
Meridian 1

Disk drive upgrade procedures

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General information

This document provides the hardware procedures for installing a floppy disk unit (FDU), multi disk unit (MDU), or small system multi disk unit (SMDU):

- In conjunction with the disk drive upgrade procedures in this document, use the document *Software conversion procedures* (553-2001-320):
 - Read all applicable information, including the “Introduction” and “Conversion notes” before you upgrade any hardware or software.
 - Follow preconversion and postconversion procedures for every system conversion.
- Use the appropriate procedures in *Upgrade system installation* (553-3001-250) for other hardware upgrade requirements.
- The following documents should also be on hand during a disk drive upgrade:
 - *Circuit card installation and testing* (553-3001-211)
 - *X11 input/output guide* (553-3001-400)
 - General Release Bulletins

Disk drive compatibility

Table 1 lists disk drive, software, system, and interface card compatibility.

Table 1
Disk drive compatibility

Disk drive unit	Software compatibility	System type	Interface card (minimum vintage)
NT8D68 FDU	X11 release 15–17	ST, RT, NT, XT* 21A, 21, 51, 61, 71*	QPC742 vintage D
NT8D69 MDU	X11 release 15–17	RT, NT, XT 51, 61, 71	QPC584 vintage F4 or K
NTND15 FDU	X11 release 18 and later	STE, RT 21E	QPC742 vintage F
NTND16 MDU	X11 release 18 and later	RT, NT, XT 51, 61, 71	QPC584 vintage L
NT9D33 SMDU	X11 release 18 and later	21E, STE	NT9D34
* With X11 release 16 and later software, XT and option 71 systems must be equipped with an MDU.			

Disk drive slot requirements

CAUTION

To prevent corruption of the system data, do not install an FDU or MDU next to a 5/12-volt converter card (QPC190, QPC355, or QPC691).

Because of the potential for magnetic interference from a transformer on 5/12-volt converter cards:

- an FDU must be at least three card slots away from the converter card
- an MDU must be at least two card slots away from the converter card

There are no such restrictions on installing an SMDU.

If you must locate the FDU or MDU close to a 5/12-volt converter card, you must install an electromagnetic interference (EMI) shield (see [Table 2](#)) between the power converter card and the disk drive unit. No shield is required for an SMDU.

Table 2
EMI shields for use between the FDU or MDU and 5/12-volt converter cards

Ordering code	Description	Shelf compatibility
P0727842	EMI shield plastic card sliders	QSD39A-C, QSD40A-C, QSD54A, QSD55A, QSD61, QSD62, QSD73A1 and B1, QSD81A, QSP31A, QSP32A, QSP39A and B
P0727843	EMI shield metal card sliders	QSD39D, QSD40D

FDU slot requirements

An FDU occupies two adjacent card slots. The FDU receives power from the QPC742 FDI Card (not from the backplane).

ST, STE, RT, NT, and XT systems

In ST, STE, RT, NT, and XT systems, the FDU is located in a common equipment (CE), network, or mass storage unit (MSU) shelf. In ST and STE systems, the FDU can also be located in a peripheral equipment (PE) shelf. Specific locations for the FDU depend on available space.

System options 21A, 21, 21E, 51, 61, and 71

For options 21A, 21, and 21E, install the FDU in any two available consecutive slots in the NT8D11 CE/PE Module.

For options 51 and 61, install the FDU in slot 18 in the NT6D39 CPU/Network Module.

For option 71, install the FDU in two consecutive slots from slots 15 through 17 in the NT8D34 CPU Module.

MDU slot requirements

An MDU occupies three adjacent card slots. The MDU receives power from the backplane.

RT, NT, and XT systems

The MDU is located in a CE or network shelf. In NT and XT systems, the MDU can also be placed in an expansion network shelf equipped with a power converter card or in a power monitor/CE auxiliary shelf.

