NORTEL
NORTHERN TELECOM

Meridian 1
Option 11C Compact
Meridian Mail Compact Option

General Release Bulletin

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Issue 0.1
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Important Note: This bulletin contains important system advisements. Please read prior to performing installation

Table of Contents

Overview

This bulletin provides general information regarding the installation, support and operation of:

- The Option 11C Compact system running Software Generic X27 Release 1.01, and
- Meridian Mail Compact Option running Release 11.19 software.

Chapter 1 —Advisements

Option 11C Compact System Advisements

Systems Supported

Generic X27 Release 1.01 and earlier releases only supports the Option 11C Compact system.

Overlay 25 Blocked

The use of overlay 25 is blocked on the Option 11C Compact.

PRI Loopback Tests

1) LD 60 - RLBK (Remote Loopback) This command functions correctly. It puts the pack in remote loopback. Far end can now run continuity pattern tests.

2) LD 60 - RMST (Remote Selftest) Running RMST on the PRI card returns an OK, but the test is not actually performed.

System Security

Nortel strongly recommends changing the default system passwords for both Option 11C Compact, Compact Option and MAT systems during initial installation. These passwords should be changed again when the system is placed in active service. These actions will help deter unauthorized system access which can result in toll fraud or system abuse.

For more information, please refer to the System Security Management NTP (553-3001-302).

Audit Routine

As in the case of Meridian 1 software releases, it is recommended that the Audit routine (Overlay 44) be specified as the background diagnostic to optimize the system capability to deal with call processing anomalies, especially in large line size and high traffic configurations.

Use of BKO command in LD 43

The BKO command is used to backup the customer data to an external data card (blank PCMCIA card) located in the slot “B” on the CPU faceplate.

Warning: If the pre-programmed software PCMCIA card is used during BKO operation, then the card cannot be used to install software. If the card is used with Overlay 143 archive database from Drive A, the card can then also be used to install software. Nine databases can be archived on a PCMCIA.

Software Patches

MAT software updates and patches are available to Distributors at www.ntcr.com in the MAT area.

All other Option 11C Compact patch files exist in the Global Patch Database. All patch files for the Option 11C Compact should be placed in the following directory: c:/u/patch. There are 5 ways to get a patch file into this directory.

Patches can be downloaded to the switch by FTP over an Ethernet connection.

Patches can be downloaded to the switch by FTP over a serial line using SLIP.

Patches can be downloaded to the switch by FTP over a serial line using PPP.

Program the patch file onto a PCMCIA card. Install the PCMCIA card in drive a. In pdt copy the patch file from the PCMCIA card to the c drive. e.g.: cp a:newpatch.p c:/u/patch/ newpatch.p

Patches can be downloaded to the switch using XMODEM file transfer over a serial line.

The following is the description of the pdt commands to **perform a file transfer using the XMODEM protocol**.

rx - command for receiving a file

sx - command for sending a file

To use rx, PDT Level 1 or Level 2 password login is required. To use sx, PDT Level 2 password login is required. This is done for security purposes so that you can't get any data out of the system unless you know the PDT Level 2 password.

To transfer a file from a PC/workstation to the switch

pdt> rx [path/]filename.ext

You then enter the appropriate commands to invoke xmodem file transfer on the PC/workstation

To transfer a file from the switch

pdt> sx [path/]filename.ext

Enter the appropriate commands to invoke xmodem file transfer on the PC/workstation. For binary files (e.g., patch files and database files), please ensure that the files are transferred in binary mode. When the transfer is completed, a transmission summary is displayed and the pdt prompt is shown.

total packets: 20

number of retries: 0

receive timeouts: 1

system errors: 0

unknown characters: 0

transfer cancelled: 0

packets received out of sequence: 0

packets with corrupted sequence: 0

packets failed checksum/crc check: 0

incomplete packets: 0

duplicate packets: 0

The following is an **example in a unix environment**:

Use tip to connect to the switch (if you telnet to the switch you can't use umodem).

To transfer a patch to the switch:

in pdt

cd c:/u/patch

rx newpatch.p

When the system prompts “Ready to receive...”, invoke local command mode by typing ~C (tilde C) and issue the umodem (s)end (b)inary command.

~C (tilde C to enter local command)

umodem -sb ~mydir/patches/newpatch.p

To transfer a file to the workstation

in pdt

cd to directory e.g. c:/p/sl1

sx direct.rec

When the system prompts “Ready to send...”, invoke local command mode by typing ~C (tilde C) and issue the umodem (r)eceive (b)inary command.

~C (tilde C to enter local command)

umodem -rb ~mydir/backup/direct.rec

The following is an **example in a PC/Window 95 environment**:

Use the HyperTerminal application to dial up to the switch.

To transfer a patch to the switch

in pdt

cd c:/u/patch

rx newpatch.p

Meridian Mail Compact Option Advisements

It is essential that this section be read before installing or upgrading a Meridian Mail Compact Option system.

Installation and Modification Advisements

Hard Disk Drive and Voice Card Daughterboard

The hard disk drive and the 4-port voice card daughterboard (NTMW03AA DSP) are packaged separately to protect these parts from damages during product shipment from the warehouse to the site. These parts need to be mounted on the Mail CPU Card (NTMW02AA) before the software can be loaded. Please note that the hard disk drive should be screwed on the bracket before the daughterboard is snapped into position. This will allow enough clearance of the screwing task without the blockage of the daughterboard. After these parts are mounted, they are adjacent to each other. Two screws on the hard disk drive bracket will touch the PCB (Printed Circuit Board) edge of the voice card daughterboard. However, there is no electrical impact to the product. The hard disk drive bracket is being redesigned such that these screws will not be in contact with the voice card daughterboard. Future shipments will reflect this change.

Mail CPU Faceplate LEDs

There are 2 LEDs on the faceplate: a green LED (ACT) and an amber LED (HDD). The following paragraphs describe the behaviors of these LEDs for the Field Trial version and the Market Release version.

Field Trial Version

The amber LED (HDD) is the only LED that lights on the field trial version of hardware. The green LED (ACT) does not light. At bootup, the amber LED will light up as the active LED. The amber LED will not light when the hard disk drive is being accessed.

Market Release Version

For the market release version, an NTMW02AA pack in stock will have one end of the 2-inch LED Jumper Wire attached to the P4 connector on the board. (i.e, the red wire is connected to the side marked with '+' (positive) of the P4 connector). However, the installer in the field will need to connect the other end of the wire to the hard disk drive after he installed the hard disk to the NTMW02 board. The method is as follows: the red wire (positive) goes to pin 14, and the black wire (negative) goes to pin 13.

Test the faceplate LEDs by plugging in the circuit pack in its cabinet location. It will take approximately 10 minutes after Meridian Mail Compact Option is reset for the hard disk to be accessed and the HDD faceplate LED to light.

At bootup, the green LED will light up for about half-a-second and then go off. After the internal hardware diagnostics is complete, this green LED will stay on if all of the Mail CPU Card hardware passes its test. A flashing green LED indicates that some hardware is in faulty condition. Typically this fault can be cleared away by tightening the connection of the SCSI drive and/or the hard disk drive; or by replacing the hard disk drive, if necessary.

The amber LED (HDD) will light whenever the hard disk drive is being accessed.

Tandberg Tape Drive

Tape Drive Termination

The external Tandberg tape drive for Compact Option systems (labeled Panther 2000-SE) already contains internal termination. Therefore, if an external terminator plug is supplied in the tape drive kit, it should NOT be installed since double termination may cause problems with the Compact Option system operation. In case of difficulties, check also the jumper setting of J5 of the hard disk drive. SCSI Terminator should be Disabled.

Refer to the *Stopping Compact Option for Maintenance* section later in this document or the *Site Planning and Installation*.

SCSI Cable Ground Wire

The SCSI cable for the Tape Drive has a small ground wire with a spade connector attached to it. The ground wire is used for extra ground capability as the NTMW02AA Mail CPU Card is already grounded inside. At the initial introduction of the NTMW02AA Mail CPU Card in the market there is no ground lug on the faceplate of the card to attach the ground cable to it. In this case, one can use a tape to wrap around the spade connector to avoid it from touching anything. The cable can be used in this manner without any impact to the software installation or backup procedures.

Shortly after market introduction the NTMW02AA Mail CPU Card shipments will be equipped with a small ground lug on the faceplate of the CPU Card. One can attach the spade connector to the ground lug on the faceplate of the NTMW02AA Card.

After completing system operations

After every system operation your system should be booted to full service. Prior to booting, the following items must be checked on the Option 11C Compact PBX:

1. The time is set properly.
2. The virtual agents are in idle state.
3. The corresponding link is in autosetup

Disk MTBF

The NTPs indicate that mean time between failure of disk drives is estimated to be 8 years or greater. This failure rate is based on electrical failures and therefore not conclusive with regard to disk drive life expectancy. Users should expect to replace disks within 5 years.

BV66656 Modified fields of diagnostic port in Tools level

The diagnostic port baud rate should not be allowed to be modified in the Tools level Data Port Configuration screen. The only baud rate that is supported by the port is 2400 baud. If the baud rate is set to any other value the information printed to the console will be unreadable. Users should not set the rate to any other value but 2400 baud.

BV67331 Backup Status does not reflect reality

When a second backup is performed to a backup tape and the tape label is a different name than the first backup tape only the backup status of the first tape is displayed.

Dialing Translations Advisements

The following diagram and examples show the parts of a DN. This is especially relevant to the Dialing Translations section where it is important to understand the structure of a DN and how its parts get translated by Meridian Mail.

DN Format

Y C NPA NXX XXXX

WhereY is the network dialing prefix that is used to access the public network. Examples are 9, 8, and 6.

C is the country code.

NPA is the Numbering Plan Area (or area/city code).

NXX is the exchange code.

XXXX is the local number.

DNs do not have to include all of these parts. For example, local DNs will not include a country code or area code.

Examples

6-1-416-555-2323

9-1-215-444-1234

6-333-4532

Networking Capacity

Networking Sites, Dialing Translation Tables and the Exchange Codes which may be entered in these tables, all reside within a common file which is limited in size. The table below shows the maximum combinations of networking sites, Dialing Translation Tables and Exchange Codes that can be supported in the MM11 COMPACT OPTION release.

Networking Sites	Dialing Translation Tables	Exchange Codes
10	15	1800

Definition of Terms: SITES are the Networking sites defined in the Network database. Sites are present if the Meridian Networking feature is used. TRANSLATION TABLES are the number of Dialing Translations tables defined. EXCHANGE CODES are the total number of exchange (office) codes defined in the Dialing Translation tables. Please refer to the Dialing Translations administration NTP section for further details.

Notes:

1. The table assumes the maximum number of steering codes (for ESN (UDP), CDP, or Hybrid dialing plans) i.e., up to 50 4-digit steering codes per site or location.

2. For combinations not covered in the table, use the tradeoff ratios of: 1 site :: 3 translation tables :: 10 exchange codes to adjust the nearest row in the table.

General Administrative Advisements

Warning: If the remote maintenance terminal is used for remote admin. It is essential to return service to the console before disconnecting. If this procedure is NOT followed, further access to that port is inhibited until a reboot is performed.

Warning: If the terminal appears to 'freeze', that is, it does not respond to keyboard input, try selecting Clear COMM from the terminal's SETUP screen. If this option is not present Resetting the terminal or powering it down and up may help. Ensure that the terminal baud rate is correct.

Warning: When performing a backup on a Viper tape drive, the drive indicator does not always go off when the backup write operations are completed for that tape cartridge. Please rely on messages on the MMI screen to indicate completed tape operation.

Warning: Multiple Appearance DNs are not supported.

Warning: During a system reboot, there is a 6124 SEER 'Time-out waiting for node to load ...'. The system will load with no problem. The SEER does not have any system impact, all diagnostics have completed.

Option 11C Compact switch Interaction Advisements

BV68230 X11 Rls 22 displayed during Compact Option bootup

During bootup of the Meridian Mail Compact Option system the screen displays the software release of the PBX as X11 release 22. The actual release of software should be X27 release 1.

External CLID

WARNING: Due to an PBX interaction problem the Calling Line ID feature does not work for all scenarios. The ‘Reply’ or ‘Call Sender’ may result in a message or a call to an invalid or incorrect DN.

In MM11 COMPACT OPTION, Meridian Mail captures the CLID for external (off-switch or off-net) callers as provided by the M1 switch. Meridian Mail receives the CLID (over the AML) and transforms it into a dialable DN. This allows the receiver of the message to send a message to the caller using the REPLY command or call the caller directly using the CALL SENDER command.

