Critical Release Notice

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The content of this customer NTP supports the SN08 (DMS) software release.

Bookmarks used in this NTP highlight the changes between the NA015 baseline and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the NA015 baseline remains unchanged and is valid for the current release.

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Publication History

March 2005

Standard release 17.07 for software release SN08 (DMS). No changes have been made for SN08 (DMS) features.

Volume 7

New procedure – Backplane replacement, "NTRX4002 in NTRX40AA" due to CR Q01166307.

March 2005

Standard release 17.06 for software release SN08 (DMS). This release is current for the SN08 (DMS) software release, although no changes have been made for SN08 (DMS) features.

Volume 3

Modified procedure – Replacing processor and memory cards in an XPM (step 26). This change corrects the re-direction from step 26, and is due to CR Q01047311.

December 2004

Standard release 17.05 for software release SN07 (DMS).

Volume 7

New procedure for CR Q00840334 - NTMX82 in a DTCO2

September 2004

Standard release 17.04 for software release SN07 (DMS). This release is current for the SN07 (DMS) software release, although no changes have been made for SN07 (DMS) features.

Volume 2

Modified procedure - Bus interface cards in an LCD Modified procedure - NTBX71 in an LCME Modified procedure - NT9X30 in an LPP LIS

Volume 3

Modified procedure - NT2X70 in an XPM

Volumes 5

All of the changes below are due to CR Q00855532:

Modified procedure - NT6X40 in an SMA Modified procedure - NT6X40 in an SMA-MVI-20 Modified procedure - NT6X40 in an SMA2 Modified procedure - NT6X40 in an SMS Modified procedure - NT6X40 in an SMU

March 2004

Standard release 17.03 for software release SN06 (DMS). Updates made for this release are shown below:

Volume 1

Modified card replacement procedure: Power converter cards in a SuperNode SE 16k ENET - Card NT9X30AB is Manufacture Discontinued and is replaced by new card NT9X30AC (Note - there is a bookmark for each changed reference).

Volume 2

No changes

Volume 3

Modified card replacement procedure: Power converter cards in trunk and service modules.

Volumes 4 - 7

No changes

September 2003

Standard release 17.02 for software release SN06 (DMS). Updates made for this release are shown below:

Volume 1

Modified card replacement procedure: Power converter cards in a Supernode SE CM/SLM.

Volume 2

Modified card replacement procedure: NT6X30 in LCE-type frames.

Volumes 3 - 7

No changes

June 2003

Preliminary release 17.01 for software release SN06 (DMS). Updates for this release are shown below:

<u>Volume 1</u>

No changes

Volume 2 No changes

<u>Volume 3</u> Added new card replacement procedure: SPM NTLX99BA STM-1 for DMS Spectrum Peripheral Module.

Volumes 4 - 7 No changes

297-8021-547

DMS-100 Family **North American DMS-100** Card Replacement Procedures Volume 5 of 7

LET0015 and up Standard 14.02 May 2001



DMS-100 Family North American DMS-100

Card Replacement Procedures Volume 5 of 7

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NTMX87 in an RSC RCC2 Vol. 7, 1-508 NTMX87 in an RSC-S (DS-1) Model A RCC2 Vol. 7, 1-528 NTMX87 in an RSC-S (DS-1) Model B RCC2 Vol. 7, 1-548 NTMX87 in an RSC-S (PCM-30) Model A RCO2 Vol. 7, 1-571 NTMX87 in an RSC-S (PCM-30) Model B RCO2 Vol. 7, 1-592 NTMX87 in an SMA2 Vol. 7, 1-613 NTRX41 in an IOPAC MSP Vol. 7, 1-630 NTRX41 in an OPAC MSP Vol. 7, 1-635 NTRX41 in an RSC-M/MSP Vol. 7, 1-640 NTRX41 in an RSC MSP Vol. 7, 1-645 NTRX41 in an RSC-S (DS-1) Model B MSP Vol. 7, 1-650 NTRX41 in an SMA2 MSP Vol. 7, 1-655 NTRX42 in an IOPAC MSP Vol. 7, 1-660 NTRX42 in an OPAC MSP Vol. 7, 1-677 NTRX42 in an RSC-M/MSP Vol. 7, 1-695 NTRX42 in an RSC MSP Vol. 7, 1-707 NTRX42 in an RSC-S (DS-1) Model B MSP Vol. 7, 1-726 NTRX42 in an RSC-S (PCM-30) Model B MSP Vol. 7, 1-746 NTRX42 in an SMA2 MSP Vol. 7, 1-766 NTRX43 in an IOPAC MSP Vol. 7, 1-778 NTRX43 in an OPAC MSP Vol. 7, 1-785 NTRX43 in an RSC-M/MSP Vol. 7, 1-792 NTRX43 in an RSC MSP Vol. 7, 1-800 NTRX43 in an RSC-S (DS-1) Model B MSP Vol. 7, 1-808 NTRX43 in an SMA2 MSP Vol. 7, 1-816 NTRX44 in an IOPAC MSP Vol. 7, 1-824 NTRX44 in an OPAC MSP Vol. 7, 1-836 NTRX44 in an RSC MSP Vol. 7, 1-848 NTRX44 in an RSC-S (DS-1) Model B MSP Vol. 7, 1-858 NTRX54 in an RSC-M/MSP Vol. 7, 1-868 NTRX54 in an RSC MSP Vol. 7, 1-875 NTRX54 in an RSC-S (DS-1) Model B MSP Vol. 7, 1-882 NTRX54 in an SMA2 MSP Vol. 7, 1-889 NTRX66 MSP Vol. 7, 1-896 NTTR46 in an RLD Vol. 7, 1-902 NTTR47 in an RLD Vol. 7, 1-908 NTTR60 in a STAR Vol. 7. 1-914 NTTR66 in an RLD Vol. 7, 1-921 NTTR67 in an RLD Vol. 7, 1-927 NTTR70 in an RLD Vol. 7, 1-934 NTTR71 in an RLD Vol. 7, 1-941 NTTR72 in an RLD Vol. 7, 1-946 NTTR73 in a STAR Vol. 7, 1-952 NTTR74 in a STAR Vol. 7, 1-956 NTTR75 in a STAR Vol. 7, 1-962 NTTR76 in a STAR Vol. 7, 1-970 NTTR77 in a STAR Vol. 7, 1-979 NTTR87 in a STAR Vol. 7, 1-986

1 XPM card replacement procedures (continued)

This chapter provides card replacement procedures for XMS-based peripheral modules (XPM).

NT6X40 in an SMA

Application

Use this procedure to replace an NT6X40 card in a Subscriber Carrier Module-100 Access (SMA) as identi ed in the follo wing table.

ATTENTION

Replacement restrictions apply to certain versions of the NT6X40 card. Carefully read the caution and note following the equipment chart before removing or installing any cards.

PEC	Suffixes	Name
NT6X40	AA, AC, AD	DS30 C-side interface card
NT6X40	CA, FA, FB, FC	DS512 link controller card
NT6X40	DA, GA	DS512 link paddle board



information read the following notes.

Note: The NT6X40AD, NT6X40FB, and NT6X40FC cards provide enhanced diagnostic capabilities. If table LTCINV data ll is set to the NT6X40AC or NT6X40FA version of the card, cards can be mismatched but the new diagnostics capabilities will not be initiated. The CM will treat the interface as NT6X40AC/NT6X40FA regardless of the card installed.

NT6X40 in an SMA (continued)

For more information see the section on data lling table LTCINV in the data schema section of the *Translations Guide*.

Common procedures

The following common procedures are referenced:

- "Locating a faulty card in an SMA"
- "Manually busying SMA C-side links"
- replacing a card
- returning a card

Do not go to a common procedure unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X40 in an SMA (continued)

Summary of Replacing NT6X40 SMA


Replacing an NT6X40 SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

- Perform the procedure "Locating a faulty card in an SMA."
- 3 4



CAUTION Loss of service

When replacing a card in the SMA, ensure the unit in which you are replacing the card is *inactive* and the mate unit is *active*.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Access the peripheral module (PM) level of the MAP display and post the SMA with the faulty card by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no

is the number of the SMA being posted

Example of a MAP response:

SMA	Sys	B Ma	nB Oi	ffl (CBsy	ISTb	InSv
РM	3		0 2	1	0	2	13
SMA	0		0 0	0	0	1	7
0	ISTb	Links	_00S:	CSid	de 0,	PSide	0
:0:	Act	InSv					
1:	Inact	ISTb					
	SMA PM SMA 0 : 1:	SMA Sys PM 3 SMA 0 0 ISTb 0: Act 1: Inact	SMA SysB Ma PM 3 SMA 0 0 ISTb Links 0: Act InSv 1: Inact ISTb	SMA SysB ManB O: PM 3 0 3 SMA 0 0 0 0 ISTb Links_OOS: 0: Act InSv 1: Inact ISTb	SMA SysB ManB Offl o PM 3 0 1 SMA 0 0 0 0 ISTb Links_OOS: CSic 0: Act InSv 1: Inact ISTb	SMA SysB ManB Offl CBsy PM 3 0 1 0 SMA 0 0 0 0 0 ISTb Links_OOS: CSide 0, 0: Act InSv 1: Inact ISTb	SMASysBManBOfflCBsyISTbPM30102SMA000010ISTbLinks_OOS:CSide 0, PSide:0:ActInSv:1:Inact ISTb

7

8

9

6 Determine the state and activity of the XPM unit in which the card you replacing is provisioned.

Do
step 7
step 11
step 11
step 37
tate of the mate PM unit.
Do
step 8
step 40
command is displayed at the MAP
command is displayed at the MAP
command is displayed at the MAP Do step 9
command is displayed at the MAP Do step 9 step 42
command is displayed at the MAP Do step 9 step 42
command is displayed at the MAP Do step 9 step 42
command is displayed at the MAP Do step 9 step 42
command is displayed at the MAP Do step 9 step 42 ay appear, indicating that are in progress. Wait until the flag oth PM units before proceeding to th
command is displayed at the MAP Do step 9 step 42 ay appear, indicating that are in progress. Wait until the flag oth PM units before proceeding to the Do

If the MA	P response is		Do	
SWACT son:	failed XPM SWACTL	Rea- back	step 10	
SWACT SWACT	refused Controller	by	step 10	

10 The inactive unit could not establish two-way communication with the central control (CC) and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 40.

- 11 A maintenance flag (Mtce) may appear, indicating that system-initiated maintenance tasks are in progress. Wait until the flag disappears from the status lines for both PM units before proceeding to the next step.
- 12 Manually busy all C-side links associated with the inactive PM unit you are working on using the procedure "Manually busying SMA C-side links" in this document. When you have completed the procedure, return to this point.

At the equipment frame

- **13** Hang a sign on the active unit bearing the words: *Active unit-Do not touch.* This sign should not be attached by magnets or tape.
- 14 Determine the suffix of the faulty card.

If you are replacing an	Do	
DA, GA	step 15	
AA, AC, AD, CA, FA, FB,	or FC step 28	

At the front of the shelf

15



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Unseat the NT6X40 card in the inactive unit.

At the backplane of the shelf

16



DANGER Risk of electrocution

Voltage is present on the backplane. Remove all jewelry before continuing with this procedure. Do not touch pins or terminals except as instructed.

Locate the circuit card to be replaced.

Note: NT6X40 circuit cards are located in slot 22.

Label each connector to the NT6X40 card.

17 18



DANGER

Avoid contaminating the fiber tip surface Do not touch the tip of the ber . Dirt or oil from the skin transferred to the ber tip surf ace degrades ber performance.



DANGER

Fiber cable may become damaged Take care when handling ber cables. Do not crimp or bend ber cables to a radius of less than 25 mm (1 in.).

Disconnect the fiber optic cables by performing the following steps:

- **a** Twist the plug retainer to unlock the retaining pin from the retaining groove
- **b** Rotate the plug retainer so the retaining pin enters the guide slot.
- **c** Gently pull on the plug retainers, moving the guide pin along the slot to remove the ferrule from the sleeve.
- d Fit dust caps to the open ends of the fiber links.



19



DANGER

Protect backplane pins

Do not allow screws to drop onto or touch the backplane pins. When removing and replacing the screws for the card, the backplane pins above and below must be protected to prevent shorting out. Use of a magnetic screw or nut driver is recommended.

Protect exposed backplane pins in one of the following ways:

- Wrap electrical tape around a group of pins. Do not bend the pins.
- Cover the pins with NOMEX paper.
- 20
- Remove the screw that holds the card to the support assembly by performing the following steps:
 - **a** Locate the screw positioned half-way down the outer edge of the card.
 - **b** Remove the washer holding the screw in place.
 - **c** Remove the screw and the spacer located between the card and the support assembly.



- **21** Using the levers located at the top and bottom of the 6X40 card, remove the card from the support assembly by firmly pulling horizontally until the connector pin socket on the card has cleared the connector pins on the backplane.
- 22 Place the card just removed in an electrostatic discharge protective container.

Note: If the card you are replacing has switches, ensure the switches on the replacement card have the same settings.

- 23 Line up the replacement card with the slots in the support assembly.
- 24 Using the levers located at the top and bottom of the 6X40 card, firmly press the connector pin socket on the card onto the connector pins on the backplane.
- 25 Secure the card to the support assembly by performing the following steps:

- **a** Locate the screw hole positioned half-way down the outer edge of the card.
- **b** Position the spacer at the screw hole between the card and the support assembly.
- **c** Insert the screw, moving it in the direction of the support assembly, through the spacer to the outer surface of the support assembly.
- **d** Fasten the washer to hold the screw in place.
- 26 Reconnect the fiber optic cables by performing the following steps. See the illustration in step 18.
 - **a** Remove the dust caps from the ends of the fiber links.
 - **b** Gently insert the ferrule into the sleeve so the guide pin enters the guide slot.
 - c Rotate the plug retainer so the retaining pin enters the retaining groove.
 - **d** Push the connectors together and twist the plug retainer to lock the retaining pin into the retaining groove.

At the front of the shelf

27

30



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Reseat the NT6X40 card unseated in step 15. Go to step 29.

28 Perform the common replacing a card procedure in this document. When you have completed the procedure, return to this point.

At the MAP terminal

29 The next action depends on the type of network in the office.

If you are working	n Do	
JNET	step 30	
ENET	step 32	
Return to service one	of the network links by typing	
>RTS plane_no and pressing the Ente where	.ink_no ⁻ key.	

31

32

33

34

plane_no is the number of the plane (0 or	⁻ 1) for the link
link_no is the link number (0 to 63)	
If the link	Do
returned to service and there are more manual-busy links	step 31
returned to service and there are no more manual-busy links	step 33
did not return to service	step 40
Repeat step 30 for each manually bus successfully returned all C-side links t	y C-side link. When you have o service, go to step 33.
Return the network link to service by t	yping
>RTS plane_no LINK link_n	0
and pressing the Enter key.	
where	
plane_no is the number of the plane (0 or	1) for the link
link_no is the link number (0 to 3)	
Example of a MAP response: Request to RTS ENET Plane:0 Shelf:0 to RTS ENET Plane:0 Shelf:00 Slot:32	00 Slot:32 Link:01 submitted.Request 2 Link:01 passed.
If the link	Do
returned to service	step 33
did not return to service	step 40
Post the SMA you are working on by t	yping
>PM;POST SMA sma_no	
and pressing the Enter key.	
where	
sma_no is the SMA number (0 to 255)	
Determine the status of the XPM unit or replaced by typing	containing the NT6X40 circuit card you
>QUERYPM	
and pressing the Enter key.	

NT6X40 in an SMA (end)

PM 7 PMs WAF SMZ RE2 Noc Uni Uni Sit	Type: SMA PM No.: 0 PM Int. No.:11 Node_No.: 192 s Equipped: 139 Loadname: XSC07BH RM SWACT is supported and available. A 0 is included in the REX schedule. X on SMS 0 has not been performed. de Status: {OK, FALSE} it 0 Act, Status: {OK, FALSE} it 1 Inact, Status: {OK, FALSE} te Flr RPos Bay_id Shf Description Slot EqPEC ST 01 E31 LTE 01 18 SMA : 000 6X02AA
	If the inactive unit status is Do
	InSv step 35
	anything else step 40
35	The next action depends on your reason for performing this procedure.
	If you were Do
	directed to this procedure from a step 36 maintenance procedure not directed to this procedure step 39 from a maintenance procedure
36	Return to the maintenance procedure that sent you to this procedure and continue as directed.
37	Consult office personnel to determine why the component is offline. Continue as directed by office personnel.
38	Remove the sign from the active SMA unit.
39	Go to the common returning a card procedure in this document.
	Go to step 41.
40	For further assistance, contact the personnel responsible for the next level of support.
41	You have completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
42	For further assistance with switch of activity, contact the personnel responsible for the next level of support.
History SN0	Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.7 (DMS)

Updates made to this card replacement procedure as per CR Q00855532.

NT6X40 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X40 card in a Subcriber Carrier Module-100 Access (SMA) as identi ed in the follo wing table.

ATTENTION

Replacement restrictions apply to certain versions of the NT6X40 card. Carefully read the caution and note following the equipment chart before removing or installing any cards.

PEC	Suffixes	Name
NT6X40	AA, AC, AD	DS30 C-side interface card
NT6X40	CA, FA, FB, FC	DS512 link controller card
NT6X40	DA, GA	DS512 link paddle board



Note: The NT6X40AD, NT6X40FB, and NT6X40FC cards provide enhanced diagnostic capabilities. If table LTCINV data ll is set to the NT6X40AC or NT6X40FA version of the card, cards can be mismatched but the new diagnostics capabilities will not be initiated. The CM will treat the interface as NT6X40AC/NT6X40FA regardless of the card installed.

For more information see the section on data lling table LTCINV in the data schema section of the *Translations Guide*.

Common procedures

The following common procedures are referenced:

- "Locating a faulty card in an SMA"
- "Manually busying SMA C-side links"
- replacing a card
- returning a card

Do not go to a common procedure unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of Replacing NT6X40 SMA



Replacing an NT6X40 SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

- Perform the procedure "Locating a faulty card in an SMA."
- 3 4



CAUTION Loss of service

When replacing a card in the SMA, ensure the unit in which you are replacing the card is *inactive* and the mate unit is *active*.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Access the peripheral module (PM) level of the MAP display and post the SMA with the faulty card by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no

is the number of the SMA being posted

Example of a MAP response:

SMA	Sys	B Ma	nB Oi	ffl (CBsy	ISTb	InSv
РM	3		0 2	1	0	2	13
SMA	0		0 0	0	0	1	7
0	ISTb	Links	_00S:	CSid	de 0,	PSide	0
:0:	Act	InSv					
1:	Inact	ISTb					
	SMA PM SMA 0 : 1:	SMA Sys PM 3 SMA 0 0 ISTb 0: Act 1: Inact	SMA SysB Ma PM 3 SMA 0 0 ISTb Links 0: Act InSv 1: Inact ISTb	SMA SysB ManB O: PM 3 0 3 SMA 0 0 0 0 ISTb Links_OOS: 0: Act InSv 1: Inact ISTb	SMA SysB ManB Offl o PM 3 0 1 SMA 0 0 0 0 ISTb Links_OOS: CSic 0: Act InSv 1: Inact ISTb	SMA SysB ManB Offl CBsy PM 3 0 1 0 SMA 0 0 0 0 0 ISTb Links_OOS: CSide 0, 0: Act InSv 1: Inact ISTb	SMASysBManBOfflCBsyISTbPM30102SMA000010ISTbLinks_OOS:CSide 0, PSide:0:ActInSv:1:Inact ISTb

7

8

9

Determine the state and activity of the XPM unit in which the card you replacing is provisioned. 6

	Do
ISTb, InSv, SysB, or CBsy, and active	, step 7
ISTb, InSv, SysB, or CBsy, and inactive	, step 12
ManB	step 12
OffL	step 38
From the MAP display, determine the	e state of the mate PM unit.
If the SMA unit is	Do
ISTb or InSv	step 8
any other state	step 41
Switch activity by typing	
>SWACT	
and pressing the Enter key.	
A confirmation prompt for the SWAC terminal.	T command is displayed at the MA
A confirmation prompt for the SWAC terminal.	T command is displayed at the MA
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time	T command is displayed at the MA Do step 9
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time	T command is displayed at the MA Do step 9 step 10
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the o	T command is displayed at the MA Do step 9 step 10 units by typing
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the or >NO	T command is displayed at the MA Do step 9 step 10 units by typing
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the open >NO and pressing the Enter key.	T command is displayed at the MA Do step 9 step 10 units by typing
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the to >NO and pressing the Enter key. The system discontinues the SWAC	T command is displayed at the MA Do step 9 step 10 units by typing T.
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the or >NO and pressing the Enter key. The system discontinues the SWAC ^T Return to step 8 during a period of lo	T command is displayed at the MA Do step 9 step 10 units by typing T. pw traffic.
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the of >NO and pressing the Enter key. The system discontinues the SWACT Return to step 8 during a period of loc Confirm the command by typing	T command is displayed at the MA Do step 9 step 10 units by typing T. ow traffic.
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the of >NO and pressing the Enter key. The system discontinues the SWACT Return to step 8 during a period of lo Confirm the command by typing >YES	T command is displayed at the MA Do step 9 step 10 units by typing T. ow traffic.
A confirmation prompt for the SWAC terminal. If SWACT cannot continue at this time can continue at this time Reject the prompt to SWACT of the of >NO and pressing the Enter key. The system discontinues the SWAC ⁻ Return to step 8 during a period of lo Confirm the command by typing >YES and pressing the Enter key.	T command is displayed at the MA Do step 9 step 10 units by typing T. ow traffic.

disappears from the status lines for both PM units before proceeding to the next step.

If the MAP response is	Do
SWACT passed	step 12
SWACT failed Rea- son: XPM SWACTback	step 11
SWACT refused by SWACT Controller	step 11

11 The inactive unit could not establish two-way communication with the central control (CC) and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 41.

- **12** A maintenance flag (Mtce) may appear, indicating that system-initiated maintenance tasks are in progress. Wait until the flag disappears from the status lines for both PM units before proceeding to the next step.
- **13** Manually busy all C-side links associated with the inactive PM unit you are working on using the procedure "Manually busying SMA C-side links" in this document. When you have completed the procedure, return to this point.

At the equipment frame

- 14 Hang a sign on the active unit bearing the words: *Active unit-Do not touch.* This sign should not be attached by magnets or tape.
- **15** Determine the suffix of the faulty card.

If you are replacing an	Do
DA, GA	step 16
AA, AC, AD, CA, FA, FB, or FO	C step 29

At the front of the shelf

16



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Unseat the NT6X40 card in the inactive unit.

At the backplane of the shelf

17



DANGER Risk of electrocution

Voltage is present on the backplane. Remove all jewelry before continuing with this procedure. Do not touch pins or terminals except as instructed.

Locate the circuit card to be replaced.

Note: NT6X40 circuit cards are located in slot 22.

- Label each connector to the NT6X40 card.
- 18 19



DANGER

DANGER

Avoid contaminating the fiber tip surface Do not touch the tip of the ber . Dirt or oil from the skin transferred to the ber tip surf ace degrades ber performance.



Fiber cable may become damaged Take care when handling ber cables. Do not crimp or bend ber cables to a radius of less than 25 mm (1 in.).

Disconnect the fiber optic cables by performing the following steps:

- **a** Twist the plug retainer to unlock the retaining pin from the retaining groove
- **b** Rotate the plug retainer so the retaining pin enters the guide slot.
- **c** Gently pull on the plug retainers, moving the guide pin along the slot to remove the ferrule from the sleeve.
- d Fit dust caps to the open ends of the fiber links.



20



DANGER

Protect backplane pins

Do not allow screws to drop onto or touch the backplane pins. When removing and replacing the screws for the card, the backplane pins above and below must be protected to prevent shorting out. Use of a magnetic screw or nut driver is recommended.

Protect exposed backplane pins in one of the following ways:

- Wrap electrical tape around a group of pins. Do not bend the pins.
- Cover the pins with NOMEX paper.
- **21** Remove the screw that holds the card to the support assembly by performing the following steps:
 - **a** Locate the screw positioned half-way down the outer edge of the card.
 - **b** Remove the washer holding the screw in place.
 - **c** Remove the screw and the spacer located between the card and the support assembly.



- 22 Using the levers located at the top and bottom of the 6X40 card, remove the card from the support assembly by firmly pulling horizontally until the connector pin socket on the card has cleared the connector pins on the backplane.
- 23 Place the card just removed in an electrostatic discharge protective container.

Note: If the card you are replacing has switches, ensure the switches on the replacement card have the same settings.

- 24 Line up the replacement card with the slots in the support assembly.
- **25** Using the levers located at the top and bottom of the 6X40 card, firmly press the connector pin socket on the card onto the connector pins on the backplane.
- 26 Secure the card to the support assembly by performing the following steps:

- **a** Locate the screw hole positioned half-way down the outer edge of the card.
- **b** Position the spacer at the screw hole between the card and the support assembly.
- **c** Insert the screw, moving it in the direction of the support assembly, through the spacer to the outer surface of the support assembly.
- **d** Fasten the washer to hold the screw in place.
- 27 Reconnect the fiber optic cables by performing the following steps. See the illustration in step 19.
 - **a** Remove the dust caps from the ends of the fiber links.
 - **b** Gently insert the ferrule into the sleeve so the guide pin enters the guide slot.
 - c Rotate the plug retainer so the retaining pin enters the retaining groove.
 - **d** Push the connectors together and twist the plug retainer to lock the retaining pin into the retaining groove.

At the front of the shelf

28

31



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Reseat the NT6X40 card unseated in step 16. Go to step 30.

29 Perform the common replacing a card procedure in this document. When you have completed the procedure, return to this point.

At the MAP terminal

30 The next action depends on the type of network in the office.

j on	Do	
	step 31	
	step 33	
e of the network	links by typing	
link_no		
ter key.		
	e of the network link_no ter key.	Do step 31 step 33 e of the network links by typing link_no ter key.

32

33

34

35

	r 1) for the link
link_no is the link number (0 to 63)	
If the link	Do
returned to service and there are more manual-busy links	step 32
returned to service and there are no more manual-busy links	step 34
did not return to service	step 41
Repeat step 31 for each manually bus successfully returned all C-side links t	y C-side link. When you have o service, go to step 34.
	yping
>RTS plane_no LINK link_n	.0
and pressing the Enter key.	
where	
plane_no is the number of the plane (0 or	1) for the link
link_no is the link number (0 to 3)	
Example of a MAP response: Request to RTS ENET Plane:0 Shelf:0 to RTS ENET Plane:0 Shelf:00 Slot:32	00 Slot:32 Link:01 submitted.Reques 2 Link:01 passed.
IT THE LINK	Do
returned to service	Do step 34
returned to service did not return to service	Do step 34 step 41
returned to service did not return to service Post the SMA you are working on by t	Do step 34 step 41 yping
returned to service did not return to service Post the SMA you are working on by ty >PM;POST SMA sma_no	Do step 34 step 41 yping
returned to service did not return to service Post the SMA you are working on by ty >PM;POST SMA sma_no and pressing the Enter key.	Do step 34 step 41 yping
returned to service did not return to service Post the SMA you are working on by ty >PM; POST SMA sma_no and pressing the Enter key. where	Do step 34 step 41 yping
returned to service did not return to service Post the SMA you are working on by ty >PM;POST SMA sma_no and pressing the Enter key. where sma_no is the SMA number (0 to 255)	Do step 34 step 41 yping
returned to service did not return to service Post the SMA you are working on by ty >PM; POST SMA sma_no and pressing the Enter key. where sma_no is the SMA number (0 to 255) Determine the status of the XPM unit of replaced by typing	Do step 34 step 41 yping containing the NT6X40 circuit card yo
returned to service did not return to service Post the SMA you are working on by ty >PM; POST SMA sma_no and pressing the Enter key. where sma_no is the SMA number (0 to 255) Determine the status of the XPM unit of replaced by typing >QUERYPM	Do step 34 step 41 yping containing the NT6X40 circuit card yo

NT6X40 in an SMA-MVI-20 (end)

PM 7	PM Type: SMA PM No.: 0 PM Int. No.:11 Node_No.: 192			
PM	PMs Equipped: 139 Loadname: XSC07BH			
WAI	RM SWACT is supported and a	vailable.		
SM	SMA 0 is included in the REX schedule.			
RE	K on SMS U has not been per:	formed.		
NOC	LE SLALUS: {OK, FALSE}	r en l		
UII. Un:	it 1 Inact Status: {OK, FA			
Sit	te Flr RPos Bay id Shf Des	scription Slot EqPEC		
HO	ST 01 E31 LTE 01 18	SMA: 000 6X02AA		
	If the inactive unit status is	Do		
	InSv	step 36		
	anything else	step 41		
36	The next action depends on your re	ason for performing this procedure.		
	If you were	Do		
	directed to this procedure from	a step 37		
	maintenance procedure			
	not directed to this procedure step 40			
	from a maintenance procedure			
07				
37	37 Return to the maintenance procedure that sent you to this procedure and continue as directed.			
38	38 Consult office personnel to determine why the component is offline. Continue			
39	Remove the sign from the active SN	1A unit		
40	40 Go to the common returning a card procedure in this document			
	Go to step 42			
11	41 Ear further againtance contact the personnal responsible for the rest level of			
	support.			
42	42 You have completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.			
History				
SINU7 ((כואוס)			

Updates made to this card replacement procedure as per CR Q00855532.

NT6X40 in an SMA2

Application

ATTENTION

Replacement restrictions apply to certain versions of the NT6X40 card. Carefully read the caution and note following the equipment chart before removing or installing any cards.



WARNING

Possible service disruption or loss of diagnostic functionality when installing or replacing NT6X40 cards versions AA, AC, AD, CA, DA, FA, FB, FC or GA NT6X40AA, AC, AD, CA, DA, FA, FB, FC or GA cards must not be mismatched with other versions between the two units of an XPM if table LTCINV is datafilled with interface card types of NT6X40AD or NT6X40FB. For example, you cannot have an AC version of the card in unit 0 and an AD version in unit 1. A PM777 log is generated citing the mismatch and the XPM is put in an ISTb state. For more information read the following notes.

Note: The NT6X40AD, NT6X40FB, and NT6X40FC cards provide enhanced diagnostic capabilities. If table LTCINV data ll is set to the NT6X40AC or NT6X40FA version of the card, cards can be mismatched but the new diagnostics capabilities will not be initiated. The CM will treat the interface as NT6X40AC/NT6X40FA regardless of the card installed. For more information see the section on data lling table LTCINV in the data schema section of the *Translations Guide*.

Use this procedure to replace an NT6X40 card in an SMA2.

PEC	Suffixes	Name
NT6X40	AA, AC, AD	DS30 Network Interface
NT6X40	CA, FA, FB, FC	DS512 Network Interface
NT6X40	DA, GA	DS512 Network Interface Paddleboard

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA2"
- "Manually busying SMA2 C-side links"
- replacing a card
- returning a card

Do not go to a common procedure unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.





Replacing an NT6X40 card in an SMA2

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

- Perform the procedure "Locating a faulty card in an SMA2."
- 3 4



CAUTION Loss of service

When replacing a card in the SMA2, ensure the unit in which you are replacing the card is *inactive* and the mate unit is *active*.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA2 by typing

>MAPCI;MTC;PM;POST SMA2 sma2_no

and pressing the Enter key.

where

sma2_no

is the number of the SMA2 being posted

Example of a MAP response:

Offl ISTb SMA2 SysB ManB CBsy InSv ΡМ 3 0 1 0 2 13 SMA2 0 0 0 0 1 7 SMA2 0 ISTb Links OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact ISTb

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Determine the state and activity of the replacing is provisioned.	SMA2 unit in which the card you are
If the state of the SMA2 unit is	Do
ISTb, InSv, SysB, or CBsy, and active	step 7
ISTb, InSv, SysB, or CBsy, and inactive	step 12
ManB	step 12
OffL	step 38
From the MAP display, determine the	state of the mate SMA2 unit.
If the SMA2 unit is	Do
ISTb or InSv	step 8
any other state	step 41
SWACT the units by typing	
>SWACT	
and pressing the Enter key.	
A confirmation prompt for the SWACT terminal.	command is displayed at the MAP
If SWACT	Do
cannot continue at this time	step 9
can continue at this time	step 10
Reject the prompt to SWACT of the un	nits by typing
>NO	
and pressing the Enter key.	
The system discontinues the SWACT.	
Return to step 8 during a period of low	v traffic.
Confirm the system prompt by typing	
>YES	
and pressing the Enter key.	

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 12
SWACT failed Rea son: XPM SWACTback	a- step 11
SWACT refused B SWACT Controller	by step 11

11 The inactive unit could not establish two-way communication with the central control (CC) and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 41.

- **12** A maintenance flag (Mtce) may appear, indicating that system-initiated maintenance tasks are in progress. Wait until the flag disappears from the status lines for both PM units before proceeding to the next step.
- 13 Manually busy all C-side links associated with the inactive PM unit you are working on using the procedure "Manually busying SMA2 C-side links" in this document. When you have completed the procedure, return to this point.

At the frame or cabinet

- 14 Hang a sign on the active unit bearing the words: *Active unit-Do not touch*. This sign should not be attached by magnets or tape.
- **15** Determine the suffix of the faulty card.

If the faulty card suffix is	Do
DA, GA	step 16
AA, AC, AD, CA, FA, FB, or FO	C step 29

At the front shelf of the frame or cabinet

16



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP). This protects the equipment against damage caused by static electricity.

Unseat the NT6X40 card in the inactive unit.

At the backplane of the frame or cabinet

17



DANGER Risk of electrocution

Voltage is present on the backplane. Remove all jewelry before continuing with this procedure. Do not touch pins or terminals except as instructed.

Locate the circuit card to be replaced.

Note: NT6X40 circuit cards are located in slot 9 of unit 0, and slot 19 of unit 1.

- **18** Label each connector to the NT6X40 card.
- 19



WARNING

Avoid contaminating the fiber tip surface Do not touch the tip of the ber . Dirt or oil from the skin transferred to the ber tip surf ace degrades ber performance.

WARNING Fiber cable m

Fiber cable may become damaged Take care when handling ber cables. Do not crimp or bend ber cables to a radius of less than 25 mm (1 in.).

Disconnect the fiber optic cables by performing the following steps:

- **a** Twist the plug retainer to unlock the retaining pin from the retaining groove.
- **b** Rotate the plug retainer so the retaining pin enters the guide slot.
- **c** Gently pull on the plug retainer, moving the guide pin along the slot to remove the ferrule from the sleeve.
- d Fit dust caps to the open ends of the fiber links.



20



WARNING

Protect backplane pins

Do not allow screws to drop onto or touch the backplane pins. When removing and replacing the screws for the card, the backplane pins above and below must be protected to prevent shorting out. Use of a magnetic screw or nut driver is recommended.

Protect exposed back plane pins in one of the following ways:

- Wrap electrical tape around a group of pins. Do not bend the pins.
- Cover the pins with NOMEX paper.
- 21 Remove the screw that holds the card to the support assembly by performing the following steps:
 - a Locate the screw positioned halfway down the outer edge of the card.
 - **b** Remove the washer holding the screw in place.



c Remove the screw and the spacer located between the card and the support assembly.

- 22 Remove the card from the support assembly by firmly pulling horizontally until the connector pin socket on the card has cleared the connector pins on the backplane.
- **23** Place the card just removed in an electrostatic discharge protective container.

Note: If the card you are replacing has switches, ensure the switches on the replacement card have the same settings.

- 24 Line up the replacement card with the slots in the support assembly.
- 25 Using the levers located at the top and bottom of the 6X40 card, firmly press the connector pin socket on the card onto the connector pins on the backplane.
- 26 Secure the card to the support assembly by performing the following steps:

- **a** Locate the screw hole positioned halfway down the outer edge of the card.
- **b** Position the spacer at the screw hole between the card and the support assembly.
- **c** Insert the screw, moving it in the direction of the support assembly, through the spacer to the outer surface of the support assembly.
- **d** Fasten the washer to hold the screw in place.
- 27 Reconnect the two fiber-optic cables by performing the following steps. See the illustration in step 19.
 - **a** Remove the dust caps from the ends of the fiber links.
 - **b** Gently insert the ferrule into the sleeve so the guide pin enters the guide slot.
 - c Rotate the plug retainer so the retaining pin enters the retaining groove.
 - **d** Push the connectors together and twist the plug retainer to lock the retaining pin into the retaining groove.

At the front shelf of the frame or cabinet

28

31



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP). This protects the equipment against damage caused by static electricity.

Reseat the NT6X40 card unseated in step 16. Go to step 30.

29 Perform the common replacing a card procedure in this document. When you have completed the procedure, return to this point.

At the MAP terminal

30 The next action depends on the type of network in the office.

If you are working	on	Do	
JNET		step 31	
ENET		step 33	
Return to service one	e of the network li	nks by typing	
<pre>>RTS plane_no</pre>	link_no		
and pressing the Ent	and pressing the Enter key.		
where			

32

33

34

35

plane_no is the number of the plane (0 or	1) for the link
link_no is the link number (0 to 63)	
If the link	Do
returned to service and there are more manual-busy links	step 32
returned to service and there are no more manual-busy links	step 34
did not return to service	step 41
Repeat step 31 for each manually bus successfully returned all C-side links to	y C-side link. When you have o service, go to step 34.
Return the network link to service by t	yping
>RTS plane_no LINK link_n	0
and pressing the Enter key.	
where	
plane_no is the number of the plane (0 or	1) for the link
link_no is the link number (0 to 3)	
Example of a MAP response: Request to RTS ENET Plane:0 Shelf:0 to RTS ENET Plane:0 Shelf:00 Slot:32	00 Slot:32 Link:01 submitted.Request 2 Link:01 passed.
If the link	Do
returned to service	step 34
did not return to service	step 41
Post the SMA2 you are working on by	typing
>PM;POST SMA2 sma2_no	
and pressing the Enter key.	
where	
sma2_no is the SMA2 number (0 to 255)	
Determine the status of the SMA2 unit replaced by typing	t containing the NT6X40 card you
>QUERYPM	
and pressing the Enter key.	

NT6X40 in an SMA2 (end)

PM T PMs WAR SMA REX Nod Uni Uni Sit	Cype: SMA2 PM No.: 0 PM Int s Equipped: 139 Loadname: XM2 2M SWACT is supported and ava A2 0 is included in the REX s C on SMS 0 has not been perfo le Status: {OK, FALSE} at 0 Act, Status: {OK, FALS at 1 Inact, Status; {OK, FALS at 1 Inact, Status; {OK, FALS at 1 Inact, Status; {OK, FALS} } } } } } } } } } } } } } } } } } }	. No.:11 Node_No.: 192 81AZ ilable. chedule. rmed. E} E} ription Slot EqPEC SMA2 : 000 6X02AA	
	If the inactive unit status is	Do	
	InSv	step 36	
	anything else	step 41	
36	The next action depends on your reason for performing this procedure.		
	If you were	Do	
	directed to this procedure from a maintenance procedure	step 37	
	not directed to this procedure from a maintenance procedure	step 39	
37	Return to the maintenance procedure continue as directed.	that sent you to this procedure and	
38	Consult office personnel to determine why the component is offline. Continue as directed by office personnel.		
39	Remove the sign from the active SMA2 unit.		
40	Go to the procedure in this document for returning a card for repair or replacement.		
	Go to step 42.		
41	For further assistance, contact the personnel responsible for the next level of support.		
42	You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.		
History			
SN07 (DMS)			
U	pdates made to this card replaceme	nt procedure as per CR 000855532.	

Updates made to this card replacement procedure as per CR Q00855532.

NT6X40 in an SMS

Application

Use this procedure to replace the following cards in a Subcriber Carrier Module (SMS) as identi ed in the follo wing table.

PEC	Suffixes	Name
NT6X40	AA, AC, AD	DS30 C-sside interface card
NT6X40	CA, FA, FB, FC	DS512 link controller card
NT6X40	DA, GA	DS512 link paddle board

Note: The NT6X40AD, NT6X40FB, and NT6X40FC cards provide enhanced diagnostic capabilities. If table LTCINV data ll is set to the NT6X40AC or NT6X40FA version of the card, cards can be mismatched but the new diagnostics capabilities will not be initiated. The CM will treat the interface as NT6X40AC/NT6X40FA regardless of the card installed. For more information see the section on data lling table LTCINV in the data schema section of the *Translations Guide*.

ATTENTION

There is an enhanced diagnostics test for NT6X18AA and NT6XAB cards. This NT6X18 card may be good. See the description of the NT6X18 line card in the "Star Remote Hub hardware" chapter in this manual for information on enhanced diagnostics.

CAUTION

Possible service disruption of loss of diagnostic functionality when installing or replacing NT6X40 cards version AA, AC, AD, CA, DA, FA, FB, FC or GA. NT6X40AA, AC, AD, CA, DA, FA, FB, FC or GA cards must not be mismatched with other versions between the two units of an XPM if table LTCINV is data lled with interface card types of NT6X40AD or NT6X40FB. A PM777 log is generated citing the mismatch and the XPM is put in an ISTb state. For example, you can not have an AC version of the card in unit 0 and an AD version in unit 1. For more information read the following notes.

Common procedures

The following common procedures are referenced:

- "Manually busying SMS C-side links"
- replacing a card
- returning a card

Do not go to a common procedure unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of Replacing NT6X40 in a SMS


Replacing an NT6X40 in a SMS

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMS, ensure the unit in which you are replacing the card is *inactive* and the mate unit is *active*.

Obtain an NT6X40 replacement circuit card. Ensure the replacement circuit card has the same product engineering code (PEC), including suffix, as the circuit card being removed.

At the MAP terminal

3 Access the peripheral module (PM) level of the MAP display and post the SMS with the faulty card by typing

>MAPCI;MTC;PM;POST SMS sms_no

and pressing the Enter key.

where

sms no

is the PM number (0 to 255)

Example of a MAP response:

SMS	3	S	ysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	0	2	0	2	25
2	Post_	SMS	0	0	0	0	1	1
3	ListSet							
4		SMS 0	ISTb	Links_00S	: CSide	1, PSide	1	
5	TRNSL	Unit0:	Inac	et ISTb				
б	TST	Unit1:	Act	InSv				
7	BSY							
8	RTS							
9	OffL							
10	LoadPM_							
11	Disp_							
12	Next_							

4 Determine the location of the SMS containing the NT6X40 circuit card you are replacing by typing

>QUERYPM

and pressing the Enter key. Example of a MAP response:

QueryPM PM Type: SMS PM No.: 0 PM Int. No.:11 Node_No.: 192 PMs Equipped: 139 Loadname: NSS05BC WARM SWACT is supported and available. SMS 0 is included in the REX schedule. REX on SMS 0 has not been performed. Node Status: {OK, FALSE} Unit 0 Act, Status: {OK, FALSE} Unit 1 Inact, Status: {OK, FALSE} Site Flr RPos Bay_id Shf Description Slot EqPEC HOST 01 E31 SME 01 18 SMS : 000 6X02AA

5 Determine the state and activity of the XPM unit in which the card you replacing is provisioned.

If the state of the PM unit is	Do
ISTb, InSv, SysB, or CBsy, and active	step 6
ISTb, InSv, SysB, or CBsy, and inactive	step 9
ManB	step 9
OffL	step 33
From the MAP display, determine the	state of the mate PM unit.
If the SMS unit is	Do
ISTb or InSv	step 7
any other state	step 35

7 Switch activity by typing

>SWACT

6

and pressing the Enter key.

Example of a MAP response:

	SMS 0 A Warm SwAct will data sync of activ	be performed after e terminals.
	Please confirm ("YES", "Y",	"NO", or "N"):
	lf	Do
	you are prompted to confirm a warm SWACT	step 8
	the system rejects the SWACT	step 34
8	Confirm the command by typing	
	>YES	
	and pressing the Enter key.	
	Example of a MAP response:	
	Unit0: Inact SysB Mtce Unit1: Act ISTb	
	SMS 0 SwAct Passed	
	<i>Note:</i> A maintenance flag (Mtce) m system-initiated maintenance tasks disappears from the status lines for h next step.	nay appear, indicating that are in progress. Wait until the flag both PM units before proceeding to the
	If the MAP response is	Do
	SWACT passed	step 9
	anything else	step 35
9	A maintenance flag (Mtce) may appea maintenance tasks are in progress. W status lines for both PM units before p	r, indicating that system-initiated /ait until the flag disappears from the roceeding to the next step.
10	Manually busy all C-side links associa working on using the procedure "Manu document. When you have completed	ted with the inactive PM unit you are ally busying SMS C-side links" in this I the procedure, return to this point.
At the	cabinet	
11	Place a sign on the active unit bearing This sign should not be attached by m	the words Active unit-Do not touch. agnets or tape.
	If you are replacing an	Do
	DA, GA	step 12
	AA, AC, AD, CA, FA, FB, or FC	step 24

8

9

At the front of the shelf

12



DANGER Static electricity damage

Wear a wrist strap connected to the wrist-strap grounding point of the modular supervisory panel (MSP) while handling circuit cards. This protects the cards against damage caused by static electricity.

Unseat the NT6X40 card in the inactive unit.

At the back plane of the shelf

13



DANGER Risk of electrocution

Voltage is present on the back plane. Remove all jewelry before continuing with this procedure. Do not touch pins or terminals except as instructed.

Locate the circuit card to be replaced.

Note: NT6X40 circuit cards are located in slot 9 of unit 0, and slot 19 of unit 1.

- 14 Label each connector to the circuit card.
- 15



DANGER

Avoid contaminating the fiber tip surface Do not touch the tip of the ber . Dirt or oil from the skin transferred to the ber tip surf ace degrades ber performance.



DANGER

Fiber cable may become damaged Take care when handling ber cables. Do not crimp or bend ber cables to a radius of less than 25 mm (1 in.).

Disconnect the fiber optic cables.

- **a** Twist the plug retainer to unlock the retaining pin from the retaining groove
- **b** Rotate the plug retainer so the retaining pin enters the guide slot.
- **c** Gently pull on the plug retainers, moving the guide pin along the slot to remove the ferrule from the sleeve.
- d Fit dust caps to the open ends of the fiber links.







DANGER

Protect back plane pins

Do not allow screws to drop onto or touch the back plane pins. When removing and replacing the screws for the card, the back plane pins above and below must be protected to prevent shorting out. Use of a magnetic screw or nut driver is recommended.

Protect exposed back plane pins in one of the following ways:

- Wrap electrical tape around a group of pins. Do not bend the pins.
- Cover the pins with NOMEX paper.
- 17 Remove the screw that holds the circuit card to the support assembly.
 - **a** Locate the screw which is positioned half-way down the outer edge of the circuit card.
 - **b** Remove the washer holding the screw in place.
 - c Remove the screw and the spacer located between the circuit card and the support assembly.



- **18** Open the ejection levers on the 6X40 circuit card. Remove the card by firmly pulling horizontally until the connector pin socket on the card has cleared the connector pins on the backplane.
- **19** Place the circuit card just removed in an electrostatic discharge protective container.

Note: If the circuit card you are replacing has switches, ensure the switches on the replacement circuit card have the same settings.

- **20** Using the levers located at the top and bottom of the 6X40 circuit card firmly press the connector pin socket on the card onto the connector pins on the backplane.
- 21 Secure the circuit card to the support assembly.
 - **a** Locate the screw hole which is positioned half-way down the outer edge of the card.

- **b** Position the spacer at the screw hole between the circuit card and the support assembly.
- **c** Insert the screw, moving it in the direction of the support assembly, through the spacer.
- d Fasten the washer to hold the screw in place.
- 22 Reconnect the fiber optic cables.
 - **a** Remove the dust caps from the ends of the fiber links.
 - **b** Gently insert the ferrule into the sleeve so the guide pin enters the guide slot.
 - **c** Rotate the plug retainer so the retaining pin enters the retaining groove.
 - **d** Push the connectors together and twist the plug retainer to lock the retaining pin into the retaining groove.

At the front of the shelf

- 23 Reseat the NT6X40 card unseated in step 12. Go to step 25.
- 24 Replace the card using the common replacing a card procedure in this document. When you have completed the procedure, return to this point.

At the MAP terminal

26

25 The next action depends on the type of network in the office.

If you are working on	Do
JNET	step 26
ENET	step 28
Return to service one of the network li	inks by typing
>RTS plane_no link_no	
and pressing the Enter key.	
where	
plane_no is the number of the plane (0 or	r 1) for the link
link_no is the link number (0 to 63)	
If the link	Do
returned to service and there are more manual-busy links	step 27
returned to service and there are no more manual-busy links	step 29

	If the link	Do	
	did not return to service	step 35	
27	Repeat step 26 for each manua successfully returned all C-side	ally busy C-side link. Wh links to service, go to s	nen you have tep 29.
28	Return the network link to servi	ce by typing	
	>RTS plane_no LINK l	ink_no	
	and pressing the Enter key.		
	where		
	plane_no is the number of the plar	ne (0 or 1) for the link	
	link_no is the link number (0 to 3	3)	
	Example of a MAP response:		
Request Request	to RTS ENET Plane:0 Sh to RTS ENET Plane:0 Sh	elf:00 Slot:32 Lir elf:00 Slot:32 Lir	nk:01 submitted. nk:01 passed.
	If the link	Do	
	returned to service	step 29	
	did not return to service	step 35	
29	Post the XPM you are working	on by typing	
	>PM;POST pm_type pm_n	0	
	and pressing the Enter key.		
	where		
	pm_type the PM type (DTC, ILGC	, LTCI, PDTC, SMS,)	
	pm_no is the PM number (0 to 2	255)	

30 Determine the status of the XPM unit containing the NT6X40 circuit card you replaced by typing

>QUERYPM

and pressing the Enter key.

SMS		SysB	ManB	OffL	CBsy	ISTb	InSv			
0 Quit	PM	1	0	15	0	2	12			
2 Post_	SMS	0	0	0	0	0				
s Listset 4	SMS	0 InSv I	inks 009:	Cside	0 . psid	e 0				
- 5 Trnsl_	Unit0:	Inact In	Sv	00140	- , 1510	- 0				
6 Tst_	Unit1:	Act In	Sv							
7 Bsy_ 8 RTS_	QueryPM									
	PM Type: PMs Equip WARM SWAC SMS 0 is REX on SM Node Stat Unit 0 J Unit 1 In Site Flr 1 HOST 01	SMS PM I ped: 139 T is supp included S 0 has n us: {0K, Act, Stat act, Stat act, Stat E31 SME	No.: 0 P Loadname: orted and in the RF FALSE} us: {OK, us: {OK, _id Shf 01 18	M Int. N NSS05BC d availab CX schedu performed FALSE} FALSE} Descript SMS	o.:11 Nod ble. tle. t. tion Slot : 000	de_No.: EqPEC 6X02AA	192			
If the inac	ctive unit st	tatus is	Do)						
InSv			ste	ep 31						
anything	else		step 35							
The next ac	ction depend	ds on you	r reason f	or perfori	ming this	procedu	re.			
lf you we	re		Do)						
directed t maintena	to this proc	edure fro lure	om a ste	ep 32						
not direct from a m	cted to thi aintenance	s procedu	lure ste re	ep 36						
Return to th	ne maintena	ince proce	edure that	sent you	ı to this p	rocedure	e and			
Consult offi as directed	ce personne by office pe	el to deteri	mine why	the comp	onentis	offline. C	Continu			
For further responsible	assistance	with switc t level of s	h of activi support.	ty, contac	ct the per	sonnel				
<i>Note:</i> If FORCE option is	the system option, cons advisable.	recomme sult office	ends using personne	g the SW. I to detern	ACT com mine if us	mand wi e of the	ith the FORC			
For further	assistance,	contact th	e personi	nel respo	nsible for	the next	level			

NT6X40 in an SMS (end)

- **36** Go to the common returning a card procedure in this document.
- 37 You have completed this procedure.

History

SN07 (DMS)

Updates made to this card replacement procedure as per CR Q00855532.

NT6X40 in an SMU

Application

Use this procedure to replace the following cards in a Subcriber Carrier Module (SMU) as identi ed in the follo wing table.

PEC	Suffixes	Name
NT6X40	AA, AC, AD	DS30 C-sside interface card
NT6X40	CA, FA, FB, FC	DS512 link controller card
NT6X40	DA, GA	DS512 link paddle board

Note: The NT6X40AD, NT6X40FB, and NT6X40FC cards provide enhanced diagnostic capabilities. If table LTCINV data ll is set to the NT6X40AC or NT6X40FA version of the card, cards can be mismatched but the new diagnostics capabilities will not be initiated. The CM will treat the interface as NT6X40AC/NT6X40FA regardless of the card installed. For more information see the section on data lling table LTCINV in the data schema section of the *Translations Guide*.

ATTENTION

Replacement restrictions apply to certain versions of the NT6X40 cards. card. Carefully read the caution and note following the equipment chart before removing or installing any cards.

Possible service disruption of loss of diagnostic functionality when installing or replacing NT6X40 cards version AA, AC, AD, CA, DA, FA, FB, FC or GA. NT6X4AA, AC, AD, CA, DA, FA, FB, FC, or GA cards must not be mismatched with other versions between the two units of an XPM if table LTCINV is data lled with interface card types of NT6X40AD or NT6X40FB. A PM777 log is generated citing the mismatch and the XPM is put in an ISTb state. For example, you can not have an AC version of the card in unit 0 and an AD version in unit 1. For more information read the following notes.

Common procedures

The following common procedures are referenced:

- "Manually busying SMU C-side links"
- replacing a card
- returning a card

Do not go to a common procedure unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of Replacing NT6X40 in an SMU



Replacing an NT6X40 in a SMU

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMU, ensure the unit in which you are replacing the card is *inactive* and the mate unit is *active*.

Obtain an NT6X40 replacement circuit card. Ensure the replacement circuit card has the same product engineering code (PEC), including suffix, as the circuit card being removed.

At the MAP terminal

3 Access the peripheral module (PM) level of the MAP display and post the SMU with the faulty card by typing

>MAPCI;MTC;PM;POST SMU smu_no

and pressing the Enter key.

where

smu_no

is the PM number (0 to 255)

Example of a MAP response:

SMU	J	S	ysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	0	2	0	2	25
2	Post_	SMU	0	0	0	0	1	1
3	ListSet							
4		SMU 0	ISTb	Links_00S	: CSide	1, PSide	1	
5	TRNSL	Unit0:	Inac	t ISTb				
б	TST	Unit1:	Act	InSv				
7	BSY							
8	RTS							
9	OffL							
10	LoadPM_							
11	Disp_							
12	Next_							

4 Determine the location of the SMU containing the NT6X40 circuit card you are replacing by typing

>QUERYPM

```
and pressing the Enter key.
Example of a MAP response:
QueryPM
PM Type: SMU PM No.: 0 PM Int. No.:11 Node_No.: 192
PMs Equipped: 139 Loadname: NSS05BC
WARM SWACT is supported and available.
SMU 0 is included in the REX schedule.
REX on SMU 0 has not been performed.
Node Status: {OK, FALSE}
Unit O
          Act, Status: {OK, FALSE}
Unit 1 Inact, Status: {OK, FALSE}
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 01 E31 SME 01
                                   SMU :
                                            000
                          18
                                                 6X02AA
Determine the state and activity of the XPM unit in which the card you
replacing is provisioned.
 If the state of the PM unit is
                                Do
 ISTb, InSv, SysB, or CBsy,
                                step 6
 and active
 ISTb, InSv, SysB, or CBsy,
                                step 9
 and inactive
 ManB
                                step 9
 OffL
                                step 33
From the MAP display, determine the state of the mate PM unit.
 If the SMU unit is
                                Do
                                step 7
 ISTb or InSv
 any other state
                                step 35
Switch activity by typing
>SWACT
and pressing the Enter key.
Example of a MAP response:
```

5

6

7

8

9

10

11

SMU 0 A Warm SwAct will be performed after data sync of active terminals. Please confirm ("YES", "Y", "NO", or "N"): If Do you are prompted to confirm a step 8 warm SWACT the system rejects the SWACT step 34 Confirm the command by typing >YES and pressing the Enter key. Example of a MAP response: Unit0: Inact SysB Mtce Unit1: Act ISTb SMU 0 SwAct Passed Note: A maintenance flag (Mtce) may appear, indicating that system-initiated maintenance tasks are in progress. Wait until the flag disappears from the status lines for both PM units before proceeding to the next step. If the MAP response is Do SWACT passed step 9 anything else step 35 A maintenance flag (Mtce) may appear, indicating that system-initiated maintenance tasks are in progress. Wait until the flag disappears from the status lines for both PM units before proceeding to the next step. Manually busy all C-side links associated with the inactive PM unit you are working on using the procedure "Manually busying SMU C-side links" in this document. When you have completed the procedure, return to this point. At the cabinet Place a sign on the active unit bearing the words Active unit-Do not touch. This sign should not be attached by magnets or tape. If you are replacing an Do DA, GA step 12 AA, AC, AD, CA, FA, FB, or FC step 24

At the front of the shelf

12



DANGER Static electricity damage

Wear a wrist strap connected to the wrist-strap grounding point of the modular supervisory panel (MSP) while handling circuit cards. This protects the cards against damage caused by static electricity.

Unseat the NT6X40 card in the inactive unit.

At the back plane of the shelf

13



DANGER Risk of electrocution

Voltage is present on the back plane. Remove all jewelry before continuing with this procedure. Do not touch pins or terminals except as instructed.

Locate the circuit card to be replaced.

Note: NT6X40 circuit cards are located in slot 9 of unit 0, and slot 19 of unit 1.

- 14 Label each connector to the circuit card.
- 15



DANGER

Avoid contaminating the fiber tip surface Do not touch the tip of the ber. Dirt or oil from the skin transferred to the ber tip surf ace degrades ber performance.



DANGER

Fiber cable may become damaged Take care when handling ber cables. Do not crimp or bend ber cables to a radius of less than 25 mm (1 in.).

Disconnect the fiber optic cables.

- **a** Twist the plug retainer to unlock the retaining pin from the retaining groove
- **b** Rotate the plug retainer so the retaining pin enters the guide slot.
- **c** Gently pull on the plug retainers, moving the guide pin along the slot to remove the ferrule from the sleeve.
- d Fit dust caps to the open ends of the fiber links.



16



DANGER

Protect back plane pins

Do not allow screws to drop onto or touch the back plane pins. When removing and replacing the screws for the card, the back plane pins above and below must be protected to prevent shorting out. Use of a magnetic screw or nut driver is recommended.

Protect exposed back plane pins in one of the following ways:

- Wrap electrical tape around a group of pins. Do not bend the pins.
- Cover the pins with NOMEX paper.
- 17 Remove the screw that holds the circuit card to the support assembly.
 - **a** Locate the screw which is positioned half-way down the outer edge of the circuit card.
 - **b** Remove the washer holding the screw in place.
 - c Remove the screw and the spacer located between the circuit card and the support assembly.



Note: If the circuit card you are replacing has switches, ensure the switches on the replacement circuit card have the same settings.

- **20** Using the levers located at the top and bottom of the 6X40 circuit card firmly press the connector pin socket on the card onto the connector pins on the backplane.
- 21 Secure the circuit card to the support assembly.
 - **a** Locate the screw hole which is positioned half-way down the outer edge of the card.

- **b** Position the spacer at the screw hole between the circuit card and the support assembly.
- **c** Insert the screw, moving it in the direction of the support assembly, through the spacer.
- d Fasten the washer to hold the screw in place.
- 22 Reconnect the fiber optic cables.
 - **a** Remove the dust caps from the ends of the fiber links.
 - **b** Gently insert the ferrule into the sleeve so the guide pin enters the guide slot.
 - **c** Rotate the plug retainer so the retaining pin enters the retaining groove.
 - **d** Push the connectors together and twist the plug retainer to lock the retaining pin into the retaining groove.

At the front of the shelf

- 23 Reseat the NT6X40 card unseated in step 12. Go to step 25.
- 24 Replace the card using the common replacing a card procedure in this document. When you have completed the procedure, return to this point.

At the MAP terminal

26

25 The next action depends on the type of network in the office.

If you are working on	Do
JNET	step 26
ENET	step 28
Return to service one of the network li	inks by typing
>RTS plane_no link_no	
and pressing the Enter key.	
where	
plane_no is the number of the plane (0 or	r 1) for the link
link_no is the link number (0 to 63)	
If the link	Do
returned to service and there are more manual-busy links	step 27
returned to service and there are no more manual-busy links	step 29

	If the link		Do				
	did not return to service		step 35				
27	Repeat step 26 for each ma successfully returned all C-s	nually busy side links to	C-side link. When you have service, go to step 29.				
28	Return the network link to service by typing						
	>RTS plane_no LINK	link_nc	0				
	and pressing the Enter key.						
	where						
	plane_no is the number of the	plane (0 or	1) for the link				
	link_no is the link number (0	to 3)					
	Example of a MAP respons	e:					
Request Request	to RTS ENET Plane:0 to RTS ENET Plane:0	Shelf:00 Shelf:00) Slot:32 Link:01 submitted) Slot:32 Link:01 passed.				
	If the link		Do				
	returned to service		step 29				
	did not return to service		step 35				
29	Post the XPM you are worki	ng on by ty	ping				
	>PM;POST pm_type pr	n_no					
	and pressing the Enter key.						
	where						
	pm_type the PM type (DTC, IL	.GC, LTCI, I	PDTC, SMU,)				
	pm_no is the PM number (0	to 255)					
30	Determine the status of the replaced by typing	XPM unit co	ontaining the NT6X40 circuit card yo				
	>QUERYPM						
	and pressing the Enter key.						

SMU 0 Quit 2 Post	PM SMU	SysB 1 0	ManB 0 0	OffL 15 0	CBsy 0 0	ISTb 2 0	InSv 121 3
3 ListSet	SMU	0 InSv L	inks_00S:	CSide	0 , PSid	e 0	-
5 Trnsl_	Unit0:	Inact In	Sv				
6 Tst_	Unit1:	Act In	Sv				
7 Bsy_ 8 RTS_	QueryPM						
	PM Type: PMs Equip WARM SWAC SMU 0 is REX on SM Node Stat Unit 0 Unit 1 Ir Site Flr HOST 01	SMU PM N pped: 139 T is supp included MU 0 has n cus: {OK, Act, Stat act, Stat RPos Bay E31 SME	No.: 0 PI Loadname: orted and in the RE ot been p FALSE} us: {OK, us: {OK, _id Shf 01 18	M Int. No NSS05BC availab X schedu erformed FALSE} FALSE Descript SMU	ion Slot	de_No.: : EqPEC 6X02AA	192
If the inac	tive unit s	tatus is	Do)			
InSv			ste	ep 31			
anything	ste	step 35					
The next ac	tion depen	ds on you	r reason f	or perforr	ning this	procedu	re.
If you we	re		Do)			
directed t maintena	o this proc nce proced	cedure fro dure	om a ste	ep 32			
not direct from a m	eted to th aintenance	is procec e procedu	lure ste re	ep 36			
Return to th continue as	ne maintena directed.	ance proce	edure that	sent you	ı to this p	rocedure	e and
Consult office as directed	ce personn by office p	el to deteri ersonnel.	mine why t	the comp	onent is o	offline. C	ontinue
For further a responsible	assistance for the nex	with switc t level of s	h of activi support.	ty, contac	t the per	sonnel	
Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCI option is advisable.							
For further a support.	assistance,	contact th	e personr	nel respo	nsible for	the next	level of

31

32

33

34

35

NT6X40 in a SMU (end)

- **36** Go to the common returning a card procedure in this document.
- 37 You have completed this procedure.

History SN07 (DMS)

Updates made to this card replacement procedure as per CR Q00855532.

NT6X41 in an SMA

Application

Use this procedure to replace a NT6X41 card in an SMA.

PEC	Suffixes	Name
NT6X41	AA, AC	Speech bus formatter

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.





Replacing an NT6X41 card in an SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4



CAUTION Loss of service

Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response

Offl SMA SysB ManB CBsy ISTb InSv 3 ΡМ 0 1 0 2 13 0 0 1 7 SMA 0 0 SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact ISTb

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 10

7 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
can continue at this time	step 8
cannot continue at this time	step 22

8 Confirm the system prompt by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 10
SWACT failed Rea- son: XPM SWACTback	step 9
SWACT refused by SWACT Controller	step 9

9 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 20.

At the equipment frame

10 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

12

13

11 Observe the MAP display and determine the state of the inactive unit.

If state is	6			Do
ManB				step 13
SysB, InSv	CBsy,	ISTb,	or	step 12
Busy the ir	nactive PM	unit by typ	ing	
>BSY UNI	T unit_n	0		
and pressi	ng the Ente	er key.		
where				
unit_n is th	i o le number (of the inact	tive SI	MA unit (0 or 1)
Reset the i	inactive PM	1 unit to inh	nibit m	essaging by typing
>PMRESET	UNIT un	it_no No	ORUN	
and pressi	ng the Ente	er key.		
where				
unit_n is th	i o le number (of the inac	tive SN	MA unit (0 or 1)

At the equipment frame

14



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

15 Use the following information to determine the next step.

If you were directed here from	Do
alarm clearing procedures	step 18
other	step 16

At the MAP terminal

16 Load the inactive SMA unit by typing

>LOADPM UNIT unit_no

and pressing the Enter key.

where

17

unit_no

is the number of the busied SMA unit

If load	Do	
passed	step 17	
failed	step 20	
Return the inactive SMA u	unit to service by typing	
>RTS UNIT unit_no		
and pressing the Enter ke	у.	
where		
unit_no is the number of the	e SMA unit loaded in step 16	
If RTS	Do	
passed	step 18	

NT6X41 in an SMA (end)

If RTS	Do
failed	step 20

At the equipment frame

- **18** Remove the sign from the active SMA unit.
- **19** Go to the common returning a card procedure in this document.

Go to step 21.

- **20** For further assistance, contact the personnel responsible for the next level of support.
- 21 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- 22 For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X41 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X41 card in an SMA.

PEC	Suffixes	Name
NT6X41	AA, AC	Speech Bus Formatter

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X41 card in an SMA



Replacing an NT6X41 card in an SMA

At the equipment frame

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4



CAUTION Loss of service

Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response

6

7

8

9

SMA SysB ManB O	ffl CBsy	ISTb	InSv
PM 3 0 SMA 0 0	L U 0 0	2 1	⊥3 7
SMA 0 ISTb Links_OOS Unit0: Act InSv Unit1: Inact ISTb Observe the MAP display and the inactive unit.	: CSide 0 d determine if	, PSid the faul	e 0 ty card is in the active o
If the faulty card is in the	Do		
active unit	ste	p 7	
inactive unit	ste	p 11	
Perform a SWACT of the unit	s by typing		
>SWACT			
and pressing the Enter key.			
A confirmation prompt for the terminal.	SWACT com	mand is	displayed at the MAP
If SWACT	Do		
cannot continue at this tin	ne stej	p 8	
can continue at this time	stej	p 9	
Reject the prompt to SWACT	the units by t	yping	
>NO			
and pressing the Enter key.			
The system discontinues the	SWACT.		
Confirm the system prompt b	y typing		
>YES			
and pressing the Enter key.			
The system runs a pre-SWAC unit to accept activity reliably.	CT audit to de	termine	the ability of the inactive
<i>Note:</i> A maintenance flag progress. Wait until the fla maintenance action.	appears whe g disappears	n maint before p	enance tasks are in proceeding with the nex
If the message is	Do		
SWACT passed	ste	p 11	

If the mess	age is		Do
SWACT son:	failed XPM SWACT	Rea- back	step 10
SWACT re Control	efused by ler	SWACT	step 10

10 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 22.

At the equipment frame

11 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

13

14

12 Observe the MAP display and determine the state of the inactive unit.

If state is			Do
ManB			step 14
SysB, CBs InSv	y, ISTb,	or	step 13
Busy the inactive	e PM unit by typi	ing	
>BSY UNIT un	it_no		
and pressing the	e Enter key.		
where			
unit_no is the num	nber of the inact	ive SN	/A unit (0 or 1)
Reset the inactiv	e PM unit to inh	ibit m	essaging by typing
>PMRESET UNI	T unit_no NC	RUN	
and pressing the	e Enter key.		
where			
unit_no is the num	nber of the inact	ive SN	/IA unit (0 or 1)

At the equipment frame

15



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

16 Use the following information to determine the next step.

If you were directed here from	Do
alarm clearing procedures	step 19
other	step 17

At the MAP terminal

17 Load the inactive SMA unit by typing

>LOADPM UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the busied SMA unit

If load	Do
passed	step 18
failed	step 22
Return the inactive SMA	unit to service by typing
<pre>>RTS UNIT unit_no</pre>	
and pressing the Enter k	ey.
where	
unit_no is the number of t	he SMA unit loaded in step 17
If RTS	Do
nassed	sten 19

18
NT6X41 in an SMA-MVI-20 (end)

If RTS	Do
failed	step 22

At the equipment frame

- **19** Remove the sign from the active SMA unit.
- 20 Send any faulty cards for repair according to local procedure.
- **21** Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 23.

- 22 For further assistance, contact the personnel responsible for the next level of support.
- 23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X41 in an SMS

Application

Use this procedure to replace an NT6X41 card in an SMS.

PEC	Suffixes	Name
NT6X41	AA,AB, CA	Speech bus formatter

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X41 card in an SMS

Replacing an NT6X41 card in an SMS

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service When replacing a card in the SMS, ensure the unit where you are replacing the card is inactive and the mate unit is active.

Obtain a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMS sms_no

and pressing the Enter key.

where

sms no

is 0-127 for NT40 and 0-255 for DMS SuperNode

Example of a MAP response

SMS 3 INSV LINKS_OOS CSIDE 0 PSIDE 0 Unit0 Act InSv Unit1 Inact ISTb

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 9

5



CAUTION

Service disruption: calls may be dropped! If you are prompted to con rm a cold SW ACT, perform this activity only during a period of low traf c. All calls being handled by this PM, including data calls, will be dropped.

Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

The system determines the type of SWACT it can perform, a warm SWACT or a cold SWACT, and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
cannot continue at this time	step 6
can continue at this time	step 7

6 Do not switch activity of the units. Reject the switch by typing

>NO

and pressing the Enter key.

The system discontinues the switch of activity. Return to step 5 during a period of low traffic.

7 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 9
SwAct failed	step 8
SwAct failed:Reason: XPM SwActback	step 8

	If the message is Do)
	SwAct refused by SwAct ste controller	ър 8
8	Return to <i>Alarm Clearing Procedures</i> to cl inactive unit. When the alarm is cleared, re	ear the alarm condition on the eturn to step 1 of this procedure.
At the	e frame	
9	Put a sign on the active unit bearing the w This sign should not be attached by magn	ords: <i>Active unit—Do not touch</i> . ets or tape.
At the	e MAP terminal	
10	Busy the inactive PM unit by typing	
	>bsy UNIT unit_no	
	and pressing the Enter key.	
	where	
	<pre>unit_no is the number of the faulty SMS un</pre>	it
11	Set the PM to the ROM level by typing	
	>PMRESET UNIT unit_no NORUN	
	and pressing the Enter key.	
	where	
	unit_no is the number of the faulty SMS uni	t
At the	e frame	
12		



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

13



DANGER

Equipment damage When removing or inserting a card, do not apply direct pressure to the components and do not force the cards into the slots.

Remove the NT6X41 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



c Verify the replacement card has the same PEC, including suffix, as the card you just removed.

14 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.