The slot location of the MDU is limited by the maximum cable length, 5.5 m (18 ft), allowed between the MDU and the MSI cards. If two MSI cards are equipped, the cable length between each MSI card and the MDU cannot exceed 5.5 m (18 ft).

If vacant space is not available within the cable distance requirement, relocate primary rate interface/digital trunk interface (PRI/DTI) cards, network cards, or both to make room for the MDU. If there is still no space available for the MDU, install additional equipment as follows:

- In RT systems, replace the PE tier located at the top of the main system cabinet with a CE expansion tier. See *RT installation procedures* (553-2441-210).
- In NT systems, install a power monitor/CE auxiliary shelf. See *Power monitor/common equipment auxiliary shelves description and installation* (553-3001-570).
- In XT systems:
 - You can add additional network shelves to the CE cabinet. See *XT installation procedures* (553-2411-210).
 - You can install a power monitor/CE auxiliary shelf. See *Power monitor/common equipment auxiliary shelves description and installation* (553-3001-570).

System options 51, 61, and 71

For options 51 and 61, install the MDU in slot 18 in an NT6D39 CPU/Network Module.

For option 71, install the MDU in slots 15 through 17 in an NT8D34 CPU Module.

SMDU slot requirements

An SMDU occupies two adjacent 1-inch card slots. The SMDU receives power from the NT9D34 EMSI Card through a power cable.

STE systems

In STE systems, the SMDU is located in a common equipment (CE), network, mass storage unit (MSU), or peripheral equipment (PE) shelf. The specific location for the SMDU depends on available space.

System option 21E

For option 21E, install the SMDU in any two available consecutive slots in an NT8D11 CE/PE Module or NT8D13 PE Module, or any three slots in an NT8D37 IPE Module.

FDI, MSI, and EMSI slot requirements

ST, STE, RT, NT, and XT systems

Table 3 lists compatible card slots for FDI, MSI, and EMSI cards.

Table 3
FDI, MSI, and EMSI compatible slots

System	Card slot
ST, STE	3
RT	3 and 14
NT	3 and 14
XT	8

System options 21A, 21, 21E, 51, 61, and 71

Table 4 lists compatible card slots for FDI, MSI, and EMSI cards.

Table 4
FDI, MSI, and EMSI compatible slots

System	Module	Card slot
21A, 21, 21E	NT8D11 CE/PE Module	1 (CPU/MEM area)
51, 61	NT6D39 CPU/Network Module	12 (CPU/MEM area)
71	NT8D34 CPU Module	7

Upgrade procedures

Precautions

Before you install a data disk, check the disk identification to make sure it is the correct disk. Compare required software options with the **target** data cartridge.

Follow these precautions to avoid damaging disks:

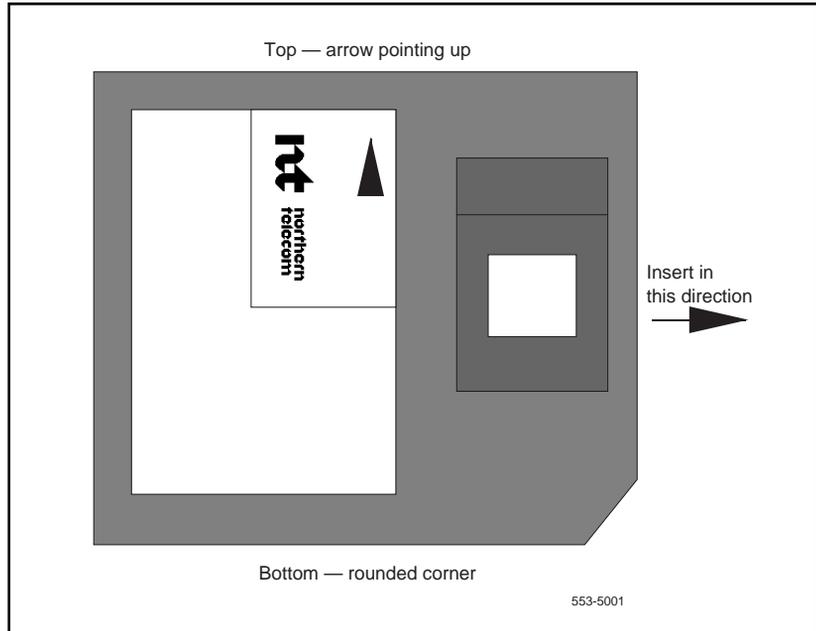
- Handle only the hard surface; never touch the recording surface.
- Keep disks away from strong magnetic fields.
- Avoid exposing disks to extreme heat, rapid changes in temperature, or high humidity.
- Store disks in a suitable container.