For proper operation of REPLY or CALL SENDER to external CLIDs, the network must be set up such that ALL CALLS STAY ON THE ESN NETWORK or that all calls stay on the public network. If the customer's network allows calls to be routed on either ESN and/or the public

network (e.g., if the customer wants to route calls to the public network when no more ESN trunks are available), the CLID received by Meridian Mail may not always be accurate, making the REPLY and CALL SENDER commands inoperable for those messages.

The Meridian Mail relies on the M1 to suppress the CLID when appropriate.

Password Display Suppression

The Password digits may not be suppressed on the display due to the following limitations:

1. Due to the potential time lag in Meridian Mail and Meridian 1 processing of the digit suppression and disable digit suppression commands, there will be situations where one or more password digits will be displayed. There will also be situations where command digits that are entered immediately after the login password will be suppressed. These situations may occur when the Meridian 1 or Meridian Mail are under peak load and the user has not delayed before and after entering their password. When a user is in an environment where security is an issue, suppression of the complete password can be ensured by waiting for the ‘Password?” prompt to be played.

2. Password display suppression of an external call logging on to Meridian Mail is not supported. The local switch has no control on the password display suppression capability of external calls.

3. Password display suppression of an attendant who logs on to Meridian Mail is not supported.

4. The Meridian processes the password display suppression AML message only if the local set is supported and has a display. Sets not supported because they do not have displays include: 500/2500 sets. M2009, M2112, M2018, M2006, M2016TSG. Attendant sets may have displays but are not supported.

5. In a conference call, if a party other than the one who directly called Meridian Mail enters the password, all digits will be displayed.

6. If a conference call is established by a set during the login process, then subsequent password digits will be echoed to the screen.

Stopping Compact Option for Maintenance Procedures

Before working on the Compact Option hardware, software or attaching the tape drive to the SCSI faceplate connector, you must courtesy down the system. This allows anyone using Compact Option to finish their session before the system is brought down. During this time, no users are allowed to log on to Compact Option, and calls are directed to the Compact Option attendant.

Courtesying down the system

Log on to Compact Option at the system administrator's terminal.

From the Main Menu, choose

"5 System Status and Maintenance."Æ"1 System Status."

Press the <Courtesy Down System> softkey.

At the prompt, Do you want to courtesy down the system?,
press the up arrow key to choose Yes, and press <Return>.
The display charts the progress of the courtesy down. Hardware locations are put out of service as users finish their sessions. System Status displays "CourtesyDown" when the process is complete.

Disable the data ports for the console and the AML.

At this point, Compact Option can be worked on, an external tape drive can be attached to the mail card, and other cards can be added or replaced.

Resetting Compact Option

Compact Option does not start automatically; you must reset it manually by pressing the reset button on the Compact Option card face. Press the reset under the following circumstance:

- whenever you courtesy down Compact Option to perform System Installation and Modification with the Install/data tape or to perform troubleshooting and maintenance procedures

Resetting mail

Press the reset button on the Compact Option card.

From the Main Menu, choose "5 System Status and Maintenance."Æ"1 System Status."

Press the [Activate System] softkey.

Enable the data ports for the console and the AML.

Enter **AX** <Return> to view the Compact Option screen.

Do you have a Tandberg tape drive?

If yes, ensure that the tape drive's power is on.

If no, continue.

Wait until the system has loaded and the logon screen is displayed (approximately four minutes).

Restarting Compact Option after turning off the Option 11C Compact Switch

Compact Option loads automatically when the Compact Option Switch is turned on, but you must complete the following steps to restore Compact Option :

Log on to Compact Option at the system administrator's terminal.

Enter the correct time and date when prompted. Compact Option cannot start until these values are entered.

Enabling and disabling the console and AML data ports

Compact Option uses two data ports on the Option 11C Compact switch: port 8 is used by the system administration terminal, and port 9 is used as an Application Module Link (AML).

You must enable these ports before turning Compact Option on, and disable them before turning Compact Option off. The procedures you follow depend on the release number of the Option 11C Compact software running on your switch.

Enabling the console and the AML data ports

Log on to the Option 11C Compact Switch.

At the > prompt, enter the following:

LD 48 <Return>.

ENL AML 9 ACMS <Return> to establish the link on port 9.

Enter * * * * .

Connecting The External Tape Drive

Before connecting the external tape drive to the SCSI port on the faceplate the following steps should be followed:

1. Courtesy down the Compact Option as described above.
2. Reset the mail as described above.
3. Attach the SCSI cable to the SCSI connector. The ground wire of the SCSI cable can be connected to the power supply by loosening one of the screws on the power supply faceplate and attaching the ground wire.
4. Perform the tape operation.
5. When the tape procedure is complete, press the Reset button on the mail faceplate and disconnect the tape drive SCSI cable and ground wire..
6. Bring the mail back into operation.

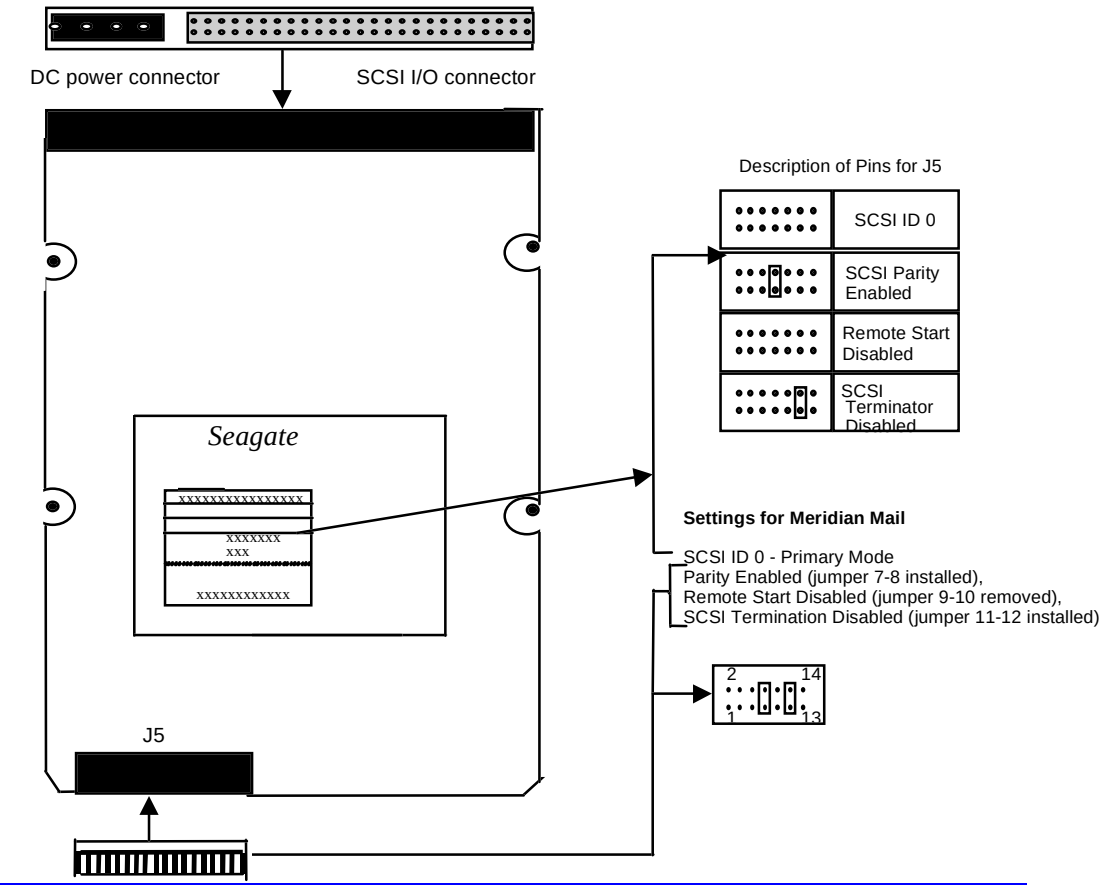
Additional disk drive and printer information

This section covers changes and additions to the Meridian Mail Compact Option documentation.

Note: Presently only the ST52160N Hard Disk Drive (2Gb) is supported for Compact Option Mail.

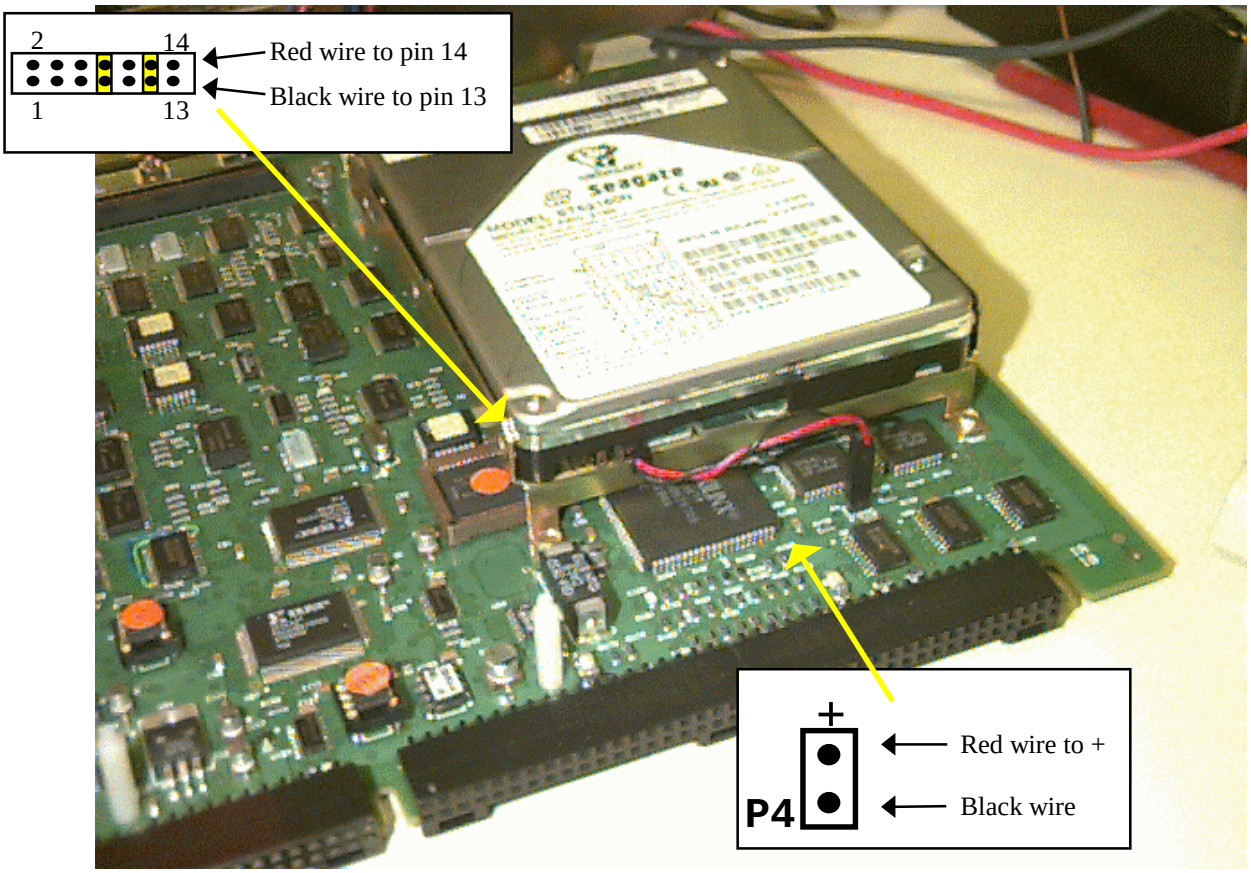
Settings for the Seagate ST52160N Hard Disk Drive

Seagate ST52160N 2 GB Drive - Compact



LED Jumper Wire

The LED Jumper Wire is a 2-in-1 twisted-pair wire about 2 inches long. It has a 2x1 connector on one end and a 2x2 connector on the other. For the market release version of the Mail CPU Card, the 2x2 connector is connected to J5 of the Hard Disk Drive. The red wire (positive) goes to pin 14, and the black wire (negative) goes to pin 13. The 2x1 connector is connected to the P4 connector on the motherboard such that the red wire goes to the side marked with "+" (positive). The following picture shows the connection of the LED Jumper Wire.



LA30N Companion printer

Printers are not shipped with the Compact Option system but may be ordered separately.

The LA30N Companion printer is connected to the Meridian Mail system in an identical fashion as the LA75 Plus Companion printer. The LA30N Companion printer is shipped with default settings that is ready to be used with terminals configured for Meridian Mail use. These settings are stored in MACRO 1. Ensure that your printer is set to use MACRO 1 settings.

Use the following steps to configure the LA30N Companion printer if the factory defaults have been changed.

