Nortel Communication Server 1000

Integrated Recorded Announcer Fundamentals

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Contents

New in this release

This section describes what's new in *Integrated Recorded Announcer Fundamentals (NN43001-560)* for Communication Server 1000 (CS 1000) Release 5.5.

Features

No new content is added to this Nortel Technical Publication (NTP) as part of CS 1000 Release 5.5.

Other changes

For a detailed revision history of this document, see Revision History.

Revision History

March 2009	Standard 02.02. This document is up-issued to replace the content in section *Locating the card slot* and Table 15.
December 2007	Standard 02.01. This document is up-issued to support Communication Server 1000 Release 5.5
May 2007	Standard 01.01. This document is issued to support CS 1000 Release 5.0 This document contains information previously contained in the following legacy document, now retired: *Integrated Recorded Announcer* (553-3001-360). No new content has been added for Communication Server 1000 Release 5.0. All references to Communication Server 1000 Release 4.5 are applicable to Communication Server 1000 Release 5.0.
December 2006	Standard 5.00. This document is up-issued to reflect changes in content: • Explanation of TRK041 messages in Maintenance. • IP method added to Time Date Synchronization.
September 2005	Standard 4.00. This document is up-issued following removal of regulatory data.

August 2005	Standard 3.00. This document is up-issued to support Communication Server 1000 Release 4.5.
September 2004	Standard 2.00. This document is up-issued for Communication Server 1000 Release 4.0. Prior to CS 1000 Release 4.0, the title of this document was *Meridian Integrated RAN: Description, Installation, and Operation* (553-3001-112).
October 2003	Standard 1.00. This document is a new NTP for Succession 3.0. It was created to support a restructuring of the Documentation Library. This document contains information previously contained in the following legacy document, now retired: *Meridian Integrated RAN: Description, Installation, and Operation* (553-3001-112).

Introduction

This chapter provides an overview of how you can control unauthorized access and provide security for the system. It describes the reason for implementing system security and provides recommendations for preventing abuse and damage to the telecommunications facilities.

This document is a global document. Contact your system supplier or your Nortel representative to verify that the hardware and software described are supported in your area.

Subject

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 5.5 software. For more information on legacy products and releases, click the Technical Documentation link under Support & Training on the Nortel home page: www.nortel.com.

The subject of this document is the implementation of system-wide security features.

Applicable systems

This document applies to the following systems:

- Communication Server 1000E (CS 1000E) CP PII, CP PIV and CP PM
- Communication Server 1000M Single Group (CS 1000M SG) CP PII, CP PIV
- Communication Server 1000M Multi Group (CS 1000M MG) CP PII, CP PIV
- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet
- Meridian 1 PBX 61C CP PII, CP PIV
- Meridian 1 PBX 81C CP PII, CP PIV

Note: When upgrading software, memory upgrades may be required on the Signaling Server, the Call Server, or both.

System migration

When particular Meridian 1 systems are upgraded to run CS 1000 software and configured to include a Signaling Server, they become CS 1000 systems. Table 1 "Meridian 1 systems to CS 1000 systems" (page 8) lists each Meridian 1 system that supports an upgrade path to a CS 1000 system.

Table 1
Meridian 1 systems to CS 1000 systems

This Meridian 1 system...	Maps to this CS 1000 system
Meridian 1 PBX 11C Chassis	CS 1000E
Meridian 1 PBX 11C Cabinet	CS 1000E
Meridian 1 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 81C	CS 1000M Multi Group

Intended audience

This document is intended for administrators responsible for configuring security features.

Terminology conventions

In this document, the following systems are referred to generically as "system":

- Communication Server 1000M (CS 1000M)
- Communication Server 1000E (CS 1000E)
- Meridian 1

The following systems are referred to generically as "Small System":

- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet

The following systems are referred to generically as "Large System":

- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 PBX 61C CP PII, CP PIV
- Meridian 1 PBX 81C CP PII, CP PIV

How to get help

This chapter explains how to get help for Nortel products and services.

Getting help from the Nortel web site

The best way to get technical support for Nortel products is from the Nortel Technical Support web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

Getting help over the telephone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support web site, and you have a Nortel support contract, you can also get help over the telephone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following web site to obtain the telephone number for your region:

www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

Description

Contents

This section contains information on the following topics:

Introduction

This chapter describes the Nortel Networks Integrated Recorded Announcer, both at a system and card level. It describes the application functions, specifications, applications, and operation.

Media Card

Integrated Recorded Announcer provides multi-tasking, voice-processing applications, such as Recorded Announcement (RAN) and Music-On-Hold (MOH). The Integrated Recorded Announcer application is preinstalled on the NT0966 Media Card. This single-slot card is compatible with all supported systems.

The NT0966 Integrated Recorded Announcer card communicates with the system software through trunk signaling messages over the DS-30X link. The Integrated Recorded Announcer card emulates the Enhanced Extended Universal Trunk (EXUT) card. The same overlay programs used to configure the EXUT card, trunk routes, and trunk functions are also used to configure the Integrated Recorded Announcer routes.

A 50-pin I/O Adaptor (Audio-adaptor) connection provides analog access to the card in order to connect external recording equipment (for example, music from an external CD connection).

The Integrated Recorded Announcer card supports three Integrated Recorded Announcer configurations: small, medium, and large. These cards offer two, four, and eight RAN ports respectively. The RAN Broadcast feature allows the multiplexing of the RAN ports.

> ***Note:*** In North America, only the Media Cards offering four and eight RAN ports are available. Refer to Table 2 "Integrated Recorded Announcer capacity options" (page 24).

Integrated Recorded Announcer supports PC Cards. These cards:

- expand Integrated Recorded Announcer announcement storage memory
- back up announcements from Integrated Recorded Announcer to the PC Card

Integrated Recorded Announcer provides 20 to 24 minutes of internal announcement storage capacity in a basic Integrated Recorded Announcer configuration. If 20 to 24 minutes of announcement storage capacity is sufficient, a Flash memory card is not required to expand the storage capacity.

The Integrated Recorded Announcer card connects to a maintenance terminal for text-based operation, administration, and maintenance (OA&M) over an RS-232 port.

The Integrated Recorded Announcer card can also connect to the maintenance terminal through Telnet over a 10BaseT LAN connection to perform text-based OA&M. The Integrated Recorded Announcer card's internal web server can also be used to perform a web-based OA&M.

> ***Note:*** A LAN connection is necessary for Telnet access, web-based OA&M, and downloading files using FTP.

Integrated Recorded Announcer also supports a Telephone User Interface (TUI). A DTMF telephone can be used to do the following:

- record new announcements
- swap existing announcements in and out of service

To use the TUI, configure port 7 as a Direct Inward Dial (DID) port dedicated to telephone access.

The Integrated Recorded Announcer card connects to an external music source over an analog I/O port using the 50-pin I/O Adaptor (Audio-adaptor). This port can also be used to input music from a music source (for example, a tape recorder or a CD player).

Figure 1 "Integrated Recorded Announcer card interface structure in the system (without a LAN connection)" (page 20) illustrates the connection of a maintenance terminal to the Integrated Recorded Announcer card. The connection of an external music source is also shown.

Figure 1
Integrated Recorded Announcer card interface structure in the system (without a LAN connection)

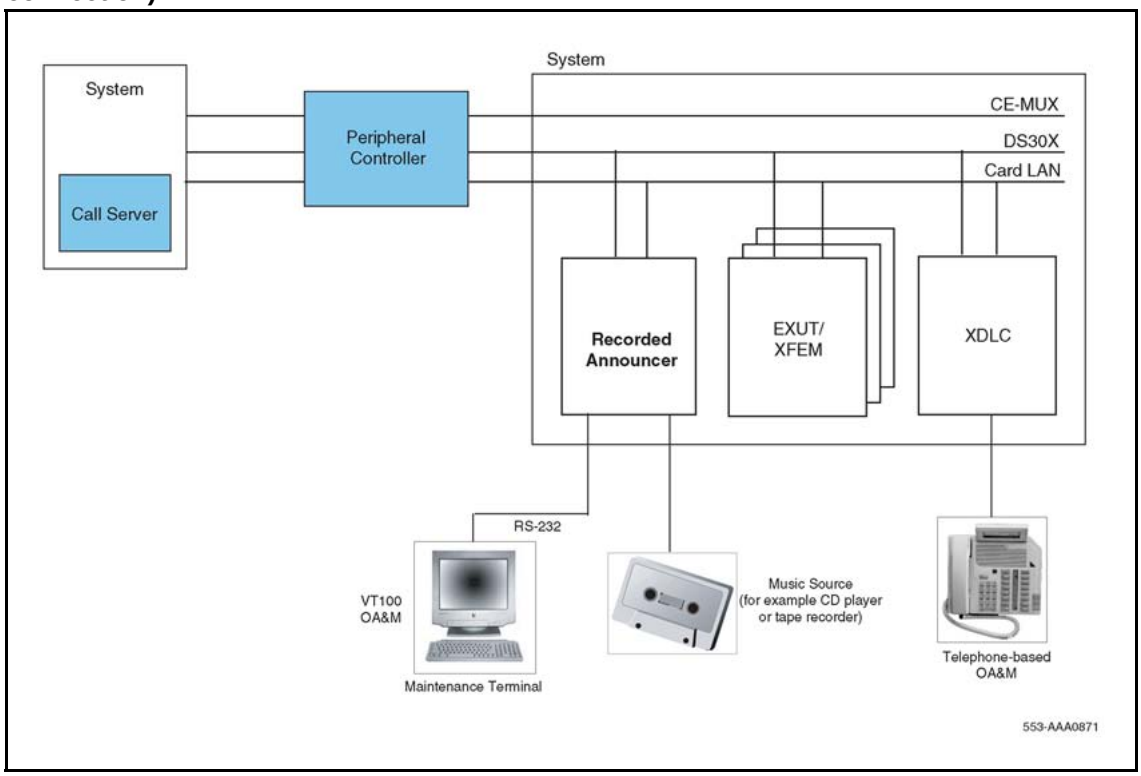
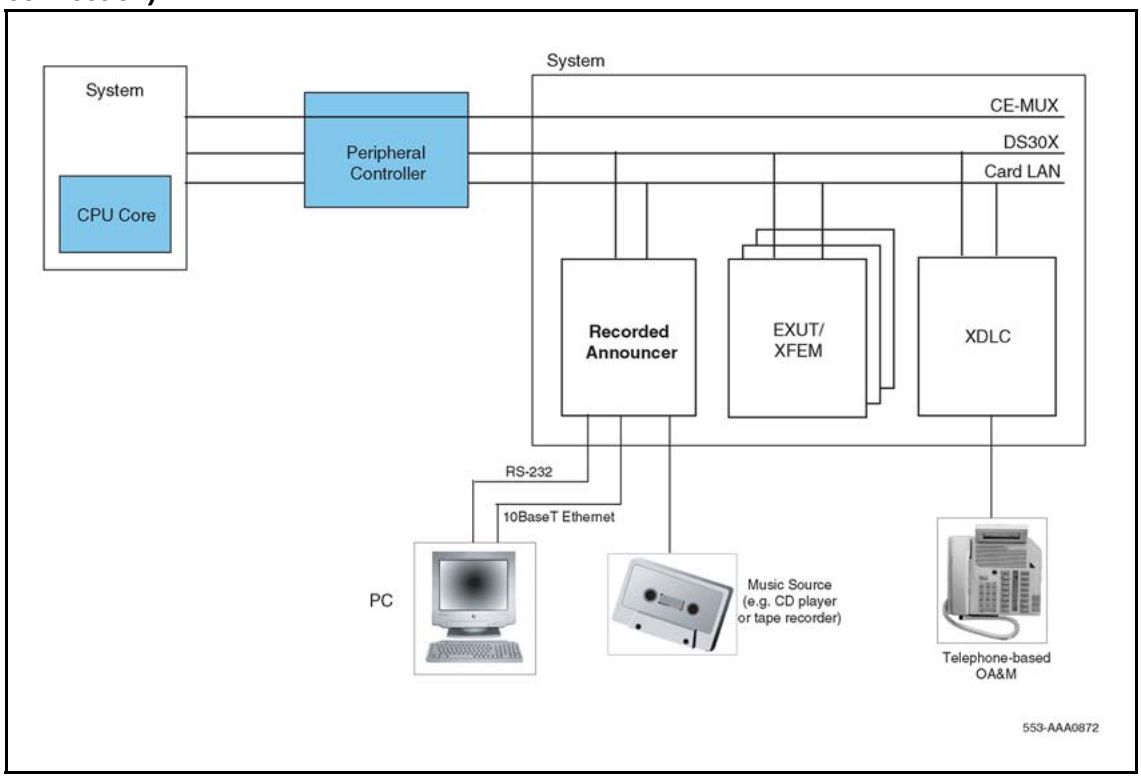


Figure 2 "Integrated Recorded Announcer card interface structure in the system (using a LAN connection)" (page 21) illustrates the connection of a 10BaseT Ethernet connection to the Integrated Recorded Announcer card. The connection of an external music source is also shown.

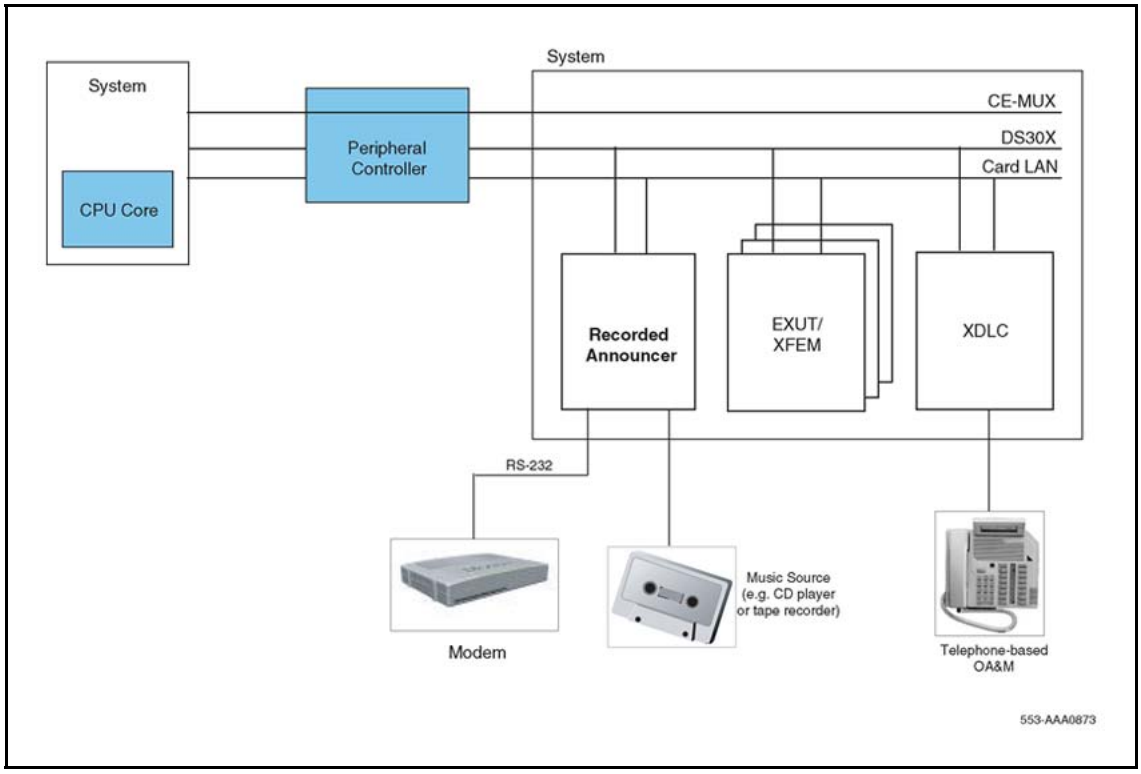
Figure 2
Integrated Recorded Announcer card interface structure in the system (using a LAN connection)



Note: For details on Installation and Configuration of LAN connectivity, refer to "LAN access installation and setup" (page 70) and "Ethernet/LAN requirements" (page 89).

Figure 3 "Integrated Recorded Announcer card connected to modem" (page 22) illustrates the connection of a modem to the Integrated Recorded Announcer card.

Figure 3
Integrated Recorded Announcer card connected to modem



The Integrated Recorded Announcer card provides the following flexibility:

- easily expandable, industry-standard architecture (small, medium, and large configuration, controlled by keycode)
- a set of both standard and proprietary interfaces
- compatibility with all systems that support IPE cards
- embedded real-time operating system
- simplicity to RAN and MOH applications (no external devices or cables)
- versatile storage capacity features that provide for:
  - recording storage capacity of 20 to 24 minutes on the base Integrated Recorded Announcer configuration
  - unlimited different announcements for each channel, per day, changeable on a time-of-day and day-of-year basis

- an option to add extra storage space with a PC Card (approximately two minutes of recording time for each MB of extended memory)
- maximum of eight internal one-to-one RAN or MOH ports/channels, which support continuous and start/stop RAN mode (up to seven ports/channels, if one is used for telephone-based OA&M access)

- a versatile set of recording features that include the following:
  - different announcements programmed to play at different times of day and different days of the year
  - FTP downloading of voice and music files over the LAN
  - swapping of "in-service" and "in-reserve" announcements using a DTMF telephone
  - announcement backup and restore capability
  - transfer of existing announcements to the Integrated Recorded Announcer card
  - new announcements recorded over a telephone or from common plug-in audio equipment (for example, CD players and cassette players)
  - password-protected RAN recording from any DTMF telephone using a simple voice menu interface
  - connection of one external analog (music) source for recording

Integrated Recorded Announcer card design characteristics

The Media Card supports voice processing by providing connectivity to the CS 1000 and Meridian 1 systems, voice storage capacity, and access to an OA&M facility.

The Media Card with the Integrated Recorded Announcer application:

- is based on the Media Card platform, which uses an Intel IXP-1200 Network Processor
- uses standard interface buses (PCI, ISA, and PCMCIA)
- accesses all 32 DS-30X voice/signaling time slots
- provides one RS-232 Maintenance Serial Port (through the faceplate 8-pin Mini-DIN connector and the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor)
- supports connection to the LAN through an Ethernet adaptor

Integrated Recorded Announcer card channels

One-to-one recording ports/channel on the Integrated Recorded Announcer card emulates the Enhanced Extended Universal Trunk (EXUT) card.

Note: Each Integrated Recorded Announcer capacity option consists of the NT0966CA Media Card, the NTDK57 Security Device, and a keycode.

Table 2 "Integrated Recorded Announcer capacity options" (page 24) shows the Integrated Recorded Announcer capacity options. For each capacity option in Table 2 "Integrated Recorded Announcer capacity options" (page 24), port 7 on the card can be configured for telephone-based OA&M.

Table 2
Integrated Recorded Announcer capacity options

Integrated Recorded Announcer capacity option	No. of one-to-one ports/channels (North America)	No. of one-to-one ports/channels (International)
Small	Not applicable	2 (See Note 1)
Medium	4 (See Note 1)	4 (See Note 1)
Large	8	8
Note 1: Also includes port 7 for the Telephone User Interface (TUI) ***Note 2:*** Integrated Recorded Announcer does not support multi-cross connect ports.		

Supported applications

Integrated Recorded Announcer supports the following applications:

- First RAN
- Second RAN
- Intercept treatment
- Music-On-Hold
- Automatic Wake-up

User interfaces

Browser User Interface

Integrated Recorded Announcer incorporates a Nortel Networks standard Browser User Interface (BUI). The Integrated Recorded Announcer BUI is a web server embedded in the Integrated Recorded Announcer card. With

the Integrated Recorded Announcer BUI, users can access the Integrated Recorded Announcer card through the LAN, using a standard internet browser. All installation and administration can be performed through the browser. The BUI provides OA&M windows similar to the Text-based User Interface.

The BUI applies to Integrated Recorded Announcer card configured with a valid IP address and connected to a LAN through an Ethernet adaptor. Alternatively, once the IP address has been configured, the BUI can be accessed by direct connection to the Integrated Recorded Announcer card, using a cross-over cable. For equipment and configuration information regarding the Integrated Recorded Announcer BUI, refer to "LAN access installation and setup" (page 70).

> ***Note:*** For the web browser, Nortel Networks recommends a minimum of Netscape Communicator 4.7 or Internet Explorer 4.0. Any web browser used must support HTML frames.

Refer to "Integrated Recorded Announcer Browser User Interface" (page 99) for more information on the BUI.

Text-based User Interface

The Text-based User Interface provides menus and commands so that all necessary Integrated Recorded Announcer OA&M functions can be performed. The software for this is part of the Integrated Recorded Announcer-specific OA&M tool running under VxWorks™. VxWorks software is independent of system software.

There are two ways to use the Text-based User Interface to access all commands and options:

- use the menu system
- enter commands on the command line

To use the Integrated Recorded Announcer Text-based User Interface, access the Integrated Recorded Announcer card through a VT-100 type terminal. The Integrated Recorded Announcer card supports a serial connection between the terminal and the card.

The Integrated Recorded Announcer card also supports Telnet access to the Text-based User Interface over a LAN. The serial interface takes precedence over the Telnet interface. If a user has logged in through the

serial interface, no-one can log in through Telnet. If a user has logged in through Telnet, another user can remove the Telnet user by logging in through the serial interface.

Note: Nortel Networks recommends HyperTerminal™ for PC-based Telnet access.

Refer to "Text-based User Interface" (page 141) for more information on the Text-based User Interface.

Telephone User Interface

A Telephone User Interface (TUI) within the Integrated Recorded Announcer application allows the application to be accessed from any telephone. The DTMF telephone can be either internal or external to the system. The TUI uses a series of simple voice menus and prompts for quick modification of announcements and other simple tasks.

Note: Extensive changes must be handled through the Text-based User Interface or the Browser User Interface (BUI).

The following tasks can be performed through the TUI:

- record new announcements
- play announcements
- assign and unassign announcements to Integrated Recorded Announcer ports
- access the Integrated Recorded Announcer card security ID

The following tasks *cannot be performed* through the TUI:

- set the Integrated Recorded Announcer card clock
- assign time-of-day restrictions to announcements
- access system configuration functions
- change passwords

The TUI allows a user to log in and issue specific commands using the dialpad of a digital telephone or any standard DTMF telephone. For security, the login requires a valid user name and password, which the administrator supplies. The Integrated Recorded Announcer card does not identify itself until a valid user name and password have been entered.

The TUI reduces the Integrated Recorded Announcer one-to-one ports available for RAN or music from eight to seven. Because there is no messaging between Integrated Recorded Announcer cards, port 7 must be

reserved for the TUI on each Integrated Recorded Announcer card that requires this interface. If an Integrated Recorded Announcer card does not require the TUI, all eight ports on the card are available for RAN or music.

Refer to “Telephone User Interface” (page 215) for more information on the TUI.

User interface multiple-access restrictions

Multiple users can simultaneously access an Integrated Recorded Announcer card. However, there are restrictions under which simultaneous access can occur. Table 3 "User interface multiple-access restrictions" (page 27) shows the various situations in which multiple access can occur.

Table 3
User interface multiple-access restrictions

A user has logged in through the...	Can more than one user simultaneously log in through the... ?			
	Text UI	TUI	BUI	FTP
Text-based User Interface (Text UI)	No	Yes	Yes	Yes
Telephone User Interface (TUI)	Yes	No	Yes	Yes
Browser User Interface (BUI)	Yes	Yes	Yes	Yes
File Transfer Protocol (FTP)	Yes	Yes	Yes	No

Features

Calendar assignment feature

Integrated Recorded Announcer software supports the Calendar assignments used in scheduling announcements. The assignments are made on a daily and monthly basis, regardless of year, using a 366-day calendar.

Calendar assignments

When a Calendar assignment is created, it is assigned a ’weighting’ based on how specific the assignment is. Assignments are sorted in the Calendar list according to this weighting. The more specific assignments appear at the top of the list while the least specific assignments appear at the end. Integrated Recorded Announcer searches the Calendar list when making channel assignments. The first entry in the list that matches the current day, time and channel will be the correct choice. If a match cannot be found in the Calendar list, the search reverts to the assignment lists.

All Calendar assignments consist of the following components:

- Channel entry - can be a single channel (for example, 6); a range of channels (for example, 2 – 4); a combination (for example, 0, 2 – 4, 7); or a wildcard, "*" (asterisk), to denote all channels.

  Note: When a wildcard is used, it affects only the channels to which the current user has access. These are the channels that are assigned to the user's channel group.

- Time entry - can be a single time (for example, 9:00); a range of times, (for example, 9:00 – 10:15); or a wildcard, "*" (asterisk), to denote the entire day. A wildcard can also be entered instead of the minutes (for example, 9:*) to indicate the entire hour.

  Table 4 "Time entry examples - sorted from most specific to least specific" (page 28) provides examples of time entries. The entries are sorted in order of most specific to least specific and indicate the order in which the entries would appear in the Calendar list.

  Table 4
  Time entry examples - sorted from most specific to least specific

Time entry	Comment
9:00 – 9:30	Range of times (no wildcards allowed) ***Note:*** The range '10:00-16:30' is more specific than '10:*' due to the use of the wildcard.
9:*	Entire hour (9:00 to 9:59)
9:00	9:00 until the end of the day (9:00 to 23:59)
* (asterisk)	Entire day (0:00 to 23:59)

- Date entry - can be a single date (for example, 20/2); a range of dates, (for example, 20/2 – 25/2); a single day (for example, MON); or a range of days (for example, MON – WED). A wildcard, "*" (asterisk), can be used instead of the day or the month (for example, 25/* would denote the 25th of each month, and */12 would denote every day in December). A wildcard used alone, "*" (asterisk), denotes every day.

  Table 5 "Date entry examples - most specific to least specific" (page 28) provides examples of date entries. The entries are sorted in order of most specific to least specific and indicate the order in which the entries would appear in the Calendar list.

  Table 5
  Date entry examples - most specific to least specific

Date Entry	Comment
20/1	Specific date
20/1 – 25/1	Range of dates (no wildcards allowed)

Table 5
Date entry examples - most specific to least specific (cont'd.)

Date Entry	Comment
1/*	First day of every month
*/1	Every day in January
MON	Every Monday
MON – WED	Every Monday through Wednesday ***Note:*** THUR-MON is also a valid range
* (asterisk)	Every day of the year

Note: The time and date definitions can be combined as part of a "descriptor". Refer to "Calendar Descriptors" (page 29).

- Filename or codec channel – specifies the file to play when the assignment is active or specifies the analog channel (displayed in the drop-down list as "Codec").

Calendar Descriptors

The Calendar Descriptors are a user-friendly way to store frequently used times and dates for Calendar assignments. Each date and time pair is assigned a descriptor name which denotes the period.

For example, to make assignments for the hour a business is closed for lunch, 13:00 to 14:00 Monday through Friday, instead of making the assignment manually, define a calendar descriptor called ***'lunch'***. The descriptor ***'lunch'*** would have a date entry of ***'MON-FRI'*** and a time entry of either ***'13:*'***, or ***'13:00-14:00'***. Assignments would then be made using the descriptor ***'lunch'***. The ***'lunch'*** descriptor can be redefined at any time, and it takes effect for all assignments using ***'lunch'***. Use Calendar Descriptors to avoid manually changing each assignment. This eliminates the chance that an assignment might be missed.