To install a disk, make sure the arrow on the label is pointing up and the rounded corner is on the bottom on the right-hand side (see [Figure 1](#)).

CAUTION

The disk drive can be damaged if an upside-down disk is forced into the slot. If there is significant resistance when you try to insert a disk, remove the disk and check the position.

Figure 1
Disk position



Upgrading to an NT8D68 FDU

The NT8D68 FDU is used in systems running X11 release 15 through 17. When you upgrade to one of these software releases, the system must meet all software and hardware requirements. If you need information, contact your distributor or Northern Telecom representative. For detailed upgrade procedures, see *Software conversion procedures* (553-2001-320) and *Upgrade system installation* (553-3001-250).

The equipment listed in **Table 5** can be replaced by an NT8D68 FDU and QPC742D (or later vintage) FDI Cards. Use **Procedure 1** to upgrade to an NT8D68 FDU.

Table 5
Upgrading to an NT8D68 FDU

Existing disk drive and interface cards	System type
QMM38 MSU and QPC584 MSI Cards	RT, NT, XT*
QMM43 MSU and QPC584 MSI Card	ST
QMM45 MSU and QPC742 FDI Card	ST
* With X11 release 15 only.	

Procedure 1
Upgrading to an NT8D68 FDU

- 1 Follow the “Preconversion procedure” in *Software conversion procedures* (553-2001-320). Always enter LD 43 from the **source** (current) media. Do not exit LD 43.

CAUTION

If the data dump is not successful during preconversion, do not proceed. The data dump problem must be corrected. Contact your technical support organization.

- 2 Remove the existing disk drive and interface cards.
Note: In an RT system, if a QMM38 MSU is disconnected, a cabinet alarm is raised. To avoid the alarm, leave the MSU connected in the RT cabinet, or replace the MSU with an NTND20 Alarm Terminator.
- 3 Check the **target** QMM42 Security Data Cartridge.

CAUTION

The ID number on the **target** data cartridge must match the data disks with the software. Make sure all required software options are included before you proceed.

If a target data cartridge is not attached to each new FDI card, plug the cartridge into the connectors on the card and install the screw that secures the cartridge.

- 4 Set the ENB/DIS switch on each new FDI card to DIS.
- 5 On each new FDI card, set positions 1 and 5 on switch 3 to ON.
- 6 Insert the NT8D68 FDU into its assigned position.

If you must locate the FDU close to a 5/12-V converter card, install the EMI shield (provided in the upgrade package) between the shelf rails next to the power converter card.

- 7 Connect an NT8D77 cable between a faceplate connector on the FDU and the faceplate connector on each new FDI card.

Connector 0 on the FDU is associated with CPU 0; connector 1 is associated with CPU 1.

CAUTION

To prevent an electrical short, do not install QPC742 FDI Cards until you have connected the NT8D77 cable at both ends.

- 8 Insert each new FDI card into its assigned position.
- 9 Insert the **target** data disks (3.5-in. high-density disks labeled "HD") into the FDU. Follow all precautions.

Note: When QPC742D FDI Cards are used, install disks in both disk drives before powering up the system. This is not required with later vintages of the FDI card.
- 10 Set the ENB/DIS switch on each FDI card to ENB.
- 11 Perform a data dump to the **target** software:
EDD invoke data dump program
Wait for the data dump to complete
- 12 Reload (sysload) the system.
- 13 Perform another data dump:
EDD invoke data dump program
**** exit LD 43
- 14 Go to **"Testing the disk drive unit and interface cards"** on page 28.

