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DMS-100 Family

Distributed Processing Peripheral (DPP)

Quick Reference Guide

DPP001 and up Standard 02.02 September 2000

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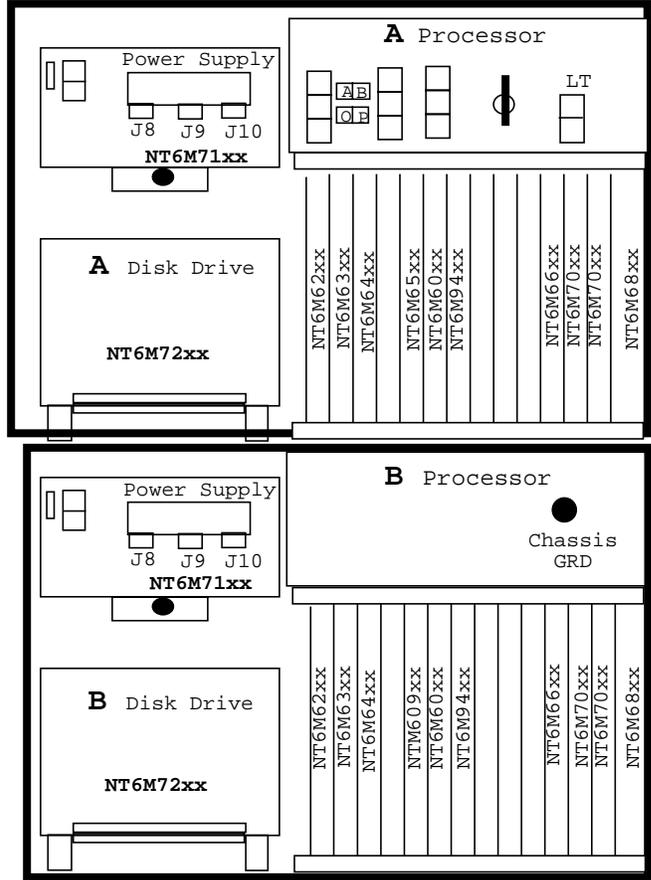
Contents

DPP Figures	1
DPP FRONT VIEW 1	
DPP SIDE VIEW 2	
Maintenance Commands	3
Alarm Commands 3	
Clock Commands 4	
Boot Commands 4	
Disk Commands 4	
CP Turbo Commands 7	
Index Maintenance Commands 9	
File Manipulations Commands 11	
Polling Link Adjustment Commands 11	
Processor Activity Command 13	
Site Dependent Data Commands 13	
Program Version Commands 15	
Statistics Commands 15	
Data Stream Interface Functions Commands 16	
USER Security Commands 16	
Testing Commands 16	
Miscellaneous Command 17	
Monitor Level Commands 17	
Guide to Index Corruption Recovery	19
Recognizing and Recovering from Index File Corruption 19	
Version number missing from index, but is on disk 19	
Sequence numbers not incrementing properly 24	
AMAIDX OPEN ERROR:03 31	
Miscellaneous PCA Replacement Procedure (NT6M60xx, NT6M62xx, NT6M63xx, NT6M64xx, NT6M66xx, NT6M68xx, or NT6M70xx)	35
Disk Replacement Procedure	37
Removing the Faulty Disk Drive 37	
Installing the Replacement Disk Drive 38	
Disk Crossover PCA Replacement Procedure (NT6M72xx or NT6M93xx)	43
Error Control II PCA Replacement Procedure (NT6M65xx)	47
Error Control II Jumper PCA Replacement Pro- cedure (NTM609xx)	49

Power and Alarm Communications PCA Replacement Procedure (NT6M84xx)	51
56K Crossover PCA Replacement Procedure (NT6M48xx)	53
Power Supply Replacement Procedure (NT6M71xx)	55
56K Interface PCA Replacement Procedure (NT6M94xx)	59
PCA Switch and Strap Settings	63
NT6M62xx CPU PCA	63
NT6M63xx EPROM PCA (MEM1)	63
NT6M60BA Quad SIO (Slot 6) Polling Modem set to EXTERNAL Timing	64
NT6M60BA Quad SIO (Slot 6) Polling modem set to INTERNAL timing	64
Baud Rate Reference	65
NT6M84BA PWR/ALM Communications PCA Polling modem set to EXTERNAL timing	66
NT6M84BA PWR/ALM Communications PCA Polling modem set to INTERNAL timing	66
NT6M70xx DMS-100 DSI PCA	67

DPP Figures

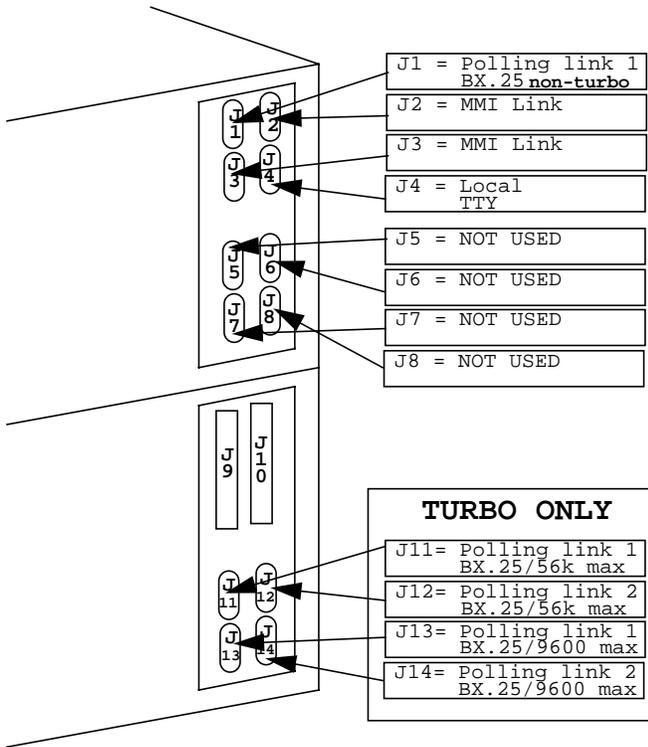
**Figure 1
DPP Front View**



- NT6M62xx CPU (Central Processor Unit with DMA)
- NT6M63xx EPROM
- NT6M64xx DRAM with Extended Memory
- NT6M65xx ERROR CONTROL II
- NTM609xx ERROR CONTROL JUMPER
- NT6M60xx QUAD SIO
- NT6M94xx 56Kbps INTERFACE
- NT6M66xx DISK INTERFACE
- NT6M70xx DSI (Data Stream Interface DMS-100)
- NT6M68xx BUS TERMINATOR
- NT6M71xx POWER SUPPLY
- NT6M72xx DISK DRIVE: AA=72MB; BA=140MB; CA=30MB; DA=380MB; DD=380MB TURBO; EA=760MB

<p>NT6M72AD> AE DISK CROSSOVER NT6M93xx TURBO DISK CROSSOVER NT6M84xx POWER/ALARM COMMUNICATION NT6M48xx 56 Kbps CROSSOVER NT6M56xx FAN FILTER NT6M54xx 56 Kbps MOUNTING PANEL NT6M73xx 56 Kbps CROSSOVER INTERFACE CABLE ASSEMBLY NT6M85xx 56 Kbps CROSSOVER INTERFACE CABLE ASSEMBLY</p>	<p>← These packs are located in the back of the DPP</p>
--	---

Figure 2
DPP Side View



Maintenance Commands

Note: DPP commands are entered through the DMS-100 [MAPCI;MTC;IOD;DPP AMA] MAP level. The DIRECT mode (enter SMODE at the DPP AMA level) is required for some noted commands.

Alarm Commands

Command Name	Explanation
ERRMAP	Displays a list of available alarms with active alarms noted on the active processor.
ERRMAP STDBY	Displays a list of available alarms with active alarms noted on the standby processor.
ERRMAP ALARMS	Displays a list of active alarms on active and standby processors.
ERRMAP ee tttttt l	Change specified alarm parameters. ee = Event #: 1-99 tttttt = Alarm type: INHIBIT/RETIRE, MINOR, MAJOR, CRITICAL. l = level of alarm 0-3.
RSERR ACT nn	Reset alarms on the active processor. nn = event # or 00 for all active side alarms.
RSERR STDBY nn	Reset alarms on the standby processor. nn = event # or 00 for all standby side alarms.

Clock Commands

Command Name	Explanation
CLK	Display time of active processor.
DOS S CLK	Display time of standby processor.
SETCLK yy mm dd hh mm ss day	Set or change the time on the DPP clock. yy = year: (00-99) mm = month: (01-12) dd = day: (01-31) hh = hour: (00-23) mm = minutes: (00-59) ss = seconds: (00-59) day = weekday: (MON, TUE, WED, THU, FRI, SAT, SUN)

Boot Commands

Command Name	Explanation
BOOT ADD xxxxxx yy	Append a program name to boot list. xxxxxx = program name yy = program version on disk.
BOOT ACT	Load program files listed in the boot file to active processor.
BOOT DELETE	Deletes the last file name in boot file.
BOOT LIST	List the contents of the boot file.
BOOT STDBY	Load program files listed in the boot file to standby processor.

Disk Commands

Command Name	Explanation
DISK DEFMAP x	Enter the defective tracks for 72-140 MB disk drives (NON-TURBO only). Bad track information is provided with the disk drive. x = disk drive: A or B

Command Name	Explanation
--------------	-------------

Note: The **DISK DEFMAP** command requires that users terminal be in the DIRECT mode. From the MAP type **S.MODE** to enter the DIRECT mode.

DISK FORMAT x	Format the specified disk drive. This operation takes several minutes.
----------------------	--

x = A or B

NOTE: Do not use for 72 to 380 MB NON-TURBO disk drives.

**CAUTION**

This command will erase all data from specified disk drive. Should not be done during high traffic on TURBO DPPs.

DISK INIT 1x	Short Init the specified disk.
---------------------	--------------------------------

x = disk drive: A or B

Note: Do not use this command on TURBO disk drives.

DISK MODE	Displays the current disk mode.
------------------	---------------------------------

DISK MODE xy	Change current disk mode. This operation can take several hours.
---------------------	--

x = Primary disk: A or B

y = O: No standby disk on-line

OR

y = P: Standby disk on-line

**CAUTION**

The **DISK MODE xy** command can over write needed data.

Command Name	Explanation
DISK PARAM	Displays choice of disk types used for NON-TURBO DPPs. Enter 1-9 depending on the disk type used.
NOTE: The DISK PARAM command requires that users terminal be in the DIRECT mode. From the MAP type S.MODE to enter the DIRECT mode.	
DISK VS	Displays the disk firmware version.
DISK USAGE	Displays the number of tracks used / total tracks available.