Procedure : Configuring the LA30 N Companion printer

1 Ensure the configurations of the administration terminal are set as follows:

Speed =9600

Receive =Transmit

Databit=8 bits

Parity =None

Stop=1 stop bit

2 Ensure that the continuous forms paper set on the tractors is loaded and that the paper select lever is set backward.

3 Turn off the printer.

4 Turn on the printer while holding the Set-Up/Quit button until the printer beeps. See the figure below for the layout of the front panel.

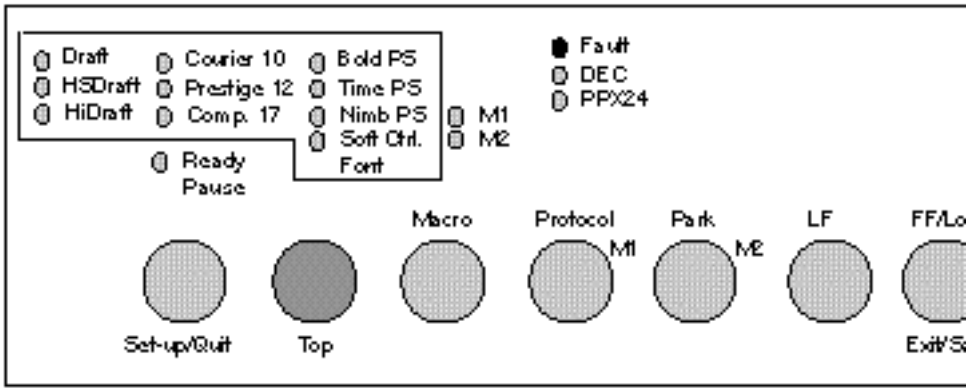


Figure : Control panel on LA30 N Companion printer

5 Remove the acoustic cover in order to see the printed text.

When the printer enters set-up mode, it prints a header menu, help menu, and <Functions> menu, and the M1 and M2 indicators flash alternately.
The header menu tells you that the printer is in set-up mode; the help menu provides a quick summary of how to use the buttons in set-up mod; and the <Functions> menu lists all of the available functions in this mode. Refer to the table below for a listing of available functions.

Table: Functions available in Set-up mode

Function	Description
MACRO 1 and MACRO 2	Assigns print features to MACRO 1 and MACRO 2.
PRINT	Prints a list of all currently selected options.
INSTALL	Changes the Set-Up menu language, computer interface, and paper feed control options.
ADJUST	Changes the top-of-form find adjustment options.
TESTS	Runs the printing test and hex dumps.
RCALL-FACT	Resets factory settings in MAC-RO 1 and MACRO 2.
MENU-ACCESS	Restricts access to Set-Up functions from the control panel.
SAVE&EXIT	Exits the Set-Up mode and saves any changes made while in Set-Up mode.

6 To recall (or reset) the factory settings, select the RCALL-FACT function and press the down button or the up button.

Options under the MACRO, INSTALL, and ADJUST functions are all initialized to the factory settings. See the table below for a listing of the factory settings.
7 To exit the Set-Up mode with the settings saved, select the SAVE&EXIT function and press the down button or the up button.
Any new settings changed while in Set-Up mode are saved as the new power-on defaults for the printer.

Table: LA30N printer default settings

Print feature	Factory setting
Protocol	Port dependent
Protocol serial	DEC
Port parallel	EPSON
Font	Draft
Horizontal pitch	10 cpi
Vertical pitch	6 Ipi
Form length	11 inches (A)
Left margin	1 column
Top of form*	0/60 inch
Top margin	1 line
Bottom margin	66 lines
Line mode	LF=LF, CR=CR
Paper source¤	Tractor
Print direction	Soft control
DEC mode	
DEC printer ID	PPL2
Auto wrap	Wrap
EOT disconnect	No disconnect on EOT
Initial report	No
Auto answerback	No
Answerback on ENQ	No
DEC GO character set	US ASCII
DEC user preference character set	DEC Supplemental
IBM & Epson mode	
Default Character set	CP 437
IBM mode	
IBM set 1 or 2	IBM set 1
IBM double height	No
IBM AGM	No
Epson mode	
Epson national character set	USA

* When you change the Macro selection and the new Top-of-Form value is different from the former, paper is automatically fed to the next page, using the new Top-of-Form value.

¤ When you change the Macro selection and the paper source selection is different, the printer automatically parts the continuous forms (in Push-Feed mode only) or ejects the cut sheet. The Fault indicator blinks indicating you should change the position of the paper select lever.

Errata on the Compact Option Mail Planning and Installation Guide

Page Number	Procedure Number	Correction
191 of 510	33 Logging on the Option 11C Compact Switch Number 4 Note states to use uppercase	With X11 Release 22 one can use either uppercase or lowercase letters

	letters only	
195 of 510	39 Installing the tape drive Number 9 states how to connect the ground wire for the Option 11C	Should state how to connect the ground wire for the Option 11C Compact
200 of 510	42 Removing the external tape drive Number 4 states to install a SCSI terminator	SCSI terminator is not needed
241 of 510	Keycode procedure: This screen shows a system configuration of 10 hours going to 24 hours	Since 24 hours is the only option for Compact Option Mail, example does not apply
268 of 510	52 LED flashes slowly Number 4 advise to reload software before replacing the 68K card	Should be removed as step 6 covers this issue

MAT for Option 11C Compact Advisements

BV74889 - MAT 5.71 Software Upgrade fails to launch ESN Sync

When upgrading from MAT 5.71.02.05 to MAT 5.71.02.07, the ESN sync application failed to launch.
Workaround: Once the upgrade is completed:

1. Open MAT
2. Open System
3. Open ESN Module
4. Remove database lock file
5. Close the ESN module
6. Close the System
7. Close MAT
8. Reboot the PC

Chapter 2— Option 11C Compact System Description

Introduction

This Chapter provides an overview of the Option 11C Compact system. It describes the system highlights, the required software, the hardware components which make up the system, and auxiliary product compatibilities.

Overview

Option 11C Compact is a small communications system targeted at the 40-80 line general business PBX customer. The system is expandable up to 128 lines, and is keycode controlled. The Option 11C Compact base package provides a complete communications system with integrated Meridian Mail Compact Option, documentation, telephone sets, system management, and a focused software feature set.

This product is based on the Meridian 1 Option 11C PBX and Meridian Mail Card Option. The physical appearance of the product is different than the existing Option 11C. The cabinets are smaller and of a different color. The peripheral cards have been reduced in size but are based on the existing Meridian 1 peripheral packs which therefore have the same functional characteristic.

Software

Option 11C Compact requires software generic X27 Release 1.00 and later versions of software. Release 1.00 is based on X11 Release 22.16 software.

Pre-Configured Database

The pre-configured database has been simplified compared to the Option 11C default database.

Incremental Software Management (ISM) parameters

The ISM parameter TNS provides a limit to the number of TNs that can be activated on an Option 11C Compact system. The base package provides 48 TNS. Additional TNs may be ordered in increments of 8, to a maximum of 128 TNS. All other ISM parameters are factory set and are modified during installation.

TNS 48 to 128 in increments of 8
AGNT (128)
ACDN (300)
AST (0)
DSL (0)
LTID (0)
MOPT (0)

Note: Mail TNs and Console power TNS do not count against available TNs purchased.

Software Installation Procedures

The same Option 11C software installation procedures are used as with the existing Option 11C product. The Software Daughter board is pre-loaded at the factory with software. This is the prime delivery vehicle for software for new system installations.

Alternately, the Software Delivery (PCMCIA) Card can be used to load software for upgrades, or new system installations.

Internet Software Delivery

Internet software delivery will be available after market release for future software upgrades. The Option 11C Internet URL, process and instructions will be used. The WEB page will be enhanced at that time to accommodate the 11C Compact software.

Order the following package to receive Internet access capability and instructions for the Option 11C and Option 11C Compact:

U.S. Registration - NTFS6851/A0672658

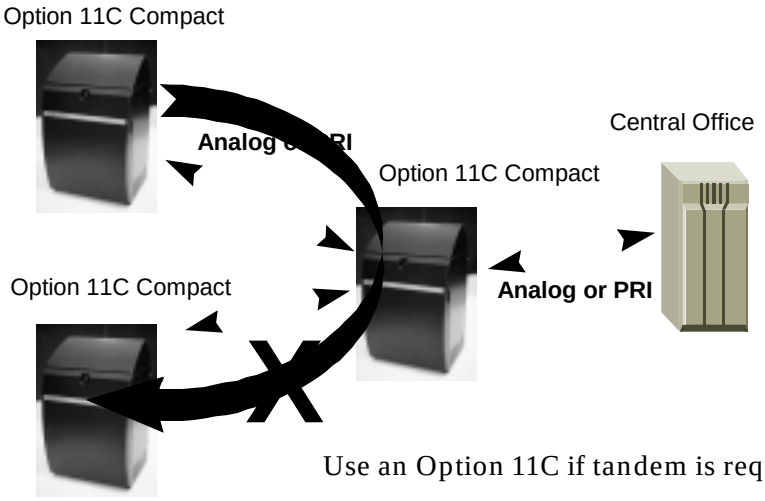
Canada Registration - NTFS6850/A0672657

Networking - Call Processing

Option 11C Compact Can NOT be Used as a Tandem Node

The Option 11C Compact when used in a network can not be used as a tandem node. The calls will not tandem through the Option 11C Compact going from Tie route to Tie route; whether it is made dialing trunk access code, CDP or ESN. Calls will tandem from Tie trunks to public network type trunks and from public network type trunks to Tie trunks. Use an Option 11C with tandem network capabilities if that is most effective for your customer.

No Tie Route to Tie Route Tandem Connections

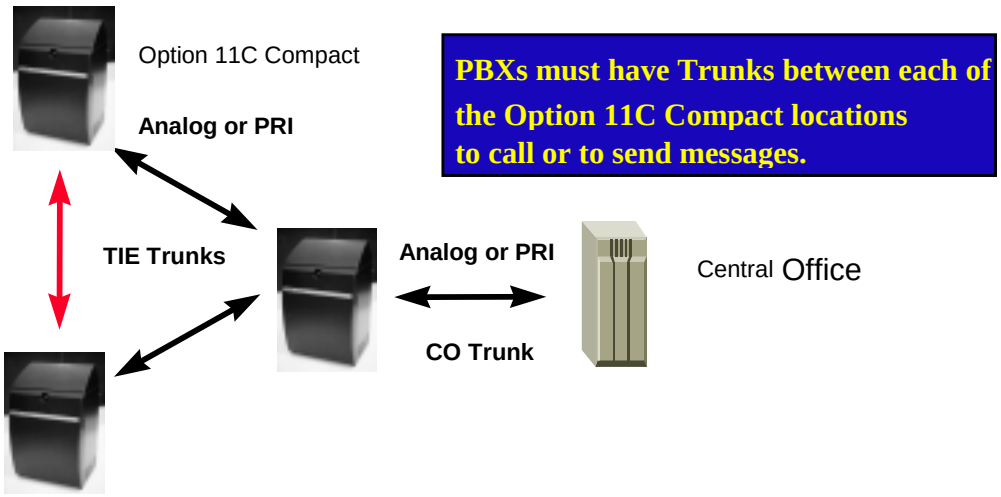


Use an Option 11C if tandem is required

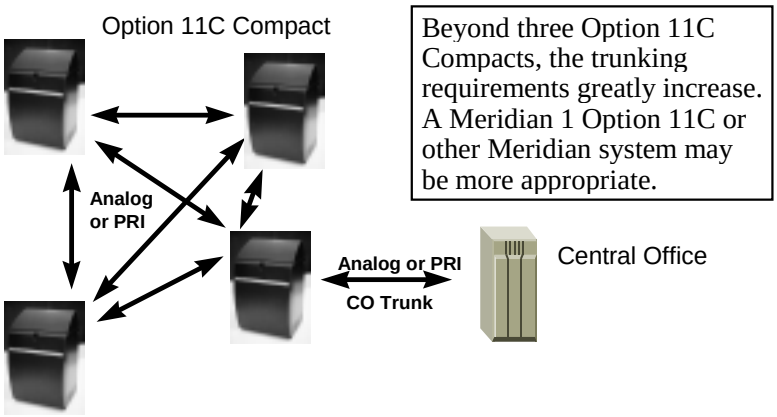
Beyond Two Option 11C Compact Network

Trunks between all sites are required when more than two Option 11C Compact machines are networked together. All sites need to be connected together as there is no Tie route to Tie route tandem capability. There is no alternate routing capability through another site if all trunks to one site are busy. This may not be cost effective and an Option 11C with tandeming capabilities should be considered.