Upgrading to an NT8D69 MDU

The NT8D69 MDU is used in systems running X11 release 15 through 17. When you upgrade to one of these software releases, the system must meet all software and hardware requirements. If you need information, contact your distributor or Northern Telecom representative. For detailed upgrade procedures, see *Software conversion procedures* (553-2001-320) and *Upgrade system installation* (553-3001-250).

The equipment listed in **Table 6** can be replaced by an NT8D69 MDU and QPC584F4 or K (or later vintage) MSI Cards. Use **Procedure 2** to upgrade to an NT8D69 MDU.

Table 6
Upgrading to an NT8D69 MDU

Existing disk drive and interface cards	System type
QMM38 MSU and QPC584 MSI Cards	RT, NT, XT
NT8D68 FDU and QPC742 FDI Cards	RT, NT, XT 51, 61, 71

Procedure 2 Upgrading to an NT8D69 MDU

- 1 If the system is not configured for a hard disk drive, change the Configuration Record as follows:
LD 17
at the prompt **IOTB** Enter **YES** to change I/O devices
at the prompt **ADAN** Enter **CHG HDK 0** to add hard disk unit
**** exit LD 17
- 2 If the software is not being upgraded, enter **LD 43** and go to Step 3.
If the software is being upgraded, follow the "Preconversion procedure" in *Software conversion procedures* (553-2001-320). Always enter LD 43 from the **source** (current) media. Do not exit LD 43.

CAUTION

If the data dump is not successful during the preconversion, do not proceed. The data dump problem must be corrected. Contact your technical support organization.

- 3 Remove the existing disk drive and interface cards.
Note: In an RT system, if a QMM38 MSU is disconnected, a cabinet alarm is raised. To avoid the alarm, leave the MSU connected in the RT cabinet, or replace the MSU with an NTND20 Alarm Terminator.
- 4 Check the **target** QMM42 Security Data Cartridge.

CAUTION

The ID number on the **target** data cartridge must match the data disks with the software. Make sure all required software options are included before you proceed.

If a target data cartridge is not attached to each new MSI card, plug the cartridge into the connectors on the card and install the screw that secures the cartridge.

- 5 Set the ENB/DIS switch on each new MSI card to DIS.
- 6 On each new MSI card, set position 1, 4, and 5 on switch 3 to ON.
- 7 Insert the NT8D69 MDU into its assigned position.

If you must locate the FDU close to a 5/12-V converter card, install the EMI shield (provided in the upgrade package) between the shelf rails next to the power converter card.
- 8 Connect an NT8D80 cable between a faceplate connector on the MDU and the faceplate connector (J1) on each new MSI card.

Connector 0 on the MDU is associated with CPU 0; connector 1 is associated with CPU 1.
- 9 Insert each new MSI card into its assigned position.
- 10 Insert the **target** data disks (3.5-in. high-density disks labeled "HD") into the disk drives on the MDU. Follow all precautions.
- 11 Set the ENB/DIS switch on each new MSI card to ENB.
- 12 Perform a data dump to the **target** software:
EDD invoke data dump program
Wait for the data dump to complete.
- 13 Copy the contents of the data disks to the hard disk by entering:
RES copy entire contents of backup to primary device
- 14 Reload (sysload) the system.
- 15 Perform another data dump:
EDD invoke data dump program
******** exit LD 43
- 16 Go to **"Testing the disk drive unit and interface cards"** on page 28.

Upgrading to an NT9D33 SMDU

The NT9D33 SMDU is used in option 21E and STE systems running X11 release 18 and later. When you upgrade to one of these software releases, the system must meet all software and hardware requirements. If you need information, contact your distributor or Northern Telecom representative. For detailed upgrade procedures, see *Software conversion procedures* (553-2001-320) and *Upgrade system installation* (553-3001-250).