CP Turbo Commands

Command Name	Explanation
CP BOOT ACT	Loads the contents of the BOOTCP file to the active 56K CommProcessor.
CP BOOT ADD	Append a new file name to the BOOTCP file.
CP BOOT DELETE	Remove the last file name in the BOOTCP file.
CP BOOT LIST	Displays the contents of the BOOTCP file.
CP BOOT STDBY	Load the contents of the BOOTCP file to the standby 56K Comm Processor.
CP CLOCK	Examine the 56K Comm Processor clock source.
CP CLOCK I sssssss	Change the clock source. I = LINK #: 1 or 2 sssssss = clock source. INTERNAL = DPP uses its own transmit clock. EXTERNAL = DPP uses an external clock.
<i>Note:</i> link 1 = J11 for 56K polling, J13 for 1200-9600 baud polling. link 2 = J12 for 56K polling, J14 for 1200-9600 baud polling.	
CP INTERFACE	Examine the CP interface used for polling.
CP INTERFACE I yyyy	To change CP interface. I = link #: 1 or 2. yyyy = RS232 ; for 1200 through 9600 baud. OR yyyy = V35 ; must use v.35 for 56k polling.
CP LOOP ACT	Performs loop test between Main Processor and 56K Comm Processor on the active side.
CP LOOP STDBY	Performs loop test between Main Processor & 56K Comm Processor on the standby side.
CP TEST ACT	Performs a series of tests on the active 56K Comm Processor.
CP TEST STDBY	Performs a series of tests on the standby 56K Comm Processor.

Command Name	Explanation
CP VS ACT	Display the firmware/software versions of active 56K Comm Processor.
CP VS STDBY	Display the firmware/software versions of standby 56K Comm Processor.

NOTE: All **CP** commands are for TURBO DPPs only.

Index Maintenance Commands

Command Name	Explanation
IDXMAINT CLOSE	Close file currently open for read.
IDXMAINT CHECK t	Check the index file.
IDXMAINT CREATE DIR t v	Creates a new index file with primary data only.
IDXMAINT CREATE DIR t v s	Creates a new index file with secondary and primary data.
IDXMAINT CREATE FILE t	Closes open call record file and opens new file.
IDXMAINT DELETE t	Delete oldest secondary file from disk and updates the index. t = filetype: AMA , LOG , or EXC . v = version # to begin index. s = first sequence # to be primary.
IDXMAINT DIR CLOSED t v	Displays the closed files on the disk.
IDXMAINT DIR CLOSED t LAST v	Displays the closed files on the disk, starting from version number variable (v) specified to the end of the index.
<i>Note:</i> The IDXMAINT DIR CLOSED t LAST v command is available only on TURBO DPPs.	
IDXMAINT DIR OPEN t	Displays the open file being written to on disk.
IDXMAINT EXAMINE t f s	Displays a selected block from DPP disk by sequence number.
IDXMAINT EXAMINE t NEXT r	To continue to display a selected range of blocks from DPP disk.

Command Name	Explanation
IDXMAINT SUMMARY t	<p data-bbox="521 201 797 258">Displays summary of indexed files.</p> <p data-bbox="521 289 797 346">t = filetype: AMA, LOG, or EXC.</p> <p data-bbox="521 378 797 518">f = format: ASCII (LOGS only), EBCDIC, HEX, PACKED (AMA Blocks) or HDR (for the header of AMA block only).</p> <p data-bbox="521 550 797 606">s = selected sequence #: 0 to 999999.</p> <p data-bbox="521 638 797 695">v = # of versions to be displayed: 1-200.</p> <p data-bbox="521 726 797 783">r = # of blocks to view: 1-255.</p>

File Manipulations Commands

Command Name	Explanation
LSTACT	Display a list of all currently open files.
LSTDIR ACT i	Lists the directory entry for the active file specified. i = file id # from LSTACT.
CLSACT i	Closes open file. i = file id # from LSTACT.
DELFILE f v	Deletes a particular file and version or a range of versions. f = filename. v = file version (Range 1-255 or 0 for latest version).
Example: DELFILE BMCCRD 3 150	Deletes filename BMCCRD versions 3 to 150.
DMPFILE f v b c	Used to output a specified number of blocks from a specified file for examination. f = filename. v = file version #. 0 is the latest version. (0-255) one version at a time. b = Specifies starting block range = 0 - 999,999. c = Specific number of blocks to dump. Range = 0 - 9,999.
LSTDIR ALL	Lists all files in the disk directory.
LSTDIR FILE f v	Lists the directory entry of a specified file. f = filename. v = file version (Range 1-255 or 0 for latest version).

Polling Link Adjustment Commands

Command Name	Explanation
LINIT	Aborts any active polling session and initializes the polling links.
LNKDSC	Causes DTR to drop for 5 seconds and aborts a polling session in progress.

Command Name

Explanation

Note: Immediately follow **LNKDSC** with the **LINIT** command.

Processor Activity Command

Command Name	Explanation
SWACT x	Change current active processor (A to B or B to A). x = optional entry: FORCE Resets any alarms on the standby processor and then performs the processor switch.

Note: The **FORCE** option resets any alarms on the standby processor and then performs the processor switch.

Site Dependent Data Commands

Command Name	Explanation
AMAHRS	Displays hour boundaries currently assigned.
AMAHRS ss ee ii	Set the time interval to verify that AMA records have been received from the Switching System. ss = two digit start time (00-23). ee = two digit end time (00-23). ii = interval in minutes of no blocks before an alarm.
AMATPSW	Examine the AMAT Password.
AMATPSW tttt iiiiii	Change AMAT password. tttt = 4 digit sensor type. iiiiii = 6 digit sensor id.
BAUD	Displays current polling baud rate for links 1 and 2.
BAUD a rrrr	Change polling baud rate for links 1 and 2. a = link: 1 or 2 . rrrr = baud rate: 1200/2400/4800/9600/56K .
<i>Note:</i> link 1 = J11 for 56K polling, J13 for 1200 through 9600 baud polling. link 2 = J12 for 56K polling, J14 for 1200 through 9600 baud polling.	
BX25PARAM PRIHDR	Display the AMATPS setting.
BX25PARAM PRIHDRx	Changes the AMATPS setting. x = 1 for 1986 AMATPS or 2 for 1990 AMATPS.

Command Name	Explanation
<i>Note:</i> The BX25PARM PRIHDR command requires that users terminal be in the DIRECT mode. From the MAP type S.MODE to enter the DIRECT mode.	
COLLPSW	Displays current collector password.
COLLPSW # tttt iiiii	# = Collector Password #: 1 2 tttt = 4 hex character office type. iiiiii = 6 character office id.
SITDAT READ	Reads (restores) the site data parameters from the DPP disk and over writes the main memory (RAM).
SITDAT WRITE	Updates (Saves) the site data parameters from memory to disk.
VALPARM BLOCKS	Displays the minimum number of blocks required to close AMACRD file when a polling session starts.
VALPARM BLOCKS x	Changes the minimum number of blocks. x = 1-65535
VALPARM INVALID	Displays invalid block quantity threshold value currently assigned.
VALPARM INVALID b	Change invalid block quantity threshold. b = number of blocks: 0-65535
VALPARM LOGHDR	Displays current status of the log header; either enabled or disabled.
VALPARM LOGHDR xxx	Enables or Disables the display of the block header as they are written to disk. xxx = ON log header display ENBLED. OR xxx = OFF log header display DIS-ABLED.

Note: Changes made to site data require that the **SITDAT WRITE** command be issued, saving the change to disk.

Program Version Commands

Command Name	Explanation
CP VS ACT	Displays the active 56K Comm processor software program version ID and firmware version ID.
CP VS STDBY	Displays the standby 56K Comm processor software program version ID and firmware version ID.
<i>Note:</i> CP commands are for TURBO DPPs only.	
DISK VS	Displays the disk firmware version ID.
VS STDBY	Displays the standby processor software program version ID and firmware version ID.
VS ACT	Displays the active processor software program version ID and firmware version ID.
DSIMAIN T SHOW x VS	Displays the active processor firmware version ID for the selected DSI.
DOS S DSIMAIN T SHOW x VS	Displays the standby processor firmware version ID for the selected DSI.
	x = DSI Port ID: 1 or 2 .
	1 = DSI in slot A13. 2 = DSI in slot A12.

Note: The **DOS S** prefix to the **DSIMAIN T** command requires that users terminal be in the DIRECT mode. From the MAP type **S MODE** to enter the DIRECT mode.

Statistics Commands

Command Name	Explanation
CLRSTATS	Clears today's statistics file reports.
REPORT tttt pppp	Displays a compiled list out of a selected statistical file available on the DPP disk.
	tttt = type: AMA , DISK , or MMI .
	pppp = period: T DAY or Y DAY .
	T DAY = Today Y DAY = Yesterday

Data Stream Interface Functions Commands

Command Name	Explanation
DSIMAIN T SHOW x a	Displays the argument of the selected DSI port on the active processor.
DOS S DSIMAIN T SHOW x a	<p>Displays the argument of the selected DSI port on the standby processor.</p> <p>x = DSI Port ID: 1 or 2.</p> <p>1 = DSI in slot A13. 2 = DSI in slot A12.</p> <p>a = argument: ERROR, STATUS, or VS.</p> <p>ERROR: Displays the error count since the last rewind. CRC = Cyclic Redundancy Check, PAR = Parity, COMM = DSI communication failures.</p> <p>STATUS: Displays the last command, status, and number of blocks received.</p> <p>VS: Displays the firmware version ID.</p>

User Security Commands

Command Name	Explanation
MPRI C c x	Change user priority of a selected command.
MPRI E c	<p>Displays the user priority of the selected command.</p> <p>c = command to be changed. x = priority level: 1-3.</p>

Testing Commands

Command Name	Explanation
DPRTST	Performs a Dual-Ported Random Access Memory test on the Standby Processor.
TEST STDBY	Performs a built-in-test on the Standby Processor.
TEST ACT	Performs a built-in-test on the Active processor.

Miscellaneous Command

Command Name	Explanation
RSCMD	Stop currently printing command output.

Monitor Level Commands

Command Name	Explanation
--------------	-------------

Note: The MONITOR level commands requires the users terminal to be in the DIRECT mode. From the MAP type **S MODE** to enter the DIRECT mode.

Note: These commands are used for tasks performed on the DPP unit CPU when the DPP software is not running.

DD FORMAT x	Format the specified disk drive. x = A or B : disk drive Format takes several minutes.
--------------------	--

NOTE: Do not use the **DD FORMAT x** command for 380 MB NON-TURBO disk drives.



CAUTION

The **DD FORMAT x** command erases all data from the specified disk drive. Should not be done during high traffic on NON-TURBO DPPs.

DD VS	Disk Version NON-TURBO.
DD MOD	Displays the current disk mode.
DD MOD xy	Change the current disk mode. x = Primary disk: A or B y = O : NO STANDBY DISK ONLINE OR y = P : STANDBY DISK ONLINE
DD INIT 1x	Short Init the specified disk. x = Primary disk: A or B
DD PARM	Displays choice of disk types used for NON-TURBO DPPs. Enter 1-9 depending on the disk type used.

Note: The **DD** commands are for NON-TURBO DPPs only.

Command Name	Explanation
DELETE f:v	To delete a particular file and version or a range of versions. f = filename. v = file version (Range 1-255 or 0 for latest version).
Example: DELETE BMCCRD 3:150	Deletes filename BMCCRD versions 3 to 150.
DOS	Displays the processor status. Response: yz > y = processor currently being communicated with: A or B . z = status of processor being communicated with: A = active, S = standby, O = only, or U = unused.
DOS VS	Displays the active processor firmware version ID.
DOS S DOS VS	Displays the standby processor firmware version ID.
DOS TEST	Performs a built-in-test on the Active processor.
DOS S DOS TEST	Performs a built-in-test on the Standby Processor.
DUSE	Displays the number of tracks used / total tracks available.
NOTE: The DUSE command is for NON-TURBO DPPs only.	
STIMyymmddhhmmssw	Set or change time on the DPP clock. yy = year (00-99) mm = month (01-12) dd = date (01-31) hh = hour in 24-hour (00-23) mm = minutes (00-59) ss = seconds (00-59) w = 1-7 : 1 for Monday, 7 for Sunday.
XDIR	List all files in disk directory.