Table 6 "Calendar Descriptor examples - most specific to least specific" (page 30) shows sample Calendar Descriptors that could be used in making assignments. These descriptors are sorted from the most specific to the least specific and appear in the same order in which they would appear in the list of Calendar assignments.

Note: ***Jan_sales_closed*** has the time defined as "*" (asterisk). This means at all times; however, because of the way the entries are sorted, ***jan_sales_open*** is always found during times when the store is open. During the time the store is closed, the search will 'fall through' to the ***jan_sales_closed*** assignment.

Table 6
Calendar Descriptor examples - most specific to least specific

Descriptor name	Date	Time	Comment
christmas	25/12	*	Christmas Day
jan_sales_open	1/1-20/1	9:00-17:30	January Sales - Store Open
jan_sales_closed	1/1-20/1	*	January Sales - Store Closed
1st_of_month	1/*	*	First Day of Every Month
weekend	Sat-Sun	*	Weekends
weekday	Mon-Fri	*	Weekdays
morning	*	8:00-10:30	Every Morning
opening_time	*	9:00	Store Opening Time
closing_time	*	17:30	Store Closing Time
always	*	*	Always

Calendar files

The Calendar List is saved as a file called _ASSIGNS.CAL. The Calendar Descriptors are saved in a file called _DESCRIP.CAL. The Calendar Descriptors file is loaded before the Calendar file so that the descriptors used in the Calendar file can be validated.

Note: Multiple Calendar List files and Descriptor files can be created, where each file contains a group of calendar assignments or descriptors. These files can be swapped in and out, and transferred to other Integrated Recorded Announcer cards. Refer to "Calendar Operations menu" (page 151) and "The Descriptor Operations menu" (page 159).

System time and date synchronization

The Integrated Recorded Announcer card can be configured to download the system time and date on bootup. The Integrated Recorded Announcer card remotely logs into the system and starts a terminal session. Once the session has been established, the Integrated Recorded Announcer

card accesses and extracts the system time and date by sending the TTAD command. The session is ended and the real-time clock is set accordingly. The IP address of the system is stored in _CONFIG.DAT. The use of this feature cancels the OA&M commands SETDAY, SETTIME, and SETDATE.

Refer to “Configuring Ethernet for Time and Date Synchronization” (page 59) and “Time and Date Configuration menu” (page 189) for instructions on configuring the system time and date synchronization.

Note: Integrated Recorded Announcer can either synchronize the time and date with the system, or have the time and date configured manually.

Music-On-Hold option

An Integrated Recorded Announcer card can have music routes and trunks programmed to provide MOH service to callers. Integrated Recorded Announcer provides approximately six minutes of prerecorded, royalty-free music on the internal C: drive. This music is in Media Card Compressed Format (MCF) and is preassigned to internal channel 0.

Note: The music assignment to internal channel 0 can be changed. Also, the royalty-free music file can be deleted if it is not needed.

The Music Broadcast feature allows a maximum of 64 callers to simultaneously listen to music on a single channel.

External music

A permanent connection is maintained, over the analog input port, between an external music source, such as a CD player or tape recorder, and an Integrated Recorded Announcer card. This port is available on the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor). External music is most suitable when the music must be changed frequently.

The analog input is not confined to music. It can be used in many applications, such as a "talking timetable" or advertisements that are changed on a regular basis. It is often used on the larger systems where a piece of audio equipment is dedicated for this purpose.

Note: The Integrated Recorded Announcer card does not support 600 or 900 Ohm music sources.

Internal music

Internal music can be used when a music source is not permanently connected to an Integrated Recorded Announcer card. A technician can use an external music source to record the music onto the Integrated Recorded Announcer card, where it is stored digitally in Flash memory.

Integrated Recorded Announcer password security

Access to the Integrated Recorded Announcer administration menus is password- controlled using the following password levels:

- User
- Administrator
- Distributor
- Super User (Nortel Networks access)

These are the restrictions for accessing the Integrated Recorded Announcer:

- User – the lowest restrictions. Users can only access the User level.
- Administrator – the second highest level of restrictions. Administrators can access the User and Administrator levels, and can change passwords for each of those levels.
- Distributor – the third highest of restrictions. Distributors can access User, Administrator and Distributor levels, and can change the passwords for those levels.
- Super User – available for Nortel Networks employees. Super Users can access all levels, including debugging area, and can change passwords for all those levels.

User level

The User password must be 8 to 16 alpha-numeric characters in length. The User default password is "**`user0000`**". The general OA&M password allows a User to login to the Integrated Recorded Announcer administration menu. This password level provides unrestricted access to all of the RAN-based, and most of the Integrated Recorded Announcer card level, administration options. The User password does not provide access to any diagnostic procedures.

Note: TUI access to the OA&M functions is at the User level.

Administrator level

The Administrator password must be 8 to 16 alpha-numeric characters in length. The Administrator default password is "**admin000**". The Administrator level permits the following actions:

- creation of new users
- assignment of passwords
- channel access permissions
- deletion of existing users
- viewing/editing user information.

Individual Users can alter their own passwords. Administrators can alter any user's password and channel-access permissions.

Distributor level

The Distributor level password must be 8 to 16 alpha-numeric characters. The Distributor default password is "**distrib0**". The Distributor level is the next level of access above the Administrator. The Distributor is able to access the base code self-test and diagnostic procedures. This password level provides announcement monitoring for Card-LAN, DS-30X, and 8051 signals.

Super User level

The Super User level allows remote access to the VxWorks shell, in order to perform maintenance and diagnosis of problems in the field.

Note: The Super User access level is for Nortel Networks employees.

Integrated Recorded Announcer card technical description

The Integrated Recorded Announcer card implements RAN and MOH applications for CS 1000 and Meridian 1 systems and systems supporting IPE cards.

The Integrated Recorded Announcer card provides faceplate and backplane interfaces, which are used to connect external RAN and music sources and maintenance terminals to the Integrated Recorded Announcer card. This section provides information on the faceplate connectors and indicators, as well as the backplane connections to the Main Distribution Frame (MDF).

Hardware architecture

The Media Card is designed with the Intel IXP1200 Network Processor as its core. The microprocessor interfaces directly to the DRAM array and cache memory and to the rest of the system over PCI and SAI buses over the PCI bus and the buffered SRAM bus.

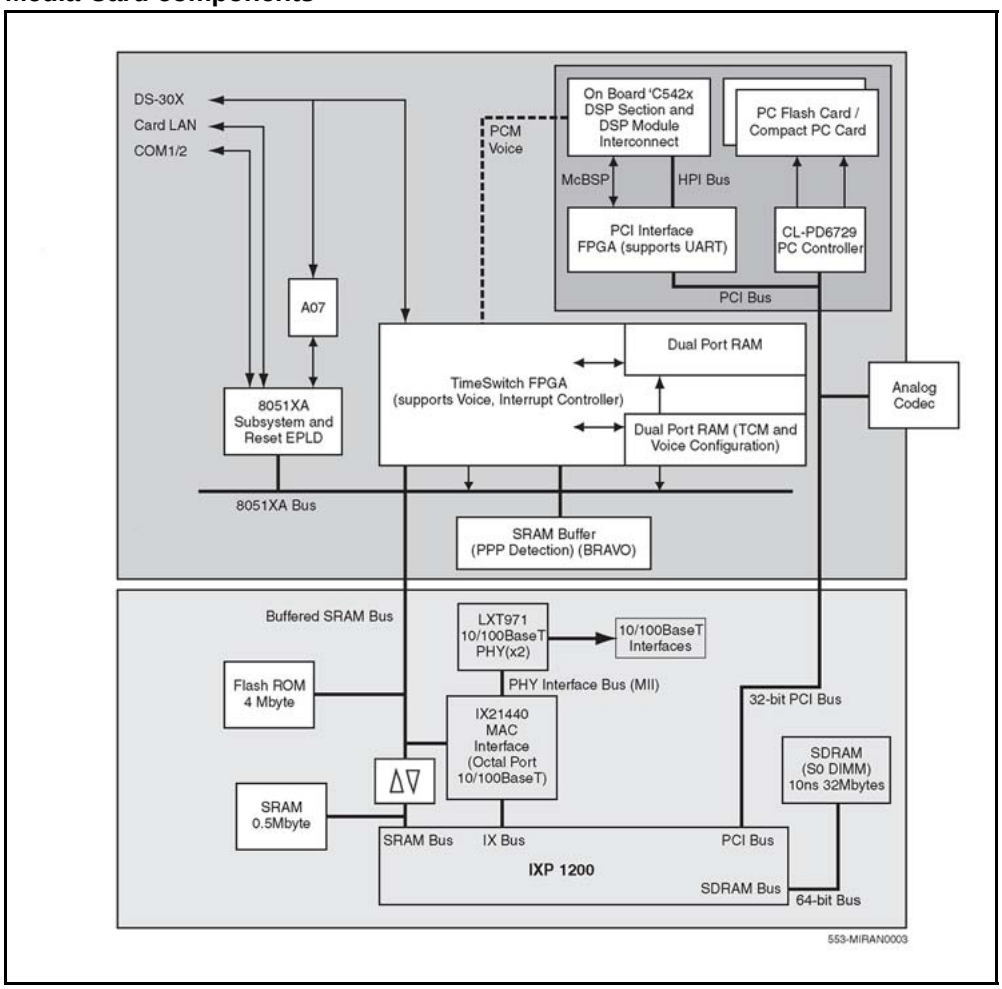
System interfaces, such as Card-LAN and DS-30X, connect to a dedicated microcontroller. This microcontroller communicates with the core microprocessor over the dual-port RAM.

To optimize the installation of the Media Card with the Integrated Recorded Announcer application, the following are provided:

- a faceplate connection for external-device occasional use
- an I/O panel connection for Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor) for external device permanent use

Figure 4 "Media Card components" (page 34) provides a high-level block diagram of the Media Card components.

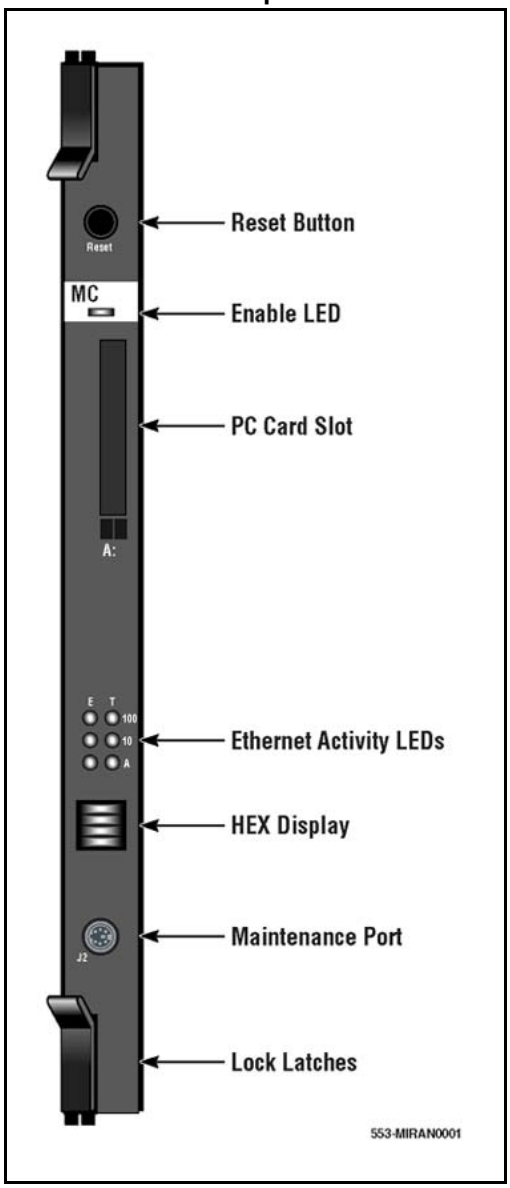
Figure 4
Media Card components



Faceplate connectors and indicators

Figure 5 "NT0966CA card faceplate" (page 35) shows the NT0966CA (Integrated Recorded Announcer application) card faceplate.

Figure 5
NT0966CA card faceplate



Reset switch

Use the reset switch on the faceplate to manually reset the Integrated Recorded Announcer card.

Status LED

The Integrated Recorded Announcer card faceplate red Enable LED indicates the following:

- the enabled/disabled status of the card
- the self-testing result during power up or card insertion into an operational system

PC Card slot

This slot accepts standard PC Flash Cards, including ATA Flash cards (3 MB to 170 MB).

Nortel Networks supplies PC Card adaptors which allow compact flash cards to be used in this slot.

This slot is used for Media Card software upgrades, backing up announcements, and additional storage.

Ethernet activity LEDs

The Integrated Recorded Announcer card faceplate contains Ethernet activity LEDs for each network.

Hex display

A four-digit, LED-based hexadecimal display provides the following information:

- **T:xx** – indicates the status of the internal self-test during bootup. See Table 32 "Integrated Recorded Announcer card hexadecimal codes" (page 246).
- **MRN3** – indicates that the Integrated Recorded Announcer application is running on the card.
- **WAIT** – indicates that it can take a number of seconds after the insertion of a PC Card before the PC Card is ready for use. During that time, the Hex display generates the message "WAIT". While the WAIT message is displayed, do not remove the PC Card. Once the card is ready for use, the Hex display displays "MRN3". At this stage, the PC Card can be removed. Similarly, after removal of a PC Card, the WAIT message is displayed for approximately one second.

ATTENTION
Do not reinsert a PC Card until the "MRN3" message is displayed

RS-232 Asynchronous Maintenance Port

An 8-pin mini-DIN socket on the faceplate provides access to the RS-232 port. This faceplate port provides access to the Integrated Recorded Announcer card for OA&M purposes. This port is also available through a female DB-9 connector on the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor). This should be used to make a permanent terminal connection.

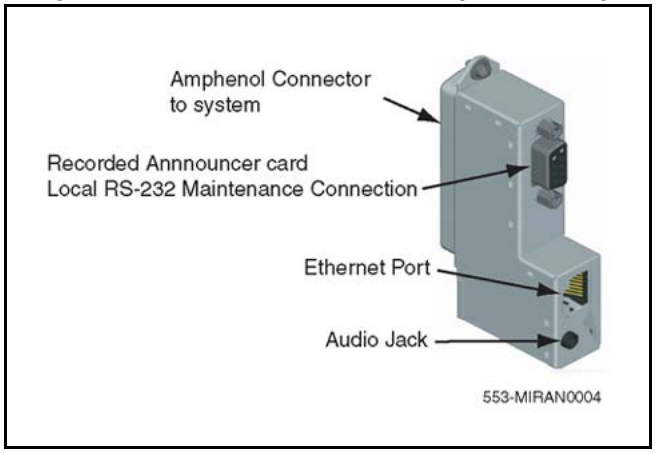
Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor)

The Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor) mounts to the I/O panel on the IPE module. It contains the following:

- one RJ-45 connector for connection to the LAN
- one DB-9 female connector for connection to a maintenance terminal (either directly or through a modem)
- one 50-pin connector for connection to the I/O panel on the IPE module

Figure 6 "Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor)" (page 37) shows the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor).

Figure 6
Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor)



Note: It is important that the 50-pin connector of the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor) be secured to the I/O connector using the mounting screw provided on the top of the 50-pin connector, as well as the fastener on the bottom.

The Integrated Recorded Announcer card provides the following connections through the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor):

- Media Card local RS-232 maintenance connection (9-way D-sub connector)
- 10BaseT Ethernet management connection
- audio socket for Music-On-Hold

Maintenance Serial Port

A Maintenance Serial Port is provided on the Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor) for maintenance functions. A terminal can be permanently connected here. This port is duplicated on the faceplate.

Audio jack

The 3.5 mm audio jack provides access to a single analog input (ANALOG0). Use the audio jack to connect external analog sources, such as a tape recorder or CD player to record to file or to route directly through a trunk emulation port into the system for MOH. Refer to Figure 6 "Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor)" (page 37).

Ethernet port

The Integrated Recorded Announcer 50-pin I/O Adaptor (Audio-adaptor) provides one 10BaseT Ethernet management connection.

CE-MUX Interface

The Integrated Recorded Announcer card does not support CE-MUX Interface.

Integrated Recorded Announcer card reset and self-test functions

A reset is executed immediately following a power-on or system-level reset. This procedure initializes the processor before proceeding with the power-on self-test. The Integrated Recorded Announcer card attempts to log the source of each reset condition. This information can later be displayed on the maintenance terminal to help determine the cause of the problem, and the time and date when it occurred.

Hard reset

A hard reset is equivalent to a card insertion or loss of power. It results in a total reset of all hardware elements and a full hardware and software initialization. A hard reset is always followed by a power-up sequence. This process can last up to two minutes.

A hard reset can be initiated by any of the following activities:

- card-level maintenance over the RS-232 port
- through a menu option in BUI
- by the administrator after upgrading Integrated Recorded Announcer software

Diagnostic self-test

The diagnostic self-test tests the installed hardware and does the following:

- determines the integrity of the hardware
- establishes Integrated Recorded Announcer configuration in terms of its processor, RAM capacity, and Flash memory

The Integrated Recorded Announcer card displays any unexpected results on the maintenance port and updates the Flash configuration. It can also indicate self-test results on the Integrated Recorded Announcer card faceplate hex display.

BIOS initialization

This process initializes the base hardware, using configuration information stored in Flash. The BIOS layer provides initialization and device drivers.

The BIOS layer initializes the hardware and boots the operating system, using the low-level reset, self-test, and BIOS initialization.

Software security

To provide security for the RAN and music applications as well as to prevent unlawful product usage, the Integrated Recorded Announcer card uses a security device and keycode security approach.

Security overview

A security device and keycode mechanism is necessary to protect against unlawful Integrated Recorded Announcer feature usage, because industry-standard PC Cards are used as the software medium on the Integrated Recorded Announcer card. All upgrades of either channel capacity or application software are restricted to a given Integrated Recorded Announcer card and are accurately tracked to allow for satisfactory handling of field repairs and incremental upgrades.

Security is required for port/channel capacity upgrades. Security is not required for the following upgrades:

- customer recorded prompts
- back up and restore operations
- application patching/bug fix

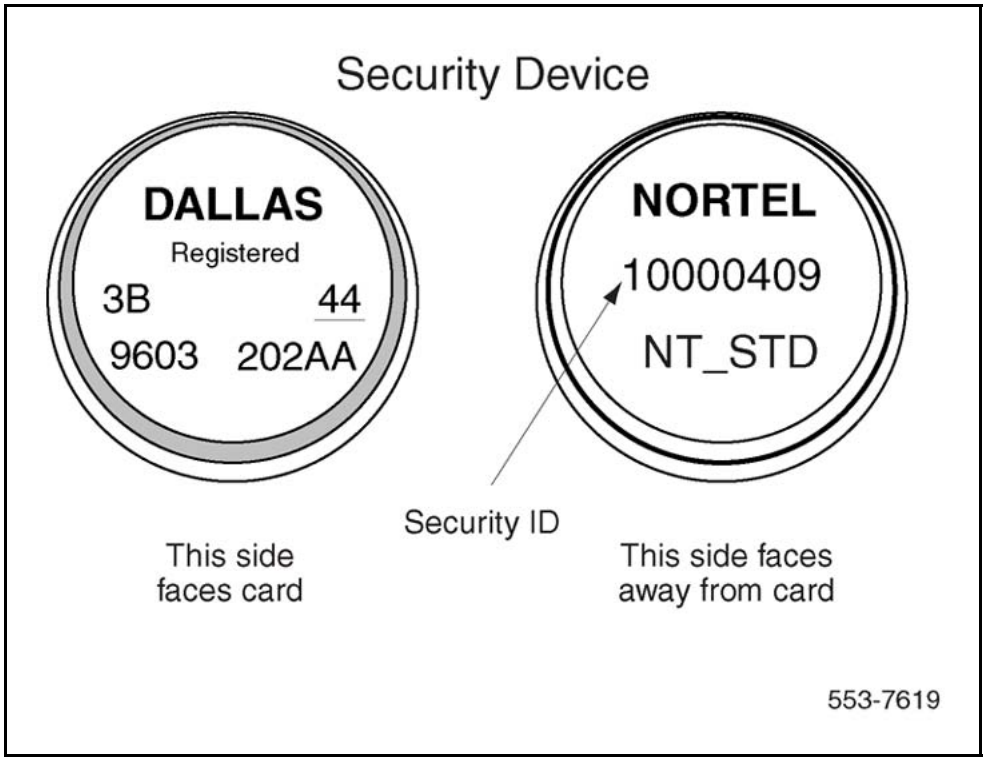
Security device

This button-sized device has a unique 12-digit laser-etched code that cannot be overwritten. In addition, it contains 1 kbit/s of PROM to:

- identify the button as part of a Nortel Networks product
- provide an eight-digit security ID

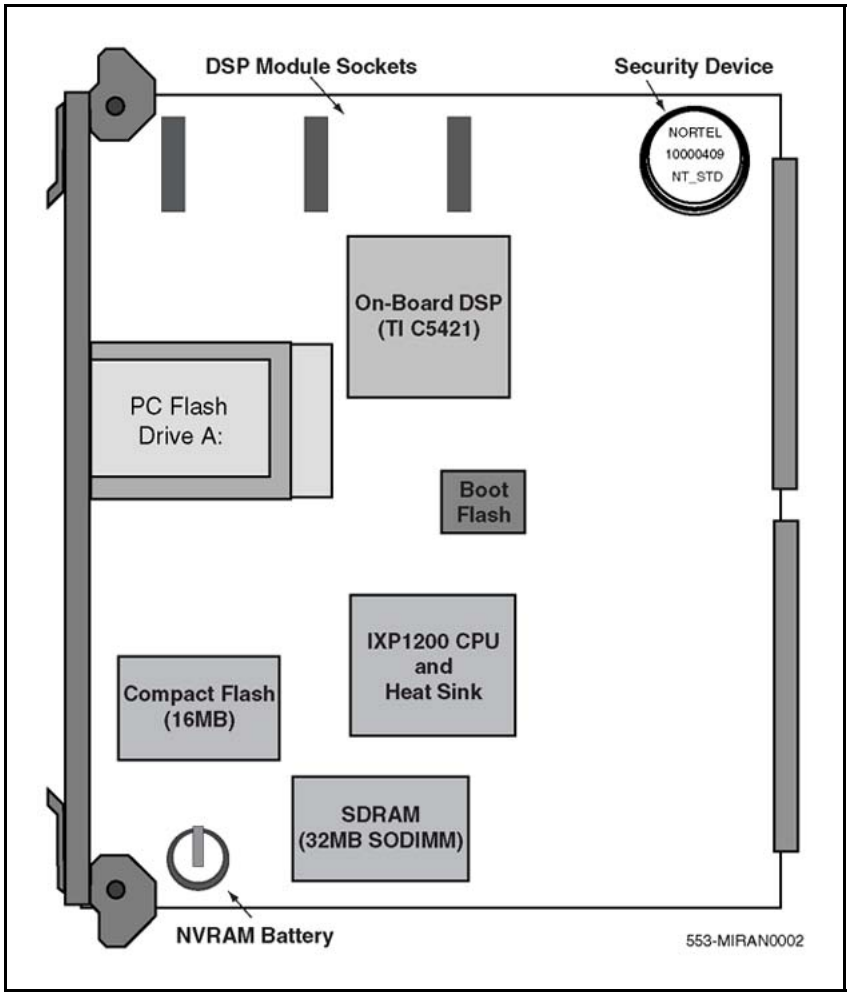
Figure 7 "Example of security devices" (page 41) illustrates an example of a security device that contains a unique 12-digit laser etched code and 1kbit of PROM preprogrammed with Nortel Networks specific information. The 'NORTEL' -side of the security device shows the eight-digit security ID. The security device must be installed with the eight-digit inscription facing away from the card.

Figure 7
Example of security devices



Note: If the security device is properly installed, the Nortel Networks logo, with the eight-digit inscription underneath, is visible. Figure 8 "Security device installation in the Integrated Recorded Announcer card" (page 42) shows the position of the security device on the Integrated Recorded Announcer card.

Figure 8
Security device installation in the Integrated Recorded Announcer card



Security ID

The security ID is the number that the customer must query from the Integrated Recorded Announcer card maintenance port prior to ordering an upgrade. The Security ID is read from the security device and is unique for each Integrated Recorded Announcer card.

The security ID number can be found:

- at the top left-hand corner of the terminal-based OA&M menu or window
- by using a command on the telephone set-based OA&M access
- on an adhesive label in the box
- on the shipping paperwork

- on the BUI System Information window
- etched on the security device

Keycode

Nortel Networks provides the customer with a keycode that enables the customer to install any desired upgrade. The keycode is entered over a terminal using the local maintenance port on the Integrated Recorded Announcer card or using the BUI. The keycode consists of three sets of eight digits and must match the Security ID on the Integrated Recorded Announcer card.

The Integrated Recorded Announcer card comes from the factory equipped with a keycode. Upgrade keycodes can be purchased to enable more ports. Spare and repaired Integrated Recorded Announcer card are not equipped with a keycode nor with the security device. For the Integrated Recorded Announcer card to operate correctly, the keycode must be installed.

Installation and configuration

Contents

This section contains information on the following topics:

Integrated Recorded Announcer card quick installation

To quickly install and configure the Integrated Recorded Announcer card, follow the steps in Procedure 1 “Installing the Integrated Recorded Announcer card using quick installation procedure” (page 46).

Procedure 1
Installing the Integrated Recorded Announcer card using quick installation procedure

Step	Action
1	Log into the system.
	a Program a DID route and configure a DID trunk on the Integrated Recorded Announcer card unit 7. Use the TN for the loop, shelf, and card slot into which the Integrated Recorded Announcer card is plugged. For example, if the Integrated Recorded Announcer card was installed in 20 0 0, then provision 20 0 0 7 as the DID unit to allow local telephone access for the recording of RAN announcements.
2	Program RAN and Music routes and trunks for the remaining channels. For example, program channel 0 as a Music trunk and channel 1 as a RAN trunk.
	Note: The Integrated Recorded Announcer card comes with royalty-free music preassigned to channel 0 and set to play ’always’. Therefore, Nortel Networks recommends that channel 0 be configured as a Music route. However, this assignment can be removed and any other announcement or music file assigned in its place.
	When using Communication Server 1000 (CS 1000) Release 4.0 software, refer to the RAN Broadcast feature in *Features and Services Fundamentals (NN43001-106)*. For Integrated Recorded Announcer configured with RAN Broadcast, use Route Type "MLVL" (RTYP = MLVL in LD 16).
3	Request an IP address, subnet mask, and gateway from the system administrator.
	Note: This step is only necessary if the Integrated Recorded Announcer card is connecting to the LAN.
4	Insert the security device onto the Integrated Recorded Announcer card. Install the security device with the Nortel

Networks logo and eight-digit inscription facing away from the board.

Note: The security device can be correctly inserted in only one position.

