INSTALLER'S CHECKLIST

NOTE: This document is pertinent for Option 11C on Release 23.30D and later.

CAUTION

Upgrades from Release 22

When upgrading from Release 22 to Release 23 or higher, you MUST use the SYSLOAD method of upgrading described in the Option 11C Release 22 or 23 NTPs (either the Upgrade Procedures or the Software Installation Program Guide). Upgrading from Release 22 to a higher Release cannot be achieved properly using the UPGRADE command.

However, when upgrading from Release 23 to a higher release or up-issue of Release 23, both methods (UPGRADE command or SYSLOAD) can be used. When using the SYSLOAD method, service on the entire system is typically disrupted for 20 to 30 minutes.

Release 23.30D or Later

Release 23B (23.30D or later) will run on either an NTDK21AB or the new software daughterboard, the NTDK81AA. If the installation involves the use of the new NTDK81AA, you must ensure the system has the following prior to starting the installation:
1) A CPU, NTDK20AB, Release 11 or later, OR
2) A CPU NTDK20AB, Release 10 or earlier with updated BootCode to Release 09 or later. Bootcode upgrades are covered in the NTPs (Release 22: 553-3021-310, Standard 1.0, Chapter 11, Release 23: 553-3021-250, Standard 2.0, Chapter 13.

Before starting make sure you have the following:

BASIC SYSTEM

- NTDK20 SSC Card
- Software Daughterboard
- Security Device
- Keycode Datasheet

The following three guides from the Option 11C NTP suite may be needed to complete installation:

- Option 11C Installation Guide
- Option 11C Software Installation Program Guide
- Option 11C Upgrade Procedures Guide

INSTALLING NEW FIBRE EXPANSION CABINET(S)

The following may be required:

- NTDK23 or NTDK25 Fibre Receiver Pack(s)
- NTDK22 or NTDK24 Fibre Daughterboard(s)
- Fibre Cable(s)
- Fibre Mounting Guides

RETAINING EXPANSION CABINET CONNECTED WITH COPPER CABLE

The following is required:

- NTDK26 Backwards Compatible Daughterboard

SYSTEM UPGRADE FROM OPTION 11 or 11E

The following two methods can be used to extract customer data from Option 11/11E software cartridge:

- PC with the Option 11/11E data stored in a CCBR file, or
- NTDK30 Database Upgrade Tool

SOFTWARE UPGRADE ON OPTION 11C

The following is required:

- Software on PCMCIA card and new keycodes

REMINDER NOTES

• ***IMPORTANT: Ensure that the NTDK20 SSC card is on a FLAT SURFACE before installing Software Daughterboard and Security Device! DAMAGE MAY RESULT if this is done with the SSC card still in the box!***

The following note, specific to Release 22.16 and later on new system installations only, has been corrected with 23.18 software:
In selecting Basic Configuration on a new system installation, you will see the following:

- ·Data conversion from 22.12
- ·SYS4691 BTDT 0 message output
- ·sysload will report problems found.

NOTE: the sysload DOES complete succesfully. In order to prevent future data dump problems, as soon as the sysload is complete, please use the EDD CLR command in overlay 43. This command sequence is only required once and will completely clear the problem going forward.

• If you are installing NTDK26 Backwards Compatible Daughterboard on the SSC card, jumper J7 must be removed prior to installing the card.

• Set the baud rate for Port 0 of the SSC card, using the dipswitch on the SSC card faceplate. **Port 0 is the only SDI port that can be used for software installations and upgrades.**

• After successful install of 11C make sure that Port 0 of SSC card is configured as a Maintenance Terminal/TTY. This is required for future software upgrades.

• If upgrading from an Option 11E multi-cabinet system that has fibre connection to the expansion cabinets, it is recommended that the keycodes be validated on the main cabinet first before swapping out the expansion cabinets.

INSTALL MENU

• If installing using a Software Daughterboard for a brand new system or for an upgrade from an Option 11/11E to 11C, select Option 1.

Note: "Basic Configuration" database option was expanded between 22.08 and 22.16 to include the following items: Directory, Configuration Record, XPECs blocks, Superloops blocks, Patch, Physical Dump Record, IMS TN Table, IMS Links No. Table, Asynch Blocks, CSL Blocks, VAS Blocks, Background TTY Blocks, Background Port ID Blocks, Aries Data Block, SYS PARAMS Block, LAPW Blocks. For a more extensive default data block, please choose "Pre-Configured Data".

• If installing using a PCMCIA card, select Option 4 for a new system or Option 2 to upgrade an Option 11/11E to Option 11C, or to upgrade Option 11C software to a new release or issue.

The data you need to enter in the INSTALL MENU is provided on the Keycode Datasheet.

• When performing new system installation, please change default AUX ID to match with the AUX ID from keycode data sheet.

• If the keycodes don't work, check the following:

-software issue, feature set name and any additional packages, ISM parameters, security ID, auxiliary ID (the old site ID, if this is an upgrade), and ensure the correct keycodes were entered. All items must match the keycode sheet exactly.

If they still do not work, then call your service representative.

• The Fibre Routing Guide is mounted beneath slot 0 in the main and expansion cabinets. Use the existing screws just under card slot 0. Coil the excess fibre as per the NTP's.

Meridian 1

Option 11C

General Release Bulletin - Release 23.35

P0879173 Issue 2.0 May 1998

General Release Bulletin
Release 23.35

Meridian 1

Option 11C

General Release Bulletin - Release 23.35

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May 1998

Issue 2.0 Standard	Change to Issue 2.0
	added reference to extra patches

Introduction

This document provides an overview of the features developed for the Meridian 1 Generic X11 Release 23 software product. It describes the new features and enhancements offered in this release.

X11 Global release 23.35 is a multi-purpose release designed to deliver a single global software stream to all markets. X11 Global Release 23.35 is supported on the following Meridian 1 systems: Option 11C, Option 51C (CP1/CP2/CP3), Option 61C (CP1/CP2/CP3), Option 81, and Option 81C (CP1/CP2/CP3). This document only applies to Option 11C systems. For other system details, please refer to the Meridian 1 General Release Bulletin PLM23-01 and Nortel Publications (NTPs).

One of the major hardware deliverables of X11 Global Release 22 was the introduction of the Meridian 1 Option 11C system. This document provides a product overview of Option 11C, new Software Delivery Mechanism, and upgrade procedures in the Appendices.

For more details on feature installation and operation, hardware upgrade procedures, refer to the Option 11C Nortel Publications (NTPs).

For details on the Meridian Mail Option, the Central Answering Position feature, the Autoconfiguration feature, Model Sets and Administration Sets, as well as installation and operation, please refer to the Northern Telecom Publications (NTP) provided with the Option 11C.

> ***Note:*** Not all features described in this document are offered in all countries. Please contact your local Northern Telecom sales representative for more information.

Note: For information on Real Time requirements, please contact your local Northern Telecom sales representative. For information on Memory calculations, please refer to publication 553-3011-100, and the Technical Reference Guide.

IMPORTANT

Please read all included advisements, requirements, and enhancements prior to loading this software.

Chapter 1 - System Advisements

X11 Release 23.35 is a global software release. This document provides the advisements specific to Option 11C X11 23.35 for both North America and Internationally for non-European markets.

Systems Supported

Generic X11 Release 23 supports the following machine types:

— Meridian 1 Option 11C, 51C (CP1/CP2/CP3), 61C (CP1/CP2/CP3), 81, and 81C (CP1/CP2/CP3).

This document includes information applicable to Option 11C systems only, for all other Meridian 1 systems, please refer to Generic X11 Release 23 General Release Bulletin PLM23-01 and Nortel Publications (NTPs).

CAUTION

Please read this important message

Upgrade from Release 22

When upgrading from Release 22 to Release 23 or higher, you MUST use the SYSLOAD method of upgrading described in the Option 11C Release 22 or 23 NTPs (either the Upgrade Procedures or the Software Installation Program Guide). Upgrading from Release 22 to a higher Release cannot be achieved properly using the UPGRADE command.

However, when upgrading from Release 23 to a higher release or up-issue of Release 23, both methods (UPGRADE command or SYSLOAD) can be used. When using the SYSLOAD method, servide on the entire system is typically disrupted for 20 to 30 minutes.

SYSLOAD Method vs. UPGRADE Method

SYSLOAD Method:

Invokes the software installation menu during a SYSLOAD.

1. Invoke a system reload (SYSLOAD) by setting the circuit breaker on the front of the power supply to OFF then to ON.

2. During the SYSLOAD, the following prompt will appear: *** To invoke install setup program from PCMCIA enter CONTROL-I***. At this point, hold down the "control" key and press the "I" key.

3. Upgrade the system through menu item 2 "System Upgrade".

UPGRADE Method:

Invokes the software installation menu resident on the daughterboard.

1. Login to the system and enter overlay 143 by typing "LD 143" <cr>.

2. Enter the software installation menu by typing "upgrade". <cr>

3. Upgrade the system through menu item 2 "System Upgrade".

System Hardware

No new hardware is being introduced on the base Option 11C with the introduction of X11 Release 23.

CLASS

The CLASS features introduced on Release 23 require the following new hardware. The new hardware will support the 32 port IPE FSK Modem Card.

XCMC	NT5D60AA

Conversion

Please note the upgrade method restriction from Release 22 systems as noted in the Caution box above.

The Option 11/11E Systems running on pre Release 22 software require a hardware upgrade in order to upgrade to the Release 22 software. The Option 11C system offers a menu driven installation and upgrade method. Please refer to the Option 11C Installation Guide and/or the Upgrade Procedures Guide for additional information.

CAUTION

Please read the Option 11C NTPs thoroughly before performing any hardware/software conversions. All conversion procedures should be strictly followed step-by-step.

To avoid static discharge, wear a properly connected anti-static wrist strap when working on the Meridian 1 equipment.

CAUTION

In order to support the new Flash daughterboard NTDK81AA, the Boot Code on the active SSC must be updated. Although this is not required if the NTDK81AA is not being used, it is strongly recommended that this update be done whilst Release 23.30 software is being installed. This will simplify any future change from NTDK21AA to NTDK81AA.

This is a very simple procedure which does not need to interrupt service. See the section "Updating the SSC Boot Code" for details.

Software Flash Daughterboard

A new version of the Software Flash Daughterboard, NTDK81AA, is introduced with X11 release 23.30D. This has an additional 8 Megabytes of program store memory (making 32 MB, plus 8 MB for the File System), but is otherwise a direct replacement for the existing NTDK21AA. The new board will be used for new system shipments beginning on or soon after the market release of 23B (23.3x), but the existing NTDK21AA can continue to be used with the newer software.

The NTDK21AA will operate with either or both the new software (Release 23.30D or later) or the new Boot Code (Release 09).

With X11 Release 23.30D, or later, software, either the NTDK81AA or the NTDK21AA can be used and either one can replace the other in the field providing the Boot Code compatibility for the NTDK81AA is checked first. Please refer to the Note in the Conversion section.

The new board requires the following:

- Release 23.30D or later software.
- Updated Boot Code, release 09, on the SSC NTDK20AB. The new Boot Code has been rolled into the Release 11 version of the SSC which has shipped since mid-January 1998. Existing (pre-release 11) SSCs can be upgraded to the new Boot Code from the PCMCIA card prior to upgrading to X11 Release 23.30D or the NTDK81AA daughterboard.

It is strongly recommended that the Boot Code on the NTDK20AB be updated to Release 09 as part of the upgrade to X11 Release 23.30D or later software. This will provide future flexibility to use NTDK81AA as a universal spare. This is not an automatic process, but has to be manually initiated before upgrading the software. The following section provides the steps for upgrading the SSC Boot Code.

Updating the SSC Boot Code

The Boot Code on the NTDK20AB should be updated to release 09, before upgrading software to release 23.30D or later software - this has to be done manually. Use the Flash Boot ROM Utility to do this: see NTP 553-3021-250 Upgrade procedures, chapter 13 (release 23), or 553-3021-310 Software Installation Program Guide, chapter 11 (Release 22). The major steps are outlined below; however, see the NTPs for full procedures and notes.

A. Without upgrading the software to release 23.30D or later

This process can be carried out without service interruption.

1. Insert the release 23.3x PCMCIA card into the socket on the faceplate of the SSC card.

2. Invoke the Software Installation program using Overlay 143.

- Login to the system
- Load overlay 143

- Enter ‘UPGRADE’

3. Select ‘Utilities’ from the main menu.

4. Select item 7 - Flash Boot ROM Utilities - from the Utilities menu.

5. Select an option from the Flash Boot ROM Utilities menu

6. Review the Flash Boot ROM Summary (selection 1). This will identify whether the version of Boot Code currently active on the SSC is REL 09, or earlier.

A response of the following form will be received:

· Active –- NTDK34AA REL 05 (specific release no. will vary)

· Backup -- NTDK34AA REL 02 (specific release no. will vary)

· Software Delivery Card -- NTDK31AA REL 09

If the Active Boot Code release is REL 09, no further activity is necessary. Proceed to step 8 to exit. Note that there may or may not be anything in the backup Boot ROM. The Software Delivery (PCMCIA) Card should indicate release REL 09 or later - if not, an upgrade cannot be done, and the PCMCIA card version should be checked.

7. Upgrade the Boot Flash ROM (selection 2).

Respond ‘yes’ to prompt asking you to confirm that you wish to update the Boot ROM.

8. Leave overlay 143 and log off.

B. As part of upgrading the software to release 23.30D or later

1. Perform normal pre-upgrade steps, i.e.

- Perform a data dump.
- Disable all DCH using Overlay 60.
- Disable AML Links using Overlay 48.

2. Insert the release 23.3x PCMCIA card into the socket on the faceplate of the SSC card.

3. Invoke the software installation menu during a SYSLOAD, by setting the power supply breaker to 'OFF' and then to 'ON'. Then enter 'CONTROL-I' at the prompt.

4. Select 'Utilities' from the main menu.

5. Select item 7 - Flash Boot ROM Utilities - from the Utilities menu.

6. Select an option from the Flash Boot ROM Utilities menu

7. Review the Flash Boot ROM Summary (selection 1). This will identify whether the version of Boot Code currently active on the SSC is REL 09, or earlier.

A response of the following form will be received:

· Active –- NTDK31AA REL 05 (specific release no. will vary)

· Backup -- NTDK31AA REL 02 (specific release no. will vary)

· Software Delivery Card -- NTDK31AA REL 09

If the Active Boot Code release is REL 09, no further activity is necessary. Proceed to step 9 to continue. Note that there may or may not be anything in the backup Boot ROM. The Software Delivery (PCMCIA) Card should indicate release REL 09 or later - if not, an upgrade cannot be done, and the PCMCIA card version should be checked.

8. Upgrade the Boot Flash ROM (selection 2).

Respond 'yes' to prompt asking you to confirm that you wish to update the Boot ROM.

9. Return to the main menu, and select "System Upgrade".

10. Proceed with normal upgrade procedures, as in NTP 553-3021-250 Upgrade procedures, chapter 7.

C Installing NTDK81AA & upgrading the software to release 23.30D and later.

1. Perform normal pre-upgrade steps, i.e.

- Perform a data dump.

- Disable all DCH using Overlay 60.
- Disable AML Links using Overlay 48.

2. Insert the release 23.3x PCMCIA card into the socket on the faceplate of the SSC card.

3. Invoke the Software Installation program using Overlay 143.

4. Select 'Utilities' from the main menu.

5. Select item 7 - Flash Boot ROM Utilities - from the Utilities menu.

6. Select an option from the Flash Boot ROM Utilities menu

7. Review the Flash Boot ROM Summary (selection 1). This will identify whether the version of Boot Code currently active on the SSC is REL 09, or earlier.

A response of the following form will be received:

· Active –- NTDK31AA REL 05 (specific release no. will vary)

· Backup -- NTDK31AA REL 02 (specific release no. will vary)

· Software Delivery Card -- NTDK31AA REL 09

If the Active Boot Code release is REL 09, no further activity is necessary. Proceed to step 9 to exit. Note that there may or may not be anything in the backup Boot ROM. The Software Delivery (PCMCIA) Card should indicate release REL 09 or later - if not, an upgrade cannot be done, and the PCMCIA card version should be checked.

8. Upgrade the Boot Flash ROM (selection 2).

Respond 'yes' to prompt asking you to confirm that you wish to update the Boot ROM.

9. Power down the system, and change the Flash Daughterboard.

10. If the release 23 software is pre-programmed on the new Flash Daughterboard, the system can then be powered up and put into service.

If the daughterboard is blank, the release 23 software can then be loaded into it by the normal procedures, as described under "Starting up and testing the System" in NTP 553-3021-210 "Planning and Installation Guide", chapter 18.

If the daughterboard has an earlier release of software, proceed to load release 23.30 as described in "Upgrading Option 11C software to a new release", in NTP 553-3021-250 "Upgrade procedures", chapter 7.

System Security

Nortel strongly recommends changing the default system passwords for both Meridian 1 and Meridian Mail 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 Sales and Marketing Bulletin #807G, or the System Security Management NTP (553-3001-302).

Audit Routine

As in the case of previous 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.

Electronic Software Delivery

Internet software delivery is currently available for the Option 11C in North America only. The downloading of software is only necessary when re-programming a PCMCIA card to update a current Option 11C system. When ordering a PCMCIA card for the first time, it will be sent pre-programmed with the current market release of software. This same card can be used for future upgrades of software by using the Option 11C Internet Software Download process, details of which are found in document P0866881.

The software download process is required to take compressed software from the Internet and download it to your PC for duplication. In addition to the duplication configuration listed above, the following is required:

- Internet software and an Internet Service Provider.

- Registration with Nortel to access the software Home Page (registration process is detailed in Product Bulletin 97046).

New System Installations Using Basic Configuration

The following note is specific to Release 22.16 up to and including 23.14B on new system installations only. 23.15 has fixed this issue.

In selecting Basic Configuration on a new system installation, you will see the following:

- Data conversion from 22.12
- SYS4691 BTDT 0 message output
- Sysload will report problems found.