- **15** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



16 Use the following information to determine where to go next in this procedure.

If you entered this procedure from	Do	
alarm clearing procedures	step 19	

	If you entered this procedure from	Do	
	other	step 17	
	Test the inactive unit by typing		
	>TST UNIT unit_no		
	and pressing the Enter key.		
	where		
	unit_no is the number of the faulty SMS	S unit	
	If TST	Do	
	passed	step 18	
	failed	step 19	
	Return the inactive SMS unit to service	e by typing	
	>RTS UNIT unit_no		
and pressing the Enter key.			
	where		
	unit_no is the number of the faulty SMS	S unit	
	If RTS	Do	
	passed	step 21	
	failed	step 20	
	Return to the <i>Alarm Clearing Procedu</i> . At the point where a faulty card list was on the list and go to the appropriate ca in this manual.	res that directed you to this procedure. s produced, identify the next faulty card rd replacement procedure for that card	
	Obtain further assistance in replacing responsible for higher level of support	this card by contacting the personnel	
	frame		
	Remove the sign from the active SMS	unit.	
	Send any faulty cards for repair using	local procedure.	
	Send any faulty cards for repair using Record the following items in office re	local procedure. cords according to local policy:	

- serial number of the card
- symptoms that prompted replacement of the card

NT6X41 in an SMS (end)

24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X41 in an SMS-R

Application

Use this procedure to replace the following card in an SMS-R.

PEC	Suffixes	Name
NT6X41	AA, AC	Speech Bus Formatter

Common procedures

Not applicable

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X41 card in an SMS-R



Replacing an NT6X41 card in an SMS-R

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMSR, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMSR smsr_no

and pressing the Enter key.

where

smsr_no
is the number of the SMSR to be posted

Example of a MAP response

SMSR 3	INSV	V LINKS_	_00S	CSIDE	0	PSIDE	0
Uni	t0	Act	InSv				
Uni	t1	InAct	ISTb				

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 8

5 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 25

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the alarm clearing procedure to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit bearing the following words: "Active unit—Do not touch."

At the MAP display

9 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMS-R unit

At the frame

10



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS-R. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

11



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Remove the NT6X41 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



12 Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **13** Verify that the replacement card has the same PEC, including suffix, as the card you just removed.
- 14 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **15** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
 - **b** Close the locking levers.



16 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 19
other	step 17

At the MAP display

17 Test the inactive unit by typing

>TST UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number	of the faulty	SIVIS-R UNIT

If TST	Do
passes	step 18
fails	step 19
Return the inactive SMSR unit to service by typing	
>RTS UNIT unit_no	
and pressing the Enter key.	

where

18

NT6X41 in an SMS-R (end)

unit no

is the number of the faulty SMS-R unit

If RTS	Do
passes	step 21
fails	step 20

19 Return to the *Alarm Clearing Procedures* section of this manual or procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.

20 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.

At the frame

- **21** Remove the sign from the active unit.
- 22 Send any faulty cards for repair according to local procedure.
- **23** Record the following items in office records in accordance with local policy:
 - the date the card was replaced
 - the serial number of the card
 - the symptoms that prompted replacement of the card.
- 24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **25** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X41 in an SMU

Application

Use this procedure to replace the following card in an SMU.

PEC	Suffix	Name
NT6X41	AA, AC	Speech bus formatter

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X41 card in an SMU



Replacing an NT6X41 card in an SMU

At your current location:

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure.
- 2 Get a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal:

3



CAUTION Loss of service

When replacing a card in the SMU, ensure that the unit where you are replacing the card is inactive and that the mate unit is active.

Access the PM level of the MAP terminal by typing

>MAPCI;MTC;PM;POST SMU smu_no

and pressing the Enter key.

where

smu no is

the number of the SMU to be posted

Example of a MAP response:

SMU		SysB	ManB	Offl	CBsy	ISTb	InSv
	РM	3	0	1	0	2	13
	SMU	0	0	0	0	1	7
SMU	0 IS	STb L:	inks_00	os: c	Side 0,	PSide	e 0
Unit	:0:	Act	ISTb				
Unit	:1:	Inact	InSv				

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 8

5 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

The system determines the type of SwAct it can perform. The system displays a confirmation prompt for the selected SwAct.

If SwAct	Do
can continue at this time	step 6
cannot continue at this time	step 21

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SwAct audit to determine if the inactive unit can accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the *Alarm Clearing Procedures* to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the SME frame:

8 Put a sign on the active unit bearing the following words: "Active unit—Do not touch."

At the MAP terminal:

9 Busy the inactive SMU unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

	unit_no is the number of the faulty SM	IU unit	
10	Set the PM to the ROM level by typ	bing	
	>PMRESET UNIT unit_no NORU	Л	
	and pressing the Enter key.		
	unit_no is the number of the SMU uni	t busied in step 9	
11	Go to the common replacing a carc to step 12 of this procedure.	procedure in this document. Then return	
12	Use the following information to det	ermine where to go next in this procedure.	
	If you entered this procedure from	Do	
	alarm clearing procedures	step 15	
	other	step 13	
13	Test the inactive unit by typing		
	>TST UNIT unit_no		
	and pressing the Enter key.		
	where		
	unit_no is the number of the SMU uni	t busied in step 9	
	If test	Do	
	passed	step 14	
	failed	step 16	
14	Return the inactive SMU unit to se	rvice by typing	
	>RTS UNIT unit_no		
	and pressing the Enter key.		
	where		
	unit_no is the number of the SMU unit tested in step 13		
	If RTS	Do	
	passes	step 18	
	fails	step 16	

NT6X41 in an SMU (end)

- **15** Return to the *Alarm Clearing Procedures*. At the point where a faulty card list is initiated, identify the next faulty card on the list. Go to the appropriate card replacement procedure for that card.
- 16 Contact personnel responsible for higher level support and get further help to replace this card.
- **17** Remove the sign from the active SMU unit.
- **18** Send any faulty cards for repair according to local procedure.
- **19** Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card
- 20 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- 21 For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X42 in an SMA

Application

Use this procedure to replace an NT6X42 card in an SMA.

PEC	Suffixes	Name
NT6X42	AA	Channel Supervision Message

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X42 card in an SMA



Replacing an NT6X42 card in an SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4



CAUTION Loss of service

Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
 is the number of the SMA being posted

Example of a MAP response:

SMA SysB ManB Offl CBsy ISTb InSv 3 ΡМ 0 1 0 2 13 7 0 0 1 SMA 0 0 SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact SysB

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 10

7 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
can continue at this time	step 8
cannot continue at this time	step 21

8 Confirm the system prompt by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 10
SWACT failedReason: XPM SWACTback	step 9
SWACT refused by SWACT Controller	step 9

9 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. All faults on the inactive unit must be cleared before attempting to clear the alarm condition on the active unit.

Go to step 19.

At the equipment frame

10 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

11 Observe the MAP display and determine the state of the inactive unit.

If state is			Do	
ManB				step 13
SysB, InSv	CBsy,	ISTb,	or	step 12

12



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Busy the inactive PM unit by typing

>BSY UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the inactive SMA unit (0 or 1)

- **13** Perform the common replacing a card procedure in this document.
- 14 Use the following information to determine the next step.

If you were directed here from	Do
alarm clearing procedures	step 17
other	step 15

NT6X42 in an SMA (end)

At the	e MAP terminal	
15	Load the inactive SMA	unit by typing
	>LOADPM UNIT unit	_no
	and pressing the Enter	key.
	where	
	unit_no is the number of	the busied SMA unit
	If load	Do
	passed	step 16
	failed	step 19
16	Return the inactive SM	A unit to service by typing
	>RTS UNIT unit_no	
	and pressing the Enter	key.
	where	
	unit_no	
	is the number of	the SMA unit loaded in step 15
	If RTS	Do
	passed	step 17
	failed	step 19
At the	e equipment frame	
17	Remove the sign from t	he active SMA unit.
18	Go to the common retu	rning a card procedure in this document.
	Go to step 20.	
19	For further assistance, contact the personnel responsible for the next level of support.	
20	You have successfully c procedure that directed	ompleted this procedure. Return to the maintenance you to this card replacement procedure and continue

21 For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

as directed.

NT6X42 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X42 card in an SMA.

PEC	Suffixes	Name
NT6X42	AA	Channel Supervision Message

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for a NT6X42 card in an SMA



Replacing a NT6X42 card in an SMA

At the equipment frame

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4



CAUTION Loss of service

Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response:

SMA		SysB	ManB	Offl	CBsy	ISTb	InSv
	PM	3	0	1	0	2	13
	SMA	0	0	0	0	1	7
SMA	0 IS	STb L	inks_0	OS: (CSide O	, PSid	e 0
Unit	:0	Act	InSv				
Unit	:1:	Inact	SysB				

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 11

7 SWACT the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
cannot continue at this time	step 8
can continue at this time	step 9
Reject the prompt to SWACT the uni	ts by typing
>NO	
and pressing the Enter key.	
The system discontinues the SWAC	Г.
Confirm the system prompt by typing	1
>YES	
and pressing the Enter key.	
The system runs a pre-SWACT audit unit to accept activity reliably.	t to determine the ability of the inactive
<i>Note:</i> A maintenance flag appear progress. Wait until the flag disap maintenance action.	rs when maintenance tasks are in pears before proceeding with the next
If the message is	Do
SWACT passed	step 11

8

9

If the mess	sage is	Do
SWACT XPM SWA	failedReason: CTback	step 10
SWACT refused by SWACT Controller		step 10

10 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 22.

At the equipment frame

11 Hang a sign on the active unit bearing the words: *Active unit—Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

12 Observe the MAP display and determine the state of the inactive unit.

If state is			Do	
ManB				step 14
SysB, InSv	CBsy,	ISTb,	or	step 13

13



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Busy the inactive PM unit by typing

>BSY UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the inactive SMA unit (0 or 1)

14 Perform the common replacing a card procedure in this document.

15	Use the following information to determine the next step.					
	If you were directed here from	Do				
	alarm clearing procedures	step 19				
	other	step 16				
At the MAP terminal						
16	Load the inactive SMA unit by typing					
	>LOADPM UNIT unit_no					
	and pressing the Enter key.					
	where					
	unit_no is the number of the busied SMA unit					
	If load	Do				
	passed	step 17				
	failed	step 22				
17	Test the inactive SMA unit by typing					
	>TST UNIT unit_no					
	and pressing the Enter key.					
	where					
	unit_no is the number of the SMA unit loaded in step 16					
	If test	Do				
	passed	step 18				
	failed	step 22				
18	Return the inactive SMA unit to service by typing					
	>RTS UNIT unit_no					
	and pressing the Enter key.					
	where					
	<pre>unit_no is the number of the SMA unit tested in step 17</pre>					
	If RTS	Do				
	passed	step 19				
NT6X42 in an SMA-MVI-20 (end)

If RTS	Do
failed	step 22

At the equipment frame

- **19** Remove the sign from the active SMA unit.
- 20 Send any faulty cards for repair according to local procedure.
- **21** Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 23.

- 22 For further assistance, contact the personnel responsible for the next level of support.
- 23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X42 in an SMS

Application

Use this procedure to replace an NT6X42 card in an SMS.

PEC	Suffixes	Name
NT6X42	AA	Channel supervision message

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X42 card in an SMS

Replacing an NT6X42 card in an SMS

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION

Loss of service When replacing a card in the SMS, ensure the unit where you are replacing the card is inactive and the mate unit is active.

Obtain a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMS sms_no

and pressing the Enter key.

where

sms no

is 0-127 for NT40 and 0-255 for DMS SuperNode

Example of a MAP response

SMS	3	INSV	LINH	KS_00S	CSIDE	0	PSIDE 0
τ	Unit0	I	Act	InSv			
τ	Jnit1	Ir	nact	ISTb			

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

If faulty card is on	Do		
active unit	step 5		
inactive unit step 8			
Switch the activity of the units by typing			

>SWACT

5

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 23

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 8
SWACT failed	step 7
SWACT failed Reason: XPM SWACTback	step 7
SWACT refused by SWACT controller	step 7

7 Return to the "SMS alarm clearing procedures" section in this document to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit bearing the words: *Active unit—Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

9 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit no

is the number of the faulty SMS unit

At the frame

10



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

11



DANGER Equipment damage

When removing or inserting a card, do not apply direct pressure to the components and do not force the cards into the slots.

Remove the NT6X42 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **13** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



14 Use the following information to determine what step to go to next in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 17
other	step 15
Test the inactive unit by typing	
>TST UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the number of the faulty Sl	MS unit
If TST	Do
passed	step 16
failed	step 17
Return the inactive SMS unit to ser	vice by typing
>RTS UNIT unit_no	
and pressing the Enter key.	
where	

15

16

NT6X42 in an SMS (end)

unit no

is the number of the faulty SMS unit

If RTS	Do
passed	step 19
failed	step 18

- 17 Return to the maintenance procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **18** Obtain further assistance in replacing this card by contacting the personnel responsible for a higher level of support.

At the frame

- **19** Remove the sign from the active SMS unit.
- 20 Send any faulty cards for repair according to local procedure.
- 21 Note in office records according to local policy:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card
- 22 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **23** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X42 in an SMS-R

Application

Use this procedure to replace the following card in an SMS-R.

PEC	Suffixes	Name
NT6X42	AA	Channel Supervision Message

Common procedures

Not applicable

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X42 card in an SMS-R

Replacing an NT6X42 card in an SMS-R

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMS-R, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMSR smsr_no

and pressing the Enter key.

where

smsr_no
is the number of the SMS-R to be posted

Example of a MAP response

SMSR 3	INSV	LINK	S_00S	CSIDE	0	PSIDE	0
Unit0	A	ct	InSv				
Unit1	In.	Act	ISTb				

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit step 8		
Switch the activity of the units by typing		

>SWACT

5

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 23

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the alarm clearing procedure to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit with the words: "Active unit—Do not touch."

At the MAP

9 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMS-R unit

At the frame

10



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS-R. This strap protects the equipment against damage caused by static electricity.

Put on a wrist strap.

11



DANGER

Equipment damage Take the following precautions when:

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Remove the NT6X42 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify that the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **13** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
 - **b** Close the locking levers.



NT6X42 in an SMS-R (end)

unit no

is the number of the faulty SMS-R unit

If RTS	Do
passes	step 19
fails	step18

17 Return to *Alarm Clearing Procedures* section of this manual or to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.

18 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.

At the frame

- **19** Remove the sign from the active SMS-R unit.
- 20 Send any faulty cards for repair according to local procedure.
- 21 Note in office records according to local policy:
 - the date the card was replaced
 - the serial number of the card
 - the symptoms that prompted replacement of the card
- 22 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **23** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X44 in an RSC

Application

Use this procedure to replace the following card in an RSC RCC.

PEC	Suffixes	Name
NT6X44	AA, EA	Time switch

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X44 in an RSC (continued)



Summary of card replacement procedure for an NT6X44 card in an RSC RCC

NT6X44 in an RSC (continued)

Replacing an NT6X44 card in an RCC

At your current location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC ensure that the unit where you are replacing the card is INACTIVE and that the mate unit is ACTIVE.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level and post the RCC by typing

>MAPCI;MTC;PM;POST RCC rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the RCC unit to be busied (0 or 1)

Example of a MAP display:

NT6X44 in an RSC (continued)

	CM	MS	IOD	Net	PM 1RCC	ccs	LNS	Trk	S	Ext	APPL ·
RCO	2		SysB	Manl	В	OffL	CBsy	IS	Tb	Ir	ıSv
0	Quit		PM	0		0	2		0	2	25
2	Post_	_	RCC	0		0	0		1		11
3	ListS	let									
4			RCC		0 ISTŁ	b Link	s_00S:	CSide	Ο,	PSide	1
5	TRNSL	<u> </u>	Unit	:0:	Inact	InSv					
6	TST_		Unit	t1: 2	Act	InSv					
7	BSY_										
8	RTS_										
9	OffL										
10	LoadP	M_									
11	Disp_	-									
12	Next										
13											
14	Query	PM									
15											
16	IRLIN	IK									
17	Perfo	rm									
18											

4 By observing the MAP display, be sure the card to be removed is on the INACTIVE unit.

At the RCE frame

5 Put a sign on the active unit bearing the words *Active unit—Do not touch*.

At the MAP terminal

6 Busy the inactive RCC unit by typing

>BSY UNIT rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the inactive RCC unit (0 or 1)

NT6X44 in an RSC (continued)

At the RCE frame

7

8



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the RCC. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- Remove the NT6X44 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

NT6X44 in an RSC (continued)



- **c** Ensure the replacement card has the same PEC including suffix, as the card you just removed.
- 9 Open the locking levers on the replacement card.

Align the card with the slots in the shelf and gently slide the card into the shelf.



- **10** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.

NT6X44 in an RSC (continued)



At the MAP terminal

11 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 15
other	step 12
Return the inactive RCC unit to serv	rice by typing
<pre>>RTS UNIT rcc_unit_no</pre>	
and pressing the Enter key.	
where	
rcc_unit_no is the number of the RCC un	it busied in step 6.
If RTS	Do
passed	step 13
failed	step 16
Send any faulty cards for repair acco	ording to local procedure.
Record the following items in office i	ecords.

- date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card

13 14

12

NT6X44 in an RSC (end)

Go to step 17.

- **15** Return to the *Alarm Clearing Procedure* that directed you to this procedure. If necessary, go to the point where the faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **16** Obtain further assistance in replacing this card by contacting personnel responsible for higher level of support.
- 17 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X44 in an SMA

Application

Use this procedure to replace the following card in an SMA identi ed in the following table.

PEC	Suffixes	Name
NT6X44	CA	Time Switch

Common procedures

The following procedures are referenced in this procedure:

- replacing a card
- returning a card

Do not go to the common procedure unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X44 card in an SMA

Replacing an NT6X44 card in an SMA

At your current location

- 1 Proceed only if you were directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMA, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma no

is the number of the SMA to be posted

Example of a MAP response:

SMA	3	INSV	LINKS_C	DOS	CSIDE 0	PSIDE	0
τ	Unit()	Act	InSv			
τ	Jnit1	L	InAct	ISTb			

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

Do	
step 5	
step 8	
-	Do step 5 step 8

Switch the activity of the units by typing
 SWACT
 and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 19

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 The inactive unit could not establish two-way communication with the central control and has switched activity back to the originally active unit. All faults on the inactive unit must be cleared before attempting to clear the alarm condition on the active unit.

Go to step 17.

At the equipment frame

8 Hang a sign on the active unit with the words: *"Active unit—Do not touch."* This sign should not be attached by magnets or tape.

At the MAP terminal

9 Observe the MAP display and determine the state of the inactive unit. The example in step 3 shows the status of the PM as in-servcie on the active unit and in-service trouble on the inactive unit.

If state is	Do
ManB	step 11

If state is	5			Do
SysB, InSv	CBsy,	ISTb,	or	step 10
Busy the ir >bsy UN and pressi where	nactive PM IIT uniting the Ente	unit by typ z_ no er key.	ving	
unit_n is th	i o ne number	of the fault	y SMA	unit

At the equipment frame

11



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

12 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 16
other	step 13

At the MAP terminal

- **13** Return the inactive SMA unit to service by typing
 - >RTS UNIT unit_no

and pressing the Enter key.

where

- unit_no
 - is the number of the faulty SMA unit

If RTS	Do
passes	step 14

NT6X44 in an SMA (end)

If RTS	Do
fails	step 17

At the equipment frame

- 14 Remove the sign from the active SMA unit.
- **15** Go to the common returning a card procedure in this document.

Go to step 18.

- **16** Return to *Alarm Clearing Procedures* section of this manual or other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 17 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.
- **18** You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **19** For further assistance with switch of activity, contact the personnel responsible for the next level of support.
 - *Note:* If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X44 in an SMA-MVI-20

Application

Use this procedure to replace the following card in an SMA identi ed in the following table.

PEC	Suffixes	Name
NT6X44	CA	Time Switch

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X44 card in an SMA

Replacing an NT6X44 card in an SMA

At your current location

- 1 Proceed only if you were directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMA, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma no

is the number of the SMA to be posted

Example of a MAP response:

SMA 3	INSV	LINK	S_00S	CSIDE 0	PSIDE	0
Unit	0	Act	InSv			
Unit	1	InAct	ISTb			

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 9	
Switch the activity of the unite by turing		

Switch the activity of the units by typing
 SWACT
 and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
cannot continue at this time	step 6
can continue at this time	step 7

6 Do not switch activity of the units. Reject the switch by typing

>NO

and pressing the Enter key.

The system discontinues the switch of activity. Return to step 5 during a period of low traffic.

7 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 9
SwAct failed Reason: XPM SwActback	step 8
SwAct refused by SwAct controller	step 8

8 The inactive unit could not establish two-way communication with the central control and has switched activity back to the originally active unit. All faults on the inactive unit must be cleared before attempting to clear the alarm condition on the active unit.

Go to step 19.

At the equipment frame

9 Hang a sign on the active unit with the words: *"Active unit—Do not touch."* This sign should not be attached by magnets or tape.

At the MAP terminal

10 Observe the MAP display and determine the state of the inactive unit. The example in step 3 shows the status of the PM as in-servcie on the active unit and in-service trouble on the inactive unit.

If state is	S			Do
ManB				step 12
SysB, InSv	CBsy,	ISTb,	or	step 11

11 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMA unit

At the equipment frame

12



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

13 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 18
other	step 14

At the MAP terminal

14 Return the inactive SMA unit to service by typing

>RTS UNIT unit_no

and pressing the Enter key.

where
NT6X44 in an SMA-MVI-20 (end)

unit_no is the number of the faulty SMA unit	
If RTS	Do
passes	step 15
fails	step 19

At the equipment frame

- 15 Remove the sign from the active SMA unit.
- 16 Send any faulty cards for repair according to local procedure.
- 17 Record the following items in office records according to local policy:
 - the date the card was replaced
 - the serial number of the card
 - the symptoms that prompted replacement of the card

Go to step 20.

- **18** Return to *Alarm Clearing Procedures* section of this manual or other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **19** Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.
- **20** You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X44 in an SMS

Application

Use this procedure to replace an NT6X44 card in an SMS.

PEC	Suffixes	Name
NT6X44	AB, CA	Time switch

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X44 card in an SMS

Replacing an NT6X44 card in an SMS

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION

Loss of service When replacing a card in the SMS, ensure the unit where you are replacing the card is inactive and the mate unit is active.

Obtain a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMS sms_no

and pressing the Enter key.

where

sms_no is 0-127 for NT40 and 0-255 for DMS SuperNode

Example of a MAP response

SMS 3 INSV LINKS_OOS CSIDE 0 PSIDE 0 Unit0 Act InSv Unit1 Inact ISTb

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 8
Switch the activity of the units by typing	

>SWACT

5

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
cannot continue at this time	step 23
can continue at this time	step 6

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to "SMS alarm clearing procedures" section in this document to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit bearing the words: *Active unit—Do not touch*. The sign should not be attached by magnets or tape.

At the MAP terminal

9 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit no

is the number of the faulty SMS unit

At the frame

10



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

11



DANGER Equipment damage

When removing or inserting a card, do not apply direct pressure to the components and do not force the cards into the slots.

Remove the NT6X44 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.



- **13** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



14 Use the following information to determine where to go next in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 20
other	step 15
Test the inactive SMS unit by typing	
<i>>TST UNIT</i> unit_no	
and pressing the Enter key.	
where	
unit_no is the number of the faulty SN	1S unit
If TST	Do
passed	step 16
failed	step 20
Return the inactive SMS unit to serv	ice by typing
<pre>>RTS UNIT unit_no</pre>	
>RTS UNIT unit_no and pressing the Enter key.	

NT6X44 in an SMS (end)

unit_no is the number of the faulty SMS unit	
If RTS	Do
passed	step 17
failed	step 21

At the frame

- 17 Remove the sign from the active SMS unit.
- **18** Send any faulty cards for repair according to local procedure.
- **19** Record the following items in office records according to local policy:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 22.

- 20 Return to the maintenance procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 21 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 22 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **23** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X44 in an SMS-R

Application

Use this procedure to replace the following card in an SMS-R.

PEC	Suffixes	Name
NT6X44	AB, CA	Time Switch

Common procedures

Not applicable

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X44 card in an SMS-R

Replacing an NT6X44 card in an SMS-R

At your Current Location

- 1 Proceed only if you were directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMS-R, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMSR smsr_no

and pressing the Enter key.

where

smsr_no

is the number of the SMS-R to be posted

Example of a MAP response:

SMSR 3	INSV	LINKS_	00S	CSIDE	0	PSIDE (0
Unit	0	Act	InSv				
Unit	1 I	nAct	ISTb				

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

p 5
p 8
]

Switch the activity of the units by typing
 SWACT
 and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 23

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the alarm clearing procedure to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit with the words: "Active unit—Do not touch."

At the MAP display

9 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMS-R unit

At the frame

10



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS-R. This strap protects the equipment against damage caused by static electricity.

Put on a wrist strap.

11



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Remove the NT6X44 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify that the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **13** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
 - **b** Close the locking levers.



NT6X44 in an SMS-R (end)

unit_no is the number of the faulty SMS-R unit		
If RTS	Do	
passes	step 17	
fails	step 21	

At the frame

- 17 Remove the sign from the active SMS-R unit.
- 18 Send any faulty cards for repair according to local procedure.
- **19** Record the following items in office records according to local policy:
 - the date the card was replaced
 - the serial number of the card
 - the symptoms that prompted replacement of the card

Go to step 22.

- 20 Return to *Alarm Clearing Procedures* section of this manual or other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 21 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.
- 22 You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **23** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X45 in an IOPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffix	Name
NTX645	AF	ESA processor

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X45 in an IOPAC HIE (continued)

Summary of card replacement procedure for an NT6X45 card in an HIE



NT6X45 in an IOPAC HIE (continued)

Replacing an NT6X45 in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card.

Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6.

Otherwise, continue with step 4.

At the MAP terminal

4 Post the Emergency Stand-Alone (ESA) processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

where

esa no

is the number of the ESA processor

5 Busy the ESA processor by typing

>BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the HIE shelf

6 Replace the NT6X45 card using the common replacing a card procedure in this document. When the card is replaced, return to this step.

When you have completed the procedure, return here.

7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.

NT6X45 in an IOPAC HIE (continued)

At the MAP terminal

8 Load the ESA processor by typing >LOADPM

and pressing the Enter key.

lf	Do
The message loadfile not found in directory is received.	step 9
load passed	step 26
load failed	step 29

9

Determine the type of device on which the PM load files are located.

If load files are located on	Do
tape	step 10
IOC disk	step 16
SLM disk	step 21

- 10 Locate the tape that contains the PM load files.
- 11 Mount the tape on a magnetic tape drive.
- 12 Download the tape by typing

>MOUNT tape_no

and pressing the Enter key.

where

tape_no

- is the number of the tape containing the PM load files
- 13 List the contents of the tape in your user directory by typing

>LIST T tape_no

and pressing the Enter key.

where

tape_no is the number of the tape containing the PM load files

- 14 Demount the tape drive by typing
 - >DEMOUNT T tape_no
 - and pressing the Enter key.

where

NT6X45 in an IOPAC HIE (continued)

tape_no

is the number of the tape drive containing the PM load files

- **15** Go to step 25.
- **16** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 17 Access the disk utility level of the MAP display by typing

>DSKUT

and pressing the Enter key.

18 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name is the name of the volume that contains the PM load files obtained in step 16.

19 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **20** Go to step 25.
- **21** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 22 Access the disk utility level of the MAP by typing

>DISKUT

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LV CM;LF file_name

and pressing the Enter key.

where

file name

is the name of the SLM disk volume containing the file obtained in step 21.

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

25 Reload the ESA processor by typing >LOADPM

NT6X45 in an IOPAC HIE (end)

lf	Do
load failed	step 29
load passed	step 26
Return the ESA processor to se	ervice by typing
>RTS	
and pressing the Enter key.	
If RTS	Do
passed	step 27
P ······	

- date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card

Go to step 30.

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have completed this procedure.

NT6X45 in an OPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffix	Name
NTX645	AF	ESA processor

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X45 in an OPAC HIE (continued)

Summary of card replacement procedure for an NT6X45 card in an HIE



NT6X45 in an OPAC HIE (continued)

Replacing an NT6X45 in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card.

Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6.

Otherwise, continue with step 4.

At the MAP terminal

4 Post the Emergency Stand-Alone (ESA) processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

where

esa no

is the number of the ESA processor

5 Busy the ESA processor by typing

>BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the HIE

- 6 Replace the NT6X45 card using the common replacing a card procedure in this document. When you have completed the procedure, return here.
- 7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.

NT6X45 in an OPAC HIE (continued)

At the MAP terminal 8 Load the ESA processor by typing >LOADPM and pressing the Enter key. lf Do The message loadfile not step 9 found in directory is received. load passes step 26 load fails step 29 9 Determine the type of device on which the PM load files are located. If load files are located on Do tape step 10 IOC disk step 16 SLM disk step 21 10 Locate the tape that contains the PM load files. 11 Mount the tape on a magnetic tape drive. 12 Download the tape by typing >MOUNT tape_no and pressing the Enter key. where tape_no is the number of the tape containing the PM load files 13 List the contents of the tape in your user directory by typing >LIST T tape_no and pressing the Enter key. where tape no is the number of the tape containing the PM load files 14 Demount the tape drive by typing >DEMOUNT T tape_no and pressing the Enter key. where

NT6X45 in an OPAC HIE (continued)

tape_no

is the number of the tape drive containing the PM load files

- **15** Go to step 25.
- **16** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 17 Access the disk utility level of the MAP display by typing

>DSKUT

and pressing the Enter key.

18 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name is the name of the volume that contains the PM load files obtained in step 16.

19 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **20** Go to step 25.
- **21** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 22 Access the disk utility level of the MAP by typing

>DISKUT

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LV CM;LF file_name

and pressing the Enter key.

where

file name

is the name of the SLM disk volume containing the file obtained in step 21.

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

25 Reload the ESA processor by typing >LOADPM

NT6X45 in an OPAC HIE (end)

lf	Do
load failed	step 29
load passed	step 26
Return the ESA processor to service by typing	
Return the ESA process	or to service by typing
Return the ESA process >RTS	or to service by typing
Return the ESA process >втя and pressing the Enter k	or to service by typing ey.
Return the ESA process >RTS and pressing the Enter k If RTS	or to service by typing ey. Do
Return the ESA process >RTS and pressing the Enter k If RTS passed	or to service by typing ey. Do step 27

- date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card

Go to step 30.

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have completed this procedure.

NT6X45 in an OPM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X45	AF	OPM ESA Processor (Master Processor-ESA)

Note: NT6X45 with suf x AF is the ESA processor supported only for OPM ESA.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X45 in an OPM HIE (continued)

Summary of replacing an NT6X45 card in an HIE



NT6X45 in an OPM HIE (continued)

Replacing an NT6X45 card in an HIE

At your Current Location

- 1 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 5; otherwise, continue with step 3.

At the MAP terminal

3 Post the ESA processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

where

esa no

- is the number of the ESA processor (0 to 255)
- Busy the ESA processor by typing

>BSY

4

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the OPM cabinet

- 5 Replace the NT6X45 card using the common replacing a card procedure in this document. When you have completed the procedure, return to this point.
- 6 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 7.
- 7 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

lf	Do
message "loadfile not found in directory" is received	step 8
load passes	step 26

NT6X45 in an OPM HIE (continued)

	lf	Do
	load fails	step 29
8	Determine the type of device on w	nich the PM load files are located.
	If load files are located on	Do
	tape	step 9
	IOC disk	step 15
	SLM disk	step 20
9	Locate the tape that contains the F	M load files.
10	Mount the tape on a magnetic tape	e drive.
At the	e MAP terminal	
11	Download the tape by typing	
	>MOUNT tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape dr	ive containing the PM load files
12	List the contents of the tape in you	r user directory by typing
	>LIST T tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape dr	ive containing the PM load files
13	Demount the tape by typing	5
	>DEMOUNT T tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape dr	ive containing the PM load files
14	Go to step 25.	
15	From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM lo files.	
16	Access the disk utility level of the M	IAP display by typing

NT6X45 in an OPM HIE (continued)

and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the files. Access the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your user >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. where volume_name is the name of the volume that a step 20 Leave the disk utility by typing >QUIT and pressing the Enter key. Reload the ESA processor by typing >LOADPM and pressing the Enter key. If loadpm	Dete the number of the system load he volume that contains the PM load P display by typing her directory by typing r directory by typing contains the PM load files, obtained in
and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the module (SLM) disk and the name of the MAR >DISKUT and pressing the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your user >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. where volume_name is the name of the volume that a step 20 Leave the disk utility by typing >QUIT and pressing the Enter key. Reload the ESA processor by typing >LOADPM and pressing the Enter key.	ote the number of the system load he volume that contains the PM load P display by typing her directory by typing r directory by typing contains the PM load files, obtained in
and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the module (SLM) disk and the name of the MAR >DISKUT and pressing the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your user >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. where volume_name is the name of the volume that a step 20 Leave the disk utility by typing >QUIT and pressing the Enter key. Reload the ESA processor by typing >LOADPM	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing r directory by typing contains the PM load files, obtained in
and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the files. Access the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. <i>where</i> volume_name is the name of the volume that step 20 Leave the disk utility by typing >QUIT and pressing the Enter key. Reload the ESA processor by typing	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing r directory by typing contains the PM load files, obtained in
and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the module (SLM) disk and the name of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. where volume_name is the name of the volume that and step 20 Leave the disk utility by typing >QUIT and pressing the Enter key.	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing r directory by typing contains the PM load files, obtained in
and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the files. Access the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. <i>where</i> volume_name is the name of the volume that step 20 Leave the disk utility by typing >QUIT	ote the number of the system load he volume that contains the PM load P display by typing er directory by typing r directory by typing contains the PM load files, obtained ir
and pressing the Enter key. Go to step 25. From office records, determine and normodule (SLM) disk and the name of the module (SLM) disk and the name of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. <i>where</i> volume_name is the name of the volume that step 20 Leave the disk utility by typing	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing r directory by typing contains the PM load files, obtained ir
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. <i>where</i> volume_name is the name of the volume that a step 20	ote the number of the system load he volume that contains the PM load P display by typing er directory by typing r directory by typing contains the PM load files, obtained ir
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key. <i>where</i>	ote the number of the system load he volume that contains the PM load P display by typing her directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name and pressing the Enter key.	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAR >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user >LF volume_name	ote the number of the system load he volume that contains the PM load P display by typing er directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key. List the SLM file names into your user	ote the number of the system load he volume that contains the PM load P display by typing her directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM and pressing the Enter key.	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key. List all SLM disk volumes into your us >LV CM	ote the number of the system load he volume that contains the PM load P display by typing er directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key. List all SLM disk volumes into your us	ote the number of the system load he volume that contains the PM load P display by typing eer directory by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT and pressing the Enter key.	ote the number of the system load he volume that contains the PM load P display by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF >DISKUT	ote the number of the system load he volume that contains the PM load P display by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files. Access the disk utility level of the MAF	ote the number of the system load he volume that contains the PM load P display by typing
and pressing the Enter key. Go to step 25. From office records, determine and no module (SLM) disk and the name of th files.	ote the number of the system load he volume that contains the PM load
and pressing the Enter key. Go to step 25.	
and pressing the Enter key.	
>QUIT	
Leave the disk utility by typing	
volume_name is the name of the volume that sten15	contains the PM load files, obtained ir
where	
and pressing the Enter key.	
>LISTVOL volume_name ALL	
List the IOC file names into your user	directory by typing
and pressing the Enter key.	
	List the IOC file names into your user <pre>>LISTVOL volume_name ALL and pressing the Enter key. where volume_name is the name of the volume that step15 Leave the disk utility by typing</pre>

NT6X45 in an OPM HIE (end)

If loadpm	Do
passed	step 26
Return the ESA processor to service by typing	
>RTS	
and pressing the Enter	key.
If RTS	Do
passed	step 27
failed	step 29
Send any faulty cards f	or repair according to local procedure.
Record the following ite	ms in office records:
 date the card was r 	eplaced
 serial number of the 	e card
 symptoms that pror 	npted replacement of the card
Go to step 30.	

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have completed this procedure.

NT6X45 in an RLCM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X45	AF	RLCM ESA Processor (Master Processor-ESA)

Note: NT6X45 with suf x AF is the ESA processor supported only for RLCM ESA.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.
Summary of replacing an NT6X45 card in an HIE



Replacing an NT6X45 card in an HIE

At your current location

- 1 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 5; otherwise, continue with step 3.

At the MAP terminal

3 Post the ESA processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

```
where
```

esa no

is the number of the ESA processor (0 to 255)

4 Busy the ESA processor by typing

>BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the RLCE frame

- 5 Replace the NT6X45 card using the common replacing a card procedure in this document. When you have completed the procedure, return to this point.
- 6 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 7.
- 7 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

lf	Do
message "loadfile not found in directory" is received	step 8
Load passed	step 26
Load failed	step 29

8 Determine the type of device on which the PM load files are located.

If load files are located on	Do
tape	step 9
IOC disk	step 15
SLM disk	step 20

9 Locate the tape that contains the PM load files.

10 Mount the tape on a magnetic tape drive.

At the MAP terminal

11	Download the tape by typing
	>MOUNT tape_no
	and pressing the Enter key.
	where
	<pre>tape_no is the number of the tape drive containing the PM load files</pre>
12	List the contents of the tape in your user directory by typing
	>LIST T tape_no
	and pressing the Enter key.
	where
	<pre>tape_no is the number of the tape drive containing the PM load files</pre>
13	Demount the tape by typing
	>DEMOUNT T tape_no
	and pressing the Enter key.
	where
	<pre>tape_no is the number of the tape drive containing the PM load files</pre>

14 Go to step 25.

15	From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
16	Access the disk utility level of the MAP display by typing
	>DSKUT
	and pressing the Enter key.
17	List the IOC file names into your user directory by typing
	>LISTVOL volume_name ALL
	and pressing the Enter key.
	where
	<pre>volume_name is the name of the volume that contains the PM load files, obtained in step15</pre>
18	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
19	Go to step 25.
20	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
21	Access the disk utility level of the MAP display by typing
	>DISKUT
	and pressing the Enter key.
22	List all SLM disk volumes into your user directory by typing
	>LV CM
	and pressing the Enter key.
23	List the SLM file names into your user directory by typing
	>LF volume_name
	and pressing the Enter key.
	where
	<pre>volume_name is the name of the volume that contains the PM load files, obtained in step 20</pre>
24	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
25	Reload the ESA processor by typing
	>LOADPM

NT6X45 in an RLCM HIE (end)

If loadpm	Do
passed	step 26
failed	step 29
Return the ESA processor to service by typing	
	ser te eer nee sy typing
>RTS	
>RTS and pressing the Enter	key.
>RTS and pressing the Enter	key. Do
<pre>>RTS and pressing the Enter If RTS passed</pre>	key. Do step 27

- Necola the following items in once reco
- date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card

Go to step 30.

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have completed this procedure.

NT6X47 in an IOPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffixes	Name
NT6X47	AC	Master processor memory circuit card (see note below)

Note: This card is also referred to as the ESA memory card.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X47 in an IOPAC HIE (continued)

Summary of card replacement procedure for an NT6X47 in an HIE



NT6X47 in an IOPAC HIE (continued)

Replacing an NT6X47 in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 4.

At the MAP terminal:

4 Post the Emergency Stand-Alone (ESA) processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

where

esa_no is the number of the ESA processor

5 Busy the ESA processor by typing

>BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the IOPAC cabinet:

- 6 Replace the NT6X47 card using the common replacing a card procedure in this document. When you have completed the procedure, return here.
- 7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.

NT6X47 in an IOPAC HIE (continued)

At the MAP terminal

8 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

lf	Do
message loadfile not found in directory is re- ceived	step 9
load passed	step 26
load failed	step 29

- 9
- Determine the type of device where the peripheral module (PM) load files are located.

If load files are located on	Do
tape	step 10
IOC disk	step 16
SLM disk	step 21

- **10** Locate the tape that contains the PM load files.
- 11 Mount the tape on a magnetic tape drive.

At the MAP terminal:

- 12 Download the tape by typing
 - >MOUNT tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape containing the PM load files

13 List the contents of the tape in your user directory by typing

>LIST T tape_no

and pressing the Enter key.

where

tape_no is the number of the tape containing the PM load files

14 Demount the tape drive by typing

>DEMOUNT T tape_no

NT6X47 in an IOPAC HIE (continued)

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files

- **15** Go to step 25.
- **16** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 17 Access the disk utility level of the MAP display by typing

>DSKUT

and pressing the Enter key.

18 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name

is the name of the volume that contains the PM load files obtained in step 16.

19 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **20** Go to step 25.
- **21** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 22 Access the disk utility level of the MAP display by typing

>DSKUT

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LV CM;LF file_name

and pressing the Enter key.

where

file name

is the name of the SLM disk volume containing the PM load files obtained in step 21.

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

NT6X47 in an IOPAC HIE (end)

25	Reload the ESA processor by typing	
	>LOADPM	
	and pressing the Enter key.	
	lf	Do
	load failed	step 29
	load passed	step 26
26	Return the ESA processor to service by typing	
	>RTS	
	and pressing the Enter key.	
	If RTS	Do
	passed	step 27
	failed	step 29
27	Send any faulty cards for repair according to local procedure.	
28	Record the following items in office records:	
	date the card was replaced	
	 serial number of the card 	
	• symptoms that prompted replace	ment of the card
	Go to step 30.	
29	Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.	
30	You have completed this procedure.	

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NT6X47 in an OPM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X47	AB, AC	Master Processor Memory (ESA) Plus

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of replacing an NT6X47 card in an HIE



Replacing an NT6X47 in an HIE

At your Current Location

- 1 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 5; otherwise, continue with step 3.

At the MAP terminal

3 Post the ESA processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

where

esa no

is the number of the ESA processor (0 to 255)

- 4 Busy the ESA processor by typing
 - >BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the OPM cabinet

- 5 Replace the NT6X47 card using the common replacing a card procedure in this document. When you have completed the procedure, return to this point.
- 6 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 7.

At the MAP terminal

7 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

lf	Do	
message "loadfile not found in directory" is received	step 8	
load passed	step 26	
load failed	step 29	
Determine the type of device on which the PM load files are located		

8 Determine the type of device on which the PM load files are located.

If load files are located on	Do
tape	step 9
IOC disk	step 15
SLM disk	step 20

- **9** Locate the tape that contains the PM load files.
- **10** Mount the tape on a magnetic tape drive.

At the MAP terminal

- **11** Download the tape by typing
 - >MOUNT tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files

12 List the contents of the tape in your user directory by typing

>LIST T tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files

13 Demount the tape by typing

>DEMOUNT T tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files

- 14 Go to step 25.
- **15** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 16 Access the disk utility level of the MAP display by typing

>DSKUT

and pressing the Enter key.

17 List the IOC disk file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name

is the name of the volume that contains the PM load files, obtained in step 15 $\,$

18 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **19** Go to step 25.
- **20** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 21 Access the disk utility level of the MAP display by typing

>DISKUT

and pressing the Enter key.

22 List the SLM disk volumes into your user directory by typing

>LV CM

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LF volume_name

and pressing the Enter key.

where

volume_name

is the name of the volume containing the PM load files, obtained in step 20

24 Leave the disk utility by typing

>QUIT

NT6X47 in an OPM HIE (end)

and pressing the Enter key.					
Reload the ESA proc	eload the ESA processor by typing				
>LOADPM					
and pressing the Ente	r key.				
lf	Do				
load fails	step 29				
load passes	step 26				
Return the ESA proce	ssor to service by typing				
>RTS					
and pressing the Ente	r key.				
If RTS	Do				
passed	step 27				
failed	step 29				
Send any faulty cards for repair according to local procedure.					
Record the following items in office records:					
• date the card was	date the card was replaced				
• serial number of	serial number of the card				
 symptoms that pr 	symptoms that prompted replacement of the card				

Go to step 30.

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have completed this procedure.

NT6X47 in an RLCM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X47	AB, AC	Master Processor Memory (ESA) Plus

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of replacing an NT6X47 card in an HIE



Replacing an NT6X47 card in an HIE

At your current location

- 1 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 5; otherwise, continue with step 3.

At the MAP terminal

3 Post the ESA processor by typing

>MAPCI;MTC;PM;POST ESA esa_no

and pressing the Enter key.

where

esa no

is the number of the ESA processor (0 to 255)

4 Busy the ESA processor by typing

>BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing

>YES

and pressing the Enter key.

At the RLCE frame

- 5 Replace the NT6X47 card using the common replacing a card procedure in this document. When you have completed the procedure, return to this point.
- 6 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 7.

At the MAP terminal

7 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

6
9
))

8 Determine the type of device on which the PM load files are located.

If load files are located on	Do
tape	step 9
IOC disk	step 15
SLM disk	step 20

9 Locate the tape that contains the PM load files.

At the IOE frame

10 Mount the tape on a magnetic tape drive.

At the MAP terminal

11 Download the tape by typing

>MOUNT tape_no

and pressing the Enter key.

where

tape_no is the number of the tape drive containing the PM load files

12 List the contents of the tape in your user directory by typing

>LIST T tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files

13 Demount the tape by typing

>DEMOUNT T tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files

- 14 Go to step 25.
- **15** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 16 Access the disk utility level of the MAP display by typing

>DSKUT

and pressing the Enter key.

17 List the IOC disk file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name

is the name of the volume that contains the PM load files, obtained in step 15

18 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **19** Go to step 25.
- **20** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 21 Access the disk utility level of the MAP display by typing

>DISKUT

and pressing the Enter key.

22 List the SLM disk volumes into your user directory by typing

>LV CM

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LF volume_name

and pressing the Enter key.

where

- volume_name
 - is the name of the volume containing the PM load files, obtained in step 20 $\,$

NT6X47 in an RLCM HIE (end)

24	Leave the disk utility by typin	ng				
	>QUIT					
	and pressing the Enter key.					
25	Reload the ESA processor I	by typing				
	>LOADPM					
	and pressing the Enter key.					
	lf	Do				
	load passed	step 26				
	load failed	step 29				
26	Return the ESA processor to service by typing					
	>RTS					
	and pressing the Enter key.					
	If RTS	Do				
	passed	step 27				
	failed	step 29				
27	Send any faulty cards for re	pair according to local procedure.				
28	Record the following items i	n office records:				
	• date the card was repla	ced				
	• serial number of the car	d				
	symptoms that prompte	d replacement of the card				
	Go to step 30.					
29	Obtain further assistance in responsible for higher level	replacing this card by contacting the personnel of support.				
30	You have completed this pro	ocedure.				

NT6X48 in an RSC

Application

Use this procedure to replace the following card in an RSC RCC.

PEC	Suffixes	Name
NT6X48	AA	DS-30A interface card

Common Procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X48 in an RSC (continued)

Summary of replacing an NT6X48 card in an RSC RCC



NT6X48 in an RSC (continued)

Replacing an NT6X48 card in an RSC RCC

At the current location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC ensure the unit where you are replacing the card is INACTIVE and that the mate unit is ACTIVE.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP display

3 Access the PM level and post the RCC by typing

>MAPCI;MTC;PM;POST RCC rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no
 is the number of the RCC unit to be busied (0 or 1)

Example of a MAP display:

NT6X48 in an RSC (continued)

/		CM	MS	IOD)	Net	PM	CCS	LNS	Trk	s Ext	APPL
							1RCC				-	
I	RCO	2			SysE	3	ManB	Off	L C	Bsy	ISTb	InSv
	0	Quit	PM		C)	0		2	0	2	25
	2	Post_	RCC	!	C)	0		0	0	1	1
	3	ListSe	et									
	4		RCC	!	0	ISTb	Links	_00S:	CSide	0, PS	ide 1	
	5	TRNSL	Uni	t0:	Ir	nact	InSv					
	б	TST	Uni	t1:	Ac	t	InSv					
	7	BSY										
	8	RTS										
	9	OffL										
-	10	LoadPM	11									
-	11	Disp_										
-	12	Next_										
-	13											
-	14	QueryF	M									
-	15											
-	16	IRLINK	C									
-	17	Perfor	rm									
-	18											
~												/

By observing the MAP display, be sure the card to be removed is on the INACTIVE unit.

At the RCE frame

4

5 Put a sign on the ACTIVE unit bearing the words *Active unit—Do not touch*.

At the MAP display

6 Busy the inactive RCC unit by typing
>BSY INACTIVE
and pressing the Enter key.
7 Reset the inactive RCC unit to the ROM level by typing
>PMRESET UNIT unit_no NORUN

and pressing the Enter key.

where

unit_no

is the inactive RCC unit number (0 or 1)

Example of a MAP response:

RCC 0 Unit 0 PMReset Passed

NT6X48 in an RSC (continued)

At the RCE frame

8



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the RCC. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

9



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Replace the NT6X48 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

NT6X48 in an RSC (continued)



- c Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- d Open the locking levers on the replacement card.
- **e** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **10** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.

NT6X48 in an RSC (continued)

b Close the locking levers.



At the MAP display

11 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 17
other	step 12
Reset the inactive RCC unit by typing	
>PMRESET UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the PM unit number (0 or 1)	
<i>Example of a MAP response:</i> RCC 0 Unit 0 PMReset Passed	
If PMRESET command	Do
passed	step 14
	sten 13

>LOADPM UNIT unit_no

13

12

NT6X48 in an RSC (end)

an	d pressing the Enter key.	
VVI	unit_no is the number of the inactive RC	C unit (0 or 1)
lf	the LOADPM command	Do
p	assed	step 14
f	ailed	step 18
Re	eturn the inactive RCC unit to service	e by typing
>R	TS UNIT rcc_unit_no	
an	d pressing the Enter key.	
wh	nere	
	<pre>rcc_unit_no is the number of the RCC unit be</pre>	usied in step 6
lf	RTS command	Do
p	assed	step 15
fa	ailed	step 18
Se	end any faulty cards for repair accord	ing to local procedure.
Re	ecord the following items in office rec	ords:
•	date the card was replaced	
•	serial number of the card	
•	symptoms that prompted replacem	ent of the card
Go	o to step 19.	
Re rep wa ap	eturn to the <i>Alarm Clearing Procedu</i> placement procedure. If necessary, g as produced, identify the next faulty of propriate replacement procedure in t	<i>re</i> that directed you to this card to to the point where the faulty card list ard on the list, and go to the this manual for that card.
Ob res	otain further assistance in replacing t sponsible for higher level of support.	his card by contacting personnel
Yo pro as	u have successfully completed this p ocedure that directed you to this card directed.	rocedure. Return to the maintenance replacement procedure and continue

NT6X50 in an OPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffix	Name
NT6X50	AB	DS-1 EFF card (See notes below.)

Note 1: EFF is the acronym for "extended frame format."

Note 2: This card has also been referred to as the "DS-1 interface card."

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X50 in an OPAC HIE (continued)

Summary of card replacement procedure for NT6X50 in an HIE



NT6X50 in an OPAC HIE (continued)

Replacing an NT6X50 in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 5. Otherwise, continue with step 4.

At the MAP terminal:

4 Access the peripheral module (PM) level and post the line concentrating module (LCM) by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the OPAC (alphanumeric)

frame

is the frame number of the OPAC (0-99)

lcm

is the number of the LCM

5 Display central side (C-side) link information by typing

>TRNSL C

and pressing the Enter key.

Example of a MAP response:

Link 0: LTC 02; Cap MS; Status:OK;MsgCond: OPNLink 1: LTC 06; Cap MS; Status: SysB;MsgCond: OPN

6 From the display in step 5, determine the control side (C-side) PM (LTC, LGC, or RCC) to which the OPAC is connected and post it by typing

```
>POST pm pm_no
```

and pressing the Enter key.

where

pm

is the name of the host PM (LTC, LGC, or RCC)

pm_no

is the number of the host PM (0 to 127)

NT6X50 in an OPAC HIE (continued)

Note: LTC is the acronym for line trunk controller; LGC is the acronym for line group controller; and RCC is the acronym for remote cluster controller.

7 Display P-side link information by typing

>TRNSL P

and pressing the Enter key.

Example of a MAP response:

Link 2: LCM REM1 00 0 0;Cap MS;Status: OK;MsgCond:OPN Link 6: LCM REM1 00 0 1;Cap MS;Status:SysB;MsgCond:CLS

- 8 Record the numbers of the links with status not OK.
- **9** Use the diagram below to determine which DS-1 interface card or cards corresponds to the links identified as faulty in step 8. Note that each NT6X50 card has 2 ports.



Note: Links 0 and 1 are message supporting, links 2 through 5 are speech only.

10 Determine the slot location of the faulty card.

11

If faulty card is in slot	Do
19 or 20 of the HIE	step 11
21 of the HIE	step 14
Post the LCM by typing	
>POST LCM site frame lcm	
and pressing the Enter key.	
where	
site is the site name of the OPAC (a	lphanumeric)
frame is the frame number of the OPA	.C (0-99)
Icm is the number of the LCM	

NT6X50 in an OPAC HIE (continued)

12 Busy LCM unit 0 for the card in slot 19 or LCM unit 1 for the card in slot 20 by typing

>BSY UNIT unit_no

and pressing the Enter key.

where

unit no

is the LCM unit to be busied (0 or 1)

Note: Extended DS-1 maintenance is applied to DS-1 message supporting links, the unit these links support must be manually busied before the DS-1 link can be busied.

13 Post the host peripheral module (LTC, LGC, or RCC) to which the OPAC is connected by typing

POST pm pm_no

and pressing the Enter key.

where

pm

is the name of the host PM (LTC, LGC, or RCC)

pm_no

is the number of the host PM (0 to 127)

14 Using the information collected in step 8, busy both links associated with the faulty card by typing

>BSY LINK link_no

and pressing the Enter key.

where

link_no

is one of two links associated with the faulty NT6X50 card

Repeat this entry for the other link associated with the faulty NT6X50 card.

At the HIE:

15



DANGER

Calls in progress may be interrupted.

Wait at least 15 min to allow calls in progress to be completed before removing the NT6X50 DS-1 interface card, because these are simplex links.

Chane the dip switch settings on the new replacement card to match the faulty card being removed.

16 Replace the NT6X50 card using the common replacing a card procedure in this document. When the card has been replaced, Go to step 17.
At the MAP terminal:

17 Test the links busied in step 14 by typing

>TST LINK link_no

and pressing the Enter key.

where

18

19

20

21

link_no

is one of two links associated with the replacement card

Repeat this entry for the other link associated with the replacement card.

If test	Do
failed	step 25
passed	step 18
Return to service the links busied i	n step 14 by typing
>RTS LINK link_no	
and pressing the Enter key.	
where	
link_no is one of two links associate Repeat this entry for the other link a	ed with the replacement card associated with the replacement card.
If RTS	Do
failed	step 25
passed	step 19
Determine if there are remaining lir	nks to clear.
If there are	Do
remaining links to clear	step 9
no remaining links to clear	step 20
If you were directed to this procedu return now to the alarm clearing pro continue with step 21.	are from the Alarm Clearing Procedures, cedure that directed you here. Otherwise,
Post the LCM by typing	
>POST LCM site frame lcm	
and pressing the Enter key.	

where

NT6X50 in an OPAC HIE (end)

site is the site name of the OP	AC (alphanumeric)
frame is the frame number of the	9 OPAC (0-99)
Icm is the number of the LCM	
Return-to-service the LCM unit b	pusied in step 12 by typing
>RTS UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the LCM unit to be RTS	ed (0 or 1).
If RTS	Do
failed	step 25
passed	step 23
Send any faulty cards for repair a	according to local procedure.
Record the following items in offic	ce records:
• date the card was replaced	
• serial number of the card	
• symptoms that prompted rep	lacement of the card
Proceed to step 26.	
Obtain further assistance in repla responsible for higher level of sup	acing this card by contacting the personnel oport.
You have augeografully completed	this pressdure. Deturn to the maintenance

26 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X50 in an OPM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X50	AA	DS-1 Interface

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X50 card in an HIE



Replacing an NT6X50 card in an HIE

At your Current Location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 4; otherwise, continue with step 3.

At the MAP display

3 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site is the name of the OPM site (alphanumeric)

frame

is the frame number of the OPM (0 to 511)

lcm

is the number of the LCM

4 Display C-side link information by typing

> TRNSL C

and pressing the Enter key.

Example of a MAP response:

—— LTC P-side link numbers

	•	
Link 0: LTC 0	2; Cap MS; Status: OK	;MsgCond: OPN
Link 1: LTC 0	6; Cap MS; Status: SysB	;MsqCond: CLS

5 From the display in step 4, determine the C-side peripheral module (LTC, LGC, or RCC) to which the OPM is connected and post it by typing

```
> POST host_pm host_pm_no
```

and pressing the Enter key.

where

host_pm

is the name of the host PM (LTC, LGC, or RCC)

¥

host_pm_no

is the number of the host PM

Display P-side link information by typing
 TRNSL P
 and pressing the Enter key.

Example of a MAP response:

► NT6X50 port numbers Link 2: LCM REM1 00 0 0;Cap MS;Status:OK ;MsgCond: OPN Link 6: LCM REM1 00 0 1;Cap MS;Status:SysB ;MsgCond: CLS

7 Record the numbers of the links with status not OK.

Use the following diagram to determine which DS-1 interface card or cards corresponds to the links identified as faulty in step 6. Note that each NT6X50 card has 2 ports. For example, the faulty link 6 displayed in step 6 is connected to port 1 as indicated, which corresponds to the NT6X50 in slot 20.



8 Determine the slot location of the faulty card.

If faulty card is in slot	Do
19 or 20 of the HIE	step 9
21 of the HIE	step 12
Post the LCM by typing	
>POST LCM site frame lcm	
and pressing the Enter key.	
where	
site is the name of the OPM site (al	phanumeric)
frame is the frame number of the OPN	Л (0-511)
Icm is the number of the LCM	

9

10 Busy LCM unit 0 for card in slot 19 or LCM unit 1 for card in slot 20 by typing >BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the OPM unit to be busied (0 for card in slot 19 or 1 for card in slot 20)

11 Post the C-side peripheral module, previously posted in step 5, where the OPM is interfaced by typing

>POST host_pm host_pm_no

and pressing the Enter key.

where

host pm

is the name of the host PM, previously posted in step 5

host_pm_no

is the number of the host PM

- **12** Using the information collected in step 7, busy both links associated with the faulty card by typing
 - >BSY LINK link_no

and pressing the Enter key.

where

link_no

is one of two links associated with the faulty card

Note: Repeat this step for the other link associated with the faulty card.

At the OPM cabinet

13



DANGER

Calls in progress may be interrupted.

The craftsperson must wait at least 15 minutes to allow calls in progress to be completed before removing the NT6X50 DS-1 interface card.

Change dip switch settings on the new replacement card to match the faulty card being removed.

14 Replace the NT6X50 card using the common replacing a card procedure in this document. When the card has been replaced, return to this point.

MAP display							
Test the links busied in step 12 by typ	ing						
>TST LINK link_no							
and pressing the Enter key.							
where							
link_no is one of two links associated with the replacement card							
Note: Repeat this step for the other link associated with the replacement card.							
If test	Do						
failed	step 24						
passed	step 16						
Return to service the links busied in	step 12 by typing						
>RTS LINK link_no							
>RTS LINK link_no	and pressing the Enter key.						
>RTS LINK link_no and pressing the Enter key.							
>RTS LINK link_no and pressing the Enter key. <i>where</i>							
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated ways.</pre>	vith the replacement card						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated w Note: Repeat this entry for the other card.</pre>	vith the replacement card link associated with the replacement						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS</pre>	vith the replacement card r link associated with the replacement Do						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS failed</pre>	vith the replacement card r link associated with the replacement Do step 24						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS failed passed</pre>	vith the replacement card rlink associated with the replacement Do step 24 step 17						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS failed passed Determine if there are remaining links</pre>	vith the replacement card link associated with the replacement Do step 24 step 17 to clear.						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS failed passed Determine if there are remaining links If there are</pre>	vith the replacement card rlink associated with the replacement Do step 24 step 17 to clear. Do						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS failed passed Determine if there are remaining links If there are remaining links to clear</pre>	vith the replacement card rlink associated with the replacement Do step 24 step 17 to clear. Do step 12						
<pre>>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated v Note: Repeat this entry for the other card. If RTS failed passed Determine if there are remaining links If there are remaining links to clear no remaining links to clear</pre>	vith the replacement card rlink associated with the replacement Do step 24 step 17 to clear. Do step 12 step 18						
>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated w Note: Repeat this entry for the other card. If RTS failed passed Determine if there are remaining links If there are remaining links to clear no remaining links to clear If you were directed to this procedure return now to the procedure that direct otherwise, continue with step 19.	vith the replacement card rlink associated with the replacement Do step 24 step 17 to clear. Do step 12 step 18 from another maintenance procedure, ted you here and continue as directed;						
>RTS LINK link_no and pressing the Enter key. where link_no is one of two links associated w Note: Repeat this entry for the other card. If RTS failed passed Determine if there are remaining links If there are remaining links to clear no remaining links to clear If you were directed to this procedure return now to the procedure that direct otherwise, continue with step 19. Determine if an LCM unit is manual b	vith the replacement card rlink associated with the replacement Do step 24 step 17 to clear. Do step 12 step 18 from another maintenance procedure, ted you here and continue as directed;						

step 20

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is ManB

NT6X50 in an OPM HIE (end)

If LCM unit	Do
is not ManB	step 22
Post the LCM by typing	
>POST LCM site frame	lcm
and pressing the Enter key.	
where	
site is the site name of th	e OPM (alphanumeric)
frame is the frame number	of the OPM (0 to 511)
Icm is the number of the	LCM
Return the busied unit to se	rvice by typing
>RTS UNIT lcm_unit	
and pressing the Enter key.	
where	
lcm_unit is the OPM unit busie	ed in step 10
If RTS	Do
failed	step 24
passed	step 22
Send any faulty cards for re	pair according to local procedure.
Send any faulty cards for re Record the following items i	pair according to local procedure. n office records:
Send any faulty cards for re Record the following items i • date the card was repla	pair according to local procedure. n office records: ced
 Send any faulty cards for re Record the following items i date the card was repla serial number of the card 	pair according to local procedure. n office records: ced d
 Send any faulty cards for re Record the following items i date the card was repla serial number of the car symptoms that prompter 	pair according to local procedure. n office records: ced rd d replacement of the card
 Send any faulty cards for re Record the following items i date the card was repla serial number of the card symptoms that prompte Proceed to step 25. 	pair according to local procedure. n office records: ced d d replacement of the card

25 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X50 in an RLCM-EDC HIE

Application

Use this procedure to replace the following card in the shelves or frames identi ed in the follo wing table.

PEC	Suffixes	Card name	Shelf/frame name
NT6X50	AB	DS-1 Interface card	HIE/RLCC

If you cannot identify the PEC, suf x, and shelf or frame for the card you want to replace, refer to the index. The index provides a list of cards, shelves, and frames documented in this maintenance manual.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The procedure for card replacement contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

Summary of replacing an NT6X50 card in HIE



How to replace an NT6X50 card in an HIE

At your current location

- 1 Obtain a replacement card. Make sure that the replacement card has the same product equipment code (PEC) and suffix as the card to remove.
- 2 If another maintenance procedure directed you to this procedure, proceed to step 4. If this event did not occur, proceed to step 3.

At the MAP display

3 To access the peripheral module (PM) level and post the line concentrating module (LCM), type

>MAPCI;MTC;PM;POST LCM site cabinet lcm

and press the Enter key.

where

site

is the name of the RLCM-EDC site (alphanumeric)

cabinet

is the number of the RLCC cabinet

¥

lcm

is the number of the LCM

- 4 To display C-side link information, type
 - > TRNSL C

and press the Enter key.

Example of a MAP response:

]	Link 0: LTC 0 Link 1: LTC 0	2; 6;	Сар Сар	MS; MS;	Status: Status:	OK SysB	;MsgCond: ;MsgCond:	OPN CLS
5	From the display in step connects. To post the	o 4, C-s	deterr ide Pl	mine t M, typ	he C-side F e	PM to wh	ich the RLCM	-EDC
	> POST LTC ltc_nd	b						
	and press the Enter ke	y.						
	where							
	Itc_no is the number o	f the	e host	LTC+	· (0 to 255)			
6	To display P-side link i	nfor	matio	n, typ	e			
	> TRNSL P							

and press the Enter key.

Example of a MAP response:

						V	- RLCM-EDC C-sid	e port numbe	rs
Link	2:	LCM	REM1	00	0	0;Cap	MS;Status:OK	;MsgCond:	OPN
Link	6:	LCM	REM1	00	0	1;Cap	MS;Status:SysB	;MsgCond:	CLS

7 Record the numbers of the links with status not OK.

Use the following diagram to determine which DS-1 interface card or cards correspond to the links identified as defective in step 6. Note that each NT6X50 card has two ports. For example, the defective link 6 that appears in step 6 connects to port 1 as indicated. Port 1 corresponds to the NT6X50 in slot 20.



Determine the slot location of the defective card.

8

Do step 9 step 12
step 9 step 12
step 12
500p 12
L
C site (alphanumeric)
abinet
19 or LCM unit 1 for card in slot 20, type

where

Icm_unit_no is the RLCM-EDC unit (0 or 1) to busy

11 To post the C-side PM, posted before in step 5, where the RLCM-EDC connects, type

>POST LTC ltc_no

and press the Enter key.

where

ltc_no

is the number of the host LTC+ (0 to 255)

12 To busy both links associated with the defective card, use the information collected in steps 6 and 7. Type

>BSY LINK link_no

and press the Enter key.

where

link no

is one of two links associated with the defective card

 $\it Note:$ Repeat this step for the other link associated with the defective card.

At the RLCE frame

13



DANGER

Possible interruption of calls in progress. Operating company personnel must wait at least 15 min before removal of the NT6X50 DS-1 interface card. Personnel must wait this time to allow callers to complete calls in progress.

Change dip switch settings on the new replacement card to match the defective card that you remove.

14 Use the common replacing a card procedure in this document to replace the NT6X50 card. When the card replacement is complete, return to this point.

At the MAP display

15 To test the links busied in step 12, type

>TST LINK link_no and press the Enter key. *where*

link no

is one of two links associated with the replacement card

Note: Repeat this step for the other link associated with the replacement card.

If test	Do				
failed	step 24				
passed	step 16				
To return to service the links busied in step 12 type					

16

20

To return to service the links busied in step 12, type

>RTS LINK link_no

and press the Enter key.

where

link no is one of two links associated with the replacement card

Note: Repeat this entry for the other link associated with the replacement card.

If RTS	Do
failed	step 24
passed	step 17

17 Determine if links remain for you to clear.

If links that you must clear	Do
remain	step 12
do not remain	step 18

18 If another maintenance procedure directed you to this procedure, return now to the procedure that directed you here. Continue as directed. If this change in direction did not occur, go to step 19.

19 Determine if an LCM unit is manual busy.

If LCM unit	Do
is ManB	step 20
is not ManB	step 22
To post the LCM, type	
>POST LCM site cabinet lcm	
and press the Enter key.	

NT6X50 in an RLCM-EDC HIE (end)

21

22 23

24

site is the site name of th	e RLCM-EDC (alphanumeric)
cabinet is the number of the	RLCC cabinet
Icm is the number of the	LCM
To return the busied unit to	service, type
>RTS UNIT lcm_unit	
and press the Enter key.	
where	
Icm_unit is the RLCM-EDC un	nit busied in step 10
If RTS	Do
failed	step 24
failed passed	step 24 step 22
failed passed Send defective cards for rep	step 24 step 22 pair according to local procedure.
failed passed Send defective cards for rep Record the items that follow	step 24 step 22 pair according to local procedure.
failed passed Send defective cards for rep Record the items that follow • date that card replacem	step 24 step 22 pair according to local procedure. <i>v</i> in office records: ment occurred
failed passed Send defective cards for rep Record the items that follow • date that card replacem • serial number of the car	step 24 step 22 pair according to local procedure. <i>v</i> in office records: ment occurred rd
failed passed Send defective cards for rep Record the items that follow • date that card replacem • serial number of the car • indications that prompte	step 24 step 22 pair according to local procedure. <i>v</i> in office records: ment occurred rd ed replacement of the card
failed passed Send defective cards for rep Record the items that follow • date that card replacem • serial number of the car • indications that prompte Proceed to step 25.	step 24 step 22 pair according to local procedure. <i>v</i> in office records: ment occurred rd ed replacement of the card

25 This procedure is complete. Return to the maintenance procedure that directed you to this card replacement procedure. Continue as directed.

NT6X50 in an RLCM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X50	AA	DS-1 Interface

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X50 card in an HIE



Replacing an NT6X50 card in an HIE

At your current location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 4; otherwise, continue with step 3.

At the MAP display

3 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the name of the RLCM site (alphanumeric)

frame

is the frame number of the RLCE (0 to 511)

¥

lcm

is the number of the LCM

- 4 Display C-side link information by typing
 - > TRNSL C

and pressing the Enter key.

Example of a MAP response:

—— LTC P-side link numbers

			,						
Link 0:	LTC	0	2;	Сар	MS;	Status:	OK	;MsgCond:	OPN
Link 1:	LTC	0	6;	Cap	MS;	Status:	SysB	;MsgCond:	CLS

5 From the display in step 4, determine the C-side peripheral module (LTC, LGC, or RCC) to which the RLCM is connected and post it by typing

```
> POST host_pm host_pm_no
```

and pressing the Enter key.

where

host_pm

is the name of the host PM (LTC, LGC, or RCC)

host_pm_no

is the number of the host PM (0 to 255)

Display P-side link information by typing
 TRNSL P
 and pressing the Enter key.

Example of a MAP response:

Link 2: LCM REM1 00 0 0;Cap MS;Status:OK ;MsgCond: OPN Link 6: LCM REM1 00 0 1;Cap MS;Status:SysB ;MsgCond: CLS

7 Record the numbers of the links with status not OK.

Use the following diagram to determine which DS-1 interface card or cards corresponds to the links identified as faulty in step 6. Note that each NT6X50 card has 2 ports. For example, the faulty link 6 displayed in step 6 is connected to port 1 as indicated, which corresponds to the NT6X50 in slot 20.



8 Determine the slot location of the faulty card.

If faulty card is in slot	Do
19 or 20 of the HIE	step 9
21 of the HIE	step 12
Post the LCM by typing	
>POST LCM site frame lcm_no	
and pressing the Enter key.	
where	
site is the name of the RLCM site (a	alphanumeric)
frame is the frame number of the RLC	E (0-511)
Icm_no is the number of the LCM	

9

10 Busy LCM unit 0 for card in slot 19 or LCM unit 1 for card in slot 20 by typing >BSY UNIT lcm_unit_no and pressing the Enter key. where lcm_unit_no is the RLCM unit to be busied, (0 or 1). 11 Post the C-side peripheral module, previously posted in step 5, where the RLCM is connected by typing >POST host pm host pm no and pressing the Enter key. where host pm is the name of the host PM, previously posted in step 5 host_pm_no is the number of the host PM (0 to 255) 12 Using the information collected in steps 6 and 7, busy both links associated with the faulty card by typing >BSY LINK link no and pressing the Enter key. where link no is one of two links associated with the faulty card *Note:* Repeat this step for the other link associated with the faulty card. At the RLCE frame

13



DANGER

Calls in progress may be interrupted.

The craftsperson must wait at least 15 minutes to allow calls in progress to be completed before removing the NT6X50 DS-1 interface card.

Change dip switch settings on the new replacement card to match the faulty card being removed.

14 Replace the NT6X50 card using the common replacing a card procedure in this document. When the card has been replaced, return to this point.

At the MAP display

15 Test the links busied in step 12 by typing

>TST LINK link_no

and pressing the Enter key.

where

link_no

is one of two links associated with the replacement card

Note: Repeat this step for the other link associated with the replacement card.

If test	Do
failed	step 24
passed	step 16

16 Return to service the links busied in step 12 by typing

>RTS LINK link_no

and pressing the Enter key.

where

link no

is one of two links associated with the replacement card

 $\it Note: Repeat this entry for the other link associated with the replacement card.$

If RTS	Do
failed	step 24
passed	step 17

17 Determine if there are remaining links to clear.

If there are	Do	
remaining links to clear	step 12	
no remaining links to clear	step 18	

18 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 19.