Tie route redirected via an attendant, using the transfer, the conference, call forward or hunt to another Tie route is allowed. Tandem back out the same Tie route is allowed.



Beyond Three Option 11C Compact Network



Hardware Description

Cabinets (NTMW08)

The Option 11C Compact introduces a new cabinet. The same cabinet is used for the main and expansion cabinet.

- Wall mounted only
- Size: 25.25”H X 15”W X 13.25”Deep
- Weight: 32lbs empty and 58.5lb full
- Color: Black
- Six peripheral card slots
- Meridian Mail Compact Option dedicated slot 10.
- EMI shield at the cards faceplate
- One small fan found in the back of the top cap
- One TTY interface connector (3 ports on main cabinet, 1 port on expansion cabinet)
- Has One Ethernet connector which has direct MAU adapter (No interface cable required)
- No Auxiliary connector (No +/-15 volt console power or PFTU signal)
- UPS power backup only (No DC battery backup available)

Note: Card slot 20 is not used, and must be filled by a blank faceplate in order to meet EMI requirements.

Cabinet Cable Routing: The cabinet has a solid tray at the bottom which was designed with a gap at the back of it. When the cabinet is mounted on the wall, it leaves the gap at the back of the tray to feed cables through. All cables connecting inside the cabinet must be passed through the gap and routed inside the cabinet to their appropriate connectors.

Cabinet Card Slot Assignment

MAIN CABINET

POWER	CPU	10 MAIL	1&2	3&4	5&6
			7	8	9

EXPANSION CABINET

POWER	Fbr	20 UNUSED	11&12	13&14	15/16
			17	18	19

The Peripheral cards are keyed and have the following card slot location:

- The PRI/DTI can only be located in the top three slots of the main cabinet
- The Combo pack can only be located in the top three slots of either cabinet.
- The 24 DLC and 16 MLC can be located in any peripheral slots

When configuring through the overlays, single slot assignment must be used. In software use the following card slot assignment:

- PRI/DTI Digital loop (DLOP) 1, 3, 5
- 4UT (motherboard) slots 1, 3, 5, 11, 13, 15 (Odd number - top slots of both cabs)
- 4MLC(daughterboard) slots 2, 4, 6, 12, 14, 16 (Even number - top slots of both cabs)
- The 16MLC and 24DLC slots 1,3,5,7,8,9,11,13,15,17,18,19

Power supply (NTMW11)

Power Supply characteristics:

- Input Voltage: AC 110 to 240V, 50/60 HZ
- Card ejector latches (Non locking)
- No DC battery backup connector
- Four faceplate installation screws
- Supplies power to every card in the cabinet even Meridian Mail Compact Option

Selecting an Un-interruptable Power supply (UPS)

- Selecting a UPS is a function of the total power to be supplied x the total hold up time desired.
- NTMW11AA Power Supply is rated at 750 VA Max.
- Real Power is 460 Watts Max.
- Power factor of approx. 0.6
- Power up in-rush surge current is 35A max. (120VAC)
- A typical 80 line single cabinet system (CPU,Mail,3-24DLC,1-PRI) will have a UPS load of approx. 360 VA.

Small System Controller (SSC) (NTMW01)

The Option 11C Compact SSC is a standard size, single slot Meridian 1 style circuit pack that resides in slot 0 of the main cabinet. It is based in the Option 11C SSC card but is not interchangeable.

The Option 11C Compact Small System Controller has a commercially based CPU (M68040 family) as the primary call processor. The CPU operates under the Wind Rivers Systems VxWorks real time operating system which is the same as the Meridian 1 Option 11C, 51C, 61C, and 81. The main features include:

- Main CPU: MC68LC040 running VxWorks.
- Auxiliary CPU: MC68020.
- Flash ROM program/file storage.
- Supports the Ethernet interface.
- Two Built-in PCMCIA interfaces drives A and B
- Built-in Time of Day device (holds for up to 15 minutes).
- Supports three standard TTY ports.
- Software Daughterboard.
- One Fiber Expansion Daughterboard.
- Security Device.
- Identical Option 11C SSC Conference, TDS and Digitone Receiver capabilities

Switching Network and Real Time Measurement

- Switching Network: - totally non-blocking switching matrix
- Processing Rating: - Up to 58,000 EBC (Equivalent Basic Calls - Note: nominal rating; actual capacity dependent on site configuration, and peripheral type.

PCMCIA Drive

The System Core Card has a faceplate accessible PCMCIA type III drive. This is a dual socket that can support up to 2 PCMCIA type II cards such as FLASH cards. The PCMCIA drive provides an interface to the system for software delivery, archived databases, or database backup.

Security Device

Installation of software, feature set and ISM parameters is protected by a security device on the SSC card and a site specific keycode. The security device is mounted on the card as part of the new system installation. Each security device has a unique identification number (Security ID) and is not changeable on the device. As long as the security device stays with the system, the Security ID of the system remains the same. The Security ID is a key component of the system tracking database.

Conference

The System Core Card supports 32 ports (conferees) on the base system. The base configuration can support up to 10 three party conferences or up to 4 six party conferences. (pre-configured as loops 29 and 30)

Conference capabilities can be expanded by 16 ports (loop 31) when an expansion box is added to the system via the fiber expansion daughterboard.. Therefore, the conference capability extends to 48 ports for two cabinets.

Software Daughterboard (NTMW30AA)

Software operation and storage is provided via FLASH based technology residing on a daughterboard mounted on the System Core Card. It contains a master copy of the software, pre-configured data, firmware, feature sets, and patches. Highlights of this card include:

- Used for software storage and operating space.
- Used for software delivery for new systems
- 24Mb for program store and 8 Mb for file system.
- Mounted on CPU pack in the main cabinet.
- Re-programmable.
- Factory loaded with the software generic

Software Delivery (PCMCIA) Card (NTMW30BA)

The Software Delivery Card is a PCMCIA Flash card that can be used to deliver system software to the system. Software upgrades can be delivered on SDC (PCMCIA) card and transferred to the on-board FLASH Software Daughterboard.

Note: A PCMCIA card is **not** required to deliver software for new system installations. The Software Daughterboard comes pre-programmed with system software.

The same SDC (PCMCIA) card can be used to upgrade multiple sites, and can be re-programmed for future upgrades. Pre-programmed or blank cards can be ordered from Nortel. SDC (PCMCIA) cards can be duplicated or re-programmed at the distributor locations with an appropriate hardware setup as described below.

> ***Note:*** Installation/upgrade of software, Feature Set, or ISM parameters requires site specific keycodes provided by Nortel.

PCMCIA card Duplication Setup: To duplicate software from one PCMCIA card to other PCMCIA cards, the following hardware setup is required:

- Personal Computer (386 or faster)
- Windows (recommended but not essential)
- A PCMCIA drive and software for Flash ATA memory cards

There are many PCMCIA drive/PC combinations on the market. The following lists setups that have been tried within Nortel, however these are not the only configurations that will work. When dealing with a local PC distributor, let them know what you are trying to program.

PCMCIA cards supported on Option 11C include:

- Toshiba (TH6SS160402AAA)
- IBM (40G4315)
- Sandisk (SDP5B40101)

Example Configurations:

Setup #1

- Pentium/75MHz

- PCNFS s/w
- Netscape
- Eiger ESA-2000 (2-slot PCMCIA ISA adapter)

Setup #2

- Go PC486DX2/66
- Windows 3.11
- 3COM ethernet card (etherlink II 3c503)
- Netscape
- WFTP 4.00 s/w
- SCM Swapbox Classic X2 (works in windows)

Fiber Daughterboard (NTDK22)

Expansion to a 2nd cabinet is done via CPU mounted fiber daughterboards. The expansion cabinet requires one fiber daughterboard mounted on the CPU pack and one expansion cabinet fiber receiver pack installed in the expansion cabinet - slot 0. The Option 11C Compact system supports a 10m fiber connectivity. The fiber connectivity provides up to 10m of separation between the cabinets (main and expansion) via a plastic fiber cable. This allows flexibility in locating expansion cabinets.

The fiber daughterboard must be installed on the SSC motherboard top connector associated with Fiber 1. The bottom connector associated with fiber 2 is not used at this time.

The main features of the fiber daughterboards are:

- Fiber connection to expansion cabinets
- Mounted on Small System Controller
- Expansion cabinet requires a fiber daughterboard on the main CPU
- The daughterboard requires a corresponding fiber receiver pack to be installed in the expansion cabinet
- Built in conference

Fiber Receiver Pack (NTMW10)

The expansion cabinet fiber receiver pack is introduced to provide fiber transmitter and receiver interface to the main cabinet. The main features include:

- Installed in slot 0 of the expansion cabinet.
- Provides fiber interface to main cabinet.
- Includes local TTY port.

Fiber Optic Cables

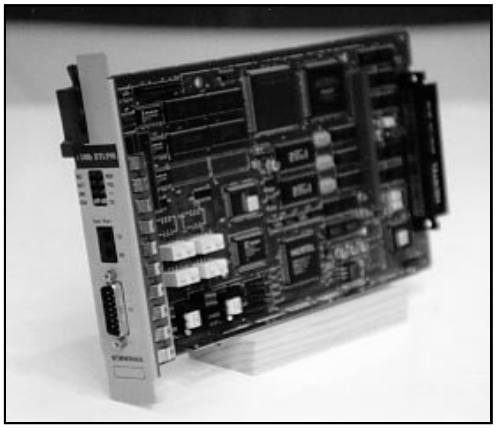
The Option 11C Compact system supports the 10m plastic cable for connection between cabinets.

Fiber Specification

The plastic fiber cable is not an industry standard. It is provided by Hewlett Packard to work with a proprietary plastic fiber interface. It must be 10 meters in length. This cable is supplied by Northern Telecom (A0632902).

Mini IPE 1.5 Mbps DTI/PRI Mini IPE Card (NTMW04)

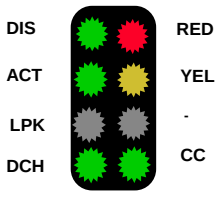
The Digital Trunk Interface/Primary Rate Interface card is a 1.544 Mbps DS-1 interface card. The card will perform DTI or PRI functions. The card can also be referred to as T-1 Multi Purpose Digital Interface (TMDI). The card incorporates all of the DTI/PRI components on one card. There is no requirement for any daughterboards to be added. The DS-1 interface, MSDL D Channel and clock circuits are all incorporated on one card. Some of the highlights of the card include:



- Mini card Size: 6”H X 1”W X 10”D
- DB15 Faceplate T-1 connector (Same pin-out as other Meridian 1products)
- Non intrusive Faceplate Bantam T1 monitor jack
- Faceplate status LEDs

Note: The CSU cable connected to the faceplate of the card must have a 90 degree connector as the one provided with the product. If you do not use a 90 degree connector, the cabinet cover may not close properly.