5 Connect the 50-pin female connector on the Integrated Recorded Announcer card Audio-adaptor to the I/O panel.

6 Connect the RJ-45 connector to the LAN hub. Use an RJ-45 coupler and the additional RJ-45 cable, if necessary.

7 Connect a VT-100 terminal to the Integrated Recorded Announcer card 50-pin I/O Adaptor (Audio-adaptor) using a standard serial cable (NTAG81GA is available as an accessory from Nortel Networks).

Alternatively, the NTAG81CA cable (also available as an accessory) can be used to connect a terminal to the 8-pin faceplate connector.

8 Configure the terminal in VT-100 mode at:

- 9600 baud
- 8 data bits
- 1 stop bit
- no parity

9 Insert the Integrated Recorded Announcer card into an unequipped card slot and watch the terminal window for bootup commands to appear. This requires approximately 90 seconds.

CAUTION
Damage to Equipment
Before installing an Integrated Recorded Announcer card into a card slot, ensure that no cross-connect wires from the Integrated Recorded Announcer card or another product remain attached to this slot. Cross-connect wires that carry a ringing voltage can damage the Integrated Recorded Announcer card.

10 At the logon window of the Text-based User Interface, ensure that the cursor is in the 'User Name:' field. Then, log on by doing the following:

a If the Integrated Recorded Announcer card is being booted for the very first time, the card boots in BOOTP mode. If a BOOTP server is not being used, the card continues to search for a BOOTP server on the network, thereby stalling the boot process.

At this point, if not using a BOOTP server, enter the key sequence +++ (plus symbols) in order to force booting to

continue. Once booted, change the IP method to either disabled or static (see Procedure 8 “Enabling the LAN capabilities” (page 70) and Procedure 9 “Configuring the IP address, subnet mask, Gateway, and IP method” (page 71)). Once the IP method is changed to disabled or static, subsequent boots of the card do not look for a BOOTP server.

b If the Integrated Recorded Announcer card is booted and the session is just starting, or if an ’access denied’ message is received, press the **Shift** key and the tilde key (**~**) to refresh the window.

c Type in the user name (**admin**), and press the ’down’ arrow.

d Type in the administrator default password (**admin000**), and press the ’down’ arrow again.

e Press **<CR>** at the ’Login’ prompt.

Note: If the logon is unsuccessful, an ’Access denied’ message appears. The logon procedure can be repeated up to three times. If an ’Access denied’ response appears for a third time, the Integrated Recorded Announcer card locks users out for 20 minutes.

11 At the Main Menu:

a Select **2**, "Pack Administration".

b Select **2**, "Keycode Entry".

Note: The keycodes are on a label that accompanies the security device. Remove this keycode label and attach it to the Integrated Recorded Announcer card faceplate.

c Between the brackets, type in the 24-character keycode with a space between each set of eight characters.

d Select **Execute** to execute the keycode.
Wait for a keycode validation response ’Keycode validated’.

e Select **Exit** to return to the Pack Administration menu.

Note: If LAN access is not needed for the Integrated Recorded Announcer card, log out after entering the keycode.

12 At the Pack Administration menu:

a Select **5**, "Ethernet Configuration".

b At the Ethernet Configuration window, enter the new IP address, subnet mask, gateway, and IP method of the

Integrated Recorded Announcer card, obtained from the network administrator.

Note: The IP method can either be 'bootp' or 'static'. To disable the IP connection, but keep Integrated Recorded Announcer working, set the IP method to 'disabled'. 'bootp' is similar to Dynamic Host Configuration Protocol (DHCP).

c Select **Set** to set the LAN configuration parameters.

d Select **Exit** to return to the Pack Administration window.

e Log out of the Text-based User Interface by selecting **9** from the menu window until the Main Menu window appears.

13 Reboot the Integrated Recorded Announcer card by pressing the reset switch on the front of the pack.

This causes the keycode to take effect. Wait for the card to reboot and the Login window to come up on the maintenance terminal. This takes approximately 90 seconds.

14 Use a local DTMF telephone to dial the DID access code for Integrated Recorded Announcer card unit 7.

Note: The local DTMF telephone must have an 'unrestricted' Class of Service (CLS = UNR) in LD 11.

a At the voice prompt, press "#" (octothorpe) to establish the call.

b Enter the user name **`'user' = 8737`** followed by "*" (asterisk).

c At the next voice prompt, enter the password **`user0000`** followed by "*" (asterisk).

d At the main menu, press **5** to access the Record menu.

e Press **5** again to begin recording a RAN announcement.

f When recording is done, press **3** to stop the recording.

g Press **1** to save the announcement.
Because Integrated Recorded Announcer writes the recording to memory, it can take 30 seconds or longer for Integrated Recorded Announcer to respond that it has saved the announcement.

CAUTION
Loss of Data
After pressing **1** to save the announcement, do not hang up. Wait for Integrated Recorded Announcer to state that it has saved the announcement and tagged the announcement with an announcement identifier. For example: 'Announcement has been saved as announcement 1'.

15 Log in to the Text-based User Interface through the maintenance terminal as before. Or, if the Integrated Recorded Announcer card is connected to the LAN, the Integrated Recorded Announcer Browser User Interface (BUI) can be accessed by pointing a web browser to the IP address of the Integrated Recorded Announcer card. To assign an announcement to an Integrated Recorded Announcer channel, do the following:

a At the Main Menu, select **1** "MIRAN Administration...".

b At the MIRAN Administration menu, select **1** "Announcement Configuration...".

c At the Announcement Configuration menu, select **1** "Calendar Operations...".

d At the Calendar Operations menu, select **1** "Calendar Assignment with Descriptor".

e At the Calendar Assignment with Descriptor window, first enter the channels (ports) on which a particular announcement is to play. For example, if the TN for a RAN trunk is 20 0 0 5, assign an announcement to channel 5.

f At the 'Filename:' prompt, enter the filename of the announcement that must play on the selected channels. Browse the list of available announcements to select one.

g At the 'Descriptor' prompt, enter the descriptor that defines when the selected announcement will play on the selected channels. Browse the list of available descriptors to select one. Descriptors can be defined if the preconfigured descriptors do not meet system needs.

h Move the cursor to 'Add to Calendar' and press **<CR>** to create the calendar assignment with descriptor.

16 To test RAN announcements, dial the trunk access code for the desired RAN route, and listen to the announcement that plays.

Note: With Integrated Recorded Announcer, all changes to announcements and configuration are saved automatically.

--End--

Refer to Table 20 "Integrated Recorded Announcer card hardware list" (page 89) for a list of relevant equipment.

System configuration

In the system software, configure the following for Integrated Recorded Announcer:

- RAN and Music routes
- a DID route
- trunks for the above routes

To allow synchronization of the time and date between the system and the Integrated Recorded Announcer card, configure the system for LAN access in LD 117. Refer to “Configuring Ethernet for Time and Date Synchronization” (page 59) for this procedure.

The system software can be configured either before or after the Integrated Recorded Announcer card is installed. Nortel Networks recommends configuring the system software first, in order to save setup time once the Integrated Recorded Announcer card arrives.

The following sections describe system software configuration for Integrated Recorded Announcer.

Configuring RAN routes

The Integrated Recorded Announcer card emulates an Enhanced Extended Universal Trunk (EXUT) card in the CS 1000 and Meridian 1 systems. Configure RAN routes and trunks for the Integrated Recorded Announcer card the same way as the EXUT card. For detailed information on Trunk Route Administration (LD 16) and Trunk Administration (LD 14), see *Software Input Output Administration (NN43001-611)*.

To configure the RAN propagation route and the mode of activating the recorded announcement, define its parameters using Trunk Route Administration (LD 16). The Integrated Recorded Announcer card emulates the EXUT characteristics and does not require modification of LD 16 to configure the Integrated Recorded Announcer functions.

The Integrated Recorded Announcer card and EXUT cards support the following modes of operation:

- Delay Dial Continuous RAN (DDL)
- Immediate Start Continuous RAN (IMM)
- Level Start/Stop RAN (LVL, MLSS, or MLVL)

The Integrated Recorded Announcer card supports the above modes of operation on two, four, or eight independent ports. The same RAN announcement can be assigned to different ports, allowing multiple callers to hear the same announcement at the same time.

Note: With RAN Broadcast, up to 30 callers can simultaneously listen to the same RAN announcement on a single RAN port.

Continuous RAN routes (Delay Dial and Immediate Start)

Continuous (immediate or delay) RAN plays an announcement over and over again. Callers "barge in" on an announcement playing on an Immediate Start RAN route. Callers receive a ringback tone for an announcement playing on a Delay Dial RAN route until the announcement begins again. At the end of each announcement, a pulse is issued on the control pulse line used by the trunk unit to cut through to the waiting call. Internal ports and channels wait until the announcement starts to be connected to a RAN announcement.

To configure a continuous RAN route, access the Route Data Block (LD 16) using the system TTY, and enter the appropriate responses to the prompts as shown.

Table 7
LD 16 Define a continuous RAN route.

Prompt	Response	Description
REQ	NEW CHG	Add a new, or change an existing configuration
TYPE	RDB	Route Data Block
CUST	xx	Customer number as defined in LD 15
ROUT		Route number
	0–511	Range for Large System and CS 1000E system
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T
TKTP	RAN	Recorded Announcement (RAN) Trunk Type
RTYP	CON MCON	Continuous route Continuous multi-channel (for RAN Broadcast)

Table 7
LD 16 Define a continuous RAN route. (cont'd.)

Prompt	Response	Description
- LGTH	4–(60)–7200	Maximum message length in seconds
- GRD	(IDLE)PLAY	Ground signal from RAN indicates Integrated Recorded Announcer is playing (idle). The LGTH and GRD prompts only appear if RTYP = MCON.
REP	1–15	Number of RAN repetitions
POST	ATT	Route to attendant after maximum repetitions.
	DIS	Disconnect after maximum repetitions.
STRT	IMM	Immediately connect call to a recorded announcement.
	DDL	Delay call connection until the start of an announcement.
BDCT	(NO) YES	Denies or allows broadcast capability. The BDCT prompt appears only if using the RAN Broadcast (RAN BRD) package 327.
	NO (YES) – for CS 1000E only	For the CS 1000E, the default is Yes.
ASUP	(NO)	Does not return Answer Supervision.
	YES	Returns Answer Supervision.
	CO	Returns Answer Supervision if originator is a CO trunk.
ACOD	xxx...x	Trunk route access code

Multi-channel level start/stop RAN route

In the multi-channel level start/stop control RAN, the leading edge of the start signal initiates announcement playback that continues until either the trailing edge of the start signal occurs or the end of the announcement is reached. If the trailing edge of a level start signal terminates an announcement, it resets immediately and is again available for playback. The multi-channel level start/stop control RAN mode allows the same announcement to be played over multiple RAN channels independently. Specify multi-channel using the same RAN route. See "Example 2:" (page 95).

To configure this RAN route, access LD 16 using the system TTY, and enter the appropriate responses to the prompts as shown.

Table 8
LD 16 Define a multi-channel level start/stop RAN route.

Prompt	Response	Description
REQ	NEW CHG	Add a new, or change an existing configuration.

Table 8
LD 16 Define a multi-channel level start/stop RAN route. (cont'd.)

Prompt	Response	Description
TYPE	RDB	Route Data Block.
CUST	xx	Customer number as defined in LD 15
ROUT		Route number.
	0–511	Range for Large System, Call Server 1000E, and Media Gateway 1000E
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	RAN	Recorded Announcement (RAN) Trunk Type
RTYP	MLSS MLVL	Multichannel level start/stop RAN. Level start/stop, multi-channel (for RAN Broadcast). Sets RTYP to MLVL with RAN Broadcast, even if the broadcast capability (BDCT = NO) is denied for this route.
- LGTH	4–(60)–7200	Maximum message length in seconds. The LGTH and GRD prompts appear only if RTYP = MCON.
- GRD	(IDLE) PLAY	Ground signal from RAN indicates Integrated Recorded Announcer is playing (idle).
REP	1–15	Number of repetitions of RAN.
POST	ATT DIS	Route to attendant after maximum repetitions. Disconnects after maximum repetitions.
STRT	IMM	Immediately connects call to recorded announcement.
BDCT	(NO) YES	Denies or allows broadcast capability. The BDCT prompt appears only if using the RAN Broadcast (RAN BRD) package 327.
	NO (YES) – for CS 1000E only	For the CS 1000E, the default is Yes.
ASUP	NO YES CO	Does not return Answer Supervision. Returns Answer Supervision. Returns Answer Supervision for a CO trunk.
ACOD	xxx...x	Trunk route access code

Multi-Level Start/Stop RAN (MLSS or MLVL) allows multiple start/stop RAN channels to be supported within the same RAN route.

Level start/stop RAN route

In the immediate "level" start RAN, the leading edge of the start signal initiates announcement playback. The playback continues until either the trailing edge of the start signal occurs or the announcement ends. If the trailing edge of a level start signal terminates an announcement, it resets immediately and is again available for playback.

To configure this RAN route, access LD 16 using the system TTY, and enter the appropriate responses to the prompts as shown.

Table 9
LD 16 Define a level start/stop RAN route.

Prompt	Response	Description
REQ	NEW CHG	Define a new, or change an existing configuration.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number as defined in LD 15
ROUT		Route number.
	0–511	Range for Large System, Call Server 1000E, and Media Gateway 1000E
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	RAN	Recorded Announcement (RAN) Trunk Type.
RTYP	LVL	Level start/stop mode.
REP	1–15	Number of RAN repetitions.
POST	ATT	Route to attendant after maximum repetitions.
	DIS	Disconnects after maximum repetitions
STRT	IMM	Immediately connects call to recorded announcement.
ASUP	NO YES CO	Does not return Answer Supervision. Returns Answer Supervision. Returns Answer Supervision if the originator is a CO trunk.
ACOD	xxx...x	Trunk route access code.

Music-On-Hold activation and route configuration

Music-On-Hold (MOH) operates in a continuous mode with an immediate connection to the music source. The music source plays continuously. Callers "barge in" on playing music.

To specify the conference loop for MOH, load the Configuration Record (LD 17), and enter the appropriate responses to the prompts as shown.

Table 10
LD 17 Add or change conference loop for MOH.

Prompt	Response	Description
REQ	CHG	Change existing configuration.
TYPE	CEQU	Record Common Equipment.
CEQU	(NO) YES	Changes Common Equipment parameters.

Table 10
LD 17 Add or change conference loop for MOH. (cont'd.)

Prompt	Response	Description
XCT	0 – 254	Loop number for NT8D17 Conference/TDS card.
CONF	0 – 254	Conference loop should be an even number.

To configure the MOH route, load Route Data Block (LD 16) using the system TTY, and enter the appropriate responses to the prompts as shown.

Table 11
LD 16 Define the Music-On-Hold route.

Prompt	Response	Description
REQ	NEW CHG	Add a new, or change an existing configuration.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number as defined in LD 15
ROUT		Route number.
	0–511	Range for Large System, Call Server 1000E, and Media Gateway 1000E
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	COT, MUS	MOH Trunk Types.
MUS	(NO) YES	Music-On-Hold.
_MRT		Music route number.
	0–511 0-127	For Large Systems. For Small Systems and CS 1000S.
STRT	IMM	Immediately connects a call to Music-On-Hold.
ICOG	OGT	For Music-On-Hold, selects the outgoing trunk only.
BDCT	(NO) YES	Denies or allows broadcast capability. The BDCT prompt appears only if using the Music Broadcast (MUSBRD) package 328. If BDCT = YES, no conference loop is necessary; each music trunk has 64 broadcast connections.
	NO (YES) – for CS 1000E only	For the CS 1000E, the default is Yes.
ASUP	NO YES CO	Does not return Answer Supervision. Returns Answer Supervision. Returns Answer Supervision if originator is a CO trunk.
ACOD	xxx...x	Trunk route access code
Note: Music Broadcast (MUSBRD package 328) is required to implement Music on Hold for Virtual Trunks.		

Configuring the DID route for the TUI

To configure an Integrated Recorded Announcer card for TUI access, using internal one-to-one port 7, configure the appropriate route and trunk data blocks. Route Data Block program LD 16 commands define the DID route data block.

Table 12
LD 16 Define a DID route for the TUI.

Prompt	Response	Description
REQ	NEW CHG	Add a new, or change an existing configuration.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number as defined in LD 15
ROUT		Route number.
	0–511	Range for Large System, Call Server 1000E, and Media Gateway 1000E
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	DID	Trunk type for telephone-based OA&M access.
ICOG	IAO	Incoming and outgoing trunk.
ACOD	xxx...x	Trunk route access code.
CNTL	YES	Gate opener for control timers
NEDC	ETH	Near End Disconnected Control. Both ends have disconnect control.
FEDC	ETH	Far End Disconnected Control. Both ends have disconnect control.
MANO	YES	Manual Outgoing Trunk Route.

Configuring the Integrated Recorded Announcer trunks

After a RAN, Music, or DID route is configured, configure the route's corresponding trunk. A trunk data block specifies the parameters for a particular trunk. Because the Integrated Recorded Announcer card emulates the EXUT card, define the Integrated Recorded Announcer card parameters using LD 14 on the system TTY. Respond to the appropriate prompts in LD 14 to configure the Integrated Recorded Announcer trunk data block.

Table 13
LD 14 Configure the Integrated Recorded Announcer trunk data block for RAN, MOH, and DID.

Prompt	Response	Description
REQ	NEW	Add new data.

Table 13
LD 14 Configure the Integrated Recorded Announcer trunk data block for RAN, MOH, and DID. (cont'd.)

Prompt	Response	Description
TYPE		Type of trunk music
	RAN DID	Recorded Announcement Direct Inward Dialing
TN		Terminal Number
	l s c u c u	Format for Large System, Call Server 1000E, and Media Gateway 1000E, where l = loop, s = shelf, c = card, u = unit Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit Integrated Recorded Announcer loop, shelf, card, and unit. The DID trunk on unit (port) 7 must be configured in order to use the TUI. The Integrated Recorded Announcer card comes from the factory with approximately 6 minutes of royalty-free music preconfigured on port 0. Unit 0 can be configured as a Music trunk to make easy use of the royalty-free music.
XTRK	EXUT	Enhanced Extended Universal Trunk card.
CUST	xx	Customer number as defined in LD 15. Customer is prompted when REQ = NEW.
RTMB		Route number and member number
	0-511 1-4000|	Range for Large System, Call Server 1000E, and Media Gateway 1000E
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T
CONN	(4) – 48	The maximum number of broadcast connections allowed for this trunk. The 'CONN' prompt only appears if BDCT = YES in LD 16.
SIGL	LDR	Signaling for battery or loop outpulsing for telephone-based OA&M over the Integrated Recorded Announcer card port 7.
BIMP	600 900	Balanced trunk impedance for the Integrated Recorded Announcer card.
STRI	DDL IMM	Incoming trunk starting arrangement.
STRO	DDL IMM	Outgoing trunk starting arrangement. Do not program MUS or DID trunks as Delayed Dial (DDL).
CFLP	0 – 254	Music conference loop.

Configuring Ethernet for Time and Date Synchronization

The time and date synchronization over the LAN requires the connection of the system to a LAN environment.

Note: Refer to "Time and Date Configuration menu" (page 189) for instructions on configuring Time & Date Synchronization.

Limited Access Password

Integrated Recorded Announcer uses a default Limited Access Password (LAPW) and ID to access LD 2. This allows a task running on Integrated Recorded Announcer to remotely log in to access LD 2, and extract the system time and date.

Basic Integrated Recorded Announcer card installation

Installation overview

The Integrated Recorded Announcer card operates on all systems. Refer to "Software requirements" (page 82) for more information.

Installing an Integrated Recorded Announcer card

To install an Integrated Recorded Announcer card, follow the general procedures listed as follows:

- Prepare the site.
- Unpack, inspect, and take inventory of the equipment.
- Install the Integrated Recorded Announcer card in the selected card slot, if it is not already installed.
- Install the cables between the Integrated Recorded Announcer card faceplate connectors and external devices, if required.
- Install the cables to the I/O panel connector at the rear of the module, if required.
- Cross-connect external devices to the Integrated Recorded Announcer card through the Audio-adaptor (for example, trunk cards, CD player, and cassette player).

Installation preparation

To prepare for Integrated Recorded Announcer card installation, unpack and inspect components. Take inventory and locate the card slots where the Integrated Recorded Announcer card will be installed.

Unpacking and inspection

Unpack and inspect the equipment for damage. When unpacking, follow the general precautions recommended by computer and telephone equipment manufacturers:

- Remove items that generate static charge from the installation site.
- Wear an antistatic wrist wrap before handling any equipment.
- Remove equipment carefully from its packaging.
- Visually inspect the equipment for obvious faults or damage.

Taking inventory

Verify that all equipment is at the site before beginning installation. Check the equipment received against the shipping documents.

Locating the card slot

An Integrated Recorded Announcer card can be installed in any IPE card slot in an IPE module or shelf that has a 25-pair tip/ring cable connected between the backplane and the I/O panel. The only slot that cannot be used is the Peripheral Controller card slot labeled *Cont*.

> ***Note:*** For Large Systems, IPE card slots 0, 4, 8, and 12 are already preconfigured for Integrated Recorded Announcer card installation.

In the Cabinet system, the Integrated Recorded Announcer card can be installed in card slots 1 to 10 of the Main Cabinet and in slots 11 to 50 in the Expansion Cabinet(s). Refer to Table 10 "LD 17 Add or change conference loop for MOH." (page 55).

In the Chassis system, the Integrated Recorded Announcer card can be installed in slots 1 to 4 of the NTDU14 Main Chassis and in slots 7 to 10 of the NTDU15 Chassis Expander.

In the CS 1000S, the Integrated Recorded Announcer card can be installed in slots 1 to 3 of the Media Gateway 1000S and in slots 7 to 10 of the Media Gateway 1000S Expansion.

> ***Note:*** If the backplane RS-232 connections are to be used, refer to “NT8D37 cable connections” (page 257) for NT8D37 ribbon cable connection configuration on the backplane.

Integrated Recorded Announcer card installation in an IPE shelf

Before installing the card, inspect the IPE module or cabinet I/O panel for backplane cabling.

CAUTION
Damage to Equipment
Before installing an Integrated Recorded Announcer card in a card slot, ensure that no cross-connect wires from the Integrated Recorded Announcer card or another product remain attached to this slot. Cross-connect wires that carry a ringing voltage can damage the Integrated Recorded Announcer card.

To install the Integrated Recorded Announcer cards in an IPE shelf, follow the steps in Procedure 2 “Installing Integrated Recorded Announcer cards in an IPE shelf” (page 61).

Procedure 2
Installing Integrated Recorded Announcer cards in an IPE shelf

Step	Action
1	Identify the IPE card slot(s) selected for Integrated Recorded Announcer card(s).
2	Pull the top and bottom extractors away from the Integrated Recorded Announcer card faceplate.
3	Insert the Integrated Recorded Announcer card into the card guides and gently push it until it makes contact with the backplane connector.
4	Push the top and bottom extractors firmly towards the faceplate to insert the Integrated Recorded Announcer card into the faceplate connector and to lock it firmly in place.
5	Observe the faceplate hexadecimal display. It indicates the progress of the internal self-test in the form of **T:xx.** See “Integrated Recorded Announcer card hexadecimal codes” (page 246). Upon successful completion of the test and the start-up of the RAN application, the display shows the code **MRN3**. ***Note 1:*** During the Integrated Recorded Announcer bootup sequence, either an error message or the **’T:xx’** self-test messages are seen on the hex display. To interpret an error message, refer to “Integrated Recorded Announcer card hexadecimal codes” (page 246). ***Note 2:*** If the Integrated Recorded Announcer card is being booted for the very first time, the cards boot in BOOTP mode. If a BOOTP server is not being used, the card continues to search for a BOOTP server on the network, stalling the boot process. At this point, if not using a BOOTP server, enter the key sequence +++ (plus symbols) in order to force booting to continue. Once booted, change the IP method to either disabled or static (see Procedure 8 “Enabling the LAN capabilities” (page 70) and Procedure 9 “Configuring the IP address, subnet mask, Gateway, and IP method” (page

71)). Once the IP method is changed to disabled or static, subsequent boots of the card do not look for a BOOTP server.

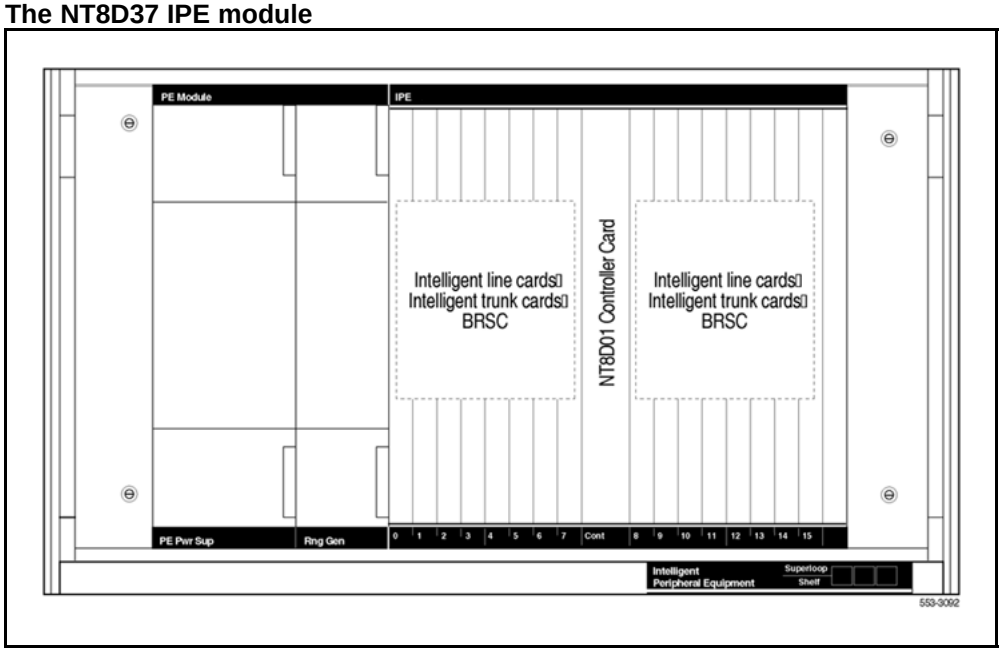
6 To enable the Integrated Recorded Announcer card, load the Network and PE Diagnostic program (LD 32) into the system memory using the system TTY. Execute the **`ENLC l s c`** command, where l is the loop, s is the module or shelf, and c is the card to enable.

7 Repeat steps 1 through 6 for each additional Integrated Recorded Announcer card.

--End--

Figure 9 "The NT8D37 IPE module" (page 62) shows the IPE module and the card slots where the IPE cards reside for Large Systems. An Integrated Recorded Announcer card can be installed in any IPE card slot, except the Peripheral Controller (Cont) card slot.