19 Determine if an LCM unit is manual busy.

If LCM unit	Do
is ManB	step 20

NT6X50 in an RLCM HIE (end)

If LCM unit	Do
is not ManB	step 22
Post the LCM by typing	
>POST LCM site fra	ame lcm_no
and pressing the Enter	key.
where	
site is the site name	of the RLCM (alphanumeric)
frame is the frame num	ber of the RLCE (0 to 511)
lcm_no is the number of	the LCM
Return the busied unit t	o service by typing
>RTS UNIT lcm_unit	t i i i i i i i i i i i i i i i i i i i
and pressing the Enter	key.
where	
Icm_unit is the RLCM unit	busied in step 10
If RTS	Do
failed	step 24
passed	step 22
Send any faulty cards for	or repair according to local procedure.
Record the following ite	ms in office records:
• date the card was re	eplaced
 serial number of the 	e card
 symptoms that pror 	npted replacement of the card
Proceed to step 25.	
Obtain further assistand responsible for higher le	ce in replacing this card by contacting the personrevel of support.

25 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X50 in an RSC

Application

Use this procedure to replace the following card in an RSC RCC.

PEC	Suffixes	Name
NT6X50	AA, AB	DS-1 interface

Common Procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X50 in an RSC (continued)

Summary of replacing an NT6X50 card in an RSC RCC



NT6X50 in an RSC (continued)

Replacing an NT6X50 card in RSC RCC

At your current location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC ensure the unit where you are replacing the card is INACTIVE and that the mate unit is ACTIVE.

Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP display and post the RCC with the faulty NT6X50 card by typing

>MAPCI;MTC;PM;POST RCC rcc_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the RCC associated with the faulty NT6X50 card.

Example of a MAP display:

NT6X50 in an RSC (continued)

(CI	M MS	IOD	Net	PM	CCS	LNS	Tr]	ks E	xt AF	PPL \
			•	•	1RCC	•	•		•		
	RCO	2	S	ysB	ManB	Off	L CI	Bsy	ISTb	Ir	ıSv
	0	Quit	PM	0	0	2		0	2	2	25
	2	Post_	RCC	0	0	0		0	1		1
	3	ListSet									
	4		RCC	0 IST	b Linl	ks_00	s: (CSide	e 1,	PSide	1
	5	TRNSL_	Unit	0: Ac	t II	nSv					
	6	TST_	Unit	1: In	act Sy	ysB					
	7	BSY_									
	8	RTS_									
	9	OffL									
	10	LoadPM_									
	11	Disp_									
	12	Next									
	13	SwAct									
	14	QueryPM									
	15										
	16	IRLINK									
	17	Perform									
	18										

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

At the RCE

5 Put a sign on the active unit bearing the words, *Active unit—Do not touch*.

At the MAP display

6 Display the C-side links associated with the faulty NT6X50 card by typing

>TRNSL C

and pressing the Enter key.

Note: Identify the host PM and its associated P-side and C-side links for later reference.

Example of a MAP response:

NT6X50 in an RSC (continued)

7

8

9

LINK 0	LTC 0	1;CAP	MS:STATUS	S OK	MSGCC	ND	OPN			
LINK 1	LTC 0	2;CAP	MS:STATUS	S OK						
LINK 2	LTC 0	3;CAP	MS:STATUS	S SBsy	MSGCOND	CLS				
LINK 3	LTC 0	4;CAP	MS:STATUS	S OK						
LINK 4	LTC 0	5;CAP	MS:STATUS	S OK						
LINK 5	LTC 0	6;CAP	MS:STATUS	S OK						
If the C-	side links are		Do							
faulty			step 8							
not fau	lty		step 7							
Display th	e P-side links	associated w	ith the DS-1	card	hy typing					
				cara	by typing					
	P Seculture Frateria									
and press	ing the Enter k	key.								
Example	of a MAP resp	onse:								
		0.015		077	Maggan		0.511			
LINK U	RMM 5		MS:STATUS	OK	MSGCON	D TD	OPN			
LINK I TIMK 2	LCM REMI 00	0 0,CAP	MG. GUATUS	OK	MSGCON	D ID	OPN			
LINK Z	LCM REMI 00		MS·SIAIUS C·CTATUC	OK	MSGCON	D	OPN			
TINK 2	CAPPIED OF C	U ZICAP	· CTATUS	OK						
LINK 5	CARRIER OF C	LASS - IRUNK	: STATUS	SveB						
			• 51A105	575D						
If the P	links are		Do							
faulty			step 11							
not fau	lty		step 34							
			-							
Busy the	nactive RCC L	init by typing								
>BSY UN	IT rcc_unit	_no								
and press	ing the Enter k	key.								
where										
rcc_u is t	<pre>rcc_unit_no is the number of the inactive RCC unit (0 or 1)</pre>									
Post the host PM by typing										
>POST host_pm host_pm_no										
and press	ing the Enter k	кеу.								
where										
host	pm									
is a line group controller (LGC) or line trunk controller (LTC) in the host office										

NT6X50 in an RSC (continued)

host_pm_no is the number of an LGC or LTC *Example of a MAP display:*

/)
, 	CI	M MS	IOD	Net	ΡM	CCS	Lns	Trks	Ext	APPL	
			•	•	1R	CC .	•	•	•	•	
	т	ГC		SvsF	R	ManB	OffI.	CBsv	TSTD	TnSv	
	0	Ouit	РМ	10,00)	0	1	0207	4	22	
	2	Post	LTC	C)	0 0	2	0	2	9	
	3	ListSet	ше	U U	,	Ū	2	0	2	2	
	4		LTC () IST	b	Links_	_00S:	CSide (), PSid	de 1	
	5	Trnsl_	Unit0	: Act		InSv					
	б	Tst_	Unit1	: Inac	:t	InSv					
	7	Bsy_									
	8	RTS_									
	9	OffL									
	10	LoadPM_									
	11	Disp_									
	12	Next									
	13	SwAct									
	14	QueryPM									
	15										
	16										
	17	Perform									
< - C	10										

10 Identify the faulty link number(s) of the host PM by typing

>TRNSL P

and pressing the Enter key.

Example of a MAP response:

LINK	1	RCC	0	0;CAP	MS:STATUS	OK	MSGCOND	OPN
LINK	2	RCC	0	1;CAP	MS:STATUS	OK		
LINK	3	RCC	0	2;CAP	S:STATUS	SBsy	MSGCOND	CLS
LINK	4	RCC	0	3;CAP	S:STATUS	OK		
LINK	5	RCC	0	4;CAP	S:STATUS	OK		
LINK	б	RCC	0	5;CAP	S:STATUS	OK		

11 Manually busy (ManB) the links connected to the faulty card by typing

>BSY LINK link_no

and pressing the Enter key.

where

link_no

is the number of the links associated with the faulty NT6X50 card from step 7

NT6X50 in an RSC (continued)

Note: Each NT6X50 card has two links associated with it. Therefore, each link must be ManB. Possible link number pairs are as follows: 0,1; 2,3; 4,5; or 6,7.

12 The system displays a prompt on the MAP screen requesting a confirmation of the command to BSY the link. Confirm the BSY command by typing

>YES

and pressing the Enter key.

13 Use the following information to determine the next step in this procedure.

If link is on P-side of	Do
host XPM	step 14
RCC	step 15

14 Type the following command

>TRKS; CARRIER; POST host_pm host_pm_no

and press the Enter key.

where

host_pm

is either a line group controller (LGC) or a line trunk controller (LTC)

host_pm_no

is the number of an LGC or LTC

Example of a MAP response;

CLA	SS	ML	OS	ALARI	-I	SYS	BB MANB	UNEQ	OFFL	CBSY	PBSY	INSV	
TRU	NKS	4	0	0		0	0	0	0	0	0	0	
REM	OTE	3	0	7		5	1	0	0	1	0	10	
Ν	CLASS	SITH	C	LTC	CKT	D	ALARM	SLIP	FR <i>I</i>	AME	BER	SES	STATE
0	REMOTE	BRSC	2	0	2	С	SLIP	ML		1	ML	0	ManB
1	REMOTE	BRSC	2	0	3	С		0		0 <	7	0	InSv
2	REMOTE	BRSC	2	0	4	С		0		0 <	7	0	InSv

MORE

Note: The MORE at the bottom of the display indicates that more links can be observed by typing

>NEXT

and pressing the Enter key.

Go to step 17.

15 Type the following command

>TRKS; CARRIER; POST RCC rcc_no

and press the Enter key.

where

NT6X50 in an RSC (continued)

rcc_unit_no

is the number of the RCC unit to be busied (0 or 1)

Example of a MAP response;

CLASS	ML	OS	ALARM		SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	2	0	4		1	0	22	5	0	0	255
REMOTE	1	1	3		5	1	0	0	1	0	10
N CLASS 0 TRUNKS 1 TRUNKS 2 TRUNKS	SITE BRSC BRSC BRSC	E RC0 0 0 0	C CK 4 5 6	D C C C	ALARM LCGA	SLIP 0 0 11	FRME 0 0 OS	BEI 5 5 MI	R ES 0 0 L 0	SES 0 0 0	STATE InSv InSv SysB-T

MORE

Note: MORE at the bottom of the display indicates that more links can be observed by typing:

>NEXT

and pressing the Enter key

16 Identify the link number(s) associated with any faulty link(s) by referring to the *N* column (as shown in the map displays in steps 14 and 15). Busy the faulty links by typing

>BSY n

and pressing the Enter key.

where

n

- is the number of the faulty link(s) associated with the NT6X50 card. Remember that at CARRIER level, links must be addressed by the number under the n column.
- **17** Test any faulty link(s) by typing

>TST n

and pressing the Enter key

where

n

is the number of the faulty link(s) associated with the NT6X50 card. Remember that at CARRIER level, links must be addressed by the number under the n column.

lf	Do
carrier test passed	step 22
carrier test failed	step 18

NT6X50 in an RSC (continued)

At the RCE frame

18



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the RCC. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

19



DANGER

Equipment damage Take the following precautions when removing or inserting a

- card:
- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Replace the NT6X50 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

NT6X50 in an RSC (continued)



c Ensure the replacement card has the same PEC, including suffix, as the card you just removed.

20 Open the locking levers on the replacement card.

Align the card with the slots in the shelf and gently slide the card into the shelf.



- 21 Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
 - **b** Close the locking levers.

NT6X50 in an RSC (continued)



At the MAP display

- 22 Return all carrier links busied in step 16 to service by typing
 - >RTS n

and pressing the Enter key

where

n

is the number of the faulty link(s) associated with the new NT6X50 card. Remember that at CARRIER level, links must be addressed by the number under the n column.

Do								
step 23								
step 33								
Use the following information to determine the next step in this procedure.								
Do								
step 32								
step 24								
Post the RCC associated with the new NT6X50 card by typing								
>PM; POST RCC rcc_unit_no								

23

24

NT6X50 in an RSC (continued)

```
where
```

rcc_unit_no

is the number of the RCC unit associated with the new NT6X50 card *Example of a MAP display:*

1											
[CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL	
		• •	•	•	1RCC	•	•	•	•	•	
	RCO	2	S	SvsB	ManB	Off	l Ce	sv I	STb	InSv	
	0	Ouit	РМ	0	0	2	-	0	2	25	
	2	Post	RCC	0	0	0		0	1	1	
	3	ListSet	1100	Ũ	0	Ũ		0	-	-	
	4	LIBCBCC	RCC	0 TST	b Link	s 00	s: c	Side	1. PS	ide O)
	5	TRNSL	Unit	:0: Ac	t. Tr	1.Sv			-, -0	200 0	
	6	TST	Unit	1: Tn	act Ma	anB					
	7	BSY	011110								
	, 8	RTS									
	9	OffI									
	10	LoadPM									
	11	Disp									
	12	Next									
	13	SwAct									
	14	OuervPM									
	15	Querynn									
	16	TRLINK									
	17	Derform									
	18	LCLIOIM									
	<u></u>										\sim
	Test the inactive RCC unit by typing										

>TST UNIT rcc_unit_no

and pressing the Enter key.

where

25

rcc_unit_no
is the number of the inactive RCC unit (0 or 1)

	lf	Do							
	TEST PASSED	step 26							
	TEST FAILED	step 33							
26	Post the host PM by typing								
	>POST host_pm host_pm_no								
	and pressing the Enter key.								
	Allow 15 minutes for messaging to clear between the CC and the RCC.								

NT6X50 in an RSC (continued)

where

host_pm

is a line group controller (LGC) or line trunk controller (LTC)

host_pm_no

is the number of an LGC or LTC

Example of a MAP display:

C№	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
•	• •	•		. 1F	RCC .	•	•	•	•
LI	ΓC		Sys	зB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM		0	0	1	0	4	22
2	Post_	LTC		0	0	2	0	2	9
3	ListSet								
4		LTC	0 I:	STb	Links_	_00S:	CSide), PSid	de 1
5	Trnsl_	UnitC): Act	t	InSv				
б	Tst_	Unit1	: Ina	act	InSv				
7	Bsy_								
8	RTS_								
9	OffL								
10	LoadPM_								
11	Disp_								
12	Next								
13	SwAct								
14	QueryPM								
15									
16									
17	Perform								

27

>RTS LINK link_no

and pressing the Enter key.

where

link no

is the number of the links associated with the new NT6X50 card.

Do		
step 30		
step 33		
-		

28 Post the RCC associated with the new NT6X50 card by typing

>PM; POST RCC rcc_unit_no
and pressing the Enter key.

where

rcc_unit_no

is the number of the RCC unit associated with the new NT6X50 card *Example of a MAP display:*

/											
	CI	M MS	IOD	Net	PM 1 DGG	CCS	LNS	Trk	s Ez	kt Al	PPL
			•	•	IRCC	•	•	•		•	•
	RCO	2	S	SysB	ManB	Off	L CI	Bsy	ISTb	II	nSv
	0	Quit	PM	0	0	2		0	2	2	25
	2	Post_	RCC	0	0	0		0	1		1
	3	ListSet									
	4		RCC	0 IST	b Linl	<s_00< td=""><td>s: (</td><td>CSide</td><td>1,</td><td>PSide</td><td>0</td></s_00<>	s: (CSide	1,	PSide	0
	5	TRNSL_	Unit	.0: Ac	t In	nSv					
	б	TST_	Unit	1: In	act Ma	anB					
	7	BSY_									
	8	RTS_									
	9	OffL									
	10	LoadPM_									
	11	Disp_									
	12	Next									
	13	SwAct									
	14	QueryPM									
	15										
	16	IRLINK									
	17	Perform									
	18										

29

Return the inactive RCC unit to service by typing

>RTS UNIT rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no
 is the number of the RCC unit tested in step 25

lf	Do	
RTS PASSED	step 30	
RTS FAILED	step 33	

30 Send any faulty cards for repair according to local procedure.

NT6X50 in an RSC (end)

- **31** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card.

Go to step 34.

- **32** Return to the *Alarm Clearing Procedure* that directed you to this card replacement procedure. If necessary, go to the point where the faulty card list was produced, identify the next faulty card on the list, and go to the appropriate replacement procedure in this manual for that card.
- **33** Obtain further assistance in replacing this card by contacting personnel responsible for higher level of support.
- **34** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X50 in an SMA

Application

Use this procedure to replace an NT6X50 card in an SMA.

PEC	Suffixes	Name
NT6X50	AB	DS-1 Interface

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is a summary of this procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X50 card in an SMA





Summary of card replacement procedure for an NT6X50 card in an SMA (continued)

Replacing an NT6X50 card in an SMA

At your current location

1



CAUTION

Service disruption: calls may be dropped! Perform this card replacement activity only during a period of low traf c. All calls being handled by the links connected to the DS-1 interface card being replaced will be dropped.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

2 Ensure you know the physical location of the faulty card.

If card location is	Do	
known	step 4	
unknown	step 3	

- Perform the procedure "Locating a faulty card in an SMA."
- 3 4



CAUTION

Loss of service Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same

product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no

is the number of the SMA being posted

Example of a MAP response:

SMA		SysB	ManB	Offl	CBsy	ISTb	InSv	
	РM	3	0	1	0	2	13	
	SMA	0	0	0	0	1	7	
SMA	0 IS	STb L:	inks_0	os: (CSide 0	, PSid	e 0	
Unit0: Act InSv								
Unit	:1:	Inact	ISTb					

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 11

7 Switch the activity (SWACT) of the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
cannot continue at this time	step 8
can continue at this time	step 9

8 Reject the prompt to switch the activity of the units by typing

>NO

and pressing the Enter key.

The system discontinues the SWACT. Go to step 48.

9 Confirm the system prompt by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 11
SWACT failed Rea- son: XPM SWACTback	step 10
SWACT refused by SWACT Controller	step 10

10 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 48.

At the equipment frame

11 Hang a sign on the active unit bearing the words: *Active unit-Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

12 Display the links to the faulty DS-1 Interface card (NT6X50) by typing

>TRNSL P

and pressing the Enter key.

Example of a MAP response:

LINK3: IDT 1 3;Cap:MS; Status:OK; MsgCond:OPN LINK4: IDT 1 4;Cap:MS; Status:OK; MsgCond:CLS LINK5: IDT 1 Carrier of CLASS - Trunk;Status:SBusy LINK6: IDT 1 Carrier of CLASS - Trunk;Status:SBusy LINK7: IDT 2 0;Cap:MS; Status:OK; MsgCond:OPN LINK8: IDT 2 1;Cap:MS; Status:SBsy; MsgCond:OPN

The first line indicates that DS-1 link 3 is connected to IDT1 at C-side link 3.

Record the link numbers, IDT number, and capability (CAP) of the links connected to the NT6X50 card to be replaced.

13 Use the following example to determine the numbers of the peripheral-side (P-side) links connected to the faulty NT6X50 card. Each card is connected to two links. The link 8, shown in step 12, corresponds to the NT6X50 card in slot 3 of unit 0.



14 If the NT6X50 to be replaced is connected to IDT message links, then the appropriate message channels (CSC and EOC) must be busied.

lf th	ne linl	k has a	CAP of	Ī	Do	1			
MS	, as i	dentifi	ed in ste	ep 12	ste	p 15			
S, a	ıs ide	ntified	in step	12	ste	p 24			
Post the IDT associated with the DS-1 link to be taken out of service, as recorded in step 12, by typing									
>POS	ST II	T idt	_no						
and p	oressi	ng the l	Enter ke	y.					
wher	where								
i	dt_nc is th) ne numt	per of th	e IDT be	ing post	ed			
Exan	nple c	of a MA	P respor	nse:					
IDT		SysB	ManB	Offl	CBsy	ISTb	InSv		
	PM	3	0	1	0	2	13		
	IDT	0	0	0	0	1	7		
IDT	2 IS	STb L	inks_C)OS:1					
Displ RDT	ay inf by ty	ormatio ping	n about	the state	e of the c	hannels	between	the IDT and	

>PPS QUERY

by;Enable by ;Enable e;Enable e;Enable
for all channels.
Do
step 18
step 20
CSC or EOC message channel by
DC1. or EOC2
nust be enabled on additional CSC o
Do
step 18
step 20
channels for the link to be taken ou
Do
Do step 21
Do step 21 step 23

	lf	Do			
	more channels must be taken of service	out step	21		
	no more channels are to be tak out of service	en step	23		
3	Determine if an additional link, as service associated with the NT6X	recorded i 50 to be re	n step placed	12, must be	take
	lf	Do			
	an additional link must be tak out of service	en step	14		
	an additional link must be tak out of service no more links are to be taken of of service	en step out step	14 24		
4	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 b	en step out step oy typing	14 24		
4	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 k >POST SMA sma_no	en step out step oy typing	14 24		
4	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 k >POST SMA sma_no and pressing the Enter key.	en step out step oy typing	14 24		
4	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 k >POST SMA sma_no and pressing the Enter key. where	en step out step oy typing	14 24		
4	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 th >POST SMA sma_no and pressing the Enter key. where sma_no is the number of the SMA b	en step out step oy typing	14 24		
24	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 to >POST SMA sma_no and pressing the Enter key. where sma_no is the number of the SMA to Example of a MAP response:	en step out step oy typing being poste	14 24		
24	an additional link must be tak out of service no more links are to be taken of of service Post the SMA identified in step 5 to >POST SMA sma_no and pressing the Enter key. where sma_no is the number of the SMA to Example of a MAP response: SMA SysB ManB Offl	en step out step oy typing being poste	14 24 ed ISTb	InSv	

25



CAUTION

Service disruption: calls may be dropped! If you are prompted to con rm a BSY LINK command, perform this activity only during a period of low traf c. All calls being handled by the busied link will be dropped.

Busy one of the links connected to the faulty NT6X50, as recorded in step12, by typing

>BSY LINK link_no

and pressing the Enter key.

where

link_no

is the number of the link connected to the faulty NT6X50 card

A confirmation prompt for the BSY command is displayed at the MAP terminal *Example of a MAP response:*

bsy	lir	ık O							
Any	act	cive	call	may	be	lost			
Plea	ase	conf	Eirm	("Yes	s″,	Ϋ́Υ,	"No″,	or	"N"):

lf	Do	
cannot continue at this time	step 26	
can continue at this time	step 33	
Reject the prompt to BSY the link b	y typing	
>NO		
and pressing the Enter key.		
The system discontinues the BSY of	command.	
Determine if the link is a message I	ink	
If the link has a CAP of	Do	
MS	step 28	
S	step 48	
Post the IDT associated with the lin	k by typing	
>POST IDT idt_no		
and pressing the Enter key		

26

27

28

where

idt_no

is the number of the IDT being posted

Example of a MAP response:

IDT		SysB	ManB	Offl	CBsy	ISTb	InSv
	PM	3	0	1	0	2	13
	IDT	0	0	0	0	1	7

IDT 2 ISTb Links_00S:1

29 Display information about the state of the channels between the IDT and the RDT by typing

>PPS QUERY

and pressing the Enter key

Example of a MAP response:

CSC1: SMA 7 7 24; OOS;Standby;Enable EOC1: SMA 7 7 12; OOS;Active ;Enable CSC2: SMA 7 8 24;InSv;Standby;Enable EOC2: SMA 7 8 12;InSv;Standby;Enable

30 Determine if there are any CSC or EOC message channels for the link to be returned to service.

If CSC or EOC channels are	Do
all in-service	step 48
out-of-service (OOS)	step 31

31 Return to service the message channels which were taken out of service in step 21 by typing

>RTS path

where

path is CSC1, CSC2, EOC1, or EOC2

32 Determine if there are additional CSC or EOC message channels to be returned to service.

If there are	Do
more channels to be returned to service	step 31
no more channels to be returned to service	step 48

33	Confirm the system prompt by typing					
	>YES					
	and pressing the Enter key.					
	Go to step 34.					
34	Determine if there are additional links on the NT6X50 to be service.	taken out of				
	lf	Do				
	there is another link to be taken out of service with a CAP of S	step 25				
	there is another link to be taken out of service with a CAP of MS and the associated IDT message channel has not been taken out of service	step 15				
	all links have been taken out of service	step 35				
	there is another link to be taken out of service with a CAP of MS and the associated IDT message channel has been taken out of service	step 25				

At the equipment frame

35



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

Ensure the switches on the replacement card are set to the same settings as those on the card you have just removed.

36

Refer to the following table for information on release numbers related to cable length and switch settings.

Switch settings for NT6X50 cards

Card	Length of cable	Close these switch contacts and leave all others open
NTX6X50AB, release number 39 or lower	0m to 91 m (0 ft to 299 ft)	SW1
	91 m to 137 m (299 ft to 449 ft)	SW2 SW5 SW7
	137 m to 200 m (449 ft to 655 ft)	SW3 SW6 SW8
NT6X50AB, release numbers 40 to 59	0 m to 91 m (0 ft to 299 ft)	SW4
	91 m to 137 m (299 ft to 449 ft)	SW3 SW6 SW8
	137 m to 200 m (449 ft to 655 ft)	SW1 SW5 SW7
NT6X50AB, release numbers 60 or higher	0 m to 41 m (0 ft to 133 ft)	SW1
	41 m to 81 m (133 ft to 266 ft)	S2 S3
	81 m to 122 m (266 ft to 399 ft)	S2
	122 m to 163 m (339 ft to 533 ft)	S3
	163 m to 200 m (533 ft to 655 ft)	None, all contacts are to be open

At the MAP terminal

37 Post the SMA identified in step 5 by typing >POST SMA sma_no

and pressing the Enter key.

where

sma_no is the number of the SMA being	g posted		
Example of a MAP response:			
SMASysBManBOfflCPM301SMA000	Bsy ISTb InSv 0 2 13 0 1 7		
SMA 0 ISTb Links_OOS: CSi Unit0: Act InSv Unit1: Inact ISTb	de 0, PSide 0		
Return to service one of the two busie	d links by typing		
>RTS LINK link_no			
and pressing the Enter key.			
where link no			
is the number of the link conne	cted to the NT6X50 card		
If RTS	Do		
passed	step 39		
failed	step 48		
Determine if the link that was returned	to service is a messaging link.		
If the link has a CAP of	Do		
MS, as identified in step 12	step 41		
S, as identified in step 12	step 40		
Determine if additional links are to be	returned to service		
lf	Do		
an additional link must be re- turned to service	step 38		
no more links are to be returned to service	step 46		
Post the IDT associated with the DS-1 by typing	link that has been returned to service		
>POST IDT idt_no			
and pressing the Enter key.			
where			

idt no

is the number of the IDT being posted

Example of a MAP response:

IDT		SysB	ManB	Offl	CBsy	ISTb	InSv
	PM	3	0	1	0	2	13
	IDT	0	0	0	0	1	7

IDT 1 SysB Links_00S:0

42 Display information about the state of the channels between the IDT and the RDT by typing

>PPS QUERY

and pressing the Enter key

Example of a MAP response:

CSC1:	SMA	7	7	24;	00S;Standby;Enable
EOC1:	SMA	7	7	12;	InSv;Active ;Enable
CSC2:	SMA	7	8	24;	00S;Standby;Enable
EOC2:	SMA	7	8	12;	00S;Standby;Enable

43 Return to service the message channels which were taken out of service in step 21 by typing

>RTS path

where

45

path

- is CSC1, CSC2, EOC1, or EOC2
- 44 Determine if there are additional CSC or EOC message channels to be returned to service.

If there are	Do
more channels to be returned to service	step 43
no more channels to be returned to service	step 45
Determine if there are additional links	on the NT6X50 to be returned service.
lf	Do
there is another link to be re- turned to service	step 37

NT6X50 in an SMA (end)

- 46 Remove the sign from the active SMA unit.
- 47 Go to the common returning a card procedure in this document.

Go to step 49.

- **48** For further assistance, contact the personnel responsible for the next level of support.
- **49** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X50 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X50 card in an SMA.

PEC	Suffixes	Name
NT6X50	AB	DS-1 Interface

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is a summary of this procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X50 card in an SMA







Replacing an NT6X50 card in an SMA

At the equipment frame

1



CAUTION

Service disruption: calls may be dropped!

Perform this card replacment activity only during a period of low traf c. All calls being handled by the links connected to the DS-1 interface card being replaced will be dropped.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

- Perform the procedure "Locating a faulty card in an SMA."
- 3 4



CAUTION

Loss of service Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

		sma_ı is th	10 ne numbe	er of the	SMA be	ing post	ted			
	Exa	ample c	of a MAP	respon	se:	•				
CMA		Green	MaxD	0££1	ODarr	TOTT	There			
SMA	ъм	SYSB 2			CBSY	1510	112			
	РМ СМЛ	3 0	0		0	∠ 1	13			
	SMA	0	0	0	0	Ţ	7			
SMA	7 IS	STb L	inks_0	os: c	Side 0	, PSid	le 1			
Unit	:0:	Act	InSv Tra Gar							
Unit	:1:	Inact	Insv							
6	Ob the	serve the inactive	ne MAP (e unit.	display a	and dete	rmine if	the faulty ca	ard is in the active or		
	lf	the fau	Ity card	is in th	е	Do				
	a	ctive u	nit			step	o 7			
	in	active	unit			step	step 11			
7	Sw	itch the	activity	(SWAC1	Γ) of the	units by	typing			
	>SI	WACT								
	and	d pressi	ng the E	nter key						
	A c teri	onfirma minal.	ation proi	mpt for t	he SWA	CT com	mand is disp	played at the MAP		
	lf	SWAC	Г			Do				
	Са	annot c	ontinue	at this	time	step 8				
	C	an cont	inue at 1	this tim	e	step	step 9			
8	Re	ject the	prompt	o SWA	CT the u	nits by ty	yping			
	>N(0								
	and	d pressi	ng the E	nter key						
	The	e syster	n discon	tinues tl	ne SWAC	CT. Go t	to step 48.			
9	Co	nfirm th	e systen	n promp	t by typir	ng				
	>Y]	ES								
	and	d pressi	ng the E	nter key						

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 11
SWACT failed Rea- son: XPM SWACTback	step 10
SWACT refused by SWACT Controller	step 10

10 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 48.

At the equipment frame

11 Hang a sign on the active unit bearing the words: *Active unit—Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

12 Display the links to the faulty DS-1 Interface card (NT6X50) by typing

>TRNSL P

and pressing the Enter key.

Example of a MAP response:

LINK3: IDT 13;Cap:MS; Status:OK; MsgCond:OPNLINK4: IDT 14;Cap:MS; Status:OK; MsgCond:CLSLINK5: IDT 1Carrier of CLASS - Trunk;Status:SBusyLINK6: IDT 1Carrier of CLASS - Trunk;Status:SBusyLINK7: IDT 20;Cap:MS; Status:SBsy; MsgCond:OPNLINK8: IDT 21;Cap:MS; Status:OK; MsgCond:OPN

The first line indicates that DS-1 link 3 is connected to IDT1 at C-side link 3.

Record the link numbers, IDT number, and capability (CAP) of the links connected to the NT6X50 card to be replaced.

13 Use the following example to determine the numbers of the peripheral-side (P-side) links connected to the faulty NT6X50 card. Each card is connected to two links. For example, link 8, shown in step 12, corresponds to the NT6X50 card in slot 3 of unit 0.



14 If the NT6X50 to be replaced is connected to IDT message links, then the appropriate message channels (TMC and EOC) must be busied.

	lf th	ne link	chas a (CAP of		Do				
	MS, as identified in step 12						o 15			
	S, as identified in step 12						step 24			
15	Post the IDT associated with the DS- recorded in step 12, by typing						1 link to be taken out of service, as			
	>POS	ST ID	T idt_	no						
	and p	oressi	ng the E	nter key	2					
	wher	е								
	i	dt_no is th	e numbe	er of the	IDT bei	ng poste	d			
	Exan	nple o	f a MAP	respon	se:					
IDT	S	ysB	ManB	Offl	CBsy	ISTb	InSv			
	PM	3	0	1	0	2	13			
	IDT	0	0	0	0	1	7			
IDT	2 IST	lSTb Links_OOS:1								

16 Display information about the state of the channels between the IDT and the RDT by typing

>PPS QUERY

and pressing the Enter key

Example of a MAP response:

TMC1: SMA 7 7 24; OOS;Standby;Enable EOC1: SMA 7 7 12; OOS;Standby;Enable TMC2: SMA 7 8 24;InSv;Active;Enable EOC2: SMA 7 8 12;InSv;Active;Enable

17 Determine if path protection is enabled for all channels.

If one or both TMC or EOC chan- nels are	Do
inhibited	step 18
enabled	step 20
Enable path protection on an inhibited typing	TMC or EOC message channel by
>PPS ENA path	
and pressing the Enter key.	
where	
path is the inhibited TMC1, TMC2, I	EOC1, or EOC2
Determine if path protection switching EOC message channels.	must be enabled on additional TMC of
lf	
•	Do
additional channels must be en- abled	Do step 18
additional channels must be en- abled all channels are enabled	Do step 18 step 20
additional channels must be en- abled all channels are enabled Determine if the TMC or EOC messag of service are in-service.	Do step 18 step 20 ge channels for the link to be taken ou
additional channels must be en- abled all channels are enabled Determine if the TMC or EOC messag of service are in-service.	Do step 18 step 20 ge channels for the link to be taken ou Do
additional channels must be en- abled all channels are enabled Determine if the TMC or EOC messag of service are in-service. If TMC or EOC channels are in-service	Do step 18 step 20 ge channels for the link to be taken ou Do step 21

21	Busy the TMC or EOC message chann out of service by typing	el associated with the link to be taken
	>BSY path	
	where	
	path is TMC1, TMC2, EOC1, or EOC	2
22	Determine if there are additional TMC o out of service.	or EOC message channels to be taken
	lf	Do
	more channels must be taken out of service	step 21
	no more channels are to be taken out of service	step 23
23	Determine if an additional link, as reco service associated with the NT6X50 to	rded in step 12, must be taken out of be replaced.
	lf	Do
	an additional link must be taken out of service	step 14
	no more links are to be taken out of service	step 24
24	Post the SMA identified in step 5 by typ	ping
	>POST SMA sma_no	
	and pressing the Enter key.	
	where	
	<pre>sma_no is the number of the SMA being</pre>	posted
	Example of a MAP response:	
SMA P	SysB ManB Offl CBsy IS M 3 0 1 0 2	STD InSv 2 13
S	SMA 0 0 0 0 1	L 7
SMA 7 Unit0 Unit1	/ ISTb Links_OOS: CSide 0, F : Act InSv : Inact InSv	PSide 1

25



Service disruption: calls may be dropped! If you are prompted to con rm a BSY LINK command, perform this activity only during a period of low traf c. All calls being handled by the busied link will be dropped.

Busy one of the links connected to the faulty NT6X50, as recorded in step12, by typing

>BSY LINK link_no

and pressing the Enter key.

where

link_no

is the number of the link connected to the faulty NT6X50 card

A confirmation prompt for the BSY command is displayed at the MAP terminal *Example of a MAP response:*

bsy link 0

```
Any active call may be lost
Please confirm ("Yes", "Y", "No", or "N"):
```

CAUTION

lf	Do
cannot continue at this time	step 26
can continue at this time	step 33
Reject the prompt to BSY the link	by typing
>NO	
and pressing the Enter key.	
The system discontinues the BSY	command.
Determine if the link is a message	e link
If the link has a CAP of	Do
MS	step 28
S	step 48
Post the IDT associated with the	ink by typing
>POST IDT idt_no	
and pressing the Enter key.	

	wnere							
	idt_n is t	o he numb	er of the	IDT bei	ng poste	d		
	Example	of a MAP	respon	se:				
IDT	SysB M 3	ManB 0	Offl 1	CBsy O	ISTb 2	InSv 13		
]	IDT 0	0	0	0	1	7		
			0.0.1					
IDT 2		Links_0	05:1					
29	Display information about the state of the channels between the IDT and the RDT by typing							
	>PPS QU	ERY						
	and press	sing the E	nter key	/				
	Example	of a MAP	respon	se:				
TMC1 EOC1 TMC2 EOC2	TMC1: SMA 7 7 24; OOS;Standby;Enable EOC1: SMA 7 7 12; OOS;Active ;Enable TMC2: SMA 7 8 24;InSv;Standby;Enable							
30	Determin	a if there	are anv	TMC or	EOC mo	ssane chan	nols for the link to be	
30	Determin							
	returned	o service				ssage chan		
	If TMC of	o service or EOC c	hannels	s are	Do			
	If TMC of all in-set	o service or EOC c ervice	hannels	s are	Do step	48		
	If TMC of all in-set out-of-set	o service or EOC c ervice service ((hannels	s are	Do step	48		
31	If TMC of all in-se out-of-se Return to step 21 b	o service or EOC c ervice service ((service t y typing	hannels	s are	Do step step	48 31 hich were ta	ken out of service in	
31	If TMC of all in-second-second out-of-second-second Return to step 21 b >RTS page	o service or EOC c ervice service ((service t y typing th	hannels	s are	Do step step	48 31 hich were ta	ken out of service in	
31	If TMC of all in-se out-of-s Return to step 21 b >RTS pa where	o service or EOC c ervice service (service t y typing th	DOS)	s are	Do step step	48 31 hich were ta	ken out of service in	
31	If TMC of all in-second out-of-second Return to step 21 b >RTS pa where path is	to service or EOC c ervice service ((service t y typing th FMC1, TM	hannels DOS) he mess	s are	Do step step	48 31 hich were ta	ken out of service in	
31 32	If TMC of all in-second out-of-second Return to step 21 b >RTS pa where path is Determining	to service or EOC c ervice service ((service t y typing th TMC1, TM e if there to service	hannels DOS) he mess MC2, EC are add	s are sage cha	Do step step innels wh	48 31 hich were ta	ken out of service in	
31 32	If TMC of all in-second out-of-second Return to step 21 b >RTS pa where path is Determine returned for If there	to service or EOC c ervice service ((service t y typing th TMC1, TM e if there to service are	hannels DOS) he mess MC2, EC are add	sage cha	Do step step unnels wh EOC2 MC or EC	48 31 hich were ta	ken out of service in	
31	If TMC of all in-sec out-of-s Return to step 21 b >RTS pa where path is Determin returned to If there more cl service	to service or EOC c ervice service ((service t y typing th TMC1, TM e if there to service are hannels t	hannels DOS) he mess AC2, EC are add	Sage cha Sage cha DC1, or E itional TN	Do step step unnels wh EOC2 MC or EC Do to step	48 31 hich were ta	ken out of service in	

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to service

Confirm the system prompt by typing	
>YES	
and pressing the Enter key.	
Go to step 34.	
Determine if there are additional links service.	on the NT6X50 to be taken out of
lf	Do
there is another link to be taken out of service with a CAP of S	step 25
there is another link to be taken out of service with a CAP of MS and the associated IDT message channel has not been taken out of service	step 15
all links have been taken out of service	step 35
there is another link to be taken out of service with a CAP of MS and the associated IDT message channel has been taken out of service	step 25

At the equipment frame

35



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

Ensure the switches on the replacement card are set to the same settings as those on the card you have just removed.

36

Refer to the following table for information on release numbers related to cable length and switch settings.

Switch settings for NT6X50 cards

Card and length of cables	Close these switch contacts and leave all others open
NT6X50AB, release number 39 or lower	
Length of cables	
0 m to 91 m (0 ft to 299 ft)	SW1
91 m to 137 m (299 ft to 449 ft)	SW2 SW5 SW7
137 m to 200 m (449 ft to 655 ft)	SW3 SW6 SW8
NT6X50AB, release numbers 40 to 59	
Length of cables	
0 m to 91 m (0 ft to 299 ft)	SW4
91 m to 137 m (299 ft to 449 ft)	SW3 SW6 SW8
137 m to 200 m (449 ft to 655 ft)	SW1 SW5 SW7
NT6X50AB, release numbers 60 or higher	
Length of cables	
0 m to 41 m (0 ft to 133 ft)	SW1
41 m to 81 m (133 ft to 266 ft)	S2 S3
81 m to 122 m (266 ft to 399 ft)	S2
122 m to 163 m (339 ft to 533 ft)	S3
163 m to 200 m (533 ft to 655 ft)	None, all contacts are to be open

At the MAP terminal

37 Post the SMA identified in step 5 by typing >POST SMA sma_no and pressing the Enter key. where

sma no is the number of the SMA being posted Example of a MAP response: SMA SysB ManB Offl CBsy ISTb InSv ΡМ 3 0 1 0 2 13 0 0 0 0 1 7 SMA SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Inact ISTb Unit1: 38 Return-to-service one of the two busied links by typing >RTS LINK link_no and pressing the Enter key. where link_no is the number of the link connected to the NT6X50 card If RTS Do step 39 passed failed step 48 39 Determine if the link that was returned to service is a messaging link. If the link has a CAP of Do MS, as identified in step 12 step 41 S, as identified in step 12 step 40 40 Determine if additional links are to be returned to service lf Do an additional link must be restep 38 turned to service no more links are to be returned step 46 to service 41 Post the IDT associated with the DS-1 link that has been returned to service by typing >POST IDT idt_no and pressing the Enter key. where

idt_no

is the number of the IDT being posted

Example of a MAP response:

IDT		SysB	ManB	Offl	CBsy	ISTb	InSv
	PM	3	0	1	0	2	13
	IDT	0	0	0	0	1	7

IDT 1 SysB Links_00S:0

42 Display information about the state of the channels between the IDT and the RDT by typing

>PPS QUERY

and pressing the Enter key

Example of a MAP response:

TMC1: SMA 7 7 24; OOS;Standby;Enable EOC1: SMA 7 7 12;InSv;Active ;Enable TMC2: SMA 7 8 24; OOS;Standby;Enable EOC2: SMA 7 8 12; OOS;Standby;Enable

43 Return to service the message channels which were taken out of service in step 21 by typing

>RTS path

where

45

path

is TMC1, TMC2, EOC1, or EOC2

44 Determine if there are additional TMC or EOC message channels to be returned to service.

If there are	Do
more channels to be returned to service	step 43
no more channels to be returned to service	step 45
Determine if there are additional links	on the NT6X50 to be returned service.
If	Do

NT6X50 in an SMA-MVI-20 (end)

lf	Do
all links have been returned to service	step 46

At the equipment frame

- **46** Remove the sign from the active SMA unit.
- 47 Go to the common returning a card procedure in this document.

Go to step 49.

- **48** For further assistance, contact the personnel responsible for the next level of support.
- **49** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X51 in an IOPAC ILCM

Application

Use this procedure to replace the following card in an International line concentrating module (ILCM).

PEC	Suffixes	Name
NT6X51	AC	Extended LCM processor

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X51 in an IOPAC ILCM (continued)

Summary of card replacement procedure for NT6X51 card in an ILCM


Replacing an NT6X51 in an ILCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your Current Location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

2 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 3.

At the MAP terminal

3 Access the peripheral module (PM) level of the MAP display and post the ILCM that contains the faulty NT6X51 card by typing

>MAPCI;MTC;PM;POST ILCM site frame lcm

and pressing the Enter key.

where

site is the site name of the IOPAC

frame

is the frame number of the IOPAC cabinet

lcm

is the number of the ILCM

4 Determine the state of the PM unit associated with the card you are replacing.

If the state of the PM unit is	Do
SysB, CBsy, ISTb, InSv	step 5
ManB	step 6
Offl	step 30

5 Busy the ILCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm unit

is the ILCM unit to be busied (0 or 1)

At the ILCM

6



DANGER

Static electricity damage

Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against damage caused by static electricity.

Go to the common replacing a card procedure in this document to replace the NT6X51 card. When the card is replaced, return to this step.

7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.

At the MAP terminal

8 Load the ILCM unit by typing

>LOADPM UNIT lcm_unit CC and pressing the Enter key. where

lf		
11	Do	
message loadfile not found in directory is re- ceived	step 9	
load passes	step 26	
load fails	step 29	
Determine the type of device on which	n the PM load files are located	
If load files located on	Do	
tape	step 10	
IOC disk	step 16	
SLM disk	step 21	
Locate the tape that contains the PM	load files.	
Mount the tape on a magnetic tape dr	ive.	
Download the tape by typing		
>MOUNT tape_no		
and pressing the Enter key.		
where		
tape_no is the number of the tape conta	ining the PM load files	
List the contents of the tape in your user directory by typing		
>LIST T tape_no		
and pressing the Enter key.		
where		
tape_no is the number of the tape conta	ining the PM load files	
Demount the tape drive by typing		
>DEMOUNT T tape_no		
and pressing the Enter key.		
where		
tape_no is the number of the tape drive	containing the PM load files	
Go to step 25.		
	found in directory is re- ceived load passes load fails Determine the type of device on which If load files located on tape IOC disk SLM disk Locate the tape that contains the PM Mount the tape on a magnetic tape dr Download the tape by typing >MOUNT tape_no and pressing the Enter key. where tape_no is the number of the tape conta List the contents of the tape in your us >LIST T tape_no and pressing the Enter key. where tape_no is the number of the tape conta Demount the tape drive by typing >DEMOUNT T tape_no and pressing the Enter key. where tape_no is the number of the tape conta Demount the tape drive by typing >DEMOUNT T tape_no and pressing the Enter key. where tape_no is the number of the tape drive So to step 25.	

17 Access the disk utility level of the MAP terminal by typing

>DSKUT

and pressing the Enter key.

18 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name

is the name of the volume that contains the PM load files obtained in step 16.

19 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **20** Go to step 25.
- **21** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 22 Access the disk utility level of the MAP terminal by typing

>DISKUT

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LV CM;LF file_name

and pressing the Enter key.

where

file_name

is the name of the SLM disk volume containing the file to be loaded, obtained in step 21.

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

25 Reload the ILCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

NT6X51 in an IOPAC ILCM (end)

	lf	Do	
	load failed	step 29	
	load passed	step 26	
6	Return the ILCM unit to s	ervice by typing	
	>RTS UNIT lcm_unit		
	and pressing the Enter ke	у.	
	where		
	Icm_unit is the ILCM busied in step 5 (0 or 1)		
	If RTS	Do	
	passed	step 27	
	failed	step 29	
	Send any faulty cards for	repair according to local procedure.	
	Record the following items in office records:		
	date the card was replaced		
	serial number of the card		
	 symptoms that prompted replacement of the card 		
	Go to step 31.		
	Obtain further assistance in replacing this card by contacting the personsible for higher level of support. Consult office personnel to determine why the component is offline. Cor as directed by office personnel.		

NT6X51 in an OPAC LCM

Application

Use this procedure to replace the following card in a line concentrating module (LCM).

PEC	Suffixes	Name
NT6X51	AB, AC	Extended LCM processor

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X51 card in an LCM



Replacing an NT6X51 in an LCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your Current Location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

2 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 3.

At the MAP terminal

3 Access the peripheral module (PM) level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the OPAC

frame

is the frame number of the OPAC (0 to 99)

lcm

is the number of the LCM

4 Determine the state of the PM unit associated with the card you are replacing.

If the state of the PM unit is	Do
SysB, CBsy, ISTb, InSv	step 5
ManB	step 6
Offl	step 30

5 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm unit

is the LCM unit to be busied (0 or 1)

At the LCM

6



DANGER

Static electricity damage

Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against damage caused by static electricity.

Go to the common replacing a card procedure in this document to replace the NT6X51 card. When the card is replaced, return to this step.

7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.

At the MAP terminal

8 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC and pressing the Enter key. where

	Icm_unit is the LCM unit to be loaded (0	or 1)
	lf	Do
	message loadfile not found in directory is re- ceived	step 9
	load passed	step 26
	load failed	step 29
	Determine the type of device on which	the PM load files are located
	If load files located on	Do
	tape	step 10
	IOC disk	step 16
	SLM disk	step 21
)	Locate the tape that contains the PM	oad files.
the	IOE frame	
	Mount the tape on a magnetic tape dr	ve.
the	MAP display	
	Download the tape by typing	
	>MOUNT tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape conta	ining the PM load files
	List the contents of the tape in your us	er directory by typing
	>LIST T tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape conta	ining the PM load files
	Demount the tape drive by typing	
	>DEMOUNT T tape_no	
	and pressing the Enter key.	

tape_no

is the number of the tape drive containing the PM load files

- **15** Go to step 25.
- **16** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 17 Access the disk utility level of the MAP terminal by typing

>DSKUT

and pressing the Enter key.

18 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name is the name of the volume that contains the PM load files obtained in step 16.

19 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **20** Go to step 25.
- **21** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 22 Access the disk utility level of the MAP terminal by typing

>DISKUT

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LV CM;LF file_name

and pressing the Enter key.

where

file_name

is the name of the SLM disk volume containing the file to be loaded, obtained in step 21.

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

25 Reload the LCM unit by typing >LOADPM UNIT lcm_unit CC

and pressing the Enter key.

NT6X51 in an OPAC LCM (end)

	where			
	Icm_unit is the LCM unit to be loaded (0 or 1)			
lf Do				
	load failed	step 29		
	load passed	step 26		
	Return the LCM unit to service by typi	ng		
	>RTS UNIT lcm_unit			
	and pressing the Enter key.			
where				
	lcm_unit is the LCM busied in step 5 (0 or 1)			
	If RTS	Do		
	passed	step 27		
	failed	step 29		
	Send any faulty cards for repair accord	ling to local procedure.		
	Record the following items in office records:			
	 date the card was replaced 			
	 serial number of the card 			
	symptoms that prompted replacement of the card			
	Go to step 31.			
	Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.			
	Consult office personnel to determine was directed by office personnel.	why the component is offline. Continue		
	You have successfully completed this procedure.			

NT6X51 in an OPM

Application

Use this procedure to replace the following card in an OPM.

PEC	Suffixes	Name
NT6X51	AA, AB, AC	LCM Processor Card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for NT6X51 card in an OPM



NT6X51 in an OPM (continued)

Replacing an NT6X51 card in an OPM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your Current Location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

2 If you were directed to this procedure from another maintenance procedure, go to step 6; otherwise, continue with step 3.

At the MAP display

3 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the OPM (alphanumeric)

frame

is the frame number of the OPM (0-511)

lcm

is the number of the LCM

4	Determine the state of the PM unit associated with the card	you are re	placing
---	---	------------	---------

If the state of the PM unit is	Do
SysB, CBsy, ISTb, InSv	step 5
ManB	step 6
Offl	step 31

5 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm unit

is the LCM unit to be busied (0 or 1)

6



DANGER

Static electricity damage

Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against damage caused by static electricity.

Go to the common replacing a card procedure in this document to replace the NT6X51 card. When the card is replaced, return to this step.

7 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 8.

At the MAP terminal

8 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

Icm_unit is the LCM unit to be loaded (0 or 1)

IfDomessage "loadfile not found in
directory" is receivedstep 9

NT6X51 in an OPM (continued)

	lf	Do		
	load passed	step 27		
	load failed	step 30		
9	Determine the type of device on w	hich the PM load files are located.		
	If load files are located on	Do		
	tape	step 10		
	IOC disk	step 16		
	SLM disk	step 21		
10	Locate the tape that contains the F	PM load files.		
At the	OPM frame			
11	Mount the tape on a magnetic tape	drive.		
At the	MAP display			
12	Download the tape by typing			
	>MOUNT tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape dr	ive containing the PM load files		
13	List the contents of the tape in your user directory by typing			
	>LIST T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape dr	ive containing the PM load files.		
14	Demount the tape drive by typing			
	>DEMOUNT T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape dr	ive containing the PM load files		
15	Go to step 26.	-		

16	From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
17	Access the disk utility level of the MAP by typing
	>DSKUT
	and pressing the Enter key.
18	List the IOC file names into your user directory by typing
	>LISTVOL volume_name ALL
	and pressing the Enter key.
	where
	volume_name is the name of the volume that contains the PM load files, obtained in step 16.
19	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
20	Go to step 26.
21	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
22	Access the disk utility level of the MAP by typing
	>DISKUT
	and pressing the Enter key.
23	List the SLM disk volume names by typing
	>LV CM
	and pressing the Enter key.
24	List the SLM file names into your user directory by typing
	>LF volume_name
	and pressing the Enter key.
	where
	volume_name is the name of the volume that contains the PM load files, obtained in step 21.
25	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
26	Load the LCM unit by typing
	>LOADPM UNIT lcm_unit CC

NT6X51 in an OPM (end)

and pressing the Enter k	ey.						
where							
Icm_unit is the LCM unit to be loaded (0 or 1)							
lf	Do						
load failed	step 30						
load passed	step 27						
Return the LCM unit to s	service by typing						
>RTS UNIT lcm_unit							
and pressing the Enter k	ey.						
where							
Icm_unit is the LCM busied	Icm_unit is the LCM busied in step 5 (0 or 1)						
If RTS	Do						
passed	step 28						
failed	step 30						
Send any faulty cards for	repair according to local procedure.						
Record the following item	ns in office records:						
 date the card was replaced 							
serial number of the card							
• symptoms that prom	symptoms that prompted replacement of the card.						
Go to step 32.							
Obtain further assistance responsible for higher level	in replacing this card by contacting the personnel vel of support.						
Consult office personnel tas directed by office personnel tasks and the second	o determine why the component is offline. Continue connel.						
You have successfully co	mpleted this procedure.						

NT6X51 in an RLCM

Application

Use this procedure to replace the following card in an RLCM.

PEC	Suffixes	Name
NT6X51	AA, AB, AC	LCM Processor Card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X51 in an RLCM (continued)





NT6X51 in an RLCM (continued)

Replacing an NT6X51 card in an RLCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your current location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

2 If you were directed to this procedure from another maintenance procedure, go to step 6; otherwise, continue with step 3.

At the MAP display

3 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the RLCM (alphanumeric)

frame

is the frame number of the RLCE (0-511)

lcm

is the number of the LCM

NT6X51 in an RLCM (continued)

4 Determine the state of the PM unit associated with the card you are replacing.

If the state of the PM unit is	Do
SysB, CBsy, ISTb, InSv	step 5
ManB	step 6
Offl	step 30

5 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm unit

is the LCM unit to be busied (0 or 1)

At the RLCE frame

6



DANGER

Static electricity damage

Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against damage caused by static electricity.

Replace the NT6X51 card using the common replacing a card procedure in this document. When the card has been replaced, return to this point.

- 7 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 8.
- 8 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

Icm_unit is the LCM unit to be loaded (0 or 1)

lf	Do
message "loadfile not found in directory" is received	step 9

NT6X51 in an RLCM (continued)

	lf	Do
	load passed	step 26
	load failed	step 29
9	Determine the type of device on wh	nich the PM load files are located.
	If load files are located on	Do
	tape	step 10
	IOC disk	step 16
	SLM disk	step 21
10	Locate the tape that contains the P	M load files.
At the	IOE frame	
11	Mount the tape on a magnetic tape	drive.
At the	MAP display	
12	Download the tape by typing	
	>MOUNT tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape dri	ve containing the PM load files
13	List the contents of the tape in your	user directory by typing
	>LIST T tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape dri	ve containing the PM load files.
14	Demount the tape drive by typing	
	>DEMOUNT T tape_no	
	and pressing the Enter key.	
	where	
	tape_no is the number of the tape dri	ve containing the PM load files
15	Go to step 25.	

NT6X51 in an RLCM (continued)

16	From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
17	Access the disk utility level of the MAP by typing
	>DSKUT
	and pressing the Enter key.
18	List the IOC file names into your user directory by typing
	>LISTVOL volume_name ALL
	and pressing the Enter key.
	where
	<pre>volume_name is the name of the volume that contains the PM load files, obtained in step 16.</pre>
19	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
20	Go to step 25.
21	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
22	Access the disk utility level of the MAP by typing
	>DISKUT
	and pressing the Enter key.
23	List the SLM file names into your user directory by typing
	>LV CM;LF volume_name
	and pressing the Enter key.
	where
	volume_name is the name of the volume that contains the PM load files, obtained in step 21.
24	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
25	Load the LCM unit by typing
	>LOADPM UNIT lcm_unit CC
	and pressing the Enter key.
	where

NT6X51 in an RLCM (end)

	Icm_unit is the LCM unit to be loaded (0 or 1)									
	lf	Do								
	load failed	step 29								
	load passed	step 26								
26	Return the LCM unit to	service by typing								
	>RTS UNIT lcm_uni	t								
	and pressing the Enter	key.								
	where	where								
	Icm_unit is the LCM busie	Icm_unit is the LCM busied in step 5 (0 or 1)								
	If RTS	Do								
	passed	step 27								
	failed	step 29								
27	Send any faulty cards for	or repair according to local procedure.								
28	Record the following ite	ms in office records:								
	 date the card was r 	eplaced								
	• serial number of the	serial number of the card								
	 symptoms that prompted replacement of the card. 									
	Go to step 31.									
29	Obtain further assistant responsible for higher le	ce in replacing this card by contacting the personnel evel of support.								
30	Consult office personne as directed by office pe	I to determine why the component is offline. Continue rsonnel.								

31 You have successfully completed this procedure.

NT6X51 in an RLCM-EDC

Application

Use this procedure to replace the following card in the shelves or frames identi ed in the follo wing table.

PEC	Suffixes	Card name	Shelf/frame name
NT6X51	BA	LCM Processor Card	LCM/RLCC

If you cannot identify the PEC, suf x, and shelf or frame for the card you want to replace, refer to the index. The index provides a list of cards, shelves, and frames documented in this maintenance manual.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

This card replacement procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

NT6X51 in an RLCM-EDC (continued)

Summary of replacing an NT6X51 card in LCM



NT6X51 in an RLCM-EDC (continued)

Replacing an NT6X51 card in an LCM

At your current location

- 1 Obtain a replacement card. Make sure that the replacement card has the same product equipment code (PEC) and suffix as the card to remove.
- 2 If another maintenance procedure directed you to this procedure, proceed to step 5. If this event did not occur, proceed to step 3.

At the MAP display

3 To access the peripheral module (PM) level and post the RLCM-EDC, type

>MAPCI;MTC;PM;POST LCM site cabinet lcm

and press the Enter key.

where

site

is the site name of the RLCM-EDC (alphanumeric)

cabinet

is the number of the RLCC-EDC cabinet

```
lcm
```

is the number of the LCM

4 To busy the LCM unit that contains the defective NT6X51 card, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no

is the LCM unit (0 or 1) associated with the defective NT6X51 card

At the RLCC cabinet

- 5 Use the common replacing a card procedure in this document to replace the NT6X51 card. When the card replacement is complete, return to this point.
- 6 If another maintenance procedure directed you to this procedure, return now to the procedure that directed you here. Continue as directed. If this event did not occur, proceed to step 7.
- 7 To query the out-of-service (OOS) LCM unit for valid loadfiles, type

>QUERYPM OOS

and press the Enter key.

Example of a MAP response

NT6X51 in an RLCM-EDC (continued)

8

9

PM Type: LCM Int. No.: 9 Status index: 7 Node_No: 40 LCM REM1 02 0 Memory Size - Unit 0: 4M , Unit 1: 4M ESA equipped: No, Intraswitching is Off Loadname: LCMINV - REDC07AA Unit0 Loads: Act- REDC07AB Stby- REDC07AA Unit1 Loads: Act- REDC07AB *FLT* Stby- REDC07AA *FLT* REX is ON; INCOMPLETE on SAT. 1995/10/28 at 01:35:19 Node Status: {OK, FALSE} Unit 0 Status: {OK, FALSE} Unit 1 Status: {MAN_BUSY, FALSE} Site Flr RPos Bay_id Shf Description Slot EqPEC REM1 01 K03 RLCM 02 04 LCM 02 0 6X04AA Services : NEUTRAL

If loadfile names	Do
are valid	step 8
are invalid or corrupted	step 9
To return the LCM unit to service, ty	ре
>RTS UNIT lcm_unit	
and press the Enter key.	
where	
lcm_unit is the LCM unit (0 or 1) busie	d in step 4
If RTS	Do
passed	step 11
failed	step 9
To load the LCM unit, type	
>LOADPM UNIT unit_no CC	
and press the Enter key.	
where	
unit_no is the LCM unit (0 or 1) to loa	d
If the load	Do
passed	step 10
failed	step 13

NT6X51 in an RLCM-EDC (end)

 10
 To return the LCM unit to service and switch load to the standby bank, type

 >RTS UNIT lcm_unit SWLD

 and press the Enter key.

 where

 lcm_unit

 is the LCM unit (0 or 1) busied in step 4

 If RTS
 Do

 passed
 step 11

 failed
 step 13

- 11 Send any defective cards for repair according to local procedure.
- **12** Record the items that follow in office records:
 - date that card replacement occurred
 - serial number of the card
 - indications that prompted replacement of the card Proceed to step 14.
- 13 For additional help in this card replacement, contact the next level of support.
- 14 This procedure is complete.

NT6X51 in an RSC-S (DS-1) Model A LCM

Application

Use this procedure to replace an NT6X51 card in an RSC-S LCM.

PEC	Suffixes	Name
NT6X51	AB, AC	Extended LCM Processor

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X51 card in RSC-S LCM

Replacing an NT6X51 card in an RSC-S LCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your current location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain an NT6X51 replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

2 Set the MAP to the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM lcm_site_name lcm_frame_no lcm_no

and pressing the Enter key.

where

- Icm_site_name is the name of the site at which the LCM is located
- Icm frame no

is the number of the frame in which the LCM is located

lcm no

is the number of the LCM with the faulty card

3 Busy the LCM by typing

>BSY UNIT lcm_unit_no

and pressing the Enter key.

where

Icm_unit_no is the number of the LCM unit

Example of a MAP response:

LCM	Ren	nL	00	0 1	ST	С	Lir	ıks_	_008	3:	CSide	1	PSide 0		
Unit-0	:]	٤nS	7 N	1tce	e Ta	ake(Dvei	2	/RC	3:	0				
Unit-1	: 1	lanE	3 N	1tce	5				/RC	3:	0				
						11	11	11	11	11		I	RG:Pref:	0	InSv
Drwr:	01	23	45	67	89	01	23	45	67	89			Stby:	1	InSv

At the LCE frame

4

5



DANGER

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the LCM. This protects the equipment against damage caused by static electricity.

Put on a wriststrap.

- Remove the card to be replaced.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 6 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.


7



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers



At the	MAP terminal								
8	Load the inactive LCM unit by typing								
	>loadpm unit lcm_unit_no CC								
	and pressing the Enter key.								
	where								
	<pre>lcm_unit_no is the number of the LCM unit b</pre>	usied in step 3							
	If load	Do							
	passed	step 9							
	failed	step 14							
9	Use the following information to determ	nine where to proceed.							
	If you entered this procedure from	Do							
	alarm clearing procedures	step 13							
	other	step 10							
10	Return the LCM unit to service by typi	ng							
	>RTS UNIT lcm_unit_no								
	and pressing the Enter key.								
	where								
	<pre>lcm_unit_no is the number of the LCM unit b</pre>	usied in step 3							
	If RTS	Do							
	passed	step 11							
	failed	step 14							
11	Send any faulty cards for repair accord	ling to local procedure.							
12	Record the date the card was replaced symptoms that prompted replacement	, the serial number of the card, and the of the card. Go to step 15.							
13	Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in <i>Card Replacement Procedures</i> .								

14 Obtain further assistance in replacing this card by contacting operating company maintenance personnel.

NT6X51 in an RSC-S (DS-1) Model A LCM (end)

15 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X51 in an RSC-S (DS-1) Model B LCME

Application

Use this procedure to replace an NT6X51 card in an RSC-S LCM.

PEC	Suffixes	Name
NT6X51	AB, AC	Extended LCM Processor

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X51 card in RSC-S LCM

Replacing an NT6X51 card in an RSC-S LCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your Current Location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain an NT6X51 replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

2 Access the PM level of the MAP display and post the LCM with the faulty NT6X51 card by typing

>MAPCI;MTC;PM;POST LCM lcm_site_name lcm_frame_no lcm_no

and pressing the Enter key.

Example of a MAP response:

where

lcm_site_name

is the name of the site at which the LCM is located

lcm_frame_no

is the number of the frame in which the LCM is located

lcm_no

is the number of the LCM with the faulty card

3 Busy the LCM unit associated with the faulty card by typing

>BSY UNIT lcm_unit_no

and pressing the Enter key.

where

lcm_unit_no

is the number of the LCM unit associated with the faulty NT6X51 card

Example of a MAP response:

LCM	Rer	nL	00	0]	IST	С	Lir	nks_	_008	3:	CSide	1	PSide	0	
Unit-0	: :	InSv	7 I	Atce	e Ta	ake	Dvei	r	/RC	3:	0				
Unit-1	: 1	ManE	3 1	Atce	3				/RC	3:	0				
						11	11	11	11	11		I	RG:Pref	:0	InSv
Drwr:	01	23	45	67	89	01	23	45	67	89			Stby	1:1	InSv
			••		••					• •					

At the LCE frame

4

5



DANGER

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the modular supervisory panel (MSP) of the LCM. This protects the equipment against damage caused by static electricity.

Put on a wriststrap.

- Remove the NT6X51 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card just removed.
- 6 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



7



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers



8 Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 13
other	step 9

At the MAP terminal

- 9 Load the inactive LCM unit by typing
 - >loadpm unit lcm_unit_no CC

and pressing the Enter key.

where

lcm_unit_no

is the number of the LCM unit busied in step 3

If load	Do
passed	step10
failed	step 14

10 Return the LCM unit to service by typing

>RTS UNIT lcm_unit_no

and pressing the Enter key.

where

Icm_unit_no
 is the number of the LCM unit busied in step 3

If RTS	Do				
passed	step 11				
failed	step 14				
Send any faulty cards for repair according to local procedure.					

- 12 Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 15.
- **13** Return to the Alarm Clearing Procedures that directed you to this procedure and continue as directed.
- 14 Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 15 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

11

NT6X51 in an RSC-S (PCM-30) Model A LCM

Application

Use this procedure to replace an NT6X51 card in an RSC-S LCM.

PEC	Suffixes	Name
NT6X51	AB, AC	Extended LCM Processor

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X51 card in RSC-S LCM



Replacing an NT6X51 card in an RSC-S LCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your Current location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain an NT6X51 replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

2 Set the MAP to the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM lcm_site_name lcm_frame_no lcm_no

and pressing the Enter key.

where

- Icm_site_name is the name of the site at which the LCM is located
- Icm frame no
- is the number of the frame in which the LCM is located
- lcm no

is the number of the LCM with the faulty card

3 Busy the LCM by typing

>BSY UNIT lcm_unit_no

and pressing the Enter key.

where

lcm_unit_no
 is the number of the LCM unit

Example of a MAP response:

LCM	Rer	nL	00	0 1	[ST]	С	Liı	nks_	_00	3:	CSide	1	PSide 0	
Unit O	: :	InSv	7 I	Atce	e Ta	ake(Dvei	r	/R	3:	0			
Unit 1	: 1	ManI	3 1	Atce	3				/RO	3:	0			
						11	11	11	11	11]	RG:Pref:() InSv
Drwr:	01	23	45	67	89	01	23	45	67	89			Stby:1	. InSv
	• •	• •	•••				• •	• •	• •					

At the LCE frame

4



DANGER

Card damage—transport Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the LCM. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

- Remove the NT6X51 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.

5



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 6 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.





8	Use the following information to determine where to proceed.								
	If you entered this procedure from	Do							
	alarm clearing procedures	step 13							
	other	step 9							
At the	e MAP terminal								
9	Load the inactive LCM unit by typing]							
	>loadpm unit lcm_unit_no C	2							
	and pressing the Enter key.								
	where								
	Icm_unit_no is the number of the LCM uni	t busied in step 3							
	If load	Do							
	passed	step 10							
	failed	step 14							
10	Return the LCM unit to service by ty	rping							
	>RTS UNIT lcm_unit_no								
	and pressing the Enter key.								
	where								
	Icm_unit_no is the number of the LCM uni	t busied in step 3							
	If RTS	Do							
	passed	step 11							
	failed	step 14							
11	Send any faulty cards for repair acco	ording to local procedure.							
12	Record the date the card was replace symptoms that prompted replacement	ed, the serial number of the card, and the ent of the card. Go to step 15.							
13	Return to the procedure that directe where a faulty card list was produce and go to the appropriate card repla <i>Replacement Procedures</i> .	d you to this procedure. At the point d, identify the next faulty card on the list cement procedure for that card in <i>Card</i>							
14	Obtain further assistance in replacir company maintenance personnel.	Detain further assistance in replacing this card by contacting operating ompany maintenance personnel.							

15 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X51 in an RSC-S (PCM-30) Model B LCM

Application

Use this procedure to replace an NT6X51 card in an RSC-S LCM.

PEC	Suffixes	Name
NT6X51	AB, AC	Extended LCM Processor

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X51 card in RSC-S LCM



Replacing an NT6X51 card in an RSC-S LCM

ATTENTION

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

At your Current Location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Obtain an NT6X51 replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

2 Set the MAP to the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM lcm_site_name lcm_frame_no lcm_no

and pressing the Enter key.

where

- Icm_site_name is the name of the site at which the LCM is located
- Icm frame no
- is the number of the frame in which the LCM is located

lcm_no

is the number of the LCM with the faulty card

3 Busy the LCM by typing

>BSY UNIT lcm_unit_no

and pressing the Enter key.

where

Icm_unit_no is the number of the LCM unit

Example of a MAP response:

LCM	Ret	nL	00	0 1	[ST]	С	Liı	nks_	_008	3:	CSide	1	PSide	0	
Unit O	:	InSv	v I	Atce	e Ta	ake(Dvei	r	/RC	3:	0				
Unit 1	: 1	ManI	31	Atce	2				/RC	3:	0				
						11	11	11	11	11		I	RG:Pref	:0	InSv
Drwr:	01	23	45	67	89	01	23	45	67	89			Stby	:1	InSv

At the LCE frame

4



DANGER

Card damage—transport Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- Remove the NT6X51 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.

5



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 6 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.





8	Use the following information to determine where to proceed.							
	If you entered this procedure from	Do						
	alarm clearing procedures	step 13						
	other	step 9						
At the	MAP terminal							
9	Load the inactive LCM unit by typing]						
	>loadpm unit lcm_unit_no CO	2						
	and pressing the Enter key.							
	where							
	lcm_unit_no is the number of the LCM uni	t busied in step 3						
	If load	Do						
	passed	step 10						
	failed	step 14						
10	Return the LCM unit to service by ty	rping						
	>RTS UNIT lcm_unit_no							
	and pressing the Enter key.							
	where							
	Icm_unit_no is the number of the LCM uni	t busied in step 3						
	If RTS	Do						
	passed	step 11						
	failed	step 14						
11	Send any faulty cards for repair acco	ording to local procedure.						
12	Record the date the card was replace symptoms that prompted replacement	ed, the serial number of the card, and the ent of the card. Go to step 15.						
13	Return to the procedure that directe where a faulty card list was produce and go to the appropriate card repla <i>Replacement Procedures</i> .	d you to this procedure. At the point d, identify the next faulty card on the list icement procedure for that card in <i>Card</i>						
14	Dbtain further assistance in replacing this card by contacting operating company maintenance personnel.							

15 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X52 in an IOPAC ILCM

Application

Use this procedure to replace the following card in an International line concentrating module (ILCM).

PEC	Suffixes	Name
NT6X52	AA, AB	Digroup control card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X52 card in an ILCM shelf



Replacing an NT6X52 in an ILCM

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level and post the ILCM by typing

MAPCI;MTC;PM;POST ILCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the IOPAC

frame

is the frame number of the IOPAC cabinet

lcm

is the number of the ILCM

5 Busy the ILCM unit containing the faulty card by typing

BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the ILCM unit to be busied (0 or 1)

At the LCM

- 6 Go to the common replacing a card procedure in this document to replace the NT6X52 card. When the card is replaced, return to this step.
- 7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.
- 8 Load the ILCM unit by typing

LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

	Icm_unit is the ILCM unit to be loaded (0 or 1)			
	lf	Do		
	message loadfile not found in directory is re- ceived	step 9		
	load passes	step 26		
	load fails	step 29		
9	Determine the type of device on which the PM load files are located.			
	If load files located on	Do		
	tape	step 10		
	IOC disk	step 16		
	SLM disk	step 21		
10 11 12 13	Locate the tape that contains the PM load files. Mount the tape on a magnetic tape drive. Download the tape by typing >MOUNT tape_no and pressing the Enter key. where tape_no is the number of the tape containing the PM load files List the contents of the tape in your user directory by typing >LIST T tape_no and pressing the Enter key.			
14	tape_no is the number of the tape conta Demount the tape drive by typing >DEMOUNT T tape_no and pressing the Enter key. where tape_no is the number of the tape drive	ining the PM load files containing the PM load files		
15	Go to step 25.			