Faceplate Status LED's
The LEDs on the Murray PRI pack are laid out on the faceplate as follows:



The functions of the LEDs are described in the following table:

LED Label	Colour(s)	Function
DIS	red	Card disabled

		- LED will be lit only if all applications and TMDI are disabled in LD96
ACT	green	Active - LED always lit if pack powered up O.K
RED	red	Local Alarm - LED will be lit while card is in a local alarm state e.g. disabled by S/W, unplugged T1 link, etc. - LED will turn off if local alarms cleared
YEL	yellow	Remote Alarm - LED will be lit while card is detecting a remote alarm indication- LED will be off if remote alarm indication cleared
LBK	green	Loopback- LED will be lit when card is placed in loopback mode by S/W- LED will turn off when card is taken out of loopback mode by S/W
-	yellow	NOT USED- LED never lit
DCH	red/green	D-channel- LED will only function if card is configured as PRI- LED will be red if DCH is disabled -LED will be off if DCH is enabled but not established - LED will turn green when DCH establishes
CC	red/green	Clock Recovery- LED will be red if circuit is disabled (system will be in free run mode) - LED will be green if circuit is enabled (card will be locked to incoming signal)

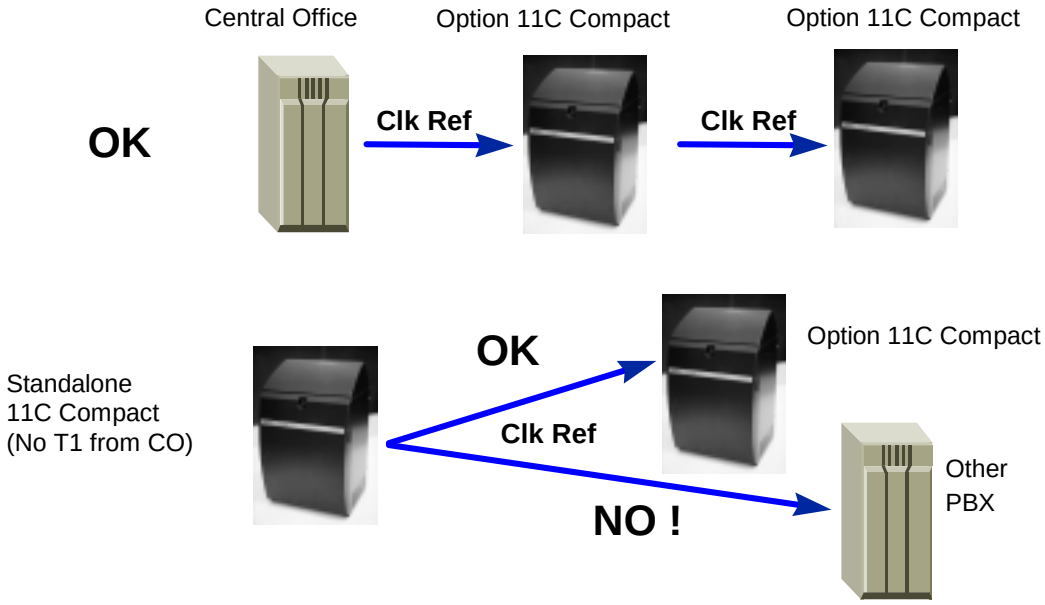
Clocking

The clock circuit incorporated on the card is called a clock recovery circuit. This clock recovery circuit does not have the same characteristics as a clock controller circuit. The clock recovery circuit has an automatic tracking mechanism which must be used to track on a reliable incoming T-1 carrier signal like a central office signal. The circuit provides reference to the SSC to synchronize the system clock just like a clock controller does. The circuit has a high level of jitter rejection and stability. The clock recovery circuit does not provide HOLD-OVER function when there is T-1 link failure. The clock recovery circuit does not meet stratum 3 or stratum 4

clock frequency accuracy when it is in the free run mode. The circuit supports a single primary clock source and does not support a secondary one. This circuit has proven to work very reliably, robustly and without service affecting issues.

Tracking

The Option 11C Compact must track on a reliable incoming clock source like a Central Office or another Meridian 1 product. One Option 11C Compact can track on another Option 11C Compact as they have the same characteristics. Other PBXs, Central Office or external equipment can not track off an Option 11C Compact.



Overlay Changes to Support the NTMW04 DTI/PRI Card

Overlay 60

Following is a summary of system responses to LD60 clock controller commands using a NTMW04 PRI with clock recovery circuit. The same clock controller commands are used for the clock recovery circuit. It is important to note that the clock recovery circuit is only controlled by the enable and disable commands. The circuit will be tracking when it is enabled and in free run when it is disabled. Because we are allowing for potential future functionality, the software TRCK commands are available through the overlay. Using them on the clock recovery circuit has no effect on the hardware.

Disable and Enable commands do not control the PRI/DTI DIS LED on this product. Disabling the loop will put the card in local RED alarm. Overlay 96 enable TMDI must be used before you can enable the loop.

Clock recovery commands:

1) ***ENL CC 0*** command

Clock recovery enabled and automatically puts the clock recovery circuit in tracking mode.

SSCK 0 stat clock returns normal info including

LOCKED TO SLOT x

2) ***DIS CC 0*** command

Clock recovery disabled

SSCK 0 stat clock returns clock disabled

3) ***TRCK FRUN***

No effect on the clock recovery and no DTI codes returned. SSCK 0 will return DTI058 because the recovery circuit returns a 'locked' message as it is tracking.

4) ***TRCK PCK***

No effect on clock recovery but could get DTI053 message SSCK 0 will return normal info including LOCKED TO SLOT x

New error codes:

DTI4135 - Cannot enable DTI loop unless the TMDI card is operational.

Action: Ensure the card is plugged in, then enable the card in overlay 96.

DTI4136 - Attempt to enable T1E1 application or port failed. Try ENLL again, or try RST TMDI command in overlay 96.

DTI4137 - Attempt to enable T1E1 port timed out. Try ENLL again, or try RST TMDI command in overlay 96.

DTI4138 - SET_MSDLMISP_PTR failed during enabling of T1E1 port. Data corruption may have occurred. Problem may be recovered by a system initialization, but if not contact system support.

Overlay 73

Secondary reference can not be configured in overlay 73 as a secondary reference is not supported.

Overlay 96

The DTI/PRI card is based on the T-1 Multi Purpose Digital Interface. The TMDI has DS-1 layer 1 and the MSDL D channel as loadware. The Previous generation of Meridian 1 PRI/DTI packs had the DS-1 as firmware configured on the pack at the factory. On the NTMW04 PRI/DTI loadware is part of the software generic and can now be updated by software upgrades.

This improvement does mean that new commands are introduced in overlay 96. The enable TMDI will download the card with the loadware for the DS-1 and the D channel. The

MSDL commands in Overlay 96 are no longer required because the TMDI commands incorporate that function. The D channel is still configured as an MSDL card in overlay 17.

Note: The disable TMDI must be used before the PRI/DTI pack is removed from the system. A system initialization will occur if you do not disable the TMDI before removing it.

Overlay 96 TMDI Commands

The commands to enable, disable, force download and stat the PRI/DTI card

in overlay 96 are: (# = digital loop card slot number)

ENL TMDI #

ENL TMDI # FDL - Enable TMDI and force download

DIS TMDI #

STAT TMDI

RST TMDI # - Reset TMDI

New error codes:

MSDL0211 - Attempt to enable T1E1 application during ENLL timed out. RST TMDI in overlay 96, then try again.

MSDL0212 - TMDI card could not enable T1E1 application. RST TMDI in overlay 96, then try again.

MSDL0213 - T1E1 application is in a transient state and could not be enabled. Wait a while and try ENLL again.

MSDL0214 - Request to enable DTI port on TMDI failed.

MSDL0215 - Request to disable DTI port on TMDI failed.

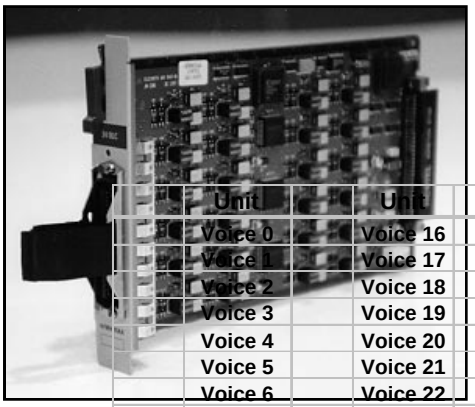
MSDL0309 - TMDI output buffer still in queue. Try the operation again, or RST TMDI in overlay 96.

MSDL0310 - TMDI output not sent to card. Try the operation again,or RST TMDI in overlay 96.

Mini IPI 24 Port Digital Line Card (NTMW05)

The NTMW05AA - 24 Port Digital Line Card is based on the Meridian 1 NT8D02 16 Port Digital Line Card and has the same functionality. The card has 24 voice ports and 8 data ports. This card supports all the Aries sets 2006, 2008, 2008F, 2616, 2216 and 2250 console. It is a mini peripheral card with a 25 pair MDF faceplate connector. The 25 pair MDF cable is held on the faceplate by a velcro strap.

Note: The 2250 console requires power TNS and must be used from this card as there is no AUX connector on the cabinet. The PWR TNs used do not count against the total TNS purchased.



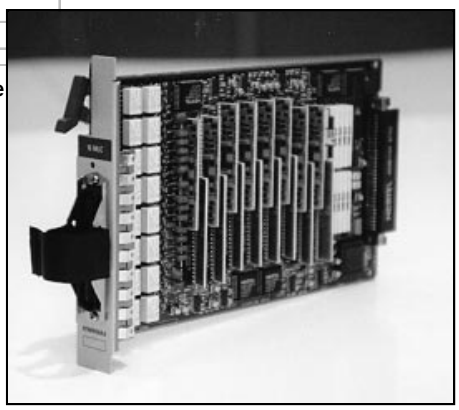
Voice Units to Data Units Relationship on a 24 DLC:

Unit		Unit
Voice 0		Voice 16
Voice 1		Voice 17
Voice 2		Voice 18
Voice 3		Voice 19
Voice 4		Voice 20
Voice 5		Voice 21
Voice 6		Voice 22
Voice 7		Voice 23
Voice 8	↔	Data 24
Voice 9	↔	Data 25
Voice 10	↔	Data 26
Voice 11	↔	Data 27
Voice 12	↔	Data 28
Voice 13	↔	Data 29
Voice 14	↔	Data 30
Voice 15	↔	Data 31

↔ Voice & Data Associated on same

Mini IPE 16 Port Analog Line Card (NTMW06)

The NTM06

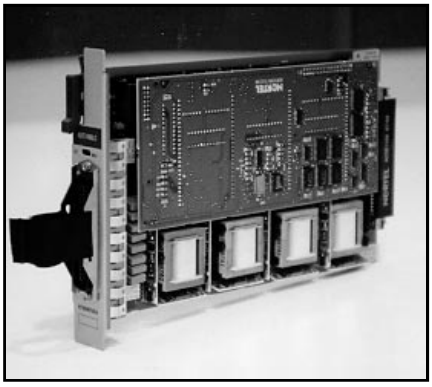


AA 16 Port Message Waiting Analog Line Card is based on the Meridian 1 NT8D09 16 Port Message Waiting Line Card and has the following characteristics:

- Mini card Size: 6”H X 1”W X 10”D
- Faceplate MDF connector with velcro strap
- Same MDF pin out as the existing NT8D09 16MLC
- Bridge 5 sets per TN and two of the 5 sets can have -150 volt message waiting lamps

Mini IPE 4 Port Trunk/4 Port Line Card (NTMW07)

The NTMW07 4UT/4MLC Mini IPE card is based on the Meridian 1 NT8D14 analog trunk pack and the NT8D09 Message Waiting Line Card. There are 4 analog trunk ports which are located on the motherboard and there 4 message waiting lines on the daughterboard. The Combo and the MLC are configured in software with the card slot and unit. They are assigned units 0 to 3. The pack also has the following:



- Mini card size: 6”H X 1”W X 10”D
- Faceplate 25 pair MDF connector with velcro strap
- Integrated Power Fail Transfer - PFT
-

The 4 analog trunks can be configured as COT Loop start, COT ground start, DID or TIE loop dial repeat, Music, Recorded announcement and paging.

Note: There is no analog 4 Wire E&M signaling available. The PRI/DTI card should be used if you require 4 Wire E&M signaling.

The 4 message waiting lines are identical to the 16 MLC lines which provide the same functionality.

Power Fail Transfer
Unit 3 of the NTMW07 card has the built in power fail transfer. On power fail transfer, unit 3 of the trunk pack connects to unit 3 of the message waiting line. The feature can be disabled on the card by using the jumper strap. The power fail set must have a ground Start Button to pull dial tone from the CO if the trunk at unit 3 is ground start. Power fail transfer is activated on:

- CPU failure
- Cabinet Power failure
- Trunk disable

Peripheral Cards Cross Connect Pin Out

Pin #	PRI/DTI		24DLC		16MLC		4UT/4MLC	
1	26	TxT	xxx	R0	T0	R0	T0	R0	T0
2	27	---	xxx	R1	T1	R1	T1	R1	T1
3	28	RxT	xxx	R2	T2	R2	T2	R2	T2
4	29	---	xxx	R3	T3	R3	T3	R3	T3
5	30	---	xxx	R4	T4	R4	T4	---	---
6	31	---	xxx	R5	T5	R5	T5	---	---
7	32	---	xxx	R6	T6	R6	T6	---	---
8	33	---	xxx	R7	T7	R7	T7	---	---
9	34	TxR	xxx	R8	T8	R8	T8	TR0	TT0
10	35	---	xxx	R9	T9	R9	T9	SIG0.A	SIG0.B
11	36	RxR	xxx	R10	T10	R10	T10	TR1	TT1
12	37	---	xxx	R11	T11	R11	T11	SIG1.A	SIG1.B
13	38	---	xxx	R12	T12	R12	T12	TR2	TT2
14	39	---	xxx	R13	T13	R13	T13	SIG2.A	SIG2.B
15	40	---	xxx	R14	T14	R14	T14	TR3	TT3
16	41	xxx	xxx	R15	T15	R15	T15	SIG3.A	SIG3.B
17	42	xxx	xxx	R16	T16	---	---	---	---
18	43	xxx	xxx	R17	T17	---	---	---	---
19	44	xxx	xxx	R18	T18	---	---	---	---
20	45	xxx	xxx	R19	T19	---	---	---	---
21	46	xxx	xxx	R20	T20	---	---	---	---
22	47	xxx	xxx	R21	T21	---	---	---	---
23	48	xxx	xxx	R22	T22	---	---	---	---
24	49	xxx	xxx	R23	T23	---	---	---	---
25	50	xxx	xxx	---	---	---	---	---	---

Environmental Requirements

Ambient temperature: Recommend 59-86F (15-30C)
Absolute 32-113F (0-45C)

Relative Humidity % without condensation:

Recommended 20-55

Absolute 10-95, temperature change less than 18F (10C) per hour

Chapter 3— Meridian Mail Compact Option Description

Introduction

This Chapter provides an overview of the Option 11C Compact system. The Meridian Mail Compact Option requires minimum Release 11.19 software.