Figure 9
The NT8D37 IPE module

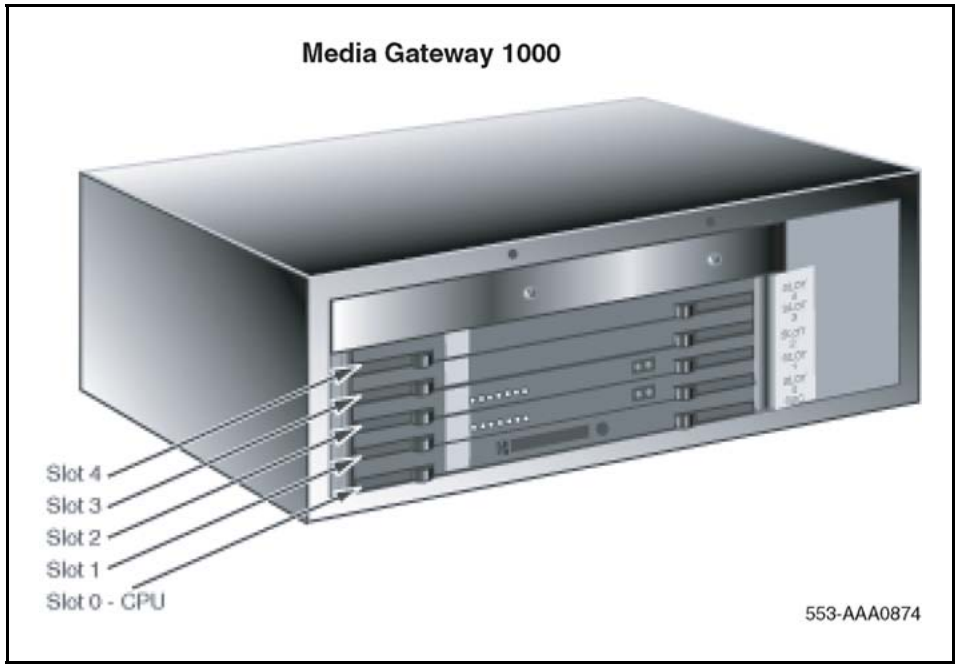


Note 1: European customers who require Integrated Recorded Announcer LAN capability must install the Integrated Recorded Announcer card in slots 0, 4, 8, or 12 of the IPE shelf.

Note 2: If using the NT8D37AA/DC IPE module, the Integrated Recorded Announcer card cannot be installed in slots 3, 7, 11, or 15 of the IPE shelf. The necessary tip/ring pairs in these slots are not available.

Figure 10 "Media Gateway 1000S" (page 63) shows the Media Gateway 1000S.

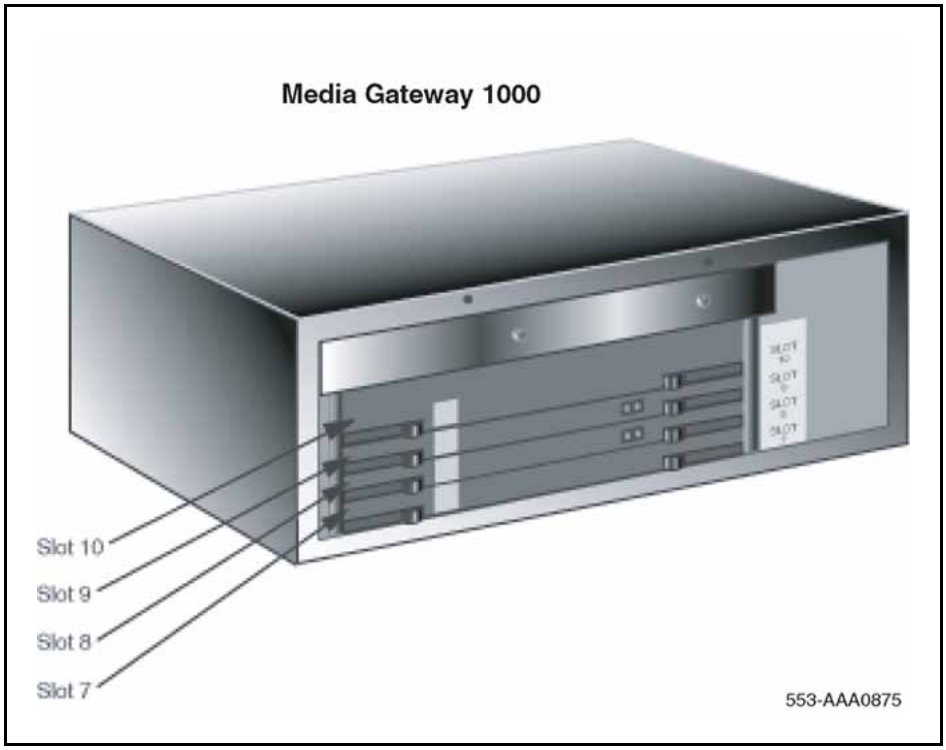
Figure 10
Media Gateway 1000S



Note: Slot 4 cannot be used in this Media Gateway 1000S.

Figure 11 "Media Gateway 1000S Expansion" (page 64) shows the Media Gateway 1000S Expansion.

Figure 11
Media Gateway 1000S Expansion



Integrated Recorded Announcer card installation in Small Systems and CS 1000S

Before installing the Integrated Recorded Announcer card, inspect the CS 1000M Cabinetor Meridian 1 PBX 11C Cabinetmodule or cabinet I/O panel for cabling.

CAUTION
Damage to Equipment
Before installing an Integrated Recorded Announcer card into a card slot, ensure that no cross-connect wires from the Integrated Recorded Announcer card or another product remain attached to this slot. Cross-connect wires that carry a ringing voltage can damage the Integrated Recorded Announcer card.

To install one or more Integrated Recorded Announcer cards in Small Systems and CS 1000S systems, follow the steps in Procedure 3 “Installing one or more Integrated Recorded Announcer cards in a Small Systemcabinet or a CS 1000S system” (page 65).

Procedure 3
Installing one or more Integrated Recorded Announcer cards in a Small Systemcabinet or a CS 1000S system

Step	Action
1	Identify the card slot(s) selected for the Integrated Recorded Announcer card(s).
2	Pull the top and bottom extractors away from the Integrated Recorded Announcer card faceplate.
3	Insert the Integrated Recorded Announcer card into the card guides and gently push it until it makes contact with the backplane connector.
4	Push the top and the bottom extractors firmly towards the faceplate to insert the Integrated Recorded Announcer card into the faceplate connector and to lock it firmly in place.
5	Observe the faceplate hexadecimal display. It indicates the progress of the internal self-test in the form of **T:xx.** Refer to "Integrated Recorded Announcer card hexadecimal codes" (page 246). Upon successful completion of the test and the start-up of the RAN application, it displays the code **MRN3**. ***Note 1:*** During the Integrated Recorded Announcer bootup sequence, either an error message or the **'T:xx'** self-test messages are seen on the hex display. To interpret an error message, refer to "Integrated Recorded Announcer card hexadecimal codes" (page 246). ***Note 2:*** If the Integrated Recorded Announcer card is being booted for the first time, the card boots in BOOTP mode. If a BOOTP server is not being used, the card continues to search for a BOOTP server on the network, stalling the boot process. At this point, if not using a BOOTP server, enter the key sequence +++ (plus symbols) in order to force booting to continue. Once booted, change the IP method to either disabled or static (see Procedure 8 "Enabling the LAN capabilities" (page 70) and Procedure 9 "Configuring the IP address, subnet mask, Gateway, and IP method" (page 71)). Once the IP method is changed to disabled or static, subsequent boots of the card do not look for a BOOTP server.
6	To enable the Integrated Recorded Announcer card, load the Network and PE Diagnostic program (LD 32) into the system memory using the system TTY. Execute the **`ENLC c`** command, where c is the card to enable.

7 Repeat steps 1 through 6 for each additional Integrated Recorded Announcer card.

--End--

A VT100-type (maintenance) terminal must be connected to the Integrated Recorded Announcer card to perform the OA&M functions during installation and setup. Follow the steps in Procedure 4 “Connecting a VT100-type terminal to the Integrated Recorded Announcer card” (page 66) to connect a VT100-type (maintenance) terminal to the Integrated Recorded Announcer card.

Procedure 4
Connecting a VT100-type terminal to the Integrated Recorded Announcer card

Step	Action
1	Enter keycode information.
2	Enter the IP address, subnet mask, and Gateway information for the LAN configuration.

--End--

The VT100-type terminal uses the Integrated Recorded Announcer card’s Text-based User Interface to perform OA&M. Refer to “Text-based User Interface” (page 141) for more information on the Text-based User Interface.

For terminal-based OA&M access, specify the VT-100 type terminal interface characteristics to ensure compatibility with the Integrated Recorded Announcer card RS-232 interface.

Configure the interface parameters as follows:

- Transmission speed: 9600 bps
- Data bits: 8
- Stop bit: 1
- Parity: No
- Flow control: none

Integrated Recorded Announcer uses the HyperTerminal application. The HyperTerminal application allows the user to disable the CTRL and arrow keys, as these keys are used by OA&M for navigating the menus.

Connecting a terminal to the Integrated Recorded Announcer card in the IPE module

To connect a terminal to the Integrated Recorded Announcer card in the IPE module, the following options are available:

- connecting directly to the Integrated Recorded Announcer card faceplate
- connecting directly to the Integrated Recorded Announcer card's Audio-adaptor
- connecting to the Integrated Recorded Announcer card's Audio-adaptor through a modem

Connecting the terminal directly to the faceplate connector or Audio-adaptor The Integrated Recorded Announcer card has an 8-pin mini-DIN connector at the bottom of the faceplate. This connector can be used to connect a terminal. The terminal can also be connected to the RS-232 maintenance connection on the Integrated Recorded Announcer card Audio-adaptor.

To connect the terminal or a personal computer emulating a terminal to the 8-pin mini-DIN connector on the Integrated Recorded Announcer card faceplate or on the Audio-adaptor, follow the steps in Procedure 5 "Connecting the terminal directly to the faceplate connector or Audio-adaptor" (page 67).

Procedure 5
Connecting the terminal directly to the faceplate connector or Audio-adaptor

Step	Action
1	Place the terminal in the desired location. If the distance to the Integrated Recorded Announcer card is less than 10 ft (3 m), an extension cable is not needed.
2	Plug the 8-pin mini-DIN male connector of the NTAG81CA Maintenance cable into the Integrated Recorded Announcer card 8-pin mini-DIN female connector located at the bottom of the faceplate or on the Audio-adaptor.
3	Plug the NTAG81CA cable DB-9 female connector into the terminal. If the terminal requires a different connector, install an adaptor cable or a compact adaptor between the terminal and the NTAG81CA cable.
4	If the terminal is more than 10 ft (3 m) from the Integrated Recorded Announcer card, use the 16-foot NTAG81BA

Maintenance Extender Cable. If the terminal requires a different connector, use an adaptor cable of the appropriate length.

--End--

To connect a modem to the maintenance connection on the Integrated Recorded Announcer card Audio-adaptor, follow the steps in Procedure 6 "Connecting a modem to Audio-adaptor" (page 68).

Procedure 6
Connecting a modem to Audio-adaptor

Step	Action
1	Place the modem in the desired location.
2	Plug the modem cable into the 9-way D-sub connector on the Audio-adaptor.

--End--

For additional information on how to set up the modem, refer to "Integrated Recorded Announcer card interface connectors" (page 247).

Connecting an external audio device

An analog audio source and receiver can be connected to the Integrated Recorded Announcer card for the following purposes:

- recording music or announcements to file
- connecting directly through a trunk emulation port/channel into the system for MOH

The analog device can be connected to the audio port on the Integrated Recorded Announcer card Audio-adaptor.

Analog to internal pass-thru switchover

For Music-On-Hold, the analog port can be used to assign music from an external source to internal channels.

To allow switching from the analog source to an internal channel, the configuration of each channel is polled every 30 seconds to check for an assignment switchover.

If the assignment is for a voice file, the playthrough is stopped and the voice file starts immediately. The opposite is also possible. This switchover always occurs at the end of the file to avoid hearing truncated announcements.

The Integrated Recorded Announcer card Audio-adaptor has an audio jack that provides one audio input.

To connect the external audio source to the Integrated Recorded Announcer card Audio-adaptor audio jack, follow the steps in Procedure 7 “Connecting audio devices to the Integrated Recorded Announcer card faceplate” (page 69).

Procedure 7
Connecting audio devices to the Integrated Recorded Announcer card faceplate

Step	Action
1	Plug the 3.5 mm jack on the common side of the NTAG81AA Audio Cable into the 3.5 mm Audio Jack on the Integrated Recorded Announcer card backplane.
2	Plug the audio input end of the NTAG81AA cable connector into the audio source device. If the source is at a distance from the Integrated Recorded Announcer card, an extension may have to be used (not supplied).
3	Plug the audio output end of the NTAG81AA cable connector into the audio receiver device for announcement backup. If the source is at a distance from the Integrated Recorded Announcer card, an extension may have to be used (not supplied). ***Note:*** For the Integrated Recorded Announcer card, a standard 3.5 mm stereo audio jack can be used to provide an external audio source.

--End--

LAN access installation and setup

The Integrated Recorded Announcer card (NT0966) can be connected to a LAN. The LAN access to the Integrated Recorded Announcer card provides the ability to:

- access the card through a common web browser to perform OA&M functions
- perform FTP uploads and downloads of files to and from the card
- Telnet to the card from a remote site

Note: LAN access to the Integrated Recorded Announcer card is optional. LAN access is not necessary to perform any of the OA&M functions through the Text-based User Interface.

The following sections describe the procedures for setting up and using the Integrated Recorded Announcer card LAN capability.

To enable the LAN capabilities, follow the steps in Procedure 8 "Enabling the LAN capabilities" (page 70).

Procedure 8
Enabling the LAN capabilities

Step	Action
1	For LAN Configuration options, refer to "Ethernet/LAN requirements" (page 89).
2	Obtain the IP address, subnet mask, gateway, and IP method from the system administrator. ***Note:*** The IP method can either be 'bootp' or 'static'. To disable the IP connection, but keep the Integrated Recorded Announcer card working, set the IP method to 'disabled'. 'bootp' is similar to Dynamic Host Configuration Protocol (DHCP).
3	Install the Integrated Recorded Announcer card in the appropriate slot.
4	Connect the VT100-type maintenance terminal.

--End--

To configure the IP address, subnet mask, gateway, and IP method for the Integrated Recorded Announcer card, follow the steps in Procedure 9 "Configuring the IP address, subnet mask, Gateway, and IP method" (page 71).

Procedure 9
Configuring the IP address, subnet mask, Gateway, and IP method

Step	Action
1	Log in to the Integrated Recorded Announcer Text-based User Interface by entering the user name and password and selecting **-Login-** at the login window. Refer to “Login window” (page 145) for further information.
2	At the Main Menu, select **2** to access the Pack Administration menu.
3	At the Pack Administration menu, select 5 to access the Ethernet Configuration window.
4	A the Ethernet Configuration window, enter the new IP address, subnet mask, gateway, and IP method. This new information writes over any old LAN configuration information that the card contains.
5	Select **-Set-** to set the new LAN configuration information. A confirmation notice at the bottom of the Ethernet Configuration window indicates successful completion of the task. Refer to “Ethernet Configuration” (page 187) for further information.
6	Reboot the Integrated Recorded Announcer card to activate the new LAN configuration.

--End--

After installing the Audio-adaptor and configuring the IP address, subnet mask, and gateway for the Integrated Recorded Announcer card, the BUI can be accessed. To access the BUI, use a standard web browser that supports HTML frames. Nortel Networks recommends using a minimum of Netscape Communicator 4.7 or Internet Explorer 4.0.

To access the Integrated Recorded Announcer BUI, follow the steps in Procedure 10 “Accessing the Integrated Recorded Announcer BUI” (page 71).

Procedure 10
Accessing the Integrated Recorded Announcer BUI

Step	Action
1	Enter the IP address of the card in the URL address field of the browser. The Integrated Recorded Announcer BUI login window appears.
2	Select the username; **admin** is the default.

3 Enter the password; **admin000** is the default password for **admin**.

4 Click on the **Login** button.

If login is successful, a confirmation message appears.

5 Click on **Main Menu**.

The main Integrated Recorded Announcer Administration page appears.

--End--

After accessing the BUI, OA&M functions can be performed.

The LAN connection to the Integrated Recorded Announcer card enables a user to Telnet to the Text-based User Interface (see "Text-based User Interface" (page 141)) from a remote site and interact with the Integrated Recorded Announcer card in the same way as using a local maintenance terminal.

To Telnet to the Integrated Recorded Announcer card, follow the steps in Procedure 11 "Telneting to the Integrated Recorded Announcer card" (page 72).

Procedure 11
Telneting to the Integrated Recorded Announcer card

Step	Action
1	Use the Telnet command from any Operating System's command line.
2	Use the HyperTerminal program.

--End--

FTP downloads and uploads

LAN connection to the Integrated Recorded Announcer card allows the transfer of files to and from the card using File Transfer Protocol (FTP)? To use the FTP capability, the following are required:

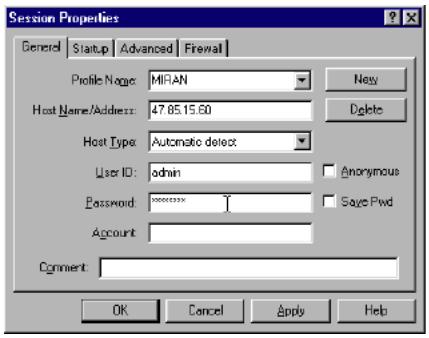
- a connection of the Integrated Recorded Announcer card to the LAN through the Integrated Recorded Announcer card Audio-adaptor
- a permanent assignment of an IP address to the card
- a valid user name and password with which to access the card
- a standard FTP client application. (The figures in this section show the use of the WS_FTP Professional file transfer client.)

To transfer files to and from the Integrated Recorded Announcer card using FTP, follow the steps in Procedure 12 “Transferring files to and from the Integrated Recorded Announcer card using FTP” (page 73).

Procedure 12
Transferring files to and from the Integrated Recorded Announcer card using FTP

Step	Action
1	Open the FTP client application. Select Connect to open a dialog box similar to the one shown in Figure 12 "Logging in to the Integrated Recorded Announcer card through an FTP client application" (page 73).

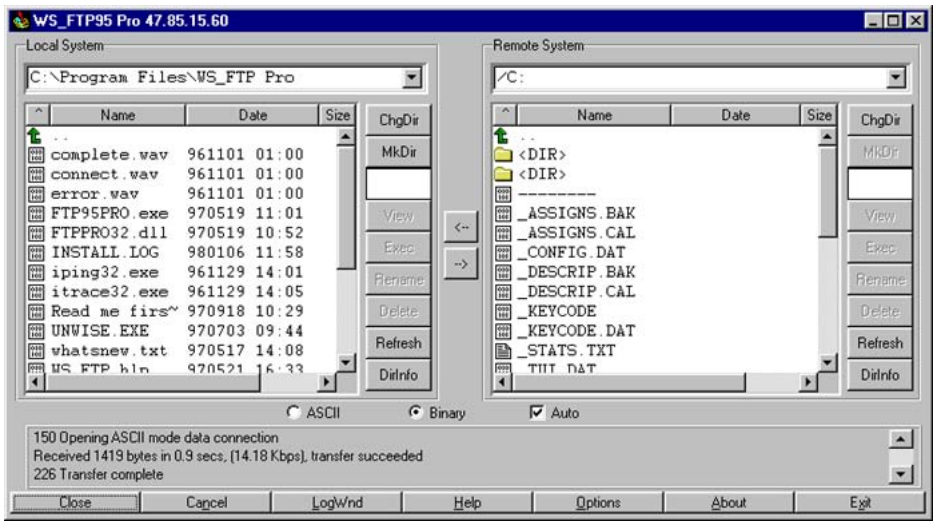
Figure 12
Logging in to the Integrated Recorded Announcer card through an FTP client application



2	Enter the IP address of the Integrated Recorded Announcer card in the Host Name/Address field.
3	Enter the user name and password for the card. This is the same user name and password used to log in to the Text-based User Interface.
4	Click **OK** to connect to the Integrated Recorded Announcer card. A dialog box appears, similar to that shown in Figure 13 "Accessing the Integrated Recorded Announcer card through an FTP client application" (page 74). From here, files can be transferred to and from the card using FTP.

--End--

Figure 13
Accessing the Integrated Recorded Announcer card through an FTP client application



Note 1: Select 'ASCII' format for the transfer of text files and 'Binary' format for the transfer of all other files.

Note 2: If a .WAV file is copied to the Integrated Recorded Announcer card, remember the .WAV file must be converted to .ALW or .ULW format before an assignment can be created for the file. Refer to "Convert Announcement File" (page 167) for instructions on converting sound files.

The Remote System lists the files in the C: drive of the Integrated Recorded Announcer card. If files must be transferred to or from the A: drive, select the 'Change Directory' option on the FTP client application. Enter /A: as the new directory name.

The FTP client application can also be used to perform file maintenance functions on the Integrated Recorded Announcer card, such as:

- renaming or deleting files
- creating or deleting subdirectories

Most FTP client applications also allow profiles to be created for addresses that are frequently accessed. Use this capability to create a profile for each Integrated Recorded Announcer card in the network. This prevents having to enter the IP address, user name, and password each time a card is accessed.

Performing upgrades and replacements

Administration tasks can include upgrading RAN applications and performing backups. Upgrades can include:

- storage capacity expansion
- channel capacity expansion

PC Card backups

Backup is available to a PC Card, if required. The configuration must be backed up. Refer to "Backup Configuration" (page 170).

Insert a blank PC Card into the A: drive, as though increasing the messaging storage capacity. Use the **BACKUP** command on the Command line.

For details, refer to "Text-based User Interface" (page 141) and "Telephone User Interface" (page 215). The new card is now available as a backup medium rather than as a storage medium.

If a backup is done to a non-blank card, the existing files are overwritten.

Note: When backing up recordings and configuration, define the drive to use for backup.

Backups save configuration files. The configuration files contain information relating to the RAN/music PCM data stored on file such as:

- announcement-to-channel allocation
- passwords
- configuration variables

Restoring configuration

When the Integrated Recorded Announcer card is rebooted, the Integrated Recorded Announcer configuration is restored from the disk using the A: drive first and then the C: drive.

RAN upgrades

Two types of upgrade are available for Integrated Recorded Announcer:

- a software upgrade for a bug fix and/or addition of new features
- a memory upgrade to increase the voice storage capacity

To perform a local software upgrade, follow the steps in Procedure 13 "Upgrading local software" (page 76).

Procedure 13
Upgrading local software

Step	Action
1	Insert the new feature PC Card into the A: drive slot on the Integrated Recorded Announcer card. ***Note:*** The configuration file can be prepared in the distributor's office for each Integrated Recorded Announcer customer and then placed on the PC Card, along with the application and/or recorded announcements to be upgraded. Then, the PC Card is sent to the customer, who inserts the PC Card into the Integrated Recorded Announcer card and performs the upgrade procedure.
2	Initiate the upgrade by using the "Software Upgrade" (page 182). Integrated Recorded Announcer copies across the new application while maintaining all files from the existing ATA Flash memory that are still needed, such as existing recorded announcements and configuration.
3	Once the upgrade is complete, remove the old Flash card, unless it is needed to provide additional storage capacity.
4	Enter the new keycode on the Integrated Recorded Announcer card terminal to activate new features just installed. ***Note 1:*** If the software upgrade is a maintenance type (for example, a bug fix), a new keycode is not needed. ***Note 2:*** If the upgrade consists of a new application or enhancement, the administrator must enter a new keycode on the maintenance terminal to enable the upgrade.
5	Perform a cold reboot to activate the new feature(s).

--End--

To upgrade Integrated Recorded Announcer cards remotely from any location on the customer's network, follow the steps in Procedure 14 "Upgrading remote software" (page 76).

Procedure 14
Upgrading remote software

Step	Action
1	Log in to the card using an administrator level password. The access can be either through Telnet or through a modem connection.

2 Download the software upgrade binary over the network using FTP. Sufficient space must be available on the Integrated Recorded Announcer card.

3 Enter the software upgrade menu in the Text-based user interface through a serial or a Telnet connection, and call up the file that was just downloaded. Complete the upgrade using "Software Upgrade" (page 182).

4 Enter the new keycode on the Integrated Recorded Announcer card terminal to activate new features just installed.

Note 1: If the software upgrade is a maintenance type, such as bug fix, a new keycode is not needed.

Note 2: If the upgrade consists of a new application or enhancement, the administrator must enter a new keycode on the maintenance terminal to enable the upgrade.

5 Perform a cold reboot to activate the new feature(s).

--End--

Increasing voice storage

The voice storage capacity can be increased to the maximum amount available on commercially available PC Cards (up to five hours).

To expand the announcement storage capacity, insert a blank PC Card in the A: drive slot on the faceplate. The Integrated Recorded Announcer card software checks the memory card for formatting information. If none exists, the Integrated Recorded Announcer card formats the card in DOS format. When completed, the full capacity of the card is available for storage.

Recording announcements remotely for use on the Integrated Recorded Announcer card

Integrated Recorded Announcer enables a customer to record announcements on a remote PC, and then transfer them, using FTP, to the Integrated Recorded Announcer cards that reside in different locations. Through the Integrated Recorded Announcer BUI, the announcements can also be assigned to the various Integrated Recorded Announcer cards from the same remote PC.

For recording announcement files on a PC, Nortel Networks recommends the GoldWave™ shareware.

To record an announcement on a PC using GoldWave, follow the steps in Procedure 15 "Recording an announcement" (page 78).

Procedure 15
Recording an announcement

Step	Action
1	At the GoldWave window, go to the **Options** menu on the toolbar and select **File types**.
2	In the filename extension, insert **snd**; set Rate (Hz) to **8000**; set **Format**: to "**PCM**"; and set **Attributes**: to **8-bit**, **mono**, **unsigned**.
3	Click the **OS Associate** box and close the window.
4	Click the new icon on the toolbar.
5	Select **Voice** under quick settings, select **Mono** under channels, and select the desired length of the announcement.
6	Close the window.
7	Go to **Tools** on the toolbar and select **Device controls**.
8	Press the red button to begin recording. Press the red button again to finish the recording. ***Note:*** Use the **Help** menu to select the recording device.
9	Go to **Effects** on the toolbar and select **Resample**.
10	Change **Rate (Hz)** to **8000**.
11	Select **OK**.
12	Go to **File** on the toolbar and select **Save as**.
13	Input the desired filename; select the file type, either ***.snd**" or ***.raw**; and select **µ-law**, **mono**, or a**-law mono** in the **File Attributes:**.
14	Select **Save**.
15	Go to Windows Explorer, locate the file, and rename the file extension to .**ulw** (or .**alw**, if appropriate).
16	Transfer the recording to a PC Card or send it by FTP to the Integrated Recorded Announcer card's C: drive.
17	Once the recording is on the Integrated Recorded Announcer card's C: drive, assign it to any available Integrated Recorded Announcer card's channel. ***Note 1:*** Remember to send announcement files as type **Binary** by using FTP. ***Note 2:*** As an alternative to Step 15, save the file as type *.**wav** instead of *.**snd** or *.**raw** in Step 13. Then skip Step 15 and transfer the .wav file to the Integrated Recorded Announcer card's C: drive as described in Step 16. However, once the .wav file is on the C: drive, it must be converted

to µ-law or a-law format before the announcement can be assigned to an Integrated Recorded Announcer card channel. See “Convert Announcement File” (page 167).