NOTE: The sysload DOES complete successfully. In order to prevent future data dump problems, as soon as the sysload is complete, please use the EDD CLR command in Overlay 43. This command sequence is only required once and will completely clear the problem going forward.

Meridian Configurator

Meridian Configurator is being modified for Release 23.35 and will be available concurrent with the product release.

Basic Configuration

On Release 22.08, the “Basic Configuration” default data option provided only a configuration record and no other customer data.

With X11 Release 22.16 and later, the “Basic Configuration” data option is expanded to include default data such as XPECs, Superloops, and other default data blocks. It doesn’t include Model sets, routes, TN’s etc. For complete default data including model sets etc., choose the Pre-Configured data option.

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.

Minimum Vintage for TDS/DTR pack - NTAK03DA

The minimum vintage for TDS/DTR pack is NTAK03DA. For packs older than the NTAK03DA version, SDI functionality will not function properly. The NTAK03DA version was introduced to the market in Feb. 1993.

Please note that the new Small System Controller pack (NTDK20) provides built-in TDS/DTR and SDI capabilities.

Backwards Compatible Daughterboard - NTDK26

The backward compatible daughterboard allows the Option 11/11E two cabinet (copper) systems to be upgraded to Option 11C maintaining copper connectivity.

The NTDK26 has a hardware key that prevents installation when the ethernet jumper (J7) is installed.

The ethernet jumper plug (J7) on the NTDK20 (Small System Controller) pack MUST be removed before the NTDK26 daughterboard is installed.

Note: Ethernet is not supported in this configuration

Upgrading Option 11 and 11E to Option 11C Using The Pre-Installed Flash Daughterboard

If the installer pre-installs customer feature set and data on the pre-programmed software daughterboard prior to delivery of the Option 11C hardware to the end customer, the following steps must be performed after they sysload their Option 11C with the pre-installed feature set and default data.

1. Ld 143 and type “upgrade”

2. Select option 3 “Utilities” from the main menu.

3. Select option 1 “Restore Backed up Database” from the Utilities menu.

4. Select option 4 “Option 11/11E CCBR File “OR option 5 “Option 11/11E Software cartridge” (After selecting this option the user is prompted to insert the Database Upgrade Tool.)

5. Sysload.

Internet Software Download Using the PCMCIA Card

Details of the Option 11C Internet Software Download process are found in P0866881. An Internet Registration Kit is required - contact your Nortel representative for ordering information.

Before copying the software executable file from the internet onto your PCMCIA card, ensure the PCMCIA card you are using is blank by clicking on the PCMCIA drive, and displaying the contents of the device. If any files appear on the card delete them.

Important: Delete the executable file from the PCMCIA card after it has executed, so that only the Option 11C software file structure remains.

The Option 11C software will have the following directory and file structure:

- bootrom/
- dflt_db/
- p/
- u/
- dramos
- dramos.sym
- dramoscc.sym
- readme.txt

The Trunk Anti Tromboning, Network Call ID, and Network Call Page

These features are supported for Option 11C in ISL/VNS configuration. The minimum vintage required for the SDI/DCH pack which supports these features is NTAK02BB.

AML EC11 disabled after upgrade

If an EC-11 Mail connected to Option 11C through AML over the NTAK02 (SDI/DCH) pack, the AML link does not come back into service after a software upgrade of the Option 11C system.

WORKAROUND:

1) Disable the AML before the software upgrade, or

2) Re-seat the NTAK02 (SDI/DCH) pack after upgrade

Meridian Mail Password Suppression

Meridian Mail Password Suppression, introduced with Release 22 provides a new AML message which prevents a Meridian Mail user's log on password from being echoed on a set's display. Meridian Mail Release 11 is required. No new software package is introduced by this feature but Meridian Mail requires the existing package Call ID (CALL ID) package # 247. In addition the following packages are also required: Digit Display (DDSP) package # 19, Command Status Link (CSL) package #77 and Basic ACD (BACD) package # 40.

Table 1: Package Sets Supporting Password Suppression (All regions except Europe)

	22.08d	**22.16 and later**
US / Canada	Enterprise Business & NAS/VNS	ALL Package Sets
CALA	Networking & Advanced Applications	ALL Package Sets
Asia Pacific	Advanced Applications	ALL but General Business
Japan	Networking & Advanced Applications	Networking & Advanced Applications
Australia / New Zealand	N/A	ALL but General Business

M2008HF (Handsfree) Sets

This functionality provides the capability to configure/install M2008HF with handsfree. This means M2008HF sets can/should be equipped with the handsfree feature. To turn on the feature on the set, enable the class of service HFA (handsfree allowed) in Overlay 11. Sites equipped with MAT Release3 and later can be patched to support this operation. Sites with MAT Release 3 and below must upgrade to MAT Release 4.02 or later. Please contact your Technical Assistance Center for insertion of the patch.

Filter TTY Changes

When doing an upgrade to Release 22, the filter TTY (USER = FIL in Overlay 17) operation has changed. The filter TTY will only print alarms that are marked as critical in the Event Default Table (EDT) in Overlay 117 after upgrading to Release 22. Alarms which are marked as critical in the Event Default Table (EDT) can be made to print on the FIL TTY by adding them to the Event Preference Table (EPT) in Overlay 117 and changing the severity to critical. Note that this functionality is different than on prior releases.

ISDN Q.Sig

ISDN Q-Sig is the standards-based definition of the Integrated Services Digital Network (ISDN) “Q” Signaling (Q-Sig) reference point for private PBX-to-PBX interworking. This ISDN Layer 3 protocol has been defined by the European Computer Manufacturer's Association (ECMA) and adopted by the European Telecommunications Standards Institute (ETSI) for Europe and by the International Standards Organization (ISO) for global introduction.

Nortel has completed their first field trial in North American using the Meridian 1 Integrated Services Digital Network (ISDN) Q.Sig interface with Lucent's Definity Generic 3 IS Version 4 system.

The Meridian 1 to Definity ISDN Q.Sig interworking trial over a Primary Rate Interface (PRI) has been completed using the International Standards Organization (ISO) protocol specification and included the following ISDN Q.Sig compliant elements:

- Q.Sig Basic Call Services
- Q.Sig Generic Functional (GF) Protocol (Transport)
- Q.Sig Name Display Services (see expanded elements listed below).

Currently, the Definity PBX does not support Q.Sig Call Completion, a Ring Again type feature. However, the Meridian 1 does support the Q.Sig Call Completion Supplementary Service.

Monitored Shipment

ISDN Q.Sig is in a "Monitored Shipment" status at this time because Lucent's Definity is the only PBX vendor to complete an interworking trial with the Meridian 1 in North America. Patches are required for any Meridian 1 to Definity interworking. Please contact your Technical Assistance Support organization prior to any connectivity to a Lucent Definity.

Any additional interworking trial requests to other ISDN Q.Sig compliant PBXs will be reviewed on a case-by-case basis.

Please refer to the ISDN Q-Sig Interworking Product Bulletin #96049 for further details.

Software Patches

Product Issue 07:

Globally, there are two manufacture installed patches on X11 Release 23.35 software, BV78252 (MPLR10521), and BV78101 (MPLR10530). Additionally, there is an extra patch on Canadian, US, and Japanese software for BV77280 (MPLR10538). This last patch is not pertinent to Carribean & Latin America, Asia Pacific, or Australia & New Zealand software.

Product Issue 08:

Globally, there are an additional 3 patches included in X11 Release 23.35 software, Product Issue 08, BV78177 (MPLR10557), BV74031 (MPLR10574), and BV75500 (MPLR10522). Non- North American regions may also have region specific manufacture installed patches, such as BV77852 (MPLR10619) in CALA and Asia Pacific.

Note: Product Issue may be determined by locating the label with the product code (i.e. NTSK11AG, NTSK11BG, NTSK12AG, or NTSK12BG) on either the software box, the software daughterboard, or the PCMCIA card. The Product Issue is the two digit number immediately following the product code.

Other patches (if any) which need to be installed must be placed in the following directory on drive C: c:/u/patch

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

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

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

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

4 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

5 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

When the system prompts “Ready to receive...”, invoke file transfer on the PC side using the (T)ransfer pull-down menu and selecting the (S)end File option. Select the file to be sent and select XMODEM as the Protocol. Then start the transfer on the PC side.

To transfer a file to the PC

in pdt

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

sx direct.rec

When the system prompts “Ready to send...”, invoke file transfer on the PC side using the (T)ransfer pull-down menu and selecting the (R)eceive File option. Select or create a file to be received as and select XMODEM as the Protocol. Then start the transfer on the PC side.

Patch Installation Steps:

1) In pdt use the pload command to load the patches. To make sure that these patches remain in service you must enter the pload command without the patch name. It will then prompt you for the patch name and ask the following questions:

Days patch vulnerable to sysload [3] - set this to 0

In-service initialize threshold [5] - enter a carriage return

In-service days to monitor inits[7] - set this to 0

2) After using the pload command use the pins command to put the patches in service.

Chapter 2 - Documentation

Release 23 Option 11C documentation library on CDROM

The CD-ROM library is available and may be ordered using the following code:

Product Order Code: NTDK76ABCPC: A0724976

CDROM Set includes the following NTP's:

- Option 11C Documentation Package
- X11 Input/Output Guide
- Planning and Engineering Guide
- Meridian X11 Data Features
- ISDN X11 Networking Features
- ISDN Basic Rate Interface Manual
- Generic X11 Automatic Call Distribution
- X11 Software Features Guide
- and more.

With the introduction of Release 23, the Option 11C English documentation has been repackaged as follows:

- A Planning and Installation Guide replaces the Release 22 and earlier General Information and Planning/Read Me First Handbook, Installation Guide and portions of the Software Installation Program Guide.

- An Upgrade Guide replaces the Release 22 and earlier Upgrade Procedures and Software Install Program Guide.

This chapter describes the new documentation codes for Option 11C Release 23 for North American (English & French) versions. For other languages, please refer to the regional price book.

Documentation Structure

Documentation is packaged as:

- Base package
- Optional documents

Base Package

Table 2: Base Package Codes

NT Code	CPC Code	Region	Binding	Language
NT6R78AB	A0688820	North American	Coil	English
NT6R77AB	A0688819	North American	Binder	English
NT6R78BB	A0723580	North American	Coil	French

Table 3: Contents of North American English Base Package - Coil

Title	English
Planning & Installation Guide	P0876452
Upgrade Guide	P0876358
Fault Clearing Guide	P0833297
Central Answering Position	P0835240
Customer Configuration backup and restore Guide	P0835273
X11 Software Guide	P0875060

Table 4: Contents of North American English Base Package - Binder

Title	English
Overview, Installation, and Programming	P0878674
Post Installation Activities	P0878675
X11 Software Guide	P0875058

Table 5: Contents of North American French Base Package - Coil

Title	French
General Information and Planning Guide	P0876657
Installation Guide	P0876656
Software Installation Program Guide	P0876654
Upgrade Procedures	P0876655
Customer Configuration Upgrade and Restore	P0835276
Fault Clearing Guide	P0835287
Central Answering Position (CAP) Guide	P0876658
X11 Administration Input/Output Guide	P0876665
X11 Maintenance Input/Output Guide	P0876659
X11 System Messages Input/Output Guide	P0876663

English Coil Bound Documentation Set Contents

Planning & Installation Guide

Contains the following contents:

From the former General Information and Planning/Read me first booklet:

- Overview of the Option 11C
- Equipment Identification
- System and site requirements
- Regulatory and other information
- Important safety instructions
- Bracing cabinets against earthquakes

From the former Installation Guide, the process of installing a new Option 11C main cabinet system and expansion cabinets, if required. If you are upgrading an existing Option 11 or Option 11E system to an Option 11C, refer to the Upgrade Guide.

From the former Software Installation Program Guide, the information required to use a menu-driven method of selecting from the various options for installing, modifying, or upgrading the software, customer data, and ISM parameters.

Fault clearing guide

This guide contains information required to maintain, clear faults, and replace defective components in the Option 11 system.

Central Answering Position guide

This guide contains information on how to configure and use a regular business telephone as a Central Answering Position in lieu of an attendant console. It includes:

- A description of what the CAP is and a list of the required equipment.
- Procedures for configuring the CAP.
- Procedures for installing and removing key expansion modules.
- Procedures for logging onto the ACD queue.

- A description of the common CAP features, including step-by-step procedures on how to use these features.

Customer Configuration Backup and Restore guide

This document describes the Customer Configuration Backup and Restore feature. It contains information about Option 11 and computer equipment requirements and includes instructions on how to operate and use the feature from a remote location and on-site.

Upgrade Guide

This guide containsthe following:

From the former Upgrade Procedures Guide, the information required to upgrade an existing Option 11 or Option 11E system to Option 11C system. It also includes procedures for upgrading an existing Option 11C software to a new release.

X11 software guides

These books show the prompts and responses in each of the overlay programs and list maintenance and administration messages. The documents included are:

- X11 Administration Input/Output Guide
- X11 Maintenance Input/Output Guide
- X11 System Messages Input/Output Guide

Optional Documents

Table 6: Optional Documents English/French - Coil

Title	English	French
Technical Reference Guide	P0837650	P0837651
1.5 Mb DTI/PRI Guide	P0875063	P0837631
2.0 MB DTI/PRI Guide	P0875062	P0876670
BRI Guide	P0875061	P0837644
X11 Software Feature Guide (Rls 23)	P0868062	
Distributor Technical Library	NTDK63BB (A0724978)	

The Distributor Technical Library contains the following documents

- X11 Software Feature Guide P0868062 (replaces P0842661)
- Option 11C Technical Reference Guide P0837650
- Option 11C General Release Bulletin P0869505 (replaces P0834642)
- System Security Guide P0868048 (replaces P0842662)

Chapter 3 - Features Overview

This section provides a summary of the new features and enhancements included in X11 Release 23 for both North American and non-European International markets on the Option 11C. For more information on these features, refer to the documents listed under “Document References.”

SYSTEM

Asia /Pacific, CALA Busy Tone Detection

The new Universal Trunk Card (DXUT) will be designed based on the EXUT current functionality as well as adding tight tolerance Tone Detect intelligence. This tight tolerance intelligence will allow the new circuit pack to differentiate between RAN and Music on Hold, and the actual disconnect tone of the C.O.. The circuit pack will also be flexible enough for the user to configure Paging, RAN, and TIE trunks on the same card, thus providing the same functionality of the Extended Universal Trunk (EXUT) card. This DXUT card will replace many of the individual country specific EXUTs.

There is no new package required for this feature. Busy Tone Detection (BTD #294) is required.

The DXUT is targeted for the International Marketplace which currently utilizes the XFCOT circuit card and the XUT BTD cards.

Flexible Trunk to Trunk Connections (23.30D and later)

The Flexible Trunk to Trunk Connections (FTTC) feature provides a way to prevent unauthorized toll charges and the potential for toll fraud on a station basis. This feature is configured via the station class of service.

FTTC provides the following options:

- Trunk to Trunk connections by Transfer or Conference can be allowed or denied based on a station's class of service.
- Unsupervised conferences can also be controlled.

FTTC, when used in conjunction with Trunk Barring (TBAR - package 132), provides one of the following options:

- Additional set level restrictions to the existing customer level trunk barring.
- Lift the restrictions placed by TBAR based upon the set's class of service.
- Can control all set based trunk to trunk connections for transfer and conference depending upon the set's class of service. Additionally, FTTC uses TBAR for all other types of trunk to trunk connections.

FTTC does NOT alter the following limitations:

- Disconnect supervision is still required for transfer and conference as per the existing operation.
- Unless the Trunk to Trunk Connection (Release 22) feature is implemented, two outgoing trunk connections are blocked for transfer and unsupervised conference.
- Except for Transfer and Conference, other call redirection features are not supported.

The FTTC feature is packaged as part of the basic M1 package. FTTC supports all trunk types except service trunks (RAN, PAG, DIC, MUS, AWU, etc.). FTTC does not support BRI sets or attendant console operations.

Configuration

Table 7: LD 15 Configure Flexible Trunk to Trunk Connections

Prompt	Response	Description
REQ:	NEW	Add new data.
	CHG	Change existing data.
TYPE:	NET	Trunk and network options.
CUST	xx	Customer number.
...		
FTOP	(FRES)	Flexible Trunk to Trunk Connection Options. FTT feature is inactive.
	TBFT	FTT adds new restrictions on connections not barred by TBAR.
	FTTB	FTT lifts TBAR restrictions for routes barred by TBAR. FTT cannot add any new restrictions for non-barred routes.
	FTLY	All set based trunk to trunk connections for Transfer and Conference are controlled by FTT only.

Table 8: LD 10 Flexible Trunk to Trunk Connections for analog (500/2500 type) telephones

Prompt	Response	Description
REQ:	NEW	Add new data.
	CHG	Change existing data.
TYPE:	500	500/2500 type telephone set data block.
TN	l s c u	Terminal number.
	c u	For Option 11C
...		
CLS	(FTTC)	Flexible Trunk to Trunk Connections Conditional (default for new sets).
	FTTU	Flexible Trunk to Trunk Connections Unrestricted (default for existing sets upon software conversion to X11 Release 23).
	FTTR	Flexible Trunk to Trunk Connections Restricted.

Table 9: LD 11 Flexible Trunk to Trunk Connections for Meridian 1 proprietary sets

Prompt	Response	Description
REQ:	NEW	Add new data.
	CHG	Change existing data.
TYPE:	500	500/2500 type telephone set data block.
TN	l s c u	Terminal number.
	c u	For Option 11C
...		
CLS	(FTTC)	Flexible Trunk to Trunk Connections Conditional (default for new sets).
	FTTU	Flexible Trunk to Trunk Connections Unrestricted (default for existing sets upon software conversion to X11 Release 23).
	FTTR	Flexible Trunk to Trunk Connections Restricted.