16	From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.		
17	Access the disk utility level of the MAP terminal by typing		
	>DSKUT		
	and pressing the Enter key.		
18	List the IOC file names into your user directory by typing		
	>LISTVOL volume_name ALL		
	and pressing the Enter key.		
	where		
	<pre>volume_name is the name of the volume that contains the PM load files obtained in step 16.</pre>		
19	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
20	Go to step 25.		
21	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.		
22	Access the disk utility level of the MAP terminal by typing		
	>DISKUT		
	and pressing the Enter key.		
23	List the SLM file names into your user directory by typing		
	>LV CM;LF file_name		
	and pressing the Enter key.		
	where		
	file_name is the name of the SLM disk volume containing the file to be loaded, obtained in step 21.		
24	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
25	Reload the ILCM unit by typing		
	>LOADPM UNIT lcm_unit CC		
	and pressing the Enter key.		
	where		

NT6X52 in an IOPAC ILCM (end)

lf	Do		
load failed	step 29		
load passed	step 26		
Return the ILCM unit to service by typing			
>RTS UNIT lcm_unit			
and pressing the Enter key.			
where			
Icm_unit is the ILCM busied	in step 5 (0 or 1)		
If RTS	Do		
passed	step 27		
failed	step 29		
Send any faulty cards for repair according to local procedure.			
Record the following items in office records:			
Record the following items			
 date the card was repl 	aced		
 Record the following items date the card was rep serial number of the card was rep 	aced ard		

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have successfully completed this procedure.

NT6X52 in an OPAC LCM

Application

Use this procedure to replace the following card in a line concentrating module (LCM).

PEC	Suffixes	Name
NT6X52	AA, AB	Digroup control card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X52 card in an LCM shelf



Replacing an NT6X52 in an LCM

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level and post the LCM by typing

MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the OPAC

frame

is the frame number of the OPAC (0 to 99)

lcm

is the number of the LCM

5 Busy the LCM unit containing the faulty card by typing

BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the LCM unit to be busied (0 or 1)

At the LCM

- 6 Replace the NT6X52 card using the common replacing a card procedure in this document.
- 7 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 8.
- 8 Load the LCM unit by typing

LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

	lcm_unit is the LCM unit to be loaded (0 or 1)			
	lf	Do		
	message loadfile not found in directory is re- ceived	step 9		
	load passes	step 26		
	load fails	step 29		
9	Determine the type of device on which the PM load files are located.			
	If load files located on	Do		
	tape	step 10		
	IOC disk	step 16		
	SLM disk	step 21		
10	Locate the tape that contains the PM I	oad files.		
11	Mount the tape on a magnetic tape dri	ve.		
12	Download the tape by typing			
	>MOUNT tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape conta	ining the PM load files		
13	List the contents of the tape in your us	er directory by typing		
	>LIST T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape conta	ining the PM load files		
14	Demount the tape drive by typing			
	>DEMOUNT T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape drive	containing the PM load files		
15	Go to step 25.			
16	From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.			
----	--			
17	Access the disk utility level of the MAP terminal by typing			
	>DSKUT			
	and pressing the Enter key.			
18	List the IOC file names into your user directory by typing			
	>LISTVOL volume_name ALL			
	and pressing the Enter key.			
	where			
	volume_name is the name of the volume that contains the PM load files obtained in step 16.			
19	Leave the disk utility by typing			
	>QUIT			
	and pressing the Enter key.			
20	Go to step 25.			
21	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.			
22	Access the disk utility level of the MAP terminal by typing			
	>DISKUT			
	and pressing the Enter key.			
23	List the SLM file names into your user directory by typing			
	>LV CM;LF file_name			
	and pressing the Enter key.			
	where			
	file_name is the name of the SLM disk volume containing the file to be loaded, obtained in step 21.			
24	Leave the disk utility by typing			
	>QUIT			
	and pressing the Enter key.			
25	Reload the LCM unit by typing			
	>LOADPM UNIT lcm_unit CC			
	and pressing the Enter key.			
	where			

NT6X52 in an OPAC LCM (end)

	Icm_unit is the LCM unit to be loaded (0 or 1)						
	lf	Do					
	load failed	step 29					
	load passed	step 26					
26	Return the LCM unit to service by	/ typing					
	>RTS UNIT lcm_unit						
	and pressing the Enter key.	and pressing the Enter key.					
	where	where					
	Icm_unit is the LCM busied in step 5	Icm_unit is the LCM busied in step 5 (0 or 1)					
	If RTS	Do					
	passed	step 27					
	failed	step 29					
27	Send any faulty cards for repair ac	ccording to local procedure.					
28	Record the following items in offic	e records:					
	date the card was replaced						
	serial number of the card						
	 symptoms that prompted replacement of the card 						
	Go to step 30.						
29	Obtain further assistance in replace responsible for higher level of sup	cing this card by contacting the personnel port.					

30 You have successfully completed this procedure.

NT6X52 in an OPM

Application

Use this procedure to replace the following card in an OPM.

PEC	Suffixes	Name
NT6X52	AA, AB	Digital Control Card (DCC)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedures for an NT6X52 card in an OPM



Replacing an NT6X52 card in an OPM

At your Current Location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 5; otherwise, continue with step 3.

At the MAP display

3 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site is the site name of the OPM

frame

is the frame number of the OPM cabinet (0 to 511)

lcm

is the number of the LCM

4 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the LCM unit to be busied (0 or 1)

At the OPM cabinet

- 5 Replace the NT6X52 card using the common replacing a card procedure in this document.
- 6 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 7.
- 7 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

	Icm_unit is the LCM unit to be loaded (0	or 1)				
	lf	Do				
	message "loadfile not found in directory" is received	step 8				
	load passed	step 26				
	load failed	step 29				
8	Determine the type of device on which	the PM load files are located.				
	If load files are located on	Do				
	tape	step 9				
	IOC disk	step 15				
	SLM disk	step 20				
9	Locate the tape that contains the PM I	oad files.				
10	Mount the tape on a magnetic tape dri	ve.				
At the	MAP display					
11	Download the tape by typing					
	>MOUNT tape_no					
	and pressing the Enter key.					
	where					
	<pre>tape_no is the number of the tape drive containing the PM load files</pre>					
12	List the contents of the tape in your us	er directory by typing				
	>LIST T tape_no					
	and pressing the Enter key.					
	where					
	tape_no is the number of the tape drive	containing the PM load files				
13	Demount the tape by typing	-				
	>DEMOUNT T tape_no					
	and pressing the Enter key.					
	where					
	tape_no is the number of the tape drive	containing the PM load files				

- **14** Go to step 25.
- **15** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 16 Access the disk utility level of the MAP by typing

>DSKUT

and pressing the Enter key.

17 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name
is the name of the volume that contains the PM load files obtained in
step 15

18 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **19** Go to step 25.
- **20** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 21 Access the disk utility level of the MAP by typing

>DISKUT

and pressing the Enter key.

22 List the SLM disk volume names by typing

>LV CM

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LF volume_name

and pressing the Enter key.

where

volume_name

is the name of the volume that contains the PM load files, obtained in step 20

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

NT6X52 in an OPM (end)

Rel	oad the LCM unit by ty	/ping				
>L0	DADPM UNIT lcm_un	it CC				
and	d pressing the Enter ke	y.				
whe	ere					
	Icm_unit is the LCM unit to b	be loaded (0 or 1)				
lf		Do				
lo	ad failed	step 29				
lo	ad passed	step 26				
Re	eturn the LCM unit to se	ervice by typing				
>R1	IS UNIT lcm_unit					
anc	nd pressing the Enter key.					
whe	here					
Icm_unit is the LCM busied in step 4 (0 or 1)						
lf	RTS	Do				
pa	assed	step 27				
fa	iled	step 29				
Ser	nd any faulty cards for	repair according to local procedure.				
Record the following items in office records:						
•	date the card was rep	laced				
•	serial number of the card					
•	symptoms that promp	ted replacement of the card.				
Go	to step 30.					

29 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

30 You have successfully completed this procedure.

NT6X52 in an RLCM

Application

Use this procedure to replace the following card in an RLCM.

PEC	Suffixes	Name
NT6X52	AA, AB	Digital Control Card (DCC)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X52 card in an RLCM



Replacing an NT6X52 card in an RLCM

At your current location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 5; otherwise, continue with step 3.

At the MAP display

3 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site is the site name of the RLCM

frame

is the frame number of the RLCE (0 to 511)

lcm

is the number of the LCM

4 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the LCM unit to be busied (0 or 1)

At the RLCE

- 5 Replace the NT6X52 card using the common replacing a card procedure in this document. When the card is replaced, return to this point.
- 6 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 7.
- 7 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

	Icm_unit is the LCM unit to be loaded (0	or 1)			
	lf	Do			
	message "loadfile not found in directory" is received	step 8			
	load passed	step 26			
	load failed	step 29			
8	Determine the type of device on which	the PM load files are located.			
	If load files are located on	Do			
	tape	step 9			
	IOC disk	step 15			
	SLM disk	step 20			
9	Locate the tape that contains the PM I	oad files.			
10	Mount the tape on a magnetic tape dri	Ve.			
14 4h a	MAD diaplay				
AL IIIE 11	NAP display				
	and pressing the Enter key				
	and pressing the Enter key.				
	tape no				
	is the number of the tape drive	containing the PM load files			
12	List the contents of the tape in your us	er directory by typing			
	>LIST T tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape drive	containing the PM load files			
13	Demount the tape by typing	-			
	>DEMOUNT T tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape drive	containing the PM load files			

- **14** Go to step 25.
- **15** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 16 Access the disk utility level of the MAP by typing

>DSKUT

and pressing the Enter key.

17 List the IOC file names into your user directory by typing

>LISTVOL volume_name ALL

and pressing the Enter key.

where

- volume_name
 is the name of the volume that contains the PM load files obtained in
 step 15
- 18 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **19** Go to step 25.
- **20** From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- 21 Access the disk utility level of the MAP by typing

>DISKUT

and pressing the Enter key.

22 List the SLM disk volume names by typing

>LV CM

and pressing the Enter key.

23 List the SLM file names into your user directory by typing

>LF volume_name

and pressing the Enter key.

where

volume_name

is the name of the volume that contains the PM load files, obtained in step 20

24 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

NT6X52 in an RLCM (end)

Reload the LCM unit by ty	ping					
>LOADPM UNIT lcm_un:	>LOADPM UNIT lcm_unit CC					
and pressing the Enter key	Ι.					
where						
Icm_unit is the LCM unit to b	e loaded (0 or 1)					
lf	Do					
load failed	step 29					
load passed	step 26					
Return the LCM unit to se	rvice by typing					
>RTS UNIT lcm_unit						
and pressing the Enter key	Ι.					
where						
Icm_unit is the LCM busied in step 4 (0 or 1)						
If RTS	Do					
passed	step 27					
failed	step 29					
Send any faulty cards for r	epair according to local procedure.					
Record the following items in office records:						
• date the card was repl	aced					
 serial number of the card 						
• symptoms that prompt	ed replacement of the card.					
Go to step 30.						

29 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

30 You have successfully completed this procedure.

NT6X52 in an RLCM-EDC

Application

Use this procedure to replace the following card in the shelves or frames identi ed in the follo wing table.

PEC	Suffixes	Card name	Shelf/frame name		
NT6X52	AA	Digroup Control Card (DCC)	LCM/RLCC		

If you cannot identify the PEC, suf x, and shelf or frame for the card you want to replace, refer to the index. The index provides a list of cards, shelves, and frames documented in this maintenance manual.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

This card replacement procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

Summary of replacing an NT6X52 card in LCM



Replacing an NT6X52 card in an LCM

At your current location

- 1 Obtain a replacement card. Make sure that the replacement card has the same product equipment code (PEC) and suffix as the card to remove.
- 2 If another maintenance procedure, proceed to step 5. If this event did not occur, proceed to step 3.

At the MAP display

3 To access the peripheral module (PM) level and post the line concentrating module (LCM), type

>MAPCI;MTC;PM;POST LCM site cabinet lcm

and press the Enter key.

where

site

is the site name of the RLCM_EDC (alphanumeric)

cabinet

is the number of the RLCC cabinet

```
lcm
```

is the number of the LCM

4 To busy the LCM unit that contains the defective card, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no

is the LCM unit (0 or 1) to busy

At the RLCC cabinet

- 5 Use the common replacing a card procedure in this document to replace the NT6X52 card.
- 6 If another maintenance procedure directed you to this procedure, return now to the procedure that directed you here. Continue as directed. If this event did not occur, proceed to step 8.
- 7 To query the out-of-service (OOS) LCM unit for valid loadfiles, type

>QUERYPM OOS

and press the Enter key.

Example of a MAP response

8

9

PM Type: LCM Int. No.: 9 Status index: 7 Node_No: 40 LCM REM1 02 0 Memory Size - Unit 0: 4M , Unit 1: 4M ESA equipped: No, Intraswitching is Off Loadname: LCMINV - REDC07AA Unit0 Loads: Act- REDC07AB Stby- REDC07AA Unit1 Loads: Act- REDC07AB *FLT* Stby- REDC07AA *FLT* REX is ON; INCOMPLETE on SAT. 1995/10/28 at 01:35:19 Node Status: {OK, FALSE} Unit 0 Status: {OK, FALSE} Unit 1 Status: {MAN_BUSY, FALSE} Site Flr RPos Bay_id Shf Description Slot EqPEC REM1 01 K03 RLCM 02 04 LCM 02 0 6X04AA Services : NEUTRAL

If loadfile names	Do
are valid	step 8
are invalid or corrupted	step 9
To return the LCM unit to service, ty	уре
>RTS UNIT unit_no	
and press the Enter key.	
where	
unit_no is the LCM unit (0 or 1) busie	ed in step 4
If RTS	Do
passed	step 11
failed	step 9
To load the LCM unit, type	
>LOADPM UNIT unit_no CC	
and press the Enter key.	
where	
unit_no is the LCM unit (0 or 1) to loa	ad
If the load	Do
passed	step 10
failed	step 13

NT6X52 in an RLCM-EDC (end)

To return the LCM unit to service and switch load to the standby bank, type
 RTS UNIT lcm_unit SWLD

 and press the Enter key.
 where
 lcm_unit
 is the LCM unit (0 or 1) busied in step 4

 If RTS Do

 passed step 11
 failed step 13

 Send defective cards for repair according to local procedure.

- **12** Record the items that follow in office records:
 - date the card replacement occurred
 - serial number of the card
 - indications that prompted replacement of the card Proceed to step 14.
- 13 For additional help in this card replacement, contact the next level of support,
- 14 This procedure is complete.

NT6X52 in an RSC LCM

Application

Use this procedure to replace the following card in an RSC LCM.

PEC	Suffixes	Name
NT6X52	AA, AB	Digital control card (DCC)

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of replacing an NT6X52 card in an in RSC LCM



Replacing an NT6X52

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the name of the RSC site

frame

is the frame number of the LCE frame (0 to 511)

```
lcm
```

is the number of the LCM (0 or1) in the LCE frame

Example of a MAP display:

·)
	CN	MS	IO	D Net	PM	CCS	LNS	Trks	Ext	Appl	
	•	•	•	•	1LCM	•	•	•	•	•	
	LCN	ſ		SvsB	ManB	OffL		CBsv	ISTb	InSv	
	0	Ouit	РМ	0	1	0		0	0	130	
	2	~ Post_	LCM	0	1	0		0	0	0	
	3										
	4	SwRg		LCM R	em1 00	0 ISTb) Li	nks_00S	: CSide	1 PSide 0	
	5	Trnsl		Unit-0:	InSv	Mtce I	ake0v	ver /	RG: 0		
	б	Tst		Unit-1:	SysB	Mtce		1	RG: 0		
	7	Bsy					11 11	11 11	11 RG:Pr	ef:0 InSv	
	8	RTS		Drwr: 0	1 23 45	67 89	01 23	3 45 67	89 St	by:1 InSv	
	9	OffL				••					
	10	LoadPM									
	11	Disp_									
	12	Next									
	13										
	14	QueryPM									
	15										
	16										
	17										
	18										

4 Busy the LCM unit containing the faulty card by typing >BSY UNIT lcm_unit and pressing the Enter key. where lcm_unit

is the LCM unit to be busied (0 or 1)

Example of a MAP display:

CI	M MS	10	D N	iet · É	PM LCM	cc •	!S	LN		Tr	·ks	E	xt •	App •	1
L	CM		SysB	Mar	ıВ	С	ffL	1	C	Bsy	-	IS	Tb	I	nSv
0	Quit	PM	0	-	_		0			0		(0	1	.30
2	Post_	LCM	0		L		0			0			0		0
3															
4	SwRg		LCM	Reml	00	ΟI	ISTŁ)	Lir	ıks	00S	CS	ide	1 PSi	de 0
5	Trnsl		Unit-	-0: II	ıSv	Mto	ce I	ake	eove	er –	- /I	RG:	0		
б	Tst		Unit-	-1: Ma	anB	Mto	ce				/1	RG:	0		
7	Bsy							11	11	11	11 1	11 R	G:Pi	ref:0	InSv
8	RTS		Drwr:	01 23	3 45	67	89	01	23	45	67 8	39	St	tby:1	InSv
9	OffL														
10	LoadPM														
11	Disp_														
12	Next														
13															
14	QueryPM														
15															
16															
17															
18															

At the LCE frame

5



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage during transportation:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the LCM. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- Remove the NT6X52 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.

6



7 Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.



8 Ensure the replacement card has the same PEC including suffix, as the card you just removed.

9 Open the locking levers on the replacement card.

Align the card with the slots in the shelf and gently slide the card into the shelf.



10 Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplace to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.



11 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
alarm clearing procedure	step 16

NT6X52 in an RSC LCM (end)

Do							
step 12							
0 or 1)							
Do							
step 13							
step 17							
rping							
and pressing the Enter key.							
where							
d in step 4							
d in step 4 Do							
d in step 4 Do step 14							
d in step 4 Do step 14 step 17							
d in step 4 Do step 14 step 17 ording to local procedure.							
d in step 4 Do step 14 step 17 ording to local procedure. ecords:							
d in step 4 Do step 14 step 17 ording to local procedure. ecords:							
d in step 4 Do step 14 step 17 ording to local procedure. ecords:							
d in step 4 Do step 14 step 17 ording to local procedure. ecords:							
d in step 4 Do step 14 step 17 ording to local procedure. ecords: ement of the card							
d in step 4 Do step 14 step 17 ording to local procedure. ecords:							
d in step 4 Do step 14 step 17 ording to local procedure. ecords: ement of the card fure that directed you to this procedure. he faulty card list was produced, identify to the appropriate card replacement al. g this card by contacting the personnel rt.							

NT6X52 in an RSC-S (DS-1) Model A LCME

Application

Use this procedure to replace an NT6X52 card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X52	AA	Digroup Control card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X52 card in RSC-S LCME

Replacing an NT6X52 card in RSC-S LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP to the PM level and post the LCME by typing

>MAPCI;MTC;PM;POST LCME lcme_site_name lcme_frame_no lcme_no

and pressing the Enter key.

where

Icme_site_name is the name of the site at which the LCME is located

lcme_frame_no

is the number of the frame in which the LCME is located

Icme no

is the number of the LCME unit with the faulty card

Example of a MAP response:

/										
CI	1 MS	IOI) Net	PM	CCS	LNS	Trks	Ext	Appl	
				1LCME						
LCN	1E		SysB	ManB	OffL	СВ	sy	ISTb	InSv	
0	Quit	PM	0	0	0		0	0	130	
2	Post	LCME	0	0	0		0	0	0	
3	_									
4	Swrg_									
5	Trnsl_	LCME	RemL	00 0 Li	nks 00S	: CSid	le O			
6	Tst_	Unit	0: InS	v 00 0 11		/RG:	0			
7	Bsy_	Unit	1: InS	v		/RG:	1			
8	RTS_				11 11 3	11	RG:Pr	ef:0 InS	Sv	
9	OffL_	Drwr	: 01 23	45 67 89	01 23 4	45	St	by:1 Ins	Sv	
10	LoadPM_							- 1		
11	Disp_									
12	Next_									
13										
14	QueryPM									
15										
16										
17										
18										
									_	Ϊ

4 Busy the LCME by typing

>BSY UNIT lcme_unit_no

and pressing the Enter key.

where

lcm_unit_no

is the number of the LCME posted in step 3

Example of a MAP response:

/										
C	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
	•	•	•	1LCME	•	•	•		•	
LC	ME		SysB	ManB	OffL	CE	sy	ISTb	InSv	
0	Quit	PM	0	1	0		0	0	130	
2	Post_	LCME	0	1	0		0	0	0	
3										
4	SwRg	LCME	RemL	00 0 IST	b Links	_00s: 0	Side 1	PSide 0		
5	Trnsl	Unit-	-0: InS	v Mtce '	Take0ve:	r /RG	;: O			
б	Tst	Unit-	-1: Man	B Mtce		/RG	;: 0			
7	Bsy				11 11	11	RG:Pre	f:0 InSv		
8	RTS	Drwr	01 23	45 67 89	01 23	45	Stk	y:1 InSv		
9	OffL									
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
18										
										/

At the LCE frame

5



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wriststrap.

6

Remove the NT6X52 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 7 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



8



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers



At th	e MAP terminal								
9	Load the inactive LCME unit by typin	ng							
	<pre>>loadpm unit lcme_unit_no CC</pre>								
	and pressing the Enter key.								
	where								
	<pre>lcme_unit_no is the number of the LCME u</pre>	nit busied in step 4							
	If load	Do							
	passed	step 10							
	failed	step 16							
10	Test the LCME unit by typing								
	>TST UNIT lcme_unit_no								
	and pressing the Enter key.								
	where								
	Icme_unit_no is the number of the LCME unit loaded in step 9								
	If TST	Do							
	passed	step 11							
	failed	step 15							
1	Use the following information to dete	ermine where to proceed.							
	If you entered this procedure from	Do							
	alarm clearing procedures	step 15							
	other	step 12							
2	Return the LCME unit to service by	typing							
	>RTS UNIT lcme_unit_no								
	and pressing the Enter key.								
	where								
	<pre>lcme_unit_no is the number of the LCME u</pre>	nit tested in step 10							
	If RTS	Do							
	passed	step 13							

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If RTS	Do
failed	step 16

- **13** Send any faulty cards for repair according to local procedure.
- 14 Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 17.
- **15** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.
- **16** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 17 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
NT6X52 in an RSC-S (DS-1) Model B LCME

Application

Use this procedure to replace an NT6X52 card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X52	AA	Digroup Control card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X52 card in RSC-S LCME



Replacing an NT6X52 card in RSC-S LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP to the PM level and post the LCME by typing

>MAPCI;MTC;PM;POST LCME lcme_site_name lcme_frame_no lcme_no

and pressing the Enter key.

where

Icme_site_name is the name of the site at which the LCME is located

lcme_frame_no

is the number of the frame in which the LCME is located

Icme no

is the number of the LCME unit with the faulty card

Example of a MAP response:

(CM	i MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
					•		•			•
	LCM	1E	S	SysB	ManB	OffL	CI	Bsy	ISTb	InSv
	0	Ouit	PM	- 0	0	0		0	0	130
	2 3	Post_	LCME	0	0	0		0	0	0
	4	Swrg_	LCME	RemL O) O Linł	(s_00S:	CSide	e 0		
	5	Trnsl_	Unit 0:	InSv			/RG:	0		
	6	Tst_	Unit 1:	InSv			/RG:	1		
	7	Bsy_				11 11 1	1	RG:Pr	ef:0 InSv	r
	8	RTS_	Drwr:	01 23 4	5 67 89	01 23 4	5	St	by:1 InSv	r
	9	OffL_								
	10	LoadPM_								
	11	Disp_								
	12	Next_								
	13									
	14	QueryPM								
	15									
	16									
	17									
(18)
1	_									

4 Busy the LCME by typing

>BSY UNIT lcme_unit_no

and pressing the Enter key.

where

lcm_unit_no

is the number of the LCME posted in step 3

Example of a MAP response:

/										
CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
•		•	•	1LCME			•		•	
LCI	ΔE		SysB	ManB	OffL	CB	sy	ISTb	InSv	
0	Quit	PM	0	1	0		0	0	130	
2	Post_	LCME	0	1	0		0	0	0	
3										
4	SwRg	LCME	RemL (00 0 ISTE	Links_C	oos: cs	Side 1 E	Side 0		
5	Trnsl	Unit-(): InSv	/ Mtce I	ake0ver	/RG:	0			
6	Tst	Unit-1	l: ManH	B Mtce		/RG:	0			
7	Bsy				11 11 11	-	RG:Pref	:0 InSv		
8	RTS	Drwr:	01 23 4	15 67 89	01 23 45	5	Stby	:1 InSv		
9	OffL									
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
18										
										/

At the LCE frame

5



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the modular supervisory panel (MSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wriststrap.

6

- Remove the NT6X52 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 7 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



8



DANGER Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers



MAP terminal							
Load the inactive LCME unit by typi	ng						
<pre>>loadpm unit lcme_unit_no CC</pre>							
and pressing the Enter key.							
where	vhere						
lcme_unit_no is the number of the LCME u	nit busied in step 4						
If load	Do						
passed	step 10						
failed	step 16						
Test the LCME unit by typing							
>TST UNIT lcme_unit_no							
and pressing the Enter key.							
where							
Icme_unit_no is the number of the LCME u	nit loaded in step 9						
If TST	Do						
passed	step 11						
failed	step 15						
Use the following information to dete	ermine where to proceed.						
If you entered this procedure from	Do						
alarm clearing procedures	step 15						
other	step 12						
Return the LCME unit to service by	typing						
<pre>>RTS UNIT lcme_unit_no</pre>							
and pressing the Enter key.							
where							
Icme_unit_no is the number of the LCME u	nit tested in step 10						
If RTS	Do						
passed	step 13						

If RTS	Do
failed	step 16
Send any faulty cards for repair accor	ding to local procedure.
Record the date the card was replaced symptoms that prompted replacement	, the serial number of the card, and the cord, and the cord. Go to step 17.
Return to the procedure that directed where a faulty card list was produced, and go to the appropriate card replace <i>Replacement Procedures</i> .	you to this procedure. At the point identify the next faulty card on the list ement procedure for that card in <i>Card</i>
Obtain further assistance in replacing company maintenance personnel.	this card by contacting operating
You have successfully completed this procedure that directed you to this care as directed.	procedure. Return to the maintenance d replacement procedure and continue

NT6X52 in an RSC-S (PCM-30) Model A LCME

Application

Use this procedure to replace an NT6X52 card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X52	AA	Digroup Control card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X52 card in RSC-S LCME

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP to the PM level and post the LCME by typing

>MAPCI;MTC;PM;POST LCME lcme_site_name lcme_frame_no lcme_no

and pressing the Enter key.

where

Icme_site_name is the name of the site at which the LCME is located

lcme_frame_no

is the number of the frame in which the LCME is located

lcme_no

is the number of the LCME unit with the faulty card

Example of a MAP response:

/									· ·
CI	i MS	IC	DD Net	PM	CCS	LNS	Trks	Ext	Appl
•	•		• •	•	•	•	•	•	•
LCN	ſΕ		SysB	ManB	OffL	CB	sy	ISTb	InSv
0	Quit	PM	0	0	0		0	0	130
2	Post_	LCME	0	0	0		0	0	0
3									
4	Swrg_		LCME	RemL	00 0 Lin	ks_00S	: CSid	le O	
5	Trnsl_		Unit): InSv	J	—	/RG:	0	
б	Tst_		Unit 1	l: InSv	J		/RG:	1	
7	Bsy_		-			11 11	11	RG:Pre	ef:0 InSv
8	RTS_		Drwr:	01 23 4	45 67 89	01 23	45	Sth	oy:1 InSv
9	OffL_								-
10	LoadPM_								
11	Disp_								
12	Next_								
13									
14	QueryPM								
15									
16									
17									
18									
))									/

4 Busy the LCME by typing

>BSY UNIT lcme_unit_no

and pressing the Enter key.

where

lcm_unit_no

is the number of the LCME posted in step 3

Example of a MAP response:

/									<u>۱</u>
CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
				1LCN	1Ε .				
LCI	МЕ		SysB	ManB	OffL	CB	sy	ISTb	InSv
0	Quit	PM	0	1	0		0	0	130
2	Post_	LCME	0	1	0		0	0	0
3									
4	SwRg		LCME	RemL 00	0 ISTb	Links_	00S: C	Side 1 PSi	lde 0
5	Trnsl		Unit-(): InSv	Mtce Ta	ake0ver	/RG	: 0	
6	Tst		Unit-1	L: ManB	Mtce		/RG	: 0	
7	Bsy				:	11 11 1	.1	RG:Pref:() InSv
8	RTS		Drwr:	01 23 45	67 89	01 23 4	5	Stby:1	InSv
9	OffL								
10	LoadPM								
11	Disp_								
12	Next								
13									
14	QueryPM								
15									
16									
17									
т8)

At the LCE frame

5



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- Remove the NT6X52 card as shown in the following figures.
 - **a** Locate the card to be removed on the appropriate shelf.



6

b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 7 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



8



DANGER Equipment damage Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers



At the MAP terminal

9 Load the inactive LCME unit by typing

>loadpm unit lcme_unit_no CC

and pressing the Enter key.

where

lcme_unit_no

is the number of the LCME unit busied in step 4

If load	Do	
passed	step 10	
failed	step 16	

Test the LCME unit by typing	
>TST UNIT lcme_unit_no	
and pressing the Enter key.	
where	
<pre>lcme_unit_no is the number of the LCME uni</pre>	t loaded in step 9
If TST	Do
passed	step 11
failed	step 15
Use the following information to deter	mine where to proceed.
If you entered this procedure from	Do
alarm clearing procedures	step 15
other	step 12
Return the LCME unit to service by ty	ping
>RTS UNIT lcme_unit_no	
and pressing the Enter key.	
where	
<pre>lcme_unit_no is the number of the LCME uni</pre>	t tested in step 10
If RTS	Do
passed	step 13
failed	step 16
Send any faulty cards for repair accor	ding to local procedure.
Record the date the card was replaced symptoms that prompted replacement	d, the serial number of the card, and the t of the card. Go to step 17.
Return to the procedure that directed where a faulty card list was produced and go to the appropriate card replac <i>Replacement Procedures</i> .	you to this procedure. At the point , identify the next faulty card on the list ement procedure for that card in <i>Card</i>
Obtain further assistance in replacing company maintenance personnel.	this card by contacting operating
You have successfully completed this procedure that directed you to this car as directed.	procedure. Return to the maintenance d replacement procedure and continue

NT6X53 in an IOPAC ILCM

Application

Use this procedure to replace the following card in an International line concentrating module (ILCM).

PEC	Suffixes	Name
NT6X53	AA	Power converter (5V/15V)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X53 in an ILCM



Replacing an NT6X53 in an ILCM

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level and post the ILCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

```
site
```

is the site name of the IOPAC

frame

is the frame number of the IOPAC cabinet (0 to 511)

lcm

is the number of the ILCM

5 Busy the ILCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the ILCM unit to be busied (0 or 1)

At the IOPAC site

6 Turn the circuit breaker off for the unit in which the power converter is being replaced. Use the table below to determine which MSP circuit breaker serves the unit.

Circuit breaker	Unit	Locations
CB1	LCA 0	Bay 0 shelf 19 slot 02
СВЗ	LCA 1	Bay 0 shelf 32 slot 02

- 7 Go to the common replacing a card procedure in this document to replace the NT6X53 card. When the card is replaced, return to this step.
- 8 Power up the NT6X53 converter just inserted.
 - Determine the correct MSP switch for the shelf in which the power converter was replaced from the diagram below. The switches are numbered corresponding to the shelf position.

Circuit breaker	Unit FED	Locations
CB1	LCA 0	Bay 0 shelf 19 slot 02
СВЗ	LCA 1	Bay 0 shelf 32 slot 02

Turn the circuit breaker on for the unit with the new power converter.

- The converter fail LED on the converter will be extinguished.
- The frame fail lamp on the converter will be extinguished.
- 9 If you were directed to this procedure from the *Alarm Clearing Procedure* return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 10.

At the MAP terminal

10 Load the ILCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

11

Icm unit

IOC disk

is the ILCM unit to be loaded (0 or 1)

lf	Do
message loadfile not found in directory is received	step 11
load passed	step 28
load failed	step 31
Determine the type of device on whic	h the PM load files are located.
If load files are located on	Do
tane	step 12

step 18

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If load files are located on	Do
SLM disk	step 23
Locate the tape that contains the PM I	oad files.
Mount the tape on a magnetic tape dri	ve.
Download the tape by typing	
>MOUNT tape_no	
and pressing the Enter key.	
where	
tape_no is the number of the tape conta	ining the PM load files
List the contents of the tape in your us	er directory by typing
>LIST T tape_no	
and pressing the Enter key.	
where	
tape_no is the number of the tape conta	ining the PM load files
Demount the tape drive by typing	
>DEMOUNT T tape_no	
and pressing the Enter key.	
where	
tape_no is the number of the tape drive	containing the PM load files
Go to step 27.	
From office records, determine and no controller (IOC) disk and the name of t files.	te the number of the input/output he volume that contains the PM load
Access the disk utility level of the MAP	terminal by typing
>DSKUT	
and pressing the Enter key.	
List the IOC file names into your user	directory by typing
>LISTVOL volume_name ALL	
and pressing the Enter key.	
where	
volume_name is the name of the volume that of step 18.	contains the PM load files obtained in

21	Leave the disk utility by typing	
	>QUIT	
	and pressing the Enter key.	
22	Go to step 27.	
23	From office records, determine and no module (SLM) disk and the name of the files.	ote the number of the system load ne volume that contains the PM load
24	Access the disk utility level of the MAR	P terminal by typing
	>DISKUT	
	and pressing the Enter key.	
25	List the SLM file names into your user	directory by typing
	>LV CM;LF file_name	
	and pressing the Enter key.	
	where	
	file_name is the name of the SLM disk vo obtained in step 23.	lume containing the PM load files
26	Leave the disk utility by typing	
	>QUIT	
	and pressing the Enter key.	
27	Reload the ILCM unit by typing	
	>LOADPM UNIT lcm_unit CC	
	and pressing the Enter key.	
	where	
	lcm_unit is the ILCM unit to be loaded (0) or 1)
	lf	Do
	load failed	step 31
	load passed	step 28
28	Return the ILCM unit to service by typ	ping
	>RTS UNIT lcm_unit	
	and pressing the Enter key.	
	where	

NT6X53 in an IOPAC ILCM (end)

29 30

f RTS	Do
passed	step 29
failed	step 31

- date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card

Go to step 32.

- **31** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 32 You have successfully completed this procedure.

NT6X53 in an OPAC LCM

Application

Use this procedure to replace the following card in a line concentrating module (LCM).

PEC	Suffixes	Name
NT6X53	AA	Power converter (5V/15V)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X53 in an LCM



Replacing an NT6X53 in an LCM

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 6. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

```
site
```

is the site name of the OPAC

frame

is the frame number of the OPAC (0 to 511)

lcm

is the number of the LCM

5 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the LCM unit to be busied (0 or 1)

At the OPAC site

6 Turn the circuit breaker off for the unit in which the power converter is being replaced. Use the table below to determine which MSP circuit breaker serves the unit.

Circuit breaker	Unit	Locations
CB1	LCA 0	Bay 0 slot 19-02
CB3	LCA 1	Bay 0 slot 32-02

- 7 Replace the NT6X53 card using the common replacing a card procedure in this document.
- 8 Power up the NT6X53 converter just inserted.
 - Determine the correct MSP switch for the shelf in which the power converter was replaced from the diagram below. The switches are numbered corresponding to the shelf position.

Circuit breaker	Unit FED	Locations
CB1	LCA 0	Bay 0 slot 19-02
CB3	LCA 1	Bay 0 slot 32-02

Turn the circuit breaker on for the unit with the new power converter.

- The converter fail LED on the converter will be extinguished.
- The frame fail lamp on the converter will be extinguished.
- **9** If you were directed to this procedure from the *Alarm Clearing Procedure* return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 10.

At the MAP terminal

10 Load the LCM unit by typing

>LOADPM UNIT lcm_unit

and pressing the Enter key.

where

Icm unit

is the LCM unit to be loaded (0 or 1)

lf	Do
message loadfile not found in directory is re- ceived	step 11
load passed	step 28
load failed	step 31
Determine the type of device on which	n the PM load files are located.
If load files are located on	Do

If load files are located on	Do
tape	step 12
IOC disk	step 18

11

	If load files are located on	Do	
	SLM disk	step 23	
12	Locate the tape that contains the P	M load files.	
13	Mount the tape on a magnetic tape	drive.	
14	Download the tape by typing		
	>MOUNT tape_no		
	and pressing the Enter key.		
	where		
	tape_no is the number of the tape co	ntaining the PM load files	
15	List the contents of the tape in your	r user directory by typing	
	>LIST T tape_no		
	and pressing the Enter key.		
	where		
	tape_no is the number of the tape co	ntaining the PM load files	
16	Demount the tape drive by typing		
	>DEMOUNT T tape_no		
	and pressing the Enter key.		
	where		
	tape_no is the number of the tape dri	ve containing the PM load files	
17	Go to step 27.		
18	From office records, determine and controller (IOC) disk and the name files.	I note the number of the input/output of the volume that contains the PM loa	
19	Access the disk utility level of the M	IAP terminal by typing	
	>DSKUT		
	and pressing the Enter key.		
20	List the IOC file names into your us	ser directory by typing	
	>LISTVOL volume_name ALL		
	and pressing the Enter key.		
	where		
	volume_name is the name of the volume th	at contains the PM load files	
21	Leave the disk utility by typing		
	>QUIT		

	and pressing the Enter key.		
22	Go to step 27.		
23	From office records, determine and no module (SLM) disk and the name of the files.	te the number of the system load ne volume that contains the PM load	
24	Access the disk utility level of the MAF	e terminal by typing	
	>DISKUT		
	and pressing the Enter key.		
25	List the SLM file names into your user	directory by typing	
	>LV CM;LF file_name		
	and pressing the Enter key.		
	where		
	file_name is the name of the SLM disk vol	lume containing the file to be loaded	
26	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
27	Reload the LCM unit by typing		
	>LOADPM UNIT lcm_unit CC		
	and pressing the Enter key.		
	where		
	is the LCM unit to be loaded (0	or 1)	
	lf	Do	
	load failed	step 31	
	load passed	step 28	
28	Return the LCM unit to service by typ	ing	
	>RTS UNIT lcm_unit		
	and pressing the Enter key.		
	where		
	Icm_unit is the LCM busied in step 5 (0 c	lcm_unit is the LCM busied in step 5 (0 or 1)	
	If RTS	Do	
	passed	step 29	
	failed	step 31	

NT6X53 in an OPAC LCM (end)

- 29 Send any faulty cards for repair according to local procedure.
- **30** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 32.

- **31** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **32** You have successfully completed this procedure.

NT6X53 in an OPM

Application

Use this procedure to replace the following card in an OPM

PEC	Suffixes	Name
NT6X53	AA, BA, CA	Power Converter Card (5V/15V)

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X53 in an OPM (continued)

Summary of card replacement for NT6X53 card in an OPM



NT6X53 in an OPM (continued)

Replacing an NT6X53 card in an OPM

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP display

3 Access the PM level of the MAP and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the name of the OPM site

frame

is the frame number of the OPM cabinet (0 to 511)

lcm

is the number of the LCM

Example of a MAP display:

/																	
CI	M MS	IO	d N	et	PI	M	C	CS	LÌ	IS	Tr	ks		Ext	Ar	pl	
				•	1L	CM		•		•		•		•		•	
T.CI	vī		SveB	N	InnB		(ר£ד		C	Bat	7	т	crb		TnGv	
	·1	DM	o o	1.	1				-		ved.		т	010		1 2 0	
0	Quit	P™	0		T			0			0			0		130	
2	Post_	LCM	0		T			0			0			0		0	
3																	
4	SwRg		LCM	Ren	n1 (OC	0	ISTŁ	С	Lir	ıks_	_005	: C	Side	0 PS	Side 0	
5	Trnsl		Unit-	0:	InS	v	Mt	ce 1	[ak	eove	er	/	RG:	0			
б	Tst		Unit-	1:	Sys	в	Mt	ce				/	RG:	0			
7	Bsy				-				11	11	11	11	11	RG:P	ref:() InSv	
8	RTS		Drwr:	01	23	45	67	89	01	23	45	67	89	S	tby:	l InSv	
9	OffL														-		
10	LoadPM																
11	Disp_																
12	Next																
13																	
14	QueryPM																
15																	
16																	
17																	
18																	
< l>																	

NT6X53 in an OPM (continued)

4 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the LCM unit (0 or 1) to be busied

Example of a MAP display:

СМ	MS	IO	d N	et	PM	CC	S	LN	IS	Tr	ks		Ext	App	1
•				•	1LCM	•			•		•		•	•	
LCM			SysB	Ma	anB	0	ffL		C	Bsy	,	I	STb	I	nSv
0 Qui	t	PM	0		1		0			0			0	1	30
2 Pos 3	t_	LCM	0		1		0			0			0		0
4 SwR	g		LCM	Rem	1 00	ΟI	STb)	Lir	ıks_	_005	: C	Side	0 PSi	de O
5 Trn	ısl		Unit-	0: 2	InSv	Mtc	е Т	ake	eove	er	/	RG:	0		
6 Tst			Unit-	1: N	ManB	Mtc	e				/	RG:	0		
7 Bsy	<i>r</i>							11	11	11	11	11	RG:P	ref:0	InSv
8 RTS	5		Drwr:	01 2	23 45	67	89	01	23	45	67	89	S	tby:1	InSv
9 Off	L			••											
10 Loa	ldPM														
11 Dis	sp_														
12 Nex	t														
13															
14 Que	eryPM														
15															
16															
17															
18															

NT6X53 in an OPM (continued)

At the OPM cabinet

5 Turn the circuit breaker OFF for the unit in which the power converter is being replaced. Use the table below to determine which FSP circuit breaker serves the unit.

Circuit breaker	Unit FED	Locations
CB6	LCA 0	Shelf 04 slot 01 (OPM)
CB7	LCA 1	Shelf 21 slot 01 (OPM)
CB6	LCA 0	Row A bay 0 slot 01 (OPM-640)
CB6	LCA 0	Row A bay 0 slot 01 (OPM-256)
CB7	LCA 1	Row A bay 0 slot 01 (OPM-640)
CB7	LCA 1	Row A bay 0 slot 23 (OPM-256)

Note: For the NTNX14AA cabinet the circuit breaker assignments are:

Circuit breaker	Unit FED	Locations
CB2	LCA 0	bay 0 slot 01
CB7	LCA 1	bay 0 slot 01

6 Replace the NT6X53 card as shown in the following figures.
NT6X53 in an OPM (continued)

7



DANGER

Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage during transportation:When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS frame (Northern Telecom Corporate Standard 5028).Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the LCM. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damageTake these precautions when removing or inserting a card:1.Do not apply direct pressure to the components.2. Do not force the cards into the slots.

Put on a wrist strap.

8

- Remove the NT6X53 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.

NT6X53 in an OPM (continued)



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.



- c Ensure that the replacement card has the same PEC including suffix, as the card you just removed.
- 9 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.

NT6X53 in an OPM (continued)



10 Seat and lock the card.



- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.
- **11** Power up the LCM unit as follows:

1. Ensure that the power converter (NT6X53) is inserted. A major audible alarm may sound. This alarm is silenced when power is restored to the converter.

2. Set the circuit breaker to the ON position. The converter fail LED and frame fail lamp on the FSP will be extinguished.

NT6X53 in an OPM (continued)

Determine the correct FSP switch for the shelf in which the power converter was replaced from the diagram below. The switches are numbered corresponding to the shelf position.

Circuit breaker	Unit FED	Locations
CB6	LCA 0	Shelf 04 slot 01 (OPM)
CB7	LCA 1	Shelf 21 slot 01 (OPM)
CB6	LCA 0	Row A bay 0 slot 01 (OPM-640)
CB6	LCA 0	Row A bay 0 slot 01 (OPM-256)
CB7	LCA 1	Row A bay 0 slot 01 (OPM-640)
CB7	LCA 1	Row A bay 0 slot 23 (OPM-256)

- 3. Turn the circuit breaker on for the unit with the new power converter.
 - a. The converter fail LED will be extinguished.
 - b. The frame fail lamp on the FSP will be extinguished.
- 12 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 13.

At the MAP display

13 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

lcm_unit

is the LCM unit (0 or 1)to be loaded

lf	Do
message "loadfile not found in directory" is received	step 14
load pases	step 33

NT6X53 in an OPM (continued)

	lf	Do
	load fails	step 37
14	Determine the type of device on w	hich the PM load files are located.
	If load files are located on	Do
	tape	step 15
	IOC disk	step 21
	SLM disk	step 26
15	Locate the tape that contains the F	PM load files.
At the	OPM cabinet	
16	Mount the tape on a magnetic tape	e drive.
At the	MAP display	
17	Download the tape by typing	
	>MOUNT tape no	
	and pressing the Enter key.	
	where	
	tape_no	ive containing the PM load files
18	List the contents of the tape in you	r user directory by typing
10		aser directory by typing
	and pressing the Enter key	
	where	
	tape_no	ing containing the DM load files
10	Is the number of the tape of	ive containing the Pivi load lifes.
19		ser directory by typing:
	>DEMOUNT T tape_no	
	and pressing the Enter key.	
	is the number of the tape dr	ive mounted in step 17.
20	Go to step 31.	
21	From office records, determine and controller (IOC) disk and the name	d note the number of the input/out of the volume that contains the P

NT6X53 in an OPM (continued)

22	Access the disk utility level of the MAP by typing
	>DSKUT
	and pressing the Enter key.
23	List the IOC file names into your user directory by typing
	>LISTVOL volume_name ALL
	and pressing the Enter key.
	where
	<pre>volume_name is the name of the volume that contains the PM load files, obtained in step 21.</pre>
24	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
25	Go to step 31.
26	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
27	Access the disk utility level of the MAP by typing
	>DISKUT
	and pressing the Enter key.
28	List the SLM disk volume names by typing
	>LV CM
	and pressing the Enter key.
29	List the SLM file names into your user directory by typing
	>LF volume_name
	and pressing the Enter key.
	where
	volume_name is the name of the volume that contains the PM load files, obtained in step 26.
30	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
31	Load the LCM unit by typing
	>LOADPM UNIT lcm_unit CC
	and pressing the Enter key.
	where

NT6X53 in an OPM (end)

	lcm_unit is the LCM unit (0 or 1)to be	loaded						
	lf	Do						
	load failed	step 37						
	load passed	step 32						
2	Use the following information to determine the next step in this procedu							
	If you entered this procedure	Do						
	an alarm clearing procedure	step 36						
	other	step 33						
	Return the LCM unit to service by t	yping						
	>RTS UNIT lcm_unit							
	and pressing the Enter key.	and pressing the Enter key.						
	where							
	lcm_unit is the LCM (0 or 1) busied in	step 4						
	If RTS	Do						
	passed	step 34						
	failed	step 37						
	Send any faulty cards for repair acc	ording to local procedure.						
	Record the following items in office	records:						
	date the card was replaced							
	serial number of the card							
	 symptoms that prompted replace 	 symptoms that prompted replacement of the card. 						
	Go to step 38.							
	Return to the <i>Alarm Clearing Procedure</i> that directed you to this procedure. If necessary, go to the point where the faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.							
	Obtain further assistance in replacir responsible for higher level of support	ng this card by contacting the personnel ort.						
	You have successfully completed th	is procedure.						

NT6X53 in an RLCM

Application

Use this procedure to replace the following card in an RLCM

PEC	Suffixes	Name
NT6X53	AA, BA, CA	Power Converter Card (5V/15V)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X53 in an RLCM (continued)

Summary of card replacement procedure for an NT6X53 card in an RLCM



NT6X53 in an RLCM (continued)

Replacing an NT6X53 in an RLCM

At your current location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP display

3 Access the PM level of the MAP and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the name of the RLCM site

frame

is the frame number of the RLCE frame (0 to 511)

lcm

is the number of the LCM

Example of a MAP display:

/															
C	M MS	IO	D N	et	PM	CC	CS	LN	IS	Tr	ks		Ext	Ap	pl
				•	llCM				•		•		•	•	
τC	M		Grap	Mor	۰Ð		λ££Τ		0	Dat	,	т	orrb		TnGu
			бубб	Mai	.16	Ċ		1	C	- ББУ		T	1		11150
0	Quit	РМ	0)		0			0			T		130
2	Post_	LCM	0		0		0			0			1		10
3															
4	SwRg		LCM	Reml	00	0	ISTŁ)	Lir	ıks_	_005	s: c	Side	0 PS	ide O
5	Trnsl		Unit-	0: I:	nSv	Mto	ce I	ake	eove	er	/	RG:	0		
б	Tst		Unit-	1: S	ysB	Mto	ce				/	RG:	0		
7	Bsy							11	11	11	11	11	RG:F	ref:0	InSv
8	RTS		Drwr:	01 2	3 45	67	89	01	23	45	67	89	S	Stby:1	InSv
9	OffL													-	
10	LoadPM														
11	Disp_														
12	Next														
13															
14	QueryPM														
15															
16															
17															
18															

NT6X53 in an RLCM (continued)

4 Busy the LCM unit containing the faulty card by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the LCM unit (0 or 1) to be busied

Example of a MAP display:

CI	M MS	IO	d N	et	PM		CC	S	LN	IS	Tr	ks		Ext	Appl
				•	1LC	М	•			•		•		•	•
T.(۳M		SvsB	N	IanB		0	fft		C	'Bsı	,	т	STD	InSv
0	Ouit	PM	0	-	0		0	0			0		-	1	130
2	Post_	LCM	0		0			0			0			1	10
3															
4	SwRg		LCM	Ren	nl C	0 0	ιс	STŁ)	Lir	ıks_	_008	s: (Side	e O PSide O
5	Trnsl		Unit-	0:	InSv	· I	Mtc	e T	ake	eove	er	/	RG	: 0	
б	Tst		Unit-	1:	ManE	I	Mtc	e				/	RG	0	
7	Bsy								11	11	11	11	11	RG:P	ref:0 InSv
8	RTS		Drwr:	01	23 4	5 (67	89	01	23	45	67	89	S	tby:1 InSv
9	OffL			••		•	•••	• •	••		••	••	• •		
10	LoadPM														
11	Disp_														
12	Next														
13															
14	QueryPM														
15 16															
17															
⊥/ 1 Q															
т0															

NT6X53 in an RLCM (continued)

At the RLCE frame

5 Turn the circuit breaker OFF for the unit in which the power converter is being replaced. Use the table below to determine which FSP circuit breaker serves the unit.

Circuit breaker	Unit FED	Locations
CB6	LCA 0	Shelf 04 slot 01
CB7	LCA 1	Shelf 21 slot 01

Note: For the NTNX14AA cabinet the circuit breaker assignments are:

Circuit breaker	Unit FED	Locations
CB2	LCA 0	bay 0 slot 01
CB7	LCA 1	bay 0 slot 01

6



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the LCM. This protects the equipment against damage caused by static electricity.

Replace the NT6X53 card using the common replacing a card procedure in this document. When the card has been replaced, return to this point.

- 7 Power up the LCM unit as follows:
 - **a** Ensure that the power converter (NT6X53) is inserted. A major audible alarm may sound. This alarm is silenced when power is restored to the converter.
 - **b** Set the circuit breaker to the ON position. The converter fail LED and frame fail lamp on the FSP will be extinguished.

NT6X53 in an RLCM (continued)

Determine the correct FSP switch for the shelf in which the power converter was replaced from the diagram below. The switches are numbered corresponding to the shelf position.

Circuit breaker	Unit FED	Locations
CB6	LCA 0	Shelf 04 slot 01
CB7	LCA 1	Shelf 21 slot 01

Note: For the NTNX14AA cabinet the circuit breaker assignments are:

Circuit breaker	Unit FED	Locations
CB2	LCA 0	bay 0 slot 01
CB7	LCA 1	bay 0 slot 01

c Turn the circuit breaker on for the unit with the new power converter.

- a. The converter fail LED will be extinguished.
- b. The frame fail lamp on the FSP will be extinguished.
- 8 If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 9.

At the MAP display

9 Load the LCM unit by typing

>LOADPM UNIT lcm_unit CC

and pressing the Enter key.

where

lcm_unit

is the LCM unit (0 or 1)to be loaded

lf	Do
message "loadfile not found in directory" is received	step 10
load passed	step 29
load failed	step 33

NT6X53 in an RLCM (continued)

10	Determine the type of device on which the PM load files are located.						
	If load files are located on	Do					
	tape	step 11					
	IOC disk	step 17					
	SLM disk	step 22					
11	Locate the tape that contains the I	PM load files.					
At th	e IOE frame						
12	Mount the tape on a magnetic tap	e drive.					
At th	e MAP display						
13	Download the tape by typing						
	>MOUNT tape_no						
	and pressing the Enter key.						
	where						
	<pre>tape_no is the number of the tape drive containing the PM load files</pre>						
14	List the contents of the tape in your user directory by typing						
	>LIST T tape_no						
	and pressing the Enter key.						
	where						
	tape_no is the number of the tape d	rive containing the PM load files.					
15	Release the tape drive from your u	user directory by typing:					
	>DEMOUNT T tape_no						
	and pressing the Enter key.						
	where						
	tape_no is the number of the tape d	rive mounted in step 13.					
16	Go to step 27.						
17	From office records, determine an controller (IOC) disk and the name files.	d note the number of the input/output e of the volume that contains the PM load					
18	Access the disk utility level of the	MAP by typing					
	>DSKUT						
	and pressing the Enter key.						

NT6X53 in an RLCM (continued)

19	List the IOC file names into your user directory by typing
	>LISTVOL volume_name ALL
	and pressing the Enter key.
	where
	<pre>volume_name is the name of the volume that contains the PM load files, obtained in step 17.</pre>
20	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
21	Go to step 27.
22	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
23	Access the disk utility level of the MAP by typing
	>DISKUT
	and pressing the Enter key.
24	List the SLM disk volume names by typing
	>LV CM
	and pressing the Enter key.
25	List the SLM file names into your user directory by typing
	>LF volume_name
	and pressing the Enter key.
	where
	<pre>volume_name is the name of the volume that contains the PM load files, obtained in step 22.</pre>
26	Leave the disk utility by typing
	>QUIT
	and pressing the Enter key.
27	Load the LCM unit by typing
	>LOADPM UNIT lcm_unit CC
	and pressing the Enter key.
	where

NT6X53 in an RLCM (end)

lcm_u is th	nit ne LCM unit (0 or 1)to be	loaded				
lf		Do				
load fail	ed	step 33				
load pas	sed	step 28				
Use the fo	llowing information to dete	rmine the next step in this procedure.				
lf you er	tered this procedure	Do				
an alarr	n clearing procedure	step 32				
other		step 29				
Return the	LCM unit to service by ty	ping				
>RTS UNI	IT lcm_unit					
and press	ing the Enter key.					
where						
lcm_u is th	Icm_unit is the LCM (0 or 1) busied in step 4					
If RTS		Do				
passed		step 30				
failed		step 33				
Send any	faulty cards for repair acco	ording to local procedure.				
Record the	e following items in office r	ecords:				
 date tl 	ne card was replaced					
serial number of the card						
 symptoms that prompted replacement of the card. 						
Go to step 34.						
Return to the <i>Alarm Clearing Procedure</i> that directed you to this procedure. If necessary, go to the point where the faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual						
Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.						
You have successfully completed this procedure.						

NT6X53 in an RLCM-EDC

Application

Use this procedure to replace the following card identi ed in the follo wing table.

PEC	Suffixes	Card name	Shelf/frame name
NT6X53	AA	Power Converter Card (5V/15V)	LCM/RLCC

If you cannot identify the PEC, suf x, and shelf or frame for the card you want to replace, refer to the index. The index contains a list of cards, shelves, and frames that this maintenance manual documents.

Common procedures

The common replacing a card procedure is referenced in this document.

Action

This procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

NT6X53 in an RLCM-EDC (continued)

Summary of replacing NT6X53 card in LCM



NT6X53 in an RLCM-EDC (continued)

Summary of replacing NT6X53 card in LCM (continued)



NT6X53 in an RLCM-EDC (continued)

Replacing an NT6X53 card in an LCM

At your current location

- 1 Proceed to step 2 if one of the following conditions applies:
 - another maintenance procedure directed you to this card replacement
 procedure
 - · you use this procedure to verify or accept cards
 - your maintenance support group directed you to this procedure
- 2 Obtain a replacement card. Make sure that the replacement card has the same product equipment code (PEC) and suffix as the card to remove.

At the MAP display

3 To access the peripheral module (PM) level of the MAP terminal and post the line concentrating module (LCM), type

```
>MAPCI;MTC;PM;POST LCM site cabinet lcm
```

and press the Enter key.

where

```
site
```

is the name of the RLCM-EDC site (alphanumeric)

cabinet

is the number of the RLCC-EDC cabinet

```
lcm
```

is the number of the LCM

Example of a MAP display:

LCM Rem1 00 0 ISTb Links_OOS: CSide 0 PSide 0 Unit 0: InSv Mtce TakeOver Unit 1: SysB Mtce 11 11 11 11 11 RG: Uneq Drwr: 01 23 45 67 89 01 23 45 67 89

4 To busy the LCM unit that contains the defective card, type

```
>BSY UNIT unit_no
```

and press the Enter key.

where

unit_no is the LCM unit (0 or 1) to busy

NT6X53 in an RLCM-EDC (continued)

At the RLCC cabinet

5 Turn the circuit breaker OFF for the unit in which you must replace the power converter. Use the table below to determine which FSP circuit breaker serves the unit.

Circuit breaker	Unit FED	Locations
CB2	LCA 0	slot 01
CB7	LCA 1	slot 01

- 6 To replace the NT6X53 card, use the common replacing a card procedure in this document. When you have replaced the card, return to this point.
- 7 Power-up the LCM unit as follows:
 - **a** Make sure that you insert the power converter (NT6X53). A major audible alarm can sound. This alarm silences when you restore power to the converter.
 - **b** Set the circuit breaker to the ON position. The converter fail LED and frame fail lamp on the FSP are extinguished.

Determine the correct FSP switch for the shelf in which you replace the power converter, from the diagram below. The switch numbers correspond to the shelf position.

Circuit breaker	Unit FED	Locations
CB2	LCA 0	slot 01
CB7	LCA 1	slot 01

- **c** Turn the circuit breaker on for the unit with the new power converter.
 - i The converter fail LED extinguishes.
 - ii The frame fail lamp on the FSP extinguishes.
- 8 If another maintenance procedure directs you to this procedure, return to the procedure that directs you here. Continue as directed. If another maintenance procedure does not direct you to this procedure, proceed to step 9.

At the MAP display

- 9 To query the out-of-service (OOS) LCM unit for valid loadfiles, type
 - >QUERYPM OOS

and press the Enter key.

Example of a MAP response

NT6X53 in an RLCM-EDC (continued)

10

11

PM Type: LCM Int. No.: 9 Status index: 7 Node_No: 40 LCM REM1 02 0 Memory Size - Unit 0: 4M , Unit 1: 4M ESA equipped: No, Intraswitching is Off Loadname: LCMINV - REDC07AA Unit0 Loads: Act- REDC07AB Stby- REDC07AA Unit1 Loads: Act- REDC07AB *FLT* Stby- REDC07AA *FLT* REX is ON; INCOMPLETE on SAT. 1995/10/28 at 01:35:19 Node Status: {OK, FALSE} Unit 0 Status: {OK, FALSE} Unit 1 Status: {MAN_BUSY, FALSE} Site Flr RPos Bay_id Shf Description Slot EqPEC REM1 01 K03 RLCM 02 04 LCM 02 0 6X04AA Services : NEUTRAL

If loadfile names	Do		
are valid	step 10		
are invalid or corrupted	step 11		
To return the LCM unit to service, ty	ре		
>RTS UNIT lcm_unit			
and press the Enter key.			
where			
lcm_unit is the LCM (0 or 1) busied in	step 4		
If RTS	Do		
passes	step 13		
fails	step 11		
To load the LCM unit, type			
>LOADPM UNIT unit_no CC			
and press the Enter key.			
where			
unit_no is the LCM unit(0 or 1) you r	must load		
If load	Do		
passes	step 12		
fails	step 15		

NT6X53 in an RLCM-EDC (end)

 12
 To return the LCM unit to service and switch load to the standby bank, type

 >RTS UNIT lcm_unit SWLD

 and press the Enter key.

 where

 lcm_unit

 is the LCM (0 or 1) busied in step 4

 If RTS
 Do

 passes
 step 13

step 15

13 Send defective cards for repair according to local procedure.

- 14 Record the items that follow in office records:
 - date that card replacement occurred
 - serial number of the card
 - indications that prompt replacement of the card Proceed to step 16.
- **15** For additional help, contact the next level of maintenance.
- **16** The procedure is complete.

fails

NT6X53 in an RSC LCM

Application

Use this procedure to replace the following card in an in RSC LCM.

PEC	Suffixes	Name
NT6X53	AA, BA, CA	Power converter card (5V/15V)

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X53 in an RSC LCM (continued)

Summary of card replacement procedure for NT6X53 card in RSC LCM



NT6X53 in an RSC LCM (continued)

Replacing an NT6X53 in an RSC LCM

At your Current Locaction

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card that is to be removed.

At the MAP display

3 Access the PM level of the MAP display and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the name of the RSC site

frame

is the frame number of the LCE frame (0 to 511)

lcm

is the number of the LCM (0 or 1)

Example of a MAP display:

MS	IO	D Net	PM	CCS	LNS	Trks	Ext	Appl	
	•	•	1LCM	•	•	•	•	•	
4		SvsB	ManB	OffI		CBsv	ISTb	InSv	
Ouit	РМ	0	1	0		0	0	130	
Post	LCM	0	1	0		0	0	0	
SwRg		LCM F	lem1 00	O ISTR	o L:	inks_00S	: CSide	0 PSide 0	
Trnsl		Unit-0:	InSv	Mtce 1	Take0	ver /	RG: 0		
Tst		Unit-1:	SysB	Mtce		/	RG: 0		
Bsy			-		11 11	1 11 11	11 RG:Pr	ef:0 InSv	
RTS		Drwr: (1 23 45	67 89	01 23	3 45 67	89 St	by:1 InSv	
OffL								-	
LoadPM									
Disp_									
Next									
QueryPM									
	4 MS 4 Quit Post_ SwRg Trnsl Tst Bsy RTS OffL LoadPM Disp_ Next QueryPM	4 MS IO 4 Quit PM Post_ LCM SwRg Trnsl Tst Bsy RTS OffL LoadPM Disp_ Next QueryPM	MS IOD Net M SysB Quit PM 0 Post_ LCM 0 SwRg LCM F Trnsl Unit-0: Tst Unit-1: Bsy Drwr: C OffL LoadPM Disp_ Next QueryPM	M MS IOD Net PM A SysB ManB Quit PM 0 1 Post_ LCM 0 1 SwRg LCM Reml OO Trnsl Unit-0: InSv Tst Unit-1: SysB Bsy Drwr: 01 SoffL LoadPM Disp_ Next QueryPM	M MS IOD Net PM CCS M SysB ManB OffI Quit PM 0 1 0 Post_ LCM 0 1 0 SwRg LCM Rem1 OO IST Trnsl Unit-0: InSv Mtce Sys Drwr: 01 23 RTS Drwr: 01 23 OffL LoadPM Disp_ Next QueryPM	A MS IOD Net PM CCS LNS A SysB ManB OffL Quit PM 0 1 0 Post_ LCM 0 1 0 SwRg LCM Reml OO O ISTD LC Trnsl Unit-0: InSv Mtce Tst Unit-1: SysB Mtce Bsy 11 11 RTS Drwr: 01 23 OffL LoadPM Disp_ Next QueryPM	A MS IOD Net PM CCS LNS Trks A SysB ManB OffL CBsy Quit PM 0 1 0 0 Post_ LCM 0 1 0 0 SwRg LCM Rem1 OO IST Links_OOS Trnsl Unit-0: InSV Mtce TakeOver / Tst Unit-1: SysB Mtce / / Bsy I1 11 11 11 11 11 RTS Drwr: 01 23 45 67 89 01 23 45 67 OffL	A MS IOD Net PM CCS LNS Trks Ext A SysB ManB OffL CBsy ISTb Quit PM 0 1 0 0 0 Post_ LCM 0 1 0 0 0 SwRg LCM Rem1 OO ISTb Links_OOS: CSide Trnsl Unit-0: InSv Mtce TakeOver /RG: 0 Swrg LCM Nether /RG: 0 11 11 11 11 RG: 0 Swrg LCM Rem1 OO O ISTb Links_OOS: CSide 0 Trnsl Unit-0: InSv Mtce TakeOver /RG: 0 Bsy I1 11 11 11 11 RG: 0 CoffL LoadPM </td <td>A MS IOD Net PM CCS LNS Trks Ext Appl A SysB ManB OffL CBsy ISTb InSv Quit PM 0 1 0 0 0 130 Post_ LCM 0 1 0 0 0 0 SwRg LCM Rem1 OO ISTb Links_OOS: CSide 0 PSide 0 Trnsl Unit-0: InSv Mtce /RG:0 0 111111111111 RG:Pref:0 Insv SysB Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 Insv LoadPM Drwr: 01 23 45 67 89 Stby:1 Insv Next QueryPM Issp. Issp.</td>	A MS IOD Net PM CCS LNS Trks Ext Appl A SysB ManB OffL CBsy ISTb InSv Quit PM 0 1 0 0 0 130 Post_ LCM 0 1 0 0 0 0 SwRg LCM Rem1 OO ISTb Links_OOS: CSide 0 PSide 0 Trnsl Unit-0: InSv Mtce /RG:0 0 111111111111 RG:Pref:0 Insv SysB Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 Insv LoadPM Drwr: 01 23 45 67 89 Stby:1 Insv Next QueryPM Issp. Issp.

NT6X53 in an RSC LCM (continued)

4 Busy the LCM unit containing the faulty card by typing >BSY UNIT lcm_unit and pressing the Enter key. where

```
Icm_unit
```

```
is the LCM unit (0 or 1)to be busied
```

Example of a MAP display:

										,
CI	M MS	IO	D Net	PM	CCS	LNS	Trks	Ext	Appl	
		•	•	1LCM	•	•	•	•	•	
L	M		SvsB	ManB	OffI		CBsv	ISTb	InSv	
0	Ouit.	РМ	0	1	0		0	0	130	
2	Post_	LCM	0	1	0		0	0	0	
3										
4	SwRg		LCM R	em1 00	0 ISTb	> Li	nks_00S	: CSide	0 PSide 0	
5	Trnsl		Unit-0:	InSv	Mtce I	ake0v	rer /	RG: 0		
6	Tst		Unit-1:	ManB	Mtce		/	RG: O		
7	Bsy					11 11	11 11	11 RG:Pr	ef:0 InSv	
8	RTS		Drwr: 0	1 23 45	67 89	01 23	45 67	89 St	by:1 InSv	
9	OffL				••					
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
18										

At the LCE frame

5 Turn the circuit breaker OFF for the unit where the power converter is being replaced. Use the table below to determine which FSP circuit breaker serves the unit.

Circuit breaker	Unit FED	Locations
CB1	LCA 0 LCM 0	Shelf 04 slot 01
CB2	LCA 1 LCM 0	Shelf 21 slot 01
СВЗ	LCA 0 LCM 1	Shelf 38 slot 01
CB4	LCA 1 LCM 1	Shelf 55 slot 01

NT6X53 in an RSC LCM (continued)

Replace the NT6X53 card as shown in the following figures.

6 7



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage during transportation:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage Before removing any cards, put on a wrist strap and connect

it to the wrist strap grounding point on the left side of the frame supervisory panel of the LCM. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

Remove the NT6X53 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.

8

NT6X53 in an RSC LCM (continued)



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 9 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.

NT6X53 in an RSC LCM (continued)



10 Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



- **11** Power up the LCM unit as follows:
 - **a** Ensure the power converter (NT6X53) is inserted. A major audible alarm may sound. This alarm is silenced when power is restored to the converter.
 - **b** Set the circuit breaker to the ON position. The converter fail LED and frame fail lamp on the FSP will be extinguished.

NT6X53 in an RSC LCM (continued)

Determine the correct FSP switch for the shelf where the power converter was replaced from the diagram below. The switches are numbered corresponding to the shelf position.

Circuit									
breaker	Unit FED	Locations							
CB1	LCA 0 LCM 0	Shelf 04 slot 01							
CB2	LCA 1 LCM 0	Shelf 21 slot 01							
CB3	LCA 0 LCM 1	Shelf 38 slot 01							
CB4	LCA 1 LCM 1	Shelf 55 slot 01							

At the MAP display

2	Load the LCM unit by typing									
	>LOADPM UNIT lcm_unit CC									
	and pressing the Enter key.									
	where									
	Icm_unit is the LCM unit (0 or 1) busied in step 4.									
	lf	Do								
	load pases	step 13								
	load fails	step 18								
3	Use the following information to dete	se the following information to determine the next step in this procedure.								
	If you entered this procedure from	Do								
	an alarm clearing procedure	step 17								
	other	step 14								
	Return the LCM unit to service by t	yping								
	>RTS UNIT lcm_unit									
	and pressing the Enter key.									
	where									

NT6X53 in an RSC LCM (end)

15 16

17

If RTS	Do
passed	step 15
failed	step 18
Send any faulty cards for	r repair according to local procedure.
Record the following iter	ms in office records:
 date the card was re 	eplaced
 serial number of the 	card
symptoms that pron	npted replacement of the card
Go to step 19.	
Return to the <i>Alarm Cle</i> . If necessary, go to the p the next faulty card on the procedure for that card	aring Procedure that directed you to this procedure oint where the faulty card list was produced, identi- ne list, and go to the appropriate card replacemen in this manual.

- Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **19** You have successfully completed this procedure.

NT6X53 in an RSC-S (DS-1) Model A LCM(E)

Application

Use this procedure to replace an NT6X53 card in an RSC-S LCM(E).

PEC	Suffixes	Name
NT6X53	CA	Power Converter

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X53 in an RSC-S (DS-1) Model A LCM(E) (continued)

Summary of card replacement procedure for an NT6X53 card in RSC-S LCM(E)



NT6X53 in an RSC-S (DS-1) Model A LCM(E) (continued)

Replacing an NT6X53 card in RSC-S LCM(E)

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain an NT6X53 replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP display to the PM level and post the LCM(E) unit by typing

>MAPCI;MTC;PM;POST LCM(E) lcm(e)_site_name lcm(e)_frame_no lcm(e)_no

and pressing the Enter key.

where

Icm(e)_site_name is the name of the site at which the LCM(E) is located

lcm(e)_frame_no

is the number of the frame in which the LCM(E) is located

lcm(e)_no

is the number of the LCM(E) with the faulty card

Example of a MAP response:

/																``
CI	1 MS	IC	D	Net		I	M	C	CCS		LNS	Tr	ks	Ext	Appl	-
•	•	•		•			•		•		•		•	•	•	
LCI	Æ			в	ManI		3	(OffL		CBsy		ISTb		InSv	
0	Quit	PM		4		0)		1	LO		3		3	130	
2	Post_	LCME		1		()			5		0		1	9	
3																
4	Swrg_	LCME	R	emL	00	0 (IS	Tb	Liı	nks	005:	CS	ide	1		
5	Trnsl_	Unit	-0:	Ins	lv							/RG:	0			
б	Tst_	Unit	-1:	TnS	lv.							/RG:	0			
7	Bsy_	01120	-					11	11	11		, 100	R	G:Pref:0	InSv	
8	RTS_	Drwr	. 01	23	45	67	89	01	23	45				Stbv:1	InSv	
9	OffL_	21.01												5557 1	1110 1	
10	LoadPM_			•••	••	•••	••	••	•••	••						
11	Disp_															
12	Next_															
13																
14	QueryPM															
15																
16																
17																
18																
																1

NT6X53 in an RSC-S (DS-1) Model A LCM(E) (continued)

4 Busy the LCM(E) by typing

>BSY UNIT lcm(e)_unit_no

and pressing the Enter key.

where

lcm(e)_unit_no

is the number of the LCM(E) unit

Example of a MAP response:

													~
CM	MS IOD Net		P	PM			LNS	Trks	Trks Ext		L		
•	•	•		•	1L	CME	•	•		•	•	•	
LCME		SysB		I	ManB		Off	OffL CBs		y ISTb		InSv	
0 Q1	uit	PM	M 4		1		1	0		3	3		
2 P	ost_	LCME	ME 1		1			5		0) 1		
3													
4 St	wRg	LCME	Ren	1L 00	οı	STb	Li	nks	00S:	CSide	1		
5 T:	rnsl	Unit	-0:	InSv	Mtc	е Та	ake01	ver .	/RG:	0			
б Т:	st	Unit	-1:	ManB	Mtce	2			/RG:	0			
7 B;	sy						11 11	. 11		RG:Pref	:0 InSv		
8 R.	rs	Drwr	: 01	23 45	67	89 (01 23	45		Stby	:1 InSv		
9 0:	ffL									-			
10 Lo	oadPM												
11 D:	isp_												
12 Ne	ext												
13													
14 Q1	ueryPM												
15													
16													
17													
18													
													/
At the LCE frame

5



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wriststrap.