Meridian Mail Compact Hardware Overview

Mail CPU Card (NTMW02)

- Based on Card Option Mail
- Installs in dedicated slot 10 of the main cabinet
- Uses Cabinet Power Supply
- 2GB SCSI Hard Drive
- SCSI Tape Interface on Faceplate
- Same Tape Drive as Option 11C
- No SCSI termination required
- User Interface via TTY pass through
- DB9 Single monitor debug RSM port 0 for diagnostics at 2400 baud
- Full height card
- Face Plate LEDs: ACT OFF - booting, ACT Green - Operational, HDD Yellow- Disk Access
- Supports two NTMW03 4 Port Daughterboards

Meridian Mail Compact Option CPU is Hot Pluggable

The courtesy down procedure **must** be used before removing the card from the system, connecting the tape drive or disconnecting the tape drive. See advisory section for further details. The Meridian Mail Compact Option card is hot-pluggable. There is no need to turn off the power to install or remove the Meridian Mail Compact Option card.

To prepare Meridian Mail Compact Option for maintenance:

- Courtesy down Meridian Mail

- Disable the AML using Overlay 48.

Reset Button

The courtesy down procedure **must** be used before resetting the Meridian Mail Compact Option with the face plate button labeled RESET. This button is used to reset Meridian Mail Compact Option. Pressing the button will cause the mail card to cold reboot and will be out of service for approximately ten minutes while it boots. The button must be pressed after installing the Meridian Mail Compact Option card back in its position, connecting the tape drive or disconnecting the tape drive. See advisory section for further details.

Faceplate DB9 Maintenance Connector

This Mail Compact faceplate DB9 connector is a DCE 2400 baud maintenance port used to monitor the mail card hardware boot. After a reset, Meridian Mail will boot and you can watch the hardware diagnostics results. The port will stop printing after PRM loading. This port can not be used to do software installation or Meridian Mail administration. The AX pass through command using the PBX TTY with a VT220 emulation terminal must be used to install the mail software or perform Administration.

DSP Daughterboard (NTMW03)

- 4 port DSP daughterboards
- Mount on the NTMW02 CPU board
- 2 cards supported on the system

Meridian Mail Compact Option Hardware Requirements

Use the following table to determine minimal hardware requirements for the system for MERIDIAN MAIL COMPACT OPTION .

Compact Option Hardware Vintage Requirements

Product	Description	Release
NTMW02AA	68K CPU Pack	03
NTMW03AA	Digital Voice Processor Daughter Card [a]	03
A0637905 or A0368522	External Tandberg TDC4220 Tape Drive (optional) [b] or Viper	not applicable
NTDK74AA A0679119	2GB Disk Drive -Seagate ST52160N	minimum F/W release on the drive 381
NT5R36AC	Meridian Mail Release 11 North American software tape	NT5R36AC.03

Notes

a. One NTMW03 Card is required for each 4 ports of mail to a maximum of 8 ports or 2 NTMW03 cards on the system.

b. The Tandberg Tape drive can be ordered for the Compact Option system. The Archive 150S Viper tape drive is also supported.

Platform Configuration

Channel configurations

System Type	Minimum Channels in System	Software Channel Increments	Maximum Channels in System
Compact Option	4	2	8

Multi-Language Impact on Storage

- Approx. 3 hours of voice storage is used by each additional language.
- Max Languages Supported by Platform-Size:

Platform	Size	Max Languages
Compact Option	24Hr	4

Meridian Mail Compact Option Feature Overview

The following table lists the supported Meridian Mail Compact Option features available with Meridian Mail Release 11. Features not appearing in this table are not available or supported on the Compact Option platform.

- Call answering
- Auto Attendant
- Thru Dial
- Name Dial
- Multiple languages (Optional)
- Dual language prompting (Optional)
- Integrated Voice Mail Administration
- Enterprise Networking (Interoffice Package only)
- External Calling Line ID
- Maintenance and Diagnostics and SEER NTP rework
- Password display suppression
- Personal distribution list enhancements
- Miscellaneous PR fixes and enhancements

- SEER enhancements and hacker tracker
- Selective backup and bulk provisioning
- System Operations Enhancements
- Temporary Absence Greeting
- Universal Link Message Analyzer

Meridian Mail Compact Option Overview

Meridian Mail Compact Option is a feature rich release containing new and enhanced features in the area of Networking, User Interface, Security and OA&M. Additional tools and diagnostics have also been provided to help the support organizations maintain the product.

Enterprise Networking

Meridian Mail Compact Option Enterprise Networking is a global solution eliminating the need for networking modems and introducing Names Across the Network and Remote Voice User Database Propagation.

Enterprise Networking is standard software with the Compact Option Interoffice Package. Remote sites networked with the Meridian Mail Compact Option must also be Enterprise Networking sites.

Networking Capacity

The maximum number of Meridian Mail Enterprise Networking sites is 10 for the Compact Option platform.

Names Across the Network

If a personal verification or spoken name has been recorded by the message sender, it will automatically be sent to the remote site with the message. Users at the receiving site will hear, in the senders own voice, a personal verification.

Remote Voice User Database Propagation

Along with a spoken name, the text or spelling of the senders name is sent with the message to the remote site. Upon receipt of a new message, Meridian Mail will automatically create a Temporary Remote Voice User entry, enabling name dialing across the Meridian Mail network. Remote Voice User Database Propagation significantly reduces networking administration by eliminating the need to manually provision Remote Voice Users, a requirement of pre-Release11 systems.

Networking Features

Feature	MM11 COMPACT OPTION Enterprise Networking
Name Addressing Users can compose messages to remote users by entering their name.	√

Automatic addition of Remote Voice Users Automatic creation of Temporary Remote Voice Users by sending network messages	√
Call Sender The recipient can call the originator of the message by entering the call sender command (9 on the keypad)	√
Name Dialing Users at remote sites can be called by entering their names.	√
Personal Distribution Lists (PDL) The networking address can be included in a PDL.	√
System Distribution Lists (SDL) The networking address can be included in a PDL.	√
Multiple Recipients All the recipients of the message are included in the header.	√
Reply A message reply can be recorded and sent to the originator	√
Reply All A message reply can be recorded and sent to the originator and all other recipients	√
Personal Verification in Senders Voice Personal Verification will be sent across the network with the message	√

Administrator Recorded Personal Verification Personal verifications can be recorded by the administrator for remote users.	√
Remote Site Spoken Names A spoken name can be recorded for each of the remote sites.	√
Private Message Tag Messages are announced to the recipient as *private* and the recipient is not allowed to forward the message.	√
Acknowledgment Tag* notification to the sender when the recipient reads the message.	√
Urgent Message Tag** Messages can be announced as urgent and will invoke urgent triggered features such an Remote Notification and Message Waiting Indicators.	√
Received Time Announced The time at which the message is placed in the mailbox will be announced in the message envelope.	√
Sent Time Announced The message header includes the time that the message was sent. The date and time are played in the time-zone of the sender.	√

99 Minute Messages*** The combined message body and attachments can be up to 99 minutes long.	√

Security

Hacker Monitor

Hacker Monitor provides a unique means of automatically monitoring mailboxes considered to be under threat from hackers. Additionally, an urgent page can immediately alert an administrator or technician if a log-in or thru-dial occurs. The Calling Line ID of the hacker is also captured by Meridian Mail which can be useful for assisting the authorities in tracing the guilty party.

Meridian Mail supports three types of hacker monitoring and provides immediate notification of hacker activity upon detection. Hacker Monitor monitors Meridian Mail in the following ways:

- Mailbox login

  Login to a specific mailbox during a specified period of time.

- Thru-dial service access

  Access to all thru-dial services during a specified period of time.

- **Login or Thru-dial access based on calling line ID (CLID)**

  Mailbox logins or thru-dial from a specified CLID (obtained, for example, from PBX call detail records).

The Administrator can specify up to twelve different CLID's with each containing a maximum of 15 digits. Monitoring can be for the complete CLID, or just the area code or the area code and office code.

Hacker Notification

Once hacker activity has been detected, a minor severity SEER message is sent to the SEER printer and if specified, deposited as a voice mail message in up to two SEER Trigger Mailboxes. A SEER Trigger Mailbox is any standard mailbox identified to receive messages from the system when specific SEER messages are output. Any SEER message sent to the SEER Trigger Mailbox is automatically marked as 'Urgent'. If Remote Notification is enabled on the mailbox, immediate notification could in turn be sent to a pager.

The actual message that would be deposited in the SEER Trigger Mailbox appears as follows:

Mailbox login / Mailbox login based on CLID

"This is a SEER message. A call has been detected from phone number <digits> to mailbox <digits>. Refer to SEER number <digits>."

Thru-dial service access/ Thru-dial service access based on CLID

"This is a SEER message. A thru-dial call has been detected from phone number <digits> to <digits>. Refer to SEER number <digits>."

Password Display Suppression

In these days of heightened awareness of security issues, the need to protect password integrity has never been greater. Prior to MM11, all digits entered by a user would be displayed on their telephone set, including all password digits. With MM11 COMPACT OPTION, when a password is entered the display will replace the digits with dashes, ensuring that a casual on-looker will be unable to deduce the password, thus increasing Meridian Mail security.

Password Display Suppression also applies to additional Meridian Mail services. Refer to the following table for a complete listing of suppressed displays.

Suppressed Password Displays by Service Type

Service	Suppressed Items
Voice Messaging Login	Login password
Voice Messaging Password Change	Old password, new and re-entered passwords
Transcription Service	Transcription password for each voice form
Voice Menus	Optional Access Password
Announcements	Optional Access Password
Thru-dial	Optional Access Password
Voice Prompt Maintenance	Optional Update Password Update password change
Remote Activation	Optional Access Password

Permission/Restrictions Lists

Maximum flexibility is available in restrictions applied within Meridian Mail with the use of Permission/Restrictions Lists. A number of enhancements are introduced with Meridian Mail Compact Option including: maximum number lists increased from 4 to 80, maximum entries per list increased from 10 to 30, and maximum digits per entry increased from 5 to 20 digits.

Mailbox Passwords

Initial Mailbox Logon
The system administrator now has the option of forcing a mailbox password change upon first log on. This prevents a default password from being left on a mailbox for any length of time, and hence increases system security.

Default Mailbox Password
With Meridian Mail Compact Option, each time a new customer is added, a randomly generated 4 digit number will be used as the default mailbox prefix. When new mailboxes are provisioned, this random 4 digit number is prefixed to the mailbox number to create the user's default mailbox password.

User Interface

Temporary Absence Greeting
The Temporary Absence Greeting (TAG) feature adds a third type of greeting for Meridian Mail Compact Option users. The TAG temporarily overrides a subscriber's existing external and internal greetings, or the default system greeting (prompt). The existing greetings remain intact for re-use allowing subscribers to avoid re-recording personalized internal and external greetings. An expiration date and time for the TAG may also be set by the subscriber to automatically return to normal internal/external greetings at the user-specified date and time.

TAG is used in situations where the normal working routine will be interrupted for a period of time e.g., vacation, business trips, out of the office for the day. Special handling of the TAG ensures that callers who habitually skip greetings are made aware of the mailbox owner's temporary absence. If the caller attempts to skip the greeting, they are notified that the greeting has a special status and are given the option to return to the greeting, or record a message.

Express Messaging from either an internal or external caller, directed to a mailbox which has a TAG, is presented with the TAG. TAG overrides all other greetings or personal verification.

Messages sent to users with a TAG invoked will not be notified when using the Message Compose feature.

External Calling Line Identification (CLID)
In Meridian Mail Compact Option, the CLID for external (off-switch or off-net) callers will be captured and included in the message envelope. This will allow the receiver of the message to send a message back to the caller using the Reply command, or to call the sender of the message directly using the Call Sender command.