MAT 5.7 Update to Support FTTC

Sites must be using MAT 5.7 with Release 23. An update is required and must be installed for MAT 5.7 to support the FTTC feature. This update will be included with all on new orders shipped after May 1, 1998. For MAT orders shipped prior to May 1, 1998, please contact your CTS group for assistance. (Reference BV74528)

7 Digit DNIS for MAX

Currently X11 Release 20 supports 7 digit DNIS, however in all messages to MAX only the first 4 or last 4 digits of a greater than 4 digits DNIS is sent to MAX. This new feature sends the complete 7 digit DNIS on all affected messages to MAX.

This feature is part of an existing package: DNIS (98). It also requires ACDD (50) for MAX to run.

This is targeted for the global market.

CLASS: Calling Number and Name Delivery (CND)

Calling Number and Name Delivery (CND), a CLASS feature, is a service intended for residential and small business analog telephone customers. It allows a called customer to receive the calling party's Directory Number (DN) and calling party's Name (if available) and the date and time. In the on-hook state, the delivery of the CND data occurs during the first ring cycle.

A CND customer is a user with an analog display set (equipped with a CLASS compatible frequency shift keyed modem) or an analog set with a display unit (equipped with a CLASS compatible frequency shift keyed modem) which is connected to the Meridian 1 via a Meridian 1 line card. This line card will be capable of delivering the information to the connected analog set or display device via an FSK modem based upon information delivered by M1 software.

This feature is packaged under two new packages: CNUM (333) to display calling number and CNAME (332) to display calling name.

The NT5D60AA XCMC hardware pack is needed for sending CND data to the CLASS set.

This feature is applicable to the U.S. and Canada.

CALL CENTER

Symposium (23.30D and later)

Symposium Call Center Server is the Nortel's next generation call center product. It integrates the functionality of Meridian MAX, Meridian CCR, NACD, and Meridian Link, plus more on a client-server architecture. Symposium Call Center Server consists of three key components: telephony, server, and client. The telephony component includes the Meridian 1 PBX and its telephones. The server component is comprised of the call center server and network. The client component is made up of the customer's LAN and supervisors' workstations.

Symposium Call Center Server includes the following features and enhancements:

- Skill base routing allows a call center to precisely define their call routing to ensure maximum caller satisfaction and optimal efficiency.

- Script Editor enables scripts to be developed with cut, paste, and delete capabilities, automatic command selection with a Command Reference Panel, and easy validation and compilation.
- Meridian Mail integration enables scripts to maintain control of a call in a voice session.
- Enhanced intrinsics and variables provided for use with the scripting commands.
- Open interfaces are available to access historical and real-time data.
- Using a voice port, gives Broadcast Announcement connects up to 50 callers to hear an announcement.
- Real time screens and telephone set displays are programmable from the client screen.
- Caller can request to be connected to a specific agent.
- Expected Wait Time and other intrinsics can be provided to callers.
- Login ID has a maximum length up to 16 digits.
- Agents can login from any ACD telephone set.

  For more information, please refer to DTR 1.10.36.

Configuration

Table 10: LD17 Application Module Link over Ethernet

Prompt	Response	Description
REQ	CHG	
TYPE	CFN	Configuration Record
ADAN	***NEW ELAN 16, CHG ELAN 16, OUT ELAN 16***	***Add/change/remove I/O device type ELAN 16 (AML over Ethernet)***
CTYP	***ELAN***	***Card type***
DES	aaa...a	Port designation
LCTL	Yes, (No)	Modify link control system parameters
NIL	128, (512)	Maximum octets per I frame.128 or 512 is available
ADAN	<cr>, ****END	Go to next prompt or exit overlayTerminate overlay (Release 19 and later)
...	...	
VAS	NEW, CHG, MOV, OUT	Add, change, move or delete a value added server
VSID	16	VAS identifier
ELAN	***16***	***Associate VAS ID 16 with ELAN 16***
SECU	Yes, (No)	Turn on (off) security for Meridian Link applications
INTL	1- 12	Time interval for checking Meridian Link for overload, in 5- second increments
MCNT	5- 100000	Message count threshold for number of Meridian Link messages per time interval

Table 11: LD 23

Prompt	Response	Description
REQ	PRT	Print
TYPE	ACD, CDN	ACD or Control DN data blocks
....	....	

Definitions that may appear on the printed report of devices on the switch:

AACQ	***Yes, (No)***	***Application acquired queue***
ASID	***16-31 or(00)***	***Application Service Identification where the acquired message was originated from***
SFNB	***1 2 ...***	***Message set feature notification bitmap for messages such as SFN (log in), SFN (log out) ...***
USFB	***1 2 ...***	***Message filter bitmap for USM messages such as: Onhook, Offhook, Ringing, Active, Disconnect, Unringing, Hold, Restore, Ready, Not Ready, Walkaway, Walkaway Return, Reserved, Unreserved ...***
CALB	***1 2 ...***	***Message filter bitmap for Call Filter messages such as PCI, DN Update ...***

Table 12: LD 56

Prompt	Response	Description
REQ	NEW, CHG	Action request
TYPE	FTC	Flexible Tones and Cadences
TABL	1- 255	Cadence number in the Master Cadence table
RING	xxxx	Define specific cadences
...	...	
HCCT	YES	Change hardware controlled cadence tone definition
...	...	
ILIN	***<cr>***	***SYMPOSIUM Call Center Server ending agent log-in tone. Can be configured to change tone and cadence, otherwise accept defaults. Go to next prompt to configure or accept default values.***
XTCN	0- (56)- 255	NT8D17 TDS tone code
XCAD	0- (2)- 255	NT8D17 cadence code for FCAD
ILOU	***<cr>***	***SYMPOSIUM Call Center Server pending agent log-out tone. Can be configured to change tone and cadence, otherwise accept defaults. Go to next prompt to configure or accept default values.***
XTCN	0- (32)- 255	NT8D17 TDS tone code
XCAD	0- (2)- 255	NT8D17 cadence code for FCAD

Dual VAS ID

Meridian Mail (MMail) and Meridian Link (MLink) are products that communicate with M1 via the Application Module Link (AML) where in the ACD Data Block, we associate the MMail ACD DN with MMail through a VAS ID for the corresponding AML. AML is defined per ACD DN basis. Currently, only one VAS ID (for MMail) can be associated to a MMail ACD DN. Hence AML message are communicated only to the MMail for any event on MMail ports. The Dual VAS ID feature will offer the facility to have MMail and MLink to be associated with a MMail ACD DN so that AML message would low to both MMail and Mlink.

No new package has been introduced by this feature. The following packages are required:

· BADC (40),

· MWC (46),

· CSL (77),

· ACDA (45),

· IMS (35).

ACD

ACD Agent Login Observe (23.30D and later)

The ACD Agent Login Observe feature gives a configurable option to allow or disallow the supervisor from observing IDN (non-ACD) calls of the agent set whether the agent is in logged-in or logged-out status. Current operation of Observe allows the supervisor to observe the agent on an IDN call even if the agent is logged out.

The ACD Agent Login Observe feature is configured in overlay 23. The feature does not require new packaging, but the ACD packages 40 and 45 must be enabled to use this feature.

Configuration

A new prompt is introduced in Overlay 23 to assign the supervisors IDN Observe level:

RAO (NO)/YES/FULL

where NO is the default and allows supervisor to observe any IDN call

YES restricts the supervisor from observing IDN calls when the agent is logged out

FULL restricts the supervisor from observing all IDN calls regardless of whether the agent is logged in or logged out

ACD Return to Queue After No Answer (23.30D and later)

The ACD Return to Queue After No Answer feature allows the system administrator at the Call Center to define the number of ringing cycles for an ACD DN for which the call continues to ring on an ACD agent. If the call has not been answered within the number of ring cycles defined for the ACD DN, the ACD agent position that did not answer the call is automatically logged out or put in NRD state by the system. The call is then presented to another idle ACD agent. If there is noidle ACD agent, the call is returned to the front of the ACD queue.

The ACD Return to Queue After No Answer feature is implemented to allow a new ring cycle definition, RTQT (Return To Queue After No Answer) on a per ACD DN basis. The RTQT ring cycle can be set from 0 to 50. The new prompt can be modified in overlay 23.

This feature is mutually exclusive with the Call Force feature.

The ACD Return to Queue After No Answer feature is configured in overlay 23. The feature does not require new packaging, but depends on the ACD packages 40 and 45. Also, Digital sets must be equipped with either a MSB or NRD key corresponding to the option set with the RTQO prompt (see configuration details below).

Configuration

Two new prompts are added to Overlay 23 for the Return to Q on No Answer feature:

RTQT (0), 1-50 <Return to Q timer in ringing cycles>

RTQO (nrd), msb <Return to Q Option>

The RTQT prompt defines the threshold in ringing cycles. If the agent does not answer a call within the RTQT threshold the call will be presented to the next available agent or returned to the ACD queue if there are no available agents.

If the RTQT threshold is exceeded the agent will be placed in either NRD or MSB status as defined by the RTQO prompt.

NETWORKING

Asia/Pacific ISDN Connectivity Phase II (China)

This functionality will support:

· Basic call on 2.0 Mb PRI and BRI interface.

· nB +D non-channel associated signaling on PRI only.

· Supplementary services are required for the following:

· Network Ring Again

· Call Transfer

· Call Forward

There is no new package required for this feature. The following packages are required:

· DDSP (19)

· ISDN (145)

· PRI2 (154)

· IPRA (202)

· BRI (216)

· MSDL (222)

· BRI Trunks (233)

· UIPE Gateway (283)

Others may be required depending upon package prerequisites and interface required.

Asia/Pacific ISDN Connectivity Phase II (Indonesia)

Indonesia, as in Malaysia, intends to offer ISDN services in the country. The telco, PT Telkom have acquired a number of ISDN CO for installation in the capital city, Jakarta. Nortel is one of the key CPE vendors in the country and the ability to support ISDN will enable us to stay competitive and ensure future earnings.

There is no new package required for this feature. The following packages are required:

· DDSP (19)

· ISDN (145)

· PRI2 (154)

· IPRA (202)

· BRI (216)

· MSDL (222)

· BRI Trunks (233)

· UIPE Gateway (283)

Others may be required depending upon package prerequisites and interface required.

Asia/Pacific ISDN Connectivity Phase II (Japan)

Japan ISDN Primary Rate Access connectivity to Hitachi's D70 CO type (also known as INS 1500 and INS 64) was developed on X11 Release 17 software in 1991. At that time, the Universal ISDN Protocol Engine was not available. Since then, the UIPE implementation of other national ISDN variants have proven to be valuable from portability support, maintenance, and time to market points of view. As INS-1500/INS64 (D70) protocol evolves with supplementary features and services, the development of any improvements on the current implementation of D70 software is prohibitive from both cost-of-development and time-to-market perspectives.

All existing Japan ISDN functionality provided by the existing non-UIPE platform will be ported over to new UIPE platform. The existing D70 code imbedded in X11 prior to Release 23 will be maintained.

The development is required for both BRI interface and 1.5 Mbit PRI interface.

There is no new package required for this feature. The following packages are required:

· PRI:

· DTI (75)

· ISDN (145)

· PRA (146)

· IPRA (202)

· DDSP (19) for CLID on ISDN PRA

· MSDL (222)

· XPE (203)

· BRIT:

· BRI (216)

· BRIT (233)

Asia/Pacific ISDN Connectivity Phase II (Malaysia)

For Malaysia Q.931 ISDN protocol, the development required is as follows:

· Calling Line Identification Presentation/Restriction

· Basic call (Enbloc, Overlap sending, Overlap receiving)

· Loop hunting (60B+D) on non-channel associated signaling (PRI only)

The above development is required for both BRI interface and 2.0 Mb PRI interface.

There is no new package required for this feature. The following packages are required:

· DDSP (19)

· ISDN (145)

· PRI2 (154)

· IPRA (202)

· BRI (216)

· MSDL (222)

· BRI Trunks (233)

· New format CDR package (234)

· UIPE Gateway Package (283)

Others may be required depending upon package prerequisites and interface required.

B-Channel Overload Control

This feature will provide the end user a mechanism to define a time delay on ISDN Trunk Routes during overload situations. The overload situations would arise from a high volume traffic coming into the system.

The application for this feature is:

1. Call Centers

· All Agents Busy

· Queue is full

2. All Sets Busy

3. All Trunks Busy

4. M1 to M1 Tandem Situations

There is no new package required for this feature. It requires the existing ISDN package (145).

DPNSS1/DASS2 INI Call Cut-off

Currently, established calls are dropped when an initialization occurs on a DPNSS1 or DASS2 link connected to SX2000 or System Y. This feature will retain the calls in the case of a system initialize. The calls will still be released during sysloads or power-outages.

This feature is included in an existing package: IDA (122).

This feature is applicable to all DPNSS countries.

FNP Package Enhancement

This feature adds an additional level of control of the FNP package (#160) when it is equipped . It disables and enables its functionality at the customer level in Overlay 15.

This is applicable to the global market.

NI-1 BRI Compliance Enhancements

This feature provides enhancements to the Meridian 1 Basic Rate Interface (BRI) Basic Call Services and Call Forward All Calls by Call Type capabilities which will be functionally compliant to the Bellcore National ISDN-1 (NI-1) standard for voice and data applications.

This feature is included in existing packages: BRI (216), BRIL (235), and MSDL (222).

This feature is only applicable to the US and Canada.

NI-2 - Call by Call Service Selection

This feature provides enhancements to support the National ISDN-2 (NI-2) Call by Call Service Selection (CBC) which allows the Meridian 1 to access various network services or facilities over any B-Channel on an ISDN PRI connection.

This feature introduces a new package: NI2CDC (334).

This feature is only applicable to the US and Canada.

QSIG-ANF Path Replacement

The intent of this feature is to provide network optimization capability to the Meridian 1 in a multi-vendor environment for the QSIG protocol. This Additional Network Feature (ANF) permits an active call's connection through the Private Telecommunication Network (PTN) to be replaced by a new connection, e.g. to obtain a more efficient connection following transfer by join.

This feature is included in existing package QSIG Supplementary Services: QSIG-SS (316).

This feature is applicable to all global markets, however Europe and the North America are the only markets where this feature will be introduced during R23 timeframe.

QSIG Call Diversion Notification

This feature provides enhancements to support of the ETSI Call diversion supplementary services on the QSIG trunk interfaces. Call Diversion comprises the following supplementary services:

· Call Forward Unconditional (CFU)

· Call Forward on No Reply (CFNR)

· Call Forward Busy (CFB)

This feature is applicable to all global markets, however Europe and the North America are the only markets where this feature will be introduced during R23 timeframe.

R2MFC Timer Control

This enhancement enables the Meridian 1 to more consistently communicate with different 2EAX Central Offices via R2 MFC when the 2EAX CO or the Meridian 1 do not know the number of digits to expect in an international number. It introduces a new configurable R2MFC timer called an Inter (digit) signal timer.

This feature is included in an existing package: MFC (128).

This feature is applicable to R2MFC markets.

Music Broadcast

With the introduction of the Music Broadcast software feature, music can be delivered through connections in core software eliminating the need for conference hardware. Meridian 1 systems equipped with Release 23 will be able to broadcast music to multiple callers from music trunk ports without using conference hardware connections. This feature will deliver up to 1024 music connections per system. This feature is applicable to Music trunk routes only.

Incremental Software Management (music connection limit) will be used with Music Broadcast.

Music broadcast will be packaged under the new package MUSBRD (#328).

This feature is applicable to all global markets.

NPI and TON in CDR Tickets

This feature includes the Numbering Plan Identification (NPI) and the Type Of Number (TON) on the third line of CDR records/tickets when the configuration record parameter CLID is set to YES, when the configuration record parameter FCDR is set to NEW, and when an incoming ISDN trunk is involved in the call.

This feature requires the existing packages requires "New format CDR", FCDR (234), and CLID_CDR_PKG (118).

This feature is applicable to all global markets.

RAN Broadcast

This software feature will allow many callers (up to 48) within a Meridian 1 system to simultaneously listen to one RAN message without the physical cross-connection of multiple EXUT trunk ports. A single RAN port attached to one EXUT port will be able to broadcast a recorded announcement to many parties. This feature is applicable to RAN trunk routes only.

Broadcast RAN is being developed as an enabler for VPS, but can also be used with external OEM RAN's.

Incremental Software Management (max number of RAN trunk / RAN connection limit) will be used with RAN Broadcast.

RAN broadcast will be packaged under the new package RANBRD (#327).

This feature is applicable to all global markets.

M911 ENHANCEMENTS

Emergency Services Access

In October 1994, the FCC issued a Notice of Proposed Rulemaking (NPRM), on the subject of PBX compatibility with Enhanced 911 Emergency Services. The intent is to give 911 callers located behind a PBX the same level of 911 service that is currently given to the majority of residences in North America.

This feature addresses this NPRM by:

· Providing the caller's number, name, and location to the PSAP where the call is received. The number, or a number derivable from it, must be able to be called back by the PSAP.

· Permitting callers to obtain access to a PSAP by dialing 911, i.e., without first dialing an Access Code such as "9" to access a trunk to the 911 tandem C.O.

· Providing the capability to alert (but not conference in) a security station, etc. at the location served by the PBX if one is present, so that such security staff can assist in responding to an emergency.

· Providing the capability to update Location Database (ALI) information to keep up with PBX Adds, Moves, and Changes.

· Providing trunk overflow. If all outgoing E911 trunks are disabled, faulty, or otherwise out of service, calls are to overflow onto a normal trunk route, and it is accepted that Enhanced 911 service will not be available. However, if all E911 trunks are traffic busy, then calls should not overflow.

This feature is contained in 3 new packages: ESA (329), ESA_SUPP (330), and ESA_CLMP (331).

· ESA Call Recognition requires ESA (329).

· ESA Calling Terminal Identification requires ESA (329) and ESA_CLMP (331).

· ESA Call Routing requires ESA (329), ESA_SUPP (330), ANI using CAMA trunks (12), and ISDN (145) if outgoing trunks are ISDN.