The equipment listed in [Table 7](#) can be replaced by an NT9D33 SMDU card and an NT9D34 EMSI card. Use [Procedure 3](#) to upgrade to an SMDU.

Table 7
Upgrading to an NT9D33 SMDU

Existing disk drive and interface cards	System type
NT8D68AA FDU and QPC742 FDI	Option 21E and STE systems
NT8D15AA FDU and QPC742 FDI	Option 21E and STE systems

Procedure 3
Upgrading to an NT9D33 SMDU

- 1 Load the Equipment Data Dump Program (LD 43). At the prompt, enter:

LD 43 to load the program

Always enter LD 43 from the source (current) media. Do not exit LD 43.

- 2 When "EDD000" appears on the terminal, enter:

EDD to begin the data dump

CAUTION

If the data dump is not successful, do not proceed; contact your technical support organization. A data dump problem must be corrected before proceeding.

When "DATABASE BACKUP COMPLETE" displays on the terminal, enter:

******** to exit the program

- 3 If the system is not configured for a hard disk drive, change the Configuration Record as follows. Use the appropriate procedure for the software release installed on the system.

For release 18:

LD 17 to load the program
at the **REQ** prompt enter **CHG** to change I/O devices
at the **TYPE** prompt enter **CFN**
at the **ADAN** prompt enter **CHG HDK 0**
at the **NUMD** prompt enter **cr**
at the **FTYP** prompt enter **cr**
at the **REQ** prompt enter ******** to exit the program

For release 19 and later:

- | | |
|---------------------------|--|
| LD 17 | to load the program |
| at the REQ prompt | enter CHG to change I/O devices |
| at the TYPE prompt | enter ADAN |
| at the ADAN prompt | enter CHG HDK 0 |
| at the NUMD prompt | enter cr |
| at the FTYP prompt | enter cr |
| at the REQ prompt | enter **** to exit the program |
-
- 4 Disable the disk drive interface card:

LD 37	to load the program
DIS MSI 0	to software-disable the FDI or MSI card
 - 5 Set the ENB/DIS switch on the FDI or MSI card to DIS.
 - 6 Disconnect the cable connecting the FDI or MSI card to the FDU or MDU.
 - 7 Remove the FDI or MSI card from its slot.
 - 8 Set all switches on the NT9D34 EMSI card to the same settings as the switches on the FDI or MSI card just removed (typically 1, 5, 7, and 8 to ON); verify that switch position 4 is set to OFF.
 - 9 Remove the QMM42 Security Data Cartridge from the FDI or MSI card just removed from the system, and install it on the NT9D34 EMSI card.
 - 10 Set the ENB/DIS switch on the new EMSI card to DIS.
 - 11 Insert the NT9D34 EMSI into the slot previously occupied by the FDI or MSI card.
 - 12 Remove the disks from the disk drives.
 - 13 Remove the FDU or MDU from the system.

- 14 Install the NT9D33 SMDU in the chosen slots. These can be any two 1-inch slots, or any three (or the rightmost two) 7/8-inch slots.
- 15 Connect an NT9D47 cable between faceplate connector J2 on the SMDU and faceplate connector J2 on the EMSI card.
- 16 Connect an NT9D66 cable between faceplate connector J1 on the SMDU and faceplate connector J1 on the EMSI card.
- 17 Set the ENB/DIS switch on the EMSI card to ENB.
- 18 Enable the disk drive interface card:
ENL MSI 0 to software-enable the EMSI card
**** to exit the program
- 19 Copy the database from the floppy disks to the hard disk:
LD 43 to load the program
RES to begin the RESTORE operation

Note: The RESTORE operation may take up to 30 minutes to complete.

CAUTION

Do not interrupt the RESTORE operation before it has completed. The RESTORE operation is complete only after the message "RESTORE COMPLETE TOTAL DISKS = n" displays on the system terminal and the system prompt [,] is shown.