--End--

To replace old announcement files with the new files that are on the PC Card, follow the steps in Procedure 16 “Replacing old announcement files” (page 79).

Procedure 16
Replacing old announcement files

Step	Action
1	Display existing (old) files by accessing the File Explorer window from the File Commands menu. “File Commands menu” (page 174)
2	Delete the files to be replaced. “Delete File” (page 177)
3	Copy new files from the PC Card into the drive where the other announcement files are located. “Copy File” (page 176)
4	Convert files from .WAV to .ULW or .ALW, or convert files from .ULW or .ALW to .WAV, if required. “Convert Announcement File” (page 167) Professionally recorded prompts must be in .WAV, .ALW, or .ULW format. “Record Announcement from External Channel” (page 166) Also see “Sound recording configuration” (page 245).

--End--

Foreign language prompt

The Integrated Recorded Announcer TUI uses English language prompts by default. The application can be configured to operate with French, German, and Italian prompts. The appropriate language prompts files can be downloaded from the Nortel Networks web site.

To change the language prompts used by the Telephone User Interface, follow the steps in Procedure 17 “Changing language prompts used by the Telephone User Interface” (page 80).

Procedure 17
Changing language prompts used by the Telephone User Interface

Step	Action
1	Create a directory on the C: (internal) drive or A: (PC Card) drive. This can be achieved by accessing the **Make Directory** link on the BUI navigator tree or by the Text User Interface. Enter the directory name as FRENCH, GERMAN, or ITALIAN.
2	Download the prompts from the web site into the respective directory.
3	Go to the **Configuration Variables Modify** page on the BUI.
4	Select the **Language** variable.
5	Change the **Language** variable to FRENCH, GERMAN, or ITALIAN, and click modify. This modification can be verified by going to the **Configuration Variables View**. The prompts on the TUI will now be in the language defined in the **Language Configuration Variable**. ***Note:*** English language prompts are the default and are part of the Integrated Recorded Announcer application. For example, if the language is changed to English, the English prompts do not need to be downloaded.

--End--

Engineering guidelines

Contents

This section contains information on the following topics:

Introduction

General system engineering guidelines are described in *Communication Server 1000M and Meridian 1 Large System Planning and Engineering (NN43021-220)* and *Communication Server 1000M and Meridian 1 Small System Planning and Engineering (NN43011-220)*. CS 1000S general system engineering guidelines are described in *Communication*

Server 1000E Planning and Engineering (NN43041-220). The following information deals specifically with the engineering guidelines for Integrated Recorded Announcer planning and implementation. For Integrated Recorded Announcer technical characteristics, refer to "Environmental and electrical regulatory data" (page 253).

Software requirements

The Integrated Recorded Announcer card emulates the Enhanced Extended Universal Trunk (EXUT) card. The Integrated Recorded Announcer card uses the existing Trunk Administration LD 14 and Trunk Route Administration LD 16 programs to configure the Integrated Recorded Announcer trunk parameters and Integrated Recorded Announcer trunk routes.

The available software options that the user has affect the functions of the Integrated Recorded Announcer card. The following paragraphs detail the differences.

For users with RAN Broadcast

With the RAN Broadcast feature, each internal one-to-one channel can support up to 30 callers simultaneously using a single time slot. RAN Broadcast also provides other benefits, such as the ability to stagger announcements based on time or number of callers in queue, and the ability to provide MOH until a RAN is available.

Small Systems with RAN Broadcast

The Small Systems come from the factory with 12 preinstalled RAN Broadcast connections. This allows 12 callers to hear the same RAN announcement on a single one-to-one channel. Additional RAN Broadcast connections for the Small Systems can be purchased.

CS 1000S with RAN Broadcast

CS 1000S does not come with preinstalled RAN Broadcast connections. The RAN Broadcast connections (NTM459AA) can be purchased in increments of four.

Large Systems with RAN Broadcast

Large Systems do not come with preinstalled RAN Broadcast connections. RAN Broadcast connections (SW150A) can be purchased in increments of one.

Example:

A customer with a Large Systemrequires RAN for two incoming trunk routes. Each route requires a first RAN for up to 25 callers and a second RAN for up to 20 callers. The system then requires 90 RAN Broadcast connections and one small Integrated Recorded Announcer card.

Table 14 "Card slots available for Integrated Recorded Announcer installation in different modules" (page 83) lists the card slots in which Integrated Recorded Announcer can be installed.

Table 14
Card slots available for Integrated Recorded Announcer installation in different modules

System modules	Suitable card slots
NT8D37BA/EC IPE modules	All available IPE card slots
NT8D37AA/DC IPE modules	Slots 0, 4, 8, and 12
NTAK11BD Cabinets	Slots 1 to 10 in Main Cabinet Slots 11 to 50 in Expansion Cabinet(s)
NTDK91BB Main Chassis	Slots 1 to 3 (not 4)
NTDK92BB Chassis Expander	Slots 7 to 10
NTDU14 Media Gateway	Slots 1 to 4
NTDU15 Media Gateway Expansion	Slots 7 to 10

For users without RAN Broadcast

Note: This section applies to customers who have the MLSS option, but do not have RAN Broadcast.

With the MLSS RAN mode, the Integrated Recorded Announcer one-to-one channels can each have the same RAN announcement or music assignment, and the same MLSS RAN trunk route assignment. Therefore, multiple callers can hear the same RAN announcement, although listening on different Integrated Recorded Announcer one-to-one channels. One large Integrated Recorded Announcer card in MLSS mode supports up to eight callers listening to the same announcement.

Note: Nortel Networks recommends that port/channel 7 of the Integrated Recorded Announcer card be reserved exclusively for the TUI. This configuration leaves a maximum of seven listeners hearing the same announcement on a single Integrated Recorded Announcer card.

For example, ten callers must be able to hear the same RAN announcement.

Use ten Integrated Recorded Announcer one-to-one ports/channels (two Integrated Recorded Announcer cards), placing all of them in the same MLSS RAN route and placing the same recording on all ten channels.

Note: The MLSS RAN mode allows playing of the same recording independently on multiple channels over the same RAN route.

Integrated Recorded Announcer requirements

The Integrated Recorded Announcer equipment can be engineered to meet specific site and application requirements. Select the number of ports/channels and the size of the memory required to support current and future requirements. The Integrated Recorded Announcer card is available in a basic form that provides a limited number of ports/channels, and minimum memory size. Basic Integrated Recorded Announcer can be easily upgraded by building on the existing basic platform to increase the number of ports/channels and the memory size.

Integrated Recorded Announcer card channel capacity options

The Integrated Recorded Announcer card comes in three port/channel capacity options. These options are listed in Table 15 "Integrated Recorded Announcer card capacity options" (page 84).

For each capacity option, port 7 can be configured as a DID port for telephone-based TUI OA&M access. In this case, port 7 of the large Integrated Recorded Announcer card option is not available for RAN or MOH applications. Alternatively, port 7 on a large Integrated Recorded Announcer card can be configured for RAN and MOH when not needed for telephone-based OA&M access.

Table 15
Integrated Recorded Announcer card capacity options

Integrated Recorded Announcer card capacity option	No. of one-to-one ports/channels (North America)	No. of one-to-one ports/channels (International)
Small	Not applicable	2 (See Note 1)
Medium	4 (See Note 1)	4 (See Note 1)
Large	8	8
Note 1: Also includes port 7 for the Telephone User Interface (TUI). ***Note 2:*** Integrated Recorded Announcer does not support multi-cross connect ports.		

The small and medium Integrated Recorded Announcer card options continue to have all one-to-one ports/channels available for RAN and MOH, because port/channel 7, which is used for telephone-based OA&M access, does not count against the port capacity for these two options.

Integrated Recorded Announcer card listener capacity options

The size of the Integrated Recorded Announcer card (small, medium, or large) affects the number of simultaneous calls that the Integrated Recorded Announcer card can support. The RAN Broadcast feature also affects the number of simultaneous calls that the Integrated Recorded Announcer card can support.

Without RAN Broadcast, each internal one-to-one port can support a single call at a time. With RAN Broadcast, each internal one-to-one port can support 30 simultaneous listeners.

Table 16 "Integrated Recorded Announcer card call-handling capacities" (page 85) lists the total call-handling capacity for each Integrated Recorded Announcer card size, with and without RAN Broadcast.

Table 16
Integrated Recorded Announcer card call-handling capacities

Integrated Recorded Announcer card size option	Call capacity without RAN Broadcast	Call capacity with RAN Broadcast
Small	2	30
Medium	4	120
Large	7 (8)	210 (240)
Note: If port 7 is configured for RAN, the figures in parentheses apply.		

Supported RAN modes

The Integrated Recorded Announcer card supports the following RAN modes for the internal channels:

- Internal one-to-one ports/channels support continuous and Level Start (LVL) RAN and MOH modes.
- Internal one-to-one ports/channels support Multi-Level Start/Stop (MLSS or MLVL) RAN and MOH modes.

  Note: Integrated Recorded Announcer supports Automatic Wake Up. To configure this feature on Integrated Recorded Announcer, refer to Automatic Wake Up in *Features and Services Fundamentals (NN43001-106)*.

Voice storage capacity

Expand the Integrated Recorded Announcer card storage capacity by installing a PC Card into the faceplate slot (A: drive).

Table 17 "Integrated Recorded Announcer card voice storage capacity expansion" (page 86) lists the memory size and the corresponding announcement recording time.

Table 17
Integrated Recorded Announcer card voice storage capacity expansion

Memory allocation	Recording time
Base Integrated Recorded Announcer card (NT0966CA) memory	approximately 20 to 24 minutes
64 Mb PC Card Flash memory	128 minutes
Each additional 1 Mb of Flash memory	2 minutes
Note: The royalty-free music file **(filename: music.mcf)** occupies approximately 6 minutes of the available 20 to 24 minutes of recording time.	

Power and ground requirements

The card slot backplane (AC or DC) provides power to the Integrated Recorded Announcer card.

> ***Note:*** The power supplied at the backplane card slot exceeds the power requirement for each Integrated Recorded Announcer card. Therefore, there is no restriction on the number of Integrated Recorded Announcer cards.

Table 18 "Integrated Recorded Announcer card power requirements" (page 86) displays the Integrated Recorded Announcer card power requirements.

Table 18
Integrated Recorded Announcer card power requirements

Configuration	+/–15V	5V	Total Power
Basic 8-port/channel	4.958 W	5.46 W	10.418 W

The power budget requirement for the Integrated Recorded Announcer card is within the allowable budget. The maximum IPE module per-slot power budget is 30 Watts, with an effective limitation of 20 Watts for thermal compensation.

Table 19 "Backplane power available (for each card slot)" (page 87) shows the maximum current available from each power supply rail.

Table 19
Backplane power available (for each card slot)

Supply Rail	Available on backplane	With dc-dc converter	Integrated Recorded Announcer card
3.3 V	—	2400 mA	8 W
5 V	2000 mA	2000 mA	10 W
+/– 15 V	800 mA	366 mA	10 W

The processor contains three separate grounds : logic, analog, and frame. Logic ground connects to the processor ground. The codec has its own separate analog ground that connects to the logic ground at a single point.

Each Integrated Recorded Announcer card I/O port routed to the backplane has its own ground to simplify connections.

External equipment requirements

The Integrated Recorded Announcer card can perform RAN applications without any external connections.

External devices must be connected to the Integrated Recorded Announcer card faceplate connector or Integrated Recorded Announcer Audio-adaptor, to perform any of the following operations:

- text-based (or terminal-based) OA&M
- web-based OA&M
- connecting external music sources to the Integrated Recorded Announcer card
- recording RAN announcements or music

Maintenance terminal requirements

A VT100 terminal, or a PC emulating a terminal, is used to:

- perform RAN and Integrated Recorded Announcer card administration
- perform maintenance and diagnostics on each Integrated Recorded Announcer card

A terminal can use:

- a menu system to perform administrative and maintenance functions
- commands that are entered on the command line

The terminal must be connected to the Integrated Recorded Announcer card RS-232 interface. The connection can be made:

- at the mini-DIN connector on the Recorded Announcer card faceplate using the NTAG81CA or NTAG81DA Maintenance Cable for occasional use
- at the Amphenol connector through a 9-pin D-Sub connector on the Audio-adaptor

The terminal interface must be set at:

- 9600 baud
- 8 data bits
- 1 stop bit
- no parity

The flow control is not supported.

Telephone for OAM access

An Unrestricted (UNR) DTMF telephone must be used for the TUI. To perform telephone-based OA&M, set port 7 to be a DID trunk in the system. The DID trunk route makes Integrated Recorded Announcer card port 7 accessible through a route access code from any unrestricted DTMF telephone. To access an Integrated Recorded Announcer card, enter a valid user name and password. Small and medium-size Integrated Recorded Announcer card options also use port 7 for telephone-based OA&M access.

External analog sources

The Integrated Recorded Announcer card provides a facility to connect tape recorders or CD players to do the following:

- record to file
- record announcements from the Integrated Recorded Announcer card onto a tape for backup
- record backed-up announcements to another Integrated Recorded Announcer card

These external analog sources can be connected to the Audio Jack connection on the Integrated Recorded Announcer Audio-Adapter using the NTAG81AA Audio Cable.

Note: With an Integrated Recorded Announcer card, a standard 3.5 mm stereo audio jack can also be used to provide an external audio source.

Integrated Recorded Announcer card hardware list

Table 20 "Integrated Recorded Announcer card hardware list" (page 89) lists specific Integrated Recorded Announcer card hardware components designed to support RAN and MOH applications in the system.

Table 20 "Integrated Recorded Announcer card hardware list" (page 89) does not list external equipment, such as terminals, telephones, and recorders, because they are (or can be) non-proprietary products.

Table 20
Integrated Recorded Announcer card hardware list

Component	Comments	Description
NT0966CA Integrated Recorded Announcer card	Provided	An IPE card that provides RAN and MOH applications over the system.
NTA0870611 Integrated Recorded Announcer Audio-adaptor	Provided	Converts the Amphenol connector to one Ethernet port (10BaseT), a local RS-232 maintenance connection, and a 9-pin DIN connector audio jack.
NTAG81BA Maintenance Extender Cable	Optional	A 5 m (16.4 ft) cable that extends the NTAG81CA, NTAG81GA, or the NTAG81DA cables when connecting a terminal to the Integrated Recorded Announcer card. It has one DB-9 male and one DB-9 female connector.
NTAG81CA Maintenance Cable	Optional	A 3 m (9.8 ft) cable that connects the terminal to the Integrated Recorded Announcer card 8-pin Mini-DIN maintenance port on the faceplate. It is terminated with an 8-pin Mini-DIN male connector and a DB-9 female connector.
16 Mb and 64 Mb Compact Flash	Optional	Use with PC Card adaptor. Used for backup and storage.
PC Card Adaptor	Optional	PC Card to Compact Flash Memory Card Adaptor

Ethernet/LAN requirements

Integrated Recorded Announcer customers can use the following alternatives for LAN connectivity access.

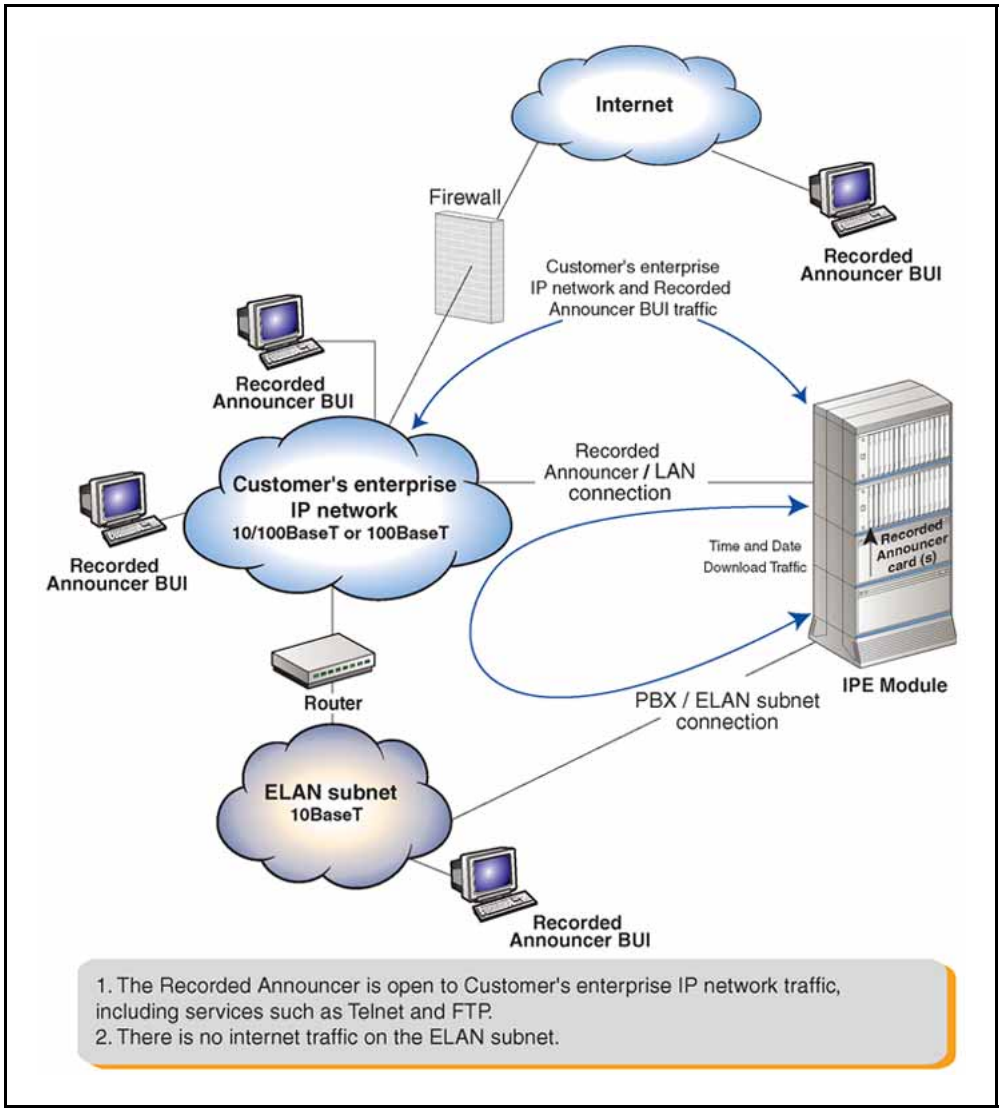
Table 21 "Firewall access permissions" (page 90) summarizes the recommended access permissions allowed by the firewall. All other paths not in the table should be denied.

Table 21
Firewall access permissions

Source	Destination	Protocol
WWW	Integrated Recorded Announcer	HTTP
Customer's enterprise IP network	Integrated Recorded Announcer	HTTP, FTP, Telnet

Figure 14 "Option 1 Enterprise IP network connection" (page 90) and Figure 15 "Option 2 ELAN subnet connection" (page 91) show the network configuration options available for Integrated Recorded Announcer.

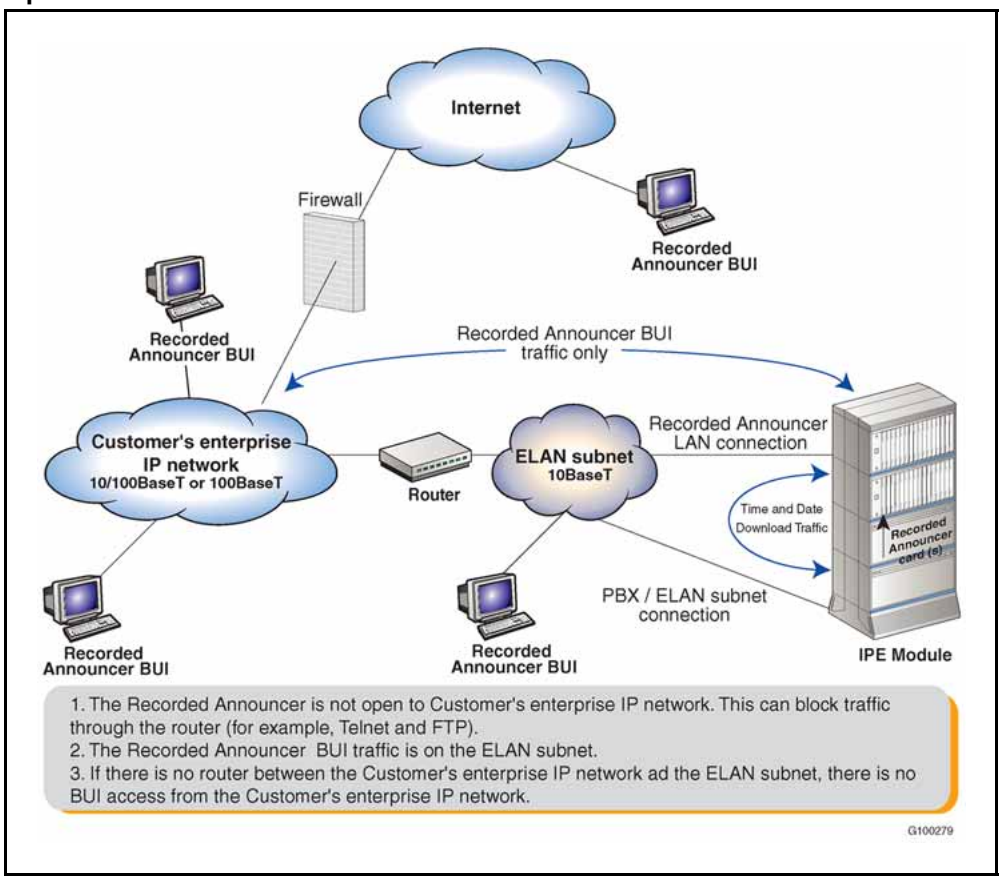
Figure 14
Option 1 Enterprise IP network connection



The Integrated Recorded Announcer network configuration Option 1 has the following restrictions:

- The Integrated Recorded Announcer is open to the customer's enterprise IP network traffic and includes services such as Telnet and FTP.
- There is no web traffic on the ELAN subnet.
- If there is no router available between the customer's enterprise IP network and ELAN subnet, manually program the time of day on the Integrated Recorded Announcer card.

Figure 15
Option 2 ELAN subnet connection



The Integrated Recorded Announcer network configuration Option 2 has the following restrictions:

- Integrated Recorded Announcer is not open to the customer's enterprise IP network traffic and the traffic can be blocked through a router, which blocks Telnet and FTP.
- The Integrated Recorded Announcer BUI traffic is available on the ELAN subnet.
- If there is no router between the customer's enterprise IP network and the ELAN subnet, the BUI cannot be accessed from the customer's enterprise IP network.

The following apply to LAN and intranet access only:

- Each site should select the most convenient option, taking into account the physical LAN endpoints available near the Integrated Recorded Announcer card.
- When there are multiple Integrated Recorded Announcer cards (that is, more than three) and the BUI is used frequently, BUI traffic can overload the ELAN subnet, so it may be better to connect the Integrated Recorded Announcer cards to the customer's enterprise IP network.

Summary of LAN installation information

To install and configure the LAN, follow the steps in Procedure 18 "Installing and configuring the LAN" (page 92).

Procedure 18
Installing and configuring the LAN

Step	Action
1	Determine if Integrated Recorded Announcer can be accessed from the internet. If yes, coordinate the firewall configuration with the user IS group according to Table 21 "Firewall access permissions" (page 90).
2	Determine the physical connection point of the Integrated Recorded Announcer card. ***Note:*** 10BaseT connectivity is required for this procedure.
3	Obtain the following Integrated Recorded Announcer card IP parameters from the user IS group: IP address, gateway address, and subnet mask.

4	Obtain the Mail Server IP address from the user IS group. Confirm that the Integrated Recorded Announcer card is allowed to access the server by SMTP.

--End--

Testing LAN configuration

To test the LAN configuration, follow the steps in Procedure 19.

Procedure 19
Testing the LAN configuration

Step	Action
1	After the Integrated Recorded Announcer card is installed and the IP parameters are configured, try to PING the Integrated Recorded Announcer card from any host in the customer's enterprise IP network or try to ping a host on the customer's enterprise IP network from an Integrated Recorded Announcer card.
2	In the case of internet access, try accessing the Integrated Recorded Announcer card from a web browser (HTTP access).

--End--

Using the LAN connection, the following actions can be performed

- Access a BUI from any PC with a common web browser, in order to perform web-based OA&M (the BUI is embedded on the Integrated Recorded Announcer card).
- Perform FTP downloads and uploads of announcement and music files from the Integrated Recorded Announcer card.
- Telnet to the Integrated Recorded Announcer card Text-based User Interface through the BUI.

Note: Connection to the LAN is optional. All OA&M functions can be performed through the Text-based User Interface.

To access each Integrated Recorded Announcer card over the LAN, the following are required:

- one Audio-adaptor and Serial Cable (available as an accessory)
- a shielded RJ-45 mating coupler and shielded RJ-45 cable to connect to the customer hub (not supplied)
- an IP address, subnet mask, and gateway for the Integrated Recorded Announcer card (supplied by the network administrator)

- an FTP client to transfer files remotely to and from the Integrated Recorded Announcer card. Nortel Networks recommends WS_FTP.
- a Telnet client for remote access to the Integrated Recorded Announcer card Text-based User Interface. Nortel Networks recommends HyperTerminal 4.0 or later.
- a web browser that supports HTML frames. Nortel Networks recommends a minimum of Netscape Communicator 4.7 or Internet Explorer 4.0.

  Note: European customers with a Large Systemthat require LAN access to the Integrated Recorded Announcer card must install the card (NT0966CA) in slot 0, 4, 8, or 12 in the IPE shelf.

LAN hub and router recommendations

A 10/100BaseT switch is recommended.

Engineering Integrated Recorded Announcer

Based on the options of the Integrated Recorded Announcer card equipment, external equipment, and the RAN and MOH requirements, an Integrated Recorded Announcer system can be engineered to meet the system requirements.

The following six examples illustrate the equipment that is required to meet specific site application requirements. It also discusses how to connect external devices to the Integrated Recorded Announcer card.

Example 1:

Application requirements:

- two internal RAN channels
- one hour of recording space on the Integrated Recorded Announcer card.
- telephone-based OA&M access

Equipment requirements:

- one small Integrated Recorded Announcer card
- one 64 Mb compact flash with PC Adaptor Card

Example 2:
Application requirements:

- multi-channel level start/stop control RAN mode for four internal RAN channels
- four minutes of recording space on the Integrated Recorded Announcer card
- terminal-based OA&M access

Equipment requirements:

- one medium Integrated Recorded Announcer card
- one NTAG81CA Maintenance cable (8-pin mini DIN to 9-pin D-sub) to connect to the faceplate

or

- one NTAG81BA Maintenance cable extender (9-pin D-sub male to 9-pin D-sub female) to connect to the Audio-adaptor

Note: In this mode, all four ports/channels play the same announcement independently over the same RAN route.