Guide to Index Corruption Recovery

Recognizing and Recovering from Index File Corruption

This procedure describes a methodology for recognizing and recovering from index file corruption which may be experienced with the DPP system. Index file corruption can occur for a variety of reasons. This procedure neither catalogs nor explains all those reasons; rather, it offers practical advice for identifying and correcting certain types of index file corruption should it occur.

This procedure enumerates the following topics:

- Types of index file corruption addressed in this document.
- How to recognize index file corruption.
- How to recover from index file corruption.

For each type of index file corruption discussed, the procedure to recognize it is first given, followed by the appropriate recovery procedure. This follows the natural flow of troubleshooting. Commands and responses for the DPP are given.

Intended audience

This document is written for the technical craftspersons who have a working knowledge of the DPP.

Conventions used

- DPP Commands that the user is expected to enter are designated by:
BOLD HELVETICA 9PT UPPERCASE TEXT
- The BMC's responses to commands are designated by:
COURIER 9PT UPPERCASE TEXT

Types of index file corruption addressed in this document

This document will address the following types of index file corruption:

- Version number missing from index, but is on disk.
- Sequence numbers not incrementing properly.
- AMAIDX OPEN ERROR:03.

Version number missing from index, but is on disk

Version numbers within the index are always supposed to be *sequential and contiguous*. That is, they should start from a low version number and increment by one, without skipping any numbers (i.e., 07, 08, 09, 10, etc.). *If a version number is missing from the index, but the AMACRD file is actually on disk, then corruption has occurred.*

Recognition

AMACRD files missing from the index can be observed by displaying and comparing listings of the AMACRD files in the index to those in the directory.

1. Display the summary of AMACRD files in the index.

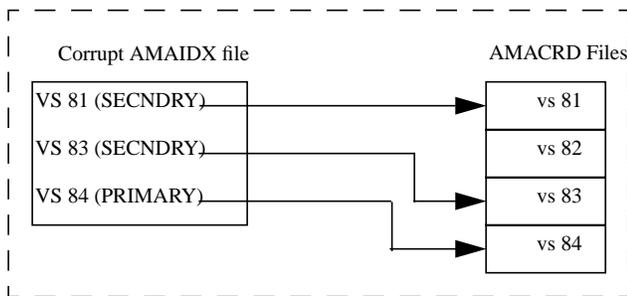
2. Display the closed AMACRD files in the index.
3. Display the open AMACRD file in the index.
4. Display the AMACRD files in the directory.

Additionally check for error messages, such as BAD AMAIDX FILE, and/or the presence of alarms.

Example: Version 82 is missing from the index but the AMACRD file version 82 is in fact on the disk. Therefore the index is corrupt and must be fixed.

Graphically, the problem can be represented as shown in the diagram below:

Figure 1
Version missing from index



5. Display the summary of the AMACRD files in the index.

IDXMAINT SUMMARY AMA (CR)

```

AMA FILE: 03 VSNS,0003487 BLKS, 00000042 PRIMARY
SEQ#00000000FIRST,00003445 PRIM,00003487 NEXT IN
VS 81: 3451 BLKS, 6 PRIMARY, AMA SEQ #00000000
  
```

Save this information. It will be used in a subsequent step.

6. Display the closed AMACRD files in the index.

IDXMAINT DIR CLOSED AMA 200

```

VS 81:3451 BLKS, 6 PRIMARY, AMA SEQ #00000000
VS 83: 36 BLKS, 36 PRIMARY, AMA SEQ #00003487
END OF AMAIDX FILE
  
```

7. Display the open AMACRD file in the index.

IDXMAINT DIR OPEN AMA

```

VS 84: 0 BLKS, 0 PRIMARY, AMA SEQ #00003523
  
```

The discrepancy (a skipped version number) is evident in the listing of the closed AMACRD files in the index.

8. Display the AMACRD files in the directory.

LSTDIR FILE AMACRD 1 255

```

                                AMACRD file version number
                                ↙
00 AMACRD 60 81 95 263      0 1531
01521201 00 0EE508 000000 003451
                                ↘
Version's beginning block number
PLUS number of blocks in this version should
add up to the next beginning block number
    
```



```

00 AMACRD 60 82 95 349      0 1531
01006C00 00 0EE507 003451 000036

00 AMACRD 60 83 95 349      0 1531
01000000 00 0EE509 003487 000036

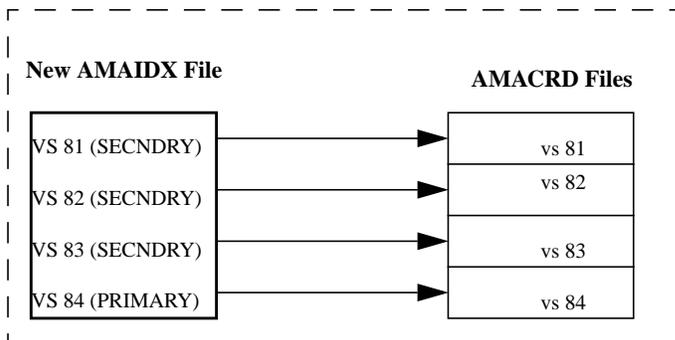
00 AMACRD 60 84 95 349      0 1531
01000000 00 0EE509 003523 000000
    
```

Recovery

The AMA index must be rebuilt to “close the gap” caused by the missing index entry. Note that the AMACRD files versions are sequential and contiguous. They start at version 81, increment correctly to version 82 then to version 83. This indicates that the AMA index file corruption can be fixed.

1. Identify the next sequence number of PRIMARY AMA in the index.
2. Delete the old AMA index file.
3. Create a new index file starting with the first block of PRIMARY AMA just located.
4. Display the summary of AMACRD files in the new index.
5. Display the closed AMACRD versions in the new index.

Graphically, the solution can be represented as shown in the diagram below:



1. Identify the next sequence number of PRIMARY AMA in the index.

Using the information from the previous **IDXMINT**

SUMMARY AMA command, it can be seen that the first block of PRIMARY AMA is block number 3445 in AMACRD version 81.

AMA FILE: 03 VSNS, 0003487 BLKS, **0000042 PRIMARY**

SEQ# 00000000 FIRST **0003445** PRIM, 00003487 NEXT IN

Next sequence number of PRIMARY AMA

2. Delete the old AMA index file:

DPP COMMAND: *DELFILE AMAIDX 1 255*

RESPONSE:

VERSION 03 DELETED

3. Create a new index file starting with the first block of PRIMARY AMA just located.

Create a new AMA index file, starting with AMACRD file version 81, and starting at the first block of PRIMARY AMA in version 81 (block 3445).

DPP COMMAND: **IDXMAINT CREATE DIR AMA 81 3445**

RESPONSE:

AMA FILE ESTABLISHED

GOOD AMAIDX FILE

4. Display the summary of AMACRD files in the new index.

The presence of the message, GOOD AMAIDX FILE, is positive indication that the new AMA index file was correctly created. This can be verified by displaying the summary of AMACRD files in the index.

DPP COMMAND: **IDXMAINT SUMMARY AMA**

RESPONSE:

AMA FILE: 04 VSNS, 00003487 BLKS, **00000078 PRIMARY**

SEQ# 00000000 FIRST, 00003445 PRIM, 00003523 NEXT IN

VS **81**: 3451 BLKS, 6 PRIMARY, AMA SEQ #00000000

Note that the number of PRIMARY blocks in the new index has changed from 42 to 78. This is an increase of 36 blocks. This is correct because the index file now correctly includes version 82 (which contains 36 blocks of PRIMARY AMA). *Since the DPP is actively collecting AMA data, the number of blocks in the index may increase by more than the indicated difference of 36 blocks.*

5. Display the closed AMACRD versions in the new index.

Verification that the AMACRD versions are now in the proper order (sequential and contiguous) can be performed by displaying the closed AMACRD files in the index.

DPP COMMAND: **IDXMAINT DIR CLOSED AMA 200**

RESPONSE:

VS **81**: 3451 BLKS, 6 PRIMARY, AMA SEQ #00000000

VS 82: 36 BLKS, **36 PRIMARY**, AMA SEQ #00003451

VS 83: 36 BLKS, 36 PRIMARY, AMA SEQ #00003487

This concludes the recovery procedure for version missing from index, but is on disk.

Sequence numbers not incrementing properly

Sequence numbers should always be *sequential and continuous*. They should increment from a lower number toward a higher number and should *never* decrement. The beginning sequence number for an AMACRD file can be calculated by adding the **beginning block number** to the **number of blocks** from the previous sequence number.

If version 106 of an AMACRD file has a starting sequence number of 602747 and contains 2968 blocks, then version 107 should have a starting sequence number of 605715 (the sum of version 106's beginning sequence number, 602747, plus the 2968 blocks in version 106).

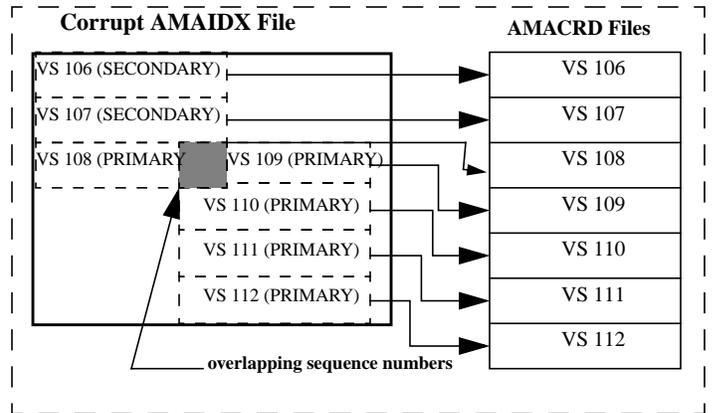
RECOGNITION

If sequence numbers are decrementing instead of incrementing, or if the sequence number is not the sum of the beginning sequence number of the previous version and the number of blocks in the previous version, then corruption has occurred.

Incorrectly incrementing sequence numbers may be observed by displaying a listing of the closed AMACRD files in the index. The system should also report BAD AMAIDX FILE.

1. Check the AMA Index File.
2. Display the summary of AMACRD files in the index.
3. Check that the sum of the beginning sequence number for a version and the blocks in that version correctly adds up to the next beginning sequence number.

Graphically, the problem can be represented as show in the diagram below:



1. Check the AMA Index File.

Have the DPP check the integrity of the AMA Index File. In this example, the execution of the following command will result with an error message which verifies that the AMA Index File is corrupt.