When it is finished, enter:

**** to exit the program

- 20 Disable the disk drive interface card:
LD 37 to load the program
DIS MSI 0 to software-disable the EMSI card
- 21 Set the ENB/DIS switch on the new NT9D34 EMSI card to DIS.

- 22** Pull the EMSI card out of the slot just enough to allow access to the switches, and set switch position 4 to ON.
- 23** Reinstall the EMSI card.
- 24** Set the ENB/DIS switch on the new NT9D34 EMSI card to ENB.
- 25** Enable the NT9D34 EMSI card:
ENL MSI 0 to software-enable the EMSI card
**** to exit the program
- 26** Insert the disks containing the target database into the SMDU drives.
- 27** Back up the hard disk to floppy disk:
LD 43 to load the program
BKO perform the backup routine
- Note:** The BACKUP operation may take up to 30 minutes to complete.
- 28** Perform the procedures located in the section titled **“Testing the disk drive unit and interface cards”** on page 28.

If you are upgrading the software also, refer to *Software conversion procedures* (553-2001-320) for procedures.

Upgrading to an NTND15 FDU

The NTND15 FDU is used in systems running X11 release 18 and later software. When you upgrade to X11 release 18, the system must meet all software and hardware requirements. If you need information, contact your distributor or Northern Telecom representative. For detailed upgrade procedures, see *Software conversion procedures* (553-2001-320) and *Upgrade system installation* (553-3001-250).

The equipment listed in **Table 8** can be replaced by an NTND15 FDU and QPC742F (or later vintage) FDI Cards. Use **Procedure 4** to upgrade to an NTND15 FDU.

Table 8
Upgrading to an NTND15 FDU

Existing disk drive and interface cards	System type
QMM38 MSU and QPC584 MSI Cards	RT
QMM43 MSU and QPC584 MSI Cards	ST*
QMM45 MSU and QPC742 FDI Cards	ST*
NT8D68 FDU and QPC742 FDI Cards	ST,* RT, 21*
NT8D69 MDU and QPC584 MSI Cards	RT
* These systems must be upgraded to the enhanced (E) system type—STE or 21E.	

Procedure 4 Upgrading to an NTND15 FDU

- 1 Follow the "Preconversion procedure" in *Software conversion procedures* (553-2001-320). Always enter LD 43 from the **source** (current) media. Do not exit LD 43.

CAUTION

If the data dump is not successful during preconversion, do not proceed. The data dump problem must be corrected. Contact your technical support organization.

- 2 Remove the existing disk drive and interface cards.
Note: In an RT system, if a QMM38 MSU is disconnected, a cabinet alarm is raised. To avoid the alarm, leave the MSU connected in the RT cabinet, or replace the MSU with an NTND20 Alarm Terminator.
- 3 Check the **target** QMM42 Security Data Cartridge.

CAUTION

The ID number on the **target** data cartridge must match the data disks with the software. Make sure all required software options are included before you proceed.

If a target data cartridge is not attached to each new FDI card, plug the cartridge into the connectors on the card and install the screw that secures the cartridge.

- 4 Set the ENB/DIS switch on each new FDI card to DIS.
- 5 On each new FDI card, set positions 1, 5, and 7 on switch 3 to ON.
Note: For upgrades to STE or 21E, *set position 8 to OFF at this point.* Position 8 will be reset to on just before the NTND01 Integrated CPU/6 Mbyte Memory Card (ICM) Card is installed.
- 6 Insert the NTND15 FDU into its assigned position.
If you must locate the FDU close to a 5/12-V converter card, install the EMI shield (provided in the upgrade package) between the shelf rails next to the power converter card.

- 7 Connect an NT8D77 cable between a faceplate connector on the FDU and the faceplate connector on each new FDI card.

Connector 0 on the FDU is associated with CPU 0; connector 1 is associated with CPU 1.