· On Site Notification requires ESA (329), ESA_SUPP (330), CPDN (95) if the originator's name is not given in the ESA call record or is to be displayed on the OSN set, and ODAS (20) if the ESA call record is to reflect the originator's DES information or originator's DES information is to be displayed on the OSN set.

This feature is applicable to all global markets.

CUSTOM APPLICATIONS

Meridian 1 Attendant Console Enhancements

The following features describe enhancements to the operation of the Meridian 1 Attendant Console that will allow this product to perform some of the same functions now available on Meridian Digital Telephones. These are applicable to the global market.

1. Attendant Console Autoline - Provides secure autodial services to the attendant console via a programmable feature key. Via service change in Overlay 12; when the key is activated the system calls a preprogrammed DN. The preprogrammed DN will remain in effect unless a service change is performed. Changes to the destination number can not be made from the console. The destination may be internal or external to the Meridian 1. The attendant may use this feature for emergencies such as 911 calls.

This functionality is the Base package.

2. Attendant DN/DID - Provides a specific non-key associated DN for each console including the ability to program the DN from the existing DID numbers purchased by the customer. This feature will allow persons paged by an attendant to re-call the specific attendant that has paged them whether they are internal or external to the Meridian 1. The current feature Departmental Listed Directed Number (DLDN) through service change, allows the assignment of a separate DN to each console or group of consoles. The Meridian 1 is capable of having up to 63 consoles. The DLDN feature does not provide enough individual console numbers as the assigned DNs are limited to (4) four or (6) six with Network-Wide Listed Directory Number. When this type of call to an attendant ends up in the attendant queue because the dialed attendant is busy, priority buzzing is given.

This functionality is the Base package.

3. Attendant Emergency Codes (Code Blue) - Provides the ability for an internal/external station to dial an emergency code and access a group of attendants. This call will be presented to each of the attendant consoles in the DLDN group along with a distinctive audible notification, indicating that a code blue call is queued. The attendant can put the present call on hold and answer the code blue call. Multiple ICI types could be programmed for an ICI key.

The existing feature Departmental Listed DN (DLDN) allows a customer within the Meridian 1 system to further subdivide the system into departments with respect to LDNs. Each department consists of a LDN and an associated list of attendants to which the LDN calls are delivered. The DLDN feature is enhanced to provide the code blue functionality. With the new option provided each of the LDN group attendants could be given priority buzzing while the LDN call (emergency/code blue call) is in the attendant queue. Since there are six LDNs (with Network LDN feature), a maximum of six different emergency code DNs are provided. The LDN ICI keys on the attendant console shows the type of emergency call.

This requires the existing package DLDN (#76).

This feature is applicable to all global markets.

Automatic Set Display

When a call is presented to a busy Business Communication Set (all sets which support digital display), the set will automatically display the CLID and CPND for the new incoming call. The user no longer needs to press the DISPLAY key and the DN key if the busy set has Tandem Digit Display (TDD) Class of Service. The current operation of the Display key remains unchanged.

Automatic Set Display requires the existing package DSET (#88) to display the CLID on a digital set.

Calling Party Privacy Enhancement

The Calling Party Privacy Enhancement (CPPE) feature allows the Meridian 1 to comply with the FCC ruling by providing an option to ignore the CPP Indicator for 800, 888, 900 and 911 call types. The CPPE feature will provide a new route option to honor or ignore the Calling Privacy Indicator on an incoming call received from the North America public ISDN PRI network. If the route option is set to ignore, then the CLID and CPND Indicators are changed from restricted/denied to allowed. However, if the option is set to honor, then the CLID and CPND Indicators are not changed.

The Calling Party Privacy Enhancement feature is packaged under the existing CPP (#301) package.

With 23.30D and later, CPPE has been expanded to support Privacy Indicator Ignored (PII) for TIE routes. The PII prompt will now be offered for TIE routes in overlay 16. Reference: BV71799

Table 13: PII prompt for CPPE

Prompt	Response	Description
PII	Yes, (No)	Privacy Indicator ignored (honored) YES mean CPP Indicator is changed from denied/ restricted to allowed NO means CPP Indicator functionality is maintained

CDR on Busy Tone

It is required that a CDR B record for abandoned calls shall now be generated on incoming calls when the call is terminated on a set in busy condition and/or busy tone is generated by M1 to the calling party. Please note that sometimes the M1 will provide Busy Tone to the user (some analog trunks) and sometimes the PSTN will provide the Busy Tone (digital trunks).

The Time To Answer field (TTA) shall indicate the Busy Condition via the letter "B" in the existing position for the call redirection identifier in the TTA field (presently used for Ringing and Non- Ringing indication).

All incoming calls will be supported: internal, tie and trunk calls.

There is no new package required for this feature. It requires "New format CDR", FCDR (#234).

This functionality is applicable to the Global market.

Electronic Brandlining

Electronic Brandlining is a portion of the M1 terminal brandlining initiative to aid our distributors in raising their own brandline awareness. It will provide the distributor’s name on the second line of the Aries display when the set is in the idle state. The distributor’s name will be customized by entering up to 24 characters on a system-wide level under password protection.

In North America, if this feature is not enabled NORTEL will appear on the second line of the display when the set is in idle. In other countries, the display will be as it is today.

Appropriate Aries set display firmware is required for this feature.

This does not introduce a new package and is included in the basic X11 system software.

Individual Hold Enhancement

Currently, for a customer with the Individual Hold option allowed, when more than one single line Directory Number (DN) of the same Multiple Appearance Directory Number (MADN) is active on a call and one user puts the call on hold, normal hold (winking) is indicated at the user's telephone only. A slow flicker is shown at all other appearances of the same MADN, thus appearing to give a "false hold" indication.

With the Individual Hold enhancement, which is provided on a customer basis, the feature will allow lamps to remain steadily lit on all other appearances when one user puts the call on hold. This is implemented via the "lamp option". This feature is applicable to all PBX, SL-1 sets, Aries, M2317 and M3000 sets. Note that PBX sets are not equipped with lamps, thus in a MADN environment, there will be no lamp indication. The current functionality will be retained if the lamp option is denied.

The Individual Hold enhancement will also provide an additional option to "release" a single line party if the user presses the hold key while another member of the same MADN is still active on the call. This option is referred to as the "Release option". This will be provided on a customer basis and will not be applicable to 500/2500 single line sets, i.e., if the user activates switchhook flash, the call will not be released and the switchhook flash will be ignored. If this option is denied, the current functionality will be retained.

This feature is included in an existing package: Deluxe Call Hold (DHLD - #71).

This feature is applicable to all global markets.

Pretranslation/System Speed Call Enhancement

Currently, Pretranslation allows a user to create a flexible dialing plan by using Speed Call lists (SCL) as Pretranslation Tables. The dialing capabilities and/or restrictions of each Pretranslation group are defined in Pretranslation Tables. The tables are Speed Call lists modified for Pretranslation. With Pretranslation, only the first dialed digit of a call is pretranslated. Also, the first digit in a SCL entry is pretranslated whether access is via key or "dial access" (i.e., SPRE or FFC) or whether this is a Regular or System Speed Call list.

With System Speed Call/Pretranslation Enhancement, the user will have an option, on a system basis, to disallow pretranslation from occurring on a system speed call list entry when dial accessed via SPRE or FFC. Regular Speed Call and key access functions will not be changed.

This feature requires 2 existing packages: System Speed Call (SSC - 34) and Pretranslation (PXLT - 92).

This feature is applicable to all global markets.

Selectable Conferee Display and Disconnect

This feature will provide the Aries set user the capability to selectively drop any party that has been added to a conference call. A new type of key (Scroll Key) is required for Aries sets with display that provides the ability to scroll through the conferees active on a conference. When the conferee to be dropped is located, the DN key can be pressed to drop this party and the Release (RLS) key can also be used to abort this operation at any time. Anyone in the conference can disconnect a conferee if equipped with a Scroll key.

A new display during conference will display the number of parties currently active in the conference. This new function is only be applicable to Aries sets with display.

This feature is included in the Base package.

This feature is applicable to all global markets.

MICROCELLULAR

Microcellular Automatic Frequency Planning

Currently, Microcellular carriers are manually engineering their frequencies in order to most effectively use their 416 available 800Mhz channels. With the increased growth in the number of cellular phones, the cellular operators will perform a "frequency re-tune" every two to six months. The re-tune will require changing the frequencies used in some of the cells. The Automatic Frequency Planning feature will allow the system to automatically engineer the frequencies instead of having the carriers manually re-engineer the frequencies.

The Microcellular Automatic Frequency Planning feature relies on a newly introduced Automatic Frequency Planning Station (AFPS) to monitor the incumbent macrocell and the Meridian Microcellular system. The AFPS is a scanner/receiver which can be deployed throughout the physical domain of the microsystem.

Enhanced Full Rate Codec on Microcellular System

The Enhanced Full Rate Codec (EFRC) feature is to support the phase two of the Meridian Microcellular product. Phase two includes a new speech and channel coding algorithm which conforms to IS-136 and IS-641. This feature is to provide the changes to the overlays necessary to support both the EFRC (phase two) and Vector Sum Excited Linear Predictive Coding (VSELP - phase one).

This feature requires MXC firmware 70 or newer. The MXC card must be a minimum of release 3 or release 2 with the new firmware.

OA&M ENHANCEMENTS

Release 23 MAT Concurrency

Will only support changes required by current Release 23 features. Will not include any new MAT functionality.

The following features require MAT changes:

· Asia /Pacific, CALA Busy Tone Detection

· Meridian 1 Attendant Console Enhancements

- B-Channel Overload Control
- CIS MF Shuttle (Commonwealth of Independent States (Europe) feature)
- CLASS: Calling Number and Calling Name Delivery
- CP3 (Feature not applicable to Option 11C)
- Electronic Brandlining
- Emergency Services Access
- DPNSS1 Message Waiting (European feature)
- Euro-ISDN Continuation Phase 3 (European feature)
- Flexible Trunk to Trunk Connections (Future content for Release 23)
- FNP Package Enhancement
- IODU/C (Feature not applicable to Option 11C)
- Japan TTC Common Signaling (Future content for Release 23)
- MDECT Companion (Future content for Release 23)
- Music Broadcast
- NI-2 - Call by Call Service Selection
- QSIG ANF Path Replacement
- QSIG Diversion Notification
- RAN Broadcast
- Selectable Conferee Display and Disconnect

Chapter 4 - Overlays

The following table summarizes the status changes of the administration overlays on Option 11C, compared to Option 11E.

Table 14: Administration Overlays Status Changes

Overlay	Description	11E	11C
OVL 13	DTRs, DTDs, MF Senders and Receivers	Supported	Modified
OVL 14	Trunks	Supported	Modified
OVL 17	Configuration Record 1	Supported	Modified
OVL 25	Move Data Blocks	Supported	Modified
OVL 29	Memory Management	Supported	Unsupported
OVL 97	Configuration Record 2	Supported	Modified
OVL 117	Alarm Management and Network Configuration	Unsupported	Supported

Administration Overlays

Overlay 13

This overlay has been modified to add 8 more XTD/DTR units (8-15) on card 0 or 4 MFC/MFE/MFR/MFK5/MFK6 units (8-11) on card 0.

Overlay 14

This overlay has been modified to add trunk level transmit level identifier. MFL prompt in overlay 14 is not supported for Option 11C.

Overlay 17

New prompts have been added to this overlay to allow for configuration of the new TTY ports introduced on Option 11C. Prompts are also added for defining flow control for the TTY ports.

The additional conference loop for Option 11c is configured automatically at sysload for an upgrade, however this overlay has been modified to allow manual removal and configuration of this additional conference loop.

Overlay 25

This overlay has been modified to add restriction for moving card 0.

Overlay 29

Not supported on Option 11C

Overlay 97

This overlay has been modified to allow two system level multifrequency transmit level identifiers.

Overlay 117

This overlay is now supported for Option 11C.

The following table summarizes the status changes to all maintenance and diagnostic overlays on Option 11C, compared to Option 11E.

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Table 15: Maintenance and Diagnostic Overlays Changes

Overlay	Description	11E	11C
OVL 7	Enhanced Maintenance	Supported	Unsupported
OVL 8	Debugger	Supported	Unsupported
OVL 9	Debugger	Supported	Unsupported

Table 15: Maintenance and Diagnostic Overlays Changes

Overlay	Description	11E	11C
OVL 32	Network and Peripheral Equipment Diagnostics	Supported	Modified
OVL 34	TDS and DTR Diagnostics	Supported	Modified
OVL 38	Conference Circuit Diagnostics	Supported	Modified
OVL 54	Multifrequency Signalling Diagnostics	Supported	Modified
OVL 135	Core Common Equipment Diagnostics	Unsupported	Modified
OVL 137	Core Input/Output Diagnostics	Unsupported	Modified
OVL 143	CCBR and upgrade	Unsupported	New
RESDB	Resident debug	Supported	Unsupported

Maintenance and Diagnostic Overlays

Overlay 32

This overlay is modified to support extended tone services units on the CPU card.

Overlay 34

This overlay has been modified to support tone services units which can now be defined as different types on the CPU card.

Overlay 38

This overlay has been modified to support a new conference loop which is provided with the second expansion cabinet on the Option 11C.

Overlay 54

This overlay has been modified to support MFC/MFE/MFK units on Card 0. Some of the functionality has also been moved to Overlay 34.

Overlay 135

Several new commands have been added to this overlay to support Option 11C fiber interface maintenance.

Overlay 137

Many commands in this overlay are not supported on Option 11C.

Overlay 143

This overlay has been introduced to invoke the Option 11C Installation program. The customer configuration backup and restore (CCBR) commands have been moved from Overlay 43 to this new overlay.

For more details on specific changes, refer to X11 Release 23 Software NTPs.

Chapter 5 - Software Packaging

Software Options and Package Dependencies

Please note that for software packages introduced prior to Release 20, dependencies within dependencies are not listed. However starting with Release 20, dependencies within dependencies are listed in some cases for new software packages. International Dependencies can be found in the International General Release Bulletin - 23.

Packages which are not supported on any machine type are not included in this table.

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
0	BASIC (R1)	Basic call Processing		
1	OPTF (R1)	Extended PBX Features		
2	CUST (R1)	Multiple Customer Operation		
4	CDR (R1)	Call Detail Recording		see also pkg# 5, 24, 83, 108 Without pkg#5 CDR cannot output statistics or reports
5	CTY (R1)	CDR on Teletype Machine (TTY)	CDR-4	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
7	RAN (R1)	Recorded Announcement	INTR - 11	
8	TAD (R1)	Time and Date		
9	DNDI (R1)	Do Not Disturb Indiv		
10	EES (R1)	End to Ens Sig.		
11	INTR (R1)	Intercept Treatment		
12	ANI (R1)	Auto. Number Ident.		
13	ANIR (R1)	ANI Route Selection	ANI - 12	
14	BRTE (R1)	Basic Routing	NCOS-32	
15	RPE (R1)	Remote Peripheral Equip.		Not supported on 11/11E/11C
16	DNDG (R1)	Do Not Disturb Group	DNDI -9	
17	MSB (R1)	Make set Busy		
18	SS25 (R1)	2500 set features		
19	DDSP (R1)	Digit Display		
20	ODAS (R1)	Office Data Admin. System		
21	DI (R1)	Dial Intercom		
22	DISA (R1)	Direct Inward System Access		
23	CHG (R1)	Charge account for CDR	CDR -4, CAB - 24	
24	CAB (R1)	Charge Account / Authorization Code		
25	BAUT (R1)	Basic Auth. Code	CAB-24	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
26	CASM (R1)	Centralized Attn. Service (Main)		Not supported on 11/11E/11C
27	CASR (R1)	Centralized Attn. Service (Remote)		Not supported on 11/11E/11C
28	BQUE (R1)	Basic Queuing		
29	NTRF (R1)	Network Traffic Measurements	BARS-57, NARS-58, CDP-59, PQUE-60, FCBQ-61, OHQ-62	One of Pkg. 57-62 must be equipped
32	NCOS (R1)	Network Class Of Service		
33	CPRK (R2)	Call Park		
34	SSC (R2)	System Speed Call		
35	IMS (R2)	Integrated Message System	ACDA-45, MWC-46	
36	ROA (R2)	Recorded Overflow Announcement	RAN-7	
37	NSIG (R2)	Network Signalling	NCOS-32	
38	MCBQ (R2)	Network Queuing - Main	NSIG-37, FCBQ-61	
39	NSC (R2)	Network Speed Call	SSC-34, BARS-57 or NARS-58	
40	BACD (R1)	Basic ACD		see also ACDA-45, ACDB-41, ACDC-42, LMAN-43, ACDD-50, LNK-51, CDRQ-83, TOF-111, DNIS-98

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
41	ACDB (R1)	ACD Package B	ACDA-45	
42	ACDC (R1)	ACD Package C1	ACDB-41	
43	LMAN (R1)	ACD Load Mgmt. C2	ACDC-42	
44	MUS (R1)	Music	RAN-7	
45	ACDA (R1)	ACD Package A	BACD-40	
46	MWC (R1)	Message Center		
47	AAB (R1)	Auto. Answer Back		
48	GRP (R1)	Group Call		
49	NCFR (R2)	New Flexible Code Restriction	NCOS-32	
50	ACDD (R2)	ACD package D	ACDC-42, LNK-51	
51	LNK (R2)	ACD Package D, Auxiliary Link Processor	ACDD-50	
52	FCA (R1)	Forced Charge Account	CHG-23	
53	SR (R1)	Set Relocation		
54	AA (R1)	Attn. Administration		
55	HIST (R1)	History File		
56	AOP (R1)	Attendant Overflow Position		Mutually exclusive with package 26, 27, or 159. Note: 26 and 27 not supported on Option 11/11E/11C
57	BARS (R1)	Basic Alternate Route Selection	BRTE-14, NCOS-32	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
58	NARS (R2)	Network Alternate Route Selection	BRTE-14	
59	CDP (R1)	Coordinated Dialing Plan	BRTE-14, FCBQ-61	
60	PQUE (R1)	Priority Queuing	NCOS-32	
61	FCBQ (R1)	Flexible Call Back Queuing	BQUE-28, BARS-57 or NARS-58 or CDP-59	
62	OHQ (R1)	Off-Hook Queuing	BQUE-28, BARS-57 or NARS-58	
63	NAUT (R1)	Network Authorization Code	BAUT-25, BARS-57 or NARS-58 or CDP-59	
64	SNR (R3)	Stored Number Redial		
65	TDET (R7)	Tone Detector		Not supported on 11/11E/11C
67	NXFR (R3)	Network Call Transfer	NSIG-37	
68	ATVN	Autovon		
69	ACDR	Autovon CDR		
70	HOT (R4/R10)	Hot Line Services / Enhanced Hot Line	NCOS-32, SSC-34. Optional Pkgs: ISDN-145, PRA-146/ISL-147, NTWK-148	Add optional packages for Network Intercom / Network Hot Line