6 Power down the shelf by setting the ON/OFF switch on the circuit breaker shelf to the OFF position. Both the converter FAIL LED and FRAME FAIL lamp on the FSP will be ON. An audible alarm may sound. If an alarm does sound, silence it by typing

>sil

and pressing the Enter key.

- 7 Remove the NT6X53 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



- **b** Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.
- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.



- 8
- Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



- 9 Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



- **10** Power up the LCM(E) unit as follows:
 - **a** Ensure the power converter (NT6X53) is inserted. A major audible alarm may sound. This alarm is silenced when power is restored to the converter.
 - **b** Set the POWER switch on the circuit breaker to the ON position.

At the MAP terminal

11 Load the LCM(E) unit by typing

>loadpm unit lcm(e)_unit_no CC

and pressing the Enter key.

where

12

13

14

lcm(e)_unit_no
 is the number of the LCM(E) unit busied in step 4

If load	Do
passed	step 12
failed	step 18
Test the LCM(E) unit by typing	
>TST UNIT lcm(e)_no	
and pressing the Enter key.	
where	
Icm(e)_unit_no is the number of the LCM(E)	unit loaded in step 11
If TST	Do
passed	step 13
failed	step 17
Use the following information to deter procedure.	ermine what step to go to next in this
If you entered this procedure from	Do
alarm clearing procedures	step 17
other	step 14
Return the LCM(E) unit to service by	y typing
<pre>>RTS UNIT lcm(e)_unit_no</pre>	
and pressing the Enter key.	

lcm(e)_unit_no

is the number of the LCM(E) unit tested in step 12

If RTS	Do
passed	step 15
failed	step 18

- **15** Send any faulty cards for repair according to local procedure.
- **16** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 19.
- **17** Return to *Alarm Clearing Procedures* or the other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **18** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- **19** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X53 in an RSC-S (DS-1) Model B LCM(E)

Application

Use this procedure to replace an NT6X53 card in an RSC-S LCM(E).

PEC	Suffixes	Name
NT6X53	CA	Power Converter

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X53 card in RSC-S LCM(E)

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain an NT6X53 replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP display to the PM level and post the LCM(E) unit by typing

>MAPCI;MTC;PM;POST LCM(E) lcm(e)_site_name lcm(e)_frame_no lcm(e)_no

and pressing the Enter key.

where

Icm(e)_site_name is the name of the site at which the LCM(E) is located

lcm(e)_frame_no

is the number of the frame in which the LCM(E) is located

lcm(e)_no

is the number of the LCM(E) with the faulty card

Example of a MAP response:

/										
Cl	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
•	•	•	•	•	•	•	•	•	•	
LCI	Æ		SysB	ManB	OffL	CE	Bsy	ISTb	InSv	
0	Quit	PM	4	0	1	0	3	3	130	
2	Post_	LCME	1	0		5	0	1	9	
3										
4	Swrg_	LCME	RemL	00 0 IS	Tb Lin	ks_00S:	CSide	e 1		
5	Trnsl_	Unit-	-0: InS	v			/RG: ()		
6	Tst_	Unit-	-1: InS	v			/RG: ()		
7	Bsy_				11 11	11		RG:Pref	:0 InSv	
8	RTS_	Drwr	: 01 23	45 67 89	01 23	45		Stby	:1 InSv	
9	OffL_									
10	LoadPM_									
11	Disp_									
12	Next_									
13										
14	QueryPM									
15										
16										
17										
18										
										/

4 Busy the LCM(E) by typing

>BSY UNIT lcm(e)_unit_no

and pressing the Enter key.

where

lcm(e)_unit_no

is the number of the LCM(E) unit

Example of a MAP response:

C	M MS	IOD	N	let	PM		ccs		LNS		Trks	Ext	Appl
•	•	•		•	1LCM	Е	•		•		•	•	•
LCI	ME		SysB	М	anB		Off	L	CB	зу	IST	b	InSv
0	Quit	PM	4		1		1	0		3		3	130
2 3	Post_	LCME	1		1			5		0		1	9
4	SwRg	LCME	RemL	00	O IS	Tb	L	inks	00S	: C	Side 1		
5	Trnsl	Unit-	0: In	Sv I	Mtce '	Take	eove	er	/RG:	0			
б	Tst	Unit-	1: Ma	nB M	tce				/RG:	0			
7	Bsy					11	11	11		RG:	Pref:0	InSv	
8	RTS	Drwr:	01 23	45 (67 89	01	23	45			Stby:1	InSv	
9	OffL										-		
10	LoadPM												
11	Disp_												
12	Next												
13													
14	QueryPM												
15													
16													
17													
18													

At the LCE frame

5



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the modular supervisory panel (MSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

6 Power down the shelf by setting the ON/OFF switch on the circuit breaker shelf to the OFF position. Both the converter FAIL LED and FRAME FAIL lamp on the MSP will be ON. An audible alarm may sound. If an alarm does sound, silence it by typing

>sil

and pressing the Enter key.

- 7 Remove the NT6X53 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



- **b** Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.
- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.



- 8
- Open the locking levers on the replacement card.
 - a Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



- 9 Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



- **10** Power up the LCM(E) unit as follows:
 - **a** Ensure the power converter (NT6X53) is inserted. A major audible alarm may sound. This alarm is silenced when power is restored to the converter.
 - **b** Set the POWER switch on the circuit breaker to the ON position.

At the MAP terminal

- 11 Load the LCM(E) unit by typing
 - >LOADPM UNIT lcm(e)_unit_no CC and pressing the Enter key.
 - where

lcm(e)_unit_no

12

13

14

15 16 is the number of the LCM(E) unit busied in step 4

ii load	Do
passed	step 12
failed	step 18
Test the LCM(E) unit by typing	
>TST UNIT lcm(e)_no	
and pressing the Enter key.	
where	
lcm(e)_unit_no is the number of the LCM(E)	unit loaded in step 11
If TST	Do
passed	step 13
failed	step 17
procedure	
procedure. If you entered this procedure from	Do
procedure. If you entered this procedure from alarm clearing procedures	Do step 17
procedure. If you entered this procedure from alarm clearing procedures other	Do step 17 step 14
procedure. If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b	Do step 17 step 14 y typing
procedure. If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no	Do step 17 step 14 y typing
procedure. If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no and pressing the Enter key.	Do step 17 step 14 y typing
If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no and pressing the Enter key. where	Do step 17 step 14 y typing
If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no and pressing the Enter key. where lcm(e)_unit_no is the number of the LCM(E)	Do step 17 step 14 vy typing unit tested in step 12
procedure. If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no and pressing the Enter key. where lcm(e)_unit_no is the number of the LCM(E) If RTS	Do step 17 step 14 y typing unit tested in step 12 Do
procedure. If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no and pressing the Enter key. where lcm(e)_unit_no is the number of the LCM(E) If RTS passed	Do step 17 step 14 y typing unit tested in step 12 Do step 15
procedure. If you entered this procedure from alarm clearing procedures other Return the LCM(E) unit to service b >RTS UNIT lcm(e)_unit_no and pressing the Enter key. where lcm(e)_unit_no is the number of the LCM(E) If RTS passed failed	Do step 17 step 14 y typing unit tested in step 12 Do step 15 step 18

- **17** Return to *Alarm Clearing Procedures* or the other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **18** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- **19** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X53 in a STAR

Application

Use this procedure to replace the following card in a STAR.

PEC	Suffixes	Name
NT6X53	AA	Power Converter Card (5V/15V)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X53 card in a STAR



Replacing an NT6X53 in a STAR

At your current location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2 Get a replacement card. Make sure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP display

3 To access the PM level of the MAP and post the STAR, type

>MAPCI;MTC;PM;POST STAR site frame unit

and press the Enter key.

where

site

is the name of the STAR site

frame

is the frame number of the STAR (0 to 511)

unit

is 0 for the STAR

Example of a MAP display:

SysB ManB OffL CBsy ISTb InSv 0 130 ΡM 0 0 0 1 0 0 0 1 10 STAR Ο STAR Reml 00 0 ISTb Links OOS: CSide 0 PSide 0 Unit 0: InSv Mtce TakeOver /RG: 0 Unit 1: SysB Mtce /RG: 0 RG: DRwr: 11 11 11 11 11 22 22 22 22 22 33 33 33 Pref 0 InSv 01 23 45 67 89 01 23 45 67 89 01 23 45 67 89 01 23 45 Stby 1 InSv

4 To busy the STAR unit containing the faulty card, type

>BSY UNIT STAR_unit

and press the Enter key.

where

star_unit is the STAR unit (0 or 1) to be busied

Example of a MAP display:

	5	SysB	M	anB		Of	ЕL		CBs	зу		IS	Гb	InSv	-	
	PM	0		0		C)		0			1	-	13	0	
	STAR	0		0		C)		0			1	-	1	0	
STAR	Reml	00 0) ISTŁ)]	Link	s_C	os:	CS	lide	0	PSi	.de	0			
Unit O:	InSv	r Mto	ce Tał	eove	er	/	RG:	0)							
Unit 1:	ManB	8 Mto	ce			/	RG:	0)					RG:		
DRwr:		11	11 1	1 11	11	22	22	22	22	22	33	33	33	Pref	0	InSv
01 23 4	5678	89 01	23 4	5 67	89	01	23	45	67	89	01	23	45	Stby	1	InSv
					••	••	••	••	••	••		••	••			

At the SRHE frame

5 Turn the circuit breaker OFF for the unit where the power converter is being replaced. Use the table below to determine which FSP circuit breaker serves the faulty power converter.

IfCircuit breaker labeled	DoNT6X53 slot number
PS00	3
PS01	5
PS10	20
PS11	18

6



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the STAR. This protects the equipment against damage caused by static electricity.

Replace the NT6X53 card using the common replacing a card procedure in this document. When the card has been replaced, return to this point.

- 7 Power up the STAR unit as follows:
 - **a** Make sure the power converter (NT6X53) is inserted. A major audible alarm may sound. This alarm is silenced when power is restored to the converter.
 - **b** Set the circuit breaker to the ON position. The Converter Fail LED on the power converter and the MAJ LED on the FSP will be extinguished.

Determine the correct FSP circuit breaker for the power converter that was replaced from the following table.

IfCircuit breaker	DoNT6X53 slot number
PS00	3
PS01	5
PS10	20
PS11	18

Set the circuit breaker to the ON position for the new power converter. С

- i The Converter Fail LED on the power converter will be extinguished.
- ii The MAJ LED on the FSP will be extinguished.
- Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 12
other	step 9
To return the STAR unit to service,	type
>RTS UNIT star_unit	
and press the Enter key.	
where	
star_unit is the STAR (0 or 1) busied ir	n step 4
star_unit is the STAR (0 or 1) busied in If RTS	n step 4 Do
star_unit is the STAR (0 or 1) busied in If RTS passes	n step 4 Do step 10
star_unit is the STAR (0 or 1) busied in If RTS passes fails	Do step 10 step 13
star_unit is the STAR (0 or 1) busied ir If RTS passes fails Send any faulty cards for repair accord	Do step 10 step 13 ording to local procedure.
star_unit is the STAR (0 or 1) busied in If RTS passes fails Send any faulty cards for repair accord Record the following items in office	Do step 10 step 13 ording to local procedure. records:
star_unit is the STAR (0 or 1) busied in If RTS passes fails Send any faulty cards for repair accord Record the following items in office date the card was replaced	Do step 10 step 13 ording to local procedure. records:

- serial number of the card
- indications that prompted replacement of the card

Go to step 14.

8

9

10 11

12 Return to the alarm clearing procedure that directed you to this procedure. If necessary, go to the point where the faulty card list was produced, identify the

NT6X53 in a STAR (end)

next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.

- **13** Get additional help replacing this card by contacting the personnel responsible for a higher level of support.
- 14 You have correctly completed this procedure.

NT6X54 in an IOPAC ILCM

Application

Use this procedure to replace the following card in an International line concentrating module (ILCM).

PEC	Suffixes	Name
NT6X54	BA	Bus interface card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X54 card in an ILCM



Replacing an NT6X54 in an ILCM

At your Current Locatin

1

ATTENTION

If you are entering this procedure due to a loss of power in the LCM's controller (PLGC/RCO2). Check logutil for PM181 log with reason text of: DCC BIC Looparound and go to step 7.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 7. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level of the MAP display and post the ILCM by typing

>MAP;MTC;PM;POST ILCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the IOPAC

frame

is the frame number of the IOPAC cabinet

lcm

is the number of the ILCM

Example of a MAP response:

ILCM REM1 00 0 ISTb Links OOS: Cside 0 Pside 0 Unit 0: InSv Mtce /RG:0 Unit 1: InSv Mtce /RG:1 11 11 11 11 11 Drwr: 01 23 45 67 89 01 23 45 67 89 RG:Pref 0 InSv SS RG:Stby 1 InSv

5 Check the status of the affected drawer.							
	If the drawer status is	Do					
	S, O, C, I	step 6					
	М	step 7					
6	Busy both line subgroups associat is being replaced by typing	ed with the ILCM drawer in which the card					
	>BSY DRWR lsg						
	and pressing the Enter key.						
	where						
	lsg						
	is one of two line subgroup	s associated with the drawer					
	Example of a MAP response;						
ILCI Plea	M REM1 00 0 Drwr 4 will be ase confirm ("YES", "Y", "N	taken out of service O", or "N"):					
	Confirm the system prompt by typ	ing					
	>YES	0					
	and pressing the Enter key.						
	<i>Note:</i> Repeat this step for the or drawer.	other line subgroup associated with the line					
At the	e IOPAC cabinet						
7	Remove the -48V fuse for the line card.	drawer containing the faulty bus interface					
8	Remove the +15V fuse for the line card.	drawer containing the faulty bus interface					
9	Remove the +5V fuse for the line of card.	drawer containing the faulty bus interface					
	If entry into this procedure is due to	Do					
	Loss of power in ILCM's co troller	on- step 14					
	Replacement of BIC	step 12					

10



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the RLCM. This protects the equipment against damage caused by static electricity.



DANGER

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Nortel [Northern Telecom] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER

Hot materials Exercise care when handling the line card. The line feed resistor may be very hot.

resistor may be very i

Put on a wriststrap.

- 11 Open the line drawer by following these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.

- **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).
- **12** Remove the BIC to be replaced by following these substeps:
 - a Open the locking levers on the BIC.
 - **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.
 - *Note:* Do not use a rocking motion to remove the card.
- **13** Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Open the locking levers on the card.
 - **c** Position the card in its backplane socket. In one steady motion, push against the top and botton of the card with your thumbs until the card plugs fully into the backplane socket, close and lock the locking levers.
 - *Note:* Do not use a rocking motion to insert the card.
 - d Close the line drawer.
- 14 Replace the +5V fuse for the line drawer containing the faulty bus interface card.
- **15** Replace the +15V fuse for the line drawer containing the faulty bus interface card.
- **16** Replace the -48V fuse for the line drawer containing the faulty bus interface card.
- 17 If you were directed to this procedure from the *Alarm Clearing Procedures,* return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 18.

At the MAP terminal

- **18** Test the line subgroups associated with the drawer by typing
 - >TST DRWR lsg

and pressing the Enter key.

where

lsg

is one of two line subgroups associated with the drawer

Note: Repeat this step for the other line subgroup associated with the line drawer.

If TST	Do
passed	step 19
failed	step 23
Return the line subgroups to service	by typing
>RTS DRWR lsg	

19

NT6X54 in an IOPAC ILCM (end)

and pressing the Enter key.

where

lsg

is one of two line subgroups associated with the drawer

Note: Repeat this step for the other line subgroup associated with the line drawer.

If RTS	Do
passed	step 20
failed	step 23

20

Test the ILCM by typing

>TST PM

and pressing the Enter key.

If the TST	Do
passed	step 21
failed	step 23

- 21 Send any faulty cards for repair according to local procedure.
- 22 Record the following items in office records:
 - · date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 24.

- 23 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 24 You have successfully completed this procedure.

NT6X54 in an OPAC LCM

Application

Use this procedure to replace the following card in a line concentrating module (LCM).

PEC	Suffixes	Name
NT6X54	AA	Bus interface card (BIC)
NT6X54	DA	ISDN drawer controller (IDC) card (BIC)
		<i>Note:</i> Peripherals with ISDN line drawer for remotes (ILDR) must use the NT6X54DA card. ILDR is first available for remote switching center-SONET (RSC-S) and remote switching center (RSC) configurations in the NA007/XPM08 timeframe. ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X54 card in an LCM



Replacing an NT6X54 in an LCM

At your Current Location

1

ATTENTION

If you are entering this procedure due to a loss of power in the LCM's controller (LGC/LTC/RCC), check logutil for PM181 log with reason text of: DCC BIC Looparound and go to step 10.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 10. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level of the MAP (maintenance and administration position) display and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name (alphanumeric) of the OPAC

frame

is the frame number (0 through 511) of the OPAC

lcm

is the number (0 through 511) of the LCM

Example of a MAP display:

CI	M MS	IO:	d N	et ·	PM 1LC	M	CC	cs •	LÌ	•	Тı	·ks		Ext •		App	1
LCN	4		SysB	Ν	lanB		C	DffI		(CBsy	7	J	STb	,	I	nSv
0	Quit	PM	0		1			0			0			0		1	30
2 3	Post_	LCM	0		1			0			0			0			0
4	SwRg		LCM	Ren	nl C	0	0 3	ISTŁ	С	Liı	nks_	_008	3: (CSid	le 0	PSi	de O
5	Trnsl		Unit-	0:	InSv	-	Mto	ce			/RG	: ()				
6	Tst		Unit-	1:	InsV	7	Mto	ce			/RG	: ()				
7	Bsy								11	11	11	11	11	RG:	Prei	E:0	InSv
8	RTS		Drwr:	01	23 4	5	67	89	01	23	45	67	89		Stb	y:1	InSv
9	OffL			• •	S	s	••		••				••				
10	LoadPM																
11	Disp_																
12	Next																
13																	
14	QueryPM																
15																	
16																	
17																	
18																	

Note: ILDR drawers are identified in reverse video on the MAP display.

Determine whether or not you need to access the ILD level on the MAP terminal.

If the card you are replacing is	Do			
NT6X54DA	step 6			
NT6X54AA	step 9			
Access the ILD level on the MAP terminal by typing				

>ILD

5

6

and pressing the Enter key.

7 Post the ILDR drawer in which the card is being replaced by typing

>POST drawer_no

and pressing the Enter key.

where

drawer_no

is the ILD drawer number (0 through 19) in the LCM

8 Busy both line subgroups associated with the LCM drawer in which the card is being replaced by typing

>BSY DRWR

and pressing the Enter key. Example of a MAP response;

Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Go to step 10.

9 Busy both line subgroups associated with the LCM drawer in which the card is being replaced by typing

```
>BSY DRWR lsg
```

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer *Example of a MAP response;*

LCM REM1 00 0 Drwr 4 will be taken out of service Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Note: Repeat this step for the other line subgroup associated with the line drawer.

Example of a MAP display:

CI	MS .	10	d N	et	PM 1LC	I IM	CC	cs •	LÌ	12	Tr	·ks	Ex	t	Appl •	
LCN	1		SysB	Μ	lanB		C	DffI		C	CBsy	,	IST	b	InS	v
0	Quit	PM	0		1			0			0		0		130	
2 3	Post_	LCM	0		1			0			0		0		0	
4	SwRg		LCM	Rem	n1 C	00	0	ISTE	С	Lir	nks_	_008	s: CSi	.de	0 PSide	0
5	Trnsl		Unit-	0:	InSv	7	Mto	ce		,	RG	: ()			
6	Tst		Unit-	1:	InsV	7	Mto	ce		,	RG	: ()			
7	Bsy								11	11	11	11	11 RG	;:Pr	ef:0 In	Sv
8	RTS		Drwr:	01	23 4	15	67	89	01	23	45	67	89	St	by:1 In	Sv
9	OffL				№	ſM							• •			
10	LoadPM															
11	Disp_															
12	Next															
13																
14	QueryPM															
15																
16																
17																
18																

At the OPAC

- **10** Remove the -48V fuse for the line drawer containing the faulty bus interface card.
- 11 Remove the +15V fuse for the line drawer containing the faulty bus interface card.
- **12** Remove the +5V fuse for the line drawer containing the faulty bus interface card.

If entry into this procedure is due to	Do
replacement of BIC	step 13
loss of power in LCM's control- ler	step 17

13



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the RLCM. This protects the equipment against damage caused by static electricity.



DANGER

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat. Wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Nortel [Northern Telecom] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.

DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

Put on a wrist strap.

- 14 Open the line drawer by following these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).
- 15 Remove the BIC to be replaced by following these substeps:
 - a Open the locking levers on the BIC.
 - **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.

Note: Do not use a rocking motion to remove the card.

- **16** Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.

- **b** Open the locking levers on the card.
- **c** Position the card in its backplane socket. In one steady motion, push against the top and bottom of the card with your thumbs until the card plugs fully into the backplane socket, close and lock the locking levers.

Note: Do not use a rocking motion to insert the card.

- **d** Close the line drawer.
- 17 Replace the +5V fuse for the line drawer containing the faulty bus interface card.
- **18** Replace the +15V fuse for the line drawer containing the faulty bus interface card.
- **19** Replace the -48V fuse for the line drawer containing the faulty bus interface card.
- **20** If you were directed to this procedure from the *Alarm Clearing Procedures,* return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 21.

At the MAP terminal

21 Determine which procedure to use to return the line subgroups to service.

p 22
p 23
]

22 Return the line subgroups to service by typing

>RTS DRWR lsg

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer **Note:** Repeat this step for the other line subgroup associated with the line drawer.

If RTS	Do
passed	step 24
failed	step 26

23 Return the line subgroups to service by typing

>RTS DRWR

NT6X54 in an OPAC LCM (end)

and pressing the Enter key.

If RTS	Do	
passed	step 24	
failed	step 26	

- 24 Send any faulty cards for repair according to local procedure.
- **25** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card Go to step 27.
- 26 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 27 You have successfully completed this procedure.
NT6X54 in an OPM

Application

Use this procedure to replace the following card in an OPM.

PEC	Suffixes	Name
NT6X54	AA	Bus interface card (BIC)
NT6X54	DA	ISDN drawer controller (IDC) card (BIC)
		<i>Note:</i> Peripherals with ISDN line drawer for remotes (ILDR) must use the NT6X54DA card. ILDR is first available for remote switching center-SONET (RSC-S) and remote switching center (RSC) configurations in the NA007/XPM08 timeframe. ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X54 card in an OPM



Replacing an NT6X54 in an OPM

At your Current Location

1

ATTENTION

If you are entering this procedure due to a loss of power in the LCM's controller (LGC/LTC/RCC), check logutil for PM181 log with reason text of: DCC BIC Looparound and go to step 10.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 10. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level of the MAP (maintenance and administration position) display and post the OPM by typing

>MAPCI;MTC;PM;POST OPM site frame opm

and pressing the Enter key.

where

site

is the site name (alphanumeric) of the OPM

frame

is the frame number (0 through 511) of the OPM cabinet

lcm

is the number (0 or 1) of the LCM

Example of a MAP display:

/																		
CI	M MS	IO	d N	et	Ρ	М	CC	CS	LI	IS	Tr	ks		Ext		App	1	
	• •				1L	СМ		•		•		•		•		•		
LCI	4		SysB	N	lanB		C	DffI	L	C	Bsy	7]	ISTb		I	nSv	
0	Quit	PM	0		1			0			0			0		1	30	
2	Post_	LCM	0		1			0			0			0			0	
3																		
4	SwRg		LCM	Rer	n1	00	0 3	ISTE	5	Lir	nks_	_005	s: (Csid	e 0	PSi	de 0	
5	Trnsl		Unit-	0:	InS	v	Mto	ce		,	RG	: ()					
6	Tst		Unit-	1:	Ins	V	Mto	ce		,	RG	: ()					
7	Bsy								11	11	11	11	11	RG:	Pref	:0	InSv	
8	RTS		Drwr:	01	23	45	67	89	01	23	45	67	89		Stby	1:1	InSv	
9	OffL					SS												
10	LoadPM																	
11	Disp_																	
12	Next																	
13																		
14	QueryPM																	
15																		
16																		
17																		
18																		

Note: ILDR drawers are identified in reverse video on the MAP display.

Determine whether or not you need to access the ILD level on the MAP terminal.

If the card you are replacing is	Do
NT6X54DA	step 6
NT6X54AA	step 9

6 Access the ILD level on the MAP terminal by typing

>ILD

5

and pressing the Enter key.

7 Post the ILDR drawer in which the card is being replaced by typing

>POST drawer_no

and pressing the Enter key.

where

drawer_no is the ILD drawer number (0 through 19) in the LCM

8 Busy both line subgroups associated with the LCM drawer in which the card is being replaced by typing

>BSY DRWR

and pressing the Enter key.

Example of a MAP response;

Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Go to step 10.

9 Busy both line subgroups associated with the OPM drawer in which the card is being replaced by typing

>BSY DRWR lsg

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer

Example of a MAP response:

```
LCM REM1 00 0 Drwr 4 will be taken out of service
Please confirm ("YES," "Y," "NO," or "N"):
```

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Note: Repeat this step for the other line subgroup associated with the line drawer.

Example of a MAP display:

		то		o.+		M	0	10	τ τ	10	Π.	alea		E+	_	7.55	-1
CI	4 MS	10.	D N	eι	1		C	25	Ш	15	11	rks		ĽΧι	-	App	ρı
	•	•		•	ΤI	⊔CM		•		•		•		•		•	
LCN	1		SvsB	1	Manl	3	(DffI		C	Bsy	,		ISTŁ	c	-	InSv
0	Ouit	РМ	0		1			0			0			0		-	L30
2	Post	LCM	0		1			0			0			0			0
3																	
4	SwRg		LCM	Rei	m1	00	0	IST	o	Liı	ıks	00	s:	CSid	de () PS:	ide 0
5	Trnsl		Unit-	0:	In	Sv	Mt	ce		,	RG/	:	0				
б	Tst		Unit-	1:	In	sV	Mt	ce		,	/RG	: (0				
7	Bsy								11	11	11	11	11	RG	Pre	ef:0	InSv
8	RTS		Drwr:	01	23	45	67	89	01	23	45	67	89		Stk	oy:1	InSv
9	OffL					MM										_	
10	LoadPM																
11	Disp_																
12	Next																
13																	
14	QueryPM																
15																	
16																	
17																	
18																	

At the OPM cabinet

- **10** Remove the -48V fuse for the line drawer containing the faulty bus interface card.
- 11 Remove the +15V fuse for the line drawer containing the faulty bus interface card.
- **12** Remove the +5V fuse for the line drawer containing the faulty bus interface card.

If entry into this procedure is due to	Do
replacement of BIC	step 13
loss of power in LCM's control- ler	step 17

13



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the OPM. This protects the equipment against damage caused by static electricity.



DANGER

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat. Wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Nortel [Northern Telecom] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed

resistor may be very hot.

Put on a wrist strap.

- 14 Open the line drawer by following these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.

- **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).
- **15** Remove the BIC to be replaced by following these substeps:
 - a Open the locking levers on the BIC.
 - **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.
 - *Note:* Do not use a rocking motion to remove the card.
- **16** Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Open the locking levers on the card.
 - **c** Position the card in its backplane socket. In one steady motion, push against the top and bottom of the card with your thumbs until the card plugs fully into the backplane socket, close and lock the locking levers.
 - *Note:* Do not use a rocking motion to insert the card.
 - d Close the line drawer.
- **17** Replace the +5V fuse for the line drawer containing the faulty bus interface card.
- **18** Replace the +15V fuse for the line drawer containing the faulty bus interface card.
- **19** Replace the -48V fuse for the line drawer containing the faulty bus interface card.
- 20 If you were directed to this procedure from the *Alarm clearing procedure*, return now to the main procedure that directed you here. Otherwise, continue with step 21.

At the MAP terminal

21 Determine which procedure to use to return the line subgroups to service.

If the card you are replacing is	Do						
NT6X54AA	step 22						
NT6X54DA	step 23						
Return the line subgroups to service by typing							
>RTS DRWR lsg							

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer

22

NT6X54 in an OPM (end)

Note: Repeat this step for the other line subgroup associated with the line drawer.

If RTS	Do						
passed	step 24						
failed	step 26	step 26					
eturn the line subgroup	s to service by typing						
>RTS DRWR							
RTS DRWR							
RTS DRWR nd pressing the Enter k	ey.						
nd pressing the Enter k	ey. Do						
RTS DRWR nd pressing the Enter k If RTS passed	ey. Do step 24						

25 Record the following items in office records:

- date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card

Go to step 27.

23

24

- 26 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 27 You have successfully completed this procedure.

NT6X54 in an RLCM

Application

Use this procedure to replace the following card in an RLCM.

PEC	Suffixes	Name
NT6X54	AA	Bus Interface Card (BIC)
NT6X54	DA	ISDN drawer controller (IDC) card (BIC)
		<i>Note:</i> Peripherals with ISDN line drawer for remotes (ILDR) must use the NT6X54DA card. ILDR is first available for remote switching center-SONET (RSC-S) and remote switching center (RSC) configurations in the NA007/XPM08 timeframe. ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X54 card in an RLCM



Replacing an NT6X54 card in an RLCM

At your current location

1

ATTENTION

If you are entering this procedure due to a loss of power in the LCM's controller (LGC/LTC/RCC), check logutil for PM181 log with reason text of: DCC BIC Looparound and go to step 10.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 10. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level of the MAP (maintenance and administration position) display and post the RLCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name (alphanumeric) of the RLCM

frame

is the frame number (0 through 511) of the RLCE

lcm

is the number (0 or 1) of the LCM

Example of a MAP display:

CI.	M MS	IO	D N	iet •	PM 1LCI	C	CS •	LÌ	•	Тı	rks •		Ext •		Appl •	L
LCN	И		SysB	Ν	IanB		Offi	L	C	CBsy	7]	ISTb		Ir	ıSv
0	Quit	PM	0		1		0			0			0		13	30
2 3	Post_	LCM	0		1		0			0			0			0
4	SwRg		LCM	Rer	nl O	0 0	IST	b	Liı	nks_	_008	s: (CSid	e 0	PSic	le O
5	Trnsl		Unit-	0:	InSv	Mt	ce		,	RG	: ()				
б	Tst		Unit-	1:	InsV	Mt	ce		,	RG	: ()				
7	Bsy							11	11	11	11	11	RG:	Pref	:0]	InSv
8	RTS		Drwr:	01	23 4	5 67	89	01	23	45	67	89		Stby	:1 1	InSv
9	OffL				S	s								_		
10	LoadPM															
11	Disp_															
12	Next															
13																
14	QueryPM															
15																
16																
17																
18																

Note: ILDR drawers are identified in reverse video on the MAP display.

Determine whether or not you need to access the ILD level on the MAP terminal.

If the card you are replacing is	Do						
NT6X54DA	step 6						
NT6X54AA	step 9						
Access the ILD level on the MAP terminal by typing							
>ILD							

and pressing the Enter key.

7 Post the ILDR drawer in which the card is being replaced by typing

>POST drawer_no

and pressing the Enter key.

where

5

6

drawer_no

is the ILD drawer number (0 through 19) in the LCM

8 Busy both line subgroups associated with the LCM drawer in which the card is being replaced by typing

>BSY DRWR

and pressing the Enter key. Example of a MAP response;

Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Go to step 10.

9 Busy both line subgroups associated with the RLCM drawer in which the card is being replaced by typing

>BSY DRWR lsg

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer *Example of a MAP response:*

LCM REM1 00 0 Drwr 4 will be taken out of service Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Note: Repeat this step for the other line subgroup associated with the line drawer.

Example of a MAP display:

CI	/ MS	τo	N N	≏t	1	РМ	C	2.5	T.T	2.D	Τ'	rks	Es	c+	Ann	1
Cr					11	LCM	0	•		•	11	•	2	•	APP.	1
LCN	4		SysB	ľ	IanI	В	(DffI		(Bsy	7	IST	۲b	I	nSv
0	Quit	PM	0		1			0			0		()	1	30
2	Post_	LCM	0		1			0			0		(C		0
3																
4	SwRg		LCM	Rei	n1	00	0	IST	о	Liı	ıks_	_005	CS:	ide	0 PSi	de O
5	Trnsl		Unit-	0:	In	Sv	Mt	ce			/RG	: 0)			
6	Tst		Unit-	1:	In	sV	Mt	ce			/RG	: 0)			
7	Bsy								11	11	11	11	11 R(G:Pr	ref:0	InSv
8	RTS		Drwr:	01	23	45	67	89	01	23	45	67	89	St	by:1	InSv
9	OffL				••	MM	••	• •	••	••	• •	••	••			
10	LoadPM															
11	Disp_															
12	Next															
13																
14	QueryPM															
15																
16																
17																
18																
< N 1																

At the RLCE frame

- **10** Remove the -48V fuse for the line drawer containing the faulty bus interface card.
- **11** Remove the +15V fuse for the line drawer containing the faulty bus interface card.
- **12** Remove the +5V fuse for the line drawer containing the faulty bus interface card.

If entry into this procedure is due to	Do
replacement of BIC	step 13
loss of power in LCM's control- ler	step 17

13



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the RLCM. This protects the equipment against damage caused by static electricity.



DANGER

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat. Wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Nortel [Northern Telecom] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER

Hot materials Exercise care when handling the line card. The line feed

resistor may be very hot.

Put on a wrist strap.

- 14 Open the line drawer by following these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.

- **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).
- **15** Remove the BIC to be replaced by following these substeps:
 - **a** Open the locking levers on the BIC.
 - **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.
 - *Note:* Do not use a rocking motion to remove the card.
- **16** Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Open the locking levers on the card.
 - **c** Position the card in its backplane socket. In one steady motion, push against the top and bottom of the card with your thumbs until the card plugs fully into the backplane socket, close and lock the locking levers.
 - *Note:* Do not use a rocking motion to insert the card.
 - d Close the line drawer.
- **17** Replace the +5V fuse for the line drawer containing the faulty bus interface card.
- **18** Replace the +15V fuse for the line drawer containing the faulty bus interface card.
- **19** Replace the -48V fuse for the line drawer containing the faulty bus interface card.
- 20 If you were directed to this procedure from the *Alarm clearing procedure*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 21.

At the MAP terminal

21 Determine which procedure to use to return the line subgroups to service.

If the card you are replacing is	Do					
NT6X54AA	step 22					
NT6X54DA	step 23					
Return the line subgroups to service	by typing					
>RTS DRWR lsg						

and pressing the Enter key.

where

22

lsg

is one of two line subgroups (0 through 19) associated with the drawer

NT6X54 in an RLCM (end)

Note: Repeat this step for the other line subgroup associated with the line drawer.

If RTS	Do				
passed	step 24				
failed	step 26				
Return the line subgroups to service by typing					

23

>RTS DRWR

and pressing the Enter key.

If RTS	Do
passed	step 24
failed	step 26

24 Send any faulty cards for repair according to local procedure.

25 Record the following items in office records:

- ٠ date the card was replaced
- serial number of the card
- symptoms that prompted replacement of the card ٠

Go to step 27.

- 26 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 27 You have successfully completed this procedure.

NT6X54 in an RLCM-EDC

Application

Use this procedure to replace the following card in the shelves or frames identi ed in the follo wing table.

PEC	Suffixes	Card name	Shelf/frame name
NT6X54	AA	Bus Interface Card (BIC)	LCM/RLCC

If you cannot identify the PEC, suf x, and shelf or frame for the card you want to replace, refer to the index. The index contains a list of cards, shelves, and frames that this maintenance manual documents.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

This procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

Summary of replacing an NT6X54 card in LCM



Replacing an NT6X54 in LCM

At your current location

1

ATTENTION

If you enter this procedure because of a loss of power in the LCM controller (LTC+), check logutil. Check for PM181 log with reason text: Text DCC BIC Looparound. Go to step 7.

Proceed to step 2 if one of the following conditions applies:

- another maintenance procedure directed you to this card replacement procedure
- you use the procedure to verify or accept cards
- · your maintenance support group directed you to this procedure
- 2 Obtain a replacement card. Make sure the replacement card has the same product equipment code (PEC) and PEC suffix, as the card to remove.
- 3 If the *Alarm Clearing Procedures* directs you to this procedure, go to step 7. If that procedure does not direct you to this procedure, proceed to step 4.

At the MAP terminal

4 To access the peripheral module (PM) level of the MAP terminal and post the RLCM-EDC, type

>MAPCI;MTC;PM;POST LCM site cabinet lcm

and press the Enter key.

where

```
site
```

is the site name of the RLCM (alphanumeric)

```
cabinet
```

is the number of the RLCC cabinet

```
lcm
```

is the number of the LCM

Example of a MAP response:

LCM REM1 00 0 ISTb Links OOS: Cside 0 Pside 0 Unit0: InSv Mtce Unit1: InSv Mtce 11 11 11 11 11 RG: Uneq Drwr: 01 23 45 67 89 01 23 45 67 89 ...SS

Check the status of the affected draw	/er.					
If the drawer status	Do					
is S, O, C, I	step 6					
is M	step 7					
To busy the two line subgroups that a which you replace the card, type	ssociate with the RLCM-EDC drawer in					
>BSY DRWR lsg_no						
and press the Enter key.						
where						
Isg_no is one of two line subgroups ((0 to 19) that associates with the drawer					
<i>Note:</i> Repeat this step for the othe drawer.	er line subgroup that associates with the					
RLCC-EDC cabinet						
Remove the -48V fuse for the line drawer that contains the defective bus interface card.						
Remove the +15V fuse for the line dr interface card.	awer that contains the defective bus					
Remove the +5V fuse for the line dra interface card.	wer that contains the defective bus					
If the reason for this procedure	Do					
is loss of power in LCM control- ler	step 11					
is replacement of BIC	step 10					
To replace the NT6X54 card, use the this document.	common replacing a card procedure in					
Replace the +5V fuse for the line dra interface card.	wer that contains the defective bus					
Replace the +15V fuse for the line dr interface card.	awer that contains the defective bus					
Replace the -48V fuse for the line dra interface card.	awer that contains the defective bus					
If the <i>Alarm clearing procedure</i> direc main procedure that directed you her to this procedure, proceed to step 15	ts you to this procedure, return to the e. If that procedure does not direct you					

At the MAP terminal

15 To test the line subgroups that associate with the drawer, type

>TST DRWR lsg_no

and press the Enter key.

where

lsg_no

is one of two line subgroups (0 to 19) that associate with the drawer

Note: Repeat this step for the other line subgroup that associates with the drawer.

If TST	Do
passes	step 16
fails	step 20

16

>RTS DRWR lsg_no

To return the line subgroups to service, type

and press the Enter key.

where

lsg_no

is one of two line subgroups (0 to 19) that associate with the drawer **Note:** Repeat this step for the other line subgroup that associates with the drawer.

If RTS	Do
passes	step 17
fails	step 20

17 To test the RLCM-EDC unit, type

```
>TST UNIT unit_no
```

and press the Enter key.

where

18

unit_no is the number of the LCM unit (0 or 1) that associates with the new NT6X54 card.

If the TST	Do	
passes	step 18	
fails	step 20	

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NT6X54 in an RLCM-EDC (end)

- **19** Record the items that follow in office records:
 - date that card replacement occurs
 - serial number of the card
 - indications that prompt replacement of the card
 - Proceed to step 21.
- **20** For additional help, contact the next level of maintenance.
- **21** The procedure is complete.

NT6X54 in an RSC

Application

Use this procedure to replace the following card in a line concentrating module (LCM).

PEC	Suffixes	Name
NT6X54	AA	Bus interface card (BIC)
NT6X54	DA	ISDN drawer controller (IDC) card (BIC)
		<i>Note:</i> Peripherals with ISDN line drawer for remotes (ILDR) must use the NT6X54DA card. ILDR is first available for remote switching center-SONET (RSC-S) and remote switching center (RSC) configurations in the NA007/XPM08 timeframe. ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

Common Procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X54 card in an RSC LCM



Replacing an NT6X54 in an RSC LCM

At your Current Location

1

ATTENTION

If you are entering this procedure due to a loss of power in the LCM's controller (LGC/LTC/RCC). Check logutil for PM181 log with reason text of: DCC BIC Looparound and go to step 10.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card that is to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 10. Otherwise, continue with step 4.

At the MAP terminal

4 Access the peripheral module (PM) level of the MAP (maintenance and administration position) display and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name (alphanumeric) of the RSC

frame

is the frame number (0 through 511) of the LCE

lcm

is the number (0 through 511) of the LCM

Example of a MAP display:

CM MS IOD Net PM CCS LNS Trks Ext App .	
LCM SysB ManB OffL CBsy ISTb ISTb 0 Quit PM 0 1 0 0 0 1 2 Post_ LCM 0 1 0 0 0 1 2 Post_ LCM 0 1 0 0 0 1 3 4 SwRg LCM Reml OO ISTb Links_OOS: CSide 0 PS: 5 Trnsl Unit-0: InSv Mtce /RG: 0 6 Tst Unit-1: InsV Mtce /RG: 0 7 Bsy 11 11 11 IRG: Pref:0 8 RTS Drwr: 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM 13 14 QueryPM </td <td>, pl</td>	, pl
LCM SysB ManB OffL CBsy ISTb ISTb 0 Quit PM 0 1 0 0 0 1 2 Post_ LCM 0 1 0 0 0 1 3	
LCM SYSB Manb OffL CBSY ISID 0 Quit PM 0 1 0 0 0 2 Post_ LCM 0 1 0 0 0 3 4 SwRg LCM Reml 00 ISTb Links_OOS: CSide 0 PS. 5 Trnsl Unit-0: InSV Mtce /RG: 0 0 6 Tst Unit-1: InSV Mtce /RG: 0 7 Bsy 11 11 11 11 RG: Pref:0 8 RTS Drwr: 01 23 45 67 89 Stby:1 9 OffL 10 LoadPM 12 Next 13 4 QueryPM 15 14 QueryPM <td> Q</td>	Q
0 Quit PM 0 1 0 0 0 1 2 Post_ LCM 0 1 0 0 0 3 4 SwRg LCM Reml OO 0 ISTb Links_OOS: CSide 0 PS: 5 Trnsl Unit-0: InSv Mtce /RG: 0 6 Tst Unit-1: InSV Mtce /RG: 0 7 Bsy 11 11 11 11 11 RG:Pref:0 8 RTS Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM 11 Disp_ 12 Next 13 14 QueryPM 15 16 17	Insv
2 Post_ LCM 0 1 0 0 0 3 4 SwRg LCM Rem1 00 0 ISTb Links_OOS: CSide 0 PS. 5 Trnsl Unit-0: InSv Mtce /RG: 0 6 Tst Unit-1: InsV Mtce /RG: 0 7 Bsy 11 11 11 11 RG:Pref:0 8 RTS Drwr: 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM 12 Next 13 4 QueryPM 15 16 17	130
3 4 SwRg LCM Rem1 00 0 ISTb Links_OOS: CSide 0 PS. 5 Trnsl Unit-0: InSv Mtce /RG: 0 6 Tst Unit-1: InsV Mtce /RG: 0 7 Bsy 11 11 11 11 11 RG:Pref:0 8 RTS Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM SS 11 Disp_ 12 Next 13 4 QueryPM 15 16	0
4 SwRg LCM Reml 00 0 ISTb Links_OOS: CSide 0 PS. 5 Trnsl Unit-0: InSv Mtce /RG: 0 6 Tst Unit-1: InsV Mtce /RG: 0 7 Bsy 11 11 11 11 RG:Pref:0 8 RTS Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM 11 Disp_ 12 Next 13 14 QueryPM 15 16 17	
5 Trnsl Unit-0: InSv Mtce /RG: 0 6 Tst Unit-1: Insv Mtce /RG: 0 7 Bsy 11 11 11 11 11 RG:Pref:0 8 RTS Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM 11 Disp_ 12 Next 13 14 QueryPM 15 16 17	ide O
6 Tst Unit-1: Insv Mtce /RG: 0 7 Bsy 11 11 11 11 11 11 RG:Pref:0 8 RTS Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM 11 Disp_ 12 Next 13 14 QueryPM 15 16 17	
o file 0 file 1 file	
1 11	
8 RTS Drwr: 01 23 45 67 89 01 23 45 67 89 Stby:1 9 OffL SS 10 LoadPM SS 11 Disp_ 12 Next 13 14 QueryPM 15 16 17	InSv
9 OffL SS	InSv
10 LoadPM 11 Disp_ 12 Next 13 14 QueryPM 15 16 17	
11 Disp_ 12 Next 13 14 QueryPM 15 16 17	
12 Next 13 14 QueryPM 15 16 17	
13 14 QueryPM 15 16 17	
13 14 QueryPM 15 16 17	
14 QueryPM 15 16 17	
15 16 17	
16 17	
17	
18	

Note: ILDR drawers are identified in reverse video on the MAP display.

5 Determine whether or not you need to access the ILD level on the MAP terminal.

If the card you are replacing is	Do							
NT6X54DA	step 6							
NT6X54AA	step 9							
Access the ILD level on the MAP terminal by typing								

>ILD

6

and pressing the Enter key.

7 Post the ILDR drawer in which the card is being replaced by typing

>POST drawer_no

and pressing the Enter key.

where

drawer_no

is the ILD drawer number (0 through 19) in the LCM

8 Busy both line subgroups associated with the LCM drawer in which the card is being replaced by typing

>BSY DRWR

and pressing the Enter key. Example of a MAP response;

Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Go to step 10.

9 Busy both line subgroups associated with the LCM drawer where the card is being replaced by typing

>BSY DRWR lsg

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer *Example of a MAP response;*

LCM REM1 00 0 Drwr 4 will be taken out of service Please confirm ("YES," "Y," "NO," or "N"):

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Note: Repeat this step for the other line subgroup associated with the line drawer.

Example of a MAP display:

_																		_
CI	CM MS IOD Net PM		CC	CS	\mathbf{L}	IS	Tr	ks		Ext		App	pl					
		•		•	11	JCM		•		• •			•		•			
T CM			SveB	ManD		Offi		CPatr		1	TOTT		TnGv					
ЦСI 1.01	-1 		0230	1	10111	,) I I I	-		2002		-			- 1	20	
0	Quit	РМ	0		T			U			0			0		T	.30	
2	Post_	LCM	0		1			0			0			0			0	
3																		
4	SwRg		LCM	Rer	n1	00	0	ISTŁ	С	Liı	ıks_	_008	s: (CSid	de O	PSi	lde 0	
5	Trnsl		Unit-	0:	Ins	Sv	Mto	ce		,	RG	: ()					
6	Tst		Unit-	1:	Ins	sV	Mto	ce		,	RG	: ()					
7	Bsy								11	11	11	11	11	RG	Pre	£:0	InSv	
8	RTS		Drwr:	01	23	45	67	89	01	23	45	67	89		Stb	y:1	InSv	
9	OffL					MM									-	-		
10	LoadPM																	
11	Disp_																	
12	Next																	
13																		
14	QueryPM																	
15																		
16																		
17																		
18																		

At the LCE frame

- **10** Remove the -48V fuse for the line drawer containing the faulty bus interface card.
- 11 Remove the +15V fuse for the line drawer containing the faulty bus interface card.
- **12** Remove the +5V fuse for the line drawer containing the faulty bus interface card.

If entry into this procedure is due to	Do
replacement of BIC	step 13
loss of power in LCM's control- ler	step 17

13



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the LCM. This protects the equipment against damage caused by static electricity.



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat. Wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Nortel [Northern Telecom] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.

\bigcirc

DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

Put on a wrist strap.

- 14 Open the line drawer using the following steps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15 cm (about 6 inches).
- **15** Remove the BIC to be replaced by following these substeps:
 - **a** Open the locking levers on the BIC.
 - **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.

Note: Do not use a rocking motion to remove the card.

- **16** Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.

- Close the locking levers on the card. b
- Position the card in its backplane socket. In one steady motion, push С against the closed locking levers with your thumbs until the card plugs fully into the backplane socket.
 - Note: Do not use a rocking motion to insert the card.
- d Close the line drawer.
- 17 Replace the +5V fuse for the line drawer containing the faulty bus interface card.
- 18 Replace the +15V fuse for the line drawer containing the faulty bus interface card.
- 19 Replace the -48V fuse for the line drawer containing the faulty bus interface card.
- 20 If you were directed to this procedure from the Alarm Clearing Procedures, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 21.

At the MAP terminal

21 Determine which procedure to use to return the line subgroups to service.

If the card you are replacing is	Do
NT6X54AA	step 22
NT6X54DA	step 23
Return the line subgroups to service	by typing

22

>RTS DRWR lsg

and pressing the Enter key.

where

lsg

is one of two line subgroups (0 through 19) associated with the drawer Note: Repeat this step for the other line subgroup associated with the line drawer.

If RTS	Do
passed	step 24
failed	step 26

23 Return the line subgroups to service by typing

>RTS DRWR

NT6X54 in an RSC (end)

and pressing the Enter key.

If RTS	Do	
passed	step 24	
failed	step 26	

- 24 Send any faulty cards for repair according to local procedure.
- **25** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card Go to step 27.
- 26 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 27 You have successfully completed this procedure.

NT6X54 in an RSC-S (DS-1) Model A LCM(E)

Application

Use this procedure to replace an NT6X54 card in an RSC-S LCM(E).

PEC	Suffixes	Name
NT6X54	AA	Bus Interface Card (BIC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X54 in an RSC-S (DS-1) Model A LCM(E) (continued)

Summary of card replacement procedure for an NT6X54 card in RSC-S LCM(E)



NT6X54 in an RSC-S (DS-1) Model A LCM(E) (continued)

Replacing an NT6X54 card in RSC-S LCM(E)

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LCME with the LCA shelf containing the card to be replaced by typing

>MAPCI;MTC;PM;POST LCME lcme_site_name lcme_frame_no lcme_no

and pressing the Enter key.

where

Icme_site_name is the name of the site at which the LCME is located

Icme_frame_no

is the number of the frame in which the LCME is located

Icme no

is the number of the LCME with the faulty card

Example of a MAP display:

LCM SysB ManB OffL CBsy ISTb InSv 0 Quit PM 0 0 0 0 130 2 Post_ LCME 0 0 0 0 0 3	l
LCM SysB ManB OffL CBsy ISTb InSv 0 Quit PM 0 0 0 0 0 130 2 Post_ LCME 0 0 0 0 0 0 130 3	
0 Quit PM 0 0 0 0 0 130 2 Post_ LCME 0 0 0 0 0 0 3 4 SwRg LCME RemL 00 0 ISTb Links_OOS: CSide 1	
2 Post_ LCME 0 0 0 0 0 0 3 4 SwRg LCME RemL 00 0 ISTb Links_OOS: CSide 1	
3 4 SwRg LCME RemL 00 0 ISTb Links_OOS: CSide 1	
4 SwRg LCME RemL 00 0 ISTb Links_OOS: CSide 1	
5 Trnsl Unit0: InSv /RG: 0	
6 Tst Unit1: InSv /RG: 0	
7 Bsy 11 11 11 RG:Pref 0 InSv	
8 RTS Drwr: 01 23 45 67 89 01 23 45 RG:Stby:1 InSv	
9 OffL	
10 LoadPM	
11 Disp_	
12 Next	
13	
14 QueryPM	
15	
16	
17	
18	,
NT6X54

in an RSC-S (DS-1) Model A LCM(E) (continued)

4 Busy both line subgroups (LSG) associated with the LCME drawer in which the card is being replaced by typing

>BSY DRWR lsg

and pressing the Enter key.

where

lsg

is a line subgroup associated with the drawer

Example of a MAP response: Please confirm ("YES" or "NO")

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Repeat this step for other line subgroups associated with the drawer.

5 Offline the LSGs busied in step 4 by typing

>OFFL DRWR lsg

and pressing the Enter key.

where

lsg

is a line subgroup busied in step 4

At the LCE frame

- 6 Remove the -48V fuse for the line drawer containing the bus interface card (BIC) to be replaced.
- 7 Remove the +15V fuse for the line drawer containing the BIC to be replaced.
- 8



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wriststrap.

- Open the line drawer by following these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).

10

9



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

Remove the BIC to be replaced by following these substeps:

- **a** Open the locking levers on the BIC.
- **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.

Note: Do not use a rocking motion to remove the card.

- 11 Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Close the locking levers on the card.

c Position the card in its backplane socket. In one steady motion, push against the closed locking levers with your thumbs until the card plugs fully into the backplane socket.

Note: Do not use a rocking motion to insert the card.

- **d** Close the line drawer.
- 12 Replace the +15V fuse associated with the line drawer.
- **13** Replace the -48V fuse associated with the line drawer.
- 14 Use the following information to determine what step to go to next in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 19
other	step 15

At the MAP terminal

15 Busy the offline LSGs associated with the LCME drawer by typing

>BSY DRWR lsg

and pressing the Enter key.

where

16

lsg

is a line subgroup associated with the drawer

Repeat this step for other LSGs associated with the drawer.

Return the LSGs to service by typing

>RTS DRWR lsg

and pressing the Enter key.

where

lsg

is a line subgroup associated with the drawer

If RTS	Do
passed	step 17
failed	step 20

- 17 Send any faulty cards for repair according to local procedure.
- **18** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 21.

19 Return to *Alarm Clearing Procedures* or the other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify

NT6X54 in an RSC-S (DS-1) Model A LCM(E) (end)

the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.

- **20** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 21 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X54 in an RSC-S (DS-1) Model B LCM(E)

Application

Use this procedure to replace an NT6X54 card in an RSC-S LCM(E).

PEC	Suffixes	Name
NT6X54	AA	Bus Interface Card (BIC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X54 card in RSC-S LCM(E)



Replacing an NT6X54 card in RSC-S LCM(E)

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LCME with the LCA shelf containing the card to be replaced by typing

>MAPCI;MTC;PM;POST LCME lcme_site_name lcme_frame_no lcme_no

and pressing the Enter key.

where

Icme_site_name is the name of the site at which the LCME is located

Icme_frame_no

is the number of the frame in which the LCME is located

Icme no

is the number of the LCME with the faulty card

Example of a MAP display:

C1	и мз •	IOD	Net	PM 1LCM	ccs	LNS	Trks H	Ext	Appl
T CD			Green	ManD	OFFT	CDarr	TOTA		Troffer
LCL	a 	517	SYSB	Malib	OIIL	CBSy	LSID		1150
0	Quit	PM	0	0	0	0	0		130
2	Post_	LCME	0	0	0	0	0		0
3									
4	SwRg	LCME	RemL	00 0 ISTE) Links	005: 05	Side 1		
5	Trnsl	 IInit(): Tn	217		/RG: 0			
б	Tst	Unit	. Tra	7		/RG: 0			
7	Bsv	UIIIC	L• 111,	5 V		/KG• 0			
, o						RG:I	rei 0 ins	v	
0	RIS OFFT	Drwr	: 01 23	45 67 89	01 23 45	RG:S	Stby:1 InS	v	
9	OIIL		••••						
10	LoadPM								
11	Disp_								
12	Next								
13									
14	QueryPM								
15									
16									
17									
18									

4 Busy both line subgroups (LSG) associated with the LCME drawer in which the card is being replaced by typing

>BSY DRWR lsg

and pressing the Enter key.

where

lsg

is a line subgroup associated with the drawer

Example of a MAP response: Please confirm ("YES" or "NO")

Confirm the system prompt by typing

>YES

and pressing the Enter key.

Repeat this step for other line subgroups associated with the drawer.

5 Offline the LSGs busied in step 4 by typing

>OFFL DRWR lsg

and pressing the Enter key.

where

lsg

is a line subgroup busied in step 4

At the LCE frame

- 6 Remove the -48V fuse for the line drawer containing the bus interface card (BIC) to be replaced.
- 7 Remove the +15V fuse for the line drawer containing the BIC to be replaced.
- 8



DANGER Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the modular supervisory panel (MSP) of the LCME. This protects the equipment against damage caused by static electricity.



Card damage-transport

DANGER

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

Put on a wriststrap.

- **9** Open the line drawer by following these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).
- **10** Remove the BIC to be replaced by following these substeps:
 - a Open the locking levers on the BIC.
 - **b** Grasping the open locking levers, remove the card from the line drawer in one steady motion. The card will unplug from its socket.

Note: Do not use a rocking motion to remove the card.

- **11** Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.

- **b** Close the locking levers on the card.
- **c** Position the card in its backplane socket. In one steady motion, push against the closed locking levers with your thumbs until the card plugs fully into the backplane socket.
 - *Note:* Do not use a rocking motion to insert the card.
- d Close the line drawer.
- **12** Replace the +15V fuse associated with the line drawer.
- **13** Replace the -48V fuse associated with the line drawer.
- **14** Use the following information to determine what step to go to next in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 19
other	step 15

At the MAP terminal

15 Busy the offline LSGs associated with the LCME drawer by typing

>BSY DRWR lsg

and pressing the Enter key.

where

lsg

is a line subgroup associated with the drawer

Repeat this step for other LSGs associated with the drawer.

Return the LSGs to service by typing

>RTS DRWR lsg

and pressing the Enter key.

where

is a line subgroup associated with the drawer

If RTS	Do
passed	step 17
failed	step 20

17 Send any faulty cards for repair according to local procedure.

18 Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 21.

16

- **19** Return to *Alarm Clearing Procedures* or the other procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **20** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 21 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X54 in a STAR

Application

Use this procedure to replace the following card in a STAR.

PEC	Suffixes	Name
NT6X54	AA	Bus interface card (BIC)
NT6X54	DA	ISDN drawer controller (IDC) card (BIC)
		<i>Note:</i> The ISDN line drawer for remotes (ILD-R) must use the NT6X54DA card.

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

This flowchart summarizes the At PM level, post procedure. the STAR Use the instructions in the V procedure that follows this Busy LSGs of flowchart to perform the drawer containing procedure. faulty card Remove -48, +15, and +5 volt fuses for the faulty drawer Replace the faulty card with one with the same PEC ٧ Replace +5, +15, and -48 volt fuses for the faulty drawer Return the drawer to service ¥ End of procedure

Summary of card replacement procedure for an NT6X54 card in a STAR

Replacing an NT6X54 card in an STAR

At your current location

1

ATTENTION

If you are entering this procedure because of a loss of power in the STAR's NTTR77AA RCP card, check logutil for PM181 log with reason text of: DCC BIC Looparound and go to step 12.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Get a replacement card. Make sure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 3 If you were directed to this procedure from an alarm clearing procedure in this manual, go to step 12. Otherwise, continue with step 4.

At the MAP terminal

4 To access the peripheral module (PM) level of the MAP (maintenance and administration position) display and post the STAR, type

>MAPCI;MTC;PM;POST STAR site frame unit

and press the Enter key.

where

site

is the site name (alphanumeric) of the STAR

frame

is the frame number (0 through 511) of the STAR

unit

is 0 for the STAR

Example of a MAP display:

CI	/ MS		IC	D	N	let	1	PM STA	C R	CS	I	INS	Т	'rks	•	Ех	t	P	App]	_			Ň
	• •		•			•	-	UIF.		•			•	•			•		•				
ç	STAR				Sys	в		Man	ıВ		Off	L		CBs	У		IST	b		Ins	Sv		
0	Quit		P№	1	0	1		1			C)		С	1		C)		130	C		
2	Post_		SI	'AR	C)		1	-		C)		C)		C)		(C		
3	Listse	t																					
4	SwRg	S.	ſAR		Reml	L (00 00) IS	STb]	Lin	<s_(< td=""><td>SOS</td><td>CS</td><td>Side</td><td>e 0</td><td>PS:</td><td>ide</td><td>0 1</td><td>JMP</td><td>00S</td><td>:</td><td>0</td></s_(<>	SOS	CS	Side	e 0	PS:	ide	0 1	JMP	00S	:	0
5	Trnsl	Ur	nit	0:	Ir	ıSv	Мt	cce			/R0	3:	0										
6	Tst	Ur	nit	1:	Ir	ısV	Mt	ce			/R0	3:	0							RG	_		
7	Bsy						11	11	11	11	11	22	22	22	22	22	33	33	33	Pre	£ 0	Ι	nSv
8	RTS	01	23	45	67	89	01	23	45	67	89	01	23	45	67	89	01	23	45	Stb	y 1	Ι	nSv
9	OffL	••	••	SS	••	••	••	••	••	••	••	••	••	••	••	••	••	••	••				
10	LoadPM	[
11	Disp_																						
12	Next																						
13																							
14	QueryP	М																					
15																							
16																							
17																							
18																							

5

6

7

Note: ILD-R drawers are identified in reverse video on the MAP display.

terminal.		Determine whether or not you need to access the ILD level on the MAP terminal.
-----------	--	--

If the card you are replacing is	Do
NT6X54DA	step 6
NT6X54AA	step 10
To access the ILD level on the MAP te	erminal, type
>ILD	
and press the Enter key.	
To post the ILD-R drawer in which the	e card is being replaced, type
>POST drawer_no	
and press the Enter key.	
where	
drawer_no is the ILD drawer number (0 th	rough 17) in the STAR

8

9

To busy both line subgroups associated with the STAR drawer where the card is being replaced, type >BSY DRWR and press the Enter key. Example of a MAP response; Please confirm ("YES," "Y," "NO," or "N"): To confirm the system prompt, type >YES and press the Enter key. Go to step 12. 10 To busy both line subgroups associated with the STAR drawer where the card is being replaced, type >BSY DRWR lsg and press the Enter key. where lsq is one of two line subgroups (0 through 35) associated with the drawer Example of a MAP response: STAR REM1 00 0 Drwr 4 will be taken out of service Please confirm ("YES," "Y," "NO," or "N"): 11 To confirm the system prompt, type >YES and press the Enter key. **Note:** Repeat this step for the other line subgroups associated with the line drawer. Example of a MAP display: STAR Rem1 00 0 ISTb Links_OOS: CSide 0 PSide 0 UMP OOS: 0 Unit 0: InSv Mtce /RG: 0 Unit 1: InSV Mtce /RG: 0 RG: 11 11 11 11 11 22 22 22 22 22 33 33 33 Pref 0 InSv Drwr: 01 23 45 67 89 01 23 45 67 89 01 23 45 67 89 01 23 45 Stby 1 InSv At the SRHE frame 12 Remove the -48V fuse for the line drawer containing the faulty bus interface card. Note: The line drawer fuses are grouped and labeled as +5 V, +15 V, and -48 V and are numbered from 1 to 18. The line drawers are numbered from 1 to 18. Any +5 V, +15 V, or -48 V fuse in position 1 is associated with line

drawer 1 and any fuse in position 2 is associated with line drawer 2, and so forth.

- **13** Remove the +15V fuse for the line drawer containing the faulty bus interface card. The +15 V fuse for the line drawer is numbered the same as the -48 V fuse removed in step 12.
- 14 Remove the +5V fuse for the line drawer containing the faulty bus interface card. Determine the correct fuse number by using the table in step 12.

If entry into this procedure is because of	Do
replacement of BIC	step 15
loss of power in STAR's controller	step 19

15



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the STAR. This protects the equipment against damage caused by static electricity.



WARNING

Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat. Wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch cabinet (Nortel Networks Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



WARNING Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

Put on a wrist strap.

- **16** To open the line drawer, follow these substeps:
 - **a** Face the drawer shelf and grasp the lip at the bottom of the drawer.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out approximately 15.0 cm (about 6.0 in).
- 17 To remove the BIC to be replaced, follow these substeps:
 - a Open the levers on the BIC.
 - **b** Grasp the open locking levers and remove the card from the line drawer in one steady motion. The card will unplug from its socket.
 - *Note:* Do not use a rocking motion to remove the card.
- **18** To replace the card with faults, follow these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Close the levers on the card.
 - **c** Position the card in its backplane socket. In one steady motion, push against the top and bottom of the card with your thumbs until the card plugs fully into the backplane socket.
 - *Note:* Do not use a rocking motion to insert the card.
 - d Close the line drawer.
- **19** Replace the +5V fuse for the line drawer containing the faulty bus interface card.
- **20** Replace the +15V fuse for the line drawer containing the faulty bus interface card.
- 21 Replace the -48V fuse for the line drawer containing the faulty bus interface card.

22 If you were directed to this procedure from an alarm clearing procedure in this manual, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 23.

At the MAP terminal

23 Determine which procedure to use to return the line subgroups to service.

If the card you are replacing is	Do
NT6X54AA	step 24
NT6X54DA	step 25

24 To return the line subgroups to service, type

>RTS DRWR lsg

and press the Enter key.

where

lsq

is one of two line subgroups (0 through 35) associated with the drawer **Note:** Repeat this step for the other line subgroups associated with the line drawer.

If RTS	Do
passed	step 26
failed	step 28

25 To return the line subgroups to service, type

>RTS DRWR

and press the Enter key.

If RTS	Do
passed	step 26
failed	step 28

26 Send any faulty cards for repair according to local procedure.

27 Record the following items in office records:

- date the card was replaced
- serial number of the card
- indications that prompted replacement of the card

Go to step 29.

28 Get additional help replacing this card by contacting the personnel responsible for higher level of support.

NT6X54 in a STAR (end)

29 You have correctly completed this procedure.

NT6X60 in an IOPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE).

PEC	Suffixes	Name
NT6X60	DB	International ring generator (RG)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for NT6X60 card in an HIE



Replacing an NT6X60 in an HIE

At your Current Location

1



CAUTION

Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 9. Otherwise, continue with step 4.

At the MAP terminal

4 Post the line concentrating module (LCM) with the HIE shelf containing the card to be replaced by typing

>MAPCI;MTC;PM;POST ILCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the IOPAC (alphanumeric)

frame

is the frame number of the IOPAC (00 to 511)

```
lcm
```

is the number of the ILCM (00 to 199)

Example of a MAP response:

 ILCM REM1 00 0 ISTb Links OOS: Cside 0 Pside 0Unit 0: ISTb
 /RG:0Unit

 1: InSv
 /RG:0
 11
 11
 11
 11
 RG: Pref 0 ISTbDrwr:

 01
 23
 45
 67
 89
 01
 23
 45
 67
 89
 Stby 1 InSv
 ...
 ...
 ...

5 Determine the line concentrating array (LCA) associated with the NT6X60 card to be replaced by using the following table.

LCM unit	RG card	HIE slot
LCA-0	RG-0	1, 2, 3, 4
LCA-1	RG-1	5, 6, 7, 8

6 Check the state of the PM units.

	If the PM or PM units are	Do	
	Offl or SysB	step 8	
	One unit is InSv or ISTb the other unit is ISTb or SysB	step 7	
	Switch RG activity for the ILCM unit as	ssigned to the faulty RG by typing	
	>SWRG UNIT unit_no		
	and pressing the Enter key.		
	where		
	unit_no is the PM unit number (0 or 1)		
	<i>Example of a MAP response:</i> LCM REM1 00 0 Unit 0 SWRG Passe	d	
	Busy the ILCM unit associated with the faulty RG by typing		
	>BSY UNIT unit_no		
	and pressing the Enter key.		
	where		
	unit_no is the ILCM unit to be busied (0	or 1)	
e	MSP		
	Turn OFF the circuit breaker for the ring the information in the following table:	ging generator to be replaced by using	

Circuit breaker	Ringing generator	Locations
CB06	RG-0	HIE slots 1, 2, 3, 4
CB08	RG-1	HIE slots 5, 6, 7, 8

10



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the modular supervisory panel of the OPAC cabinet. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:1. Do not apply direct pressure to the components.2. Do not force the cards into the slots.

Put on a wrist strap.

At the HIE

- **11** Remove the NT6X60 card as follows:
 - 1. Locate the card to be removed on the appropriate shelf.

2. Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

3. Place the card you have removed in an electrostatic discharge (ESD) protective container.

4. Examine the switch settings (if any) of the card just removed. Ensure that the switch settings on the replacement card match those of the card being replaced.

5. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card you just removed.

- 12 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.
- 13 Seat and lock the card.

1. Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.

2. Close the locking levers.

At the MSP

- 14 Turn ON the circuit breaker turned OFF in step 9.
- **15** Remove the wrist strap.

18

16 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 17.

At the MAP terminal

17 Return the ILCM unit to service by typing

>RTS UNIT unit_no

and pressing the Enter key.

where

unit no

is the number of the ILCM unit busied in step 8 (0 or 1)

If RTS	Do
passed	step 18
failed	step 23
Switch RG activity to the new R	G by typing
>SWRG UNIT unit_no and pressing the Enter key.	
where	
unit_no is the PM unit number (0	or 1)
Example of a MAP response: ILCM REM1 00 0 InSv Links O0 1: InSv /RG:0 23 45 67 89 01 23 45 67 8	DS: Cside 0 Pside 0Unit 0: InSv /RG:0Unit 11 11 11 11 11 RG: Pref 0 InSvDrwr: 01 9 Stbv 1 InSv
If SWRG	Do
If SWRG passed	Do step 19
If SWRG passed failed	Do step 19 step 23
If SWRG passed failed Test the new RG by typing	Do step 19 step 23
If SWRG passed failed Test the new RG by typing >TST UNIT unit_no	Do step 19 step 23

unit no

is the number of the ILCM unit busied in step 8 (0 or 1)

where

19

NT6X60 in an IOPAC HIE (end)

LCM REM1 00 0 Unit 0 InSvce Tests InitiatedLCM REM1 00 0 Unit 0 Tst Passed

If test	Do
passed	step 20
failed	step 23

20 Align RG activity to the preferred RG by typing

>SWRG UNIT unit_no

and pressing the Enter key.

where

unit_no is the number of the ILCM unit (0 or 1)

If SWRG	Do
passed	step 21
failed	step 23

- 21 Send any faulty cards for repair according to local procedure.
- 22 Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 24.

- 23 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 24 You have successfully completed this procedure.

NT6X60 in an OPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE).

PEC	Suffixes	Name
NT6X60	AA, BA, CA,DA	North American ring generator (RG)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.





Replacing an NT6X60 in an HIE

At your Current Location

1



CAUTION

Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- 3 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 9. Otherwise, continue with step 4.

At the MAP terminal

4 Post the line concentrating module (LCM) with the HIE shelf containing the card to be replaced by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the OPAC (alphanumeric)

frame

is the frame number of the OPAC (00-511)

lcm

is the number of the LCM in the OPAC cabinet

Example of a MAP response:

LCM	REM1	00 0	ISTb	LINKS	00S:	Cside O Pside O
Unit	0:	ISTb		/RG:1		
Unit	1:	InSv		/RG:1		
				11 11 11	11 11RG	: Pref 0 ISTb
Drwr:	01 23	45 67	89 01	23 45 67	89	Stby 1 InSv
		• • • •			• • •	

5 Determine the line concentrating array (LCA) associated with the NT6X60 card to be replaced by using the following table.