CAUTION

To prevent an electrical short, do not install QPC742 FDI Cards until you have connected the NT8D77 cable at both ends.

- 8 Insert each new FDI card into its assigned position.
- 9 Insert the **target** data disks (3.5-in. extra high-density disks labeled "ED") into the FDU. Follow all precautions.
- 10 Set the ENB/DIS switch on each FDI card to ENB.
- 11 Perform a data dump to the **target** software:
EDD invoke data dump program
**** exit LD 43
Wait for the data dump to complete.
- 12 Perform the hardware upgrade procedures required for X11 release 18.
- To upgrade ST to STE or 21 to 21E do the following:
 - Remove the CPU card.
 - Disable and remove the FDI card. Set position 8 on switch 3 to ON. Reinstall, and then reenable the card.
 - Install the NTND01 ICM Card. (The NTND31 ROM Card must be installed on the ICM card.)
 - Replace the memory or memory/peripheral signaling card with the NTND02 Misc/SDI/Peripheral Signaling (MSPS) Card.
 - Connect an NTND37 Dual SDI Cable (used in conjunction with the MSPS card) from the I/O panel to the system terminal.

- To upgrade an RT system do the following:
 - Replace the CMA cards with NTND10 CMA Cards.
 - Replace the memory cards with NTND09 Memory Cards.
 - Replace the ROM cards on the QPC579 CPU Function Cards with NTND08 ROM Cards.

For detailed instructions, use the appropriate upgrade procedure in *Upgrade system installation (553-3001-250)*.

- 13** Reload (sysload) the system.
- 14** Update the Configuration Record for the new disk drive:
LD 17
at the prompt **ADAN** enter **CHG FDK 0** for single FDU
at the prompt **FTYP** enter **3S** for 3.5-in. extra high-density disks
**** exit LD 17
- 15** Perform a data dump:
LD 43
EDD invoke data dump program
**** exit LD 43
- 16** Go to [“Testing the disk drive unit and interface cards” on page 28.](#)

Upgrading to an NTND16 MDU

The NTND16 MDU is used in systems running X11 release 18 and later software. When you upgrade to X11 release 18, the system must meet all software and hardware requirements. If you need information, contact your distributor or Northern Telecom representative. For detailed upgrade procedures, see *Software conversion procedures* (553-2001-320) and *Upgrade system installation* (553-3001-250).

The equipment listed in [Table 9](#) can be replaced by NTND16 MDU and QPC584L (or later vintage) MSI Cards. Use [Procedure 5](#) to upgrade to an NTND16 MDU.

Table 9
Upgrading to an NTND16 MDU

Existing disk drive and interface cards	System type
QMM38 MSU and QPC584 MSI Cards	RT, NT, XT
NT8D68 FDU and QPC742 FDI Cards	RT, NT, XT 51, 61, 71
NT8D69 MDU and QPC584 MSI Cards	RT, NT, XT 51, 61, 71
NTND15 FDU and QPC742 FDI Cards	RT, 51

Procedure 5 Upgrading to an NTND16 MDU

- 1 If the system is not configured for a hard disk drive, change the configuration record:
LD 17
at the prompt **IOTB** enter YES to change I/O devices
at the prompt **ADAN** enter **CHG HDK 0** to add hard disk unit
**** exit LD 17
- 2 If the software is not being upgraded, enter **LD 43** and go to Step 3.
If the software is being upgraded, follow the "Preconversion procedure" in *Software conversion procedures* (553-2001-320). Always enter LD 43 from the **source** (current) media. Do not exit LD 43.

CAUTION

If the data dump is not successful during preconversion, do not proceed. The data dump problem must be corrected. Contact your technical support organization.

- 3 Remove the existing disk drive and interface cards.
Note: In an RT system, if a QMM38 MSU is disconnected, a cabinet alarm is raised. To avoid the alarm, leave the MSU connected in the RT cabinet, or replace the MSU with an NTND20 Alarm Terminator.
If you are removing an NT8D69 MDU, gently pull the unit forward two or three inches. Wait at least 10 seconds; then, pull the unit out of the card slot.