DPP COMMAND: ***IDXMAINT CHECK AMA***

RESPONSE:

BAD AMAIDX FILE

2. Display the summary of AMACRD files in the index.

DPP COMMAND: ***IDXMAINT DIR CLOSED AMA 200***

RESPONSE:

VS 106: 2968 BLKS, 99 DA SECNDRY, AMA SEQ #602747

VS 107: 1698 BLKS, 99 DA SECNDRY, AMA SEQ #605715

VS 108: 1335 BLKS, 49 PRIMARY, AMA SEQ #607413

VS **109**: 1389 BLKS, 1389 PRIMARY, AMA SEQ #**608740**

VS 110: 304 BLKS, 304 PRIMARY, AMA SEQ #610129

VS 111: 632 BLKS, 632 PRIMARY, AMA SEQ #610433

VS 112: 1085 BLKS, 1085 PRIMARY, AMA SEQ #611065

END OF AMAIDX FILE

3. Check that the sum of the beginning sequence number for a version and

the blocks in that version correctly adds up to the next beginning sequence number.

In this example, the sequence number for version number 109 is incorrect. Prior to (and after) version 109, the sequence numbers are incrementing properly. The sequence number for version 109, #608740, has incorrectly been incremented by only 1327 blocks. It *should* have incremented by 1335 blocks (sequence number 607413 for version 108 plus 1335 blocks in version 108 equals sequence number 608748 for version 109). Eight blocks of PRIMARY AMA appear to be missing in version 108.

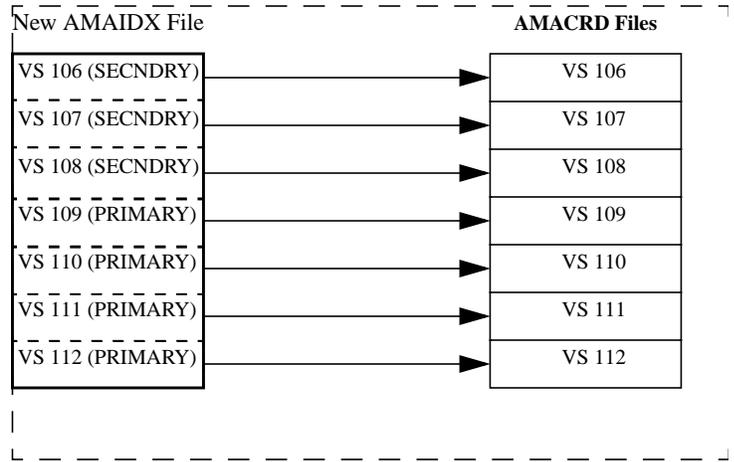
The effect is that the polling center won't be able to retrieve AMA starting at version 109, because there will be duplicate sequences in versions 108 and 109 (sequences 608740 through 608748). The actual AMA data in version 108, sequence numbers 608740 through 608748 will be different from the AMA data in version 109, sequence numbers 608740 through 608748, but the DPP will detect the duplicated sequence numbers and report, *BAD AMAIDX FILE*.

RECOVERY

To recover from this error, version 108 must be changed from PRIMARY to SECONDARY and the data retrieved from it in a DEMAND POLL. After the data center retrieves the data via demand poll, the old index (which contains the corrupt version 108) will be deleted, then a new index will be built starting with version 109 (which is not corrupt).

1. Delete the corrupt AMA index file.
2. Create a temporary AMA index that includes the corrupt AMACRD file. This forces the corrupt version into SECNDRY status.
3. Display the closed AMACRD files in the index.
4. Data center does a DEMAND POLL on the unpolled data in the corrupt version.
5. Delete the temporary AMA index file.
6. Create a new AMAIDX file starting with the first good sequence number containing PRIMARY AMA.
7. Confirm that there is only one AMAIDX file on the disk.
8. Delete the AMACRD files that were forced into SECNDRY status.
9. Display the closed AMACRD files in the new index.

Graphically, the solution can be represented as shown in the following diagram.



1. Delete the corrupt AMA index file.

DPP COMMAND: ***DELFILE AMAIDX 1 255***

RESPONSE:

VERSION 03 DELETED

2. Create a temporary AMA index that includes the corrupt AMACRD file. This forces the corrupt version into SECNDRY status.

Create a temporary AMA index file, starting at version 106 (which is already marked as SECNDRY) and ending at version 109. (Version 109 will become the first version having PRIMARY AMA data.) The effect is that the AMA data in version 108 will be changed from PRIMARY to SECNDRY. (Versions 106 and 107 are already SECNDRY AMA, so they won't be affected.)

DPP COMMAND: ***IDXMAINT CREATE DIR AMA 106 608470***

RESPONSE:

AMA FILE ESTABLISHED

BAD AMAIDX FILE

3. Display the closed AMACRD files in the index.

Displaying the closed AMACRD files in the index shows that version 108 has been changed from PRIMARY to SECNDRY AMA.

DPP COMMAND: ***IDXMAINT DIR CLOSED AMA 200***

RESPONSE:

VS 106: 2968 BLKS, 99 DA SECNDRY, AMA SEQ #602747

VS 107: 1698 BLKS, 99 DA SECNDRY, AMA SEQ #605715

VS 108: 1335 BLKS, **99 DA SECNDRY**, AMA SEQ #607413

VS 109: 1389 BLKS, 1389 PRIMARY, AMA SEQ #608740

VS 110: 304 BLKS, 304 PRIMARY, AMA SEQ #610129

VS 111: 632 BLKS, 632 PRIMARY, AMA SEQ #610433

VS 112: 1085 BLKS, 1085 PRIMARY, AMA SEQ #611065

END OF AMAIDX FILE

4. Data center does a DEMAND POLL on the unpolled data in the corrupt version.

The data center should now be able to retrieve the previously unpolled data from version 108 by executing a DEMAND POLL, starting at sequence number 608699, for 49 blocks.

This starting sequence number for the demand polling is calculated by using the original sequence number of version 108 (607413) and adding the blocks in version 108 (1335) to arrive at the correct next

sequence number, 608748. From this sequence number, the 49 blocks of unpolled data in version 108 are subtracted (608748 minus 49) to arrive at the actual starting sequence number, 608699. This is where the data center should start the demand poll.

5. Delete the temporary AMA index file.

After the data center confirms that they have successfully retrieved the previously unpolled 49 blocks from the BMC, remove the temporary AMA index file. This doesn't remove the AMA data (the AMACRD files), but it does remove the AMAIDX file. The following command will remove the AMAIDX file, but a new one will be built in a subsequent step. (The new AMAIDX file that will be built shall contain the correct version numbers.)

DPP COMMAND: ***DELFILE AMAIDX 1 255***

RESPONSE:

VERSION 02 DELETED

6. Create a new AMAIDX file starting with the first good sequence number containing PRIMARY AMA.

The following command creates a new AMA index, starting with version 109 as the first version having PRIMARY AMA data. All subsequent versions numbers in the index (110, 111 and 112 in the example above) will still be PRIMARY AMA, and will be included in the new AMA index. The system should report, GOOD AMAIDX FILE , indicating that the new index was properly created.

Create a new AMAIDX file starting with version 109 containing all PRIMARY data.

DPP COMMAND: ***IDXMAINT CREATE DIR AMA 109***

RESPONSE:

AMA FILE ESTABLISHED

GOOD AMAIDX FILE

7. Confirm that there is only one AMAIDX file on the disk.

The following command checks the disk to confirm that only one AMAIDX file exists.

DPP COMMAND: ***LSTDIR FILE AMAIDX 1 255***

RESPONSE:

00 AMAIDX 60 29 95..3490 .4096

01000000 00 0EE509 003523 000009

01 FILE LISTED

8. Delete the AMACRD files that were forced into SECNDRY status.

Delete the AMACRD files in versions 106 through 108.

DPP COMMAND: ***DELFILE AMACRD 106 108***

After the data center has confirmed the integrity of the AMA data collected during the demand poll, the AMACRD files in versions 106, 107 and 108 (which contain SECNDRY data, and the duplicated sequence numbers in version 108) must be deleted.

9. Display the closed AMACRD files in the new index.

DPP COMMAND: ***IDXMAINT DIR CLOSED AMA 200***

Displaying the closed AMACRD files in the new index confirms that only one AMA index file exists, and that it contains the correct versions numbers (109 through 112).

RESPONSE:

VS 109: 1389 BLKS, 1389 PRIMARY, AMA SEQ #608740

VS 110: 304 BLKS, 304 PRIMARY, AMA SEQ #610129

VS 111: 632 BLKS, 632 PRIMARY, AMA SEQ #610433

VS 112: 1085 BLKS, 1085 PRIMARY, AMA SEQ #611065

END OF AMAIDX FILE

This concludes the recovery procedure for sequence numbers not incrementing properly.

AMAIDX OPEN ERROR:03

The DPPAMAT uses the AMAIDX file to manage data AMACRD data files on the disk. The error message, AMAIDX OPEN ERROR:03, occurs when an AMAIDX file is missing from the disk.

1. Examine available AMACRD files in the directory by typing:

DPP COMMAND: ***LSTDIR FILE AMACRD 1 255***

2. Note sequence number in the versions that are displayed.

```

version number          version's beginning block number
    |                   |
    v                   v
00 AMACRD 60 78 95..349 ..0 .1531
01006C00 00 0EE509 063402 000076
00 AMACRD 60 79 95..349...0 .1531
01000000 00 0EE509 063478 000076
00 AMACRD 60 80 95..349...0 .1531
01000000 00 0EE509 063554 001980
00 AMACRD 60 81 95 263 0 1531
01521201 00 0EE508 000000 003451

07 FILES LISTED

```

3. Contact data center.

Verify what sequence numbers have been completely processed and will not need to be repolled, as well as what sequence number the data center needs to start normal polling at.

4. Determine which versions contain the sequence numbers obtained from the data center in step 3.
5. Create an AMAIDX containing the AMACRD versions the data center needs to poll.

DPP COMMAND: ***IDXMAINT CREATE DIR AMA vvv nnnnnn***

(where: vvv = starting version number and nnnnnn = first primary block sequence number)

6. Display contents of new index using the command:

DPP COMMAND: ***IDXMAINT DIR CLOSED AMA 255***

Observe:

VS 81: .3451 BLKS, 30 DA TO DLET, AMA SEQ :000000

VS 82:36 BLKS, 30 DA TO DLET, AMA SEQ :003451

VS 83:36 BLKS,36 TO POLL, AMA SEQ :003487

VS 84: ..1389 BLKS, ..1389 TO POLL, AMA SEQ :003523

END OF AMAIDX FILE

7. If any versions were left outside the index, these versions should remain on disk until data center can confirm the data will not need to be repolled. These versions MUST be deleted using the command in step 8.
8. Set up an appointment with customer to do this if necessary.

8. Any versions displayed in step 1 that were not included in the new AMAIDX, MUST be deleted using the following command:

DPP COMMAND: ***DELFILE AMACRD 78:80***

9. Verify there is only one index in the directory by typing:

DPP COMMAND: ***LSTDIR FILE AMAIDX 1 255***

In the event there is more than one index, verify which index is

active by typing:

DPP COMMAND: ***LSTDIR FILE AMAIDX 0***

AMAIDX file version number



00 AMAIDX 60 **81** 95..263 ...0 .1531

Note the version number and delete any indicies that are NOT needed.

10. Check validity of index using:

DPP COMMAND: ***IDXMAINT CHECK AMA***

Response should be GOOD AMAIDX FILE.

This concludes the recovery procedure for the AMAIDX OPEN ERROR:03 message.