LCM unit	RG card	HIE slot
LCA-0	RG-0	1, 2, 3, 4
LCA-1	RG-1	5, 6, 7, 8

6 Check the state of the PM units.

lf	the PM units are	Do	
	OFFL or SysB	step 8	
C o	Dneunitis InSv or ISTbthe therunitis ISTB or SysB	step 7	
Switch RG activity for the LCM unit assigned to the faulty RG by typing			
>S	WRG UNIT unit_no		
an	d pressing the Enter key.		
wh	nere		
	unit_no is the PM unit number (0 or 1)		
Ex LC	ample of a MAP response: M REM1 00 0 Unit 0 SWRG Passed	1	
Bu	sy the LCM unit associated with the	faulty RG by typing	
>в	SY UNIT lcm_unit		
an	d pressing the Enter key.		
wh	nere		
	Icm_unit is the LCM unit to be busied (0 o	or 1)	

At the MSP

9 Turn OFF the circuit breaker for the ringing generator to be replaced by using the information in the following table:

Circuit breaker	Ringing generator	Locations
CB06	RG-0	HIE slots 1, 2, 3, 4
CB08	RG-1	HIE slots 5, 6, 7, 8

10



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the modular supervisory panel of the OPAC cabinet. This protects the equipment against damage caused by static electricity.



DANGER Equipment damage

Take these precautions when removing or inserting a card:1. Do not apply direct pressure to the components.2. Do not force the cards into the slots.

Put on a wrist strap.

At the HIE

- **11** Remove the NT6X60 card as follows:
 - 1. Locate the card to be removed on the appropriate shelf.

2. Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

3. Place the card you have removed in an electrostatic discharge (ESD) protective container.

4. Examine the switch settings (if any) of the card just removed. Ensure that the switch settings on the replacement card match those of the card being replaced.

5. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card you just removed.

12 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.

13 Seat and lock the card.

1. Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.

2. Close the locking levers.

At the MSP

- 14 Turn ON the circuit breaker turned OFF in step 9.
- **15** Remove the wrist strap.
- 16 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 17.

At the MAP terminal

17 Return the LCM unit to service by typing

>RTS UNIT unit_no

and pressing the Enter key.

where

18

19

unit_no

is the number of the LCM unit (0 or 1)

If RTS	Do
passed	step 18
failed	step 23
Switch RG activity to the new R	G by typing
>SWRG UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the PM unit number (0	or 1)
<i>Example of a MAP response:</i> LCM REM1 00 0 InSv Links OO 1: InSv /RG:0 23 45 67 89 01 23 45 67 89	DS: Cside 0 Pside 0Unit 0: InSv /RG:0Unit 11 11 11 11 RG: Pref 0 InSvDrwr: 01 9 Stby 1 InSv
If SWRG	Do
If SWRG passed	Do step 19
If SWRG passed failed	Do step 19 step 23

NT6X60 in an OPAC HIE (end)

and pressing the Enter key.

where

Icm unit

is the number of the LCM unit busied in step 8 (0 or 1)

where

LCM REM1 00 0 Unit 0 InSvce Tests InitiatedLCM REM1 00 0 Unit 0 Tst Passed

If test	Do
passed	step 20
failed	step 23

20 Align RG activity to the preferred RG by typing

>SWRG UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the number of the LCM unit (0 or 1)

Note: Repeat this step until both units of the LCM are aligned to the preferred RG.

If RTS	Do
passed	step 21
failed	step 23

21 Send any faulty cards for repair according to local procedure.

22 Record the following items in office records:

- date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 24.

- **23** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 24 You have successfully completed this procedure.

NT6X60 in an OPM HIE

Application

Use this procedure to replace the following card in a host interface environment (HIE).

PEC	Suffixes	Name
NT6X60	AA, BA, CA , DA	North American ringing Generator (RG)

A summary of the card replacement procedure for the NT6X60 in a HIE is shown below. The procedure used to perform the task follows the o wchart.

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedures for an NT6X60 card in an HIE


Replacing an NT6X60 card in an HIE

At your Current Location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or were directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC) including suffix, as the card that is to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 9. Otherwise, continue with step 4.

At the MAP

4 Access the PM level and post the LCM by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the name of the site at which the LCM is located

frame

is the number of the frame (0 to 511)

```
lcm
```

is the number of the LCM (0 to 199)

Example of a MAP display:

LCM Unit Unit	REM1 0: 1:	L	00 IST InS	0 Ib Sv	IS	Tb	I /	INK RG: RG:	S 1 1	0	OS:	Cside	e 0	Psid	le O	
							11	. 11	11	11	11RG	: Pre	E 0	IST	C	
Drwr:	01	23	45	67	89	01	23	45	67	89		:	Stb	y 1 1	InSv	
						• •					•					

5 Determine the line concentrating array (LCA) associated with the NT6X60 card to be replaced by using the following table.

LCM unit	RG card	HIE slot
LCA-0	RG-0	1, 2, 3, 4
LCA-1	RG-1	5, 6, 7, 8

6 Check the state of the PM units.

If the PM units are	Do
OFFL or SysB	step 8
One unit is InSv or ISTb the other unit is ISTB or SysB	step 7
Switch ringing generator activity to the	e good NT6X60 card by typing
>SWRG UNIT unit_no	
and pressing the Enter key.	
where	
lcm_unit is the LCM unit (0 or 1) aligned	to the faulty RG
<i>Note:</i> If necessary repeat this step to the good RG.	until both units of the LCM are aligned
If the SWRG command	Do
passed	step 8
failed	step23
Busy the LCM unit associated with the	e faulty RG by typing
NEV INTE lam unit	

8

7

and pressing the Enter key.

where

lcm_unit

is the LCM unit (0 or 1) as seen in step 5

At the OPM cabinet

9 Turn OFF the circuit breaker for the ringing generator to be replaced by using the information in the following table:

IfCircuit breaker	DoRinging Generator
CB2	RG-0
CB3	RG-1

10



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the OPM cabinet. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:1. Do not apply direct pressure to the components.2. Do not force the cards into the slots.

Put on a wrist strap.

At the HIE

- 11 Remove the NT6X60 card as follows:
 - 1. Locate the card to be removed on the appropriate shelf.

2. Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

3. Place the card you have removed in an electrostatic discharge (ESD) protective container.

4. Examine the switch settings (if any) of the card just removed. Ensure that the switch settings on the replacement card match those of the card being replaced.

5. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card you just removed.

- 12 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.
- **13** Seat and lock the card.

1. Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.

2. Close the locking levers.

At the OPM cabinet

- 14 Turn ON the circuit breaker turned OFF in step 9.
- **15** Remove the wrist strap.
- 16 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 17.

At the MAP terminal

17 Return the LCM unit to service by typing

>RTS UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the number of the LCM unit busied in step 8

If RTS	Do
passed	step 18
fai led	step 23
Switch ringing generator	r activity to the new NT6X60 card by typing

>SWRG UNIT unit_no

and pressing the Enter key.

18

Icm_unit is the LCM unit (0 or 1)					
<i>Note:</i> Repeat this step until RG.	both units of the LCM are aligned to the				
If SWRG command	Do				
passed	step 19				
failed	step 23				
Test the new RG by typing					
>TST UNIT lcm_unit_no					
and pressing the Enter key.					
where					
<pre>lcm_unit_no is the number of the LCM unit posted in step 4</pre>					
Example of a MAP response: LCM REM1 14 1 Unit 0 InSvce Passed	e Tests Initiated LCM REM1 14 1 Unit 0				
1 43364					
If TST	Do				
If TST passed	Do step20				
If TST passed failed	Do step20 step 23				
If TST passed failed If required align RG activity to t	Do step20 step 23 he preferred RG by typing				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no	Do step20 step 23 he preferred RG by typing				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no and pressing the Enter key.	Do step20 step 23 he preferred RG by typing				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no and pressing the Enter key. where	Do step20 step 23 he preferred RG by typing				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no and pressing the Enter key. where unit_no is the number of the LCM	Do step20 step 23 he preferred RG by typing				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no and pressing the Enter key. where unit_no is the number of the LCM Note: Repeat this step until preferred RG.	Do step20 step 23 he preferred RG by typing 4 unit (0 or 1) both units of the LCM are aligned to the				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no and pressing the Enter key. where unit_no is the number of the LCM Note: Repeat this step until preferred RG. If the SWRG command	Do step20 step 23 he preferred RG by typing 1 unit (0 or 1) both units of the LCM are aligned to the Do				
If TST passed failed If required align RG activity to t >SWRG UNIT unit_no and pressing the Enter key. where unit_no is the number of the LCM Note: Repeat this step until preferred RG. If the SWRG command passed	Do step20 step 23 he preferred RG by typing I unit (0 or 1) both units of the LCM are aligned to the Do step 21				

21 Send any faulty cards for repair according to local procedure.

NT6X60 in an OPM HIE (end)

- 22 Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to Step 24

- 23 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.
- 24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X60 in an RLCM HIE

Application

Use this procedure to replace the following card in a host interface environment (HIE).

PEC	Suffixes	Name
NT6X60	AA, BA, CA, DA	North American Ring Generator

A summary of the card replacement procedure for the NT6X60 in a HIE is shown below. The procedure used to perform the task follows the o wchart.

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X60 card in an HIE



Replacing an NT6X60 card in an HIE

At your current location

1



CAUTION Loss of service

This procedure includes directions to manually busy one or more peripheral module (PM) units. Since manually busying a PM unit can cause service degradation, perform this procedure only if necessary to restore out-of-service components. Otherwise, carry out this procedure during periods of low traf c.

Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or were directed to this procedure by your maintenance support group.

- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC) including suffix, as the card that is to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 9. Otherwise, continue with step 4.

At the MAP terminal

4 Post the line concentrating module (LCM) with the HIE shelf containing the card to be replaced by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the RLCM (alphanumeric)

frame

is the number of the RLCM frame (00 to 511)

lcm

is the number of the LCM (00 to 199)

Example of a MAP response:

LCM Unit	REM1 0:	00 0 ISTb InSv	ISTb	LINKS /RG:1	00S:	Cside O Pside O
Unit	1:			/RG:1	11 1100	· Drof () IST
				<u> </u>	. II IIKG	· FIEL 0 ISID
Drwr:	01 23	45 67	89 01	23 45 67	89	Stby 1 InSv
	••	• • • • •	• • • •		• ••	

5 Determine the line concentrating array (LCA) associated with the NT6X60 card to be replaced by using the following table.

LCM unit	RG card	HIE slot
LCA-0	RG-0	1, 2, 3, 4
LCA-1	RG-1	5, 6, 7, 8

6 Check the state of the PM units.

If the PM units are	Do
OFFL or SysB	step 8
One unit is InSv or ISTb the other unit is ISTB or SysB	step 7
Switch ringing generator activity to th	e good NT6X60 card by typing
SWRG UNIT unit_no	
and pressing the Enter key.	
where	
is the LCM unit (0 or 1) aligned	d to the faulty RG
is the LCM unit (0 or 1) aligned Note: If necessary repeat this step good RG.	d to the faulty RG p until both units of the LCM are on the
Icm_unit is the LCM unit (0 or 1) aligned <i>Note:</i> If necessary repeat this step good RG. If the SWRG command	d to the faulty RG p until both units of the LCM are on the Do
Icm_unit is the LCM unit (0 or 1) aligned <i>Note:</i> If necessary repeat this step good RG. If the SWRG command passed	d to the faulty RG p until both units of the LCM are on the Do step 8
Icm_unit is the LCM unit (0 or 1) aligned <i>Note:</i> If necessary repeat this step good RG. If the SWRG command passed failed	d to the faulty RG p until both units of the LCM are on the Do step 8 step23
Icm_unit is the LCM unit (0 or 1) aligned Note: If necessary repeat this step good RG. If the SWRG command passed failed Busy the LCM unit associated with th	d to the faulty RG p until both units of the LCM are on the Do step 8 step23 re faulty RG by typing

8

7

and pressing the Enter key.

where

lcm_unit

is the LCM unit (0 or 1) as seen in step 5

At the FSP

9 Turn OFF the circuit breaker for the ringing generator to be replaced by using the information in the following table:

IfCircuit breaker	DoRinging Generator
CB2	RG-0
CB3	RG-1

10



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the LCM. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:1. Do not apply direct pressure to the components.2. Do not force the cards into the slots.

Put on a wrist strap.

At the HIE

- 11 Remove the NT6X60 card as follows:
 - 1. Locate the card to be removed on the appropriate shelf.

2. Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

3. Place the card you have removed in an electrostatic discharge (ESD) protective container.

4. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card you just removed.

5. Examine the switch settings (if any) of the card just removed. Ensure that the switch settings on the replacement card match those of the card being replaced.

- 12 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.
- **13** Seat and lock the card.

1. Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.

2. Close the locking levers.

At the FSP

- 14 Turn ON the circuit breaker turned OFF in step 9.
- **15** Remove the wrist strap.
- 16 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 17.

At the MAP terminal

17 Return the LCM unit to service by typing

>RTS UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the number of the LCM unit (0 or 1) busied in step 8

If RTS	Do	
passed	step 18	
fai led	step 23	
Switch ringing generator a	activity to the new NT6X60 card by typing	

>SWRG UNIT unit_no

and pressing the Enter key.

18

Note: Repeat this step until bo	oth units of the LCM are aligned to the n
RG	
If the SWRG command	Do
passed	step 19
failed	step23
Test the new ringing generator by	typing
>TST UNIT lcm_unit_no	
and pressing the Enter key.	
where	
lcm_unit_no is the number of the LCM	unit busied in step 8
Example of a MAP response: LCM REM1 00 0 Unit 0 InSvce ⁻ Passed	Tests Initiated LCM REM1 00 0 Unit 0
If TST	Do
	• •
passed	step20
passed failed	step20 step 23
passed failed If required, align ringing generato	step20 step 23 r activity to the preferred RG by typing
passed failed If required, align ringing generato >SWRG UNIT unit_no	step20 step 23 r activity to the preferred RG by typing
passed failed If required, align ringing generato >SWRG UNIT unit_no and pressing the Enter key.	step20 step 23 r activity to the preferred RG by typing
passed failed If required, align ringing generato >SWRG UNIT unit_no and pressing the Enter key. where	step20 step 23 r activity to the preferred RG by typing
passed failed If required, align ringing generato >SWRG UNIT unit_no and pressing the Enter key. where Icm_unit is the LCM unit (0 or 1)	step20 step 23 r activity to the preferred RG by typing
passed failed If required, align ringing generato >SWRG UNIT unit_no and pressing the Enter key. where Icm_unit is the LCM unit (0 or 1) Note: Repeat this step until be preferred RG.	step 20 step 23 r activity to the preferred RG by typing oth units of the LCM are aligned to the
passed failed If required, align ringing generato >SWRG UNIT unit_no and pressing the Enter key. where Icm_unit is the LCM unit (0 or 1) Note: Repeat this step until be preferred RG. If the SWRG command	step20 step 23 r activity to the preferred RG by typing oth units of the LCM are aligned to the Do
passed failed If required, align ringing generato >SWRG UNIT unit_no and pressing the Enter key. where Icm_unit is the LCM unit (0 or 1) Note: Repeat this step until be preferred RG. If the SWRG command passed	step 20 step 23 r activity to the preferred RG by typing oth units of the LCM are aligned to the Do step 21

19

20

21 Send any faulty cards for repair according to local procedure.

NT6X60 in an RLCM HIE (end)

- 22 Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to Step 24

- 23 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.
- 24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an RSC-M

Application

This procedure replaces an NT6X69 circuit card in a Remote Switching Center Multi-access (RSC-M) main shelf.

Note: In the examples of this section, RSC-M refers to RCO2. When software outputs messages to the MAP terminal, the software does not differentiate between the two types of RCO2.

PEC	Suffixes	Name
NT6X69	LB	Message and tone card

Common procedures

Does not apply

Action

This procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

NT6X69 in an RSC-M (continued)

Summary of card replacement procedure for an NT6X69 card in an RSC-M RCO2



NT6X69 in an RSC-M (continued)

To Replace a/an NT6X69 in an RSC-M

At your Current Location:

- 1 Continue with this procedure if:
 - a step in a maintenance procedure directs you to this card
 - you use this procedure to verify or accept cards
 - your maintenance support group directs you to this procedure.

2



WARNING

Loss of service When you replace a card in the RSC-M, make sure that the unit in which you replace the card is *inactive* and the mate unit is *active*.

Obtain a replacement card. Make sure the replacement card has the same PEC and PEC suffix, as the card to be removed.

At the MAP terminal

3 Make sure the peripheral module (PM) level of the MAP display appears, type:

>MAPCI;MTC;PM;POST RCO2 rco2_no

and press the Enter key.

where

rco2_no

is the number of the rco2 with the defective card

Example of a MAP display:

NT6X69 in an RSC-M (continued)

СМ	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
•	•	•	•	•	•	•	•	•	•
RCC)2		SysB	ManB	OffL	CBsy	ISTb		InSv
0	Quit	PM	0	0	0	0	0		25
2	Post_	RCO2	0	0	0	0	0		0
3	ListSet								
4		RCO2	0 InSv	Links_	_00S:				
5	TRNSL	Unit0:	Inact	InSv					
б	TST	Unit1:	Act In	lSv					
7	BSY								
8	RTS								
9	OffL								
10	LoadPM_								
11	Disp_								
12	Next_								
13									
14	QueryPM								
15									
16									
17									
18									

4 Check the MAP display to make sure that the card to be removed is on the inactive unit.

If defective card is on	Do
active unit	step 4
inactive unit	step 6

5 To switch the processing activity (SWACT) to the inactive unit,type:

>SWACT

and press the Enter key.

Example of a MAP response:

RSCM 0 A Warm SwAct will be performed after data sync of active terminals. Please confirm ("YES", "Y", "NO", or "N"):

lf	Do
you must confirm the command	step 6
the system rejects the SWACT	step 23

NT6X69 in an RSC-M (continued)

6 To confirm the system prompt, type:

>YES

and press the Enter key.

When both units are in-service, proceed to the next step.

At the RSC-M

7 Place a sign with the words Active unit-Do not touch on the unit. Do not attach the sign with magnets or tape.

At the MAP terminal

8 To busy the inactive PM unit, type:

>bsy unit rco2_unit_no

and press the Enter key.

where

rco2_unit_no

is the number of the inactive RCO2 unit zero or one

9 To set the PM to the ROM level and stop messaging, type:

>PMRESET UNIT rco2_unit_no NORUN

and press the Enter key.

where

rco2_unit_no

is the number of the inactive RCO2 unit zero or one

NT6X69 in an RSC-M (continued)

At the RSC-M

10

11



WARNING Static electricity damage

Before you remove cards, put on a wrist strap that connects to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RSC-M. The wrist strap protects the equipment against static electricity damage.



DANGER

Equipment damage

Take these precautions when you remove or insert a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card in the slots.

Put on a wrist strap.

- The following figures show how to remove the NT6X69 card:
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced. Carefully pull the card toward you until the card clears the shelf.

NT6X69 in an RSC-M (continued)



- **c** Make sure the replacement card has the same PEC and PEC suffix, as the card you removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Carefully slide the card in the shelf.



NT6X69 in an RSC-M (continued)

13



CAUTION Loss of subscriber service Subscriber service can occur in the active unit when you reseat the NT6X69 card.

Peform this procedure during low traf c periods.

Seat and lock the card.

- **a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Make sure that the card sits completely in the shelf.
- **b** Close the locking levers.



At the MAP terminal

14 To perform a full reset of the inactive unit, type:

>PMRESET UNIT rco2_unit_no

and press the Enter key.

where

rco2_unit_no

is the number of the inactive RCO2 unit zero or one

If PMRESET	Do
passes	step 17
fails, try loading this unit again	step 15

NT6X69 in an RSC-M (continued)

	If PMRESET	Do					
	fails with a card list	step 20					
	To load the inactive unit, type:						
>LOADPM UNIT rco2_unit_no CC							
	and press the Enter key.						
	where						
	rco2_unit_no is the number of the inactive	RCO2 unit zero or one					
	If LOADPM	Do					
	passes	step 16					
	fails	step 21					
	fails with a card list	step 20					
	Use the following information to dete	ermine the next step in this procedure					
	If you entered this procedure from	Do					
	How to clear an procedure	step 20					
	other	step 17					
	To return the inactive RCO2 unit to s	service, type:					
	>RTS UNIT rco2_unit_no						
	and press the Enter key.						
	where						
	rco2_unit_no is the number of the inactive	RCO2 unit zero or one					
	If RTS	Do					
	passes	step 18					
	fails	step 21					
	Send the defective cards for repair a	according to local procedure.					
	Record the date the card is replaced problems that prompted replacement	d, the serial number of the card, and t it of the card. Go to step 22.					
	Return to the procedure that directe where the system produced a defec	d you to this procedure. At the point tive card list, identify the next damage					

NT6X69 in an RSC-M (end)

card on the list. Go to the appropriate card replacement procedure for that card in this manual.

- 21 For additional help, contact the next level of support.
- 22 This procedure is complete. Remove the sign from the active unit. Return to the maintenance procedure that directed you to this card replacement procedure. Continue as directed.
- **23** For additional help, keep 2, contact the next level of support.

Note: The system can recommend you use the SWACT command with the FORCE option. When this condition occurs, contact the office personnel to determine if use of the FORCE option is correct.

NT6X69 in an RSC RCC/RCC2

Application

Use this procedure to replace an NT6X69 in an RSC RCC.

Note: This procedure is used to replace a card in an RCC or an RCC2. In this procedure the term RCC refers to both the RCC in an RSC frame, NT6X10, and an RCC2 in an RSCE cabinet, NTMX89.

PEC	Suffixes	Name
NT6X69	AB, AC, AD, QA	Message and tone card

Common Procedures

None

Action

The following o wchart is a summary of this procedure. Use the instructions in the step-action table that follows the o wchart to perform the procedure.

Summary of card replacement procedure for an NT6X69 card in an RSC RCC



Replacing an NT6X69 card in RSC RCC

At your current location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in an RCC, ensure the unit where you are replacing the card is INACTIVE and that the mate unit is ACTIVE.

Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP display

3 Access the PM level and post the RCC by typing

>MAPCI;MTC;PM;POST RCC rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no
 is the number of the RCC unit to be busied (0 or 1)

Example of a MAP display:

-											-
	СМ	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL	
		•	•	•	1RCC		•	•		•	
RC	C		S	∕sB	ManB	OffL	СВ	sy	ISTb	InSv	
0	Quit	PM		0	0	2		0	2	25	
2	Post_	RC	С	0	0	0		0	1	1	
3	ListSe	t									
4		R	CC	0 IST	b Link	s_00S:	CSide	1, PSi	de 1		
5	TRNSL_	U	nit0:	Inact	SysB						
6	TST_	U	nit1:	Act	InSv						
7	BSY_										
8	RTS_										
9	OffL										
10	LoadPM	_									
11	Disp_										
12	Next										
13											
14	QueryP	М									
15											
16	IRLINK										
17	Perfor	m									
18											
N											

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

At the RCE frame

5 Put a sign on the ACTIVE unit bearing the words *Active unit—Do not touch*.

At the MAP display

6 Busy the inactive RCC unit by typing

>BSY UNIT rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the inactive RCC unit (0 or 1)

7 Prevent the PM from trapping by typing

>PMRESET UNIT rcc_unit_no NORUN

and pressing the Enter key.

where

rcc_unit_no is
 the number of the inactive RCC unit

At the RCE frame

8



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the RCC. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

9



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Remove the NT6X69 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.



c Ensure the replacement card has the same PEC, including suffix, as the card you just removed.

10



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



CAUTION

Loss of subscriber service

Subscriber service may be lost in the active unit when reseating the NT6X69 card in slot 17.

It is recommended this procedure be performed during low traf c periods.

Open the locking levers on the replacement card.

Align the card with the slots in the shelf and gently slide the card into the shelf.



11 Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.



At the MAP display

12 Perform a full reset of the inactive unit by typing

>PMRESET UNIT rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no is the number of the inactive RCC unit

NT6X69 in an RSC RCC/RCC2 (end)

13 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do				
an alarm clearing procedure	step 17				
other	step 14				
Return the inactive RCC unit to serv	rice by typing				
>RTS UNIT rcc_unit_no					
and pressing the Enter key.					
where					
rcc_unit_no is the number of the RCC uni	t reset in step 12.				
If the RTS	Do				
passes	step 15				
fails	step 18				
Send any faulty cards for repair acco	ording to local procedure.				
Record the following items in office r	records:				
 date the card was replaced 					
serial number of the card					
 symptoms that prompted replacement of the card 					
Go to step 19.					
Return to the <i>Alarm Clearing Proceed</i> replacement procedure. If necessary was produced, identify the next fault appropriate replacement procedure	<i>dure</i> that directed you to this card y, go to the point where the faulty card I y card on the list, and go to the in this manual for that card.				

- **18** Obtain further assistance in replacing this card by contacting personnel responsible for higher level of support.
- **19** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an RSC-S (DS-1) Model A RCC2

Application

Use this procedure to replace an NT6X69 card in an RSC-S RCC2.

PEC	Suffixes	Name
NT6X69	AC, AD, QA	Message and Tone Card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X69 in an RSC-S (DS-1) Model A RCC2 (continued)

Summary of card replacement procedure for an NT6X69 card in RSC-S RCC2



NT6X69 in an RSC-S (DS-1) Model A RCC2 (continued)

Replacing an NT6X69 card in an RSC-S RCC2

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP display to the PM level and post the RCC2 unit by typing

>MAPCI;MTC;PM;POST RCC2 rcc2_no

and pressing the Enter key.

where

rcc2_no

is the number of the rcc2 with the faulty card

Example of a MAP display:

NT6X69 in an RSC-S (DS-1) Model A RCC2 (continued)

/									
CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
•	•	•	•	•	•	•	•	•	•
DO			G D	ManaD	0557	an an	T OT		T 0
RCO	22		SYSB	ManB	OIIL	CBSA	1516)	Insv
0	Quit	PM	0	0	0	0	0		25
2	Post_	RCC2	0	0	0	0	0		0
3	ListSet								
4		RCC2	0 InSv	Links_	_00S:				
5	TRNSL	Unit0:	Inact	InSv					
6	TST	Unit1:	Act In	ıSv					
7	BSY								
8	RTS								
9	OffL								
10	LoadPM_								
11	Disp_								
12	Next_								
13									
14	QueryPM								
15									
16									
17									
18									
<hr/>									

4 By observing the MAP display, be sure that the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 7	

5 Switch the processing activity (SWACT) to the inactive unit by typing

>SWACT

and pressing the Enter key.

6 Confirm the system prompt by typing

>YES

and pressing the Enter key.

After both units are in service, proceed to the next step.

At the RCE

7 Place a sign on the active unit bearing the words *Active unit—Do not touch.* This sign should not be attached by magnets or tape.
NT6X69

in an RSC-S (DS-1) Model A RCC2 (continued)

At the MAP terminal

8 Busy the inactive PM unit by typing

>BSY UNIT rcc2_unit_no

and pressing the Enter key.

where

rcc2_unit_no is the number of the inactive RCC2 unit (0 or 1)

9 Set the PM to the read-only memory (ROM) level and inhibit messaging by typing

>PMRESET UNIT rcc2_unit_no NORUN

and pressing the Enter key.

where

rcc2_unit_no

is the number of the inactive RCC2 unit (0 or 1)

At the RCE

10



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the RCC2. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- 11 Remove the NT6X69 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



13



CAUTION Loss of subscriber service

Subscriber service may be lost in the *active* unit when reseating the NT6X69 card. It is recommended that this procedure be performed during low traf c periods.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.



At the MAP terminal

14 Perform a full reset of the inactive unit by typing
>PMRESET UNIT rcc2_unit_no
and pressing the Enter key.
where

If PMRESET	Do
passed	step 17
fails, try reloading this unit	step 15
fails with a card list	step 20
Load the inactive unit by typing	
>LOADPM UNIT rcc2_unit_no (CC
and pressing the Enter key.	
where	
rcc2_unit_no is the number of the inactive l	RCC2 unit (0 or 1)
If LOADPM	Do
passed	step 16
failed	step 21
fails with a card list	step 20
Use the following information to dete procedure.	ermine what step to go to next ir
If you entered this procedure from	Do
alarm clearing procedures	step 20
	stap 17
other	step 17
other Return the inactive RCC2 unit to ser	vice by typing
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no	vice by typing
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no and pressing the Enter key.	vice by typing
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no and pressing the Enter key. where	vice by typing
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no and pressing the Enter key. where rcc2_unit_no is the number of the inactive I	RCC2 unit (0 or 1)
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no and pressing the Enter key. where rcc2_unit_no is the number of the inactive I If RTS	RCC2 unit (0 or 1)
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no and pressing the Enter key. where rcc2_unit_no is the number of the inactive I If RTS passed	RCC2 unit (0 or 1) Do step 18
other Return the inactive RCC2 unit to ser >RTS UNIT rcc2_unit_no and pressing the Enter key. where rcc2_unit_no is the number of the inactive I If RTS passed failed	RCC2 unit (0 or 1) Do step 18 step 21

NT6X69 in an RSC-S (DS-1) Model A RCC2 (end)

- **18** Send any faulty cards for repair according to local procedure.
- **19** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 22.
- **20** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.
- 21 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 22 You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an RSC-S (DS-1) Model B RCC2

Application

Use this procedure to replace an NT6X69 card in an RSC-S RCC2.

PEC	Suffixes	Name
NT6X69	AC, AD, QA	Message and Tone Card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X69 card in an RSC-S RCC2

At your Current Location

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

2



CAUTION Loss of service

When replacing a card in the RCC2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Set the MAP display to the PM level and post the RCC2 unit by typing

>MAPCI;MTC;PM;POST RCC2 rcc2_no

and pressing the Enter key.

where

rcc2_no

is the number of the rcc2 with the faulty card

Example of a MAP display:

/)
CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
•	•	•	•	•	•	•	•	•	•
PCO	-0		SveB	ManB	Offi	CRew	TOTH		TnSv
1.00	0	DM	JAPE	Mand	0111	CDSy	1310		1112 V
0	Quit	РМ	0	0	0	0	0		25
2	Post_	RCC2	0	0	0	0	0		0
3	ListSet								
4		RCC2	0 InSv	Links_	00S:				
5	TRNSL	Unit0:	Inact	InSv					
6	TST	Unit1:	Act Ir	ıSv					
7	BSY								
8	RTS								
9	OffL								
10	LoadPM_								
11	Disp_								
12	Next_								
13									
14	QueryPM								
15									
16									
17									
18)

4 By observing the MAP display, be sure that the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 7	

5 Switch the processing activity (SWACT) to the inactive unit by typing

>SWACT

and pressing the Enter key.

6 Confirm the system prompt by typing

>YES

and pressing the Enter key.

After both units are in service, proceed to the next step.

At the RCE

7 Place a sign on the active unit bearing the words *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

8 Busy the inactive PM unit by typing

>bsy unit rcc2_unit_no

and pressing the Enter key.

where

rcc2_unit_no is the number of the inactive RCC2 unit (0 or 1)

9 Set the PM to the read-only memory (ROM) level and inhibit messaging by typing

>PMRESET UNIT rcc2_unit_no NORUN

and pressing the Enter key.

where

rcc2_unit_no

is the number of the inactive RCC2 unit (0 or 1)

At the RCE

10



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RCC2. This protects the equipment against damage caused by static electricity.



DANGER Equipment damage

Take these precautions when removing or inserting a card:

1. Do not apply direct pressure to the components. 2. Do not force the card into its slot.

Put on a wrist strap.

- 11 Remove the NT6X69 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



13



CAUTION Loss of subscriber service Subscriber service may be lost in the *active* unit when reseating the NT6X69 card. It is recommended that this procedure be performed during low traf c periods.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.



At the MAP terminal

14 Perform a full reset of the inactive unit by typing

>PMRESET UNIT rcc2_unit_no

and pressing the Enter key.

where

rcc2_unit_no
is the number of the inactive RCC2 unit (0 or 1)

If PMRESET	Do	
passed	step 17	
fails, try reloading this unit	step 15	
fails with a card list	step 20	
Load the inactive unit by typing		
>LOADPM UNIT rcc2_unit_no	CC	
and pressing the Enter key.		

15

where

16

17

18 19

20

rcc2_unit_no

is the number of the inactive RCC2 unit (0 or 1)

If LOADPM	Do
passed	step 16
failed	step 21
fails with a card list	step 20
Use the following information to determine to determine the procedure.	ermine what step to go to next in this
If you entered this procedure from	Do
alarm clearing procedures	step 20
other	step 17
Return the inactive RCC2 unit to se	rvice by typing
>RTS UNIT rcc2_unit_no	
and pressing the Enter key.	
where	
rcc2_unit_no is the number of the inactive	RCC2 unit (0 or 1)
If RTS	Do
passed	step 18
failed	step 21
Send any faulty cards for repair acc	ording to local procedure.
Record the date the card was replace symptoms that prompted replacement	ed, the serial number of the card, and t ent of the card. Go to step 22.
Return to the procedure that directe where a faulty card list was produce	d you to this procedure. At the point d. identify the next faulty card on the l

- and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.
 21 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 22 You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an RSC-S (PCM-30) Model A RCO2

Application

Use this procedure to replace the following card in an RSC-S RCO2.

PEC	Suffixes	Name
NT6X69	LA, LB	Message and Tone Card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X69 card in RSC-S RCO2



Replacing an NT6X69 in an RSC-S RCO2

At your Current Location

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

2



CAUTION Loss of service

When replacing a card in the RCO2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Ensure the PM level of the MAP display is currently displayed by typing

>MAPCI;MTC;PM;POST RCO2 rco2_no

and pressing the Enter key.

where

rco2_no

is the number of the rco2 with the faulty card

Example of a MAP display:

1	· ·										
(CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
	•	•	•	•	•	•	•	•	•	•	
	RCC)2		SvsB	ManB	Offi	CBsv	TSTP	2	InSv	
	0	0.11+	DM	0	0	0	02.01			25	
	0	Quit		0	0	0	0	0		20	
	2	Post_	RC02	0	0	0	0	0		0	
	3	ListSet									
	4		RCO2	0 InSv	Links_	_00S:					
	5	TRNSL	Unit0:	Inact	InSv						
	б	TST	Unit1:	Act In	nSv						
	7	BSY									
	8	RTS									
	0	Offi									
	2										
	10	LoadPM_									
	11	Disp_									
	12	Next_									
	13										
	14	QueryPM									
	15										
	16										
	17										
	1.8)
/	× 0										

4 By observing the MAP display, be sure that the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 7	

5 Switch the processing activity (SWACT) to the inactive unit by typing

>SWACT

and pressing the Enter key.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

- 6 Confirm the system prompt by typing
 - >YES

and pressing the Enter key.

After both units are in service, proceed to the next step.

At the RCE

7 Put a sign on the *active* unit bearing the words *Active unit—Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

8 Busy the inactive PM unit by typing

>BSY UNIT rco2_unit_no

and pressing the Enter key.

where

rco2_unit_no is the number of the inactive RCO2 unit (0 or 1)

9 Set the PM to the ROM level and inhibit messaging by typing

>PMRESET UNIT rco2_unit_no NORUN

and pressing the Enter key.

where

rco2_unit_no
is the number of the inactive RCO2 unit (0 or 1)

At the RCE

10



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RCO2. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- 11 Remove the NT6X69 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



13



CAUTION

Loss of subscriber service Subscriber service may be lost in the active unit when reseating the NT6X69 card.

It is recommended that this procedure be performed during low traf c periods.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.



NT6X69

in an RSC-S (PCM-30) Model A RCO2 (continued)

At the MAP terminal

14 Perform a full reset of the inactive unit by typing

>PMRESET UNIT rco2_unit_no

and pressing the Enter key.

where

15

16

17

rco2_unit_no
is the number of the inactive RCO2 unit (0 or 1)

If PMRESET	Do
passed	step 17
fails, try reloading this unit	step 15
fails with a card list	step 20
Load the inactive unit by typing	
>LOADPM UNIT rco2_unit_no (CC
and pressing the Enter key.	
where	
rco2_unit_no is the number of the inactive I	RCO2 unit (0 or 1)
If LOADPM	Do
passed	step 16
failed	step 21
fails with a card list	step 20
Use the following information to dete procedure.	ermine what step to go to next in this
If you entered this procedure from	Do
alarm clearing procedures	step 20
other	step 17
Return the inactive RCO2 unit to ser	vice by typing
>RTS UNIT rco2_unit_no	
and pressing the Enter key.	

rco2_unit_no

is the number of the inactive RCO2 unit (0 or 1)

If RTS	Do
passed	step 18
failed	step 21

- **18** Send any faulty cards for repair according to local procedure.
- **19** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 22.
- **20** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 21 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 22 You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an RSC-S (PCM-30) Model B RCO2

Application

Use this procedure to replace the following card in an RSC-S RCO2.

PEC	Suffixes	Name
NT6X69	AC, AD, QA	Message and Tone Card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X69 card in RSC-S RCO2



Replacing an NT6X69 in an RSC-S RCO2

At your Current Location

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

2



CAUTION Loss of service

When replacing a card in the RCO2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Ensure the PM level of the MAP display is currently displayed by typing

>MAPCI;MTC;PM;POST RCO2 rco2_no

and pressing the Enter key.

where

rco2_no

is the number of the rco2 with the faulty card

Example of a MAP display:

/											`
	СМ	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
	•	•	•	•	•	•	•	•	•	•	
	RCC	12		SvsB	ManB	OffI.	CBsv	TSTD		InSv	
	0	Ouit	РM	0	0	0	0	0		25	
	2	Post	RCO2	0	0	0	0	0		0	
	2	ListSet	1002	0	0	0	0	0		0	
	4	LIBCOCC	RCO2	0 InSv	Links	00S:					
	5	TRNSL	Unit0:	Inact	InSv	-					
	6	TST	Unit1:	Act Ir	ıSv						
	7	BSY									
	8	RTS									
	9	OffL									
	10	LoadPM									
	11	Disp_									
	12	Next									
	13	_									
	14	QueryPM									
	15										
	16										
	17										
	18										
											Ι

4 By observing the MAP display, be sure that the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 8

5 Switch the processing activity (SWACT) to the inactive unit by typing

>SWACT

and pressing the Enter key.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

- 6 Confirm the system prompt by typing
 - >YES

and pressing the Enter key.

After both units are in service, proceed to step 8.

7 Confirm the system prompt by typing

>YES

and pressing the Enter key.

After both units are in service, proceed to the next step.

NT6X69

in an RSC-S (PCM-30) Model B RCO2 (continued)

At the RCE

8 Put a sign on the *active* unit bearing the words "Active unit—Do not touch." This sign should not be attached by magnets or tape.

At the MAP terminal

9 Busy the inactive PM unit by typing

>bsy unit rco2_unit_no

and pressing the Enter key.

where

rco2_unit_no is the number of the inactive RCO2 unit (0 or 1)

10 Set the PM to the ROM level and inhibit messaging by typing

>PMRESET UNIT rco2_unit_no NORUN

and pressing the Enter key.

where

rco2_unit_no

is the number of the inactive RCO2 unit (0 or 1)

At the RCE

11



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RCO2. This protects the equipment against damage caused by static electricity.

DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- 12 Remove the NT6X69 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- **13** Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



14



CAUTION

Loss of subscriber service Subscriber service may be lost in the active unit when reseating the NT6X69 card.

It is recommended that this procedure be performed during low traf c periods.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
- **b** Close the locking levers.



At the MAP terminal

15 Perform a full reset of the inactive unit by typing

>PMRESET UNIT rco2_unit_no

and pressing the Enter key.

where

16

17

18

rco2_unit_no
is the number of the inactive RCO2 unit (0 or 1)

If PMRESET	Do
passed	step 18
fails, try reloading this unit	step 16
fails with a card list	step 21
Load the inactive unit by typing	
>LOADPM UNIT rco2_unit_no (CC
and pressing the Enter key.	
where	
rco2_unit_no is the number of the inactive	RCO2 unit (0 or 1)
If LOADPM	Do
passed	step 17
failed	step 22
fails with a card list	step 21
Use the following information to dete procedure.	ermine what step to go to next in this
If you entered this procedure from	Do
alarm clearing procedures	step 21
other	step 18
Return the inactive RCO2 unit to se	rvice by typing
>RTS UNIT rco2_unit_no	
and pressing the Enter key.	
where	

rco2_unit_no

is the number of the inactive RCO2 unit (0 or 1)

If RTS	Do
passed	step 19
failed	step 22

- **19** Send any faulty cards for repair according to local procedure.
- **20** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 23.
- 21 Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 22 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 23 You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an SMA

Application

Use this procedure to replace an NT6X69 card in an SMA.

PEC	Suffixes	Name
NT6X69	AC, AD, QA	Message Protocol and Tone Interface

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X69 in an SMA (continued)





NT6X69 in an SMA (continued)

Replacing an NT6X69 card in an SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do	
known	step 4	
unknown	step 3	

- Perform the procedure "Locating a faulty card in an SMA."
- 3 4



CAUTION Loss of service

Ensure you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response:

SMA ManB Offl CBsy ISTb InSv SysB 3 0 1 0 2 13 ΡМ 0 7 0 0 0 1 SMA SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact SysB

NT6X69 in an SMA (continued)

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 10

7 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
can continue at this time	step 8
cannot continue at this time	step 22

8 Confirm the system prompt by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 10
SWACT failed Reason: XPM SWACTback	step 9
SWACT refused by SWACT Controller	step 9

9 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 20.

NT6X69 in an SMA (continued)

At the equipment frame

10 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

11 Observe the MAP display and determine the state of the inactive unit.

If state is			Do	
ManB				step 13
SysB, InSv	CBsy,	ISTb,	or	step 12
Busy the ir	nactive PM	unit by typ	oing	
>BSY UNI	T unit_r	10		
and pressi	ng the Ente	er key.		
where				
unit_n is th	e number	of the inac	tive SN	/A unit (0 or 1)
unit_n is th Reset the i	i o le number nactive PM	of the inac 1 unit to inf	tive SN nibit m	/IA unit (0 or 1) essaging by typing
unit_n is th Reset the i >PMRESET	e number nactive PM	of the inac 1 unit to inf ınit_no	tive SM hibit m NORU	MA unit (0 or 1) essaging by typing ท

At the equipment frame

14

15

13

12



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

Use the following information to determine the next step.

If you were directed here from	Do
alarm clearing procedures	step 18
other	step 16
NT6X69 in an SMA (end)

At the	MAP terminal				
16	Load the inactive SMA unit by typing				
	>LOADPM UNIT unit_no				
	and pressing the Enter key.				
	where				
	<pre>unit_no is the number of the busied SMA unit</pre>				
	If load	Do			
	passed	step 17			
	failed	step 20			
17	Return the inactive SMA unit to servic	e by typing			
	>RTS UNIT unit_no				
	and pressing the Enter key.				
	where				
	<pre>unit_no is the number of the SMA unit loaded in step 16</pre>				
	If RTS	Do			
	passed	step 18			
	failed	step 20			
At the	equipment frame				
18	Remove the sign from the active SMA	unit.			
19	Go to the common returning a card pr	ocedure in this document.			
	Go to step 21.				
20	For further assistance, contact the person support.	sonnel responsible for the next level of			
21	You have successfully completed this p procedure that directed you to this card as directed.	procedure. Return to the maintenance replacement procedure and continue			
22	For further assistance with switch of a responsible for the next level of suppo	ctivity, contact the personnel rt.			

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X69 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X69 card in an SMA.

PEC	Suffixes	Name
NT6X69	AC, AD, QA	Message Protocol and Tone Interface

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.





Replacing an NT6X69 card in an SMA

At the equipment frame

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do	
known	step 4	
unknown	step 3	

Perform the procedure "Locating a faulty card in an SMA."

3 4



CAUTION Loss of service

Ensure you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response:

SMA SysB ManB Offl CBsy ISTb InSv 3 0 1 0 2 13 ΡМ 7 0 0 0 0 1 SMA SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact SysB

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

7

8

9

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 11
SWACT the units by typing	
>SWACT	
and pressing the Enter key.	
A confirmation prompt for the SWA terminal.	CT command is displayed at the MAF
If SWACT	Do
cannot continue at this time	step 8
can continue at this time	step 9
Reject the prompt to SWACT the u	Inits by typing
>NO	
and pressing the Enter key.	
The system discontinues the SWA	CT.
Confirm the system prompt by typi	ng
>YES	
and pressing the Enter key.	
The system runs a pre-SWACT au unit to accept activity reliably.	dit to determine the ability of the inact
<i>Note:</i> A maintenance flag apper progress. Wait until the flag dis maintenance action.	ears when maintenance tasks are in appears before proceeding with the ne
If the message is	Do
If the message is SWACT passed	Do step 11
If the message is SWACT passed SWACT failed	Do step 11 step 10
If the message is SWACT passed SWACT failed Reason: XPM SWACTbac	Do step 11 step 10 k

10 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on

the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 23.

At the equipment frame

11 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

12 Observe the MAP display and determine the state of the inactive unit.

If state is	5			Do	
ManB				step 14	
SysB, InSv	CBsy,	ISTb,	or	step 13	
Busy the i	nactive PM	unit by typ	oing		
>BSY UNI	T unit_r	10			
and press	ng the Ente	er key.			
where					
unit_r is th	10 ne number	of the inac	tive SI	MA unit (0 or 1)	
Reset the	inactive PN	1 unit to inl	hibit m	essaging by typing	
>PMRESET	UNIT ur	nit_no N	ORUN		
and press	ng the Ente	er key.			
where					
unit_r	10 De number	of the inac	tive SI	MA unit (0 or 1)	

At the equipment frame

15



DANGER

Static electricity damage Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory

it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

16	Use the following information to determine the next step.						
	If you were directed here from	rom Do					
	alarm clearing procedures	step 20					
	other	step 17					
At th	e MAP terminal						
17	Load the inactive SMA unit by typing						
	>LOADPM UNIT unit_no						
	and pressing the Enter key.						
	where						
	unit_no is the number of the busied SMA unit						
	If load	Do					
	passed	step 18					
	failed	step 23					
18	Test the inactive SMA unit by typing						
	>TST UNIT unit_no						
	and pressing the Enter key.						
	where						
	unit_no is the number of the SMA uni	t loaded in step 17					
	If TST	Do					
	passed	step 19					
	failed	step 23					
19	Return the inactive SMA unit to service by typing						
	>RTS UNIT unit_no						
	and pressing the Enter key.						
	where						
	unit_no is the number of the SMA unit tested in step 18						
	If RTS	Do					
	passed	step 20					
		-					

NT6X69 in an SMA-MVI-20 (end)

If RTS	Do
failed	step 23

At the equipment frame

- 20 Remove the sign from the active SMA unit.
- 21 Send any faulty cards for repair according to local procedure.
- 22 Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 24.

- **23** For further assistance, contact the personnel responsible for the next level of support.
- 24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X69 in an SMS

Application

Use this procedure to replace an NT6X69 card in an SMS.

PEC	Suffixes	Name
NT6X69	AB, AC, AD, QA	CPP message protocol and tone generator

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X69 card in an SMS



Replacing an NT6X69 card in an SMS

At your Current Location

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.

2



CAUTION Loss of service

When replacing a card in the SMS, ensure the unit where you are replacing the card is inactive and the mate unit is active.

Obtain a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMS sms_no

and pressing the Enter key.

where:

sms_no

is 0-127 range for NT40 and 0-255 range for DMS SuperNode

Example of a MAP response

SMS	3	INSV	LINKS_	_00S	CSIDE	0	PSIDE	0
1	Unit0	I	Act	InSv				
1	Unit1	Ir	nact	ISTb				

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 8

5 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

The system determines the type of SWACT it can perform, and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 25

Switch the activity of the unit by typing

>YES

6

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason:XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the "SMS alarm clearing procedures" section in this document to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit bearing the words: *Active unit—Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

9 Busy the inactive PM unit by typing

>bsy UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMS unit

10 Set the PM to the ROM level by typing >PMRESET UNIT unit_no NORUN and pressing the Enter key.

where

unit no

is the number of the faulty SMS unit

At the frame

11



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

12



DANGER Equipment damage

When removing or inserting a card, do not apply direct pressure to the components and do not force the cards into the slots.

Remove the NT6X69 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify the replacement card has the same PEC, including suffix, as the card you just removed.
- **13** Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.



14



CAUTION

Loss of subscriber service Subscriber service may be lost in the active unit when reseating the NT6X69 card. It is recommended that this procedure be performed during low-traf c periods.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



15 Perform a full reset of the inactive unit by typing >PMRESET UNIT unit_no and pressing the Enter key.

unit_no is the number of the faulty SM	S unit
Use the following information to dete procedure.	rmine what step to go next in this
If you entered this procedure from	Do
alarm clearing procedures	step 22
other	step 17
Test the inactive SMS unit by typing	
>TST UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the number of the faulty SM	S unit
If TST	Do
passed	step 18
failed	step 22
Return the inactive SMS unit to servi	ce by typing
>RTS UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the number of the faulty SM	S unit
If RTS	Do
	(10
passed	step 19

- **19** Remove the sign from the active SMS unit.
- 20 Send any faulty cards for repair according to local procedure.

NT6X69 in an SMS (end)

- **21** Record the following items in office records according to local policy:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 24.

- 22 Return to the maintenance procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 23 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **25** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X69 in an SMS-R

Application

Use this procedure to replace the following card in an SMS-R.

PEC	Suffixes	Name
NT6X69	AC, AD, QA	CPP Message Protocol and Tone Generator

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X69 card in an SMS-R

Replacing an NT6X69 card in an SMS-R

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMS-R, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMSR smsr_no

and pressing the Enter key.

where

smsr_no
is the number of the SMS-R to be posted

Example of a MAP response:

smsr 3	INSV I	INKS_OOS	CSIDE 0	PSIDE 0
Unit0	Act	InSv		
Unit1	InAct	ISTb		

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 8

5 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 25

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason:XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the alarm clearing procedure to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit with the words: "Active unit—Do not touch."

At the MAP display

- **9** Busy the inactive PM unit by typing
 - > bsy UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMS-R unit

10 Set the PM to the ROM level by typing

>PMRESET UNIT unit_no NORUN

and pressing the Enter key.

where

unit_no

is the number of the inactive SMS-R unit (0 or 1)

At the frame

11



CAUTION

Static electricity damage Before removing any cards, put on a wrist strap and connect

it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS-R. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

12



CAUTION

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Remove the NT6X69 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



c Verify that the replacement card has the same PEC, including suffix, as the card you just removed.

13



CAUTION

Loss of subscriber service

Subscriber service may be lost in the active unit when reseating the NT6X69 card. It is recommended that this procedure be performed during low traf c periods.

Open the locking levers on the replacement card.

a Align the card with the slots in the shelf and gently slide the card into the shelf.



- 14 Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
 - **b** Close the locking levers.



15 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 22
other	step 17

At the MAP display

16 Perform a full reset of the inactive unit of the PM by typing

>PMRESET UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the inactive SMS-R unit (0 or 1)

17 Test the inactive SMS-R unit by typing

> TST UNIT unit_no

and pressing the Enter key.

where

NT6X69 in an SMS-R (end)

If TST	Do	
passes	step 18	
fails	step 22	
Return the inactive SM	S-R unit to service by typing	
<pre>> RTS UNIT unit_n</pre>	10	
and pressing the Enter	key.	
and pressing the Enter where	key.	
and pressing the Enter where unit_no is the number of	key. f the faulty SMS-R unit	
and pressing the Enter where unit_no is the number of If RTS	key. f the faulty SMS-R unit Do	
and pressing the Enter where unit_no is the number of If RTS passes	key. f the faulty SMS-R unit Do step 19	

At the frame

18

- **19** Remove the sign from the active SMS-R unit.
- 20 Send any faulty cards for repair according to local procedure.
- 21 Record the following items in office records according to local policy:
 - the date the card was replaced
 - the serial number of the card
 - the symptoms that prompted replacement of the card

Go to step 24.

- 22 Return to *Alarm Clearing Procedures* section of this manual or to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- 23 Obtain further assistance in replacing this card by contacting personnel responsible for a higher level of support.
- 24 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **25** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X69 in an SMU

Application

Use this procedure to replace the following card in an SMU.

PEC	Suffixes	Name
NT6X69	AB, AC, AD, QA	Message protocol and tone card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X69 card in an SMU

Replacing an NT6X69 card in an SMU

At your current location:

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure.
- 2



CAUTION Loss of service

When replacing a card in the SMU, ensure that the unit where you are replacing the card is inactive and that the mate unit is active.

Get a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.

At the MAP terminal:

3 Ensure that the PM level of the MAP terminal is displayed and post the SMU by typing

>MAPCI;MTC;PM;POST SMU smu_no

and pressing the Enter key.

where

smu no

is the number of the SMU to be posted

Example of a MAP response:

SMU	SysB	ManB	Offl	CBsy	ISTb	InSv
PM	3	0	1	0	2	13
SMU	0	0	0	0	1	7

SMU 0 ISTb Links_OOS: CSide 2, PSide 0 Unit0: Act SysB Unit1: Inact InSv

4 By observing the MAP display, ensure the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 8	
Switch the activity of the units	s by typing	

>SWACT

5

and pressing the Enter key.

The system determines the type of SwAct it can perform. The system displays a confirmation prompt for the selected SwAct.

If SwAct	Do
can continue at this time	step 6
cannot continue at this time	step 21

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SwAct audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the *Alarm Clearing Procedures* to clear the alarm condition on the inactive unit. After the alarm is cleared, return to step 1 of this procedure.

At the SME frame:

8 Put a sign on the active unit bearing the following words: "Active unit—Do not touch."

At the MAP terminal:

9 Busy the inactive PM unit by typing

>BSY UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the inactive SMU unit (0 or 1)

Set the PM to the ROM level by typing		
>PMRESET UNIT unit_no NORUN		
and pressi	ng the Enter key.	
where		
unit_n is t	io he number of the SMU ur	it (0 or 1) busied in step 9
Go to the common replacing a card procedure in this document, then return to step 1 of this procedure.		
Perform a	full reset of the inactive u	nit of the PM by typing
>PMRESET	UNIT unit_no	
and pressi	ng the Enter key.	
where		
unit_n is t ⁱ	lo he number of the inactive	SMU unit (0 or 1)
Use the fol	lowing information to dete	rmine where to go next in this procedure.
lf you en from	tered this procedure	Do
alarm cle	earing procedures	step 16
other		step 14
	active unit by typing	
Test the ina	active unit by typing	
Test the ina	T unit_no	
Test the in >TST UNI and pressi	T unit_no ng the Enter key.	
Test the in- >TST UNI and pressi where	T unit_no ng the Enter key.	
Test the in- >TST UNI and pressi where unit_n is th	T unit_no ng the Enter key. No he number of the SMU ur	it busied in step 9
Test the init >TST UNI and pressi where unit_n is the state of the sta	ng the Enter key.	iit busied in step 9 Do
Test the initial state of the	ng the Enter key.	hit busied in step 9 Do step 15
Test the init >TST UNI and pressi where unit_n is the If TST passes fails	T unit_no ng the Enter key. no he number of the SMU ur	hit busied in step 9 Do step 15 step 17
Test the initial state of the	T unit_no ng the Enter key. he number of the SMU ur	hit busied in step 9 Do step 15 step 17 vice by typing
Test the init >TST UNI and pressi where unit_n is th If TST passes fails Return the >RTS UNI	inactive SMU unit to serv	hit busied in step 9 Do step 15 step 17 vice by typing
Test the initial state of the	<pre>inactive drift by typing "T unit_no ng the Enter key. he number of the SMU ur inactive SMU unit to serv "T unit_no ng the Enter key.</pre>	hit busied in step 9 Do step 15 step 17 vice by typing
Test the init >TST UNI and pressi where unit_n is th If TST passes fails Return the >RTS UNI and pressi where	T unit_no ng the Enter key. he number of the SMU ur inactive SMU unit to server T unit_no ng the Enter key.	iit busied in step 9 Do step 15 step 17 vice by typing

NT6X69 in an SMU (end)

unit no

is the number of the SMU unit tested in step 14

If RTS	Do
passed	step 18
failed	step 17

16 Return to the Alarm Clearing Procedures.

If necessary, go to the point where a faulty card list is initiated and identify the next faulty card on the list. Go to the appropriate card replacement procedure for that card.

- 17 Contact personnel responsible for higher level support and get further help to replace this card.
- 18 Send any faulty cards for repair according to local procedure.
- **19** Record the following items in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card
- 20 You have successfully completed this procedure. Remove the sign from the active unit and return to the maintenance procedure that directed you to this card replacement procedure. Continue as directed.
- 21 For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X71 in an IOPAC ILCM

Application

Use this procedure to replace the following card in an International line concentrating module (ILCM).

PEC	Suffixes	Name
NT6X71	AA	Data line card

Common procedures

The common replacing a line card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X71 in an IOPAC ILCM (continued)



Summary of card replacement procedure for an NT6X71 card in an ILCM

NT6X71 in an IOPAC ILCM (continued)

Replacing an NT6X71 in an ILCM

At your Current Location

1 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.

At the MAP terminal

2 Access the line test position (LTP) level of the MAP display and post the line associated with the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST L site lcm lsg ckt

and pressing the Enter key.

where

site

is the name of the site where the IOPAC is located

lcm

is the number of the ILCM with the faulty card

lsg

is the number of the line subgroup with the faulty card

```
ckt
```

is the number of the circuit associated with the faulty card

Example of a MAP response:

LCC PTY RNGLEN..... DN STA F S LTA TE RESULT CKT TYPEFL REM1 00 0 03 03 3627708 MB

3 Check the status of the posted line.

If the line status is	Do
manual busy (ManB)	step 5
not ManB	step 4
Busy the line by typing	
>BSY	
and pressing the Enter key.	
Go to the common replacing a you have completed the procec	line card procedure in this document. When lure, return to this step.
Test the line card just replaced	by typing
>DIAG	
and pressing the Enter key.	
If the DIAG	Do
passed	step 7

4

5

6

NT6X71 in an IOPAC ILCM (end)

If the DIAG	Do
failed	step 10
Return the line card to s	ervice by typing
>RTS	
and pressing the Enter I	key.
If RTS	Do
passed	step 8
failed	step 10
Send any faulty cards for	r repair according to local procedure.
Record the following iten	ns in office records:
 date the card was re 	placed

- serial number of the card •
- symptoms that prompted replacement of the card ٠

Go to step 11.

- Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support. 10
- 11 You have successfully completed this procedure.

NT6X71 in an OPM

Application

Use this procedure to replace the following card in an OPM.

PEC	Suffixes	Name
NT6X71	AA	Data line card DMS-100/SL-100

Common procedures

The common replacing a line card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.
NT6X71 in an OPM (continued)



Summary of card replacement procedures for an NT6X71 card in an OPM

NT6X71 in an OPM (continued)

Replacing an NT6X71 card in an OPM

At your Current Location

1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.

At the MAP terminal

2 Access the line test position (LTP) level of the MAP display and post the line associated with the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST L site lcm lsg ckt

and pressing the Enter key.

where

site

is the name of the site where the OPM is located

Icm is the number of the OPM with the faulty card

lsg

is the number of the line subgroup with the faulty card

```
ckt
```

is the number of the circuit associated with the faulty card

Example of a MAP display:

LCC PTY RNGLEN..... DN STA F S LTA TE RESULT 1FR REM1 00 0 03 03 7213355 MB

Check the status of the posted line.

If the line status is	Do
ManB	step 5
not ManB	step 4

4 Busy the line by typing

>BSY

3

and pressing the Enter key.

5 Go to the common replacing a line card procedure in this document. When you have completed the procedure, return here.

NT6X71 in an OPM (end)

At the MAP 6 Test the line card just replaced by typing >DIAG and pressing the Enter key. If the DIAG Do passed step 7 failed step 10 7 Return the line card to service by typing >RTS and pressing the Enter key.

If RTS	Do
passed	step 8
failed	step 10

- 8 Send any faulty cards for repair according to local procedure.
- **9** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 11.

- **10** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 11 You have successfully completed this procedure.

NT6X71 in an RLCM

Application

Use this procedure to replace the following card in an RLCM.

PEC	Suffixes	Name
NT6X71	AA	Data line card

Common procedures

The common replacing a line card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X71 in an RLCM (continued)



Summary of card replacement procedure for an NT6X71 card in an RLCM

NT6X71 in an RLCM (continued)

Replacing an NT6X71 card in an RLCM

At your current location

1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.

At the MAP terminal

2 Access the line test position (LTP) level of the MAP display and post the line associated with the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST L site lcm lsg ckt

and pressing the Enter key.

where

site

is the name of the site where the RLCM is located

lcm

is the number of the RLCM with the faulty card

lsg

is the number of the line subgroup with the faulty card

```
ckt
```

is the number of the circuit associated with the faulty card

Example of a MAP display:

LCC PTY RNGLEN..... DN STA F S LTA TE RESULT 1FR REM1 00 0 03 03 7213355 MB

Check the status of the posted line.

If the line status is	Do
ManB	step 5
not ManB	step 4

4 Busy the line by typing

>BSY

3

and pressing the Enter key.

5 Go to the common replacing a line card procedure in this document. When you have completed the procedure, return here.

NT6X71 in an RLCM (end)

At the MAP Test the line card just replaced by typing >DIAG and pressing the Enter key. If the DIAG Do passed step 7 failed step 10 Return the line card to service by typing >RTS and pressing the Enter key. If RTS Do passed step 8 failed step 10 Send any faulty cards for repair according to local procedure. Record the following items in office records: date the card was replaced serial number of the card symptoms that prompted replacement of the card

Go to step 11.

6

7

8

9

- 10 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 11 You have successfully completed this procedure.

NT6X71 in an RSC LCM

Application

Use this procedure to replace the following card in an RSC LCM.

PEC	Suffixes	Name
NT6X71	AA	Data line card (DLC) type D

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X71 in an RSC LCM (continued)

Summary of card replacement procedure for an NT6X71 card in an in RSC LCM



NT6X71 in an RSC LCM (continued)

Replacing an NT6X71 card in an in RSC LCM

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or were directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP terminal

3 Access the line test position (LTP) level of the MAP display and post the line associated with the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST L site frame lcm lsg ckt

and pressing the Enter key.

where

site

is the name of the RSC site where the LCM is located

frame

is the number of the LCE frame (0 to 511)

lcm

is the number of the LCM with the faulty card

lsg

is the number of the line subgroup with the faulty card

ckt

is the number of the circuit associated with the faulty card

Example of a MAP display:

NT6X71 in an RSC LCM (continued)

(СМ	MS	IOD	Net	PM	CCS	LN	S Trks	s Ext	Appl
		•	•	•		•		•	•	•
I	JTP									
	0	Quit	Pos	st	DELQ		BUSYQ	PRE	EFIX	
	2	Post_								
	3		LCC F	PTY RNG.	LEN		DN	STA F S I	LTA TE RES	SULT 4
	CK	T TYPE FI	L REM1	00 0 03	03 72	13355	IDL			
	5	BSY								
	6	RTS								
	7	DIAG								
	8									
	9.	AIMStat								
1	L0	CKTLOC								
1	11	Hold								
1	L2 1	Next_								
1	L3									
1	L4									
1	L5									
1	L6 :	Prefix								
1	L7 :	LCO								
1	L8 :	Level								

4 Check the status of the posted line.

If the line status is	Do
manual busy (ManB)	step 6
not ManB	step 5

5 Busy the line by typing

>BSY

and pressing the Enter key.

Example of a MAP display:

NT6X71 in an RSC LCM (continued)

CM	MS	IOD	Net	PM	CCS	LNS	5	Trks	E	xt	Appl	
•	•	•	•	•	•	•		•	•			
LTP												
0 Ç	Quit	Post		DELQ	BU	SYQ		PRE	FIX			
2 E	Post_											
3		LCC PTY	RNG	LEN	DN		STA	F S LT	'A TE	RESUI	JT 4	1
CKT	TYPE FL	REM1 00	0 03	03 7213	355 MB							
5 E	BSY											
бF	RTS											
7 I	DIAG											
8												
9 F	AIMStat											
10 C	CKTLOC											
11 F	Hold											
12 N	Vext											
13	_											
14												
15												
16 F	Prefix											
17 I	CO											
18 I	Level											

NT6X71 in an RSC LCM (continued)

At the LCEI frame

6



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage when transporting them:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the LCM. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

CAUTION Special tools required

Card shrouds and removal tools are required for removing cards from the line drawers. For descriptions of these tools, refer to the notes at the end of this procedure.

Put on a wrist strap.

NT6X71 in an RSC LCM (continued)

7



DANGER Hot materials Exercise care when handling the line card. The line feed resistor may be hot.

Open the line drawer using the following steps:

- **a** Face the drawer shelf and grasp the handle at the bottom of the drawer with your right hand.
- **b** Push up on the drawer latch with your thumb and pull the drawer out until fully withdrawn. It is fully withdrawn when the drawer stop is at the top, to prevent further travel.
- **c** Maintain a slight pull on the handle and lift the faceplate of the drawer approximately 2.5 cm (1 inch).
- **d** While holding the drawer in this position, push the bottom of the drawe nearest the shelf with your left hand, to a position about one 1 cm (.5 inch) to the right.
- e Hold the drawer in this position with your left hand and lower the faceplate of the drawer by releasing the grip of your right hand.
- f Ensure that a card shroud and line card extractor are available.

Note 1: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with three-inch and/or six-inch cards.

Descriptions of these shrouds are as follows:

- Line card insertion/withdrawal tool (3")
 - QTH56A (apparatus code)
 - A0298291 (common product code)
- Line card insertion/withdrawal tool (6")
 - QTH58A (apparatus code)
 - A0313317 (common product code)

Note 2: Card removal tools are required for removing cards from line drawers. Two sizes are available.

NT6X71 in an RSC LCM (continued)

Descriptions of these tools are as follows:

- Card removal tool (3-inch or larger)
 - QTH57A (apparatus code)
 - A0298292 (common product code)
 - Large grip tool for 4-inch or larger cards is NT tool ITA9953

Remove the line card to be replaced by using the following steps:

Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.

- **g** Grasp the edge of the card with a line card extractor at a point midway between the top and bottom edges. Hold the extractor in your right hand.
- **h** Squeeze the handles of the extractor together to grasp the card tightly.
- i Hold the front cover of the line drawer to steady it with your left hand.
- **j** Pull the extractor away from the drawer and the card will become unplugged from its socket on the drawer backplane.
- **k** Continue pulling the card with the extractor until the card is clear of the shroud.
- I Insert the removed card into ESD container and store per local procedures.
- 8 Replace the faulty card by using the following steps:
 - **a** Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots towards the drawer backplane.
 - c Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - e Push the card towards the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 13
other	step 10

NT6X71 in an RSC LCM (end)

11

At the MAP terminal

10 Test the new NT6X71 line card by typing

>DIAG

and pressing the Enter key.

If the DIAG	Do	
passed	step 11	
failed	step 15	
Return the line card to serv	vice by typing	
>RTS		
and pressing the Enter key	/.	

If RTS	Do
passed	step 12
failed	step 15

- 12 Send any faulty cards for repair according to local procedure.
- **13** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step .16

- **14** Return to the *Alarm Clearing Procedure* that directed you to this procedure. At the point where the faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **15** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 16 You have successfully completed this procedure.

NT6X71 in an RSC-S (DS-1) Model A LCME

Application

Use this procedure to replace an NT6X71 card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X71	AA, AB	Data Line card (DLC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X71 card in RSC-S LCME



Replacing an NT6X71 card in RSC-S LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LEN of the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST L site lcme no unit_no lsg no ckt_no

and pressing the Enter key.

where

site

is the location name of the LCME with the faulty card

lcme_no

is the number of the LCME with the faulty card

unit_no

is the number of the LCME unit with the faulty card

lsg_no

is the number of the LSG with the faulty card

ckt_no

is the number of the circuit associated with the faulty card

Example of a MAP display:

/)
CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
•	•	•	•	•	•	•	•	•	•	
LTI	2									
0	Quit	Post	DEL	Q	BUSYQ		PREFIX			
2	Post_									
3		LCC PTY	RNG	.LEN	. D	N	STA F S	LTA TE	RESULT	
4		CKT TYP	E FL	HOST	00 0 03	03 49	31082 I	DL		
5	BSY									
6	RTS									
7	DIAG									
8										
9	AIMStat									
10	CKTLOC									
11	Hold									
12	Next_									
13										
14										
15	D									
16 17	Preilx									
10	Lourol									
τo	TEAGT									

4 Busy the NT6X71 line card by typing

>BSY and pressing the Enter key. *Example of a MAP display:*

/											
(CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	,
	•	•	•	•	•	•	•	•	•	•	
	LTI	2									
	0	Ouit	Post	DEL	0	BUSYO		PREFIX			
	2	~ Post_			~	~					
	3		LCC PTY	RNG	.LEN	DN		STA F S	LTA TE	RESULT	
	4		CKT TYP	PE FL H	OST 00	0 03 03	4931	082 IDL			
	5	BSY									
	б	RTS									
	7	DIAG									
	8										
	9	AIMStat									
	10	CKTLOC									
	11	Hold									
	12	Next_									
	13										
	14										
	15	D									
	17	Prefix									
	10	Lovol									
	τ0	пелет									Ϊ

At the LCE frame

5



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame.

Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

CAUTION



Special tools required Card shrouds and removal tools are required for removing cards from the line drawers.

Put on a wrist strap.

Line card insertion / withdrawal tool for	Apparatus code	Common product code
3-inch cards	QTH56A	A0298291
6-inch cards	QTH58A	A0313317

Note 1: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with 3-inch and 6-inch cards. Descriptions of these shrouds follow.

Note 2: Card removal tools are required for removing cards from line drawers. Two sizes are available. Descriptions of these tools follow.

Card removal tool for	Apparatus code	Common product code				
3-4 inch cards	QTH57A	A0298292				
<i>Note:</i> For 4-inch or larger cards, use the large grip tool ITA9953.						

- 6 Prepare to remove the faulty card by opening the line drawer, determined in step 1, and following these substeps:
 - **a** Face the drawer shelf and grasp the handle at the bottom of the drawer with your right hand.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out until fully withdrawn. It is fully withdrawn when the drawer stop, at the top, prevents further travel.
 - **c** Maintain a slight pull on the handle and lift the faceplate of the drawer approximately 2.5 cm (1 in).
 - **d** While holding the drawer in this position, push the bottom of the drawer, nearest the shelf with your left hand, to a position about 1 cm (.5 in) to the right.
 - e Hold the drawer in this position with your left hand and lower the faceplate of the drawer by releasing the grip of your right hand.
 - f Ensure a card shroud and line card extractor are available.
- 7 Remove the line card to be replaced by following these substeps:
 - **a** Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.
 - **b** Grasp the edge of the card with a line card extractor at a point midway between the top and bottom edges. Hold the extractor in your right hand.

- c Squeeze the handles of the extractor together to grasp the card tightly.
- **d** Hold the front cover of the line drawer to steady it using your left hand.
- e Pull the extractor away from the drawer, and the card will become unplugged from its socket on the drawer backplane.
- f Continue pulling the card with the extractor until the card is clear of the shroud.
- **g** Insert the removed card into the ESD container and store using local procedures.
- 8 Replace the faulty card by following these substeps:
 - **a** Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots toward the drawer backplane.
 - **c** Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - e Push the card toward the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 14
other	step 10

At the MAP terminal

10 Test the NT6X71 line card by typing

>DIAG

11

and pressing the Enter key.