Meridian Mail will use the dialing translation tables, previously used only in the case of Fax on Demand and AMIS Networking, to convert external CLID into a dialable number. Prior to storing any new message, the dialing translation tables will be examined for any required CLID manipulation. The message envelope provided with each new message will include any CLID manipulation defined through the dialing translation tables. Messages which include external CLID will be stored by Meridian Mail as a non-user address.

External Call Sender
When external CLID is presented in the message envelope, the user can now place a call directly to the external message sender using the Call Sender feature. This capability exists today for internal and networked messages when internal CLID is presented to Meridian Mail.

External Call Sender can be enabled and disabled on a per user basis, and is controlled by the External Call Sender Permission / Restriction table identified through user administration.

External Reply
When external CLID is presented in the message envelope, a message can be recorded and delivered to the external caller using the Reply command. Messages with external CLID are stored as non-user addresses, therefore External Reply is controlled by the users ability to support the Delivery to Non-user feature as well as the Delivery to Non-user Permission / Restrictions assigned. These options are provisioned on a per user basis through user administration.

Personal Distribution Lists (PDL) Enhancements
Personal Distribution Lists allow user's to create and re-use personalized "mailing lists". When composing and addressing a message, a PDL can save a significant amount of time by eliminating the need to enter individual mailbox numbers. Meridian Mail Compact Option introduces a number of enhancements to PDL's including:

- Duplicate addresses are automatically removed from existing lists and entry of a duplicate address is not allowed.
- New addresses can be added to an existing PDL.
- A "Find" capability has been added, allowing users to search for a specific PDL address and delete if found or add if valid and not found.
- The user is informed of the number of addresses in a PDL once a list is selected for administration purposes.

Users are informed of Invalid PDL addresses and are offered a class of service option which can automatically delete addresses that become invalid. Users are prevented from entering invalid mailbox addressesValid addresses may become invalid when mailboxes are deleted in the system and when Network dialing plans or permission/restrictions change.

Configurable Announcements
First, the administrator can configure the number of times, up to 10, that an announcement will be played when accessed directly or through a voice menu. Prior to Meridian Mail Compact Option, announcements were played twice if accessed directly, and once when accessed via a voice menu.

Silent Disconnect
The administrator can now specify whether a "Good-bye" prompt is played after the announcement. Prior to MM11, a "Good-bye" prompt was played if an announcement was accessed directly; not if accessed via a voice menu. This proved to be confusing for callers involved in a Meridian Mail session while waiting in queue: if prompted with "Good-bye", callers had a tendency to hang up.

OA&M

Operational Measurement Enhancements

With Meridian Mail Compact Option, each time a Time of Day Controller or Thru- Dial service is accessed they will be included in the Voice Services Detail Report, which is renamed Services Report. This report will include total accesses for each specific Service ID, within a specified

time interval. Additionally, this report will now include the number of times a caller reverts or presses key “0” within the report interval

Selective Backup and Restore

Selective Backup and Restore provides considerable enhancements and greater flexibility in backing up and restoring data. User messages, Personal Distribution Lists (PDLs), and multimedia services may be backed up on-demand or as part of the regular backup schedule. All system backups and selective restores are performed on line, without taking the system out of service.

Selective Backup provides the capability to define the specific user or services for tape backup. To backup messages and PDLs, one of the following criteria may be chosen:

- All messages and PDLs in the system
- Disk Volume Name, up to the total number of volumes on the system
- Classes of service, up to 15
- Departments, up to 5 inputs[1]
- Mailbox number, up to 10 inputs[2]

and for backing up multimedia services, one of the following criteria may be chosen:

- All services
- Services specified by Service ID, up to 30 inputs[2]

Restoring of user messages, PDLs and multimedia services can be done on-line from a selective backup When restoring messages or PDLs, the user is locked out of their mailbox during the restore, although multimedia services continue to be available.

Any message in a users mailbox prior to a message restore is left in tact. Only those messages contained in the backup that do not currently exist in the users mailbox are restored. In the case of multimedia services, any existing service restored, is overwritten.

Bulk Provisioning

Bulk provisioning significantly reduces Meridian Mail administration when a standard set of services are desired for multiple Meridian Mail system customers. Bulk Provisioning can be used to seed a Meridian Mail system with Remote Voice Users to support Meridian Mail Networking.

With Meridian Mail Compact Option, applications can be built or updated on a ‘master’ site, backed up to tape, and then with Bulk Provisioning, restore them onto one or more ‘slave’ sites.

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[1] Input can include wildcards ‘+’ and ‘_”, which could permit the backup of more than 5 departments or more than 10 mailboxes or more than 30 services.

As long as each site is equipped with Meridian Mail Compact Option, the hardware platforms may vary.

Data to be added through Bulk Provisioning can consist of Voice Service DNs (VSDN), Voice Services i.e. voice menus, announcements, fax on demand definitions, voice forms etc., and local mailboxes. Restoring local mailboxes at a slave site would restore them as Remote Voice Users only, which provides support of personal verification and name dialing when a Meridian Mail Network exists.

SEER Enhancements

System Event and Error (SEER) messages generated by Meridian Mail provide an indication that either an event such as a nightly audit or an error has occurred. Each SEER message has a severity classification of minor, major or critical and is of one of the following categories: System, Administration and Error.

SEER Remap

An enhancement included with Meridian Mail Compact Option allows the System Administrator to remap the severity level of up to 60 SEERs to a different severity level (higher or lower). Additionally, the System Administrator can set automatic notification of the SEER to the SEER Trigger Mailbox, bypassing SEER Filtering.

SEER Filtering and Printer Output

Meridian Mail Compact Option provides the ability to filter the type of SEER messages that will output to a SEER printer and or SEER Trigger Mailbox. The printer output options include none, filtered, unfiltered.

If the printer option ‘filtered’ is chosen, Meridian Mail will examine the SEER severity and classification before output to a printer and or trigger mailbox occurs. Administrators define the minimum SEER severity as well as the SEER classification to be examined for output.

The available SEER severity definition choices include minor, major and critical. If minor is selected, then minor, major and critical messages are sent. If major is selected, only major and critical messages will be sent. The second level of filtering is based on the minimum SEER type, available choices include System, Administration and Error. If Administration is selected, then both Administration and Error type messages would be output. If Error messages are selected then only Error messages would be output as Error messages are considered to be the highest SEER type. If the severity ‘major’ along with the SEER type of ‘Error’ is selected then only major and critical SEER messages within the Error classification will be output.

SEER Escalation

SEER Escalation allows an administrator to define a threshold and interval of time in which specific SEERs identified through Meridian Mail administration are monitored. If the same SEER is generated more times then the defined threshold for the interval period, one of the following can occur:

- Escalate to the next higher severity level (minor and major messages) and
- Send immediate notification to SEER Trigger Mailbox and printer

or

- Escalate to the next higher severity level (minor and major messages) and
- Examine SEER Filters before notification to SEER Trigger Mailbox and printer is sent

SEER Throttling

SEER Throttling allows a limit to be set on the number of identical SEER messages that would be output to the SEER Trigger Mailbox and or printer. SEER Throttling only applies to printer output when 'filter' is defined as the printer output option.

The administrator defines a threshold and interval of time, once met, no additional SEER message is output to the SEER printer and Trigger Mailbox. This eliminates unnecessary output of reoccurring messages that could tie up the SEER printer or Trigger Mailbox.

SEER Trigger Mailbox

A SEER Trigger Mailbox is a mailbox identified through administration, in which a SEER message from the system is deposited. Up to two SEER Trigger Mailboxes can be identified to receive notification of SEER messages. Any SEER message deposited in the SEER Trigger Mailbox will be tagged as an urgent message and if combined with Outcalling, immediate notification could be sent to a pager. The SEER message deposited in the SEER Trigger Mailbox would be as follows:

This is a SEER message. Severity<severity>; Type<SEER type>;SEER number:<digits>

YEAR 2000 Compatibility

Meridian Mail Compact Option is fully compatible with the year 2000 and beyond and provides no interaction issues. Meridian Mail Compact Option addresses market concerns in how computing platforms with a traditional 2-digit year format will interact in the year 2000.

Software Configuration Engineering

Release 11 Software Packaging

The following table overviews Meridian Mail features. Each feature is classified as either standard (provided with Meridian Mail Compact Option Office Software) or optional (available as an additional feature).

Feature Type	Standard	Optional
Messaging	User Changeable Operator Revert Temporary Absence Greeting Personal Distribution List Editing External CLID Seer Trigger Mailbox	Multi-Languages Dual Language Prompting
Networking	Enterprise Networking (standard with the Interoffice package)	
Caller Services	Voice Menus	
Administration	Integrated Mailbox Administration Class of Service Session Trace Administration Tool SEER Improvements Administrative Interface Improvements Storage Recapture MMI Improvements Selective Backup Bulk Provisioning	
Security	Hacker Monitor Password Suppression	

Compact Option Software Tapes

Media

Meridian Mail Compact Optionis distributed on the following media:

- A0368760 DC6250 250MB tape cartridge

For the Archive Viper Tape Drive Unit, only DC6250 tape cartridges must be used for backup purposes. The mixed use of DC6150 and DC6250 tapes in the same tape drive can lead to tape drive head wear, producing reliability problems and tape drive errors.

Do not use the original Master Meridian Mail software tape for backup purposes, this tape is required for potential software and hardware modifications in the future. Use a "blank" DC6250 tape cartridge for backup purposes.

For the Tandberg Tape Drive unit, either a DC6250 tape cartridge or any tape up to a 2.5GB tape cartridge (A0630697) can be used for backup purposes. Although the DC6150 tape will work it is not recommended. The mixed use of the two tapes will not impact the normal wear and tear of the drive.

Language Packaging by Master Tape

The North America language taped is shipped with all Compact Option systems.

Part Numbers	Description
NT5R36AC A0684882	Meridian Mail Master Tape- North American 1 Release 11.19 Prompt Sets includes: North American English Canadian French Latin American Spanish German Japanese Brazilian Portuguese

Language Label Identification

A tape can hold up to six languages (four of which can be loaded onto a single Meridian Mail Compact Option system at any one time). When you receive your tape, look carefully at the label to identify what languages are actually on the tape. Some languages listed may have a double asterisk (**) or a single asterisk (*) next to them. A single * indicates that the language is present on the tape, but has not yet been trialled at a customer site. A ** indicates that the language is not yet available and a place holder language has been substituted instead.

The placeholder language is always North American English. Placeholder languages are required to support sites performing upgrades, where the original language(s) already exist on the system, but the actual language is not yet available.

The upgrade process compares the list of languages that are on the system with the list on the tape. A "match" must be found in order for the upgrade to proceed.

Note: When you use a tape containing a placeholder language, the list of languages that appears on the TTY during the procedure will not indicate which languages are a placeholder language. The label accurately reflects which languages are available.

MM11 COMPACT OPTION Keycode

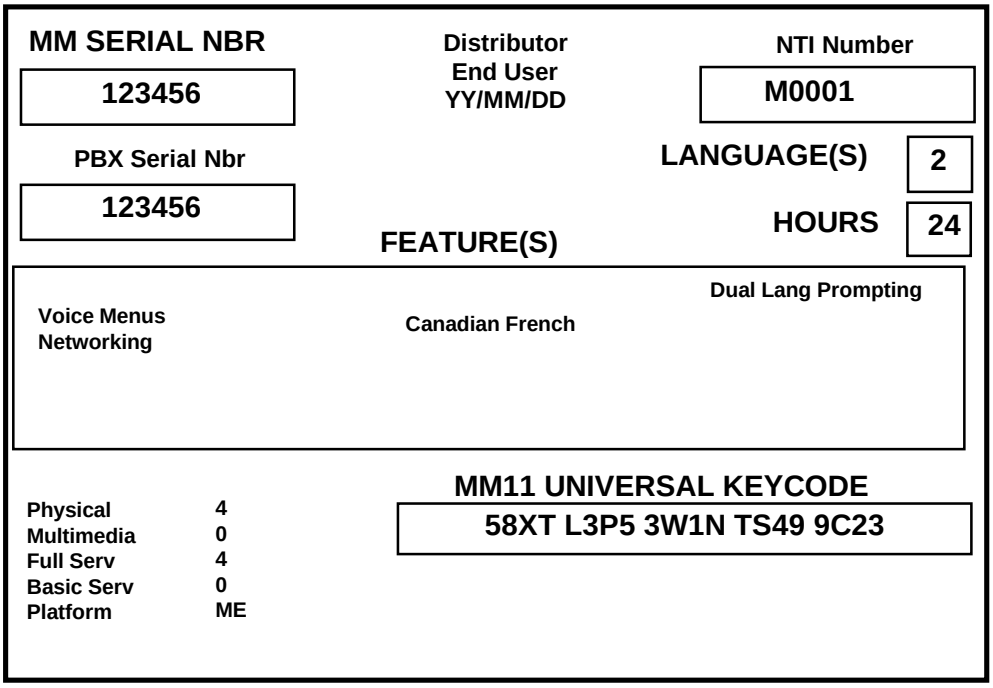
The following items contain information relating to the generation and application of keycodes.