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
71	DHLD (R4)	Deluxe Hold		
72	LSEL (R4)	Auto. Line Selection		
73	SS5 (R4)	500 Set Features	SS25-18	
74	DRNG (R4/R9)	Distinctive and New Distinctive Ringing		
75	PBXI (R5)	PBX Interface for DTI		
76	DLDN (R5)	Dept. Listed DN		
77	CSL (R8)	Command Status Link		
79	OOD (R5)	Optional Outpulsing Delay		
80	SCI (R7)	Station Category Indication		
81	CCOS (R7)	Controlled Class of Service		
82	RESDB	Resident Debug		Not supported on Option 11C
83	CDRQ (R3)	ACD CDR Queue Record	CDR-4, BACD-40	
84	ATM (R7)	Automatic Trunk Maintenance	TDET - 65	Not supported on Option 11/11E/11C
86	TENS (R7)	Mult. Tenant Service		
87	FTDS (R7)	Fast Tone and Digit Switch		
88	DSET (R7)	Digital Telephones		
89	TSET (R7)	M3000 Touchphone	DSET-88	
90	LNR (R8)	Last Number Redial		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
91	DLT2 (R9)	M2317 Digital Display Telephone	DSET-88	
92	PXLT (R8/R14)	Pretranslation / Enhanced Pretranslation		
93	SUPV (R8)	Sup. Attn. Console		
95	CPND (R10)	Call Party Name Display	DDSP-19, DSET-88, TSET-89, ODAS-20, BGD-99	ODAS for DES, BGD for Hotel/Motel applications
97	JCO	Japan CO Trunk		
98	DNIS (R10)	Dialed Number Identification Service	DDSP-19, ACDA-45, APL-109, IDC-113	APL for DP link, IDC for routing by DNIS
99	BGD (R10)	Background Terminal Facility	RMS-100, MR-101, AWU-102, PMSI-103	
100	RMS (R10)	Room Status	BGD-99, DNDI-9, MWC-46	packages DNDI and MWC are required for lamp status
101	MR (R10)	Message Registration	BGD-99	
102	AWU (R10)	Automatic Wake-up	RAN-7, BGD-99	
103	PMSI (R10)	Property Management System Interface	RMS-100	
104	OPAO	Outpulsing of * and #		
105	LLC (R14)	Line Load Control		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
106	SLP	Station Loop Preemption		
107	MCT (R10/R20)	Malicious Call Trace	ISDN-145, PRA-146 or ISL-147, NAS-159, ISDNS-161	
108	ICDR (R10)	Internal CDR	CDR-4	
109	APL (R10)	Aux. Processor Link		
110	TVS (R9.32)	Trunk Verification from a Station		
111	TOF (R10)	ACD Timed Overflow	ACDB-41	
113	IDC (R12)	Incoming DID Digit Conversion	NFCR-49	
114	AUXS (R12)	ACD-D Aux. Security	LNK-51	
115	DCP (R12)	Directed Call Pickup		
116	PAGT (R12)	ACD Priority Agent	ACDA-45	
117	CBC (R16)	Call By Call Service Selection	PRA-146, IEC-149	IEC for Inter-Exchange Carrier
118	CCDR (R13)	Calling Line ID in CDR	CDR-4, ISDN-145	
119	EMUS (R12)	Enhanced Music	MUS-44	
120	PLDN	Group Hunt/DN access to SCL		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
121	SCMP (R20)	Station Camp on		
122	COMDT	Common DAS/DPNSS DTRK Package		
123	DPNSS	DPNSS		
124	DASS2	DASS2		
125	FTC (R16)	Flexible Tone and Cadences		
126	OPCB	Operator Call Back		
127	BKI (R20)	Attendant Break-in / Trunk Offer		
128	MFC	Multifrequency Compelled Sig.		
129	DTI2	2.0 Mb DTI2		
131	SUPP	International Supp. Features		
132	TBAR (R20)	Trunk Baring		
133	ENS (R20)	Enhanced Night Service		
134	AFNA	Auto. Forward No Answer		
135	MFE	MFE Sig. (France)		
136	JDMI	2.0 Mb Digital MUX interface (Japan)		Not supported on Option 11/11E/11C
137	LSCM	Local Steering Code Modification		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
138	DTD	Dial Tone Detector		
139	FFC (R15/R21)	Flexible Feature Codes	CCOS-81, SS5-73, NCOS-32 CCOS-81 and ISDN-145, SS25-18, NFCR-49	CCOS for Electronic Lock and Remote Call Forward, SS5 for FFCs on 500 telephones, NCOS, CCOS, and ISDN for Electronic Lock Network Wide, SS25 for Customer Call Forward, NFCR for Outgoing Call Barring
140	DCON (R15)	M2250 TCM Console	DSET-88	
141	MPO (R20)	Multi Party Operation	FTC-125	FTC for recall ringing cadence and control/special dial tones
144	ABCD	16-Button DTMF		
145	ISDN (R13)	ISDN Signaling	DCP-115, NTWK-148, PRA-146/BRI -216	PRA / BRI for Call pickup Network Wide
146	PRA (R13)	ISDN Primary Rate Access	PBXI-75, ISDN-145, DDSP-19	DDSP for CLID
147	ISL (R14)	ISDN Signaling Link	ISDN-145	
148	NTWK (R14)	Advanced Network Services	NARS-58 or CDP-59, PRA-146 or ISL-147, NSIG-37	NSIG for tandem node
149	IEC (R13)	Inter-exchange Carrier	PRA-146	
150	DNXP (R13)	Direct Number Expansion	CDRE-151	CDRE if CDR is equipped

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
151	CDRE (R13)	Call Detail Recording Expansion	CDR-4, DNXP-150	
153	IAP3P (R13)	Application Module Link	CSL-77, IMS-35	
154	PRI2	2.0 Mb PRI		
155	ACNT (R13)	ACD Activity Code Entry	AUXS-114	
157	THF (R14)	Centrex Switchhook Flash		
158	FGD (R17)	Feature Group D	BARS-57, NARS-58 (recommended)	
159	NAS (R20)	Network Attn. Services	BARS-57, NARS-58, or CDP-59, BQUE-28, NCOS-32, FCBQ-61, ISL-147	Mutually exclusive with packages 26, 27, and 56, For 1.5Mbit interface add PBXI - 75 and PRA - 146
160	FNP (R20)	Flexible Numbering Plan	BARS-57, NARS-58, or CDP-59	
161	ISDNS (R20)	ISDN Supplementary Features	BRTE-14, BQUE-28, NCOS-32, BARS-57 NARS-58 or CDP-59, FCBQ-61, ISDN-145, NAS-159	for call connection limitations add PRA-146 and ISL-147

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
162	SAR (R20)	Scheduled Access Restrictions		for manual modifications BAUT-25, FCA-52, FFC-139, for NCOS restrictions NCOS-32, for Multi-tenant TENS-86
163	MIN	Message Intercept		
164	LAPW (R16)	Limited Access to overlays		
165	RPE2	2.0 Mb RPE2		Not supported on Option 11/11E/11C
166	HOSP	Hospitality Mgmt.		
167	GPRI	1.5/2.0 MB Gateway		
168	TMON	Traffic Monitoring		Not supported on Option 11/11E/11C
169	COOP	Console Operation		
170	ARIE (R14)	Meridian Modular Telephone	DSET-88 or TSET-89	
171	JTDS	Japan Tone and Digit Service		
172	CPGS (R15)	Console Presentation Group Level Services	TENS-86	
173	ECCS (R15)	Enhanced Controlled Class of Service	CCOS-81	
174	AAA (R15)	Attendant Alternative Answering		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
175	NMS (R16)	Network Message Services	EES-10, MWC-46, ISDN-145, NTWK-148.	for Network Message Center, Originating or Teminrating PBX
			ISDN-145, NTWK-148.	for Network Message Center, Tandem PBX
			EES-10, ACDA-45, MWC-46, ISDN-145, NTWK-148.	for Meridian Mail, Originating PBX
			ISDN-145, NTWK-148.	for Meridian Mail, Tandem PBX
			EES-10, IMS-35, CSL-77, ISDN-145, NTWK-148.	for Meridian Mail, Terminating PBX
			EES-10, MWC-46, ISDN-145, NTWK-148.	for ACD Message Center, originating PBX
			ISDN-145, NTWK-148.	for ACD Message Center, tandem PBX
			EES-10, ACDA-45, MWC-46, ISDN-145, NTWK-148.	for ACD Message Center, terminating PBX
176	DTOT	DID to TIE		
178	EOVF (R15)	Enhanced Overflow	TOF-111	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
179	HVS (R16)	Hospitality Voice Services	RAN-7, EES-10, MSB-17, IMS-35, BACD-40, ACDA-45, MWC-46, CSL-77, APL-109. PMSI-103	for Pretranslation and DND enhancements. for PMSI enhancements.
180	DKS (R16)	Digital Key Signaling	RAN-7, EES-10, MSB-17, IMS-35, BACD-40, ACDA-45, MWC-46, CSL-77, APL-109	
181	SACP (R21)	Semi-automatic Camp-on		
182	TFM	Trunk Failure Monitor		
183	VNS (R21)	Virtual Network Services	NARS-58, NCOS-32, BRTE-14, ISDN-145, ISL-147, NTWK-148, ISDNS-161	
184	OVPL	Overlap Signaling		
185	EDRG	Executive Distinctive Ringing		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
186	POVR (R20)	Priority Override / Forced Camp On	FFC-139, MPO-141	dependencies for 500-2500 sets
187	RPA	Radio Paging		
188	L1MF	L1-MFC Signalling		
189	SVCT	Sup. Console Tones		
190	UK	UK H/W support		
191	SECL (R21)	Series Call		
192	RVQ (R18)	Remote Virtual Queuing	MCBQ-38, FCBQ-61, DTI-75, ISDN-145, PRA-146, NTWK-148	R20 renamed package to Originator Routing Control / Remote Virtual Queuing (ORC-RVQ) with additional dependencies BRTE-14, BQUE-28, NCOS-32, NSIG-37, BARS-57 NARS-58 or CDP-59, removal of DTI-75 dependency and change of either PRA-146 or ISL-147. For Drop Back Busy add OHQ-62, NAS-159, and ISDNS-161
193	RCK	Ring Change Key		
195	FAXS	HiMail Fax Server Interface		
196	OHOL	On Hold on Loudspeaker		
197	FTA	French Type Approval		
198	FFCSF	Boss Secretary Filtering		
200	AINS	Auto. Set Based Installation		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
202	IPRA	International PRA		
203	XPE (R15)	Extended Peripheral Equipment (Superloop)	XCT1-205	
204	XCT0 (R15)	Enhanced Conference, TDS, and MFS card	XCT1-205	
205	XCT1 (R15)	Superloop Administration		Overlay 97
206	MLWU (R16)	Multi-Language Wake-up	AWU-102, PMSI-103	
207	NACD (R15)	Network ACD	BQUE-28, NTWK-148, EOVF-178	
208	HSE (R17)	Hospitality Screen Enhancement	ARIE-170	
209	MLM (R16)	Meridian Link Module	IAP3P-153	
210	MAID (R17)	Maid Identification	CCOS-81, BGD-99, RMS-100, PMSI-103, HSE-208	- PMSI to capture Maid ID for statistic reports. - HSE to bring up Maid ID screen for Meridian Modular Telephones with Hospitality Screen Enhancement feature
211	MLIO	Multi-Language CPND		
212	VAWU (R17)	VIP Auto Wake-up	AWU-102	
214	EAR (R17)	Enhanced ACD Routing	ACDB-41	
215	CCR (R18)	Customer Controlled Routing	CSL-77, EAR-214, CALL ID-247	Note: CALL ID for R19 and later

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
216	BRI (R18)	Basic Rate Interface	XPE-203, MSDL-222	For R20 and later add BRIL-235
218	IVR (R18)	Hold in Queue for IVR	CCR-215	
219	MWI (R19)	Message Waiting Indication Interworking with DMS	EES-10, MWC-46, NTWK-148, NWC/NMS-175	For originating node. Add ACDA-45 is ACD DN is used as Message Center DN
			EES-10, IMS-35, NTWK-148, NWC/NMS-175	For host node
			NTWK-148	For Tandem node
221	CIST	DTI/3-wire analog trunk		
222	MSDL (R18)	Multi-Purpose Serial Data Link	ISDN-145, PRA-146.	for D-Channel with PRA
			ISDN-145, ISL-147.	for D-Channel with ISL
			MSDl SDI-227.	for Serial Data Interface
			MSDL SDI-227, STA-228.	for Single Terminal Access
			IMS-35, CSL-77, IAP3P-153	for Application Module Link
223	FC68 (R17)	FFC Comp for DID Answer Supervision		

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
224	M911 (R19)	Meridian 911	DDSP-19, IAP3P-153, EAR-214, CALL ID-247	- for full M911 operation add CWNT-225. - for Meridian Link add MLM-209. - for Call Abandon (R21) add BACD-40, ACDB-41, ACDA-45, CWNT-225. - Recommended CDR-4, CTY-5, ACDC-42, LMAN-43, ACDD-50, LNK-51, CPND-95, MCT-107, and CCDR-118. If 50 and 51 are enabled, 42 is not needed.
225	CWNT (R19)	Call Waiting Notification	DDSP-19, ACDB-41	
227	MSDL SDI (R19)	MSDL Serial Data Interface	MSDL-222	Not Supported on Option 11/11E/11C
228	STA (R19)	Single Terminal Access	MSDL-222, MSDL SDI-227	Not Supported on Option 11/11E/11C
229	SSAU (R19)	Station Specific Authcode	BAUT-25	
230	MDP	Manufactured Delivered Patches		Not Supported on Option 11/11E/11C
231	DNWK	DPNSS Network Services		
232	PEMD	Pulsed EAM		Not Supported on Option 11/11E/11C
233	BRIT	BRI Trunk Application		
234	FCDR (R20)	New Format CDR	CDR-4, CTY-5	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
235	BRIL (R20)	Basic Rate Interface Line Application	BRI-216	for Packet Data add ISDN-145
236	ARCL	AC15 Timed Recall		
240	MCMO (R20)	Meridian Companion	DDSP-19, MWC-46, CPND-95	for Network Call Party Name Display / Calling Line ID add ISDN-145, PRA-146, ISL-147
242	MULI (R19)	MultiUser Login		
243	ALMR_FILTER (R19)	Alarm Filtering	HIST-55	Supported on Option 11C
245	SYS_MSG_LKUP (R19)	System Errors and Events Look-up		Supported on Option 11C - requires use of EDC to store lookup table
246	VMBA (R19)	Meridian Mail Voice Mail Box Administration		CPND-95 and ALRM_FILTER-243 are recommended
247	CLID (R19)	Call ID		
248	MPH (R19)	Meridian 1 Packet Handler	BRI-216, for 1.5 Mbps PRI add ISDN-145, for 2Mbps PIR add PRI2-154	Not Supported on Option 11/11E/11C Package 145/154 only required if Packet Data Network (PDN) connection is via T1 channel and not via Meridian Communication unit (MCU)
250	DPNA (R21)	Direct Private Network Access	DISA-22, RAN-7, DISA-22, RAN-7, BAUT-25, NAUT-63.	for DISA Digit Insertion for DISA RAN for Authcode-last Retry (RAN only if RAN is required).