Miscellaneous PCA Replacement Procedure

The following PCAs can be replaced using this procedure:

- CPU with DMA (NT6M62xx)
- EPROM (NT6M63xx)
- DRAM with Extended Memory (NT6M64xx)
- Quad SIO (NT6M60xx)
- Disk Interface (NT6M66xx)
- DSI (NT6M70xx)
- Bus Terminator (NT6M68xx).

Step	Description
	<p>CAUTION</p> <p> Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.</p>
	<p>WARNING</p> <p> Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.</p>
1	To remove the front panel of the DPP, loosen the four screws located on the left and right hand sides. Once removed, put the front panel in a safe place to avoid damage, bending and scratching.
2	Get the replacement circuit pack from the spares kit.
3	Remove the protective electrostatic bag and place it on a suitable, grounded surface.
4	Make sure the replacement circuit pack matches the faulty circuit packs part number and has the correct revision level. Also, make sure the suspected faulty pack is in the standby processor. Verify that any applicable firmware for the circuit packs is correct.
5	Place the processor unit with the suspected faulty pack in the standby mode, by putting the other processor in the ONLY mode. The other processor is defined as that processor that does not have the suspected faulty pack.
	<p>At the Switch and Status Panel of the DPP:</p> <p>a. Press the A/B Select Switch to match the other processor.</p> <p>b. Press the O/P Mode Select Switch to O.</p> <p>c. Turn the Mode Switch to the right 90 degrees and release.</p>
	NOTE: This will create an alarm.
6	Enter the following commands to write the value 00 in the DRAM memory address 2204 for the off-line DSI cards:
	<p>DOS S DSIMAIN MEMWRITE 1 2204 00 (cr)</p> <p>DOS S DSIMAIN MEMWRITE 2 2204 00 (cr)</p>
7	Remove power from the standby DPP chassis by operation of the +8 V dc red rocker switch on the power supply.
	(A or B, the one with the suspected fault.)
8	Remove the suspected faulty circuit pack.



CAUTION

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.



WARNING

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

1 To remove the front panel of the DPP, loosen the four screws located on the left and right hand sides. Once removed, put the front panel in a safe place to avoid damage, bending and scratching.

2 Get the replacement circuit pack from the spares kit.

3 Remove the protective electrostatic bag and place it on a suitable, grounded surface.

4 Make sure the replacement circuit pack matches the faulty circuit packs part number and has the correct revision level. Also, make sure the suspected faulty pack is in the standby processor. Verify that any applicable firmware for the circuit packs is correct.

5 Place the processor unit with the suspected faulty pack in the standby mode, by putting the **other** processor in the ONLY mode. The **other** processor is defined as that processor that does not have the suspected faulty pack.

At the Switch and Status Panel of the DPP:

- Press the A/B Select Switch to match the **other** processor.
- Press the O/P Mode Select Switch to **O**.
- Turn the Mode Switch to the right 90 degrees and release.

NOTE: This will create an alarm.

6 Enter the following commands to write the value 00 in the DRAM memory address 2204 for the off-line DSI cards:

DOS S DSIMAIN MEMWRITE 1 2204 00 (cr)
DOS S DSIMAIN MEMWRITE 2 2204 00 (cr)

7 Remove power from the standby DPP chassis by operation of the +8 V dc red rocker switch on the power supply.

(A or B, the one with the suspected fault.)

8 Remove the suspected faulty circuit pack.

Step Description

- 9 The replacement pack option settings must be set to match the pack being removed, if present, before installation.

**CAUTION**

Failure to set-up options correctly may cause AMA loss.

- 10 Insert the spare circuit pack in the vacated card slot, making sure it is fully seated.
- 11 Put faulty pack in the empty electrostatic bag.
- 12 Apply power to the DPP chassis by resetting the rocker switch in step 5 above.

Wait for start-up activity to end and the message, **Software Loaded** or **S/W Loaded**, to be displayed. For TURBO DPP systems, wait for the **CP S/W Loaded** message to be displayed.

- 13 To clear any alarms on the standby processor, enter the following at the maintenance terminal:

RSERR STDBY 00 (cr)

Alarms will clear on the standby processor if there are no faults.

- 14 To place the active processor unit in PRIME mode, perform the following steps at the Switch and Status Panel of the DPP:
- Press the A/B Select Switch to match the active processor.
 - Press the O/P Mode Select Switch to **P**.
 - Turn the Mode Switch 90 degrees to the right and release.

- 15 To clear all alarms on the active processor, enter the following at the maintenance terminal:

RSERR ACT 00(cr)

Alarms will clear if there are no faults.

- 16 Enter the following command at the maintenance terminal to Switch Processors to make the standby active:

SWACT (cr)

The old standby is now the active processor.

**WARNING**

This should not be done at a high traffic period, it may cause a loss of AMA.

- 17 Verify replacement circuit pack has corrected original error.
- 18 When all maintenance activities are complete, be sure to replace the front panel of the DPP. Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.

The procedure is complete.

Disk Replacement Procedure

Removing the Faulty Disk Drive

Step	Description
------	-------------

NOTE: The following procedure is for replacing the A disk drive; use the same procedure for replacing the B disk drive by transposing references to A and B disks.



CAUTION

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.



WARNING

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

- 1 To remove the front panel of the DPP, loosen the four screws located on the left and right hand sides. Once removed, put the front panel in a safe place to avoid damage, bending and scratching.
- 2 For the side that is operating in an ONLY disk mode, make sure that the other processor is active. The **other** processor is defined as that processor that does NOT have the failing disk drive in its chassis.

Determine the current disk mode:

Enter: (at the terminal)

DISK MODE (cr)

Responses: **AO** = A ONLY DISK MODE

BO = B ONLY DISK MODE

AP = A PRIME DISK MODE

BP = B PRIME DISK MODE

i.e., If the disk mode is AP or BP, and the disk in the A chassis is the suspected bad drive, change the disk mode to B ONLY:

Enter: (at the terminal)

DISK MODE BO (cr)

- 3 Disconnect disk A power by removing the connector plug P8 from the power supply on the A chassis. Pinch the release clips on P8 and pull it down gently.



CAUTION

Wait at least 30 seconds before proceeding.

- 4 Remove the two screws from the disk drive handle mount.
- 5 Grasp the disk drive in the front at the bottom, by the handle, slightly lift and pull straight forward until the J1 ribbon cable connector can be viewed. Keep one hand under the disk drive to maintain support.

Step Description

NOTE: For 72 and 140 MB disk drives, the **J1** connector is on the **top** of the disk drive assembly.

For 380 and 760 MB and 1 and 2 GB disk drives, the **J1** connector is on the **rear** of the disk drive assembly.

6 Disconnect the ribbon cable from J1; use the cables pull tab. Note the direction of the brown stripe on the cable (PIN 1).

7 Remove the disk from the chassis. Place the disk on an anti-static surface. Fill out the disk drive fault analysis form and attach it to the disk drive

END OF THE PROCEDURE FOR REMOVING A FAULTY DISK DRIVE.

Installing the Replacement Disk Drive



IMPORTANT WARNING:

If changing the B disk in a TURBO DPP or a 380 Mbyte Non-Turbo DPP system, set the options correctly on the disk drive. Incorrect option settings causes the disk to fail.

B Disk Drive Options				A Disk Drive Options
Disk	Vendor	Pins	Connector	
2 GB	Seagate	5-6 (IN)	J5	4-6 (IN) or OUT
1 GB	Seagate	5-6 (IN)	J5	4-6 (IN) or OUT
760 MB	Sequel (Maxtor)	9-10 (IN)	J2	J2 (OUT)
760 MB	Seagate (Imprimis)	5-6 (IN)	J4	OUT
760 MB	Micropolis	IDO (IN)	J2	OUT
380 MB	Sequel (Maxtor)	JP35 (IN)	N/A	JP35 (OUT)

Step Description

1 Keeping the disk drive level, slide it into position far enough to reconnect the ribbon cable at connector J1. Connect the ribbon cable to J1.



WARNING

The disk drive cannot operate if this cable is reversed. Reversal may also cause an AMA outage.

Step Description

IMPORTANT NOTES:

For 72 and 140 MB disk drives, the **P1** ribbon cables Brown stripe (PIN 1) must be toward the **RIGHT**, as viewed from the front.

For 380 and 760 MB disk drives, the **P1** ribbon cables Brown stripe (PIN 1) must be toward the **LEFT**, as viewed from the front.

For 1 and 2 GB disk drives, the **P1** ribbon cable is keyed to prevent improper installation.

2 Continue sliding the disk drive into its mounting position, until it begins a downward motion. Allow the disk drive to lower itself into place and continue pushing inward until it is fully seated.

3 Replace the two screws for the disk drive handle mount.

4 Reconnect the disk power cable by inserting the plug **P8** into connector **J8**.

5 Return the processor to PRIME mode. On the status panel push the **P** rocker switch down and turn the MODE SWITCH key. The ONL lamp should go out.

6 Select the next step using the following criteria:

- a. If replacing a 380 MB NON-TURBO disk, a 380 MB, 760 MB, 1 GB, or 2 GB TURBO disk, go to **step 7**.
 - b. If replacing a 72 or 140 MB NON-TURBO disk, go to **step 8**.
-

7 Make the disk system redundant by changing the ONLY disk mode to PRIME disk mode. This step is used for 380 MB NON-TURBO and 380 MB, 760 MB 1 GB, and 2 GB TURBO disk drives.

Enter (at the terminal):

DISK MODE xP (cr)

where **x** = currently active disk

i.e., if DISK MODE is currently AO then type AP
if DISK MODE is currently BO then type BP.

Proper responses:

BACKUP STARTED

BACKUP COMPLETE

DISK MODE AP (or) DISK MODE BP

This may take minutes to hours depending on the disk size and usage. Use the **DISK USAGE** command to check disk usage.

- a. If replacing a 380 MB NON-TURBO disk and the response is DISK NOT INITIALIZED, go to **step 12**.
- b. If replacing a 380 MB, 760 MB, 1 GB, or 2 GB TURBO disk, and the response is DISK NOT FORMATTED, go to **step 13**.

Otherwise, go to **step 11**.

8 Reinitialize the new disk. This is for 72 and 140 MB NON-TURBO disk drives only.

Step Description

**CAUTION**

These disk commands may cause a loss of data. Make sure the operational disk drive is in an ONLY mode before entering the following commands.

Enter: (at the terminal)

DISK INIT 1x (cr)

where: **x = A** for newly installed disk A

= **B** for newly installed disk B

Proper response:

INIT COMPLETE

If the response is NO DISK PARAMETERS, go to **step 14**.

- 9 Enter in the defective track(s) from the disk manufacturer's defect (bad track) list.

Enter: (at the terminal)

DISK DEFMAP x (cr)

where: **x = A** for newly installed disk A

= **B** for newly installed disk B

System response is a prompt:

ENTER HEAD AND CYLINDER # FROM DEFECT MAP.

ENTER Q TO EXIT

HEAD>

Obtain the disk manufacturer's bad track map. Enter the HEAD No. **xx** (1 to 2 digits), from the disk manufacturer's bad track map.

System response:

CYLINDER>

Enter the CYLINDER No. **xxx** (1 to 3 digits), from the disk manufacturer's bad track map.

System response:

xx BAD TRACKS

HEAD>

(**xx** = number of bad tracks masked out.)