Example 3:
Application requirements:

- seven internal RAN channels
- one hour of recording space on the Recorded Announcer card
- telephone-based OA&M access
- terminal-based OA&M access
- web-based OA&M access

Equipment requirements:

- one large Recorded Announcer card
- one 64 Mb compact flash with PC Adaptor Card
- one NTAG81CA Maintenance cable (8-pin MINI DIN to 9-pin D-sub) to connect to the faceplate

or

- one NTAG81BA Maintenance cable extender (9-pin D-sub male to 9-pin D-sub female) to connect to the Audio-adaptor

Example 4:

Application requirements:

- 11 internal RAN channels
- one hour of recording space on the Recorded Announcer card
- telephone-based OA&M access
- terminal-based OA&M access

Equipment requirements:

- one large Integrated Recorded Announcer card
- one 48 Mb compact flash memory card adaptor
- one medium Integrated Recorded Announcer card for the international market
- two NTAG81CA Maintenance cables (8-pin MINI DIN to 9-pin D-sub) to connect to the faceplate

or

- two NTAG81BA Maintenance cable extenders (9-pin D-sub male to 9-pin D-sub female) to connect to the Audio-adaptor

Note: The total number of internal one-to-one ports is 12. Configure port 7 on each card as a DID trunk for telephone-based OA&M access. This reduces the number of available ports for RAN and MOH applications on the large Integrated Recorded Announcer card to seven ports, but the number of available ports on the small (or medium) Integrated Recorded Announcer card remains at four.

Example 5:

Application requirements:

- 14 internal RAN channels
- one hour of recording space
- two external analog (music) sources
- telephone-based OA&M access
- terminal-based OA&M access

Equipment requirements:

- one 64 Mb compact flash with PC Adaptor Card
- two NTAG81AA Audio cables to connect external analog sources, or two standard stereo cables
- two NTAG81CA Maintenance cables (8-pin MINI DIN to 9-pin D-sub) to connect to the faceplate

or

- two NTAG81BA Maintenance cable extenders (9-pin D-sub male to 9-pin D-sub female) to connect to the Audio-adaptor

Note: The total number of internal one-to-one ports is 16. Configure port 7 on each card as a DID trunk for telephone-based OA&M access. This reduces the number of available ports for RAN and MOH applications on each large Integrated Recorded Announcer card to seven ports.

Example 6:

Application requirements:

- three recorded announcements for up to 12 total simultaneous callers and MOH for up to 64 simultaneous callers
- four minutes of recording space on the Recorded Announcer card
- telephone-based, terminal-based, and web-based OA&M access

Equipment/system requirements:

- one medium Integrated Recorded Announcer card
- system software with RAN and Music Broadcast features
- 12 RAN Broadcast connections
- 64 Music Broadcast connections

Note: Nortel Networks preequips each Cabinet systemwith 12 RAN Broadcast connections and 100 Music Broadcast connections. For all other systems, additional RAN and Music Broadcast connections can be purchased in increments of one.

- one NTAG81CA Maintenance Cable (8-pin MINI DIN to 9-pin D-sub) to connect to the faceplate

or

- one NTAG81BA maintenance cable extender (9-pin D-sub male to 9-pin D-sub female) to connect to the Audio-adaptor

Integrated Recorded Announcer Browser User Interface

Contents

This section contains information on the following topics:

Introduction

This chapter describes the Integrated Recorded Announcer Browser User Interface (BUI). The BUI applies to Integrated Recorded Announcer cards that are configured with a valid IP address and connected to a LAN through an Ethernet adaptor. The BUI can also be accessed using a cross-over cable that provides a direct connection to the card.

For equipment and configuration information regarding the Integrated Recorded Announcer BUI, refer to “LAN access installation and setup” (page 70).

Note: OA&M functions can also be performed through the Text-based User Interface and the Telephone User Interface (TUI). Refer to “Text-based User Interface” (page 141) and “Telephone User Interface” (page 215).

The Integrated Recorded Announcer BUI allows the user to access the Integrated Recorded Announcer card through the LAN using a common web browser. For a web browser, Nortel Networks recommends using Netscape Communicator 4.7 or later, or Internet Explorer 4.0 or later.

Note: Any web browser used must support HTML frames.

To access the Integrated Recorded Announcer card through a web browser, the IP address of the Integrated Recorded Announcer card must first be configured through the Text-based User Interface on the maintenance serial port. Request a different IP address for each Integrated Recorded Announcer card in the system.

Accessing the BUI

To access the Integrated Recorded Announcer card through a web browser, enter the IP address of the card in the URL address field. The **Login** window appears. See Figure 16 "Login window" (page 100).

Figure 16
Login window

Logging in to the BUI

Note: If there are no Users configured in Integrated Recorded Announcer, only an Administrator can log in. Once logged in, the Administrator can configure the new Users.

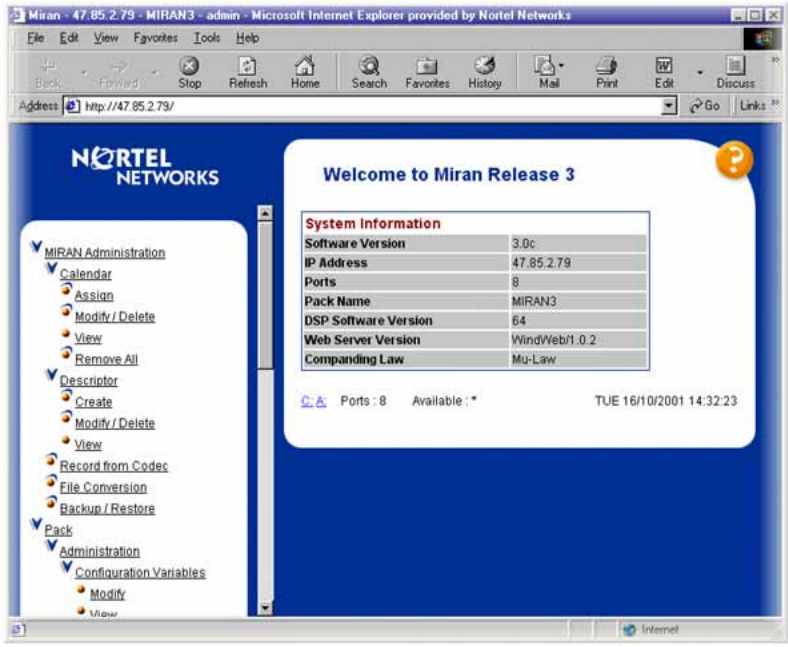
To log in to the Integrated Recorded Announcer BUI, follow the steps in Procedure 20 “Logging in to the BUI” (page 101).

Procedure 20
Logging in to the BUI

Step	Action
1	Enter a valid User Name in the User Name field.
2	Enter a valid password in the Password field. ***Note:*** For the initial login, default user names and passwords are the same as those for the Text-based User Interface. Refer to “Login window” (page 145).
3	Click **OK**. If the login is successful, the **Welcome to MIRAN** window opens. See Figure 17 "Welcome to MIRAN window" (page 102). ***Note:*** After three unsuccessful login attempts, the BUI locks the user out for 20 minutes.

--End--

Figure 17
Welcome to MIRAN window



Navigating the BUI

The Main BUI window consists of two panes. The left pane provides links to the OA&M functions to which the user has access.

The right pane of the Main BUI window is where OA&M information is displayed and where all user input takes place. Access the OA&M menus and windows by clicking on the appropriate link either in the left pane or in the selected menu.

Drop-down lists of available options and text fields are provided in all context windows that require data entry. Select the required option with the mouse, or enter the required information in the text box, before pressing the Submit/Execute button for the form. When the operation is completed, a confirmation or an error message is displayed in a results table.

The Menu links in the left frame of the BUI consist of:

- “Administration menu” (page 103)
- “Pack Administration menu” (page 113)
- “Pack Information menu” (page 123)
- “File System” (page 126)

- "Pack User menu" (page 133)
- "Support" (page 137)

At any time during the session, click on these links to access the menus.

The following sections describe menus and windows in the BUI.

Administration menu

The Administration menu consists of links to the following:

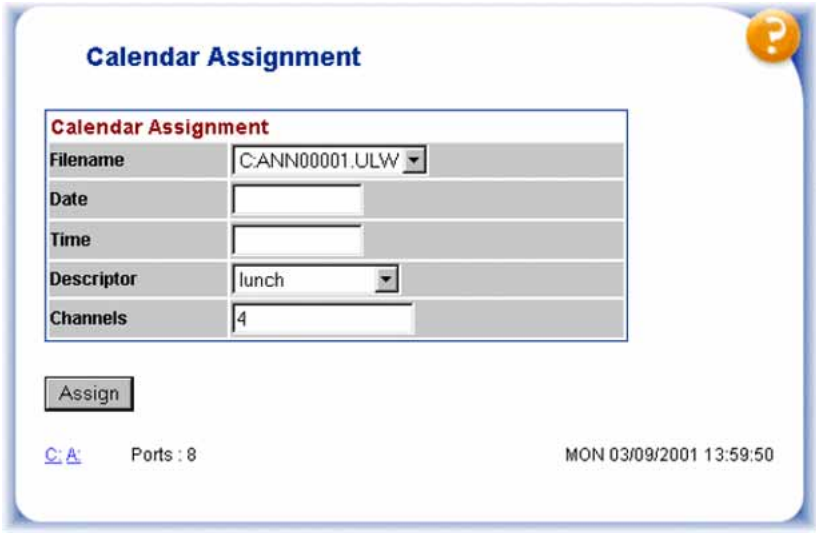
- Calendar
- Descriptor
- Record from Codec
- File Conversion
- Backup/Restore

Calendar operations

Use the Calendar windows for making calendar assignments to any of the available channels. For a description of the Calendar operation, refer to "Calendar assignment feature" (page 27).

Assign When the **Assign** link is clicked, the **Calendar Assignment** window opens. See Figure 18 "Calendar Assignment window" (page 103).

Figure 18
Calendar Assignment window



Use the Calendar Assignment window to add time- and date-based assignments to the 366-day calendar.

To add an entry to the calendar, follow the steps in Procedure 21 “Adding an entry to the calendar” (page 104).

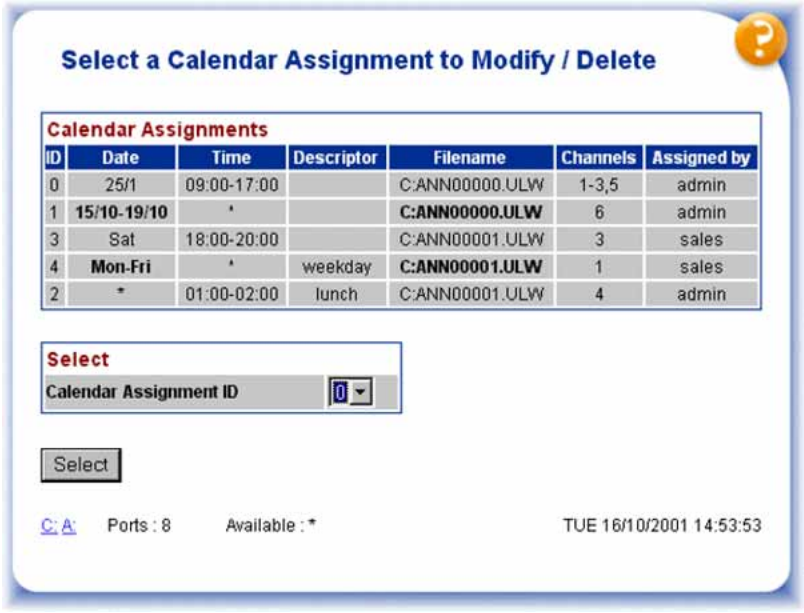
Procedure 21
Adding an entry to the calendar

Step	Action
1	Select an announcement file from the **Filename** drop-down list. The Filename drop-down list contains all available announcement files and the codec option. Selecting the codec assigns the input from the analog input on the Audio Adaptor.
2	Select a descriptor from the **Descriptor** drop-down list. The Descriptor drop-down list contains all calendar descriptors. ***Note:*** The descriptor selected from the Descriptor drop-down list overrides any values entered in the **Time** and **Date** fields.
3	To make an assignment with an explicit date and time: **a** Enter the date and time values in the **Date** and **Time** fields. **b** Select **None** from the Descriptor drop-down list.
4	In the **Channels** field, enter a string describing a channel or list of channels. Examples: • "0,3" for channels 0 and 3 • "4-7" for channels 4, 5, 6, and 7 • "0, 3-5,7" for 0, 3, 4, 5, and 7 • "*" (asterisk) for all channels to which the user has access ***Note:*** Error messages appear if users attempt to make assignments to channels to which they do not have access.
5	Click **Assign**.

--End--

Modify/Delete When a user clicks the **Modify/Delete** link, the **Select a Calendar Assignment to Modify/Delete** window opens. See Figure 19 "Select a Calendar Assignment to Modify/Delete window" (page 105).

Figure 19
Select a Calendar Assignment to Modify/Delete window



To modify or delete a calendar assignment, follow the steps in Procedure 22 “Modifying or deleting a calendar assignment” (page 105).

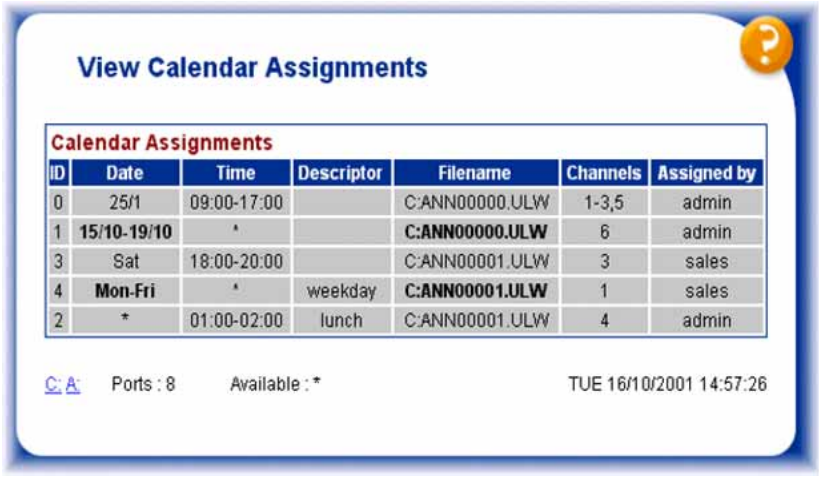
Procedure 22
Modifying or deleting a calendar assignment

Step	Action
1	Select a Calendar Assignment ID from the **Calendar Assignment ID** drop-down list.
2	Click **Select**. The Calendar Assignment’s information appears.
3	Modify the Calendar Assignment information or delete the Calendar Assignment. ***Note:*** Only the user who made the assignment can delete it. A user logged in as an administrator or higher can remove any assignment.

--End--

View When the **View** link is clicked, the **View Calendar Assignments** window opens. See Figure 20 "View Calendar Assignments window" (page 106).

Figure 20
View Calendar Assignments window



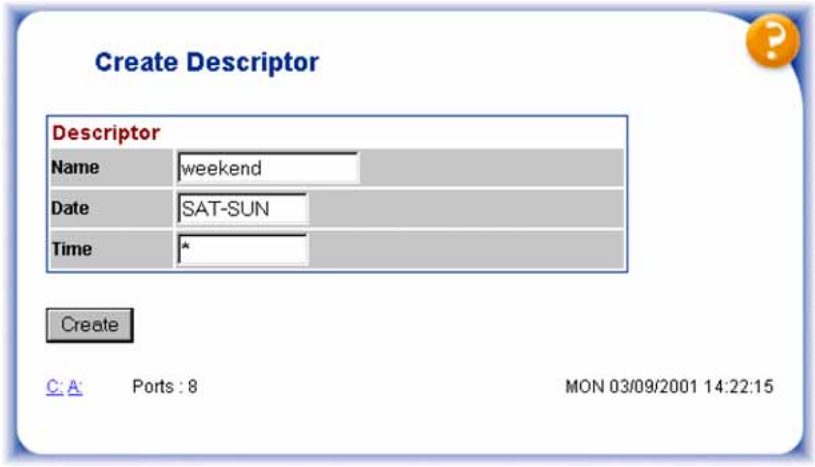
The **View Calendar Assignments** window shows all defined Calendar assignments, as well as which users made the assignments. Assignments in the Calendar that match the current date and time have their file name highlighted in bold.

Descriptor operations

Use the Calendar windows to add, modify, or delete calendar descriptors. Calendar descriptors are an easy way to store frequently used times and dates for assignments. Refer to “Calendar Descriptors” (page 29) for more information.

Create When the **Create** link is clicked, the **Create Descriptor** window opens. See Figure 21 "Create Descriptor window" (page 107).

Figure 21
Create Descriptor window



To create a calendar descriptor, follow the steps in Procedure 23 “Creating a calendar descriptor” (page 107).

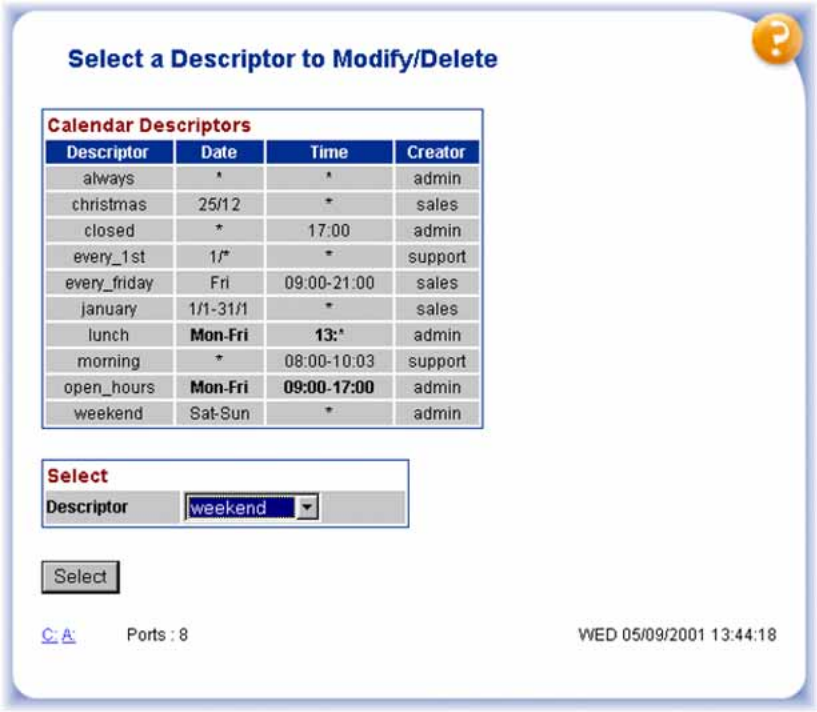
Procedure 23
Creating a calendar descriptor

Step	Action
1	Enter the Descriptor name in the **Name** field.
2	Enter the Date that applies to the Descriptor in the **Date** field.
3	Enter the Time that applies to the descriptor in the **Time** field.
4	Click **Create**.

--End--

Modify/Delete When the **Modify/Delete** link is clicked, the **Select a Descriptor to Modify/Delete** window opens. See Figure 22 "Select a Descriptor to Modify/Delete window" (page 108).

Figure 22
Select a Descriptor to Modify/Delete window

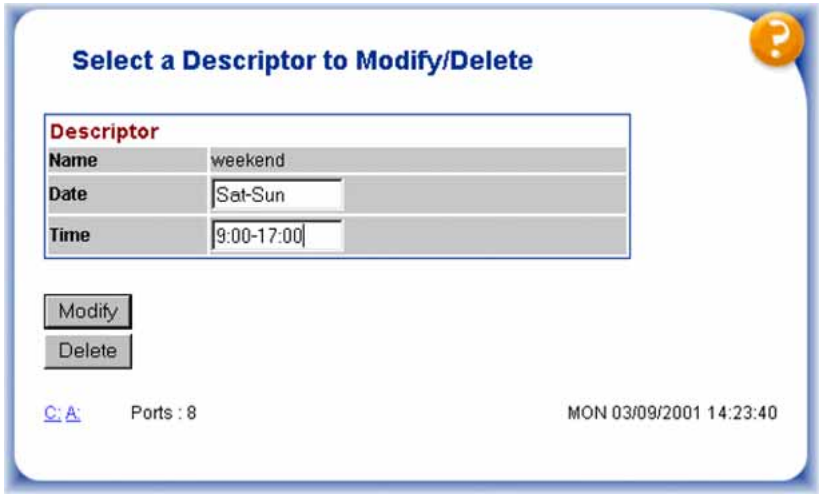


To modify or delete a calendar descriptor, follow the steps in Procedure 24 “Modifying or deleting a calendar descriptor” (page 108).

Procedure 24
Modifying or deleting a calendar descriptor

Step	Action
1	Select a calendar descriptor from the **Descriptor** drop-down list.
2	Click **Select**. The Descriptor information appears in the Modify/Delete window. See Figure 23 "Select a Descriptor to Modify/Delete window" (page 109).

Figure 23
Select a Descriptor to Modify/Delete window



3 Click **Modify** to modify the calendar descriptor information or **Delete** to delete the calendar descriptor.

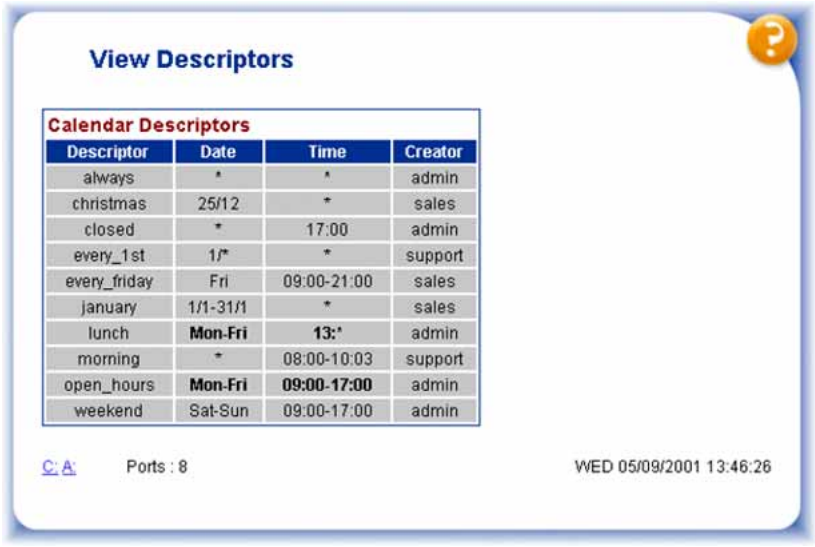
Note 1: Only the user who created the descriptor can delete it. A user logged in as an administrator or higher can remove any descriptor.

Note 2: If the calendar descriptor is modified, all calendar assignments using the descriptor are affected.

--End--

View When the **View** link is clicked, the **View Descriptors** window opens. See Figure 24 "View Descriptors window" (page 110).

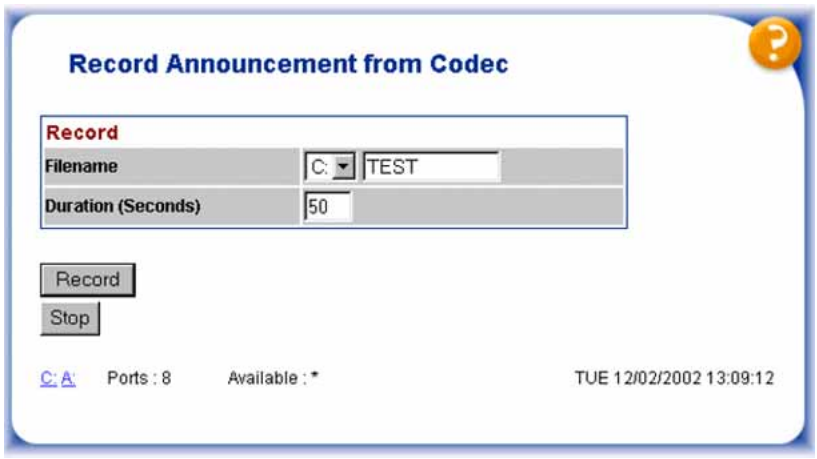
Figure 24
View Descriptors window



The **View Descriptors** window shows the currently defined calendar descriptors. If the current time matches the time specified in any calendar descriptor entry, the **Date** and **Time** fields appear in bold.

Record from Codec When the **Record from Codec** link is clicked, the **Record Announcement from Codec** window opens. See Figure 25 "Record Announcement from Codec window" (page 110).

Figure 25
Record Announcement from Codec window



To record an announcement, follow the steps in Procedure 25 “Recording an announcement” (page 111).

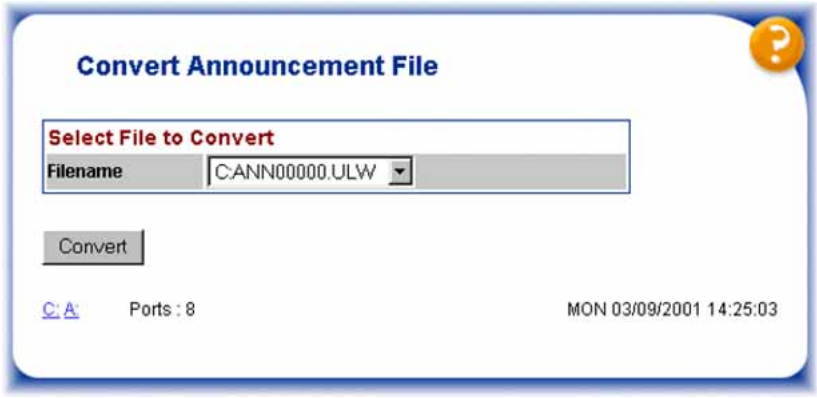
Procedure 25
Recording an announcement

Step	Action
1	Enter the file name of the announcement in the **Filename** field. The file name cannot be longer than 12 characters.
2	Enter the record duration in seconds in the **Duration** field. The record duration must be 5 to 120 seconds.
3	Click **Record**.

--End--

File Conversion When the **File Conversion** link is clicked, the **Convert Announcement File** window opens. See Figure 26 "Convert Announcement File window" (page 111).

Figure 26
Convert Announcement File window



The **Convert Announcement File** window allows users to convert announcement files from .WAV to .ULW/.ALW format and from .ULW/.ALW to .WAV format.

To convert an announcement file, follow the steps in Procedure 26 “Converting an announcement file” (page 112).

Procedure 26
Converting an announcement file

Step	Action
1	Select the announcement file name from the **Filename** drop-down list. ***Note:*** If a .ALW or.ULW file is selected, it is converted to a .WAV file by adding the .WAV header. Users can then edit the .WAV file on their PC using an application, such as GoldWave. If a .WAV file is selected, it is converted to a .ULW or .ALW file, provided that the .WAV file is in an 8 Khz, Mono, A-Law, or Mu-Law format. If the file is not in one of these formats, it is rejected.
2	Click **Convert**.

--End--

Backup and Restore When the **Backup/Restore** link is selected, the **Backup/Restore Configuration** window opens. See Figure 27 "Backup/Restore Configuration window" (page 112).