CAUTION

You must wait *at least 10 seconds* before you remove an MDU from the card slot. This allows the hard disk to stop.

- 4 Check the **target** QMM42 Security Data Cartridge.

CAUTION

The ID number on the **target** data cartridge must match the data disks with the software. Make sure all required software options are included before you proceed.

If a target data cartridge is not attached to each new MSI card, plug the cartridge into the connectors on the card and install the screw that secures the cartridge.

- 5 Set the ENB/DIS switch on each new MSI or EMSI card to DIS.
- 6 On each new MSI or EMSI card, set positions 1, 5, and 7 on switch 3 to ON.

Note: Set position 4 to OFF at this point. Position 4 will be reset to ON after the database is transferred.

- 7 Insert the NTND16 MDU into its assigned position.

If you must locate the FDU close to a 5/12-V converter card, install the EMI shield (provided in the upgrade package) between the shelf rails next to the power converter card.

- 8 Connect an NT8D80 cable between a faceplate connector on the MDU and the faceplate connector (J1) on each new MSI card.

Connector 0 on the MDU is associated with CPU 0; connector 1 is associated with CPU 1.

- 9 Insert each new MSI or EMSI card into its assigned position.
- 10 Insert the **target** data disks (3.5-in. extra high-density disks labeled "ED") into the disk drives on the MDU. Follow all precautions.
- 11 Set the ENB/DIS switch on each MSI or EMSI card to ENB.

- 12 Perform a data dump to the **target** software:

EDD invoke data dump program

Wait for the data dump to complete.

Note: You may receive the message "backup failed" because the hard disk cannot be accessed yet, but this is not a problem since the data dump is being recorded on the floppy disks.

- 13** Disable and remove the MSI or EMSI cards. Set position 4 on switch 3 to ON. Reinstall then reenble the cards.
- 14** Copy the contents of the data disks to the hard disk by entering:
RES copy entire contents of backup to primary device
- 15** If you are upgrading to X11 release 18, upgrade the hardware as follows:
- Replace the CMA cards with NTND10 CMA Cards.
 - Replace the memory cards with NTND09 Memory Cards.
 - Replace the ROM cards on the QPC579 CPU Function Cards with NTND08 ROM Cards.
- For detailed instructions, use the appropriate upgrade procedure in *Upgrade system installation (553-3001-250)*.
- 16** Reload (sysload) the system.
- 17** Perform a data dump:
EDD invoke data dump program
******** exit LD 43
- 18** Go to ["Testing the disk drive unit and interface cards"](#) on page 28.

Testing the disk drive unit and interface cards

Use **Procedure 6** to test the disk drive system in a working system.

Note: After testing, follow the “Postconversion procedure” in *Software conversion procedures* (553-2001-320).

Procedure 6

Testing the disk drive unit and interface cards

- 1 Enter **LD 37**.
- 2 See if the disk drive unit and interface cards to be tested are disabled by entering:

STAT MSI

If the disk drive and interface cards are disabled, enable them as follows:

ENL MSI 0

- 3 Test the disk drive unit by entering:

MSI 0

- If the system response is other than **OK**, see the *X11 input/output guide* (553-3001-400) for an interpretation of the message(s).
- If you cannot correct the error, test the read/write availability of the disk drive unit by entering the following:

MSI RW 0

- If the response is **OK**, the previous messages can be disregarded.
- Exit LD 37 by entering the following:

Note: Perform steps 4 through 6 on dual-CPU systems only.

- 4** Enter **LD 35**.
- 5** Switch CPUs by entering:
SCPU

Exit LD 35 by entering:

- 6** Repeat steps 1, 2, and 3 above.
- 7** If the disk drive unit or interface cards are faulty, replace them and perform the test again.

Meridian 1
**Disk drive upgrade
procedures**

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