Continue entering HEAD and CYLINDER numbers until the end of the disk manufacturer's bad track map is reached. When done entering the bad tracks, enter **Q** at the **HEAD>** prompt, to exit the DEFMAP utility.

System response:

DEFMAP DONE

Step	Description
10	<p>Make the disk system redundant; change the ONLY disk mode to a PRIME disk mode.</p> <p>Enter (at the terminal): DISK MODE xP (cr)</p> <p>where x = currently active disk (A or B)</p> <p>i.e., if DISK MODE is currently AO then type AP if DISK MODE is currently BO then type BP.</p> <p>Proper response: DISK MODE xP (where x=A or B)</p> <p>This may take minutes to hours depending on the disk size and the usage. Use the DISK USAGE command to determine disk usage.</p> <p>If the disk system does not achieve redundancy, contact the next level of support.</p> <p>Otherwise, continue with step 11.</p>
11	<p>When all maintenance activities are complete, be sure to replace the front panel of the DPP.</p> <p>Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.</p> <p>The Disk Drive Replacement Procedure is now complete.</p>
12	<p>380 MB NON-TURBO Disk Reinitialization</p> <p>This command is to be used when the DPPs response to the DISK MODE xx command is DISK NOT INITIALIZED.</p> <p> CAUTION These disk commands may cause a loss of data. Make sure the operational disk drive is in an ONLY mode before entering the following commands.</p> <p>Enter: (at the terminal) DISK INIT 1x (cr)</p> <p>where: x = A for disk drive A = B for disk drive B</p> <p>Proper response: INIT COMPLETE</p> <p>If the response is INIT COMPLETE, go to step 7.</p> <p>If the response is NO DISK PARAMETERS, go to step 14.</p> <p>If the DISK INIT FAILS, switch processors and retry the command.</p> <p>If the DISK INIT fails on the other processor, call the next level of support.</p>

Step Description

13 380 MB, 760 MB, 1 GB, and 2 GB TURBO Disk Format

This command is to be used when the DPP's response to the **DISK MODE xx** command is DISK NOT FORMATTED.

**CAUTION**

These disk commands may cause a loss of data. Make sure the operational disk drive is in an ONLY mode before entering the following commands.

Enter: (at the terminal)

DISK FORMAT x (cr)

where: **x = A** for newly replaced disk A
 = B for newly replaced disk B

Proper response:

DISK FORMAT STARTED

The format should take about 15-20 minutes.

Proper response:

FORMAT DONE

If the response is FORMAT DONE, go to **step 7**.

If DISK FORMAT FAILS, switch processors and retry the command.

If the DISK FORMAT fails on the other processor, call the next level of support.

14 DISK PARAMETERS FOR 72 to 380 MB NON-TURBO DISK DRIVES.

Enter: (at the terminal)

DISK PARAM (cr)

Enter the number from the displayed list that describes the type of the replacement disk drive.

If replacing a 72 or 140 MB NON-TURBO disk drive, go to **step 8**.

If replacing a 380 MB NON-TURBO disk drive, go to **step 12**.

Disk Crossover PCA Replacement Procedure (NT6M72xx or NT6M93xx)

Step Description

**CAUTION**

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.

**WARNING**

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

- 1 Make sure no polling is occurring. Wait for a low traffic period, if possible.
-

- 2 Locate the failing Disk Crossover circuit pack and change the disk mode to the **other** disk **ONLY** mode, if necessary. The **other** disk is the one not in the same chassis as the suspected Disk Crossover circuit pack.

Enter: (at the terminal)

DISK MODE xx (cr)

where: xx = disk mode = **AO** = A ONLY
 = **BO** = B ONLY

Proper response:

DISK MODE: AO

or

DISK MODE: BO

- 3 Place the DPP into an **ONLY** processor mode. The processor mode should be the same as the **DISK** mode.

At the Switch and Status Panel of the DPP:

- a. Press the A/B Select Switch to match the active disk drive.
 - b. Press the O/P Mode Select Switch to **O**.
 - c. Turn the Mode Switch 90 degrees to the right and release.
-

- 4 Loosen the slotted screws which fasten the outer edges of the appropriate rear panel assembly to the cabinet.
-

- 5 Pull the rear panel away from the cabinet. Remove the front panel of the chassis to improve cooling, if necessary. Put the two panels in a safe place to prevent bending and scratching.
-

- 6 Loosen the two screws at the top of the hinged card panel and the screw at the bottom of the hinged card panel. Let it swing slowly down from the top until it rests.

NOTE: If the circuit pack at A15 is being replaced, use a Styrofoam block or another insulating material, about 1" x 1" x .5", to insulate the pins of the 16-pin cable on the P/A Comm circuit pack to prevent accidental shorting against the chassis.

Step Description

- 7 Remove power cable (J4), then any cables and screws connected to the suspected circuit pack.

NOTE: Observe the cable markings (identification) or attach labels to the cables for correct positioning for installation of replacement PCA.

Gently pull the suspect assembly loose from its mounting position.

- 8 Verify (J5) jumper option is the same on the replacement PCA as the PCA that was removed.

**WARNING**

Incorrect positioning of jumper may cause loss of AMA.

- 9 Mount the replacement assembly in the vacated position.

NOTE: When replacing the screws, align carefully before tightening to avoid stripping. Tighten the screws, alternating until all are equally tight. Do not “cinch down” any one screw until all are properly aligned; no binding or force needed to turn.

- 10 Reattach any cables removed in step 6 in reverse order.

NOTE: Verify the cable markings (identification) or attach labels to the cables for correct positioning.

**WARNING**

Incorrect positioning of jumper may cause loss of AMA.

- 11 Verify the repair by switching disk modes back to PRIME.

Enter: (at the terminal)

DISK MODE xx (cr)

where: xx = disk mode = **AP** = A PRIME (if mode is A only)
= **BP** = B PRIME (if mode is B only)

The DPP will begin a disk copy this may take several hours, depending on how much data is on the disk and the capacity of the disk.

Proper response:

DISK MODE: AP (from disk mode AO)

or

DISK MODE: BP (from disk mode BO)

- 12 Remove the insulating material, if used. Route all wires and cables to avoid pinching or crimping when the rear panel is reinstalled.

- 13 Lift the hinged circuit assembly gate back to its vertical position and tighten the two screws loosened in step 5.

Step	Description
14	<p>Replace the rear panel. Reinstall the slotted pan head screws previously removed in step 3.</p> <p>NOTE: Align carefully before tightening to avoid stripping. Tighten the screws, alternating until all are equally tight. Do not “cinch down” any one screw until all are properly aligned; no binding or force needed to turn.</p>
15	<p>Clear any alarms on the DPP.</p> <p>At the maintenance terminal, enter:</p> <p>RSERR ACT 00 (cr) RSERR STDBY 00 (cr)</p> <p>Alarms will stay clear on the DPP if there are no faults.</p>
16	<p>Place the active processor unit in PRIME mode.</p> <p>At the Switch and Status Panel of the DPP:</p> <ol style="list-style-type: none">Press the A/B Select Switch to match the active processor.Press the O/P Mode Select Switch to P.Turn the Mode Switch 90 degrees to the right and release.
17	<p>When all maintenance activities are complete, be sure to replace the front panel of the DPP if removed.</p> <p>Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.</p> <p>At this time the procedure is complete.</p>

Error Control II PCA Replacement Procedure (NT6M65xx)

Step	Description
	<p> CAUTION Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.</p>
	<p> WARNING Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.</p>
1	To remove the front panel of the DPP, loosen the four screws located on the left and right hand sides. Once removed, put the front panel in a safe place to avoid damage; bending and scratching.
2	Get the replacement circuit pack from the spares kit.
3	Remove the protective electrostatic bag and place it on a suitable, grounded surface.
4	Make sure the replacement circuit pack matches the faulty circuit packs part number and has the correct revision level. Also, make sure the suspected faulty pack is in the standby processor. Verify that any applicable firmware for the circuit packs is correct.
5	<p>Place the B processor unit an ONLY mode.</p> <p>At the Switch and Status Panel of the DPP:</p> <ol style="list-style-type: none"> Press the A/B Select Switch to B. Press the O/P Mode Select Switch O. Turn the Mode Switch to the right 90 degrees and release. <p>NOTE: This will create an alarm. ONLY MODE NON-REDUNDANT</p>
6	<p>Enter the following commands to write the value 00 in the DRAM memory address 2204 for the off-line DSI cards:</p> <p>DOS S DSIMAIN T MEMWRITE 1 2204 00 (cr) DOS S DSIMAIN T MEMWRITE 2 2204 00 (cr)</p>
7	Remove power from the standby chassis (A processor) by operation of the +8 V dc red rocker switch on the power supply.
8	On the Error Control II Jumper circuit pack in the B chassis (Slot 5), pull the toggle switch outward and lift the switch to the up position.
	<p>NOTE: The CRIT will be the only lamp lit on the status panel.</p> <p>This Switch serves a dual function. First, it removes the B chassis power-feed from the Error Control II circuit pack in the A chassis. Second, it locks the error control functions to the B chassis.</p>
9	Remove the Error Control II circuit pack in the A chassis (slot 5).
10	Insert the spare Error Control II circuit pack in the A chassis (slot 5), making sure it is fully seated.

Step	Description
11	Put faulty pack in the empty electrostatic bag.
12	<p>Apply power to standby chassis (A processor) by operation of the +8 V dc red rocker switch on the power supply.</p> <p>Wait for start-up activity to end and the message, Software Loaded or S/W Loaded to be displayed. For TURBO DPP systems, wait for the CP S/W Loaded message to be displayed.</p>
13	<p>Return the toggle switch on the Error Control II Jumper circuit pack in B5 to the down (LED off) position.</p> <p>This unlocks the Error Control functions. The B processor may print out this message: EC-IC-ALM (this is normal)</p>
14	<p>To clear any alarms on the standby processor.</p> <p>At the maintenance terminal, enter:</p> <p>RSERR STDBY 00 (cr)</p> <p>Alarms will stay clear on the standby processor if there are no faults.</p>
15	<p>To clear any alarms on the active processor.</p> <p>At the maintenance terminal, enter:</p> <p>RSERR ACT 00 (cr)</p> <p>Alarms will clear if there are no faults.</p>
16	<p>Place the active processor unit in PRIME mode.</p> <p>At the Switch and Status Panel of the DPP:</p> <ol style="list-style-type: none">Press the A/B Select Switch to B.Make the O/P Mode Select Switch P.Turn the Mode Switch to the right 90 degrees and release.
17	<p>When all maintenance activities are complete, be sure to replace the front panel of the DPP.</p> <p>Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.</p> <p>The procedure is complete.</p>

Error Control II Jumper PCA Replacement Procedure (NTM609xx)

Step Description



CAUTION

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.



WARNING

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

1 To remove the front panel of the DPP, loosen the four screws located on the left and right hand sides. Once removed, put the front panel in a safe place to avoid damage; bending and scratching.

2 Get the replacement circuit pack from the spares kit.

3 Remove the protective electrostatic bag and place it on a suitable, grounded surface.

4 Make sure the replacement circuit pack matches the faulty circuit packs part number and has the correct revision level. Also, make sure the suspected faulty pack is in the standby processor. Verify that any applicable firmware for the circuit packs is correct.