Figure 27
Backup/Restore Configuration window

The **Backup/Restore Configuration** window backs up the calendar, the descriptors, and the configuration variables to the A: drive, or restores the previously saved calendar, descriptors, and configuration variables from the A: drive. This is useful if it is desirable to have the same configuration on a number of Integrated Recorded Announcer cards.

Note: Only an Administrator, Distributor, or Super User can back up or restore variables.

To back up or restore, follow the steps in Procedure 27 “Backing up or restoring” (page 113).

Procedure 27
Backing up or restoring

Step	Action
1	Confirm that a backup or restore operation is to be performed.
2	Click **Backup** or **Restore**.

--End--

Pack Administration menu

The Pack Administration menu consists of links to the following:

- Configuration Variables
- Time and Date
- Ethernet Configuration
- Keycode Entry

Configuration Variables

Configuration Variables are variables that control different aspects of Integrated Recorded Announcer operation. These variables are not immediately visible to the user.

Note: Usually default settings are sufficient; however, if non-standard options are required, an advanced user can view and change variables as required.

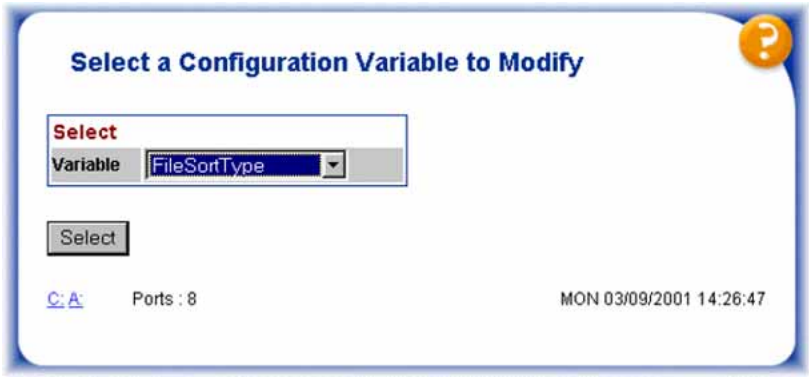
Table 22 "Configuration Variables" (page 114) lists the Configuration Variables available with Integrated Recorded Announcer.

Table 22
Configuration Variables

Variable	Value	Description
DspEcanEnabled	True	Enables/disables Echo Cancellation
DspReceiveGain	–18 – +6	Gain in Decibels into DTMF. Default to 0 dB. Can be used to adjust sensitivity of DTMF
FileSortType	Name, type, size or time	Sort method for file display
Language of TUI Prompts	English	Language in which Telephone User Interface prompt appears
PackName	Integrated Recorded Announcer	Name of pack user assigned name of Integrated Recorded Announcer card
SetBasedAccess	True/False	Telset User Interface access
StatsSaveFreq	1 – 7	Frequency in days at which to update Operational Statistics automatically
StatusUpdateFreq	0 – 60	Frequency in seconds at which to update status window for CUI/BUI
SysDownloadFreq	1 – 7	Frequency in days at which to automatically download System Time and Date
SysDownloadTime	00:00 – 23:59	Time at which to automatically download System Time and Date
SysIPAddress	AA.BB.CC.DD	System IP address. Used to download System Time and Date.
SysLoginEnabled	True/False	System Time and Date automatic download enabled/disabled
TuiSeizeAck	0 – 127	Trunk Seize Acknowledge code

Select To modify a Configuration Variable, first select the variable. When the Select link is clicked, the **Select a Configuration Variable to Modify** window opens. See Figure 28 "Select a Configuration Variable to Modify window" (page 115).

Figure 28
Select a Configuration Variable to Modify window



To select a Configuration Variable to modify, follow the steps in Procedure 28 “Selecting a Configuration Variable to modify” (page 115).

Procedure 28
Selecting a Configuration Variable to modify

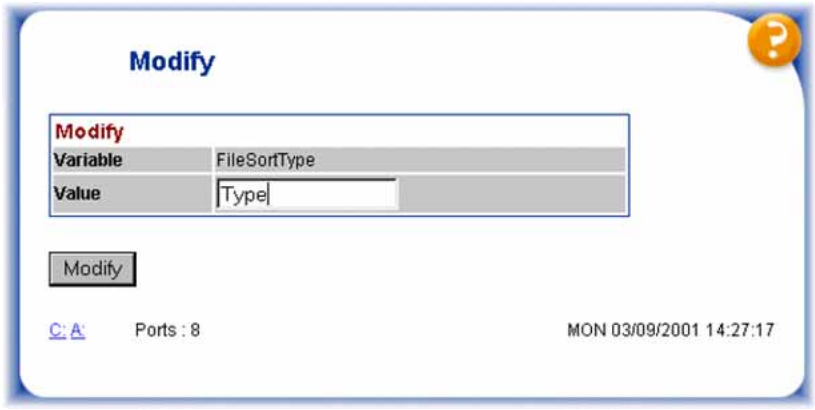
Step	Action
1	Select the Configuration Variable to be modified from the **Variable** drop-down list.
2	Click **Select**.

Note: Only an Administrator, Distributor, or Super User can modify the Configuration Variables.

--End--

Modify When the **Modify** link is clicked, the **Modify** window opens. See Figure 29 "Configuration Variables Modify window" (page 116).

Figure 29
Configuration Variables Modify window



Use the **Modify** window to customize some aspects of Integrated Recorded Announcer functionality by setting the values of the Configuration Variables. For each variable, there is an allowed set of values.

To modify a Configuration Variable, follow the steps in Procedure 29 “Modifying a Configuration Variable” (page 116).

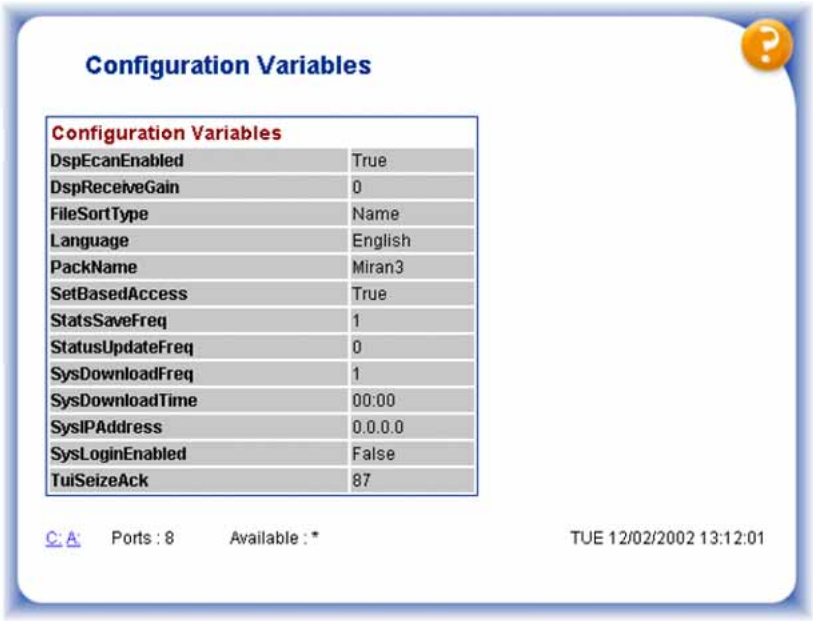
Procedure 29
Modifying a Configuration Variable

Step	Action
1	Enter the new value for the Configuration Variable in the **Value** text field.
2	Click **Modify**.
	--End--

When a Configuration Variable is modified, all variables are saved to C:_CONFIG.DAT. Configuration Variables are automatically reloaded every time the Integrated Recorded Announcer card is rebooted.

View When the **View** link is clicked, a list of all Configuration Variables appears when the **Configuration Variables** window opens. See Figure 30 "View Configuration Variables window" (page 117).

Figure 30
View Configuration Variables window



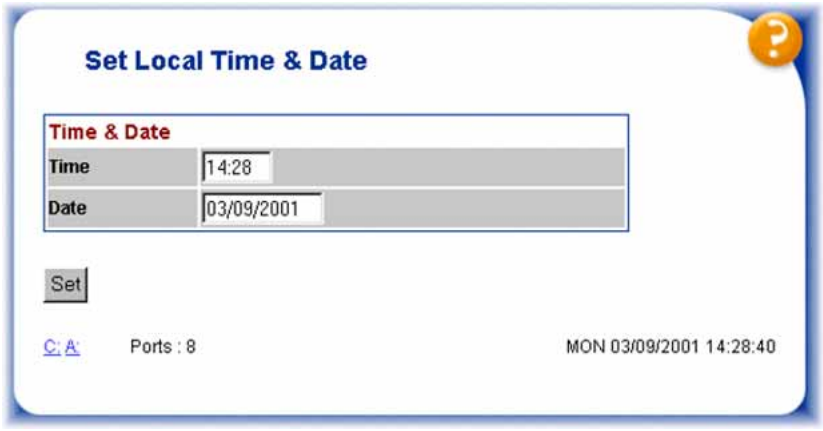
Time and Date

Under the **Time and Date** link, configure the local time and date and system synchronization.

> ***Note:*** Only an Administrator, Distributor, or Super User can set or download the Time and Date.

Local Time and Date When the **Local Time and Date** link is clicked, the **Set Local Time and Date** window opens. See Figure 31 "Set Local Time and Date window" (page 118).

Figure 31
Set Local Time and Date window



Use the **Set Local Time and Date** window to set the time on Integrated Recorded Announcer's internal real-time clock.

To set the time and date, follow the steps in Procedure 30 "Setting time and date" (page 118).

Procedure 30
Setting time and date

Step	Action
1	Enter the current time and date in the **Time** and **Date** text fields respectively.
2	Click **Set**. The Integrated Recorded Announcer internal clock automatically updates. ***Note:*** The Calendar is affected, as all assignments are dependent on time and date.

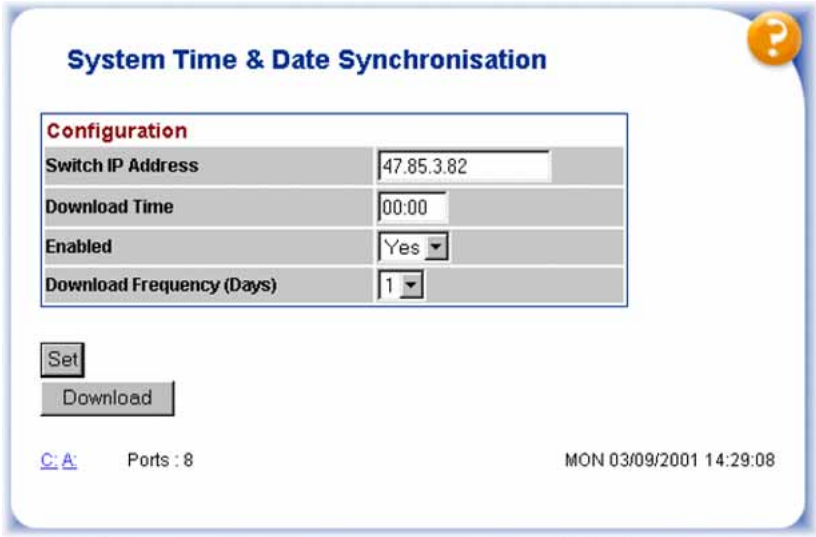
--End--

Time and Date Download

When **Time and Date Download** is clicked, the System Time and Date Synchronization window opens. See Figure 32 "System Time and Date Synchronization window" (page 119). Use this window to configure the system time and date synchronization.

With Integrated Recorded Announcer, the card retrieves the system time and date from the system on bootup. The Integrated Recorded Announcer card logs in remotely and extracts the time and date. The session is then closed and the real-time clock is set accordingly.

Figure 32
System Time and Date Synchronization window



CAUTION
Time and date synchronization can impact other system operations; therefore, Nortel Networks recommends that the synchronization process be carefully planned.

To configure the system time and date synchronization, follow the steps in Procedure 31 “Configuring the system time and date synchronization” (page 119).

Procedure 31
Configuring the system time and date synchronization

Step	Action
1	Enter the IP address of the system in the **Switch IP Address** text field. ***Note:*** The Switch IP Address is the address of the system in which the Integrated Recorded Announcer card is installed. This IP address must be on the same subnet as the Integrated Recorded Announcer card.

2 In the **Download Time** text field, enter the time when the Integrated Recorded Announcer card will attempt to synchronize with the system.

> ***Note:*** The Integrated Recorded Announcer card makes three attempts to synchronize with the system. If it is not successful, it will retry at the same download time once the number of days specified in the Frequency text field has elapsed.

3 Select **Yes** or **No** from the **Enabled** drop-down list.

Set Enabled to Yes or No depending on whether or not the System Time and Date Synchronization is enabled.

> ***Note:*** If Yes is selected from the Enabled drop-down list, the Integrated Recorded Announcer card automatically downloads the time and date from the system using the specified parameters and updates the internal real-time clock.

4 From the **Download Frequency (Days)** drop-down list, select the frequency of how often the Integrated Recorded Announcer card will attempt to synchronize with the system.

5 Click **Set** or **Download**.

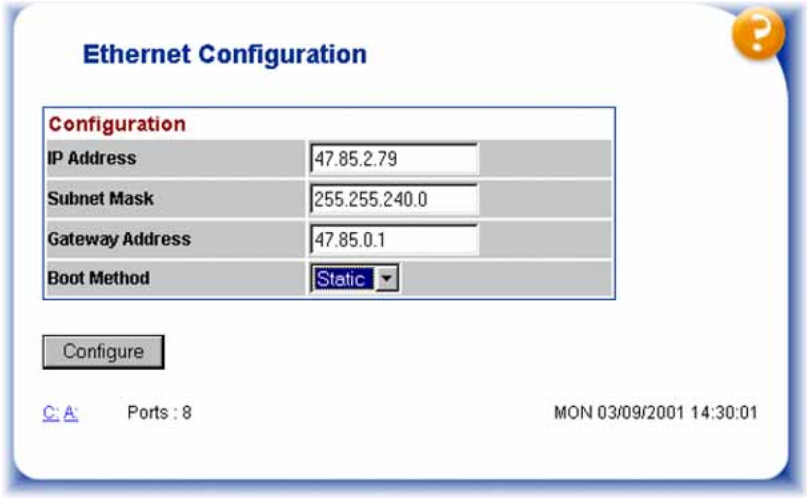
--End--

Ethernet Configuration

When the **Ethernet Configuration** link is clicked, the **Ethernet Configuration** window opens. See Figure 33 "Ethernet Configuration window" (page 121).

> ***Note:*** Only Administrators, Distributors, or Super Users can configure the Ethernet.

Figure 33
Ethernet Configuration window



CAUTION
Consult the network administrator before configuring the Ethernet parameters. Configuring these parameters incorrectly can cause problems for other users in the network. In extreme cases, configuring the Ethernet parameters incorrectly could lead to network outages.

To configure the Ethernet, follow the steps in Procedure 32 “Configuring the Ethernet” (page 121).

Procedure 32
Configuring the Ethernet

Step	Action
1	Enter the data in the **IP address** and **Subnet Mask** text fields.
2	Enter the Gateway IP address in the **Gateway Address** text field. The Gateway IP address tells Integrated Recorded Announcer where the local gateway router is located. It allows the Integrated Recorded Announcer card to be accessed from networks outside its own subnet.
3	Select the **IP boot method** from the **Boot Method** drop-down list. This boot method specifies how, from a networking perspective, the Integrated Recorded Announcer card will react on bootup. Select one of the following options from the Boot Method drop-down list:

- **Disabled:** The Integrated Recorded Announcer card will be inaccessible from the network
- **Static:** The static IP address which corresponds to the address on the window. This is manually configured on the Text-based User Interface or BUI.
- **DCHP:** The Integrated Recorded Announcer card will request its IP address from the DCHP server on the network.

4 Click **Configure**.

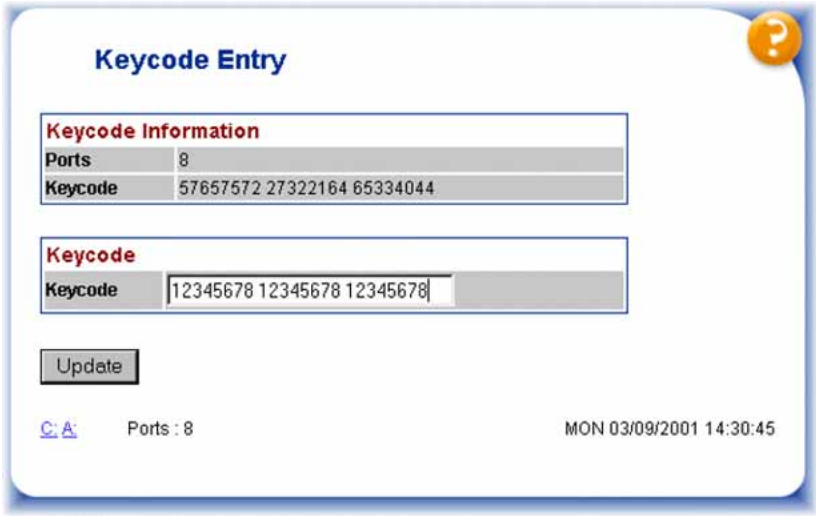
--End--

Keycode Entry

When the **Keycode Entry** link is clicked, the **Keycode Entry** window opens. See Figure 34 "Keycode Entry window" (page 122).

Note: Only an Administrator, Distributor, or Super User can update a keycode.

Figure 34
Keycode Entry window



To enter a new keycode, follow the steps in Procedure 33 “Entering a new keycode” (page 123).

Procedure 33
Entering a new keycode

Step	Action
1	Enter the new keycode in the **Keycode** text field.
2	Click **Update**. The Keycode information is updated and any new ports are activated.

--End--

Pack Information menu

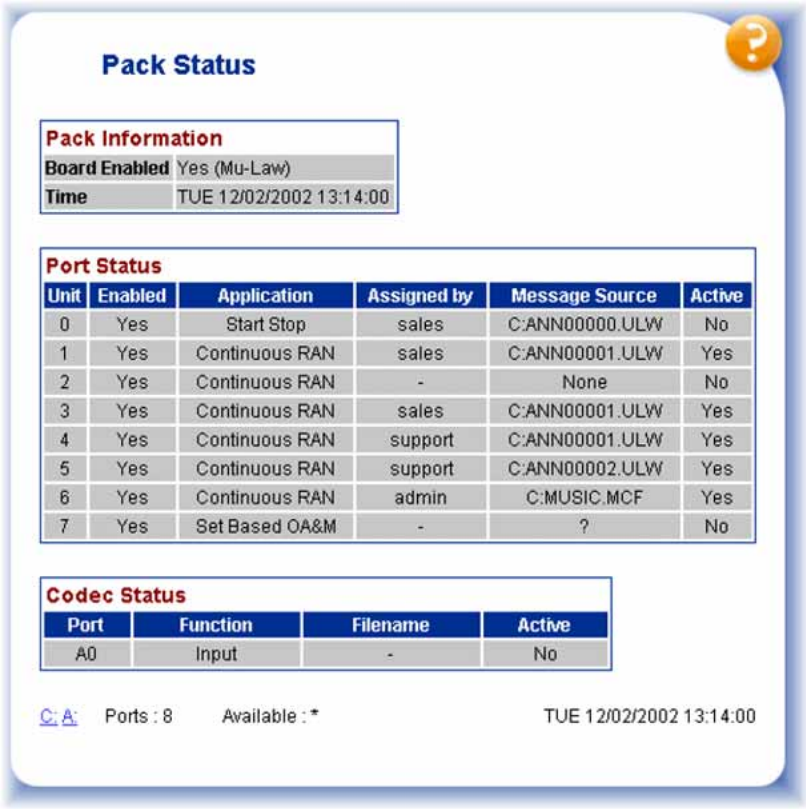
The Pack Information menu consists of links to the following:

- Status
- System Information
- Operational Statistics

Status

When the **Status** link is clicked, the **Pack Status** window opens. See Figure 35 "Pack Status window" (page 124).

Figure 35
Pack Status window

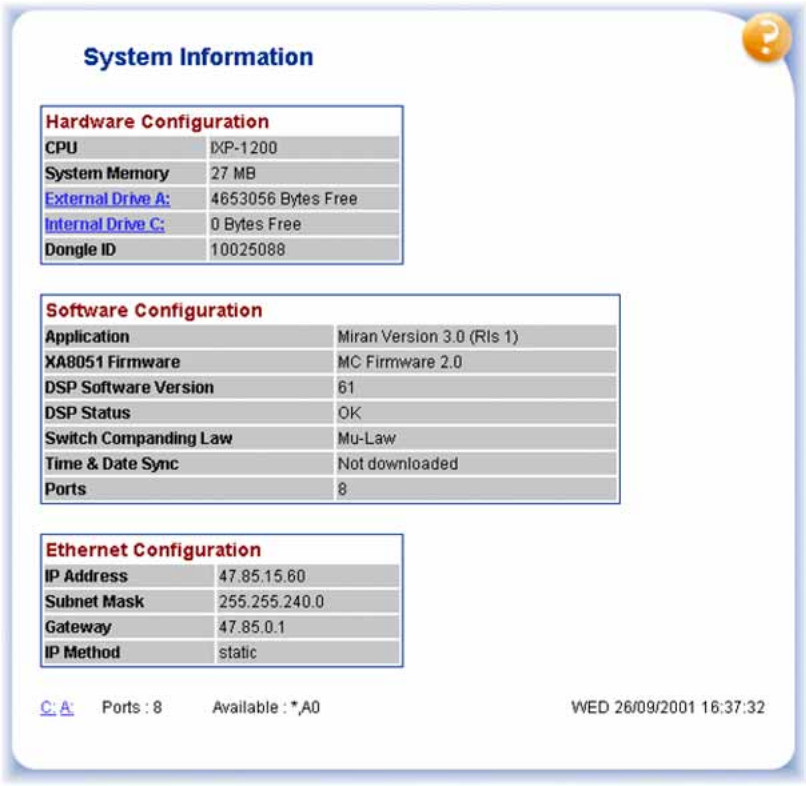


The Pack Status window shows the configuration of all units on the Integrated Recorded Announcer card and whether or not they are active. The Pack Status window also shows the status of the Codec input channel.

System Information

When the **System Information** link is clicked, the **System Information** window opens. See Figure 36 "System Information window" (page 125).

Figure 36
System Information window

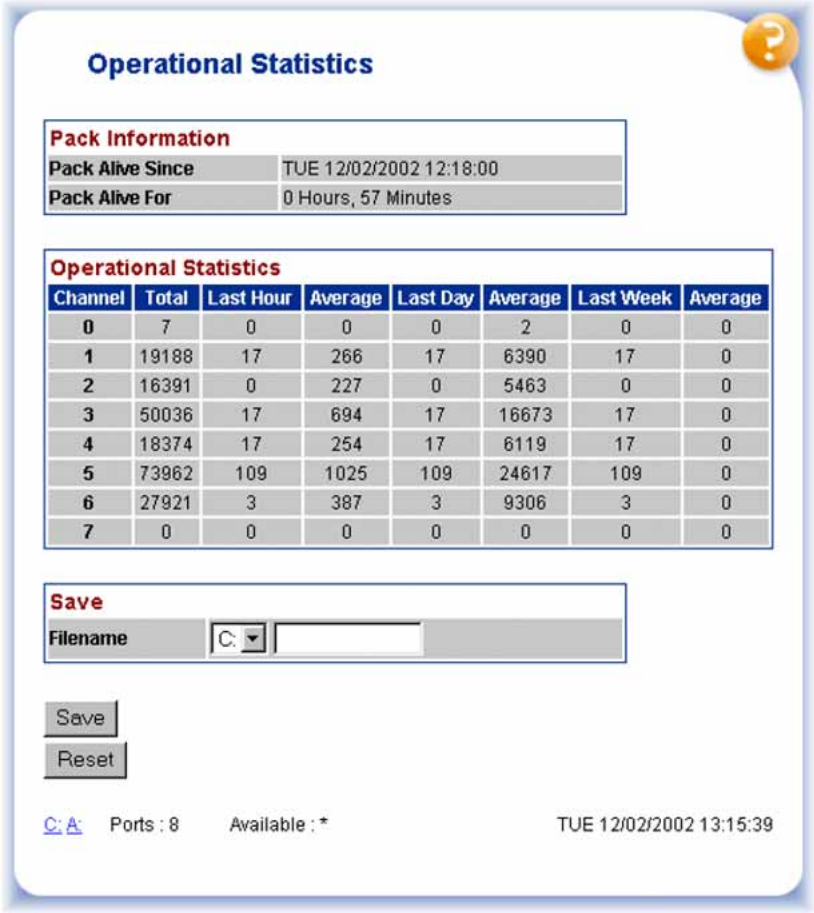


The System Information window shows the hardware, software, and Ethernet configuration information. To explore the drives shown in the Hardware Configuration section, click the appropriate links.

Operational Statistics

When the **Operational Statistics** link is clicked, the **Operational Statistics** window opens. See Figure 37 "Operational Statistics window" (page 126).

Figure 37
Operational Statistics window



The Operational Statistics window shows the operational statistics for all channels. In the **Save** pane of the window, the statistics can be saved to file or reset to zero.

File System

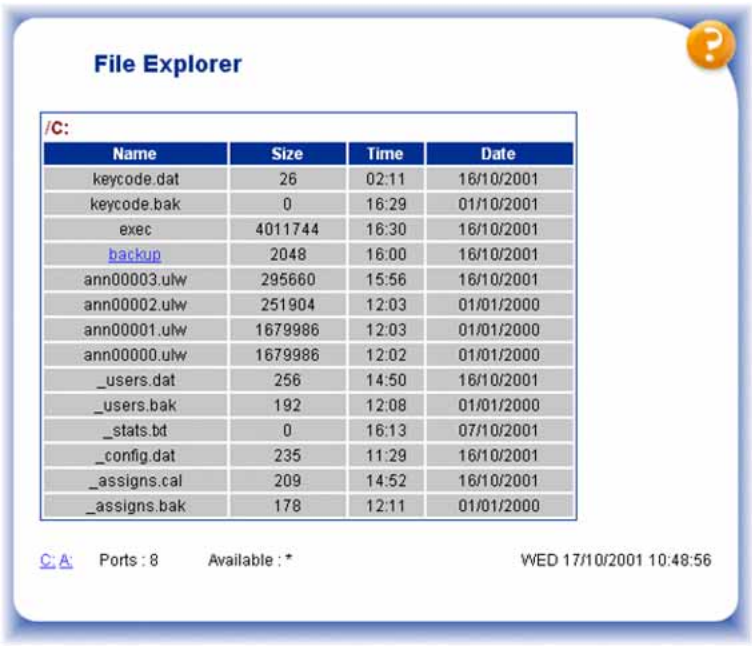
The File System menu consists of links to the following:

- File Explorer
- Copy
- Delete
- Move
- Rename
- Make Directory
- Remove Directory

File Explorer

When the **File Explorer** link is clicked, the **File Explorer** window opens. See Figure 38 "File Explorer window" (page 127).