If DIAG	Do					
passed	step 11					
failed	step 14					
Return the NT6X71 card to service by typing						
>RTS						
and pressing the Enter key.						
If RTS	Do					
passed	step 12					

If RTS	Do
failed	step 15

- **12** Send any faulty cards for repair according to local procedure.
- **13** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 16.
- 14 Return to *Alarm Clearing Procedures* or another procedure that directed you to this procedure. If necessary, go to the point where a faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **15** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 16 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X71 in an RSC-S (DS-1) Model B LCME

Application

Use this procedure to replace an NT6X71 card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X71	AA, AB	Data Line card (DLC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X71 card in RSC-S LCME



Replacing an NT6X71 card in RSC-S LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LEN of the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST L site lcme_no unit_no lsg_no ckt_no

and pressing the Enter key.

where

site

is the location name of the LCME with the faulty card

lcme_no

is the number of the LCME with the faulty card

unit_no

is the number of the LCME unit with the faulty card

lsg_no

is the number of the LSG with the faulty card

ckt_no

is the number of the circuit associated with the faulty card

Example of a MAP display:

/												\mathbf{i}
((СМ	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl)
		•	·	•	•	•	•	•	•	•	•	
	LTI	P										
	0	Quit		Post	DE	LQ	BUSY	Q	PREFIX			
	2	Post_										
	3			LCC PT	Y RNG	LEN.	••	DN	STA F S	LTA TE	RESULT	
	4			CKT TY	PE FL	HOST	00 0 0	3 03	4931082	IDL		
	5	BSY										
	б	RTS										
	7	DIAG										
	8											
	9	AIMSt	at									
	10	CKTLO	C									
	11	Hold										
	12	Next_										
	13											
	14											
	15											
	10	Preii	х									
	10	LCO										
	т8	тедет										/

4 Busy the NT6X71 line card by typing

>BSY and pressing the Enter key.

Example of a MAP display:

CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
•	•	•	•	•	•	•		•	•
LTI	P								
0	Quit	Post	: I	DELQ	BUS	ΥQ	PREFIX		
2	Post_								
3		LCC	PTY RNG	LEN		DN	STA F S	LTA TE	RESULT
4		CKT	TYPE FL	HOST	00 0 03	03 493	1082 IDI	I	
5	BSY								
б	RTS								
7	DIAG								
8									
9	AIMStat								
10	CKTLOC								
11	Hold								
12	Next_								
13									
14									
15									
16	Prefix								
17	LCO								
18	Level)

At the LCE frame

5



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame.

Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.

CAUTION



Special tools required Card shrouds and removal tools are required for removing cards from the line drawers.

Put on a wrist strap.

Note: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with 3-inch and 6-inch cards.

Descriptions of these shrouds follow.

Line card insertion / withdrawal tool for	Apparatus code	Common product code
3-inch cards	QTH56A	A0298291
6-inch cards	QTH58A	A0313317

Note: Card removal tools are required for removing cards from line drawers. Two sizes are available. Descriptions of these tools follow.

Card removal tool for			Apparatus code	Common product code				
3-4 inch cards			QTH57A	A0298292				
Note:	For	4-inch or larger	cards, use the large grip to	ol ITA9953.				
6	Pre step	pare to remove to 1, and following	he faulty card by opening tl g these substeps:	ne line drawer, determined in				
	а	Face the drawer with your right h	r shelf and grasp the handle and.	e at the bottom of the drawer				
	b	Push up on the of fully withdrawn. prevents further	drawer latch with your thum It is fully withdrawn when t travel.	b and pull the drawer out until he drawer stop, at the top,				
	C	Maintain a sligh approximately 2	nt pull on the handle and lift the faceplate of the drawer 2.5 cm (1 in).					
	d	While holding th nearest the shel right.	e drawer in this position, pu f with your left hand, to a po	ush the bottom of the drawer, sition about 1 cm (.5 in) to the				
	е	Hold the drawer of the drawer by	in this position with your left releasing the grip of your i	hand and lower the faceplate right hand.				
	f	Ensure a card s	hroud and line card extract	or are available.				
7 Remove the line ca			d to be replaced by followir	ng these substeps:				
а		Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.						
	b	Grasp the edge between the top	of the card with a line card and bottom edges. Hold th	extractor at a point midway ne extractor in your right hand.				
	с	Squeeze the ha	ndles of the extractor toget	her to grasp the card tightly.				
	d	Hold the front co	over of the line drawer to st	eady it using your left hand.				
	е	Pull the extractor unplugged from	or away from the drawer, an its socket on the drawer ba	d the card will become ackplane.				

- **f** Continue pulling the card with the extractor until the card is clear of the shroud.
- **g** Insert the removed card into the ESD container and store using local procedures.
- 8 Replace the faulty card by following these substeps:
 - **a** Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots toward the drawer backplane.
 - c Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - **e** Push the card toward the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 14
other	step 10

At the MAP terminal

10 Test the NT6X71 line card by typing

>DIAG

11

and pressing the Enter key.

If DIAG	Do	
passed	step 11	
failed	step 14	
>RTS and pressing the Enter I	key.	
If RTS	Do	
passed	step 12	

12 Send any faulty cards for repair according to local procedure.

13 Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 16.

- **14** Return to *Alarm Clearing Procedures* or another procedure that directed you to this procedure. If necessary, go to the point where a faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **15** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 16 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X71 in a STAR or RLD

Application

Use this procedure to replace the following card in a STAR or remote line drawer (RLD).

PEC	Suffixes	Name
NT6X71	AA, AB, AC	Standard line card type D
NT6X71	BA	Data line card

Common procedures

The common replacing a line card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X71 in a STAR or RLD (continued)

Summary of card replacement procedure for an NT6X71 card in a STAR or RLD



NT6X71 in a STAR or RLD (continued)

Replacing an NT6X71 card in a STAR or RLD

At your current location

1 Get a replacement card. Mke sure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.

At the MAP terminal

2 To access the line test position (LTP) level of the MAP display and post the line associated with the card to be replaced, type

>MAPCI;MTC;LNS;LTP;POST L site frame unit lsg ckt

and press the Enter key.

where

site

is the name of the site where the STAR is located

frame

is the frame number of the STAR with the faulty card (0 to 511)

unit

is 0 for the STAR

```
lsg
```

is the number of the line subgroup with the faulty card (0 to 35)

```
ckt
```

is the number of the circuit associated with the faulty card (0 to 31)

Example of a MAP display:

LCC PTY RNGLEN.....DN STA F S LTA TE RESULT RES REM1 00 0 03 03 7213355 MB

3 Check the status of the posted line.

If the line status is	Do
ManB	step 5
not ManB	step 4

4 To busy the line, type

>BSY

and press the Enter key.

5 Go to the common replacing a line card procedure in this document. When you have completed the procedure, return here.

NT6X71 in a STAR or RLD (end)

7

At the MAP

6 To test the line card just replaced, type

>DIAG

and press the Enter key.

If the DIAG	Do	
passes	step 7	
fails	step 10	
To return the line card to	o service, type	
and press the Enter key		
and press the Enter key	Do	
and press the Enter key If RTS passes	Do step 8	

- 8 Send any faulty cards for repair according to local procedure.
- **9** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - indications that prompted replacement of the card

Go to step 11.

- **10** Get additional help replacing this card by contacting the personnel responsible for a higher level of support.
- 11 You have correctly completed this procedure.
NT6X72 in an RSC

Application

Use this procedure to replace the following card in an RSC RCC.

PEC	Suffixes	Name
NT6X72	AB, BA	host link formatter

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X72 in an RSC (continued)

Summary of card replacement procedure for an NT6X72 card in an RSC RCC



NT6X72 in an RSC (continued)

Replacing an NT6X72 card in an RSC RCC

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC ensure the unit where you are replacing the card is INACTIVE and the mate unit is ACTIVE.

Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level and post the RCC by typing

>MAPCI;MTC;PM;POST RCC rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the RCC unit to be busied (0 or 1)

Example of a MAP display:

NT6X72 in an RSC (continued)

1	-										
/	C	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
						1RCC					
F	RCC	2		SysB	Ма	anB	OffL	CBsy	IST	b	InSv
	0	Quit	PM	0		0	2	0		2	25
	2	Post_	RCC	0		0	0	0		1	1
	3	ListS	et								
	4			RC	!C	0 IS1	Tb Link	s_00S:	CSide	0, PS	ide O
	5	TRNSL	_ U	nit0:	Inact	SysE	B Mtce				
	б	TST_		Unit1	: Act	: 1	InSv				
	7	BSY									
	8	RTS									
	9	OffL									
1	LO	LoadPI	M								
1	L1	Disp_									
1	L2	Next									
1	L3										
1	L4	Query	PM								
1	L5										
1	Lб	IRLIN	ĸ								
1	L7	Perfo	rm								
1	L 8										

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

At the RCE frame

5 Put a sign on the active unit bearing the words *Active unit—Do not touch.*

At the MAP terminal

6 Busy the inactive RCC unit by typing

>BSY UNIT rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the inactive RCC unit (0 or 1)

7 Prevent the PM from trapping by typing

>PMRESET UNIT rcc_unit_no NORUN

and pressing the Enter key.

where

rcc_unit_no

is the number of the inactive RCC unit (0 or 1)

NT6X72 in an RSC (continued)

At the RCE frame

8

9



DANGER Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the RCC. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- Remove the NT6X72 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.

NT6X72 in an RSC (continued)



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- **10** Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **11** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.

NT6X72 in an RSC (continued)



12 Use the following information to determine the next step in this procedure.

If you entered this procedure from	Do
an alarm clearing procedure	step 18
other	step 13

At the MAP terminal

13	Return to service the inactive RCC unit by typing					
	>RTS UNIT rcc_unit_no					
	and pressing the Enter key.					
	where					
	rcc_unit_no is the number of the inactive R	CC unit				
	Example of a MAP response:					
Test	Passed					
	or					
Test	Failed					
	If RTS	Do				
	passed	step 16				

NT6X72 in an RSC (continued)

	If RTS	Do
	failed	step 14
L	oad the inactive RCC unit by typing	
>	LOADPM UNIT rcc_unit_no	
а	nd pressing the Enter key.	
И	vhere	
	rcc_unit_no is the number of the inactive I	RCC unit
	If load	Do
	passed	step 15
	failed	step 19
R	eturn the inactive RCC unit to servi	ce by typing
>	RTS UNIT rcc unit no	
а	nd pressing the Enter key.	
	9 9 9 9	
И	/here	
И	here	
и	<i>/here</i> rcc_unit_no is the number of the inactive I	RCC unit
и 	/here rcc_unit_no is the number of the inactive I If the RTS	RCC unit Do
и 	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed</pre>	RCC unit Do step 16
и 	<i>there</i> <pre>rcc_unit_no is the number of the inactive I If the RTS passed failed</pre>	RCC unit Do step 16 step 19
и Sfr	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed failed end any faulty cards for repair acco om active unit.</pre>	RCC unit Do step 16 step 19 rding to local procedure. Remove sig
и — Sfr R	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed failed end any faulty cards for repair acco om active unit. e.ecord the following items in office reference </pre>	RCC unit Do step 16 step 19 rding to local procedure. Remove sin ecords:
и Sfr R	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed failed end any faulty cards for repair acco om active unit. tecord the following items in office re date the card was replaced</pre>	RCC unit Do step 16 step 19 rding to local procedure. Remove si ecords:
и —	<i>there</i> rcc_unit_no is the number of the inactive I If the RTS passed failed end any faulty cards for repair acco om active unit. ecord the following items in office re date the card was replaced serial number of the card	RCC unit Do step 16 step 19 rding to local procedure. Remove side
и Sfr 	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed failed end any faulty cards for repair acco om active unit. tecord the following items in office re date the card was replaced serial number of the card symptoms that prompted replace</pre>	RCC unit Do step 16 step 19 rding to local procedure. Remove sidecords:
и — — —Sfr R • • • 6	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed failed end any faulty cards for repair acco om active unit. tecord the following items in office re date the card was replaced serial number of the card symptoms that prompted replace Go to step 20.</pre>	RCC unit Do step 16 step 19 rding to local procedure. Remove si ecords: ement of the card
	<pre>/here rcc_unit_no is the number of the inactive I If the RTS passed failed failed feend any faulty cards for repair acco om active unit. feecord the following items in office re date the card was replaced serial number of the card symptoms that prompted replace fo to step 20. feturn to the Alarm Clearing Procede necessary, go to the point where the next faulty card on the list, and go rocedure for that card in this manual </pre>	RCC unit Do step 16 step 19 rding to local procedure. Remove si ecords: ement of the card ure that directed you to this procedure faulty card list was produced, ident to to the appropriate card replacement.

NT6X72 in an RSC (end)

20 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X73 in an IOPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffixes	Name
NT6X73	AA	Link control card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X73 in an IOPAC HIE (continued)



Summary of card replacement procedure for an NT6X73 card in an HIE

Replacing an NT6X73 in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 7. Otherwise, continue with step 4.

NT6X73 in an IOPAC HIE (continued)

At the MAP terminal

4 Access the peripheral module (PM) level and post the ILCM by typing

>MAPCI;MTC;PM;POST ILCM site frame lcm

and pressing the Enter key.

where

site is the site name of the IOPAC (alphanumeric)

frame

is the frame number of the IOPAC cabinet

lcm

is the number of the ILCM

5 Use the following table to determine which ILCM unit is associated with the faulty NT6X73.

LCM unit	LCC card	HIE slot
0	LCC 0	17
1	LCC 1	18

6



CAUTION

Loss of service This procedure contains directions to busy one or more peripheral modules (PM) in a frame. Since busying a PM affects subscriber service, replace the link control card (LCC)

only during periods of low traf c

Busy the ILCM unit associated with the faulty NT6X73 by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

lcm_unit

is the ILCM unit number (0 to 1)

At the IOPAC cabinet

7 Replace the NT6X73 card using the common replacing a card procedure in this document. When you have completed the procedure, return to this step.

NT6X73 in an IOPAC HIE (end)

8 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 9.

At the MAP terminal

9 Return the busied unit to service by typing

>RTS UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the ILCM unit busied in step 6 (0 or 1)

If RTS	Do
Failed	step 12
Passed	step 10

- **10** Send any faulty cards for repair according to local procedure.
- **11** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card Proceed to step 13.
- **12** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **13** You have successfully completed this procedure.

NT6X73 in an OPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffixes	Name
NT6X73	AA	Link control card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X73 in an OPAC HIE (continued)



Summary of card replacement procedure for an NT6X73 card in an HIE

Replacing an NT6X73 in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 7. Otherwise, continue with step 4.

NT6X73 in an OPAC HIE (continued)

At the MAP terminal

4 Access the peripheral module (PM) level and post the line concentrating module (LCM) by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site is the site name of the OPAC (alphanumeric)

frame

is the frame number of the OPAC (0 to 99)

lcm

is the number of the LCM

5 Use the following table to determine which LCM unit is associated with the faulty NT6X73.

LCM unit	LCC card	HIE slot
0	LCC 0	17
1	LCC 1	18

6



CAUTION

Loss of service This procedure contains directions to busy one or more peripheral modules (PM) in a frame. Since busying a PM affects subscriber service, replace the link control card (LCC) only during periods of low traf c

Busy the LCM unit associated with the faulty NT6X73 by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the LCM unit number (0 to 1)

At the HIE

7 Replace the NT6X73 card using the common replacing a card procedure in this document.

NT6X73 in an OPAC HIE (end)

8 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 9.

At the MAP terminal

9 Return the busied unit to service by typing

>RTS UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the LCM unit busied in step 6 (0 or 1)

If RTS	Do
Failed	step 12
Passed	step 10

- **10** Send any faulty cards for repair according to local procedure.
- **11** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card Proceed to step 13.
- **12** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **13** You have successfully completed this procedure.

NT6X73 in an OPM HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffixes	Name
NT6X73	AA	Link Control Card (LCC)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X73 in an OPM HIE (continued)

Summary of card replacement procedures for an NT6X73 card in an HIE



Replacing an NT6X73 card in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- 3 If you were directed to this procedure from another maintenance procedure, go to step 7. Otherwise, continue with step 4.

NT6X73 in an OPM HIE (continued)

At the MAP terminal

4 Access the peripheral module (PM) level and post the line concentrating module (LCM) by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site

is the site name of the OPM (alphanumeric)

frame

is the frame number of the OPM cabinet (0 to 511)

lcm

is the number of the LCM

5 Use the following table to determine which LCM unit is associated with the faulty NT6X73.

LCM unit	LCC card	LCC slot
0	LCC0	17
1	LCC1	18

6



CAUTION

Loss of service This procedure contains directions to busy one or more peripheral modules (PM) in a frame. Since busying a PM affects subscriber service, replace the link control card (LCC) only during periods of low traf c

Busy the LCM unit associated with the faulty NT6X73 by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the LCM unit number (0 to 1)

At the HIE shelf

7 Replace the NT6X73 card using the common replacing a card procedure in this document.

NT6X73 in an OPM HIE (end)

8 If you were directed to this procedure from another maintenance procedure, return now to the alarm clearing procedure that directed you here; otherwise, continue with step 9.

At the MAP terminal

9 Return the busied unit to service by typing

>RTS UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the OPM unit busied in step 6

If RTS	Do
failed	step 12
passed	step 10

- **10** Send any faulty cards for repair according to local procedure.
- **11** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card Proceed to step 13.
- **12** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **13** You have successfully completed this procedure.

NT6X73 in an RLCM-EDC HIE

Application

Use this procedure to replace the following card in the shelves or frames identi ed in the the follo wing table:

PEC	Suffixes	Cardname	Shelf/frame name
NT6X73	AA	Link Control Card (LCC)	HIE/RLCC

If you cannot identify the:

- Product Engineering Code (PEC)
- PEC suf x
- shelf or frame

For the card you are to replace, refer to the Index. The index in this manual documents a list of cards, shelves and frames.

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

This procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

NT6X73 in an RLCM-EDC HIE (continued)

Summary of Replacing an NT6X73 card in HIE



NT6X73 in an RLCM-EDC HIE (continued)

Replacing an NT6X73 card in HIE

At your current location

- 1 Continue with this procedure if:
 - a step in a a maintenance procedure directs you to this card replacement procedure
 - you use this procedure to verify or accept cards
 - your maintenance support group directs you to this procedure.
- 2 Obtain a replacement card. Make sure the replacement card has the same PEC and PEC suffix of the card to be removed.
- 3 If another maintenance procedure directed you to this procedure, go to step 7. If another maintenance procedure did not direct you to this procedure, continue with step 4.

At the MAP terminal

4 To access the peripheral module (PM) level and to post the line concentrating module (LCM), type:

>MAPCI;MTC;PM;POST LCM site cabinet lcm

and press the Enter key.

where

site

is the site name of the RLCM-EDC (alphanumeric)

cabinet

is the number of the RLCC-EDC cabinet

- lcm
 - is the number of the LCM
- Use the following table to determine the LCM unit associated with the defective NT6X73:

LCM unit	LCC card	LCC slot
0	LCC0	17
1	LCC1	18

5

NT6X73 in an RLCM-EDC HIE (continued)

6



CAUTION Loss of service

This procedure contains directions to busy one or more PMs in a frame. Busying a PM affects subscriber service. Replace power converters during periods of low traf c

To busy the LCM unit associated with the damaged NT6X73, type:

>BSY UNIT unit_no

and press the Enter key.

where

unit_no

is the LCM unit number zero or one associated with the defective card.

At the HIE shelf

- 7 To replace the NT6X73 card, use the common replacing a card procedure in this document.
- 8 If another maintenance procedure directed you to this procedure, return to the alarm clearing procedure that directed you here. If another maintenance procedure did not direct you to this procedure, continue with step 9.

At the MAP terminal

9 To return the busy LCM unit to service, type:

>RTS UNIT unit_no

and press the Enter key.

where

unit_no is the LCM unit zero or one busied in step 6

If RTS	Do
fails	step 12
passes	step 10

- **10** Send the defective cards for repair according to local procedure.
- **11** Record the following items in office records:
 - date of card replacement
 - serial number of the card
 - problems that prompted replacement of the card.

NT6X73 in an RLCM-EDC HIE (end)

Proceed to step 13.

- **12** For additional help, contact the next level of support.
- **13** This procedure is complete.

NT6X73 in an RLCM HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffixes	Name
NT6X73	AA	Link Control Card (LCC)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

NT6X73 in an RLCM HIE (continued)

Summary of card replacement procedure for an NT6X73 card in an HIE



Replacing an NT6X73 card in an HIE

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- 3 If you were directed to this procedure from another maintenance procedure, go to step 7. Otherwise, continue with step 4.

NT6X73 in an RLCM HIE (continued)

At the MAP terminal

4 Access the peripheral module (PM) level and post the line concentrating module (LCM) by typing

>MAPCI;MTC;PM;POST LCM site frame lcm

and pressing the Enter key.

where

site is the site name of the RLCM (alphanumeric)

frame

is the frame number of the RLCE (0 to 511)

lcm

is the number of the LCM

5 Use the following table to determine which LCM unit is associated with the faulty NT6X73.

LCM unit	LCC card	LCC slot
0	LCC0	17
1	LCC1	18

6



CAUTION

Loss of service This procedure contains directions to busy one or more peripheral modules (PM) in a frame. Since busying a PM affects subscriber service, replace the link control card (LCC) only during periods of low traf c

Busy the LCM unit associated with the faulty NT6X73 by typing

>BSY UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the LCM unit number (0 to 1)

At the HIE shelf

7 Replace the NT6X73 card using the common replacing a card procedure in this document. When the card is replaced, return to this point.

NT6X73 in an RLCM HIE (end)

8 If you were directed to this procedure from another maintenance procedure, return now to the alarm clearing procedure that directed you here; otherwise, continue with step 9.

At the MAP terminal

9 Return the busied unit to service by typing

>RTS UNIT lcm_unit

and pressing the Enter key.

where

Icm_unit is the RLCM unit busied in step 6

If RTS	Do
failed	step 12
passed	step 10

- **10** Send any faulty cards for repair according to local procedure.
- **11** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card Proceed to step 13.
- **12** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 13 You have successfully completed this procedure.

NT6X74 in an IOPAC RMM

Application

Use this procedure to replace the following card in a remote maintenance module (RMM) shelf.

PEC	Suffix	Name
NT6X74	AB	RMM control card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of replacing an NT6X74 in an RMM



Replacing an NT6X74 in an RMM

At your Current Location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card to be removed.
- 2 If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 5.

Otherwise, continue with step 3.

At the MAP terminal

3 Go to the peripheral module (PM) level of the MAP display and post the RMM by typing

>MAPCI;MTC;PM;POST RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf where the card is to be replaced

Example of a MAP response:

	SysB	ManB	Offl	CBsy	ISTb	InSv
PM	0	2	2	0	7	21
RMM	1	0	1	0	0	б

RMM 0 SysB

4 Busy the RMM by typing

>BSY

and pressing the Enter key.

At the IOPAC cabinet

- 5 Replace the NT6X74 card using the common replacing a card procedure in this document. When you have completed the procedure, return here.
- 6 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 7.

At the MAP terminal

7 Reload the RMM by typing

>LOADPM

and pressing the Enter key.

lf	Do
The message loadfile not found in directory is received.	step 8
load passed	step 26
load failed	step 29

8	Determine the type of device on which the PM load files are located.				
	If load files are located on	Do			
	tape	step 9			
	IOC disk	step 15			
	SLM disk	step 20			
9	Locate the tape that contains the I	PM load files.			
At th	e IOE frame				
10	Mount the tape on a magnetic tap	e drive.			
At th	e MAP terminal				
11	Download the tape by typing				
	>MOUNT tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape co	ontaining the PM load files			
12	List the contents of the tape in you	Ir user directory by typing			
	>LIST T tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape co	ontaining the PM load files			
13	Demount the tape drive by typing				
	>DEMOUNT T tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape d	rive containing the PM load files			
14	Go to step 25.				
15	From office records, determine an controller (IOC) disk and the name files.	d note the number of the input/output of the volume that contains the PM load			
16	Access the disk utility level of the MAP terminal by typing				
	>DSKUT				
	and pressing the Enter key.				

17	List the IOC file names into your user directory by typing		
	>LISTVOL volume_name ALL		
	and pressing the Enter key.		
	where		
	volume_name is the name of the volume that step 15.	contains the PM load files obtained in	
18	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
19	Go to step 25.		
20	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.		
21	Access the disk utility level of the MAP terminal by typing		
	>DSKUT		
	and pressing the Enter key.	and pressing the Enter key.	
22	List all Disk volumes to user Directory by typing		
	>LV CM		
	and pressing the Enter key.		
23	List the SLM file names into your user directory by typing		
	>LF file_name		
	and pressing the Enter key.		
	<i>where</i> file_name is the name of the SLM disk volume containing the PM load files obtained in step 20.		
24	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
25	Reload the RMM by typing		
	>LOADPM		
	and pressing the Enter key.		
	lf	Do	
	load failed	step 29	
	load passed	step 26	

NT6X74 in an IOPAC RMM (end)

26 Return the RMM to service by typing

>RTS

and pressing the Enter key.

If RTS	Do
passed	step 27
failed	step 29

- 27 Send any faulty cards for repair according to local procedure.
- **28** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 30.

- **29** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **30** You have completed this procedure.
NT6X74 in an OPM RMM

Application

Use this procedure to replace the following card in an RMM.

PEC	Suffixes	Name
NT6X74	AB	RMM Control Card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedures for an NT6X74 card in an RMM



Replacing an NT6X74 card in an RMM

At your Current Location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 8; otherwise, continue with step 3.

At the MAP display

3 Access the TTP level of the MAP and post the RMM that contains the card to be replaced by typing

>MAPCI;MTC;TRKS;TTP;POST P RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf in which the card is to be replaced *Example of a MAP response:*

LAST CIRCUIT = 27 POST CKT IDLED SHORT CLLI IS: OTDA00 OK, CLLI POSTED

POST 20 DELQ BUSY Q DIG TTP 6-006 CKT TYPE PM NO. COM LANG STA S R DOT TE R OG MF RMM 0 0 OTWAON23DA00 2001 LO P_IDL

4 Check the status of the RMM.

If RMM status is	Do
MB, PMB, RMB	step 8
other	step 5

Busy the trunks that are associated with the card to be replaced by typing
 >BSY ALL

and pressing the Enter key.

6 Go to the PM level of the MAP and post the RMM by typing

>PM;POST RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf in which the card is to be replaced *Example of a MAP response:*

	SysB	ManB	Offl	CBsy	ISTb	InSv
PM	0	2	2	0	7	21
RMM	0	0	1	0	0	б

RMM 0 InSv

7 Busy the RMM by typing

>BSY

and pressing the Enter key.

At the RMM

- 8 Replace the NT6X74 card using the common replacing a card procedure in this document. When the card has been replaced, return to this point.
- **9** If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 10.

At the MAP display

10 Load the RMM by typing

>LOADPM

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf in which the card is to be replaced

lf	Do
message "loadfile not found in directory" is received	step 11
load passed	step 27
load failed	step 32
Determine the type of device on which	the PM load files are located.
If load files are located on	Do
tape	step 12
IOC disk	step 17
SLM disk	step 22

12 Locate the tape that contains the PM load files.

13 Mount the tape on a magnetic tape drive.

11

14 Download the tape by typing >MOUNT tape_no and pressing the Enter key. where tape_no is the number of the tape drive containing the PM load files 15 List the contents of the tape in your user directory by typing >LIST T tape_no and pressing the Enter key. where tape_no is the number of the tape drive containing the PM load files. 16 Demount the tape drive by typing >DEMOUNT T tape_no and pressing the Enter key. where tape_no is the number of the tape drive containing the PM load files. Go to step 27. 17 From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files. 18 Access the disk utility level of the MAP by typing >DSKUT and pressing the Enter key. 19 List the IOC file names into your user directory by typing >LISTVOL volume_name ALL and pressing the Enter key. where volume name is the name of the volume that contains the PM load files, obtained in step 17. 20 Leave the disk utility by typing >QUIT and pressing the Enter key. 21 Go to step 27. 22 From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.

23	Access the disk utility level	of the MAP by typing		
	>DISKUT			
• •	and pressing the Enter key.			
24	List all disk volumes to user	directory by typing		
	>LV CM			
	and pressing the enter key.			
25	List the SLM file names into	your user directory by typing		
	>LF volume_name			
	and pressing the Enter key.			
	wnere			
	is the name of the vo step 22.	lume that contains the PM load files, obtained in		
26	Leave the disk utility by typi	ng		
	>QUIT			
	and pressing the Enter key.			
27	Reload the RMM by typing			
	>LOADPM			
	and pressing the Enter key.			
	lf	Do		
	load failed	step 33		
	load passed	step 28		
28	Return the RMM unit to set	rvice by typing		
	>RTS			
	and pressing the Enter key.			
	If RTS	Do		
	passed	step 29		
	failed	step 33		
29	Go to the TTP level of the M	IAP and post the RMM by typing		
	>TRKS;TTP;POST P RMM	rmm_no		
	and pressing the Enter key.			
	where			
	rmm_no is the number of the	RMM shelf in which the card is to be replaced		

NT6X74 in an OPM RMM (end)

30 Return to service the circuits busied in step 5 by typing

>RTS ALL

and pressing the Enter key.

If RTS	Do
passed	step 31
failed	step 33

- **31** Send any faulty cards for repair according to local procedure.
- **32** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 34.

- **33** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 34 You have successfully completed this procedure.

NT6X74 in an RLCM-EDC RMM

Application

Use this procedure to replace the following card in the shelves or frames identi ed in the follo wing table.

PEC	Suffixes	Card name	Shelf/frame name
NT6X74	AB	RMM Control Card	RMM/RLCC

If you cannot identify the PEC, suf x, and shelf or frame for the card you want to replace, refer to the index. The index contains a list of cards, shelves, and frames that this maintenance manual documents.

Common procedures

The common replacing a card procedure is referenced in this procedure..

Action

This procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

Summary of replacing an NT6X74 card in RMM



How to replace an NT6X74 card in RMM

At your current location

- 1 Obtain a replacement card. Make sure that the replacement card has the same product equipment code (PEC) and PEC suffix as the card to remove.
- 2 If another maintenance procedure directs you to this procedure, go to step 8. If another maintenance procedure does not direct you to this procedure, proceed to step 3.

At the MAP display

3 To access the trunk test position (TTP) level of the MAP terminal and post the remote maintenance module (RMM) that contains the card to replace, type

>MAPCI;MTC;TRKS;TTP;POST P RMM rmm_no

and press the Enter key.

where

```
rmm_no
```

is the number of the RMM shelf in which you replace the card

Example of a MAP response:

LAST CIRCUIT = 27POST CKT IDLED SHORT CLLI IS: OTDA00 OK, CLLI POSTED POST 20 DELQ BUSY Q DIG TTP 6-006 CKT TYPE PM NO. COM LANG STA S R DOT TE R OG MF RMM 0 0 OTWAON23DA00 2001 LO P_IDL

4 Check the status of the RMM trunk circuits.

If RMM status	Do
is MB, PMB, RMB	step 6
is other than listed here	step 5

To busy the trunks that associate with the card you must replace, type
 >BSY ALL
 and press the Enter key.

6 To access the peripheral module (PM) level of the MAP terminal and post the RMM, type

>PM; POST RMM rmm_no

and press the Enter key.

where

rmm_no

is the number of the RMM shelf in which you replace the card

Example of a MAP response:

	SysB	ManB	Offl	CBsy	ISTb	InSv
PM	0	2	2	0	7	21
RMM	0	0	1	0	0	б

RMM 0 InSv

7 To busy the RMM, type

>BSY

and press the Enter key.

At the RMM

- 8 To replace the NT6X74 card, use the common replacing a card procedure in this document. After you replace the card, return to this point.
- **9** If another maintenance procedure directed you to this procedure, return to the procedure that directed you here. Continue as directed. If another maintenance procedure does not direct you to this procedure, proceed to step 10.

At the MAP display

10 To load the RMM, type

>LOADPM

and press the Enter key.

where

rmm_no

is the number of the RMM shelf in which you replace the card

lf	Do
message "loadfile not found in directory" appears	step 11
load passes	step 28
load fails	step 33

11	Determine the type of device that holds the PM load files.					
	If load files	Do				
	are on tape	step 12				
	are on IOC disk	step 17				
	are on SLM disk	step 22				
12	Locate the tape that contains th	e PM load files.				
13	Mount the tape on a magnetic ta	ape drive.				
14	To download the tape, type					
	>MOUNT tape_no					
	and press the Enter key.					
	where					
	tape_no is the number of the tape	edrive that contains the PM load files.				
15	To list the contents of the tape in	n your user directory, type				
	>LIST T tape_no					
	and press the Enter key.					
	where					
	tape_no is the number of the tape	edrive that contains the PM load files.				
16	To demount the tape drive, type					
	>DEMOUNT T tape_no					
	and press the Enter key.					
	where					
	tape_no is the number of the tape	edrive that contains the PM load files.				
	Proceed to step 27.					
17	From office records, determine a controller (IOC) disk. Determine load files.	and note the number of the input/output the name of the volume that contains the PM				
18	To access the disk utility level of	f the MAP display, type				
	>DSKUT					
	and press the Enter key.					
19	To list the IOC file names into yo	our user directory, type				
	>LISTVOL volume_name AL	G				
	and press the Enter key.					
	where					

volume_name is the name of the step 17.	e volume that contains the PM load files you obtain in			
To leave the disk utility,	type			
>QUIT				
and press the Enter key	Ι.			
Proceed to step 27.				
From office records, de module (SLM) disk. De load files.	termine and note the number of the system load termine the name of the volume that contains the PM			
To access the disk utility	y level of the MAP, type			
>DISKUT				
and press the Enter key	Ι.			
To list all disk volumes t	o user directory, type			
>LV CM				
and press the enter key	and press the enter key.			
To list the SLM file nam	Γο list the SLM file names into your user directory, type			
>LF volume_name				
and press the Enter key	Ι.			
where				
volume_name is the name of the step 22	e volume that contains the PM load files you obtain in			
To leave the disk utility,	type			
>QUIT				
and press the Enter key	Ι.			
To reload the RMM, typ	e			
>LOADPM				
and press the Enter key	Ι.			
If load	Do			
fails	step 33			
passes	step 28			
To return the RMM unit	to service, type			

NT6X74 in an RLCM-EDC RMM (end)

If RTS	Do
passes	step 29
fails	step 33
To go to the TTP le	vel of the MAP terminal and post the RMM, type
>TRKS;TTP;POST	P RMM rmm_no
and press the Ente	r key.
where	
rmm_no is the numbe	er of the RMM shelf in which you replace the card
To return to service	the circuits busied in step 5, type
>RTS ALL	
>RTS ALL and press the Ente	r key.
>RTS ALL and press the Ente If RTS	r key. Do
>RTS ALL and press the Ente If RTS passes	r key. Do step 31
>RTS ALL and press the Ente If RTS passes fails	r key. Do step 31 step 33
>RTS ALL and press the Ente If RTS passes fails Send defective card	r key. Do step 31 step 33 ds for repair according to local procedure.
>RTS ALL and press the Ente If RTS passes fails Send defective card Record the items th	r key. Do step 31 step 33 ds for repair according to local procedure. hat follow in office records:
RTS ALL and press the Ente If RTS passes fails Send defective card Record the items the other that card results.	r key. Do step 31 step 33 ds for repair according to local procedure. nat follow in office records: replacement occurred
RTS ALL and press the Ente If RTS passes fails Send defective card Record the items th date that card r • serial number of	r key. Do step 31 step 33 ds for repair according to local procedure. nat follow in office records: replacement occurred of the card
RTS ALL and press the Ente If RTS passes fails Send defective card Record the items th date that card r serial number o indications that	r key. Do step 31 step 33 ds for repair according to local procedure. hat follow in office records: replacement occurred of the card prompt replacement of the card
RTS ALL and press the Ente If RTS passes fails Send defective card Record the items the date that card re serial number of indications that Proceed to step 34	r key. Do step 31 step 33 ds for repair according to local procedure. hat follow in office records: replacement occurred of the card prompt replacement of the card
RTS ALL and press the Ente If RTS passes fails Send defective card Record the items th date that card r date that card r serial number of indications that Proceed to step 34 For additional help,	r key. Do step 31 step 33 ds for repair according to local procedure. hat follow in office records: replacement occurred of the card prompt replacement of the card . contact the next level of maintenance.

NT6X74 in an RLCM RMM

Application

Use this procedure to replace the following card in an RMM.

PEC	Suffixes	Name
NT6X74	AB	RMM Control Card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedures for an NT6X74 card in an RMM



Replacing an NT6X74 card in an RMM

At your current location

- 1 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 2 If you were directed to this procedure from another maintenance procedure, go to step 8; otherwise, continue with step 3.

At the MAP display

3 Access the TTP level of the MAP and post the RMM that contains the card to be replaced by typing

>MAPCI;MTC;TRKS;TTP;POST P RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf in which the card is to be replaced *Example of a MAP response:*

LAST CIRCUIT = 27 POST CKT IDLED SHORT CLLI IS: OTDA00 OK, CLLI POSTED

POST 20 DELQ BUSY Q DIG TTP 6-006 CKT TYPE PM NO. COM LANG STA S R DOT TE R OG MF RMM 0 0 OTWAON23DA00 2001 LO P_IDL

4 Check the status of the RMM.

If RMM status is	Do
MB, PMB, RMB	step 8
other	step 5

Busy the trunks that are associated with the card to be replaced by typing
 >BSY ALL

and pressing the Enter key.

6 Go to the PM level of the MAP and post the RMM by typing

>PM;POST RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf in which the card is to be replaced *Example of a MAP response:*

	SysB	ManB	Offl	CBsy	ISTb	InSv
PM	0	2	2	0	7	21
RMM	0	0	1	0	0	6

RMM 0 InSv

7 Busy the RMM by typing

>BSY

and pressing the Enter key.

At the RMM

- 8 Replace the NT6X74 card using the common replacing a card procedure in this document. When the card is replaced, return to this point.
- **9** If you were directed to this procedure from another maintenance procedure, return now to the procedure that directed you here and continue as directed; otherwise, continue with step 10.

At the MAP display

10 Load the RMM by typing

>LOADPM

and pressing the Enter key.

where

rmm_no

is the number of the RMM shelf in which the card is to be replaced

lf	Do
message "loadfile not found in directory" is received	step 11
load passed	step 28
load failed	step 33
Determine the type of device on which	the PM load files are located.
If load files are located on	Do
tape	step 12
IOC disk	step 17

SLM disk step 22

12 Locate the tape that contains the PM load files.

13 Mount the tape on a magnetic tape drive.

11

14 Download the tape by typing >MOUNT tape_no and pressing the Enter key. where tape_no is the number of the tape drive containing the PM load files 15 List the contents of the tape in your user directory by typing >LIST T tape_no and pressing the Enter key. where tape_no is the number of the tape drive containing the PM load files. 16 Demount the tape drive by typing >DEMOUNT T tape_no and pressing the Enter key. where tape_no is the number of the tape drive containing the PM load files. Go to step 27. 17 From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files. 18 Access the disk utility level of the MAP by typing >DSKUT and pressing the Enter key. 19 List the IOC file names into your user directory by typing >LISTVOL volume_name ALL and pressing the Enter key. where volume name is the name of the volume that contains the PM load files, obtained in step 17. 20 Leave the disk utility by typing >QUIT and pressing the Enter key. 21 Go to step 27. 22 From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.

23	Access the disk utility level	of the MAP by typing					
	>DISKUT						
	and pressing the Enter key	Ι.					
24	List all disk volumes to user directory by typing						
	>LV CM						
	and pressing the enter key						
25	List the SLM file names into your user directory by typing						
	>LF volume_name						
	and pressing the Enter key	1.					
	where						
	is the name of the v step 22.	olume that contains the PM load files, obtained in					
26	Leave the disk utility by typ	bing					
	>QUIT						
	and pressing the Enter key	Ι.					
27	Reload the RMM by typing	l					
	>LOADPM						
	and pressing the Enter key	l.					
	lf	Do					
	load failed	step 33					
	load passed	step 28					
28	Return the RMM unit to se	ervice by typing					
	>RTS						
	and pressing the Enter key	ι.					
	If RTS	Do					
	passed	step 29					
	failed	step 33					
29	Go to the TTP level of the	MAP and post the RMM by typing					
	>TRKS;TTP;POST P RM	1 rmm_no					
	and pressing the Enter key	Ι.					
	where						
	rmm_no is the number of the	RMM shelf in which the card is to be replaced					

NT6X74 in an RLCM RMM (end)

30 Return to service the circuits busied in step 5 by typing

>RTS ALL

and pressing the Enter key.

If RTS	Do
passed	step 31
failed	step 33

- **31** Send any faulty cards for repair according to local procedure.
- **32** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 34.

- **33** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 34 You have successfully completed this procedure.

NT6X74 in an RSC RMM

Application

Use this procedure to replace the following card in an RSC RMM.

PEC	Suffixes	Name
NT6X74	AB	RMM control card

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.



Summary of card replacement procedure for NT6X74 card in an RSC RMM

Replacing an NT6X74 card in an RSC RMM

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP terminal

3	Access the TTP level of the MAP and post the RMM by typing
	>MAPCI;MTC;TRKS;TTP;POST P RMM rmm_no
	and pressing the Enter key.
	where
	<pre>rmm_no is the number of the RMM shelf in which the card is to be replaced</pre>
4	Installation busy all the RMM circuits by typing
	>BSY INB ALL
	and pressing the Enter key.
5	Access the PM level and post the RMM by typing
	>PM;POST RMM rmm_no
	and pressing the Enter key.

where

rmm_no

is the number of the RMM from which the card is to be removed Example of a MAP display:

CM	MS	IOD		Net	PM	CCS	LNS	Trks	Ext	APPL
·	•	•		•	4SysB	•	•	•	•	•
				G	Man		0557	GD	т отл.	T Q
RM	M .			SASR	ManB		OIIL	CBSY	ISTO	Insv
0	Quit	PM		4	0		10	3	3	130
2	Post_	RMM		0	1		1	0	0	2
3										
4		RMM	5	SysB						
5	Trnsl									
6	Tst									
7	Bsy									
8	RTS									
9	OffL									
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
18										
\mathbf{X}										

6 Busy the RMM by typing

>BSY

and pressing the Enter key.

Example of a MAP display:

См	MS	IOD		Net	PM 4SysB	ccs	LNS	Trks	Ext	APPL
RMI	м			SysB	ManB	(DffL	CBsy	ISTb	InSv
0	Quit	PM		4	0		10	3	3	130
2	Post_	RMM		0	1		1	0	0	2
3										
4		RMM	5	ManB						
5	Trnsl									
6	Tst									
7	Bsy									
8	RTS									
9	OffL									
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
/ ₁₈										

At the RMM shelf

7

8



CAUTION

Static discharge may cause damage to circuit packs Put on a wrist strap and connect it to the frame of the RMM before removing any cards. This protects the RMM against service degradation caused by static electricity.

Put on a wrist strap.

Remove the NT6X74 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.

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b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC including suffix, as the card you just removed.
- 9 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



10



DANGER Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.

Reload the RMM by typing	
>loadpm	
and pressing the Enter key.	
If load	Do
passed	step 12
failed	step 19
Use the following information	to determine the next step in this procedure.
If you entered this proced from	ure Do
alarm clearing procedures	s step 18
other	step 13
Return the RMM shelf to serv	vice by typing
>RTS	
and pressing the Enter key.	
If the RTS	Do
failed	step 19
passed	step 14

NT6X74 in an RSC RMM (end)

At the MAP terminal 14 Access the TTP level of the MAP display and post the RMM by typing >TRKS;TTP;POST P RMM rmm no and pressing the Enter key. where rmm no is the number of the RMM associated with the new NT6X74 card 15 Return to service the circuits busied in step 4 by typing >RTS ALL and pressing the Enter key. If the RTS Do failed step16 passed step19 16 Send any faulty cards for repair according to local procedure. 17 Record the following items in office records: date the card was replaced serial number of the card symptoms that prompted replacement of the card Go to step 20. 18 Return to the Alarm Clearing Procedure that directed you to this procedure. If necessary, go to the point where the faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual. 19 Obtain further assistance in replacing this card by contacting personnel responsible for higher level of support. 20 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X74 in an RSC-S (DS-1) Model A RMM

Application

Use this procedure to replace an NT6X74 card in an RSC-S RMM.

PEC	Suffixes	Name
NT6X74	AB	RMM Control Card (RMMC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X74 card in an RSC-S RMM

At your Current Location

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards or have been directed to this procedure by your maintenance support group.

At the MAP terminal

2 Set the MAP display to the TTP level and post the RMM by typing

>MAPCI;MTC;TRKS;TTP;POST TM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM in which the card is to be replaced

3 Busy all trunks in the RMM by typing

>BSY INB ALL

and pressing the Enter key.

4 At the PM level, busy the RMM shelf by typing

>PM;POST RMM rmm_no;BSY

and pressing the Enter key.

where

rmm no

is the number of the RMM in which the card is to be replaced *Example of a MAP display:*

(CM	MS	IOD		Net	PM	CCS	LNS	Trks	Ext	APPL)
	٠	•			•	4SysB	•		•	•		
	RM	4			SysB	ManB	Of	fL	CBsy	ISTb	InSv	
	0	Quit	PM		4	1		10	3	3	130	
	2	Post_	RMM		0	1		1	0	0	2	
	3											
	4		RMM	5	ManB							
	5	Trnsl										
	б	Tst										
	7	Bsy										
	8	RTS										
	9	OffL										
	10	LoadPM										
	11	Disp_										
	12	Next										
	13											
	14	QueryPM										
	15											
	16											
	17											
	18											
1												1

At the RMM shelf

5



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the RMM. This protects the equipment against damage caused by static electricity.

DANGER

Improper insertion may cause damage to circuit packs

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- 6 Remove the NT6X74 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 7 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



8



DANGER Equipment damage

Take these precautions when removing or inserting a card:

1. Do not apply direct pressure to the components.2. Do not force the card into its slot.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



9	Reload the RMM by typing						
	>LOADPM						
40	and pressing the Enter key.						
10	Use the following information to determine where to proceed.						
	lf	Do					
	loadfile not found in directory	ory step 11					
	load passes	step 15					
	load fails	step 22					
11	Refer to the following table to determine the next step in this procedure.						
	If the system load module is	Do					
	version 1	step 12					
	version 2	step 13					
12	List the loadfile in the directory by typing						
	> DSKUT;LISTVOL D000 ALL						
	and pressing the Enter key.						
	or						
	> DSKUT;LISTVOL D010 ALL						
	and pressing the Enter key.						
	Local operating company policy determines which disk, D000 or D010, the loadfile will be on.						
	Proceed to step14.						
13	List the loadfile in the directory by typ	ping					
	>DISKUT;LV S00D						
	>LF						
	and pressing the Enter key.						
	or						
	> DISKUT;LV S01d						
	>LF						
	and pressing the Enter key.						
14	Leave the disk utility by typing						
	>QUIT						
	and pressing the Enter key.						
	Return to step 9.						
15 Return the RMM shelf to service by typing

>RTS

16

and pressing the Enter key.

If RTS	Do
passed	step 16
failed	step 22
Continue this procedure depending procedure.	on where you were directed to this
If directed to this procedure from	Do
an alarm clearing procedure	step 21
other	sten 17

At the MAP terminal

17 Post all trunks in the RMM in order to return to them service by typing

>TRKS;TTP;POST TM RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM in which the card has been replaced

18 Busy and return to service all trunks by typing

>BSY ALL;RTS ALL

and pressing the Enter key.

19 Use the following information to determine where to proceed.

If RTS	Do
passed	step 20
failed	step 22

20 Observe the alarm that is produced and go to the appropriate alarm clearing procedure in *Alarm Clearing Procedures*. Go to step 23.

21 Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.

22 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

NT6X74 in an RSC-S (DS-1) Model A RMM (end)

23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this procedure and continue as directed.

NT6X74 in an RSC-S (DS-1) Model B RMM

Application

Use this procedure to replace an NT6X74 card in an RSC-S RMM.

PEC	Suffixes	Name
NT6X74	AB	RMM Control Card (RMMC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X74 card in an RSC-S RMM

At your Current Location

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards or have been directed to this procedure by your maintenance support group.

At the MAP terminal

2 Set the MAP display to the TTP level and post the RMM by typing

>MAPCI;MTC;TRKS;TTP;POST TM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM in which the card is to be replaced

3 Busy all trunks in the RMM by typing

>BSY INB ALL

and pressing the Enter key.

4 At the PM level, busy the RMM shelf by typing

>PM;POST RMM rmm_no;BSY

and pressing the Enter key.

where

rmm no

is the number of the RMM in which the card is to be replaced *Example of a MAP display:*

/										
СМ	MS	IOD		Net	PM	CCS	LNS	Trks	Ext	APPL
•	•	•		•	4SysB	•	•	•	•	•
RMI	м			SysB	ManB	Of	fL	CBsy	ISTb	InSv
0	Quit	PM		4	1	1	.0	3	3	130
2	Post_	RMM		0	1		1	0	0	2
3										
4		RMM	5	ManB						
5	Trnsl									
б	Tst									
7	Bsy									
8	RTS									
9	OffL									
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
18)

At the RMM shelf

5



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RMM. This protects the equipment against damage caused by static electricity.



DANGER

Improper insertion may cause damage to circuit packs 1. Do not apply direct pressure to the components.

2. Do not force the card into its slot.

Put on a wrist strap.

- 6 Remove the NT6X74 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 7 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



8



DANGER Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



9	Reload the RMM by typing						
	>LOADPM						
	and pressing the Enter key.						
10	Use the following information to deter	mine where to proceed.					
	lf	Do					
	loadfile not found in directory	step 11					
	load passes	step 15					
	load fails	step 22					
11	Refer to the following table to determ	ine the next step in this procedure.					
	If the system load module is	Do					
	version 1	step 12					
	version 2	step 13					
12	List the loadfile in the directory by typing						
	> DSKUT;LISTVOL D000 ALL						
	and pressing the Enter key.						
	or						
	> DSKUT;LISTVOL D010 ALL						
	and pressing the Enter key.						
	Local operating company policy determines which disk, D000 or D010, the loadfile will be on.						
	Proceed to step14.						
13	List the loadfile in the directory by typ	ing					
	>DISKUT;LV S00D						
	>LF						
	and pressing the Enter key.						
	or						
	> DISKUT;LV S01D						
	>LF						
	and pressing the Enter key.						
14	Leave the disk utility by typing						
	>QUIT						
	and pressing the Enter key.						
	Return to step 9.						

15 Return the RMM shelf to service by typing

>RTS

16

and pressing the Enter key.

If RTS	Do
passed	step 16
failed	step 22
Continue this procedure depending procedure.	on where you were directed to this
If directed to this procedure from	Do
an alarm clearing procedure	step 21
other	step 17

At the MAP terminal

17 Post all trunks in the RMM in order to return to them service by typing

>TRKS;TTP;POST TM RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM in which the card has been replaced

18 Busy and return to service all trunks by typing

>BSY ALL ; RTS ALL

and pressing the Enter key.

19 Use the following information to determine where to proceed.

If RTS	Do
passed	step 20
failed	step 22

20 Observe the alarm that is produced and go to the appropriate alarm clearing procedure in *Alarm Clearing Procedures*. Go to step 23.

21 Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.

22 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this procedure and continue as directed.

NT6X74 in an RSC-S (PCM-30) Model A RMM

Application

Use this procedure to replace an NT6X74 card in an RSC-S RMM.

PEC	Suffixes	Name
NT6X74	AB	RMM Control Card (RMMC)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X74 card in an RSC-S RMM

1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards or have been directed to this procedure by your maintenance support group.

At the MAP terminal

2 Set the MAP display to the PM level and post the RMM by typing

>MAPCI;MTC;TRKS;TTP;POST TM rmm_no

and pressing the Enter key.

where

rmm no

- is the number of the RMM in which the card is to be replaced
- **3** Busy all trunks in the RMM by typing

>BSY INB ALL

and pressing the Enter key.

4 At the PM level, busy the RMM shelf by typing

>PM;POST rmm rmm_no;BSY

and pressing the Enter key.

where

rmm no

is the number of the RMM in which the card is to be replaced *Example of a MAP display:*

/										
CM	MS	IOD		Net	PM	CCS	LNS	Trks	Ext	APPL
	•	•		•	4SysB					
RMI	M			SysB	ManB	Of	fL	CBsy	ISTb	InSv
0	Quit	PM		4	1	1	0	3	3	130
2	Post_	RMM		0	1		1	0	0	2
3										
4		RMM	5	ManB						
5	Trnsl									
б	Tst									
7	Bsy									
8	RTS									
9	OffL									
10	LoadPM									
11	Disp_									
12	Next									
13										
14	QueryPM									
15										
16										
17										
18										
<u>۱</u>										

At the RMM shelf

5



DANGER

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the RMM. This protects the equipment against damage caused by static electricity.

DANGER

Improper insertion may cause damage to circuit packs

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- 6 Remove the NT6X74 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 7 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



8



DANGER Equipment damage

Take these precautions when removing or inserting a card:

1. Do not apply direct pressure to the components.2. Do not force the card into its slot.

Seat and lock the card.

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



9	Reload the RMM by typing					
10	Use the following information to dete	rmine where to proceed.				
	lf	Do				
	loadfile not found in directory	step 11				
	load passes	step 15				
	load fails	step 22				
11	Refer to the following table to determ	ine the next step in this procedure.				
	If the system load module is	Do				
	version 1	step 12				
	version 2	step 13				
12	List the loadfile in the directory by typ	bing				
	> DSKUT;LISTVOL D000 ALL					
	and pressing the Enter key.					
	or					
	> DSKUT;LISTVOL D010 ALL					
	and pressing the Enter key.					
	Local operating company policy determined to a company policy determined by a company policy	ermines which disk, D000 or D010, the				
	Proceed to step14.					
13	List the loadfile in the directory by typ	bing				
	>DISKUT;LV S00D					
	>LF					
	and pressing the Enter key.					
	or					
	> DISKUT;LV S01D					
	>LF					
	and pressing the Enter key.					
14	Leave the disk utility by typing					
	>QUIT					
	and pressing the Enter key.					
	Return to step 9.					

15 Return the RMM shelf to service by typing

>RTS

16

and pressing the Enter key.

If RTS	Do		
passed	step 16		
failed	step 22		
Continue this procedure depending procedure.	on where you were directed to this		
If directed to this procedure from	Do		
an alarm clearing procedure	step 21		
4	step 17		

At the MAP terminal

17 Post all trunks in the RMM in order to return to them service by typing

>TRKS;TTP;POST TM RMM rmm_no

and pressing the Enter key.

where

rmm_no

is the number of the RMM in which the card has been replaced

18 Busy and return to service all trunks by typing

>BSY ALL;RTS ALL

and pressing the Enter key.

19 Use the following information to determine where to proceed.

If RTS	Do
passed	step 20
failed	step 22

20 Observe the alarm that is produced and go to the appropriate alarm clearing procedure in *Alarm Clearing Procedures*. Go to step 23.

21 Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.

22 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this procedure and continue as directed.

NT6X75 in an IOPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffix	Name
NT6X75	KA	ESA tone and clock card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X75 in an HIE



Replacing an NT6X75 in an HIE

At your current location:

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 10. Otherwise, continue with step 4.

At the MAP terminal

4 Post the ILCM associated with the faulty NT6X75 card by typing

>MAPCI;MTC;PM;POST ILCM site frame lcm

and pressing the Enter key.

where

site is the name of the location of the IOPAC

frame

is the number of the IOPAC cabinet

```
lcm
```

is the number of the ILCM

- 5 Translate the links to the P-side peripherals by typing
 - >TRNSL P

and pressing the Enter key.

6 Post the Emergency Stand-Alone (ESA) processor by typing

>POST ESA esa_no

and pressing the Enter key.

```
where
```

esa no

is the number of the ESA processor identified in step 5.

- **7** Busy the ESA processor by typing
 - >BSY

and pressing the Enter key.

Example of a MAP response:

This action will take this PM out of service Please confirm ("Yes" or "No")

Respond by typing >YES

and pressing the Enter key.

8 Post the ILCM associated with the faulty NT6X75 card by typing

>POST ILCM site frame lcm

and pressing the Enter key.

where

site

is the name of the location of the IOPAC

frame

is the number of the IOPAC cabinet

lcm

is the number of the ILCM

9 Busy unit 0 by typing

>BSY UNIT 0

and pressing the Enter key.

At the IOPAC cabinet

- **10** Replace the NT6X75 card using the common replacing a card procedure in this document. When you have completed the procedure, return here.
- 11 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 12.

At the MAP terminal

12 Return to service unit 0 by typing

>RTS UNIT 0

and pressing the Enter key.

If RTS	Do
passed	step 13
failed	step 35

13 Post the Emergency Stand-Alone (ESA) processor identified in step 5 by typing

>POST ESA esa_no

and pressing the Enter key.

where

esa_no

is the number of the ESA processor

14 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

lf	Do	
The message loadfile not found in directory is received.	step 15	
load passed	step 32	
load failed	step 35	
Determine the type of device on which the PM load files are located.		

If load files are located on	Do
tape	step 16
IOC disk	step 22
SLM disk	step 27

16 Locate the tape that contains the PM load files.

At the IOE frame

15

19

17 Mount the tape on a magnetic tape drive.

at the MAP terminal

- 18 Download the tape by typing
 - >MOUNT tape_no

and pressing the Enter key.

where

tape_no is the number of the tape drive containing the PM load files.

List the contents of the tape in your user directory by typing

>LIST T tape_no

and pressing the Enter key.

where

tape_no is the number of the tape containing the PM load files

20 Demount the tape drive by typing

>DEMOUNT T tape_no

and pressing the Enter key.

where

tape_no

is the number of the tape drive containing the PM load files.

- **21** Go to step 31.
- **22** From office records, determine and note the number of the input/output controller (IOC) disk and the name of the volume that contains the PM load files.
- 23 Access the disk utility level of the MAP terminal by typing

>DSKUT

and pressing the Enter key.

24 List the IOC file names into your user directory by typing

LISTVOL volume_name ALL

and pressing the Enter key.

where

volume_name is the name of the volume that contains the PM load files identified in step 22.

25 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

- **26** Go to step 31.
- 27 From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.
- **28** Access the disk utility level of the MAP terminal by typing

>DISKUT

and pressing the Enter key.

29 List the SLM file names into your user directory by typing

>LV CM;LF volume_name

and pressing the Enter key.

where

volume_name

is the name of the disk volume that contains the PM load files identified in step 27.

30 Leave the disk utility by typing

>QUIT

and pressing the Enter key.

31 Reload the ESA processor by typing >LOADPM

NT6X75 in an IOPAC HIE (end)

If loadpm	Do
passed	step 32
failed	step 35
Return the ESA process	or to service by typing
>RTS	
and pressing the Enter k	сеу.
If RTS	Do
If RTS passed	Do step 33

- Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 36.

34

- **35** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **36** You have completed this procedure. If you were directed here from an alarm clearing procedure, return to the maintenance procedure that directed you to this procedure and continue as directed.

NT6X75 in an OPAC HIE

Application

Use this procedure to replace the following card in a host interface equipment (HIE) shelf.

PEC	Suffix	Name
NT6X75	AA	ESA tone and clock card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.





Replacing an NT6X75 in an HIE

At your current location:

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.
- **3** If you were directed to this procedure from the *Alarm Clearing Procedures*, go to step 10. Otherwise, continue with step 4.

At the MAP terminal

4	Post the LCM associated with the faulty NT6X75 card by typing
	>MAPCI;MTC;PM;POST LCM site frame lcm
	and pressing the Enter key.
	where
	site is the name of the location of the OPAC
	frame is the number of the OPAC cabinet
	Icm is the number of the LCM in the OPAC cabinet
5	Translate the links to the P-side peripherals by typing
	>TRNSL P
	and pressing the Enter key.
6	Post the Emergency Stand-Alone (ESA) processor by typing
	>POST ESA esa_no
	and pressing the Enter key.
	where
	esa_no is the number of the ESA processor identified in step 5.
7	Busy the ESA processor by typing
	>BSY
	and pressing the Enter key.
	Example of a MAP response:
This Plea	action will take this PM out of service se confirm ("Yes" or "No")
	Respond by typing
	>YES
	and pressing the Enter key.
8	Post the LCM associated with the faulty NT6X75 card by typing
	>POST LCM site frame lcm
	and pressing the Enter key.
	where
	site
	is the name of the location of the OPAC
	is the number of the OPAC cabinet

lcm

is the number of the LCM in the OPAC cabinet

9 Busy unit 0 by typing

>BSY UNIT 0

and pressing the Enter key.

At the OPAC

- **10** Replace the NT6X75 card using the common replacing a card procedure in this document. When you have completed the procedure, return here.
- 11 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 12.

At the MAP terminal

12 Return to service unit 0 by typing

>RTS UNIT 0

and pressing the Enter key.

If RTS	Do
passed	step 13
failed	step 35

13 Post the Emergency Stand-Alone (ESA) processor identified in step 5 by typing

```
>POST ESA esa_no
```

and pressing the Enter key.

- where
- esa no
 - is the number of the ESA processor
- 14 Load the ESA processor by typing

>LOADPM

and pressing the Enter key.

lf	Do
The message loadfile not found in directory is received.	step 15
load passes	step 32
load fails	step 35

15	Determine the type of device on which the PM load files are located.			
	If load files are located on	Do		
	tape	step 16		
	IOC disk	step 22		
	SLM disk	step 27		
16	Locate the tape that contains the F	PM load files.		
At th	e IOE frame			
17	Mount the tape on a magnetic tape drive.			
at the	e MAP terminal			
18	Download the tape by typing			
	>MOUNT tape_no	>MOUNT tape no		
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape dr	ive containing the PM load files.		
19	List the contents of the tape in your user directory by typing			
	>LIST T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape co	ontaining the PM load files		
20	Demount the tape drive by typing			
	>DEMOUNT T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape dr	ive containing the PM load files.		
21	Go to step 31.			
22	From office records, determine and controller (IOC) disk and the name files.	d note the number of the input/output of the volume that contains the PM load		
23	Access the disk utility level of the N	MAP terminal by typing		
	>DSKUT			
	and pressing the Enter key.			

24	List the IOC file names into your user d	lirectory by typing	
	LISTVOL volume_name ALL		
	and pressing the Enter key.		
	where		
	volume_name is the name of the volume that c step 22.	ontains the PM load files identified in	
25	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
26	Go to step 31.		
27	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.		
28	Access the disk utility level of the MAP	terminal by typing	
	>DISKUT		
	and pressing the Enter key.		
29	List the SLM file names into your user	directory by typing	
	>LV CM;LF volume_name		
	and pressing the Enter key.		
	where		
	<pre>volume_name is the name of the disk volume t identified in step 27.</pre>	hat contains the PM load files	
30	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
31	Reload the ESA processor by typing		
	>LOADPM		
	and pressing the Enter key.		
	If loadpm	Do	
	passed	step 32	
	failed	step 35	
32	Return the ESA processor to service by >RTS	y typing	

NT6X75 in an OPAC HIE (end)

and pressing the Enter key.

If RTS	Do	
passed	step 33	
failed	step 35	

- **33** Send any faulty cards for repair according to local procedure.
- **34** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 36.

- **35** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- **36** You have completed this procedure. If you were directed here from an alarm clearing procedure, return to the maintenance procedure that directed you to this procedure and continue as directed.

NT6X75 in an OPM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X75	AA	OPM ESA Tone and Clock Card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedures for an NT6X75 card in an HIE



Replacing an NT6X75 card in an HIE

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- 3 If you were directed to this procedure from another maintenance procedure, go to step 10; otherwise, continue with step 4.
At the MAP display 4 Post the LCM associated with the faulty NT6X75 card by typing >MAPCI;MTC;PM;POST LCM site frame lcm and pressing the Enter key. where site is the name of the location of the OPM frame is the number of the OPM cabinet lcm is the number of the LCM in the OPM cabinet 5 Translate the links to the P-side peripherals by typing >TRNSL P and pressing the Enter key. 6 Post the Emergency Stand-Alone (ESA) processor by typing >POST ESA esa_no and pressing the Enter key. where esa no is the number of the ESA processor identified in step 5. 7 Busy the ESA processor by typing >BSY and pressing the Enter key. Example of a MAP response: This action will take this PM out of service Please confirm ("Yes" or "No") Respond by typing >YES and pressing the Enter key. 8 Post the LCM associated with the faulty NT6X75 card by typing >POST LCM site frame lcm and pressing the Enter key. where site is the name of the location of the OPM frame is the number of the OPM cabinet

lcm

is the number of the LCM in the OPM cabinet

9 Busy unit 0 by typing

>BSY UNIT 0

and pressing the Enter key.

At the OPM cabinet

- **10** Replace the NT6X75 card using the common replacing a card procedure in this document. When you have completed the procedure, return to step 11 of this procedure.
- 11 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 12.

At the MAP terminal

12 Return to service unit 0 by typing

>RTS UNIT 0

and pressing the Enter key.

If RTS	Do
passed	step 13
failed	step 36
Post the ESA processor identified in s	tep 5 by typing
>POST ESA esa_no	
and pressing the Enter key.	
where	
esa_no is the number of the ESA proce	essor
Load the ESA processor by typing	
>LOADPM	
and pressing the Enter key.	
lf	Do
message "loadfile not found in directory" is received	step 15
load passed	step 33

13

14

15	Determine the type of device on which the PM load files are located.				
	If load files are located on Do				
	tape	step 16			
	IOC disk	step 22			
	SLM disk	step 27			
16	Locate the tape that contains the	PM load files.			
At th	e OPM cabinet				
17	Mount the tape on a magnetic tape drive.				
At th	e MAP displav				
18	Download the tape by typing				
	>MOUNT tape_no	>MOUNT tape_no			
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape d	rive containing the PM load files			
19	List the contents of the tape in your user directory by typing				
	>LIST T tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape d	rive containing the PM load files			
20	Demount the tape by typing				
	>DEMOUNT T tape_no				
	and pressing the Enter key.				
	where				
	tape_no is the number of the tape d	rive containing the PM load files			
21	Go to step 32.				
22	From office records, determine an controller (IOC) disk and the name files.	d note the number of the input/output e of the volume that contains the PM load			
23	Access the disk utility level of the MAP by typing				
	>DSKUT				
	and pressing the Enter key.				

24	List the IOC file names into your user directory by typing		
	>LISTVOL volume_name ALL		
	and pressing the Enter key.		
	where		
	volume_name is the name of the volume that o step 22.	contains the PM load files, obtained in	
25	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
26	Go to step 32.		
27	From office records, determine and no module (SLM) disk and the name of th files.	te the number of the system load e volume that contains the PM load	
28	8 Access the disk utility level of the MAP by typing		
	>DISKUT		
	and pressing the Enter key.		
29	List the disk volume names for both S00D and S01D by typing		
	>LV CM		
	and pressing the Enter key.		
30 List the SLM file names into your user directory by typing		directory by typing	
	>LF volume_name		
	and pressing the Enter key.		
	where		
	volume_name is the name of the volume that contains the PM load files, obtained in step 27.		
31	Leave the disk utility by typing		
	>QUIT		
	and pressing the Enter key.		
32	Reload the ESA processor by typing		
	>LOADPM		
	and pressing the Enter key.		
	lf	Do	
	load failed	step 36	
	load passed	step 33	

NT6X75 in an OPM HIE (end)

33 Return the ESA processor to service by typing

>RTS

and pressing the Enter key.

If RTS	Do
passed	step 34
failed	step 36

- 34 Send any faulty cards for repair according to local procedure.
- **35** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card.

Go to step 37.

- **36** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 37 You have successfully completed this procedure.

NT6X75 in an RLCM HIE

Application

Use this procedure to replace the following card in an HIE shelf.

PEC	Suffixes	Name
NT6X75	AA	RLCM ESA Tone and Clock Card

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X75 card in an HIE

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure that the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.
- **3** If you were directed to this procedure from another maintenance procedure, go to step 10; otherwise, continue with step 4.

At the MAP display

4	Post the LCM associated with the faulty NT6X75 card by typing		
	>MAPCI;MTC;PM;POST LCM site frame lcm		
	and pressing the Enter key.		
	where		
	site is the name of the location of the RLCM		
	frame is the number of the RLCE		
	Icm is the number of the LCM in the RLCE		
5	Translate the links to the P-side peripherals by typing		
	>TRNSL P		
	and pressing the Enter key.		
6	Post the Emergency Stand-Alone (ESA) processor by typing		
	>POST ESA esa_no		
	and pressing the Enter key.		
	where		
	esa_no is the number of the ESA processor identified in step 5.		
7	Busy the ESA processor by typing		
	>BSY		
	and pressing the Enter key.		
	Example of a MAP response:		
This Plea	action will take this PM out of service se confirm ("Yes" or "No")		
	Respond by typing		
	>YES		
	and pressing the Enter key.		
8	Post the LCM associated with the faulty NT6X75 card by typing		
	>POST LCM site frame lcm		
	and pressing the Enter key.		
	where		
	site is the name of the location of the RLCM		
	frame is the number of the RLCE		

lcm

is the number of the LCM in the RLCE

9 Busy unit 0 by typing

>BSY UNIT 0

and pressing the Enter key.

At the RLCE frame

- **10** Replace the NT6X75 card using the common replacing a card procedure in this document. When you have completed the procedure, return to step 11 of this procedure.
- 11 If you were directed to this procedure from the *Alarm Clearing Procedures*, return now to the alarm clearing procedure that directed you here. Otherwise, continue with step 12.

At the MAP terminal

13

14

12 Return to service unit 0 by typing

>RTS UNIT 0

and pressing the Enter key.

If RTS	Do	
passed	step 13	
failed	step 36	
Post the ESA processor identified in s	tep 5 by typing	
>POST ESA esa_no		
and pressing the Enter key.		
where		
esa_no is the number of the ESA proce	ssor	
Load the ESA processor by typing		
>LOADPM		
and pressing the Enter key.		
lf	Do	
message "loadfile not found in directory" is received	step 15	
load passed	step 33	
load failed	step 36	

15	Determine the type of device on which the PM load files are located.			
	If load files are located on Do			
	tape	step 16		
	IOC disk	step 22		
	SLM disk	step 27		
16	Locate the tape that contains the R	PM load files.		
At th	e IOE frame			
17	Mount the tape on a magnetic tap	e drive.		
At th	e MAP display			
18	Download the tape by typing			
	>MOUNT tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape di	rive containing the PM load files		
19	List the contents of the tape in your user directory by typing			
	>LIST T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape d	rive containing the PM load files		
20	Demount the tape by typing			
	>DEMOUNT T tape_no			
	and pressing the Enter key.			
	where			
	tape_no is the number of the tape d	rive containing the PM load files		
21	Go to step 32.			
22	From office records, determine an controller (IOC) disk and the name files.	d note the number of the input/output e of the volume that contains the PM load		
23	Access the disk utility level of the MAP by typing			
	>DSKUT			
	and pressing the Enter key.			

24	List the IOC file names into your user directory by typing	
	>LISTVOL volume_name ALL	
	and pressing the Enter key.	
	where	
	volume_name is the name of the volume t step 22.	hat contains the PM load files, obtained in
25	Leave the disk utility by typing	
	>QUIT	
	and pressing the Enter key.	
26	Go to step 32.	
27	From office records, determine and note the number of the system load module (SLM) disk and the name of the volume that contains the PM load files.	
28	Access the disk utility level of the	MAP by typing
	>DISKUT	
	and pressing the Enter key.	
29	List the disk volume names for bo	th S00D and S01D by typing
	>LV CM	
	and pressing the Enter key.	
30	List the SLM file names into your	user directory by typing
	>LF volume_name	
	and pressing the Enter key.	
	where	
	volume_name is the name of the volume t step 27.	hat contains the PM load files, obtained in
31	Leave the disk utility by typing	
	>QUIT	
	and pressing the Enter key.	
32	Reload the ESA processor by typi	ng
	>LOADPM	
	and pressing the Enter key.	
	lf	Do
	load failed	step 36
	load passed	step 33

NT6X75 in an RLCM HIE (end)

33	Return the ESA processor to service by typing
----	---

>RTS

and pressing the Enter key.