5 Place the A processor unit an ONLY mode.

At the Switch and Status Panel of the DPP:

- a. Press the A/B Select Switch to **A**.
- b. Press the O/P Mode Select Switch **O**.
- c. Turn the Mode Switch to the right 90 degrees and release.

NOTE: This will create an alarm.

6 Enter the following commands to write the value 00 in the DRAM memory address 2204 for the off-line DSI cards:

```
DOS S DSIMAIN T MEMWRITE 1 2204 00(cr)
DOS S DSIMAIN T MEMWRITE 2 2204 00(cr)
```

7 Remove power from the standby chassis (B processor) by operation of the +8 V dc red rocker switch on the power supply.

8 Remove the Error Control II Jumper circuit pack in the B chassis (Slot 5).

9 Insert the spare Error Control II Jumper circuit pack in the B chassis (Slot 5), making sure it is fully seated.

10 Put faulty pack in the empty electrostatic bag.

11 Apply power to standby chassis (B processor) by operation of the +8 V dc red rocker switch on the power supply.

Wait for start-up activity to end and the message, **Software Loaded** or **S/W Loaded** to be displayed. For TURBO DPP systems, wait for the **CP S/W Loaded** message to be displayed.

Step Description

12 To clear any alarms on the standby processor.

At the maintenance terminal, enter:

RSERR STDBY 00 (cr)

Alarms will stay clear on the standby processor if there are no faults.

13 Place the active processor unit in PRIME mode.

At the Switch and Status Panel of the DPP:

- a. Press the A/B Select Switch to **A**.
 - b. Make the O/P Mode Select Switch **P**.
 - c. Turn the Mode Switch to the right 90 degrees and release.
-

14 To clear any alarms on the active processor.

At the maintenance terminal, enter:

RSERR ACT 00 (cr)

Alarms will clear if there are no faults.

15 When all maintenance activities are complete, be sure to replace the front panel of the DPP.

Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.

The procedure is complete.

Power and Alarm Communications PCA Replacement Procedure (NT6M84xx)

Step	Description
	 <p>CAUTION Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.</p>
	 <p>WARNING Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.</p>
1	Make sure no polling is occurring. Wait for a low traffic period, if possible.
2	Remove the slotted screws that fasten the outer edges of the rear panel assembly to the cabinet.
3	Remove the front panel of the A chassis. Put the two panels in a safe place to prevent bending and scratching.
4	Remove the power from the circuit pack first by disconnecting (P11) located in the upper right quadrant. Remove the other cables.
	<p>NOTE: Verify the cable markings (identification) or attach labels to the cables when removing them to facilitate replacement in the correct positions.</p> <p>Alarms may also activate and the DPP status panel lights will all be off. This is normal. Silence the alarm at the switching system and go to step 5.</p>
5	Remove the screws that fasten the P/A Comm circuit pack. Gently remove the circuit pack from its mounting position.
6	Make sure any circuit pack option setting and jumpers/straps are set the same as the ones on the circuit pack to be replaced.
	<p>NOTE: Improper performance can be caused by incorrect settings, and produce fault-like symptoms in the DPP.</p>
7	Mount the replacement assembly in the vacated position.
	<p>NOTE: When replacing the screws, align carefully before tightening to avoid stripping. Tighten the screws, alternating until all are equally tight. Do not “cinch down” any one screw until all are properly aligned; no binding or force needed to turn.</p>
8	Reattach any cables removed in step 4 in reverse order.
	<p>NOTE: Verify the cable markings (identification) or attach labels to the cables for correct positioning.</p>
	 <p>WARNING Incorrect positioning of cables will cause alarms and communication problems.</p>
9	Properly reroute all cables. Make sure all wires and cables are routed so they are not pinched or in contact with the arc of the fan blades.

Step Description

10 To clear any alarms on the active processor.

At the maintenance terminal, enter:

RSERR ACT 00 (cr)

Alarms will clear if there are no faults.

11 To clear any alarms on the standby processor.

At the maintenance terminal, enter:

RSERR 00 STDBY (cr)

Alarms will clear on the standby processor if there are no faults.

12 If DPP status panel shows processor is in **ONL** mode go to step 13, otherwise go to step 14.

13 Place the active processor unit in **PRIME** mode.

At the Switch and Status Panel of the DPP:

- a. Press the A/B Select Switch to match the active processor.
 - b. Press the O/P Mode Select Switch to **P**.
 - c. Turn the Mode Switch 90 degrees to the right and release.
-

14 Verify replacement circuit pack has corrected original error.

15 Test the polling function on the NON-TURBO DPP only.

16 When all maintenance activities are complete, be sure to replace the rear panel in its fully seated position and reinstall the slotted pan head screws previously removed.

Also replace the front panel of the DPP if removed. Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.

The procedure is complete.

56K Crossover PCA Replacement Procedure (NT6M48xx)

Step	Description
	<p> CAUTION Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.</p>
	<p> WARNING Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.</p>
1	Make sure no polling is occurring. Wait for a low traffic period, if possible, to execute the steps in this procedure.
2	Remove the slotted screws that fasten the outer edges of the B rear panel assembly to the cabinet.
3	Remove the front panel of the A chassis. Put the two panels in a safe place to prevent bending and scratching.
4	Remove the power from the 56K Crossover circuit pack first by disconnecting plug P1 . Then remove the other cables.
	<p>NOTE: Verify the cable markings (identification) or attach labels to the cables when removing them to facilitate replacement in the correct positions.</p> <p>Alarms may also activate and the DPP status panel lights will all be OFF. This is normal. Silence the alarm at the switching system and go to step 5.</p>
5	Remove the screws that fasten the 56K Crossover circuit pack. Gently remove the circuit pack from its mounting position.
6	Mount the replacement assembly in the vacated position.
	<p>NOTE: When replacing the screws, align carefully before tightening to avoid stripping. Tighten the screws, alternating until all are equally tight. Do not “cinch down” any one screw until all are properly aligned; no binding or force needed to turn.</p>
7	Reattach any cables removed in step 4 in reverse order.
	<p>NOTE: Verify the cable markings (identification) or attach labels to the cables for correct positioning.</p>
	<p> WARNING Incorrect positioning of cables will cause alarms and polling problems.</p>
8	Properly reroute all cables. Make sure all wires and cables are routed so they are not pinched or in contact with the arc of the fan blades.
9	To clear any alarms on the active processor.
	<p>At the maintenance terminal, enter:</p> <p>RSERR ACT 00 (cr)</p> <p>Alarms will clear if there are no faults.</p>



CAUTION

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.



WARNING

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

1 Make sure no polling is occurring. Wait for a low traffic period, if possible, to execute the steps in this procedure.

2 Remove the slotted screws that fasten the outer edges of the B rear panel assembly to the cabinet.

3 Remove the front panel of the A chassis. Put the two panels in a safe place to prevent bending and scratching.

4 Remove the power from the 56K Crossover circuit pack first by disconnecting plug **P1**. Then remove the other cables.

NOTE: Verify the cable markings (identification) or attach labels to the cables when removing them to facilitate replacement in the correct positions.

Alarms may also activate and the DPP status panel lights will all be **OFF**. This is normal. Silence the alarm at the switching system and go to step 5.

5 Remove the screws that fasten the 56K Crossover circuit pack. Gently remove the circuit pack from its mounting position.

6 Mount the replacement assembly in the vacated position.

NOTE: When replacing the screws, align carefully before tightening to avoid stripping. Tighten the screws, alternating until all are equally tight. Do not “cinch down” any one screw until all are properly aligned; no binding or force needed to turn.

7 Reattach any cables removed in step 4 in reverse order.

NOTE: Verify the cable markings (identification) or attach labels to the cables for correct positioning.



WARNING

Incorrect positioning of cables will cause alarms and polling problems.

8 Properly reroute all cables. Make sure all wires and cables are routed so they are not pinched or in contact with the arc of the fan blades.

9 To clear any alarms on the active processor.

At the maintenance terminal, enter:

RSERR ACT 00 (cr)

Alarms will clear if there are no faults.

Step Description

10 To clear any alarms on the standby processor.

At the maintenance terminal, enter:

RSERR STDBY 00 (cr)

Alarms will clear on the standby processor if there are no faults.

11 After RSERR, alarms may reappear. Perform diagnostics on both the standby and active processors.

Enter: (at the terminal)

TEST ACT (cr)

CP TEST ACT (cr)

TEST STDBY (cr)

CP TEST STDBY (cr)

NOTE: The tests will take several minutes to execute, and the **program test** is the last test to run.

If all tests do not pass, refer to the DPP maintenance manual and/or contact the next level of support.

12 Display all active alarms.

Enter: (at the terminal)

ERRMAP ALARMS (cr)

If active alarms are present, troubleshoot using the DPP maintenance manual and/or contact the next level of support.

13 Verify replacement circuit pack has corrected original error.

14 Test the polling function.

15 When all maintenance activities are complete, be sure to replace the rear panel in its fully seated position and reinstall the slotted pan head screws previously removed during step 2.

Replace the front panel of the DPP if removed. Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.

The procedure is complete.

Power Supply Replacement Procedure (NT6M71xx)

Step	Description
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**CAUTION**

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.

**WARNING**

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

- | | |
|---|------------------------------------|
| 1 | Remove the front panel of the DPP. |
|---|------------------------------------|

If you are changing the A power supply remove only the A panel.

If changing the B power supply, remove both the A and B front panels, this allows access to the Switch and Status Panel.

Loosen the four captive screws on the left and right sides of the front panel; carefully remove the front panel. Put it in a safe place to avoid damage.

- | | |
|---|---------------------------------------|
| 2 | Put the processors into an Only mode. |
|---|---------------------------------------|

At the Switch and Status Panel of the DPP:

- a. Press the A/B Select Switch to:

A - If you are changing out the B power supply

or

B - If you are changing out the A power supply

- b. Press the O/P Mode Select Switch to **O**.

- c. Turn the Mode Switch 90 degrees to the right and release.

- | | |
|---|---------------------------------|
| 3 | Put the disk into an Only mode. |
|---|---------------------------------|

Enter: (at the terminal)

DISK MODE xx (cr)

where: **xx** = disk mode = **AO** = A ONLY (if you are changing out the B power supply).

OR

= **BO** = B ONLY (if you are changing out the A power supply).

Proper response:

DISK MODE: AO

or

DISK MODE: BO

- | | |
|---|--|
| 4 | Enter the following commands to write the value 00 in the DRAM memory address 2204 for the off-line DSI cards: |
|---|--|

DOS S DSIMAIN T MEMWRITE 1 2204 00 (cr)

DOS S DSIMAIN T MEMWRITE 2 2204 00 (cr)

Step Description

5 Power down the faulty power supply.

Remove power from the standby chassis by operation of the +8 V dc red rocker switch on the power supply.

6 Remove the -48 V dc source for the standby processor chassis at the main fuse panel; disk drive in this chassis should now be disabled.

**WARNING**

Removal of the incorrect -48 V dc source can cause loss of AMA.

NOTE: This step will cause an alarm.

7 Remove the three connector plugs from the front of the power supply. Squeeze the side release clips and pull down gently; fold the cables back out of the way.

8 Loosen the slotted-head captive screw at the bottom of the power supply. Gently pull the power supply out of the chassis.

Make sure the three connectors (and cables) are out of the way during removal of the power supply unit.