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
251	SCDR (R20)	Station Activity Record	CTY-5	
252	KD3	Spanish KD3 DID/DOD Interface		
253	ARFW (R20)	Attendant Remote Call Forward	FFC-139	for Set based network RCFW. For implementation of 500/2500 sets add SS5-73. For network RCFW add ISDN-145, NARS-58, and CDP-59
254	PHTN (R20)	Phantom TN Operation	FFC-139	for Remote Call Forward
255	INBD	Intn. nB+D		
256	ADMINSET	Set Based Administration	LAPW-164, FFC-139	For digit display add DDSP-19. For digital sets add DSET-88. for Call Party Name Display add CPND-95, for Meridian Modular Sets add ARIE-170. For Automatic Installation (Option 11E only_ add AINS-200
258	ATX (R20)	Autodial Tandem Transfer	EES-10, THF-157	
259	CDRX	CDR Enhancements		
261	EURO	EURO ISDN		
262	SAMM	Stand-alone Meridian Mail		
263	QSIG (R22)	QSIG Interface	DDSP-19, ISDN-145, PRA-146, MSDL-222	Full ISL & VNS not supported

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
264-280	SMLL	System Message Lookup (Country Specific)		Supported on Option 11C - requires country specific data on SDC plus EDC for storage
283	UIGW	ISDN/DPNSS DASS Gateway		
284	DPNSS 1891	DPNSS 1891		
285	CHINA	Attn. Monitor		
286	REM_IPE	Remote IPE		Not supported on Option 11/11E/11C
288	DPNSS ES	DPNSS Enhanced Services		
289	ADSP	ACD Disconnect Supervision		
290	CCB	Collect Call Blocking		
291	NI2 (R21)	North America National ISDN Class II Equipment	ISDN-145, PRA-146, MSDL-222	
292	CHTL	China Toll Loss Plan		
293	TAT	Trunk Anti Tromboning		Pkg. replaced with TATO 312
294	BTD	Busy Tone Detection		
296	MAT_PKG (R22)	Meridian Administration Tools Management Interface	LAPW-164, MULI-242	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
297	MQA (R21)	Multiple Queue Assignment	BACD-40, ACDB-41, ACDC-42, ACDA-45, ACDD-50, LNK-51, DSET-88, ARIE-170	for Agents to specify priorities add PAGT-116. for Automatic Call Forward of non-ACD calls add FFC-139, and PHTN-254
298	CPIO (R21)	Call Processor Input / Output (Opt 81)		Not supported on Option 11/11E/11C
299	CORENET (R21)	Core Network Module (Opt 81C)		Not supported on Option 11/11E/11C
301	CPP (R21)	Calling Party Privacy	FFC-139	
302	MOSR (R22C)	Mobility Server	Pkgs. 303, 216, 254, and MAT5 dependencies 164, 242, 296, and optionally 243	Supported on Release 22.37 and later
303	MMO (R22C)	M1 Microcellular Option	Pkgs. 303, 216, 254, and MAT5 dependencies 164, 242, 296, and optionally 243	Supported on Release 22.37 and later
305	QSIGGF (R22)	QSIG GF Transport	QSIG-263, ISDN-145, PRA-146, MSDL-222	
306	CPRKNET (R22)	Call Park Networkwide	CPRK-33, NAS-159	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
307	PAGENET (R22)	Call Page - Networkwide		
309	MASTER	Euro ISDN Master Mode		
310	CPCI (R22)	Called Party Control on Internal Calls	MCT-107	
312	TATO (R21)	Trunk Anti Tromboning	ISDN-145, PRA-146 or ISL-147,	Recommended NTWK-148
313	ISPC	ISDN Semi-Perm Connection -Australia		
314	MMSN (R22C)	M1 Mobility Multi-Site Networking	Pkgs 302, 303, 145, 146, 147, 148, and 58 or 59	Supported on Release 22.37 and later
315	OPEN ALARM (R22)	Open Alarms	ALRM_FILTER-243, MAT-296	
316	QSIG_SS (R22)	ISDN Qsig Supplementary Services - Call Completion	QSIGGF-305	
321	QTN (R22C)	CCR-NACD Interworking		Supported on Release 22.37 and later
323	EISDN	EISDN Supp. Services		
324	NGEN (R22)	New Generation Connectivity		
327	RANBRD (R23)	RAN Broadcast	RAN-7, INTR-11	

Table 16: Software Package Dependencies

Pkg #	Mnemonic	Name	Package Dependency	Comments
328	MUSBRD (R23)	Music Broadcast	RAN-7, MUS-44	
329	ESA (R23)	Emergency Services Access	ANI-12, ODAS-20, CPND-95	if using ISDN add ISDN-145
330	ESA_SUPP (R23)	Emergency Services Access Supplementary	ESA-329	
331	ESA_CLMP (R23)	Emergency Sedrvices Access Calling Number	ESA_329	
332	CNUMB (R23)	CLASS: Calling Number Delivery		
333	CNAME (R23)	CLASS: Calling Name Delivery	CPND-95	
334	NI2CBC (R23)	NI-2 Call by Call Service Selection	ISDN-145, PRA-146, MSDL-222, NI2-291	

Packages Introduced in Release 23

The following table provides a list of the packages introduced in Release 23, their mnemonics, and their package numbers.

Table 17: Packages introduced with X11 Release 23

Package Name	Mnemonic	Package Number
RAN Broadcast	RANBRD	327
Music Broadcast	MUSBRD	328
Emergency Services Access	ESA	329
Emergency Services Access Supplementary	ESA_SUPP	330
Emergency Sedrvices Access Calling Number	ESA_CLMP	331
CLASS: Calling Number Delivery	CNUMB	332
CLASS: Calling Name Delivery	CNAME	333
NI-2 Call by Call Service Selection	NI2CBC	334

Table 18: Packages Introduced with Release 22.46

Package Name	Mnemonic	Package Number
Mobility Server	MOSR	302
M1 Microcellular Option	MMO	303
M1 Mobility Multi-Site Networking	MMSN	314
CCR-NACD Interworking	QTN	321

Packages not supported on Option 11C

The following table lists the packages which are not supported on Option 11 machine types.

Table 19: Packages Not Supported on Option 11/11E/11C

Package Name	Mnemonic	Package Number
Remote Peripheral Equipment	RPE	15
Centralized Attendant Service (Main)	CASM	26
Centralized Attendant Service (Remote)	CASR	27
Tone Detector	TDET	65
Resident Debug	RESDB	82
Automatic Trunk Maintenance	ATM	84
2 Mb. Digital Mux Interface (Japan)	JDMI	136
2 Mb RPE	RPE2	165
Traffic Monitoring	TMON	168
MSDL - Serial Data Interface	MSDL SDI	227
Single Terminal Access	STA	228
Manufactured Delivered Patches	MDP	230
Pulsed EAM	PEMD	232
Meridian 1 Packet Handler	MPH	248
Remote IPE	REM_IPE	286
CP1 Processor I/O	CPIO	298
CP1 Processor Network	CORENET	299

Chapter 6- Documentation References

Table 20: Reference Documentation

Package Name	Mnemonic
Option 11C Documentation	General Information and Planning Handbook (553- 3021- 200) Software Installation Program Guide (553- 3021- 310) Upgrade Procedures (553- 3021- 250) Central Answering Position Guide (553- 3011- 320) Customer Configuration Backup and Restore Guide (553- 3011- 330) Fault Clearing Guide (553- 3011- 500) Installation Guide (553- 3021- 210) Technical Reference Guide (553- 3011- 100)
X11 Software Guides	X11 Administration Input/ Output Guide (553- 3001- 311) X11 System Message Guide (553- 3001- 411) X11 Maintenance Input/ Output Guide (553- 3001- 511)

Table 20: Reference Documentation

Package Name	Mnemonic
2216 ACD Set Voice Parameters	Input/ Output Guide (553- 3001- 400) Automatic Call Distribution Features Description (553- 2671- 110) Commands and Reports (553- 2671- 112) X11 Features and Services (553- 3001- 305) Meridian Modular Telephone/ Standard Telephone User Guide M2216 ACD Telephone User Guide
68040 Call Processor for Options 51C/ 61C	Upgrade Overview (553- 3001- 101) Upgrade Engineering (553- 3001- 150) Spares Planning (553- 3001- 153) Equipment Identification (553- 3001- 154) Product Compatibility (553- 3001- 156) System Installation Procedures (553- 3001- 210) Upgrade system installation to X11 R22 (553- 3001- 258) Hardware Replacement (553- 3001- 520)
7 Digit DNIS for MAX	Input/ Output Guide (553- 3001- 400) Automatic Call Distribution Features Description (553- 2671- 110)
Alarm Management	Input/ Output Guide (553- 3001- 400) System Management Overview (553- 3001- 300) System Management Applications (553- 3001- 301) System Management Security (553- 3001- 302) X11 Features and Services (553- 3001- 305)
Automatic Wake- Up	Input/ Output Guide(553- 3001- 400) X11 Features and Services(553- 3001- 305)

Table 20: Reference Documentation

Package Name	Mnemonic
B- Channel Overload Control	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) ISDN BRI Description (553- 2901- 101) ISDN BRI Maintenance (553- 2901- 501)
Call Forward Destination Deactivation	Input/ Output Guide (553- 3001- 400) X11 Features and Services(553- 3001- 305)
Call Page Network-wide	Input/ Output Guide(553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) Meridian 1 Telephones (553- 3001- 108) Meridian Modular Telephone/ Standard Telephone User Guide M1250/ 2250 Attendant Console User Guide
Call Park Network-wide	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) Meridian 1 Telephones (553- 3001- 108) Meridian Modular Telephone/ Standard Telephone User Guide M1250/ 2250 Attendant Console User
Call Party Control on Internal Calls	Input/ Output Guide(553- 3001- 400) X11 Features and Services(553- 3001- 305)
Call Redirection by Time of Day	Input/ Output Guide(553- 3001- 400) X11 Features and Services(553- 3001- 305)

Table 20: Reference Documentation

Package Name	Mnemonic
CDR 100 Hour Call	Input/ Output Guide(553- 3001- 400) X11 Features and Services(553- 3001- 305) Call Detail Recording (553- 2631- 100)
CDR on Busy Tone	Input/ Output Guide (553- 3001- 400) Call Detail Recording (553- 2631- 100)
CFW, Break In and Hunt Int/ Ext Networkwide	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) Meridian 1 Telephones (553- 3001- 108)
CLASS: Calling Number and Name Delivery	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) ISDN BRI Description (553- 2901- 101) ISDN BRI Maintenance (553- 2901- 501)
CP3	Input/ Output Guide (553- 3001- 400) Equipment Identification (553- 3001- 154) System Installation Procedures (553- 3001- 210)
Display of Calling Party Denied	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500)
Dual VAS ID	Input/ Output Guide (553- 3001- 400)
E.164/ ESN Numbering Plan Expansion	Input/ Output Guide(553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500)
Electronic Brandlining	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305)

Table 20: Reference Documentation

Package Name	Mnemonic
Emergency Services Access	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305/ 306) Emergency Services Access (553- 3001- 313)
Fiber Remote IPE Phase II	Input/ Output Guide (553- 3001- 400)
Flexible Voice/ Data TN	Input/ Output Guide (553- 3001- 400) X11 Features and Services(553- 3001- 305)
FNP Packaging Enhancement	Input/ Output Guide (553- 3001- 400)
Individual Hold Enhancement	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305/ 306)
Init ACD Queue Call Restore	X11 Features and Services(553- 3001- 305) Meridian 1 Telephones (553- 3001- 108) Automatic Call Distribution Features Description(553- 2671- 110) Commands and Reports (553- 2671- 112) Meridian Modular Telephone/ Standard Telephone User Guide M2216 ACD Telephone User Guide
ICDU/ C	Input/ Output Guide (553- 3001- 400) Equipment Identification (553- 3001- 154) System Installation Procedures (553- 3001- 210)
ISDN Q- Sig Basic Call	Input/ Output Guide(553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500)

Table 20: Reference Documentation

Package Name	Mnemonic
ISDN Q-Sig GF Transport	Input/Output Guide(553-3001-400) ISDN PRI Description (553-2901-100) ISDN PRI Maintenance (553-2901-500)
ISDN Q-Sig Supplementary Services - Path Replacement	Input/Output Guide (553-3001-400) X11 Features and Services (553-3001-306) ISDN PRI Description (553-2901-100) ISDN PRI Maintenance (553-2901-500)
ISDN Q-Sig Supplementary Services - Call Diversion Notification	Input/Output Guide (553-3001-400) X11 Features and Services (553-3001-306) ISDN PRI Description (553-2901-100) ISDN PRI Maintenance (553-2901-500)
Meridian 1 Attendant Console Enhancements	Input/Output Guide (553-3001-400) X11 Features and Services (553-3001-305/306) M1250/2250 Console (553-2001-450) M1250/2250 Attendant Console User Guide
Meridian Link Release 5 Enhancements	Input/Output Guide (553-3001-400)
Meridian Mail Password Suppression	X11 Features and Services(553-3001-305)
Meridian Mail Trunk Access Restrictions	X11 Features and Services(553-3001-305)

Table 20: Reference Documentation

Package Name	Mnemonic
Mcrocellular	Nortel COMPANION Mcrocellular Overview (553- 3611- 100) Nortel COMPANION Mcrocellular Site Planning and Deployment guide (553- 3611- 105) Nortel COMPANION Mcrocellular Multi- site Network description, operation, and administration(553- 3611- 100) Nortel COMPANION Mcrocellular Operations, Administration, and Maintenance (553- 3611- 300) COMPANION Mcrocellular Quick Reference Card (PC841607)
Music Broadcast	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305/ 306) Automatic Call Distribution Features Description (553- 2671- 110)
NI1 BRI Compliance Enhancement	X11 Features and Services (553- 3001- 305)
NI2 Call By Call Service Selection	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) ISDN BRI Description (553- 2901- 101) ISDN BRI Maintenance (553- 2901- 501)
NPI and TON in CDR	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500)
Pre- translation / System Speed Call Enhancement	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305/ 306)

Table 20: Reference Documentation

Package Name	Mnemonic
RAN Broadcast	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305/ 306) Automatic Call Distribution Features Description (553- 2671- 110)
Selectable Conferee Display and Disconnect	Input/ Output Guide (553- 3001- 400) X11 Features and Services (553- 3001- 305/ 306) Meridian 1 Telephones (553- 3001- 108) Meridian Modular Telephone User Guide M2216 ACD Telephone User Guide
Speed Call Delimiter	Input/ Output Guide(553- 3001- 400) X11 Features and Services(553- 3001- 305)
System Access Enhancements	Input/ Output Guide (553- 3001- 400) System Management Overview (553- 3001- 300) System Management Applications (553- 3001- 301) System Management Security (553- 3001- 302)
System Management Features	Input/ Output Guide (553- 3001- 400) System Management Overview (553- 3001- 300) System Management Applications (553- 3001- 301) System Management Security (553- 3001- 302)
Trunk Anti- Tromboning	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) X11 Features and Services(553- 3001- 305)

Table 20: Reference Documentation

Package Name	Mnemonic
Trunk- to- Trunk Connections	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500) X11 Features and Services(553- 3001- 305)
VNS / VDN Expansion	Input/ Output Guide (553- 3001- 400) ISDN PRI Description (553- 2901- 100) ISDN PRI Maintenance (553- 2901- 500)

Chapter 7- Auxiliary Processor Compatibility

Table 21Auxiliary Processor Compatibility

Auxiliary Processor	Release	Comments
Meridian Link	2- 4 4B, 5.0x 5.2x	Application Module and IPE Module
NORTEL Multimedia Symposium Conference	4,5	
NORTEL Symposium Communicator	1.0	
NORTEL Symposium Messenger	3.0	
NORTEL Symposium Assistant	1.0	
NORTEL Symposium Fast Call (Windows only)	1.1	
CPlus (base)	3.11	
CPlus LAN key	1.0	
CPlus Performer	1.0 and later	

Table 21Auxiliary Processor Compatibility

Auxiliary Processor	Release	Comments
Meridian Mail	8.x - 11.x	
Meridian Mail Card Option	8.x - 11.x	
Meridian Customer Controlled Routing	2.x, 3.x 3B	Application Module Application Module and IPE Module
ACD MAX	4.x	
Meridian MAX	4.x - 7.x	Application Module and IPE Module
Interactive Voice Response	1.x - 2.x 2.x	US, Canada, and Asia Pacific Europe
Meridian Interactive Voice Response	1.x - 3.x	
Open Interactive Voice Response	2.x +	
M911	1.x - 2.x	
Meridian Administration Tools (for Windows 3.1)	4.7x	Station Admin, Traffic Analysis, Call Accounting, Call Tracking (Windows 3.1)
(for Windows 95)	5.7x	Station Admin, Traffic Analysis, Call Accounting, Call Tracking, Maintenance Windows, ESN Analysis and Routing Tool and Alarm Management (Windows 95)
Network Administration Center	1.x, 2.x	

Appendix 1 - Option 11C Product Overview

Introduction

This Chapter provides a brief overview of the Meridian 1 Option 11C as introduced with Generic X11 Release 22. It describes the system highlights, the required software, the hardware components which make up the system, upgrade scenarios, and auxiliary product compatibilities.

Overview

The Meridian 1 incorporates many enhancements to the existing Option 11/ 11E product. The Option 11C is now the PBX system of choice in the 30- 400 line size market, offering customers the power of a much larger system in a small package. The Option 11C can address the needs of a small single- site business establishments and that of a larger organization supporting multiple locations in a network.

Technical improvements to the product include a dramatic increase (>7 times over Option 11E) in the real time processing power. Increased real time is delivered through the use of a Motorola M68040 processor on the CPU board. The number of conference loops has been increased giving the Option 11C the capability of having up to 64 conferees (based upon system configuration). Currently the Option 11E offers fiber connectivity between the main and expansion cabinets up to a maximum length of 10 meters. Option 11C provides an additional option to extend remote fiber connectivity up to 3 km away from the main cabinet.

The software for all new system installations and systems converting from Option 11/ 11E to Option 11C will be delivered via a FLASH software daughterboard. The software daughterboard is installed on the CPU board and remains with the system permanently. The software daughterboard contains all components associated with a particular release of software including software patches, pre- configured customer data, feature sets and other pertinent databases and software.

The software upgrades to the existing Option 11C systems will be delivered via a 40 Mb PCMCIA card. Once the installation or modification is completed successfully, the PCMCIA card can be reused at other sites.

Installation of software, feature sets and ISM parameters is protected by a security keycode scheme. The installation is not allowed unless the correct keycodes are entered. Keycodes are required for all new installations as well as existing system upgrades. They are provided on a keycode datasheet supplied with the software and security device.

Systems wishing to upgrade from a two cabinet copper Option 11/ 11E to a two cabinet Option 11C have the opportunity to go to a two cabinet fiber interface or retain the copper interface. The copper interface is provided with the introduction of a backward compatible daughterboard.

System Highlights

The Meridian 1 Option 11C enhancements include:

- Commercially based CPU (M68040) providing significant increase in Real Time and memory capacity.
- The CPU will operate under Wind Rivers Systems VxWorks real time operating system which is the same as the Meridian 1 Option 51C, 61C, and 81.
- Ethernet Connectivity operating at 10Mbits.
- Tone service units on the CPU card provides the same tone functions as the following packs: TDS/ DTR (NTAK03), XTD (NT5K48), MFR (NTAG26), and XMFC (NT5K21). The CPU card can co- exist with these existing packs, thus allowing customers to continue use these packs on an Option 11C system. Tone services units can now be configured as either 16 DRT/ XTD units or 4 units of MFC/ MFE/ MFK5/ MFK6/ MFR plus 8 DTR/ XTD units.