The keycode will be a MM11 COMPACT OPTION keycode.

If a keycode fails during an installation or conversion, please contact 1-800-321-2649 to have the problem resolved.

MM11 COMPACT OPTION Keycode Label

Below is an example of the MM11 COMPACT OPTION keycode label that is shipped with the software.



Notes to the Keycode Label: MM11 COMPACT OPTION port types are controlled by the keycode. The number of ports by type authorized by the keycode are listed in the lower left hand corner.

Physical Ports: is the total number of hardware ports licensed to operate on the system.

Multimedia Ports: is the MINIMUM number of Multimedia ports that are licensed to operate on the system. This number will always be 0 on the Compact Option.

Full Service Ports: is the MAXIMUM number of full service ports that are licensed to operate on the system. This value will be set to the number of physical ports.

Basic Ports: is the MINIMUM number of Basic Ports that are licensed to operate on the system. This value will be set to 0 on the Compact Option system.

Chapter 4 — MAT for Option 11C Compact Description

Introduction

This Chapter provides an overview of MAT for the Option 11C Compact system. It describes MAT features, functionality and available modules.

Overview

MAT 5.71 (Meridian Administration Tools) is a portfolio of Microsoft Windows 95 PC based applications designed to provide a user-friendly Graphical User Interface (GUI) Meridian 1 system management tool. Every Option 11C Compact system is shipped with MAT 5.71 base software, as well as four update diskettes which provide MAT with the capability to support the Option 11C Compact system type. The four update diskettes are packaged with the MAT for Option 11C Compact Introduction Guide, designed to assist customers in performing common administration tasks. The update diskette package is orderable separately.

MAT for Option 11C Compact includes Common Services and Station Administration applications, which are shipped with every Option 11C Compact system. Additional MAT applications can be ordered through the standard MAT ordering guidelines:

- Traffic Analysis
- Call Tracking
- Call Accounting
- Call Accounting Mini-Expansion License
- ESN Analysis and Reporting Tool
- Maintenance Windows
- Alarm and Event Management

Chapter 5 — Documentation

The Option 11C Compact documentation suite consists of:

- Option 11C Compact Customer Documentation Package (shipped with every Option 11C Compact system)
- Compact Option Documentation Package (shipped with every Option 11C Compact system)
- Optionally Orderable Documents

Option 11C Compact Customer Documentation Package (NTMW43)

P0872787	Central Answering Position Guide
P0872785	Set Based Administration Guide
P0872791	Planning and Installation Guide
P0872784	Software Guides (I/O)
A0686187	Option 11C Compact Documentation - CD ROM (contains all mail and system documentation)

Compact Option Documentation Package (NT5F96)

P0873717	Meridian Mail Compact Option System Administration Guide
NT5F97AA	4 Meridian Mail Compact Option Voice Messaging Packages

Optionally Orderable Option 11C Compact/Compact Option Documents

P0872789	Technical Reference Guide
P0872790	Features and Services Guide
P0872786	CCBR Guide
A0686151	Meridian Mail Compact Option Voice Messaging Package
P0872788	1.5 MB DTI/PRI Guide (part of DTI/PRI Marketing Package)
P0839941	Meridian Mail 11 Maintenance Messages (SEERs) Reference Guide (not Compact Option specific)
P0873719	Meridian Mail Compact Option Enterprise Networking Installation and Administration (part of Interoffice marketing package)

Chapter 6 – Software Packaging

Office Communications Feature Set

Pkg #	Mnemonic	Name
0	BASIC	Basic Call Processing
1	OPTF	Extended PBX Features
4	CDR	Call Detail Recording
5	CTY	CDR on TTY
7	RAN	Recorded Announcement
8	TAD	Time and Date
9	DNDI	Do Not Disturb, Individual
10	EES	End to End Signaling
11	INTR	Intercept Treatment
12	ANI	Automatic Number Identification
13	ANIR	ANI Route Selection
14	BRTE	Basic Routing
16	DNDG	Do Not Disturb, Group
17	MSB	Make Set Busy
18	SS25	Special Services for 2500 Sets
19	DDSP	Digit Display
20	ODAS	Office Data Administration System
21	DI	Dial Intercom
23	CHG	Charge Account for CDR
24	CAB	Charge Account/Authorization Code
25	BAUT	Basic Authorization Code
28	BQUE	Basic Queing
32	NCOS	Network Class of Service
33	CPRK	Call Park
34	SSC	System Speed Call
35	IMS	Intergrated Messaging System Link
36	ROA	Recorded Overflow Announcement
40	BACD	Basic ACD
41	ACDB	ACD Pkg B
42	ACDC	ACD Pkg C
43	LMAN	ACD Pkg C2. Load Mngt Reports
44	MUS	Music
45	ACDA	ACD Pkg A
46	MWC	Message Waiting Center
47	AAB	Automatic Answer Back
48	GRP	Group Call
49	NFCR	New FlexIble Code Restriction
51	LNK	ACD PkgD Auxillary Processor Link

52	FCA	Forced Charge Account
53	SR	Set relocation
55	HIST	History File
56	AOP	Attendant Overflow Position
57	BARS	Basic Alternate Route Selection
61	FCBQ	FlexIble Call Back Queuing
64	SNR	Stored Number Redial
70	HOT/EHOT	HOT Line Services/Enhanced HOT Line
71	DHLD	Deluxe Hold
72	LSEL	Automatic Line Selection
73	SS5	500 Set Features
74	DRNG	Distinctive Ringing
75	PBXI	PBX Interface for DTI/CPI (1.5Mb)
76	DLDN	Departmental Listed Directory #
77	CSL	Command Status Link
79	OOD	Optional Outpulsing Delay
80	SCI	Station Category Indication
81	CCOS	Controlled Class of Service
83	CDRQ	ACD CDR Queue Record
87	FTDS	Fast Tone & Digit Switch
88	DSET	M2000 Digital Sets
90	LNR	Last Number Redial
92	PXLT	Pretranslation
95	CPND	Call Party Name Display
98	DNIS	Dialed Number Identification Service
107	MCT	Malicious Call Trace
108	ICDR	Internal CDR
110	TVS	Trunk Verification from a Station
111	TOF	ACD Timed Overflow
113	IDC	Incoming DID Digit Conversion
115	DCP	Direct Call Pickup
117	CBC	Call by Call Service Selection
118	CCDR	Calling Line ID in CDR
119	EMUS	Enhanced Music
121	SCMP	Station Camp On
125	FTC	Flexible Tones and Cadences
127	BKI	Attendant Break In
132	TBAR	Trunk Barring
133	ENS	Enhanced Night Service
139	FFC	Flexible Feature Codes
140	DCON	M2250 Attendant Console
141	MPO	Multi-Party Operations
145	ISDN	ISDN Signalling
146	PRA	ISDN 1.5 Mbit PRA
149	IEC	Inter-Exchange Carrier
150	DNXP	DN Expansion (7 digit)

151	CDRE	CDR Expansion (7 digit)
157	THF	Centrex Switch Hook Flash
162	SAR	Scheduled Access Restriction
164	LAPW	Limited Access to Overlays
170	ARIE	Meridian Modular Telephone Sets
173	ECCS	Enhanced Controlled Class of Service
174	AAA	Attendant Alternative Answering
178	EOVF	ACD Enhanced Overflow
180	DKS	Digit Key Signalling
181	SACP	Semi-Automatic Camp-On
186	POVR	Priority Override / Forced Camp on
191	SECL	Series call
200	AINS	Automatic Set Based Installation
203	XPE	Extended Peripherial Equipment
204	XCT0	Enhanced Conf, TDS, and MFS Card
205	XCT1	Superloop Administration (LD 97)
222	MSDL	Multi-Purpose Serial Data Link
223	FC68	Compliance for DID ANSWER SUPV
229	SSAC	Station Specific Auth Codes - 20A
234	CDR-NEW	New Format CDR - 8B
242	MUL	Multi User Login
243	FM	Meridian 1 Fault management
246	VMB	*Voice Mail Box - Added for Rls 21B*
247	CLID	Call ID for Meridian Link - 20A
251	SCDR	Station Activity Record - 20B
254	PHTN	Phantom TN Operation - 20A
256	ADMINSET	Set Based Administration Enhancements
258	ATX	Autodial Tandem Transfer - 20A
259	CDRX	CDR Enhancements - 20A
291	NI2	NI-2 TR-1268 PRI Basic Call
296	MAT_PKG	Meridian Administration Tools - MI
301	CPP	Call Party Privacy (21B)
310	CPCI	Called Party Control on Internal Calls
312	TATO	Trunk Anti-Tromboning Optimized (MSDL only)
315	OPEN_ALARM	Open Alarm

Inter Office Communications Feature Set

The Interoffice Communications package contains all of the packages in the Office Communications Feature Set with the addition of the following:

Pkg #	Mnemonic	Name
29	NTRF	Network Traffic Measurement
37	NSIG	Network Signalling
39	NSC	Network Speed Call
58	NARS	Network Alternate Route Selection
59	CDP	Coordianted Dialing Plan
63	NAUT	Network Authorization Code
160	FNP	Flexible Numbering Plan

Chapter 7 - Option 11C and Option 11C Compact Features/Applications Comparison

Features/Applications	Option 11C Compact	Option 11C
Terminals /Consoles & Data		
2250 Attendant Console & Busy Lamp Field (BLF)	X	X
Meridian 1 Modular (Aries) M2006, M2008, M2008HF, M2616, M2216	X	X
M2317 & M3000		X
Meridian Communication Unit (MCU)	X	X
QMT21 High Speed Data		X
Meridian 1 Data Peripheral Cards (AILC, 4PDLC, RILC, DAC)		X
BRI		X
PC-Based Attendant CPLUS & CPLUS 2000	X	X
500/2500 telephone sets (Dial Pulse and Digitone)	X	X
Peripheral Hardware		
DTI/PRI 1.5MB	X	X
Maximum TTY	4	36
Uninterrupted Power Supply	X	X
Battery Backup		X
External RAN (Recorded Announcement Machine)	X	X
Meridian 1 Intelligent Peripheral Equipment (IPE) (Full size cards)		X
Meridian 1 Mini Intelligent Peripheral Equipment (Half size cards)	X	
Meridian 1 Integrated RAN (MIRAN)		X
Meridian Integrated Conference Bridge		X
Dual Port DTI/PRI		
D Channel	X	X
Clock Controller Card		X
Clock Recovery Circuit and Clock Tracking Capability	X	X
Line Side T1		X
PCMCIA	X	X
Power Fail Transfer Trunk Card Integration	X	
External Power Fail Transfer Unit (PFTU)		X
Ethernet port on Cabinet	X	X
Installation		
Wall Mounted	X	X
Floor Pedestal		X
Power		
AC 110-240 volts	X	X
DC		X
Cabinet Auxiliary Connector (+/- 15 volt for console power)		X
2250 Console Power TNS (PWR) 2250	X	X
-150 volt message waiting	X	X

Features/Applications	Option 11C Compact	Option 11C
Trunking		
COT GRD&LOP, DID Loop Dial Repeat (LDR), TIE LDR, RAN, Music, Paging	X	X
4 Wire EAM analog		X
DTI - (COT, DID, TIE) GRD, LOP, Loop Dial Repeat, 4 Wire EAM	X	X
ISDN - SL-1, DMS100, DMS250, ESS4, ESS5, NI2	X	X
BRI		X
Feature Group D		X
Networking		
ESN - BARS, NARS, CDP, NAUT	X	X
Calling Line ID	X	X
CPND	X	X
Least Cost Routing	X	X
Tandem Capability		X
Stratum 3 or 4 Network Clock Source Capability		X
Network Clock Tracking Capability	X	X
4 Wire EAM analog TIE trunks		X
Loop Dial Repeat analog TIE trunks	X	X
PRI and DTI supporting and trunk signaling	X	X
NMS (Network Message Service)		X
VNS (Virtual Network Service)		X
QSIG		X
NACD (Network ACD)		X
NAS (Network Attendant Service)		X
ISL (D channel controlling analog trunks)		X
Video		
Point to Point Video using Communicator Digital Line Card I/F	X	X
Multi Point Video using Communicator Digital Line Card I/F	X	X
Symposium		
Communicator BRI I/F		X
Communicator Digital Line Card I/F	X	X
Remote Agent	X	X