If RTS	Do
passed	step 34
failed	step 36

- **34** Send any faulty cards for repair according to local procedure.
- **35** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card.

Go to step 37.

- **36** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.
- 37 You have successfully completed this procedure.

NT6X76 in an RSC LCME

Application

Use this procedure to replace an NT6X76 card in an RSCE LCME.

PEC	Suffixes	Name
NT6X76	AC	Asynchronous Interface Line card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X76 card in RSC LCME



Replacing an NT6X76 card in RSC LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LEN of the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST LCME site lcm(e)_no unit_no lsg_no ckt_no

and pressing the Enter key.

where

site

is the location name of the LCME with the faulty card

lcm(e)_no

is the number of the LCME with the faulty card

unit_no

is the number of the LCME unit with the faulty card

lsg_no

is the number of the LSG with the faulty card

ckt_no

is the number of the circuit associated with the faulty card

Example of a MAP response:

CM	1 MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl
т.тъ	•	•	•	•	•	•	•	•	•
0	Oui+	Post		FLO	סוום	NO.	DDFFT	7	
2	Dogt	FOSC	D	дпð	DUL	,1Q	FREFIZ	7	
2	POSL_			T 131		DN		ат п аг	
3		LCC P	II RNG.	LEN	•••		SIAF	Б ЦІА.	IE RESULI
4		CKI. I.	АЪЕ Е.Г	HOS	.1. 00 0	03 03			
5	BSY								
6	RTS								
7	DIAG								
8									
9	AIMStat								
10	CKTLOC								
11	Hold								
12	Next_								
13									
14									
15									
16	Prefix								
17	LCO								
10	LCO								
10	Tevel								
۱									

4 Busy the NT6X76 line card by typing

>BSY

and pressing the Enter key.

Example of a MAP display:

	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl 🔪
	•	•	•	•	•	•	•	•	
	Ouit	Post	П	FT.O	BIIG	νo	DBEETS	7	
2	Post_	1050	D	шцо	DOD	10	11(01)12	7	
3		LCC P	TY RNG.	LEN		DN	STA F S	5 LTA TE	RESULT
4		СКТ Т	YPE FL	HOST	00 0 03	03			
5	BSY								
7	RTS DTAG								
8	DING								
9	AIMStat								
10	CKTLOC								
11	Hold								
	Next_								
14									
15									
16	Prefix								
17	LCO								
1 10	телет								

At the LCE frame

5



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER Equipment damage

Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER

Hot materials Exercise care when handling the line card. The line feed resistor may be very hot.

CAUTION



Card shrouds and removal tools are required for removing cards from the line drawers. For descriptions of these tools, see the following notes.

Put on a wrist strap.

Line card insertion / withdrawal tool for	Apparatus code	Common product code
3-inch cards	QTH56A	A0298291
6-inch cards	QTH58A	A0313317

Note 1: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with 3-inch and 6-inch cards. Descriptions of these shrouds follow.

Note 2: Card removal tools are required for removing cards from line drawers. Two sizes are available. Descriptions of these tools follow.

Card removal tool for	Apparatus code	Common product code			
3-4 inch cards	QTH57A	A0298292			
<i>Note:</i> For 4-inch or larger cards, use the large grip tool ITA9953.					

- 6 Prepare to remove the faulty card by opening the line drawer and following these substeps:
 - **a** Face the drawer shelf and grasp the handle at the bottom of the drawer with your right hand.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out until fully withdrawn. It is fully withdrawn when the drawer stop, at the top, prevents further travel.
 - **c** Maintain a slight pull on the handle and lift the faceplate of the drawer approximately 2.5 cm (1 in).
 - **d** While holding the drawer in this position, push the bottom of the drawer, nearest the shelf with your left hand, to a position about 1 cm (.5 in) to the right.
 - **e** Hold the drawer in this position with your left hand and lower the faceplate of the drawer by releasing the grip of your right hand.
 - f Ensure a card shroud and line card extractor are available.
- 7 Remove the line card to be replaced by following these substeps:
 - **a** Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.
 - **b** Grasp the edge of the card with a line card extractor at a point midway between the top and bottom edges. Hold the extractor in your right hand.
 - **c** Squeeze the handles of the extractor together to grasp the card tightly.
 - **d** Hold the front cover of the line drawer to steady it using your left hand.

- e Pull the extractor away from the drawer, and the card will become unplugged from its socket on the drawer backplane.
- **f** Continue pulling the card with the extractor until the card is clear of the shroud.
- **g** Insert the card removed into the ESD container and store using local procedures.
- 8 Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots toward the drawer backplane.
 - c Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - e Push the card toward the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 14
other	step 10

At the MAP terminal

10 Test the NT6X76 line card by typing

>DIAG

and pressing the Enter key.

If DIAG	Do
passed	step 11
failed	step 15

11 Return the NT6X76 card to service by typing

>RTS

and pressing the Enter key.

If RTS	Do
passed	step 12
failed	step 15

12 Send any faulty cards for repair according to local procedure.

NT6X76 in an RSC LCME (end)

- **13** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 16.
- 14 Return to the procedure that directed you to this procedure. If necessary, go to the point where a faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **15** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 16 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X76 in an RSC-S (DS-1) Model A LCME

Application

Use this procedure to replace the following card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X76	AC	Asynchronous Interface Line card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X76 card in RSC-S LCME



Replacing an NT6X76 card in RSC-S LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LEN of the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST LCME site lcm(e)_nounit_no lsg_no ckt_no

and pressing the Enter key.

where

site

is the location name of the LCME with the faulty card

lcm(e)_no

is the number of the LCME with the faulty card

unit_no

is the number of the LCME unit with the faulty card

lsg_no

is the number of the LSG with the faulty card

ckt_no

is the number of the circuit associated with the faulty card

Example of a MAP display:

/										
CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	Ì
•	•		•			•		•	•	
LTI	P									
0	Quit	Post	DE	LQ	BUSY	ZQ.	PREFIX			
2	Post_									
3		LCC PI	Y RNG	LEN.	• •	DN	STA F S	LTA TE	RESULT	
4		CKT TY	PE FL	HOST	00 0 0	03 03				
5	BSY									
б	RTS									
7	DIAG									
8										
9	AIMStat									
10	CKTLOC									
11	Hold									
12	Next_									
13										
14										
15										
16	Prefix									
17	LCO									
(T8	Level									/

4 Busy the NT6X76 line card by typing

>BSY

and pressing the Enter key.

Example of a MAP display:

(CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	
	•	•			•	•	•	•	•	•	
	LTI	2									
	0	Quit	Post	DE	LQ	BUSY	Q	PREFIX			
	2 3	Post_	LCC PT	Y RNG	LEN.		DN	STA F S	LTA TE	RESULT	
	4	2.011	CKT TY	PE FL	HOST 0	0 0 03	03				
	5 6	BSY RTS									
	7	DIAG									
	8 9	AIMStat									
	10	CKTLOC									
	11 12	Hold									
	13	NEXL_									
	14										
	15 16	Prefix									
	17	LCO									
\langle	18	Level									Ϊ

At the LCE frame

5



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER

Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the frame supervisory panel (FSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER

Hot materials Exercise care when handling the line card. The line feed resistor may be very hot.



CAUTION

Special tools required Card shrouds and removal tools are required for removing cards from the line drawers. For descriptions of these tools, refer to the following notes.

Put on a wriststrap.

Note: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with 3-inch and 6-inch cards, as shown in the following table.

Line card insertion / withdrawal tool for	Annaratus code	Common product code
	Apparatus couc	Common product code
3-inch cards	QTH56A	A0298291
6-inch cards	QTH58A	A0313317

Note: Card removal tools are required for removing cards from line drawers. Two sizes are available, ash shown in the following table.

Card removal tool for	Apparatus code	Common product code			
3—4 inch cards	QTH57A	A0298292			
Note: For 4-inch or larger cards, use the large grip tool ITA9953.					

6 Prepare to remove the faulty card by opening the line drawer and following these substeps:

- **a** Face the drawer shelf and grasp the handle at the bottom of the drawer with your right hand.
- **b** Push up on the drawer latch with your thumb and pull the drawer out until fully withdrawn. It is fully withdrawn when the drawer stop, at the top, prevents further travel.
- **c** Maintain a slight pull on the handle and lift the faceplate of the drawer approximately 2.5 cm (1.0 in).
- **d** While holding the drawer in this position, push the bottom of the drawer, nearest the shelf with your left hand, to a position about 1.0 cm (0.5 in) to the right.

- e Hold the drawer in this position with your left hand and lower the faceplate of the drawer by releasing the grip of your right hand.
- f Ensure a card shroud and line card extractor are available.
- 7 Remove the line card to be replaced by following these substeps:
 - **a** Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.
 - **b** Grasp the edge of the card with a line card extractor at a point midway between the top and bottom edges. Hold the extractor in your right hand.
 - c Squeeze the handles of the extractor together to grasp the card tightly.
 - d Hold the front cover of the line drawer to steady it using your left hand.
 - e Pull the extractor away from the drawer, and the card will become unplugged from its socket on the drawer backplane.
 - f Continue pulling the card with the extractor until the card is clear of the shroud.
 - **g** Insert the card removed into the ESD container and store using local procedures.
 - Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots toward the drawer backplane.
 - c Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - e Push the card toward the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 14
other	step 10

At the MAP terminal

8

10 Test the NT6X76 line card by typing

>DIAG

and pressing the Enter key.

If DIAG	Do
passed	step 11
failed	step 15

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11 Return the NT6X76 card to service by typing

>RTS

and pressing the Enter key.

If RTS	Do	
passed	step 12	
failed	step 15	

- 12 Send any faulty cards for repair according to local procedure.
- **13** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 16.
- 14 Return to the procedure that directed you to this procedure. If necessary, go to the point where a faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **15** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 16 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X76 in an RSC-S (DS-1) Model B LCME

Application

Use this procedure to replace the following card in an RSC-S LCME.

PEC	Suffixes	Name
NT6X76	AC	Asynchronous Interface Line card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X76 card in RSC-S LCME



Replacing an NT6X76 card in RSC-S LCME

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 Post the LEN of the card to be replaced by typing

>MAPCI;MTC;LNS;LTP;POST LCME site lcm(e)_no unit_no lsg_no ckt_no

and pressing the Enter key.

where

site

is the location name of the LCME with the faulty card

lcm(e)_no

is the number of the LCME with the faulty card

unit_no

is the number of the LCME unit with the faulty card

lsg no

is the number of the LSG with the faulty card

ckt_no

is the number of the circuit associated with the faulty card

Example of a MAP display:

/										
CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl	``
•	•	•	•	•	•	•	•	•	•	
LTI	P									
0	Quit	Post	DEL	Q	BUSYQ		PREFIX			
2	Post_									
3		LCC PTY	RNG	.LEN	. :	DN	STA F S	LTA TE	RESULT	
4		CKT TYP	E FL	HOST	00 0 03	03	SB			
5	BSY									
6	RTS									
7	DIAG									
8										
9	AIMStat									
10	CKTLOC									
11	Hold									
12	Next_									
13										
14										
15										
16	Pretix									
17	LCO									
_T8	Level									,

4 Busy the NT6X76 line card by typing

>BSY

and pressing the Enter key.

Example of a MAP display:

/	CI	M MS	IOD	Net	PM	CCS	LNS	Trks	Ext	Appl)
	•		•	•	•	•	•	•	•	•	
	LTI	,									
	0	Quit	Post	DELQ		BUSYQ		PREFIX			
	3	FOSC_	LCC PTY	RNG	LEN	DN		STA F S	LTA TE	RESULT	
	4 5	BSY	CKT TYP	PE FL HOS	ST 00	0 03 03		MB			
	6	RTS									
	7 8	DIAG									
	9	AIMStat									
	10 11	CKTLOC Hold									
	12	Next_									
	13 14										
	15										
	16 17	Prefix LCO									
	18	Level)

At the LCE frame

5



DANGER Card damage—transport

Take the following precautions to protect circuit cards from electrical and mechanical damage during transport:

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wriststrap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Northern Telecom [Nortel] Corporate Standard 5028). Store and transport circuit cards in an ESD protective container.



DANGER Static electricity damage

Before removing any cards, put on a wriststrap and connect it to the wriststrap grounding point on the left side of the modular supervisory panel (MSP) of the LCME. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

DANGER Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.



CAUTION

Special tools required Card shrouds and removal tools are required for removing cards from the line drawers. For descriptions of these tools, refer to the following notes.

Put on a wrist strap.

Note: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with 3-inch and 6-inch cards, as shown in the following table.

Line card insertion / withdrawal tool for	Annaratus code	Common product code
	Appulatus oode	
3-inch cards	QTH56A	A0298291
6-inch cards	QTH58A	A0313317

Note: Card removal tools are required for removing cards from line drawers. Two sizes are available, as shown in the following table.

Card removal tool for	Apparatus code	Common product code			
3—4 inch cards	QTH57A	A0298292			
<i>Note:</i> For 4-inch or larger cards, use the large grip tool ITA9953.					

6 Prepare to remove the faulty card by opening the line drawer and following these substeps:

- **a** Face the drawer shelf and grasp the handle at the bottom of the drawer with your right hand.
- **b** Push up on the drawer latch with your thumb and pull the drawer out until fully withdrawn. It is fully withdrawn when the drawer stop, at the top, prevents further travel.
- **c** Maintain a slight pull on the handle and lift the faceplate of the drawer approximately 2.5 cm (1.0 in).
- **d** While holding the drawer in this position, push the bottom of the drawer, nearest the shelf with your left hand, to a position about 1.0 cm (0.5 in) to the right.

- e Hold the drawer in this position with your left hand and lower the faceplate of the drawer by releasing the grip of your right hand.
- f Ensure a card shroud and line card extractor are available.
- 7 Remove the line card to be replaced by following these substeps:
 - **a** Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.
 - **b** Grasp the edge of the card with a line card extractor at a point midway between the top and bottom edges. Hold the extractor in your right hand.
 - c Squeeze the handles of the extractor together to grasp the card tightly.
 - d Hold the front cover of the line drawer to steady it using your left hand.
 - e Pull the extractor away from the drawer, and the card will become unplugged from its socket on the drawer backplane.
 - **f** Continue pulling the card with the extractor until the card is clear of the shroud.
 - **g** Insert the card removed into the ESD container and store using local procedures.
 - Replace the faulty card by following these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots toward the drawer backplane.
 - c Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - e Push the card toward the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 14
other	step 10

At the MAP terminal

8

10 Test the NT6X76 line card by typing

>DIAG

and pressing the Enter key.

If DIAG	Do
passed	step 11
failed	step 15

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11 Return the NT6X76 card to service by typing

>RTS

and pressing the Enter key.

If RTS	Do	
passed	step 12	
failed	step 15	

- 12 Send any faulty cards for repair according to local procedure.
- **13** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 16.
- 14 Return to the procedure that directed you to this procedure. If necessary, go to the point where a faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **15** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 16 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
NT6X76 in a STAR or RLD

Application

Use this procedure to replace an NT6X76 card in a STAR or remote line drawer (RLD).

PEC	Suffixes	Name
NT6X76	AA, AC, AD	Asynchronous interface line card

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X76 card in a STAR or RLD



Replacing an NT6X76 card in a STAR or RLD

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Get a replacement card. Make sure the replacement card has the same product equipment code (PEC), including suffix, as the card that is to be removed.

At the MAP terminal

3 To post the LEN of the card to be replaced, type

>MAPCI;MTC;LNS;LTP; POST STAR site frame unit lsg ckt

and press the Enter key.

where

site

is the name of the site where the STAR is located

frame

is the frame number of the STAR with the faulty card (0 to 511)

unit

is 0 for the STAR

lsq

is the number of the line subgroup with the faulty card (0 to 35)

ckt

is the number of the circuit associated with the faulty card (0 to 31)

Example of a MAP response:

Post	DELQ	BUSYQ	PRE	CFIX			
LCC PTY CKT TYPI	RNGLEN E FL HOS	DN T 00 0 03 0	N STA	FS	LTA	ΤE	RESULT

4 To busy the NT6X76 line card, type

```
>BSY
```

and press the Enter key.

Example of a MAP display:

Post	DE	ELQ	E	BUSY	ZQ	PRE	CF]	ĽΧ			
LCC H CKT T	PTY RNG FYPE FL	HOST (0 00	03	DN 03	STA	F	S	LTA	ΤE	RESULT

At the SRHE frame

5



DANGER Card damage—transport

Take these precautions to protect the circuit cards from electrical and mechanical damage while transporting cards.

When handling a circuit card not in an electrostatic discharge (ESD) protective container, stand on a conductive oor mat and wear a wrist strap connected, through a 1-megohm resistor, to a suitably grounded object, such as a metal workbench or a DMS switch frame (Nortel Networks Corporate Standard 5028).

Store and transport circuit cards in an ESD protective container.



DANGER

Equipment damage Take these precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.



DANGER

Hot materials

Exercise care when handling the line card. The line feed resistor may be very hot.



CAUTION Special tools required

Card shrouds and removal tools are required for removing cards from the line drawers. For descriptions of these tools, see the following notes.

Put on a wrist strap.

Note: Card shrouds are required for inserting or removing cards in line drawers. Two sizes are available for use with 3-inch and 6-inch cards. Descriptions of these shrouds follow.

Line card insertion / removal tool for	Apparatus code	Common product code
3-inch cards	QTH56A	A0298291
6-inch cards	QTH58A	A0313317

Note: The card removal tool is required for removing cards from line drawers. A descriptions of this tool follows.

Card removal tool for	Apparatus code	Common product code		
3-4 inch cards	QTH57A	A0298292		
<i>Note:</i> For 4-inch or larger cards, use the large grip tool ITA9953.				

- **6** To prepare to remove the card with faults, open the line drawer and follow these substeps:
 - **a** Face the drawer shelf and grasp the handle at the bottom of the drawer with your right hand.
 - **b** Push up on the drawer latch with your thumb and pull the drawer out until fully withdrawn. It is fully withdrawn when the drawer stop, at the top, prevents further travel.
 - **c** Maintain a slight pull on the handle and lift the faceplate of the drawer approximately 2.5 cm (1 in).
 - **d** While holding the drawer in this position, push the bottom of the drawer nearest the shelf, with your left hand, to a position about 1 cm (.5 in) to the right.
 - e Hold the drawer in this position with your left hand and lower the faceplate of the drawer by releasing the grip of your right hand.
 - f Make sure a card shroud and line card extractor are available.
 - To remove the line card to be replaced, follow these substeps:

7

- **a** Slide a card shroud over the card to be removed and an adjacent card. If there is not an adjacent card on either side, do not use the card shroud.
- **b** Grasp the edge of the card with a line card extractor at a point midway between the top and bottom edges. Hold the extractor in your right hand.
- c Squeeze the handles of the extractor together to grasp the card tightly.
- **d** Hold the front cover of the line drawer to steady it using your left hand.

- e Pull the extractor away from the drawer and the card will become unplugged from its socket on the drawer backplane.
- **f** Continue pulling the card with the extractor until the card is clear of the shroud.
- **g** Insert the card removed into the ESD container and store using local procedures.
- 8 To replace the card with faults, follow these substeps:
 - a Remove the replacement card from the ESD container.
 - **b** Slide the card in the shroud guide slots toward the drawer backplane.
 - c Hold the front cover of the line drawer with your left hand to steady it.
 - **d** Grasp the top and bottom edges of the card with the fingers of your right hand.
 - e Push the card toward the backplane until it plugs fully into the backplane socket.
- **9** Use the following information to determine where to proceed.

If you entered this procedure from	Do
alarm clearing procedures	step 14
other	step 10

At the MAP terminal

- 10 To test the NT6X76 line card, type
 - >DIAG

fails

and press the Enter key.

If DIAG	Do
passes	step 11
fails	step 15
To return the NT6X76 card to service,	type
>RTS	
and press the Enter key.	
If RTS	Do
passes	step 12

step 15

12 Send any faulty cards for repair according to local procedure.

11

NT6X76 in a STAR or RLD (end)

- **13** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - indications that prompted replacement of the card

Go to step 16.

- 14 Return to the procedure that directed you to this procedure. If necessary, go to the point where a faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **15** Get additional help replacing this card by contacting the personnel responible for a higher level support.
- 16 You have correctly completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an RSC-M

Application

Note: In the examples of this section RSC-M refers to RCO2. When software outputs messages to the MAP terminal the software does not differentiate between the two types of RCO2.

PEC	Suffixes	Name
NT6X78	AB	CLASS Modem Resource

Common procedures

This section refers to the following procedures:

- replacing a card
- returning a card

Action

This procedure contains a summary o wchart and a list of steps. Use the o wchart to review the procedure. Follow the steps to perform the procedure.

NT6X78 in an RSC-M (continued)

Summary of replacing an NT6X78 in an RSC-M



NT6X78 in an RSC-M (continued)

Summary of replacing an NT6X78 in an RSC-M

At the MAP display:

- 1 Proceed if one the following conditions apply:
 - a step in a maintenance procedure directs you to this card
 - you use this procedure to verify or accept cards
 - your maintenance support group directs you to this procedure.

2



WARNING Loss of service

When you replace a card in the RSC-M, make sure the unit in which you replace the card is *inactive* and the mate unit is *active*.

Obtain an NT6X78 replacement circuit card. Make sure the replacement circuit has the same product engineering code (PEC) and PEC suffix, as the circuit card to be removed.

At the MAP terminal

3 To access the peripheral module (PM) level of the MAP display and to post the RSC-M/RCO2 with the defective card, type:

>MAPCI;MTC;PM;POST RCO2 rco2_no

and press the Enter key.

where

rco2_no is the PM number zero to 255

Example of a MAP response:

PM RCO2		SysB	ManB 0 0	OffL 0 0	CBsy 5 0	ISTb 0 0	InSv 1 0
RCO2 Unit0: Unit1:	0 InSv Inact I Act I	Links <u></u> nSv STb	_00S: CS	ide 1,	PSide	0	

4 To determine the location of the RCO2 that contains the NT6X78 circuit card you are to replace, type:

>QUERYPM

and press the Enter key.

NT6X78 in an RSC-M (continued)

Example of a MAP response:

6

7

PM Type: RCO2 PM No.: 0 PM Int. No.: 9 Node_No: 24
PMs Equipped: 53 Loadname: UK00ADU6 EEPRom Load:
BNK0N205
WARM SWACT is supported and available
RCO2 0 is included in the REX schedule.
REX on RCO2 0 has not been performed.
Node Status: {OK, FALSE}
Unit 0 Act, Status: {OK, FALSE}
Unit 1 Inact, Status: {OK, FALSE}
Site Flr RPos Bay_id Shf Description Slot EqPEC
RSC-M 00 C02 RSC-M 00 05 RCO2: 000 MX85AA
RSC-M 00 C02 RSC-M 00 47 EXT:LEFT 01:13 MX86AA

5 Check the MAP display to make sure the circuit card you are to remove is on the inactive unit.

If defective card is on the	Do	
active unit	step 6	
inactive unit	step 8	
To switch activity of the units, type:		
>SWACT		
and press the Enter key.		
Example of a MAP response:		
RCO2 0 A Warm SwAct data sync of a Please confirm ("YES", "	will be performed active terminals. Y", "NO", or "N"):	after
lf		Do
the system prompts you to conf Activity (SWACT)	ïrm a warm Switch of	step 7
the system rejects the SWACT		step 20
To confirm the command, type:		
To confirm the command, type: >YES		
To confirm the command, type: > YES and press the Enter key.		

NT6X78 in an RSC-M (continued)

Unit0: Inact SysB Mtce Unit1: Act ISTb

RCO2 0 SwAct Passed

Note: A maintenance flag (Mtce) can appear. This Mtce indicates system-initiated maintenance tasks are in progress. Wait until the flag disappears from the status lines for both PM units before you proceed to the next step.

If the MAP response is	Do
is SWACT passed	step 8
is other than listed here	step 19
To busy the inactive unit, type:	

>BSY UNIT unit_no CMR

and press the Enter key.

where

unit_no

is the number of the inactive RCO2 unit zero or one

At the cabinet

9 Place a sign with the words *Active unit-Do not touch* on the active unit. Do not attach the sign with magnets or tape.

At the shelf

10

8



WARNING

Static electricity damage

Wear with a strap that connects the wrist-strap grounding modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Locate the circuit card to be replaced.

Note: The NT6X78 circuit cards, are in slot five of unit zero, and slot 23 of unit one.

11 To replace the card, use the common replacing a card procedure in this document. Complete the procedure and return to this point.

Note: If the circuit card you replace has switches, make sure the switches on the replacement circuit card have the same settings.

NT6X78 in an RSC-M (continued)

Use the following inform	ation to determine the next step:
lf you	Do
are directed to this procedure	procedure from a maintenance step 13
are not directed to thi procedure	s procedure from a maintenance step 14
Remove the sign from th that sent you to this proc	e active unit. Return to the maintenance proceduced and continue as directed.
To load the CLASS mod	em resource (CMR) in the inactive RCO2 unit, ty
>LOADPM UNIT unit	_no CC CMR
and press the Enter key.	
where	
unit_no is the number of t	he inactive RCO2 unit
If LOAD	Do
passes	step 15
fails	step 19
To return to service (RTS	S) the CMR in the inactive RCO2 unit, type:
<pre>>RTS UNIT unit_no</pre>	CMR
and press the Enter key.	
where	
unit_no is the number of t	he RCO2 unit loaded in step 15
If RTS	Do
passes	step 16
C :1	step 10

- **16** Remove the sign from the active RCO2 unit.
- **17** Go to the common returning a card procedure in this document.
- **18** This procedure is complete. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **19** For additional help, contact the next level of support.

NT6X78 in an RSC-M (end)

20 For additional help with the SWACT, contact the the next level of support.

Note: The system can recommend the use of the SWACT command with the FORCE option. If this condition occurs, contact office personnel to determine if use of the FORCE option is correct.

NT6X78 in an RSC RCC/RCC2

Application

Use this procedure to replace the following card in a Remote Switching Center (RSC) Remote Cluster Controller (RCC).

Note: This procedure is used to replace a card in an RCC or an RCC2. In this procedure the term RCC refers to both the RCC in an RSC frame, NT6X10, and an RCC2 in an RSCE cabinet, NTMX89.

PEC	Suffixes	Name
NT6X78	AB , BA	CLASS modem resource (CMR)

Common procedures

None

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X78 card in an RSC RCC



Replacing an NT6X78 card in an RSC RCC

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure to verify or accept cards, or were directed to this procedure by your maintenance support group.
- 2

3



CAUTION Loss of service

When replacing a card in the RCC ensure the unit in where you are replacing the card is INACTIVE and that the mate unit is ACTIVE.

Obtain a replacement card. Ensure the replacement card has the same product equipment code (PEC) including suffix, as the card to be removed.

At the MAP display

Access the PM level and post the RCC by typing

>MAPCI;MTC;PM;POST RCC rcc_unit_no

and pressing the Enter key.

where

rcc_unit_no

is the number of the RCC unit to be busied (0 or 1)

Example of a MAP display:

												•
/	CM	MS	IOD	Net	PM	CCS	LNS	Tr	ks	Ext	APPL	
	•	•	•	•	1RCC	•	•		•	•	•	
RC	a		Q.	veB	ManB	OffI.	СВ	1917	TQ	гЪ	TnSv	
0	0	DN	,	25D 0	namb	0111	CL	,5 y	10.	2	21100	
0	Quit	PM	1	0	0	2		0		2	25	
2	Post_	RC	C	0	0	0		0		1	1	
3	ListSe	et										
4		F	RCC	0 IST	b Link	s_00S:	CSide	Ο,	PSide	0		
5	TRNSL_	. 0	Jnit0:	Inact	InSv							
б	TST_	U	Jnit1:	Act	InSv							
7	BSY_											
8	RTS_											
9	OffL											
10	LoadPM	I										
11	Disp_											
12	Next											
13												
14	QueryF	M										
15												
16	IRLINK	:										
17	Perfor	m										
18												

4

By observing the MAP display, be sure the card to be removed is on the inactive unit.

At the RCE frame

5 Put a sign on the active unit bearing the words Active unit—Do not touch.

At the MAP display

6 Busy the CMR card on the inactive RCC unit by typing

>BSY UNIT rcc_unit_no CMR

and pressing the Enter key.

where

rcc_unit_no

is the number of the inactive RCC unit (0 or 1)

At the RCE frame

7

8



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the RCC. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- Remove the NT6X78 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card towards you until it clears the shelf.



- c Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- 9 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.



- **10** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



At the MAP display

11 After replacing the faulty card, load the CMR card on the inactive RCC unit by typing

>LOADPM UNIT rcc_unit_no CC CMR

and pressing the Enter key.

where

rcc_unit_no
 is the number of the RCC unit busied in step 6

If load	Do
passed	step12
failed	step 16

12 Return the CMR card on the inactive RCC unit to service by typing

>RTS UNIT rcc_unit_no CMR

and pressing the Enter key.

where

rcc_unit_no

is the number of the RCC unit where the CMR was loaded in step 11.

If the RTS	Do
passed	step13
failed	step 16

NT6X78 in an RSC RCC/RCC2 (end)

- **13** Send any faulty cards for repair according to local procedure.
- **14** Record the following items in office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 17.

- **15** Return to the *Alarm Clearing Procedure* that directed you to this procedure. If necessary, go to the point where the faulty card list was produced, identify the next faulty card on the list, and go to the appropriate card replacement procedure for that card in this manual.
- **16** Obtain further assistance in replacing this card by contacting personnel responsible for higher level of support.
- 17 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an RSC-S (DS-1) Model A RCC2

Application

Use this procedure to replace an NT6X78 card in an Remote Switching Center (RSC)-SONET Remote Cluster Controller (RCC) 2.

PEC	Suffixes	Name
NT6X78	AA, AB, BA	CLASS Modem Resource (CMR)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X78 card in RSC-S RCC2



Replacing an NT6X78 card in an RSC-S RCC2

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain an NT6X78 replacement card. Ensure that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level and find out which RCC2 is ISTb by typing

>MAPCI;MTC;PM;DISP ISTB RCC2

and pressing the Enter key.

4 Access the ISTb RCC2 by typing

>POST RCC2 rcc2_no

and pressing the Enter key.

where

rcc2 no

is the number of the ISTB RCC2 identified in step 4.

5 Busy the CLASS modem resource (CMR) card by typing

```
>bsy UNIT unit_no CMR
```

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

At the RCE

6

7



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel (FSP) of the RCC2. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- Remove the NT6X78 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- Open the locking levers on the replacement card.
 - a Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



9 Seat and lock the card.

8

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



unit_no

is the number of the unit containing the faulty CMR card

If TST	Do
passed	step 13
failed	step 17

13 Return the CMR card to service by typing

>RTS UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

If RTS	Do
passed	step 14
failed	step 17

- 14 Send any faulty cards for repair according to local procedure.
- **15** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 18.
- **16** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.
- **17** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- 18 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an RSC-S (DS-1) Model B RCC2

Application

Use this procedure to replace an NT6X78 card in a Remote Switching Center (RSC)-SONET Remote Cluster Controller (RCC) 2.

PEC	Suffixes	Name
NT6X78	AA, AB, BA	CLASS Modem Resource (CMR)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.





Replacing an NT6X78 card in an RSC-S RCC2

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCC2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain an NT6X78 replacement card. Ensure that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level and find out which RCC2 is ISTb by typing

>MAPCI;MTC;PM;DISP ISTB RCC2

and pressing the Enter key.

4 Access the ISTb RCC2 by typing

>POST RCC2 rcc2_no

and pressing the Enter key.

where

rcc2 no

is the number of the ISTB RCC2 identified in step 4.

5 Busy the CMR card by typing

>bsy UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

At the RCE

6

7



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RCC2. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- Remove the NT6X78 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- c Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- Open the locking levers on the replacement card.
 - a Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



- 9 Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.

8



unit_no

is the number of the unit containing the faulty CMR card

If TST	Do
passed	step 13
failed	step 17

13 Return the CMR card to service by typing

>RTS UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

If RTS	Do
passed	step 14
failed	step 17

- 14 Send any faulty cards for repair according to local procedure.
- **15** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 18.
- **16** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in *Card Replacement Procedures*.
- **17** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- **18** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
NT6X78 in an RSC-S (PCM-30) Model A RCO2

Application

Use this procedure to replace an NT6X78 card in a Remote Switching Center (RSC)-SONET Remote Switching Center Offshore (RCO)2.

PEC	Suffixes	Name
NT6X78	AA, AB, BA	CLASS Modem Resource (CMR)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X78 card in RSC-S RCO2



Replacing an NT6X78 card in RSC-S RCO2

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCO2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain an NT6X78 replacement card. Ensure that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level to find out which RCO2 is ISTb by typing

>MAPCI;MTC;PM;DISP STATE ISTB RCO2

and pressing the Enter key.

4 Access the ISTb RCO2 by typing

>POST RCO2 0-127 or 0-255

and pressing the Enter key.

where

variable

is 0-127 range with an NT40 and 0-255 with a DMS SuperNode

5 Busy the CMR card by typing

>bsy UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

At the RCE

6

7



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RCO2. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- Remove the NT6X78 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- Open the locking levers on the replacement card.
 - a Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



9 Seat and lock the card.

8

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



12 Test the CMR card by typing >TST UNIT unit_no CMR and pressing the Enter key. where

10

11

unit no

is the number of the unit containing the faulty CMR card

If TST	Do
passed	step 13
failed	step 17

13 Return the CMR card to service by typing

>RTS UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

If RTS	Do
passed	step 14
failed	step 17

- 14 Send any faulty cards for repair according to local procedure.
- **15** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 18.
- **16** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **17** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- **18** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an RSC-S (PCM-30) Model B RCO2

Application

Use this procedure to replace an NT6X78 card in a Remote Switching Center (RSC)-SONET Remote Switching Center Offshore (RCO) 2.

PEC	Suffixes	Name
NT6X78	AA, AB, BA	CLASS Modem Resource (CMR)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X78 card in RSC-S RCO2



Replacing an NT6X78 card in RSC-S RCO2

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the RCO2, ensure that the unit in which you are replacing the card is *inactive* and that the mate unit is *active*.

Obtain an NT6X78 replacement card. Ensure that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level to find out which RCO2 is ISTb by typing

>MAPCI;MTC;PM;DISP STATE ISTB RCO2

and pressing the Enter key.

4 Access the ISTb RCO2 by typing

>POST RCO2 0-127 or 0-255

and pressing the Enter key.

where

variable

is 0-127 range with an NT40 and 0-255 with a DMS SuperNode

5 Busy the CMR card by typing

>bsy UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

At the RCE

6

7



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the modular supervisory panel (MSP) of the RCO2. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the card into its slot.

Put on a wrist strap.

- Remove the NT6X78 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- c Ensure the replacement card has the same PEC, including suffix, as the card you just removed.
- Open the locking levers on the replacement card.
 - a Align the card with the slots in the shelf.
 - **b** Gently slide the card into the shelf.



- 9 Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.

8



unit_no

is the number of the unit containing the faulty CMR card

If TST	Do
passed	step 13
failed	step 17

13 Return the CMR card to service by typing

>RTS UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

If RTS	Do
passed	step 14
failed	step 17

- 14 Send any faulty cards for repair according to local procedure.
- **15** Record the date the card was replaced, the serial number of the card, and the symptoms that prompted replacement of the card. Go to step 18.
- **16** Return to the procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **17** Obtain further assistance in replacing this card by contacting operating company maintenance personnel.
- **18** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an SMA

Application

Use this procedure to replace an NT6X78 card in a Subscriber Module AccessNode (SMA).

PEC	Suffixes	Name
NT6X78	AB, BA	CLASS Modem Resource (CMR)

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X78 in an SMA (continued)

Summary of card replacement procedure for a NT6X78 card in a SMA



NT6X78 in an SMA (continued)

Replacing an NT6X78 card in an SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do	
known	step 4	
unknown	step 3	

3 Perform the procedure "Locating a faulty card in an SMA."

4

5



CAUTION Loss of service

Ensure you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

Ensure the current MAP display is at the peripheral module (PM) level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no

is the number of the SMA being posted

Example of a MAP response:

NT6X78 in an SMA (continued)

Offl CBsy ISTb SMA SysB ManB InSv 3 ΡМ 0 1 0 2 13 7 SMA 0 0 0 0 1 SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact SysB

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 10

7 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
can continue at this time	step 8
cannot continue at this time	step 21

8 Confirm the system prompt by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 10
SWACT failed Reason: XPM SWACT back	step 9
SWACT refused by swact controller	step 9

NT6X78 in an SMA (continued)

9 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 19.

10 Hang a sign on the active unit bearing the words: *Active unit—Do not touch*. This sign should not be attached by magnets or tape.

At the MAP terminal

11 Observe the MAP display and determine the state of the inactive unit.

If state is	\$			Do	
ManB				step 13	
SysB, InSv	CBsy,	ISTb,	or	step 12	
Busy the C	MR card in	n the inacti	ve uni	t by typing	
>BSY UNI	T unit_r	IO CMR			
and pressi	ng the Ente	er key.			
where					

At the equipment frame

13

12



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

14 Use the following information to determine the next step.

If your were directed here from	Do
alarm clearing procedures	step 17
other	step 15

NT6X78 in an SMA (end)

At the	MAP terminal						
15	Load the CMR in the inactive SMA unit	it by typing					
	>LOADPM UNIT unit_no CC CMR						
	and pressing the Enter key.						
	where						
	unit_no is the number of the busied SMA unit						
	If LOAD	Do					
	passed	step 16					
	failed	step 19					
16	Test and return to service the CMR in	the inactive SMA unit by typing					
	>RTS UNIT unit_no CMR						
	and pressing the Enter key.	nd pressing the Enter key.					
	where	where					
	unit_no is the number of the SMA unit le	unit loaded in step 15					
	If RTS	Do					
	passed	step 17					
	failed	step 19					
At the	equipment frame						
17	Remove the sign from the active SMA unit.						
18	Go to the common returning a card procedure in this document.						
	Go to step 20.						
19	For further assistance, contact the personnel responsible for the next level of support.						
20	You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.						

21 For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X78 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X78 card in a Subscriber Module AccessNode (SMA).

PEC	Suffixes	Name
NT6X78	AB, BA	CLASS Modem Resource (CMR)

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X78 card in an SMA



Replacing a NT6X78 card in an SMA

At the equipment

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure that you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4

5



CAUTION Loss of service

Ensure you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

Ensure the current MAP display is at the peripheral module (PM) level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no

is the number of the SMA being posted

Example of a MAP response:

6

7

8

9

SMA PM SMA	SysB Ma 3 . O	anB Offl 0 1 0 0	CBsy 0 0	ISTb 2 1	InSv 13 7	
SMA 0 I Unit0: Unit1:	STb Lind Act Ir Inact Sy	as_OOS: (NSV VSB	CSide O	, PSid	e 0	
Observe the inacti	the MAP dis ve unit.	play and de	termine if	the fau	Ity card is	in the active or
If the fa	ulty card is	in the	Do			
active u	ınit		ste	р7		
inactive	e unit		ste	p 11		
SWACT (switch activ	ity) the units	by typing	J		
>SWACT						
and press	sing the Ente	er key.				
A confirmation prompt for the SWACT command is displayed at the MAP terminal.					d at the MAP	
If SWAG	ст		Do			
cannot	continue at	this time	ste	p 8		
can cor	ntinue at thi	s time	ste	p 9		
Reject the	e prompt to	SWACT the	units by t	yping		
>NO						
and press	sing the Ente	er key.				
The syste	The system discontinues the SWACT.					
Confirm t	Confirm the system prompt by typing					
>YES						
and press	sing the Ente	er key.				
The syste unit to ac	em runs a pr cept activity	e-SWACT a reliably.	udit to de	termine	the ability	of the inactive
<i>Note:</i> progre mainte	A maintena ss. Wait un mance actio	nce flag app til the flag di n.	ears whe sappears	en maint before	enance ta proceedin	isks are in g with the next
If the m	essage is		Do			
SWACI	' passed		ste	p 11		

	Do
SWACT failed Reason XPM Swactback	: step 10
SWACT refused by SWAC Controller	т step 10
The inactive unit could not establish switched activity back to the origina the inactive unit before attempting t unit.	two-way communication with CC a Ily active unit. You must clear all fa to clear the alarm condition on the
Go to step 22.	
Hang a sign on the active unit beari This sign should not be attached by	ing the words: <i>Active unit—Do not</i> y magnets or tape.
IAP terminal	
Observe the MAP display and dete	rmine the state of the inactive unit
If state is	Do
If state is ManB	Do step 14
If state is ManB SysB, CBsy, ISTb, o InSv	Do step 14 r step 13
If state is ManB SysB, CBsy, ISTb, o InSv Busy the CMR card in the inactive	Do step 14 r step 13 unit by typing
If state is ManB SysB, CBsy, ISTb, o InSv Busy the CMR card in the inactive >BSY UNIT unit_no CMR	Do step 14 r step 13 unit by typing
If state is ManB SysB, CBsy, ISTb, o InSv Busy the CMR card in the inactive >BSY UNIT unit_no CMR and pressing the Enter key.	Do step 14 r step 13 unit by typing
If state is ManB SysB, CBsy, ISTb, o InSv Busy the CMR card in the inactive >BSY UNIT unit_no CMR and pressing the Enter key. where	Do step 14 r step 13 unit by typing
If state is ManB SysB, CBsy, ISTb, o InSv Busy the CMR card in the inactive >BSY UNIT unit_no CMR and pressing the Enter key. where unit_no	Do step 14 r step 13 unit by typing

14



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

15	Use the following information to determine the next step.					
	If your were directed here from	Do				
	alarm clearing procedures	step 19				
	other	step 16				
At the	MAP terminal					
16	Load the CMR in the inactive SMA un	it by typing				
	>LOADPM UNIT unit_no CC CMF	2				
	and pressing the Enter key.					
	where					
	unit_no is the number of the busied SM	1A unit				
	If LOAD	Do				
	passed	step 17				
	failed	step 22				
17	Test the CMR in the inactive SMA unit	t by typing				
	TST UNIT unit_no CMR					
and pressing the Enter key.						
	where					
	loaded in step 16					
	If TST	Do				
	passed	step 18				
	failed	step 22				
18	Return to service the CMR in the inac	tive SMA unit by typing				
	>RTS UNIT unit_no CMR					
	and pressing the Enter key.					
	where					
	unit_no is the number of the SMA unit t	tested in step 17				
	If RTS	Do				
	passed	step 19				

NT6X78 in an SMA-MVI-20 (end)

If RTS	Do
failed	step 22

At the equipment frame

- **19** Remove the sign from the active SMA unit.
- 20 Send any faulty cards for repair according to local procedure.
- **21** Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 23.

- 22 For further assistance, contact the personnel responsible for the next level of support.
- 23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an SMA2

Application

Use this procedure to replace an NT6X78 card in a Subscriber Module AccessNode 2 (SMA2).

PEC	Suffixes	Name
NT6X78	AB, BA	CLASS Modem Resource (CMR)

Common procedures

The following procedures are referenced in this procedure:

- "Removing and inserting cards in an SMA2"
- "Locating a faulty card in an SMA2"
- "Returning a card for repair or replacement"

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.





Replacing an NT6X78 card in an SMA2

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA2."

4



CAUTION Loss of service

When replacing a card in the SMA2, ensure the unit in which you are replacing the card is *inactive* and the mate unit is *active*.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA2 by typing

>MAPCI;MTC;PM;POST SMA2 sma2_no

and pressing the Enter key.

where

sma2_no

is the number of the SMA2 being posted

Example of a MAP response:

NT6X78 in an SMA2 (continued)

SMA2	Sys	sВ	ManB	Offl	CBsy	ISTb	InSv
PM		3	0	1	0	2	13
SM	A2	0	0	0	0	1	7
SMA2 0 Unit0: Unit1:	ISTb Act Inac	Li I ct S	nks_00 nSv ysB	DS: C	Side O	, PSide	e 0

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 11

7 SWACT (switch activity) the units by typing

>SWACT

8

9

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do	
cannot continue at this time	step 8	
can continue at this time	step 9	
Reject the prompt to SWACT of the	units by typing	
>NO		
and pressing the Enter key.		
The system discontinues the SWAC	CT.	
Confirm the system prompt by typin	ıg	
>YES		
and pressing the Enter key.		
The system runs a pre-SWACT auc unit to accept activity reliably.	lit to determine the ability of the inactive	
<i>Note:</i> A maintenance flag appea progress. Wait until the flag disa maintenance action.	ars when maintenance tasks are in ppears before proceeding with the next	
If the message is	Do	
SWACT passed	step 11	

If the message is		Do	
SWACT son:	failed XPM SWAC	Rea- CTback	step 10
SWACT : Contro	refused by ller	SWACT	step 10

10 The inactive unit could not establish two-way communication with the central control (CC) and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 21.

At the frame or cabinet

11 Hang a sign on the active unit bearing the words: *Active unit-Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

12 Observe the MAP display and determine the state of the inactive unit.

If state is		Do			
ManB				step 14	
SysB, InSv	CBsy,	ISTb,	or	step 13	
Busy the C BBSY UNI and pressi where	MR card in T unit_r ng the Ente	n the inacti 10 CMR er key.	ve uni	t by typing	
unit_n	0				

is the number of the inactive SMA2 unit (0 or 1)

13

NT6X78 in an SMA2 (continued)

At the frame or cabinet

14



WARNING Static electricity damage

Wear a strap connected to the wrist strap grounding modular supervisory panel (MSP) while handling cards. This strap protects the cards against damage caused by static electricity.

Perform the common replacing a card procedure in this document.

15 Use the following information to determine the next step.

If your were directed here from	Do
alarm clearing procedures	step 18
other	step 16

At the MAP terminal

16 Load the CMR in the inactive SMA2 unit by typing

>LOADPM UNIT unit_no CC CMR

and pressing the Enter key.

where

unit_no is the number of the busied SMA2 unit

If LOAD	Do
passed	step 17
failed	step 21

17 Test and return to service the CMR in the inactive SMA2 unit by typing

>RTS UNIT unit_no CMR

and pressing the Enter key.

where

unit_no is the number of the SMA2 unit loaded in step 16

If RTS	Do
passed	step 18

NT6X78 in an SMA2 (end)

If RTS	Do
failed	step 21

At the frame or cabinet

- **18** Remove the sign from the active SMA2 unit.
- **19** Send any faulty cards for repair according to local procedure.
- **20** Go to step 22.
- 21 For further assistance, contact the personnel responsible for the next level of support.
- 22 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an SMS

Application

Use this procedure to replace an NT6X78 card in a Subscriber Module SLC-96 (SMS).

PEC	Suffixes	Name
NT6X78	AA, AB, BA	CLASS modem resource (CMR)

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X78 in an SMS (continued)

Summary of Card replacement procedure for an NT6X78 card in an SMS


Replacing an NT6X78 card in an SMS

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION

Loss of service When replacing a card in the SMS, ensure the unit where you are replacing the card is inactive and the mate unit is active.

Obtain a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the peripheral module (PM) level and find out which SMS is ISTb by typing

>MAPCI;MTC;PM;DISP STATE ISTB SMS

and pressing the Enter key.

Example of a MAP response

ISTb SMS: 1

4 Access the ISTb SMS by typing

>POST SMS sms_no

and pressing the Enter key.

where

sms_no is 0-127 for NT40 and 0-255 for DMS SuperNode

Example of a MAP response

SMS 3	INSV	LINK	S_00S	CSIDE 0	PSIDE 0	
Unit	.0	Act	InSv			
Unit	1	Inact	ISTb			

5 Busy the CMR card by typing >bsy UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the faulty CMR card

At the frame

6



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS. This protects the equipment against damage caused by static electricity.

Put on a wrist strap.

7



DANGER Equipment damage

When removing or inserting a card, do not apply direct pressure to the components and do not force the cards into the slots.

Remove the NT6X78 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify the replacement card has the same PEC, including suffix, as the card you just removed.
- Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.



9 Seat and lock the card.

8

- **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
- **b** Close the locking levers.



At the MAP terminal

10 Load the CMR card by typing >loadpm unit unit_no CMR and pressing the Enter key.

where

unit_no is the number of the unit containing the faulty CMR card

If load	Do	
passed	step 11	
failed	step 14	
Test the CMR card by typing	l	
<i>>TST UNIT</i> unit_no CMR	2	
and pressing the Enter key.		
wnere		
wnere unit_no is the number of the u	unit containing the faulty CMR card	
unit_no is the number of the u	unit containing the faulty CMR card	
unit_no is the number of the u If TST passed	unit containing the faulty CMR card Do step 12	
unit_no is the number of the u If TST passed failed	Do step 12 step 13	
unit_no is the number of the u If TST passed failed Return the CMR card to serv	Do step 12 step 13 vice by typing	
unit_no is the number of the u If TST passed failed Return the CMR card to serv >RTS UNIT unit_no CMR	Init containing the faulty CMR card Do step 12 step 13 vice by typing	

12

11

NT6X78 in an SMS (end)

where

unit_no

is the number of the unit containing the faulty CMR card

If RTS	Do
passed	step 16
failed	step 14

13 *Return to the Alarm Clearing Procedures that directed you to this procedure.* At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.

14 Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

At the frame

- **15** Remove the sign from the active SMS unit.
- **16** Send any faulty cards for repair according to local procedure.
- 17 Record the following items in office records according to local policy:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 18.

18 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X78 in an SMU

Application

Use this procedure to replace the following card in a Subscriber Carrier Module-100 Urban (SMU).

PEC	Suffixes	Name
NT6X78	AA, AB, BA	CLASS modem resource (CMR)

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of replacing an NT6X78 card in an SMU

Replacing an NT6X78 card in an SMU

At your current location:

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure.
- 2



CAUTION Loss of service

When replacing a card in the SMU, ensure that the unit where you are replacing the card is inactive and that the mate unit is active.

Get a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal:

3 Access the peripheral module (PM) level and find out which SMU is in-service trouble (ISTb) by typing

>MAPCI;MTC;PM;DISP STATE ISTB SMU

and pressing the Enter key.

Example of a MAP response:

ISTb SMU: 1

4 Access the ISTb SMU by typing

>POST SMU smu_no

and pressing the Enter key.

where

smu_no

is the number of the SMU to be posted

Example of a MAP response:

SMU SysB ManB Offl CBsy ISTb InSv ΡМ 3 0 1 0 2 13 0 0 0 SMU 0 1 7 SMU 0 ISTb Links_OOS: CSide 0, PSide 0 ISTb Unit0: Act Unit1: Inact InSv

5 Busy the CMR card by typing

>BSY UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

- is the number of the unit containing the faulty CMR card
- 6 Go to the common replacing a card procedure in this document, then return to step 7 of this procedure.
- 7 Use the following information to determine what step to go to next in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 11
other	step 8

At the MAP terminal:

8 Load the CMR card by typing

>LOADPM UNIT unit_no CC CMR

and pressing the Enter key.

where

9

unit_no

is the number of the unit containing the CMR card busied in step 5

If LOADPM	Do
passed	step 9
failed	step 12
Test the CMR card by typi	ing
> <i>TST UNIT</i> unit_no C	MR
and pressing the Enter ke	у.
where	
unit_no is the number of th	ne unit containing the CMR card loaded in step 8
If TST	Do
passed	step 10
failed	step 12

NT6X78 in an SMU (end)

10 Return the CMR card to service by typing

>RTS UNIT unit_no CMR

and pressing the Enter key.

where

unit_no

is the number of the unit containing the CMR card tested in step 9

If RTS	Do
passes	step 13
fails	step 12

- **11** Return to the *Alarm Clearing Procedures*. At the point where a faulty card list is initiated, identify the next faulty card on the list. Go to the appropriate card replacement procedure for that card.
- **12** Contact personnel responsible for higher level support and get further help to replace this card.
- **13** Send any faulty cards for repair according to local procedure.
- 14 Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card
- **15** You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X80 in an SMA

Application

Use this procedure to replace an NT6X80 card in an SMA.

PEC	Suffixes	Name
NT6X80	AB, BB	Pulse Code Modulation (PCM)/Addition

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card
- returning a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X80 card in an SMA



Replacing an NT6X80 in an SMA

At your current location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4



CAUTION Loss of service

Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response

SMA Offl SysB ManB CBsy ISTb InSv ΡМ 3 0 1 0 2 13 0 0 7 SMA 0 0 1 SMA 0 ISTb Links_OOS: CSide 0, PSide 0 Unit0: Act InSv Unit1: Inact ISTb

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 10

7 Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
can continue at this time	step 8
cannot continue at this time	step 21

8 Confirm the system prompt by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SWACT passed	step 10
SWACT failed Rea- son: XPM SWACTback	step 9
SWACT refused by SWACT Controller	step 9

9 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 19.

At the equipment frame

10 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

11 Observe the MAP display and determine the state of the inactive unit.

If state is				Do
ManB				step 13
SysB, InSv	CBsy,	ISTb,	or	step 12

12



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Busy the inactive PM unit by typing

>BSY UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the inactive SMA unit (0 or 1)

At the equipment frame

- **13** Perform the common replacing a card procedure in this document.
- 14 Use the following information to determine the next step.

If you were directed here from	Do
alarm clearing procedures	step 17
other	step 15

NT6X80 in an SMA (end)

At th	e MAP terminal						
15	Load the inactive SMA unit by typing						
	>LOADPM UNIT unit_	>LOADPM UNIT unit_no					
	and pressing the Enter I	key.					
	where						
	unit_no is the number of t	the busied SMA unit					
	If load	Do					
	passed	step 16					
	failed	step 19					
16	Return the inactive SMA	A unit to service by typing					
	>RTS UNIT unit_no						
	and pressing the Enter I	key.					
	where						
	unit_no is the number of	the SMA unit loaded in step 15					
	If RTS	Do					
	passed	step 17					
	failed	step 19					
At th	e equipment frame						
17	Remove the sign from the	Remove the sign from the active SMA unit.					
18	Go to the common retur	Go to the common returning a card procedure in this document.					
	Go to step 20.						
19	For further assistance, c support.	For further assistance, contact the personnel responsible for the next level of support.					
20	You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.						

21 For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X80 in an SMA-MVI-20

Application

Use this procedure to replace an NT6X80 card in an SMA.

PEC	Suffixes	Name
NT6X80	AB, BB	Pulse Code Modulation (PCM)/Addition

Common procedures

The following procedures are referenced in this procedure:

- "Locating a faulty card in an SMA"
- replacing a card

Do not go to the common procedures unless directed to do so in the step-action procedure.

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

Summary of card replacement procedure for an NT6X80 card in an SMA



Replacing an NT6X80 in an SMA

At the equipment frame

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2 Ensure you know the physical location of the faulty card.

If card location is	Do
known	step 4
unknown	step 3

3 Perform the procedure "Locating a faulty card in an SMA."

4



CAUTION Loss of service

Ensure that you replace the card in the inactive unit and verify the mate unit is active.

Obtain a replacement card. Ensure the replacement card has the same product engineering code (PEC), including suffix, as the card being removed.

At the MAP terminal

5 Ensure the current MAP display is at the PM level and post the SMA by typing

>MAPCI;MTC;PM;POST SMA sma_no

and pressing the Enter key.

where

sma_no
is the number of the SMA being posted

Example of a MAP response

SMA		SysB	ManB	Offl	CBsy	ISTb	InSv
	PM	3	0	1	0	2	13
	SMA	0	0	0	0	1	7
CIMA	о то	omb t	intra 0	09.		DC: d	~ 0
SMA .	0 13	1 012	TUKS_0	05.	CSIde U	, PSIA	e u
Unit	:0:	Act	InSv				
Unit	:1:	Inact	: ISTb				

6 Observe the MAP display and determine if the faulty card is in the active or the inactive unit.

If the faulty card is in the	Do
active unit	step 7
inactive unit	step 11

7 SWACT the units by typing

>SWACT

and pressing the Enter key.

A confirmation prompt for the SWACT command is displayed at the MAP terminal.

If SWACT	Do
cannot continue at this time	step 8
can continue at this time	step 9
Reject the prompt to SWACT the units	s by typing
>NO	
and pressing the Enter key.	
The system discontinues the SWACT.	
Confirm the system prompt by typing	
>YES	
and pressing the Enter key.	
The system runs a pre-SWACT audit unit to accept activity reliably.	to determine the ability of the inactive
<i>Note:</i> A maintenance flag appears progress. Wait until the flag disapp maintenance action.	when maintenance tasks are in bears before proceeding with the next
If the message is	Do
SWACT passed	step 11

If the message is	Do	
SWACT passed	step 11	

8

9

If the message is	Do
SWACT failed Rea- son: XPM SWACTback	step 10
SWACT refused by SWACT Controller	step 10

10 The inactive unit could not establish two-way communication with CC and has switched activity back to the originally active unit. You must clear all faults on the inactive unit before attempting to clear the alarm condition on the active unit.

Go to step 22.

At the equipment frame

11 Hang a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached by magnets or tape.

At the MAP terminal

12 Observe the MAP display and determine the state of the inactive unit.

If state is				Do
ManB				step 14
SysB, InSv	CBsy,	ISTb,	or	step 13

13



WARNING

Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the frame supervisory panel (FSP). This protects the equipment against damage caused by static electricity.

Busy the inactive PM unit by typing

>BSY UNIT unit_no

and pressing the Enter key.

where

unit_no

is the number of the inactive SMA unit (0 or 1)

At the equipment frame

- **14** Perform the common replacing a card procedure in this document.
- **15** Use the following information to determine the next step.

	If you were directed here from	Do
	alarm clearing procedures	step 19
	other	step 16
e	MAP terminal	
	Load the inactive SMA unit by typing	
	>LOADPM UNIT unit_no	
	and pressing the Enter key.	
	where	
	unit_no is the number of the busied SN	MA unit
	If load	Do
	passed	step 17
	failed	step 22
	Test the inactive SMA unit by typing	
	>TST UNIT unit_no	
	and pressing the Enter key.	
	where	
	unit_no is the number of the SMA unit	loaded in step 16
	If test	Do
	passed	step 18
	failed	step 22
	Return the inactive SMA unit to servi	ce by typing
	>RTS UNIT unit_no	
	and pressing the Enter key.	
	where	

NT6X80 in an SMA-MVI-20 (end)

unit_no is the number of the SMA unit tested in step 17			
If RTS	Do		
passed	step 19		
failed	step 22		

At the equipment frame

- **19** Remove the sign from the active SMA unit.
- 20 Send any faulty cards for repair according to local procedure.
- 21 Note the following in the office records:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card

Go to step 23.

- 22 For further assistance, contact the personnel responsible for the next level of support.
- 23 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.

NT6X80 in an SMS

Application

Use this procedure to replace an NT6X80 card in an SMS.

PEC	Suffixes	Name
NT6X80	AA, BB	SCM pad/ring

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X80 card in an SMS

Replacing an NT6X80 card in an SMS

At your Current Location

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION

Loss of service When replacing a card in the SMS, ensure the unit where you are replacing the card is inactive and the mate unit is active.

Obtain a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMS sms_no

and pressing the Enter key.

where

sms no

is 0-127 for NT40 and 0-255 for DMS SuperNode

Example of a MAP response

SMS	3	INSV	LIN	KS_	<u>00</u> S	CSIDE	0	PSIDE	0
τ	Jnit0		Act		InSv				
τ	Jnit1	I	nact		ISTb				

4 By observing the MAP display, be sure the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 8	
Switch the activity of the units by typing		

>SWACT

5

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 23

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failedReason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the "SMS alarm clearing procedures" section in this document to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 6 of this procedure.

At the frame

8 Put a sign on the active unit bearing the words: *Active unit—Do not touch.* This sign should not be attached with magnets or tape.

At the MAP terminal

9 Busy the inactive PM unit by typing

>bsy unit unit_no

and pressing the Enter key.

where

unit no

is the number of the faulty SMS unit

At the frame

10



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS. This protects the equipment against damage by static electricity.

Put on a wrist strap.

11



DANGER Equipment damage

When removing or inserting a card, do not apply direct pressure to the components and do not force the cards into the slots.

Remove the NT6X80 card as shown in the following figures.

a Locate the card to be removed on the appropriate shelf.



b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card. Align the card with the slots in the shelf and gently slide the card into the shelf.



- **13** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure the card is fully seated in the shelf.
 - **b** Close the locking levers.



14 Use the following information to determine where to go next in this procedure.

If you entered this procedure from	Do
alarm clearing procedures	step 17
other	step 15
Test the inactive unit by typing	
>TST UNIT unit_no	
and pressing the Enter key.	
where	
unit_no is the number of the faulty SI	MS unit
If TST	Do
passed	step 16
failed	step 17
Return the inactive SMS unit to serve	vice by typing
>RTS UNIT unit_no	
and pressing the Enter key.	

NT6X80 in an SMS (end)

unit no

is the number of the faulty SMS unit

If RTS	Do
passed	step 19
failed	step 18

- 17 Return to the maintenance procedure that directed you to this procedure. At the point where a faulty card list was produced, identify the next faulty card on the list and go to the appropriate card replacement procedure for that card in this manual.
- **18** Obtain further assistance in replacing this card by contacting the personnel responsible for higher level of support.

At the frame

- **19** Remove the sign from the active SMS unit.
- 20 Send any faulty cards for repair according to local procedure.
- 21 Record the following items in office records according to local policy:
 - date the card was replaced
 - serial number of the card
 - symptoms that prompted replacement of the card
- 22 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **23** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X80 in an SMS-R

Application

Use this procedure to replace the following card in an SMS-R.

PEC	Suffixes	Name
NT6X80	BA, BB	SCM Pad/Ring

Common procedures

None

Action

The following o wchart is only a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.



Summary of card replacement procedure for an NT6X80 card in an SMS-R

Replacing an NT6X80 card in an SMS-R

At your Current Location

- 1 Proceed only if you were either directed to this card replacement procedure from a step in a maintenance procedure, are using the procedure for verifying or accepting cards, or have been directed to this procedure by your maintenance support group.
- 2



CAUTION Loss of service

When replacing a card in the SMS-R, ensure that the unit in which you are replacing the card is inactive and that the mate unit is active.

Obtain a replacement card. Verify that the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP display

3 Access the PM level of the MAP display by typing

>MAPCI;MTC;PM;POST SMSR smsr_no

and pressing the Enter key.

where

smsr_no
 is the number of the SMSR to be posted

Example of a MAP response

SMSR 3	INSV	LINKS_	00S	CSIDE	0	PSIDE	0
Unit0	Ac	t	InSv				
Unit1	InA	ct	ISTb				

4 By observing the MAP display, ensure that the card to be removed is on the inactive unit.

If faulty card is on	Do	
active unit	step 5	
inactive unit	step 8	
Switch the activity of the units by typing		

>SWACT

5

and pressing the Enter key.

The system determines the type of SWACT it can perform and displays a confirmation prompt for the selected SWACT.

If SWACT	Do
can continue at this time	step 6
cannot continue at this time	step 23

6 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SWACT audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 8
SwAct failed	step 7
SwAct failed. Reason: XPM SwActback	step 7
SwAct refused by SwAct controller	step 7

7 Return to the alarm clearing procedure to clear the alarm condition on the inactive unit. When the alarm is cleared, return to step 1 of this procedure.

At the frame

8 Put a sign on the active unit with the words: "Active unit—Do not touch."

At the MAP display

9 Busy the inactive PM unit by typing

>bsy unit unit_no

and pressing the Enter key.

where

unit_no

is the number of the faulty SMS-R unit

At the frame

10



WARNING Static electricity damage

Before removing any cards, put on a wrist strap and connect it to the wrist strap grounding point on the left side of the frame supervisory panel of the SMS-R. This protects the equipment against damage caused by static electricity.



DANGER

Equipment damage

Take the following precautions when removing or inserting a card:

- 1. Do not apply direct pressure to the components.
- 2. Do not force the cards into the slots.

Put on a wrist strap.

- 11 Remove the NT6X80 card as shown in the following figures.
 - a Locate the card to be removed on the appropriate shelf.


NT6X80 in an SMS-R (continued)

b Open the locking levers on the card to be replaced and gently pull the card toward you until it clears the shelf.



- **c** Verify that the replacement card has the same PEC, including suffix, as the card you just removed.
- 12 Open the locking levers on the replacement card.
 - **a** Align the card with the slots in the shelf and gently slide the card into the shelf.

NT6X80 in an SMS-R (continued)



- **13** Seat and lock the card.
 - **a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is fully seated in the shelf.
 - **b** Close the locking levers.



NT6X80 in an SMS-R (continued)

	If you entered this procedure from	Do
-	alarm clearing procedures	step 17
	other	step 15
-	Test the inactive unit by typing	
	>TST UNIT unit_no	
i	and pressing the Enter key.	
	where	
	unit_no is the number of the faulty S	MS-R unit
	If TST	Do
	passes	step 16
	fails	step 17
-	Return the inactive SMS-R unit to se	ervice by typing
:	>RTS UNIT unit_no	
i	and pressing the Enter key.	
	where	
	unit_no is the number of the faulty S	MS-R unit
-	If RTS	Do
-	passes	step 19
	fails	step 18
- 	Return to <i>Alarm Clearing Procedure</i> procedure that directed you to this pr list was produced, identify the next f appropriate card replacement proce	es section of this manual or to the ocedure. At the point where a fault aulty card on the list and go to the dure for that card in this manual.
(Obtain further assistance in replacir responsible for a higher level of sup	g this card by contacting personn port.
fı	rame	
	Demonstration along the method actives ON	

20 Send any faulty cards for repair according to local procedure.

NT6X80 in an SMS-R (end)

- 21 Note the following in office records according to local policy:
 - the date the card was replaced
 - the serial number of the card
 - the symptoms that prompted replacement of the card
- 22 You have successfully completed this procedure. Return to the maintenance procedure that directed you to this card replacement procedure and continue as directed.
- **23** For further assistance with switch of activity, contact the personnel responsible for the next level of support.

Note: If the system recommends using the SWACT command with the FORCE option, consult office personnel to determine if use of the FORCE option is advisable.

NT6X80 in an SMU

Application

Use this procedure to replace the card in an SMU.

PEC	Suffix	Name
NT6X80	BB	Ring/pad

Common procedures

The common replacing a card procedure is referenced in this procedure.

Action

The following o wchart is a summary of the procedure. To replace the card, use the instructions in the step-action procedure that follows the o wchart.

NT6X80 in an SMU (continued)

Summary of card replacement procedure for an NT6X80 card in an SMU



NT6X80 in an SMU (continued)

Replacing an NT6X80 card in an SMU

At your current location:

- 1 Proceed only if you have been directed to this card replacement procedure from a step in a maintenance procedure.
- 2



CAUTION Loss of service

When replacing a card in the SMU, ensure that the unit where you are replacing the card is inactive and that the mate unit is active.

Get a replacement card. Verify the replacement card has the same product engineering code (PEC), including suffix, as the card to be removed.

At the MAP terminal:

3 Access the PM level of the MAP terminal by typing

>MAPCI;MTC;PM;POST SMU smu_no

and pressing the Enter key.

where

smu no

is the number of the SMU to be posted

Example of a MAP response:

SMU		SysB	ManB	Offl	CBsy	ISTb	InSv
	РМ	3	0	1	0	2	13
	SMU	0	0	0	0	1	7
SMU	0 IS	STb L:	inks_00	os: c	Side 0,	PSide	e 0
Unit	:0:	Act	ISTb				
Unit	:1:	Inact	InSv				

4 By observing the MAP display, ensure the card to be removed is on the inactive unit.

If faulty card is on	Do
active unit	step 5
inactive unit	step 9

NT6X80 in an SMU (continued)

5



CAUTION Service disruption: calls may be dropped!

If you are prompted to con rm a cold switch of acti vity (SwAct), perform this activity only during a period of low traf c. All calls being handled by this PM, including data calls, will be dropped.

Switch the activity of the units by typing

>SWACT

and pressing the Enter key.

The system determines the type of SwAct it can perform, which is either a warm SwAct or a cold SwAct. The system displays a confirmation prompt for the selected SwAct.

If SwAct	Do
cannot continue at this time	step 6
can continue at this time	step 7

6 Do not switch activity of the units. Reject the switch by typing

>NO

and pressing the Enter key.

The system discontinues the SwAct.

Return to step 5 during a period of low traffic.

7 Switch the activity of the unit by typing

>YES

and pressing the Enter key.

The system runs a pre-SwAct audit to determine the ability of the inactive unit to accept activity reliably.

Note: A maintenance flag appears when maintenance tasks are in progress. Wait until the flag disappears before proceeding with the next maintenance action.

If the message is	Do
SwAct passed	step 9
SwAct failed	step 8

NT6X80 in an SMU (continued)

	If the message is	Do
	SwAct failed Reason: XPM SwActback	step 8
	SwAct refused by SwAct controller	step 8
8	Return to the <i>Alarm Clearing Proced</i> inactive unit. After the alarm is clear	<i>lures</i> to clear the alarm condition on the ed, return to step 1 of this procedure.
At the	SME frame:	
9	Put a sign on the active unit bearing th touch."	ne following words: "Active unit—Do not
At the	MAP terminal:	
10	Busy the inactive PM unit by typing	
	>bsy UNIT unit_no	
	and pressing the Enter key.	
	where	
	unit_no is the number of the faulty SM	/IU unit
11	Go to the common replacing a card p to step 12 of this procedure.	procedure in this document, then return
12	Use the following information to dete procedure.	rmine what step to go to next in this
	If you entered this procedure from	Do
	alarm clearing procedures	step 15
	other	step 13
13	Test the inactive unit by typing	
	>TST UNIT unit_no	
	and pressing the Enter key.	
	where	
	unit_no	

is the number of the SMU unit busied in step 10

If TST	Do
passed	step 14

NT6X80 in an SMU (end)

	151	Do
fa	ailed	step 16
Re	turn the inactive SMU unit to servic	e by typing
>R'	TS UNIT unit_no	
and	d pressing the Enter key.	
wh	pere	
	unit_no is the number of the SMU unit	tested in step 13
lf	RTS	Do
p	assed	step 18
fa	ailed	step 16
fa Re is ii rep	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card.	step 16 es. At the point where a faulty card on the list. Go to the appropriate c
fa Re is ii rep Co rep	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card.	step 16 es. At the point where a faulty carc on the list. Go to the appropriate c er level support and get further hel
fa Re is i rep Co rep Re	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card.	step 16 es. At the point where a faulty card on the list. Go to the appropriate of er level support and get further hel unit.
fa Re is in rep Co rep Re Se	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card. Imove the sign from the active SMU nd any faulty cards for repair accord	step 16 es. At the point where a faulty carc on the list. Go to the appropriate c er level support and get further hel unit. ding to local procedure.
fa Re is in rep Co rep Re Se No	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card. Imove the sign from the active SMU nd any faulty cards for repair accord te the following in the office records	step 16 es. At the point where a faulty card on the list. Go to the appropriate c er level support and get further hel unit. ding to local procedure.
fa Re is in rep Co rep Re Se No	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card. Imove the sign from the active SMU and any faulty cards for repair accord te the following in the office records date the card was replaced	step 16 es. At the point where a faulty carc on the list. Go to the appropriate c er level support and get further hel unit. ding to local procedure.
fa Re is in rep Re Se No •	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card. Imove the sign from the active SMU nd any faulty cards for repair accord te the following in the office records date the card was replaced serial number of the card	step 16 es. At the point where a faulty card on the list. Go to the appropriate c er level support and get further hel unit. ding to local procedure.
fa Re is in rep Co rep Re Se No •	ailed turn to the <i>Alarm Clearing Procedur</i> nitiated, identify the next faulty card placement procedure for that card. Intact personnel responsible for high place this card. Imove the sign from the active SMU and any faulty cards for repair accord the the following in the office records date the card was replaced serial number of the card symptoms that prompted replacen	step 16 es. At the point where a faulty carc on the list. Go to the appropriate c er level support and get further hel unit. ding to local procedure.

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