9 Install the replacement power supply. Make sure all cables and connectors are out of the way of the insertion path. Make sure the proper fuses are installed in the replacement power supply.

10 Gently slide the power supply into position until it is fully seated. Tighten the slotted captive screw until snugly in place; do not bear down.

If any resistance, remove the power supply and check for obstructions. Remove the obstructions and reinsert the power supply.

11 Reconnect the three connectors removed in step 5 during the removal phase.

Connect the Power Supply Connectors as follows:

- a. J8 to P8
- b. J9 to P9
- c. J10 to P10

12 Restore the -48 V dc power source at the main fuse panel.

13 Apply power to standby chassis by operation of the +8 V dc red rocker switch on the power supply.

Wait for start-up activity to end and the message, **Software Loaded** or **S/W Loaded** to be displayed. For TURBO DPP systems, wait for the **CP S/W Loaded** message to be displayed.

14 Place the active processor unit in PRIME mode.

At the Switch and Status Panel of the DPP:

- a. Depress the **P** side of the O/P Mode Select Switch.
- b. Turn the Mode Switch to the right 90 degrees and release.

Step	Description
15	<p>Make the disk system redundant.</p> <p>At the maintenance terminal, enter:</p> <p>DISK MODE xx (cr) where: xx = disk mode = AP = A PRIME (if mode is A only) = BP = B PRIME (if mode is B only)</p> <p>The DPP will begin a disk copy, this may take several hours, depending on how much data is stored and the capacity of the disks.</p> <p>Proper response: DISK MODE: AP (from disk mode AO) or DISK MODE: BP (from disk mode BO)</p>
16	<p>To clear any alarms on the standby processor.</p> <p>At the maintenance terminal, enter:</p> <p>RSERR STDBY 00 (cr)</p> <p>Alarms will clear on the standby processor if there are no faults</p>
17	<p>To clear any alarms on the active processor.</p> <p>At the maintenance terminal, enter:</p> <p>RSERR ACT 00 (cr)</p> <p>Alarms will clear if there are no faults.</p>
18	<p>When all maintenance activities are complete, be sure to replace the front panel of the DPP, if removed. Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.</p> <p>The procedure is complete.</p>

56K Interface PCA Replacement Procedure (NT6M94xx)

Step	Description
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**CAUTION**

Since all DPP circuit packs are static sensitive, be careful when handling them. Wear a wrist grounding strap when working with the DPP.

**WARNING**

Since the DPP is powered up during this procedure, observe all safety procedures for operations on live equipment.

- | | |
|---|--|
| 1 | To remove the front panel of the DPP, loosen the four screws located on the left and right hand sides. Once removed, put the front panel in a safe place to avoid damage; bending and scratching. |
| 2 | Get the replacement 56K Interface circuit pack from the spares kit. |
| 3 | Remove the protective electrostatic bag and place it on a suitable, grounded surface. |
| 4 | Make sure the replacement circuit pack matches the faulty circuit packs part number and has the correct revision level. Also, make sure the suspected faulty pack is in the standby processor. Verify that any applicable firmware for the circuit packs is correct. |
| 5 | Place the processor unit with the suspected faulty pack in the standby mode, by putting the other processor in the ONLY mode. The other processor is defined as that processor that does not have the suspected faulty pack. |

At the Switch and Status Panel of the DPP:

- a. Press the A/B Select Switch to match the **other** processor.
- b. Press the O/P Mode Select Switch to **O**.
- c. Turn the Mode Switch to the right 90 degrees and release.

NOTE: This will create an alarm:

ONLY MODE NON-REDUNDANT

- | | |
|---|--|
| 6 | Enter the following commands to write the value 00 in the DRAM memory address 2204 for the off-line DSI cards:

DOS S DSIMAIN T MEMWRITE 1 2204 00 (cr)
DOS S DSIMAIN T MEMWRITE 2 2204 00 (cr) |
| 7 | Remove power from the standby chassis (A or B ; the one with the suspected fault) by operation of the +8 V dc red rocker switch on the power supply. |
| 8 | Remove the suspected faulty circuit pack. |
| 9 | Before installing the replacement PCA, any option jumper settings must be set to match the PCA being removed. |

**CAUTION**

Failure to set-up options correctly may cause an AMA loss.

Step	Description
10	Insert the spare circuit pack in the vacated card slot, making sure it is fully seated.
11	Put faulty pack in the empty electrostatic bag.
12	Apply power to the DPP chassis by operation of the +8 V dc red rocker switch, reversing step 6. Wait for start-up activity to end and the message, Software Loaded or S/W Loaded to be displayed. For TURBO DPP systems, wait for the CP S/W Loaded message to be displayed.
13	To clear any alarms on the standby processor. At the maintenance terminal, enter: RSERR STDBY 00 (cr) Alarms will clear on the standby processor if there are no faults.
14	After RSERR, alarms may reappear. The command, CP TEST, forces diagnostics that confirm whether the faults were corrected. Enter: (at the terminal) CP TEST STDBY (cr) NOTE: The tests will take several minutes to execute, and the program test is the last test to run. If all tests do not pass, contact the next level of support.
15	Place the active processor unit in PRIME mode. At the Switch and Status Panel of the DPP: a. Verify that the A/B Select Switch is depressed to match the active processor. b. Make the O/P Mode Select Switch P . c. Turn the Mode Switch to the right 90 degrees and release.
16	To clear any alarms on the active processor. At the maintenance terminal, enter: RSERR ACT 00 (cr) Alarms will clear if there are no faults.
17	If alarm status shows active alarms, troubleshoot all alarm conditions. Enter: (at the terminal) TEST ACT (cr) TEST STDBY (cr) NOTE: The tests will take several minutes to execute, and the program test is the last test to run.

Step	Description
18	<p>Switch Processors to make the standby processor active.</p> <p>Enter: (at the terminal) SWACT (cr)</p> <p>The standby processor becomes the active processor.</p> <p> WARNING This should not be done during a high traffic period; it may cause loss of AMA.</p>
19	<p>Test the Active processor.</p> <p>Enter: (at the terminal) TEST ACT (cr) CP TEST ACT (cr) TEST STDBY (cr) CP TEST STDBY (cr)</p> <p>NOTE: The tests will take several minutes to execute, and the program test is the last test to run.</p>
20	<p>Verify that the replacement circuit pack has corrected the original error.</p>
21	<p>When all maintenance activities are complete, be sure to replace the front panel of the DPP.</p> <p>Carefully line up the four captive screws of the front panel with their mounting holes. Tighten the captive screws; but do not bear down.</p> <p>The procedure is complete.</p>

PCA Switch and Strap Settings

Table 1: NT6M62xx CPU PCA

Switch #	Position
S2	1 OFF 2 OFF 3 ON 4 OFF
Jumpers	Pin
J3	1-2

NOTE: Pin 1 is designated by a white dot on the PCA. Factory default settings.

Table 2: NT6M63xx EPROM PCA (MEM1)

Jumper	Pin		Jumper	Pin
P2	OUT		P14	2-3
P3	1-2		P15	1-2
P4	2-3		P16	2-3
P5	1-2		P17	1-2
P6	1-2		P18	2-3
P7	2-3		P19	1-2
P8	1-2		P20	2-3
P9	1-2		P21	OUT
P10	2-3		P22	IN
P11	1-2		P23	IN
P12	2-3		P24	2-3
P13	1-2			

NOTE: Pin 1 is designated by a white dot on the PCA. Factory default settings.

**Table 3: NT6M60BA Quad SIO (Slot 6)
Polling Modem set to EXTERNAL Timing**

Port Description	Jumper	Pin	Baud Selection
POLLING Link BX.25/SYNC (NON-TURBO)	J2 J3 J10	1-2 2-3 IN	Baud 1 (SW2)
MMI Link ASYNC	J4 J5 J11	1-2 1-2 IN	Baud 2 (SW3)
MMI Link ASYNC	J6 J7 J12	1-2 1-2 IN	Baud 3 (SW4)
Local TTY ASYNC	J8 J9 J13	1-2 1-2 IN	Baud 4 (SW5)

**Table 4: NT6M60BA Quad SIO (Slot 6)
Polling modem set to INTERNAL timing**

Port Description	Jumper	Pin	Baud Selection
POLLING Link BX.25/SYNC (NON-TURBO)	J2 J3 J10	2-3 2-3 OUT	Baud 1 (SW2)
MMI Link ASYNC	J4 J5 J11	1-2 1-2 IN	Baud 2 (SW3)
MMI Link ASYNC	J6 J7 J12	1-2 1-2 IN	Baud 3 (SW4)
Local TTY ASYNC	J8 J9 J13	1-2 1-2 IN	Baud 4 (SW5)

NOTE: ADDRESS SELECTION SW1 = A is required for SIO inserted into slot 6.

NOTE: Pin 1 is designated by a white dot on the PCA. Factory default settings.

NOTE: For baud selection, use **Table 5**.

Table 5: Baud Rate Reference

Rotary Switch Position	Asynchronous Rate	Synchronous Rate
0	50	N/A
1	75	1200
2	110	N/A
3	134.5	N/A
4	150	2400
5	300	4800
6	600	9600
7	1200	N/A
8	1800	NA
9	2000	NA
A	2400	N/A
B	3600	N/A
C	4800	N/A
D	7200	N/A
E	9600	N/A
F	N/A	N/A

NOTE: The **Asynchronous rate** is used for the MMI and Local TTY. The **Synchronous rate** is used for the Polling port.

**Table 6: NT6M84BA PWR/ALM
Communications PCA Polling modem set to
EXTERNAL timing**

Switch	Jack, Position
S1	J1, 1 OFF 5 OFF J2, 2 OFF 6 OFF J3, 3 OFF 7 OFF J4, 4 OFF 8 OFF
S2	J5, 1 OFF 5 OFF J6, 2 OFF 6 OFF J7, 3 OFF 7 OFF J8, 4 OFF 8 OFF
Jumper	Pin
J14	OUT
J15	2-3
J16	2-3
J17	2-3

**Table 7: NT6M84BA PWR/ALM
Communications PCA Polling modem set to
INTERNAL timing**

Switch	Jack, Position
S1	J1, 1 ON 5 ON J2, 2 OFF 6 OFF J3, 3 OFF 7 OFF J4, 4 OFF 8 OFF
S2	J5, 1 OFF 5 OFF J6, 2 OFF 6 OFF J7, 3 OFF 7 OFF J8, 4 OFF 8 OFF
Jumper	Pin
J14	OUT
J15	2-3
J16	2-3
J17	2-3

NOTE: Pin 1 is designated by a white dot on the PCA. Factory default settings.

Table 8: NT6M70xx DMS-100 DSI PCA

SLOT 12	
Switch #	Position
SW1	1 OFF 2 ON 3 ON 4 OFF 5 OFF 6 OFF 7 ON 8 ON 9 OFF 10 OFF
SW2	1 ON 2 OFF 3 OFF 4 ON
SLOT 13	
Switch #	Position
SW1	1 OFF 2 OFF 3 ON 4 OFF 5 OFF 6 OFF 7 ON 8 ON 9 OFF 10 OFF
SW2	1 ON 2 OFF 3 OFF 4 ON

DMS-100 Family
Distributed Processing Peripheral (DPP)
Quick Reference Guide

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