- Increased conference capacity for the system (additional 1 loop allowing 16 more conferees); 1 cabinet - 32 conference ports; 2 cabinets - 48 conference ports; 3 cabinets - 64 conference ports.
- Built- in Time of Day clock provides a minimum of 15 minutes hold up time when a +5 V power is removed. This will bridge short power outages and cover maintenance issues.
- Inclusion of Memory Daughterboard providing 24 Mb of flash ROM for program store and 8 Mb of flash ROM for the file system.
- RAM on SIMM can be upgraded should future applications require.
- DOS compatible file system.
- The main processor has a base configuration of 8Mb of DRAM for operating memory space
- Two PCMCIA slots accommodating two industry standard PCMCIA cards which can be used for a cost effective vehicle for software upgrading/ updating or data storage devices. Slots are labelled as a: and b:. Slot a: is dedicated for the software delivery and patch delivery and slot b: is dedicated for External Data Card.
- New Software Delivery Process. Feature activation via keycodes which will be controlled via a security device specific to each site.
- New software installation/ upgrade procedure.
- FLASH software daughterboard replacing Option 11 and 11E software cartridges remains with the system permanently.
- Flash daughterboard is expandable.
- Supports telenet, ftp, remote login for the SMP (System Management Products).
- New fiber interface for connecting up to two expansion cabinets to the main cabinet.
- Two new options of fiber- optic connectivity are provided - local 10m fixed length and remote up to 3 Km length.
- New fiber routing/ cable management solutions.
- TTY improvements - 1 TTY on each expansion cabinet, 3 TTY ports on card 0 of main cabinet.

- Backward Compatible Daughterboard for copper connectivity upgrades from Option 11/ 11E.
- Database upgrade tool for data extraction from Option 11/ 11E software cartridges for customers who don't have remote backup capabilities.

Software

Option 11C requires X11 Release 22 and later versions of software.

Note: Release 22 and later versions of software cannot be used with existing Option 11 and Option 11E systems.

Hardware

- Commercially Based System Core Card NIDK20 with built- in ethernet & PCMCIA interface.
- Flash ROM software daughterboard NIDK21.
- Fiber expansion daughterboards - 2 versions: 10m (NIDK22) and up to 3 Km (NIDK24).
- Expansion Cabinets fiber receiver packs - 2 versions: 10m (NIDK23) and up to 3 Km (NIDK25) provides interface to the main cabinet and includes local TTY port.
- Fiber Optic Cables:10m between cabinets (plastic) and up to 3 Km to remote cabinet (glass).
- Backward compatible CPU daughterboard - NIDK26 provides upgrade path for existing Option 11 systems.
- New expansion cabinet & backplane (same as the main cabinet).
- Ethernet Connector Cable - NIDK27.
- PCMCIA Card used for software delivery. Two versions 40 Mb for software delivery and 3 Mb for patch delivery.
- Customer Database Upgrade tool - NIDK30 used for extracting the customer database from old Option 11 cartridges for upgrades where remote backup is not available.

- Security Device - NTDK57: Installation of software, feature set and ISM parameters is protected by a security device on the CPU board card and a site specific keycode scheme. The security device is installed as part of the new system installation.

Table 22: Hardware Components

Option 11E Hardware	Option 11C Hardware	Description
NTBK45	NTDK20	System Core Card
NTBK63	NTDK21	Flash Software Daughterboard (Blank)
NTBK54	NTDK22	10m Fiber Daughterboard
NTBK55	NTDK23	10m Fiber Receiver Pack
Included with NTBK55	A0632902	10m Fiber Cable
N/A	NTDK24	3 Km Fiber Daughterboard
N/A	NTDK25	3 Km Fiber Receiver Pack
N/A	NTDK26	Backward Compatible Daughterboard
N/A	NTDK27	Ethernet Cable
N/A	NTDK30	Customer Database Upgrade Tool
NTAK69/70 &NTBK79	NTDK50	Main/Expansion Cabinets
N/A	NTDK57	Security Device
N/A	P0816832	Fiber Routing Guide
N/A	A0633651	PCMCIA Card (Blank)
NTBK81	Not Required	Fiber Management Kit

Note: Glass cable for 3 Km fiber connectivity is provided by end user.

Note: Option 11E H/Wcodes listed above cannot be upgraded to 11C.

NTAK02BB Introduction

The vintage of the NTAK02 has been advanced to incorporate new firmware that supports ISDN Signaling Link (ISL) Networking features developed in Release 21.44 and later, namely Trunk- Anti- Tromboning, Network call page and Network call park.

Customers planning to take advantage of these features are required to upgrade the NTAK02 to the minimum vintage of NTAK02BB - A0658092 QUAD SERIAL I/O (SPORT).

All new shipments that require NTAK02 cards will automatically receive new vintage of NTAK02.

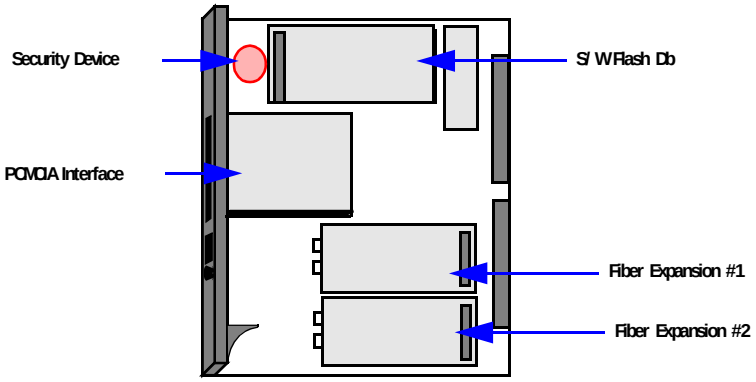
Product Description

System Core Card (NTDK20)

The Option 11C CPU pack is a standard size, single slot Meridian 1 style circuit pack that resides in slot 0 of the main cabinet.

The Option 11C CPU card introduces 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 51C, 61C, and 81. It provides a real time improvement of more than 7 times (based upon configuration) over the Option 11E. The main features include:

- Main CPU: MC68LC040 running VxWorks.
- Auxiliary CPU: MC68020.
- More than 7 times Real Time increase over 11E.
- Flash ROM program/file storage.
- Built- in ethernet interface.
- Built- in PCMCIA interfaces to support new software delivery mechanism.
- Built- in Time of Day device (holds for up to 15 minutes).
- Conference capability expanded (additional 1 loop allowing 16 more conferees).
- Provides on board XMFC/MF functions.
- 3 standard TTY ports.
- Expandable SIMM DRAM operations memory.



The following hardware items can be mounted on the system core card:

- Software Flash Daughterboard.
- Fiber Expansion Daughterboards.
- Backward Compatible Daughterboard (in place of fiber expansion daughterboard).
- Security Device.
- Fiber Routing Guide.

Note: NTBK45 (Option 11E System Core card) is not supported on Option 11C systems

PCMCIA Socket

The CPU has a faceplate accessible PCMCIA type III socket. This is a dual socket that can support either 2 PCMCIA type II cards such as FLASH cards, or a single PCMCIA type III card such as a Harddrive. The intent of the PCMCIA interface is to provide a software delivery interface to the system. All system software can be delivered on a PCMCIA card and transferred to the on- board FLASH software daughterboard. The PCMCIA interface provides a method of transferring software or upgrades to the system.

Security Device

Installation of software, feature set and ISM parameters is protected by a security device on the CPU card and a site specific keycode scheme. The security device is installed as part of the new system installation. The Security ID (8 digit number encoded on the security device) is a key component of the system tracking database. Each security device has a unique identification number 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.

There are three types of security devices:

Standard Security Device - site specific and requires keycode to activate software. The standard security device is required for every site.

Technology Security Device - used by Nortel Tech Lab.

Distributor Security Device - used by Distributor Tech Labs and doesn't require keycodes to activate software.

Tone Services

The Option 11C CPU pack extends the tone services and consolidates the remaining Meridian 1 tone services of MFC, MFE, KD3, & MF onto the CPU pack. While increasing the flexibility of the Option 11 product, it will also provide a cost reduction for those markets that require these signalling standards as they will no longer require a separate IPE pack for the function.

The Option 11C includes the capability of adding one of the following: XMFC or XMFE or KD3 or MF or DTR detection. This effectively imports the functionality of the (XMFC) or the (MF) packs. The new channels (4 MF/ MFC or 8 XTD/ DTR) will be able to support only one of the signalling protocols at a time as defined by software. This is not viewed as a limitation as the signalling protocols are primarily exclusive. That is, you would not require more than one of the protocols in a system at a time. If none of the new signalling protocols is required, an addition 8 channels of DTR can be supported.

Conference

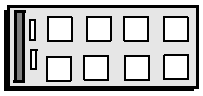
The CPU supports 32 ports (conferees) on the base system. The base configuration can support up to 10 three party conferences or up to 4 six party conferences.

Conference capabilities has been expanded in increments of 16 ports per expansion box via the fiber expansion daughterboard. Therefore, the conference capability extends to 48 ports for two cabinets, and 64 ports for 3 cabinets.

Flash Software Daughterboard (NTDK21)

The delivery of software and firmware has been significantly improved for Option 11C. Software operation and storage is now provided via FLASH based technology residing on a daughterboard mounted on the CPU pack. The software cartridges will not be supported on the Option 11C systems. **Software will be delivered on the new systems and systems converting from Option 11/ 11E to Option 11C by a pre- programmed flash daughterboard**. It contains a master copy of the software, pre- configured data, firmware, feature sets, and patches. The FLASH could be expanded should future applications require it.The highlights include:

- Used for software storage and operating space.
- Used for software delivery for new systems and 11/ 11E conversions to Option 11C.
- 24Mb for program store and 8 Mb for file system.
- Mounted on CPU pack in the main cabinet.
- Re- programmable.



Note: Upgrades to Option 11C systems do not require a new software daughterboard. The software upgrades are done via a PCMCIA card.

Note: Option 11/ 11E software cartridges are not supported on Option 11C.

Fiber Daughterboards (NTDK22 & NTDK24)

Expansion to 2nd and 3rd cabinet is done via CPU mounted fiber daughterboards. The system core card supports up to 2 fiber daughterboards. Each 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. There are two versions of fiber daughterboards to support two different solutions namely:

- 10m fiber connectivity.
- 3 Km fiber connectivity.

The 10m 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 on different floors. For 10m fiber, the NTDK22 Fiber Daughterboard is required.

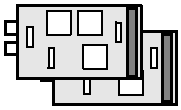
The 3 Km fiber connectivity provides up to 3 Km of separation between the cabinets (main and expansion) via a glass fiber cable (customer supplied). This allows flexibility in locating expansion cabinets on a remote site or a campus environment. For 3 Km fiber - NTDK24 fiber Daughterboard is required.

Both fiber connectivities can co- exist i.e. a system can be configured with a 10m fiber connectivity to local expansion cabinet and 3 Km fiber connectivity to the remote expansion cabinet.

> ***Note:*** Copper and fiber connectivity can not co- exist i.e. a system can not be configured with a copper connection to one expansion cabinet and fiber connection to the other expansion cabinet.

The main features of the fiber daughterboards are:

- Fiber connection to expansion cabinets.
- Mounted on System Core Card (CPU).
- Each expansion cabinet requires a fiber daughterboard on the main CPU maximum of two daughterboards are supported.
- 2 versions (10m and upto 3 Km) - can co- exist on the same system.
- Each daughterboard requires a corresponding fiber receiver pack to be installed in the expansion cabinet.
- Built in conference.



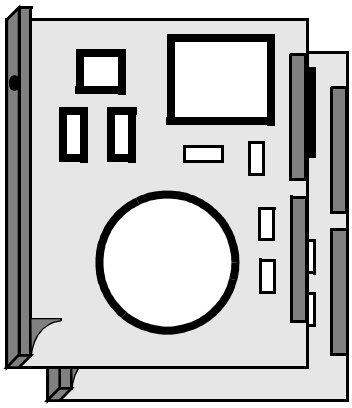
Fiber Receiver Packs (NTDK23 & NTDK25)

The expansion cabinet fiber receiver pack is introduced to provide fiber transmitter and receiver interface to the main cabinet. There are two version of fiber receiver packs:

- 10m version - NTDK23.
- 3 Km version - NTDK25.

The main features include:

- Installed in slot 0 of each expansion cabinet.
- Provides fiber interface to main cabinet.
- Includes local TTY port.
- Fiber Routing Guide mechanism.
- 2 versions (10m and 3 km).



Fiber Routing Guides

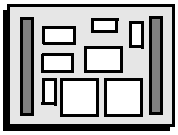
The fiber routing guide is installed on the fiber receiver pack to manage the fiber cable.

Backward Compatible Daughterboard (NTDK26)

The Option 11C supports a CPU mounted daughterboard which provides a backward compatible solution for upgrades of existing Option 11/ 11E systems with copper expansion cable to the new Option 11C system maintaining copper connectivity. It is installed on the CPU board and has additional conference capabilities.

Note: This configuration

- Does not support ethernet interface (e.g. SMP ethernet connection).
- Does not support Option 11E fiber.
- Does not support Option 11C 10m and 3Km fiber expansion schemes.



Cabinets

The Option 11C introduces new expansion cabinets which are now same as main cabinets. The Option 11 / 11E systems requiring conversions to Option 11C can maintain their old cabinets as long as no ethernet access and no fiber connectivity is required. The existing main cabinets can be maintained when converting to a 2 or 3 cabinet fiber Option 11C systems. The new cabinet code NTDK50 replaces the existing NTAK69, NTAK70, and NTBK79. There is no distinction between the main cabinet and expansion cabinets.

Note: System configuration and restrictions are the same as for Option 11E (i.e. Common Equipment (CPU board, Digital Trunks, etc.) can only be installed in the main cabinet.

The new codes are:

Table 23: New Cabinet Codes

New Cabinet Codes	Description	Region
NTDK50BA	Main/ Expansion cabinet (FCC CLASS A)	North America, CALA, and AP
NTDK50DA	Main/ Expansion Cabinet (CISPR CLASS B)	Europe
NTDK50FA	Main/ Expansion Cabinet (Holland)	Holland
NTDK50GA	Main/ Expansion Cabinet (CISPR CLASS A)	Europe, Asia Pacific

Fiber Optic Cables

There are two versions of fiber cable required for fiber connectivities:

- 10m plastic cable for 10m fiber connection between cabinets.
- Up to 3 Km glass cable for 3 Km fiber connection to remote cabinets.

Fiber Specification

Plastic Fiber Cable

This 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).

Glass Fiber Cable Requirements

The cable is standard 62.5/125 um glass multimode duplex cable with ST style connectors. The cable is not provided by Nortel. Potential vendors are Hewlett Packard or AMP.

Table 24: Typical Requirements for Glass Fiber

Item	Mn.	Typical	Max.
Cable Length			3 Km.
Cable Attenuation (@1300 nm)		1.5 dB/Km	2.0 dB/Km
Model Bandwidth (@1300nm)	200 Mhz*Km	500 Mhz*Km	
Chromatic Dispersion (@1300nm)		6 ps/nm*Km	
Typical 3 DB Bandwidth		180 Mhz *Km	

Note: The optical power budget for the glass fiber link is typically 8 dB. Fiber link is limited to a maximum length of 3 km, even though with many optical cables the optical power budget of 8 dB could support greater lengths. To guarantee reliable operation a bandwidth budget of 150% should be maintained. If the link is increased beyond 3 km length, the 150% margin is deteriorated possibly resulting in link malfunction under some conditions.

> ***Note:*** Glass cable is customer supplied and can not be ordered from Nortel.

Ethernet Interface

The Option 11C CPU pack has a built-in 10 Mbps Ethernet port. This is consistent with the other members of the "C" based switches in the Meridian 1 family.

A 50 pin amphenol to 15 pin MAU adaptor cable is introduced to provide ethernet access.

Note: Ethernet connectivity is not available if the Backward Compatible Daughterboard (NTDK26) is in use.

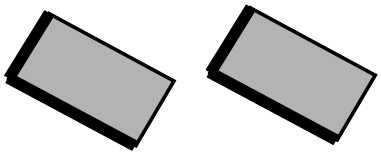
PCMCIA Cards

The software for Option 11C systems can be delivered via a plug-in commercial PCMCIA card containing the new software and software installation program. It is primarily intended to deliver software upgrades to the existing Option 11C systems. It contains a master copy of the software, pre-configured data, firmware, feature sets, and patches which can be used by the distributors for installation/upgrades for a number of sites. Once the upgrade is completed successfully, the PCMCIA card can be removed from the Small System Controller card and reused at other sites. The main features include:

- Used for software, firmware, feature sets, and patches delivery.
- Can be used as an external memory storage device.
- Re-programmable.
- Single device can be used to upgrade multiple sites.
- 2 versions: 40 Mb for software delivery and 3 Mb for patch delivery only. See "Software Delivery Impact" section for details on PCMCIA model# supported on Option 11C.

Note 1: A PCMCIA card is not required during initial installation of the system, where only a pre-programmed software daughterboard is required.

Note 2: The 3 Mb PCMCIA patch delivery card is only required for patch delivery under circumstances where remote patch delivery via modem is not used.



3 MByte

Customer Database Upgrade Tool

Upgrade of an existing Option 11/ 11E system to Option 11C requires the retrieval and conversion of the data. Two methods used are:

Remote Backup and Restore Feature: The upgrade procedure requires the use of a PC equipped with Remote Backup and Restore tools. The PC is used to extract the data file from an existing Option 11 system and transfer it back to the Option 11C CPU. The installation program running on the Option 11C performs the conversion and database restore tasks.

Customer Database Upgrade Tool: At sites where remote backup and restore capabilities are not available, a Customer Database Upgrade Tool can be used to transfer the customer data contents from the existing 11/ 11E system cartridge to the Option 11C CPU. This is a tool which can be used at multiple sites and can be ordered from Nortel in addition to the Option 11C system hardware/ software.

Tools Impact

Meridian Administration Tool

Meridian Administration Tools (MAT) Release 4.5 now supports X11 Release 22 as well as systems running X11 Release 14, 17, 19, 20 and 21. MAT Release 4.5 is designed for the Windows 3.1 operating system. MAT Release 4.5 provides the following Applications: Station Administration, Traffic Analysis, Call Accounting and Call Tracking.

Meridian Administration Tools (MAT) Release 5 is introduced with X11 Release 22 and requires the Windows 95 Operating System. MAT Release 5 provides the following applications: Station Administration, Traffic Analysis, Call Accounting, Call Tracking, Maintenance Windows, ESN Analysis and Routing Tool and Alarm Management.

MAT Release 5 also supports connectivity to Meridian 1 via Ethernet for System Options 11C, 51C through 81C running X11 Release 22. If MAT 5 is connected to a System type of 51C through 81C via Ethernet the following minimum vintage cards and cables are required:

- NT5D20BA (Release 01) - ICP/ CMDU Card
- NT6D63BA (Release 01) - ICP Card (1 for each ICP/ CMDU or ICP card)
- NT7D90DA (Release 01) - Ethernet Cable

Note: If MAT is connected via Ethernet a revised Parallel Upgrade procedure must be followed to ensure that the primary IP address remains active following a software upgrade. Please refer to the MAT Release 5 Common Services User Guide Release 5.0 (part number A0858266) for further details.

Meridian Configurator

With the Introduction of the Option 11C, Meridian Configurator was modified to reflect the new machine type.

Meridian Mail

There is no impact on Meridian Mail due to Option 11C introduction.

Customer Database Upgrade Tool

This is a tool which is required for sites requiring upgrade to an Option 11C that do not have Remote Backup capabilities. This new tool allows the data to be extracted from the Option 11/ 11E software cartridge for an upgrade to an Option 11C. Once the site upgrade has been completed, the tool can be used for other sites.

Software Delivery Impact

The following two software delivery media are used for Option 11C:

- **Pre- Programmed Flash Software Daughterboard: all new system installations and Option 11/ 11E conversions to Option 11C**
- **PCMCIA Card: Ongoing Option 11C software upgrades**

The software delivery for all new Option 11C and upgrades from existing Option 11/ 11E system to Option 11C is done via a pre- programmed FLASH software daughterboard.

The software delivery for Option 11C sites (new software releases) is done via a re- programmable 40Mb PCMCIA card. The same 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. The programmed PCMCIA card contains a generic copy of all the software components for a particular release and all the feature set options and customer default data available for that specific country/ region. Feature upgrade for existing Option 11C sites do not require PCMCIA cards because Packaging, ISM parameters etc. can be upgraded via obtaining new keycodes.

The PCMCIA cards can be duplicated/ re- programmed at the distributor locations with an appropriate hardware setup as described below.

> ***Note:*** Installation/ upgrade of software, feature set, and ISM parameters requires site specific keycodes provided by Nortel.

PCMCIA Duplication Setup

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

Hardware Set- up

- Personal Computer (386 or faster).
- Windows (recommended, but not essential).
- A PCMCIA drive & 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 that you are trying to program:

PCMCIA Flash devices supported on option 11C include:

Table 25: Supported 40Mb PCMCIA Cards

Vendor	Catalogue #
IBM	40G4315
Toshiba	TH6SS160402AAA
Sandisk	SDP5B-40-101

Table 26: Supported 3Mb PCMCIA Cards

Vendor	Catalogue #
Toshiba	TH6SS160031AAA

Example Configurations

Setup # 1

- Pentium/75MHz
- PCNFS s/w
- Netscape
- Eiger ESA-2000. (2-slot PCMCIA ISA adapter)

Setup #2

- Go PC486 DX2/66
- Windows 3.11
- 3COM ethernet card (etherlink II 3c503)
- Netscape
- WFTP 4.00 s/w
- SCM Swapbox Classic X2 (works in windows)

Note: PCMCIA cards can be sent to Nortel for programming at nominal charge if distributors choose not to have the local software duplication setup.

Keycode Process Flow

Installation of software, feature set and ISM parameters is protected by a security device on the CPU board card and a site specific keycode scheme. The security device is installed as part of the new system installation.

Keycodes are required for each new installation as well as existing system upgrades. They are unique to each site for a particular combination of such items as software release, feature set, and ISM parameters.

The following steps are required to obtain keycodes:

- Distributor places order for new keycodes (site specific)
- The keycode is prepared by Nortel and sent via fax (if requested) and shipped overland. For emergencies the keycodes can be provided over the phone.

Upgrading an existing Option 11/ 11E to Option 11C

When upgrading from an Option 11 or Option 11E, the customer database must be extracted from the existing system. As the new Option 11C system will not utilize the existing cartridge, it will not be able to directly extract customer data from old cartridge. There are two methods of extracting the database:

1. By using the **Customer Configuration Backup and Restore** (CCBR) feature and a Personal Computer (PC). The PC is used to extract the data from an existing Option 11/ 11E system and transfer it back to the Option 11C CPU. The installation program running on the Option 11C CPU will perform the conversion and database restore tasks.
2. Alternately, at sites where a PC is not available for remote backup and restore, a **Customer Database Upgrade Tool** (NTDK30) can be used to transfer the customer data contents from the cartridge to the Option 11C CPU.

The following table highlights the hardware required for upgrading an existing Option 11/11E systems to an Option 11C system under various configurations. For a detailed list of items, use standard tools.

Table 27: Upgrade Option 11/11E to Option 11C

Initial Configuration	Upgrade to	Physical Changes
1- cabinet Option 11 or 1- cabinet Option 11E	1- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/adaptor
	2- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/adaptor Expansion Cabinet Fiber Expansion Daughterboard Fiber Receiver Pack Fiber Optic Cable
	3- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/adaptor Expansion Cabinet (2) Fiber Expansion Daughterboard (2) Fiber Receiver Pack (2) Fiber Optic Cable (2)

Table 27: Upgrade Option 11/ 11E to Option 11C

Initial Configuration	Upgrade to	Physical Changes
2- cabinet Option 11 or 2- cabinet Option 11E with copper cable connection	2- cabinet Option 11C with copper cable connection Note: No Ethernet Connectivity in this configuration	System Core Card Flash ROM Daughterboard Backward Compatible Daughterboard
	2- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/ adaptor Expansion Cabinet Fiber Expansion Daughterboard Fiber Receiver Pack Fiber Optic Cable
	3- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/ adaptor Expansion Cabinet (2) Fiber Expansion Daughterboard (2) Fiber Receiver Pack (2) Fiber Optic Cable (2)
2- cabinet Option 11E with fiber connection	2- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/ adaptor Expansion Cabinet Fiber Expansion Daughterboard Fiber Receiver Pack Fiber Optic Cable

Table 27: Upgrade Option 11/ 11E to Option 11C

Initial Configuration	Upgrade to	Physical Changes
	3- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/ adaptor Expansion Cabinet (2) Fiber Expansion Daughterboard (2) Fiber Receiver Pack (2) Fiber Optic Cable (2)
3- cabinet Option 11E	3- cabinet Option 11C	System Core Card Flash ROM Daughterboard Ethernet cable/ adaptor Expansion Cabinet (2) Fiber Expansion Daughterboard (2) Fiber Receiver Pack (2) Fiber Optic Cable (2)

Upgrading Option 11C Software

The software delivery for upgrades to Option 11C systems is done via a re- programmable 40Mb PCMCIA card. The same PCMCIA card can be used to upgrade multiple sites and can be re- programmed on future upgrades.

Pre- programmed or blank cards can be ordered from Nortel. The programmed PCMCIA card contains a generic copy of all the software components for a particular release and issue (e.g. 22.16) as well as all the feature set options and customer default data available for that specific country/ region.

The blank cards can be programmed at the distributor location via downloading the software from the internet, see section Electronic Software Delivery for internet registration.

Keycodes are required for activating the new software. They are unique to each site for a particular combination of such items as software release, feature set, and ISM parameters. New keycodes must be ordered for each site to activate the new software release.

Appendix 2 - X11 Release 22C Features

Introduction

The following section describes features made available with Release 22.46 and 23.35 software.

CCR - NACD Interworking

CCR- NACD Interworking provides greater control for calls that need to be placed in multiple queues throughout a private ISDN enterprise network. With this enhancement a call can be logically placed into many queues throughout the network using the "Queue To" command, while the local Customer Controlled Routing (CCR) system maintains control over the call. Once a remote target agent is reserved by NACD, a call will be removed from the source Control Directory Number (CDN) queue and presented to the reserved target agent.

If the source node is running ACD- C reports, Call Accepted, Call Answered and Abandoned fields of CDN Report 2 will be pegged for a Queue to NACD call. TOF Out field of ACD DN (NACD Routing DN) Report 2 will be pegged when a Queue to NACD call has been answered by the remote target agent. If the source node is running ACD- D reports, a new QIN field will be added to existing Call Enter Queue (IECQ), CCR Call Cancel (ICCN), Network Call Overflowed (NOVF), Answered by Remote Agent (RCAA) and Network Call Released (NCRL) MAX messages to indicate the MAX message is sent for a queue to NACD call. High Speed Link (HSL) Protocol 11 or higher (i.e. MAX 8B) will reflect these changes in the reports.

If the remote target node is running ACD- C or ACD- D reports, the incoming Queue to NACD calls will be pegged like NACD calls. The source ACD DN for a Queue to NACD call would be a source CDN instead.

There is no restriction for the Queue to Command to a NACD Routing DN that the HSL Protocol be at least Release 11. The Queue to Command will still work with HSL Protocol 10 or lower. The only thing that will be affected by this are the MAX reports. If the HSL Protocol is 10 or lower, the MAX messages will not contain any new information and the length of the messages will remain the same.

A new package is required for CCR - NACD Interworking, Option 321. There are no changes required in CCR or OA&M.

Refer to Product Bulletin 97-041 for further information.

NOTE

Patches are required for systems running NACD-CCR Interworking. The patches are required on the source node only. Please contact the Nortel CTS organization and provide the following reference number to obtain the required patches: BV67504.

Companion Mcrocellular

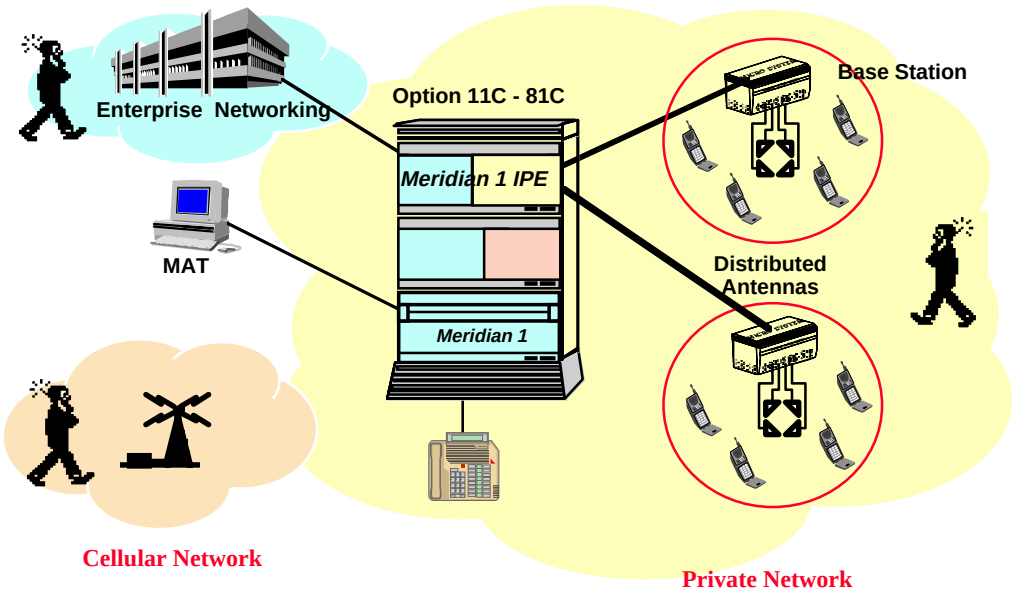


Figure 1Using a single standard cellular portable, the Mcrocellular product provides in- building and wide- area wireless communications.

Companion Mcrocellular provides users both in- building and wide area mobility using a single standard cellular portable. Within the Mcrocell coverage area (in- building), the Mcrocellular system delivers wireless communications and popular Meridian 1 features including CLID, Message Waiting Indication, transfer and conference to the cellular portable user. No cellular air- time charges apply to calls made from within the Mcrocellular system's coverage area. When outside the microcell's coverage area, users may make and receive calls throughout the macrocellular network with the same cellular portable.

The Mcrocellular product also provides personal mobility across multiple Meridian 1's within an enterprise network and works in Remote- IPE configurations. Mcrocellular is fully integrated with the Meridian 1 PBX, but may also be used as an adjunct behind most other PBXs.

Microcellular uses the North American 800 MHz licensed cellular band; the required cellular channels must be provided by a Cellular Operator. Based on TDMA technology, the system supports the latest digital standard, IS-136 (DCCH), as well as IS-54(B) protocols.

Microcellular is supported on Meridian 1 Options 11C, 51C, 61C, 81 and 81C running X11 Release 22. Each Meridian 1 equipped with Microcellular requires MOSR (Option 302) and MMO (Option 303). Each Meridian 1 using the Multi-Site Networking feature must also have MMSN (Option 314). MAT 5 is also required, along with the Mobility System Management application. (Additional information on system configuration and pre-requisites can be found in the Microcellular NTPs: 553-3611-100, 553-3611-105, 553-3611-200, 553-3611-300 and 553-3611-110).

Two IPE cards, the Embedded Intelligent Mobility Controller (EIMC) and the Microcellular Transcoder Card (MXC), are required. The EIMC is the wireless controller, while the MXC provides the voice transcoding function and base station interface via standard twisted pair wiring (TCM).

The Microcellular Base Stations contain the radios and may be placed at various locations within the building, up to 3,000' away from the Meridian 1. All radio channels may be simulcast onto all antennas within the same partition to cover high density areas economically. A distributed antenna system, composed of directional antennas connected to the base stations via coaxial cable, is used to provide coverage. A directional antenna can usually cover up to 200 linear feet.

Microcellular uses industry standard, dual-mode AMPS/TDMA portables. IS-136 portables offer extended battery life and talk-time.

All OA&M functions are fully integrated with the Meridian Administration Tool (MAT).

NOTE

In Canada and the United States, the Microcellular Feature is not available for Release 22 on the Option 11C General business package. For other regions, please refer to the regional price book.

Key Microcellular features include:

- **Single handset:** One cellular portable for both in-building and wide area communications minimizes handset investment.

- **Twinning:** The cellular portable and the wired set may be assigned the same Directory Number, allowing calls to be presented simultaneously to both devices. Call treatment preferences are preserved and users may answer calls on either device.

- **Privacy:** When the desk set is twinned with the portable, Privacy prevents a call answered on the portable from appearing on the desk set.

- **Cellular Spectrum Re-Use:** Use of licensed spectrum eliminates interference concerns.

- **High capacity:** Supports up to 1,500 users per system.

- **Large Coverage:** Microcellular can cover large sites or campus environments. It can also support high density applications.

- **Ease of Expansion:** Capacity can be increased by adding radios to the base stations and additional IPE circuit packs, if necessary.

- **Security:** TDMA digital technology makes it extremely difficult to eavesdrop.

- **Data Capabilities:** Microcellular offers 9,600 baud data transfer capabilities for applications such as fax and e-mail.

- **Multi-Site Roaming:** Microcellular allows roaming among Meridian 1 systems connected via a Primary Rate Interface (PRI) through use of the Mobility Multi-Site Networking feature package.

- **Access to popular PBX Features:** Meridian 1 integration offers cellular portable users Message Waiting Indication, CLID, call transfer, 3-party conference, etc. while operating within the Companion Microcellular coverage area.

For more information, refer to the Sales and Marketing Bulletin 1100-G and Product Bulletin 97-044.

Meridian 1 Network Management for Spectrum

The Open Alarm feature of X11 facilitates the management of Meridian 1 networks from an open network management platform. The Open Alarm feature is used to implement the M1 fault management function on SPECTRUM. SPECTRUM is an open network management platform developed and marketed by Cabletron Systems. The SPECTRUM provides the ability to monitor and maintain voice and data networks. Alarms from Meridian 1 network can be monitored on a single window along with the alarms from the other elements managed as a part of the enterprise network. In addition, fault management functions of MAT 5 are integrated with SPECTRUM to complete alarm management. Using these MAT5 functions, user can view the events for Meridian1, exercise maintenance functions on components of M1, and access overlay commands.

Package #315 is required for Meridian 1 Network Management for Spectrum.

SPECTRUM provides a set of applications assisting the technician and network operations managing an enterprise network effectively.

SpectroPHONE - - SpectroPHONE enables network managers to be notified and respond to alarms remotely via a touch- tone phone. Configuration allows many options including alarm severity and support territory.

Remedy Trouble- Ticketing - - Spectrum is integrated with the Remedy Trouble- Ticketing system to facilitate the creation and automation of problem tracking and resolution.

Spectrum Report Generator - - Spectrum offers many options for report generation using its own report generation tools as well as third- party applications. Reporting tools allow for the creation and customization of reports for statistical and inventory details. Statistical data can be exported as ASCII output to be used by external database products.

Spectrum Alarm Notification Manager - - Spectrum Alarm Notifications Manager is a policy- based alarm filtering tool that can be used in conjunction with other Spectrum applications. It reduces the number of alarms that network managers need to view in order to isolate a network fault.

For more information, refer to Sales and Marketing Bulletin 1105- G.

Meridian 1

Option 11C

General Release Bulletin

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