Figure 38
File Explorer window

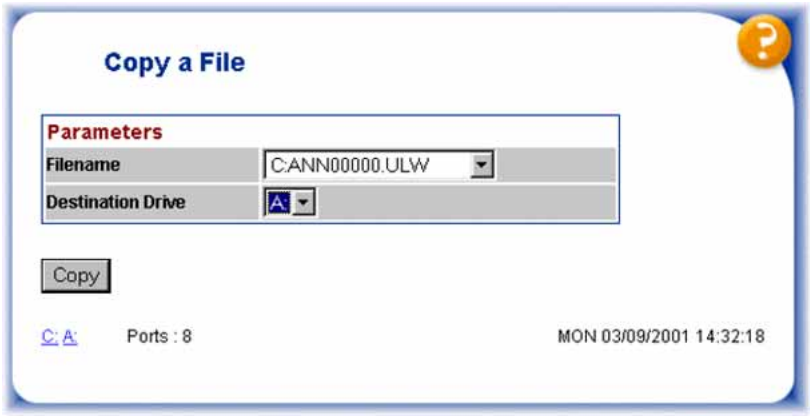


The File Explorer window displays the file details for the specified drive. The directories appear as links. Click the links to display the contents of the directories.

Copy

When the **Copy** link is clicked, the **Copy a File** window opens. See Figure 39 "Copy a File window" (page 128).

Figure 39
Copy a File window



To copy a file, follow the steps in Procedure 34 “Copying a file” (page 128).

Procedure 34
Copying a file

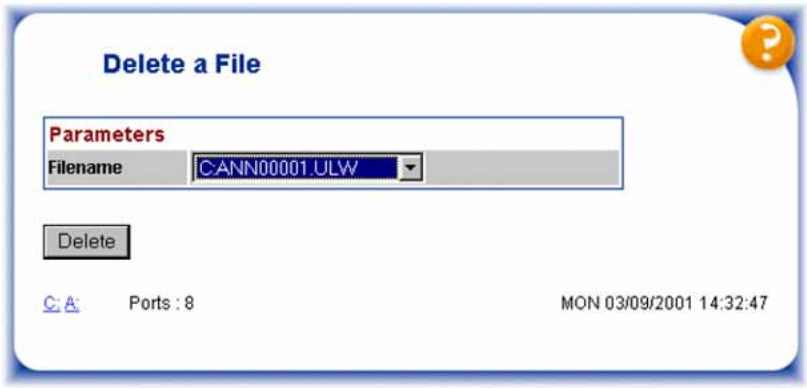
Step	Action
1	From the **Filename** drop-down list, select the file that you want to copy.
2	From the **Destination Drive** drop-down list, select the drive where the file will be copied.
3	Click **Copy**.

--End--

Delete

When the **Delete** link is clicked, the **Delete a File** window opens. See Figure 40 "Delete a File window" (page 129).

Figure 40
Delete a File window



To delete a file, follow the steps in Procedure 35 “Deleting a file” (page 129).

Procedure 35
Deleting a file

Step	Action
1	From the **Filename** drop-down list, select the file that you want to delete.
2	Click **Delete**.

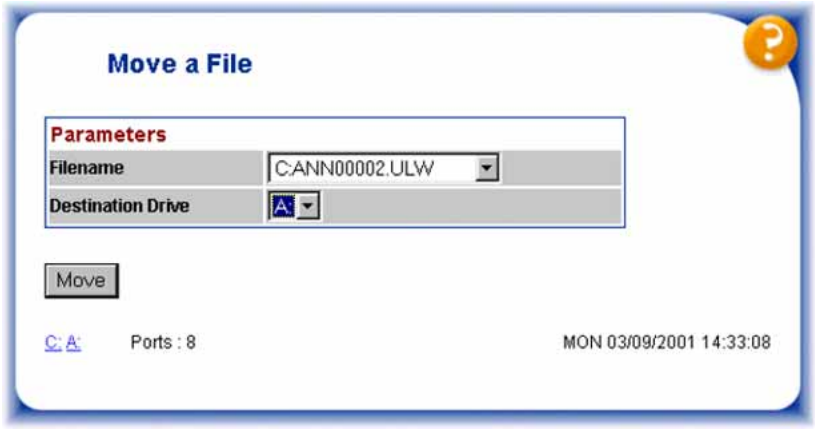
Note: Users cannot delete a file that is assigned in the calendar.

--End--

Move

When the **Move** link is clicked, the **Move a File** window opens. See Figure 41 "Move a File window" (page 130).

Figure 41
Move a File window



To move a file, follow the steps in Procedure 36 “Moving a file” (page 130).

Procedure 36
Moving a file

Step	Action
1	From the **Filename** drop-down list, select the file to move.
2	From the **Destination Drive** drop-down list, select the drive where the file will be moved.
3	Click **Move**.

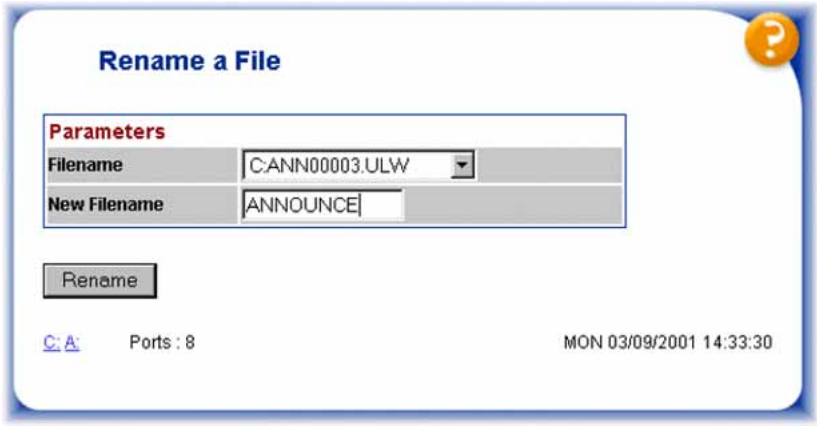
Note: Users cannot move a file currently assigned in the Calendar.

--End--

Rename

When the **Rename** link is clicked, the **Rename a File** window opens. See Figure 42 "Rename a File window" (page 131).

Figure 42
Rename a File window



To rename a file, follow the steps in Procedure 37 “Renaming a file” (page 131).

Procedure 37
Renaming a file

Step	Action
1	From the **Filename** drop-down list, select the file to rename.
2	Enter the new file name in the **New Filename** text field. ***Note 1:*** When renaming a file, it is not necessary to specify the drive. ***Note 2:*** if a file is assigned in the Calendar, it cannot be renamed. ***Note 3:*** Do not change the extensions of announcement (*.ULW and *.ALW) and Batch (*.BAT) files.
3	Click **Rename**. ***Note:*** Directory name cannot be longer than eight characters.

--End--

Make Directory

When the **Make Directory** link is clicked, the **Make Directory** window opens. See Figure 43 "Make Directory window" (page 132).

Figure 43
Make Directory window

To make a directory, follow the steps in Procedure 38 “Making a directory” (page 132).

Procedure 38
Making a directory

Step	Action
1	From the **Drive** drop-down list, select the drive where the directory will be created.
2	In the **Directory Name** text field, enter the directory name.
3	Click **Make**.

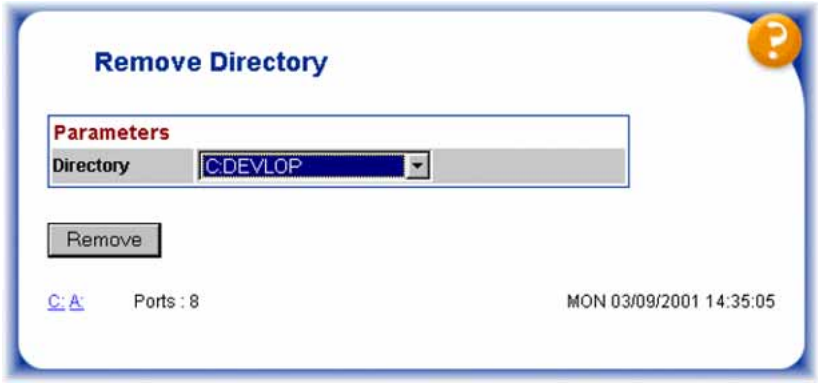
Note: Only Administrators, Distributors, or Super Users can make a directory.

--End--

Remove Directory

When the **Remove Directory** link is clicked, the **Remove Directory** window opens. See Figure 44 "Remove Directory window" (page 133).

Figure 44
Remove Directory window



To remove a directory, follow the steps in Procedure 39 “Removing a directory” (page 133).

Procedure 39
Removing a directory

Step	Action
1	Select the name of the directory from the **Directory** drop-down list.
2	Click **Remove**.

Note: Only Administrators, Distributors, and Super Users can remove a directory.

--End--

Pack User menu

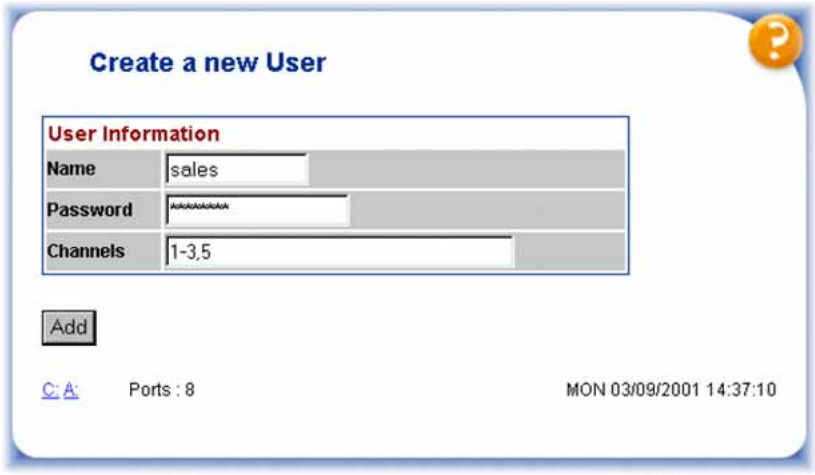
The Pack User menu contains links to the following:

- User Add
- User Select
- User Modify/Delete
- User View

User Add

When the **User Add** link is clicked, the **Create a new User** window opens. See Figure 45 "Create a new User window" (page 134).

Figure 45
Create a new User window



To add a new user, follow the steps in Procedure 40 “Adding a new user” (page 134).

Procedure 40
Adding a new user

Step	Action
1	Enter the User’s name in the **Name** text field.
2	Enter the User’s password in the **Password** text field.
3	Enter the **Channels** to which the User has access.
4	Click **Add**.

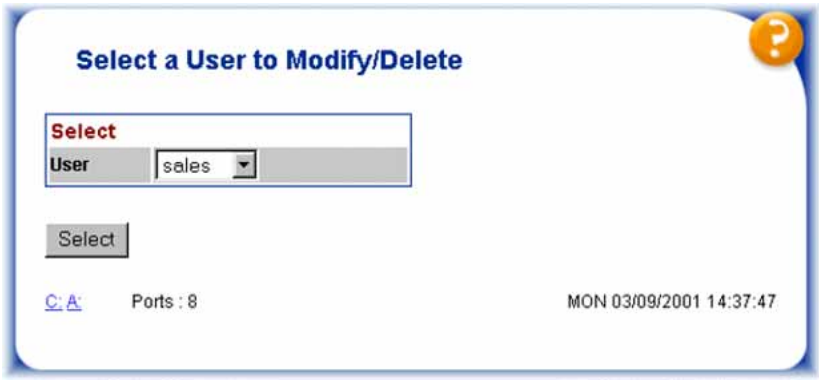
Note: Only Administrators, Distributors, and Super Users can add Users.

--End--

User Select

When the **User Select** link is clicked, the **Select a User to Modify/Delete** window opens. See Figure 46 "Select a User to Modify/Delete window" (page 135).

Figure 46
Select a User to Modify/Delete window



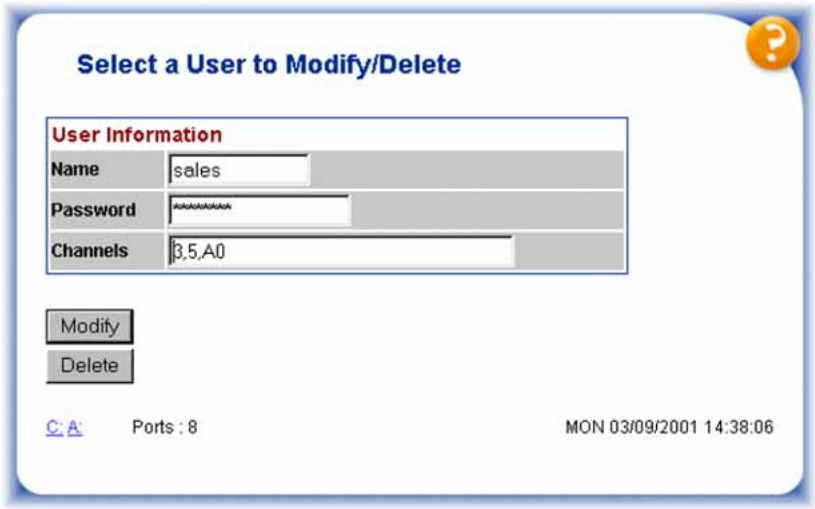
To select a user to modify or delete, follow the steps in Procedure 41 “Selecting a user to modify or delete” (page 135).

Procedure 41
Selecting a user to modify or delete

Step	Action
1	Select the user name from the **User** drop-down list.
2	Click **Select**. An updated User to Modify/Delete window appears containing the User’s information. See Figure 47 "Updated Select a User to Modify/Delete window" (page 136).

--End--

Figure 47
Updated Select a User to Modify/Delete window



To modify or delete a User, follow the steps in Procedure 42 “Modifying or deleting a user” (page 136).

Procedure 42
Modifying or deleting a user

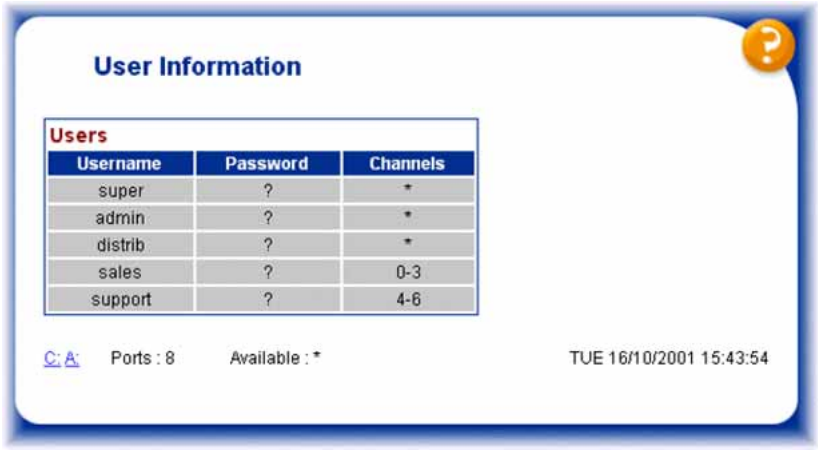
Step	Action
1	Modify the **Name**, **Password**, and **Channels** as required.
2	Click **Modify** to change the User’s information. Click **Delete** to remove the User. ***Note:*** Only Administrators, Distributors, and Super Users can modify or delete a User.

--End--

User View

When the **User View** link is clicked, the **User Information** window opens. See Figure 48 "User Information window" (page 137).

Figure 48
User Information window



The User Information window displays a list of all configured users.

Note: For security purposes, passwords are not displayed on this window.

Support

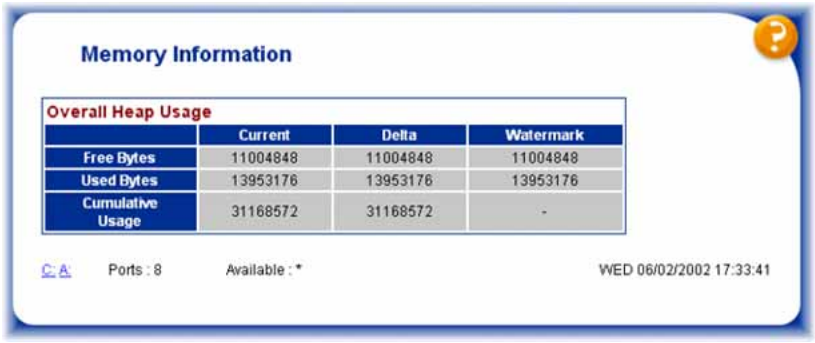
The Support menu contains links to the following:

- Memory Information
- Task Information
- DSP Information
- Reset
- Help
- Logout

Memory Information

When the **Memory Information** link is clicked, the **Memory Information** window opens. See Figure 49 "Memory Information window" (page 138).

Figure 49
Memory Information window



Note: Only Administrators, Distributors, or Super Users can view memory information.

Task Information

When the **Task Information link** is clicked, the **Task List** window opens. See Figure 50 "Task List window" (page 138).

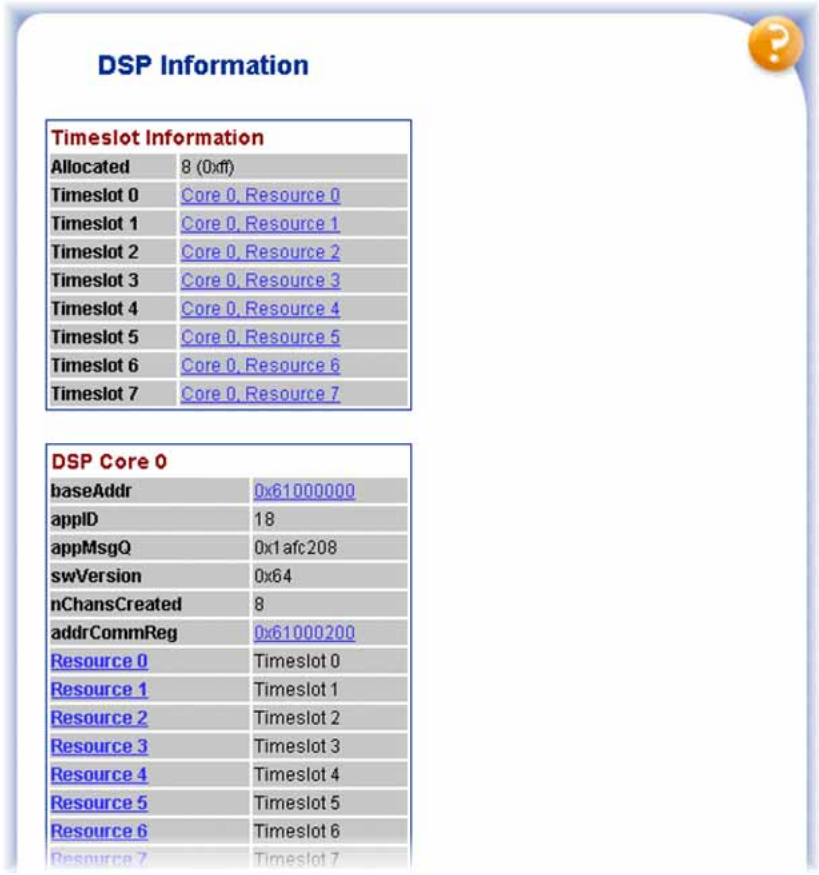
Figure 50
Task List window

Note: Only Administrators, Distributors, or Super Users can view task information.

DSP Information

When the **DSP Information** link is clicked, the **DSP Information** window opens. See Figure 51 "DSP Information window" (page 139).

Figure 51
DSP Information window



Note: Only Administrators, Distributors, or Super Users can view DSP information.

Resetting the BUI

Figure 52 "Resetting the BUI" (page 140) shows the **Reset** window.

Figure 52
Resetting the BUI

Logging out of the BUI

Figure 53 "Logging out of the BUI" (page 140) shows the **Logout** window.

Figure 53
Logging out of the BUI

Help on the BUI

For help on any BUI page, click the orange **?** button in the top right of the context window.

Text-based User Interface

Contents

This section contains information on the following topics:

Introduction

This chapter describes the Text-based User Interface for the Integrated Recorded Announcer card (NT0966CA). The Text-based User Interface provides menus and commands to perform all of the necessary Integrated Recorded Announcer OA&M functions. The software for this interface is part of the Integrated Recorded Announcer-specific OA&M tool running under VxWorks; it is independent of system software.

There are two ways to use the Text-based User Interface to access all commands and options:

- Use the menu system.
- Enter commands on the command line.

To use the Integrated Recorded Announcer Text-based User Interface, connect a VT-100 type terminal to the Integrated Recorded Announcer card. The Integrated Recorded Announcer card supports a serial connection between the terminal and the card.

The Integrated Recorded Announcer card also supports Telnet access to the Text-based User Interface over a LAN. Refer to Procedure 4 "Connecting a VT100-type terminal to the Integrated Recorded Announcer card" (page 66) for instructions on how to make a serial connection from the Integrated Recorded Announcer card to the VT-100 type terminal. Refer to "LAN access installation and setup" (page 70) for instructions on how to connect the Integrated Recorded Announcer card to the ELAN subnet.

Integrated Recorded Announcer also supports a Browser User Interface (BUI). This BUI provides a web-based version of the Integrated Recorded Announcer menu system, which can be accessed through a standard web browser. The BUI also supports file transfers and online viewing of customer documentation. For more information on the BUI, see "Integrated Recorded Announcer Browser User Interface" (page 99).

General procedure for configuring Integrated Recorded Announcer

To configure Integrated Recorded Announcer functions, follow the steps in Procedure 43 "Configuring Integrated Recorded Announcer" (page 143).

Procedure 43
Configuring Integrated Recorded Announcer

Step	Action
1	Configure the RAN and MOH trunk route and trunk data block, as described in "System configuration" (page 51). Complete this step during installation and configuration.
2	Configure the DID trunk for the Telephone User Interface (TUI) access, if necessary. Refer to "Configuring the DID route for the TUI" (page 57) and "Configuring the Integrated Recorded Announcer trunks" (page 57). Complete this step during installation and configuration.
3	Set up the terminal for the Text-based User Interface access, as described in Procedure 4 "Connecting a VT100-type terminal to the Integrated Recorded Announcer card" (page 66). Complete this step during installation and configuration.
4	Log in to the Integrated Recorded Announcer Text-based User Interface as either a user or an administrator. Both a user name and a password must be entered. The default user login is *User Name*: **`user`** and *Password*: **`user0000`**. The default administrator login is *User Name*: **`admin`** and *Password*: **`admin000`**. The default distributor login is *User Name*: **`distrib`** and *Password*: **`distrib0`**. Refer to "Login window" (page 145) for more information.
5	Enter the keycode, if necessary.

See “Keycode Entry” (page 181).

Note: When Integrated Recorded Announcer is ordered as part of a new system, the keycode is preloaded into the Integrated Recorded Announcer card. Stand-alone orders of Integrated Recorded Announcer require that the keycode be entered.

6 Perform a cold reboot of the Integrated Recorded Announcer card and log in again.

Refer to “Maintenance and Diagnostics menu” (page 193) for instructions on performing a cold reboot.

7 Record the announcements.

From the Main Menu, select the **MIRAN Administration** menu, followed by the **Announcement Configuration** menu, and then the **Record Announcement** window.

Refer to “Record Announcement from External Channel” (page 166).

From this window, record announcements through the Audio jack on the Audio-adaptor. The Audio jack provides access to a single analog input (ANALOG0).

8 Assign announcements.

From the **Record Announcement** window, return to the **Announcement Configuration** menu and select **Calendar Operations**. From the Calendar Operations menu, create assignments, with or without descriptors. Repeat this step for other files and channels.

Refer to “Calendar Operations menu” (page 151).

9 Back up the original configuration onto the C: drive, or to a PC Card in the A: drive, if available.

10 Copy new files (if first installing or upgrading software) from the A: drive to the C: drive.

Remove the PC Card from the A: drive and store in a safe place for future use. This enables the configuration to be restored into the Integrated Recorded Announcer card without having to reconfigure the system and rerecord the announcements.

--End--

Configuring the VT-100 type terminal

The Integrated Recorded Announcer card faceplate and the Integrated Recorded Announcer Audio-adaptor each contains a maintenance serial port, which enables direct connection to a VT-100 terminal or to a PC running a terminal emulation program.

Note: Alternatively, each Integrated Recorded Announcer card can be connected through an Ethernet adaptor to the LAN. This alternative enables maintenance of all Integrated Recorded Announcer cards from any PC that has internet or Telnet access.

To run the Text-based User Interface, configure the VT-100 terminal emulation parameters as shown in Table 23 "VT-100 terminal configuration parameters" (page 145).

Table 23
VT-100 terminal configuration parameters

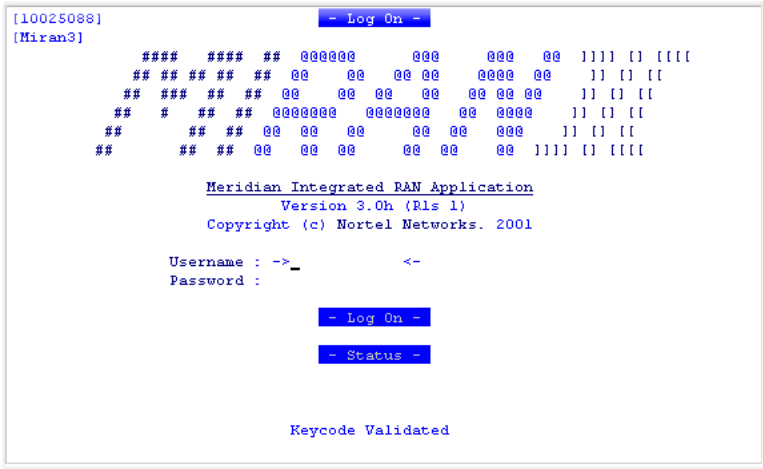
Parameter	Setting
Transmission rate	9600 baud
Data bits; stop bit	8
Stop bit	1
Parity	No
Flow control	None

Note: Integrated Recorded Announcer uses the HyperTerminal application. This application allows the technician to disable the CTRL and arrow keys, as these keys are used by the OA&M for navigating the menus.

Login window

Figure 54 "Login window" (page 146) shows the **Login** window. This window appears when the terminal is connected to the Integrated Recorded Announcer card and the **Enter** key is pressed.

Figure 54
Login window



To log into the selected Integrated Recorded Announcer card, follow the steps in Procedure 44 “Logging in to the selected Integrated Recorded Announcer card” (page 146).

Procedure 44
Logging in to the selected Integrated Recorded Announcer card

Step	Action
1	Enter the user name.
2	Enter the password.
3	Click **Log On**.

--End--

The defaults for user login are:

- **User Name:** user
- **Password:** user0000

The defaults for administrator login are:

- **User Name:** admin
- **Password:** admin000

The defaults for distributor login are:

- **User Name:** distrib
- **Password:** distrib0

Note 1: If an 'Access denied' response is received, press the **Shift** key and tilde (~) to refresh the window. Then attempt to log in again. If an 'Access denied' response is received for a third time, the Integrated Recorded Announcer card locks the user out for 20 minutes.

Note 2: All passwords must be at least eight characters in length, with a maximum of 12 characters. It is possible to change the passwords at each user level.

Note 3: All default users and passwords can be restored by deleting the C:_USERS.DAT file.

Status window

Select the **Status** button, without logging in, to view the status of the current card.

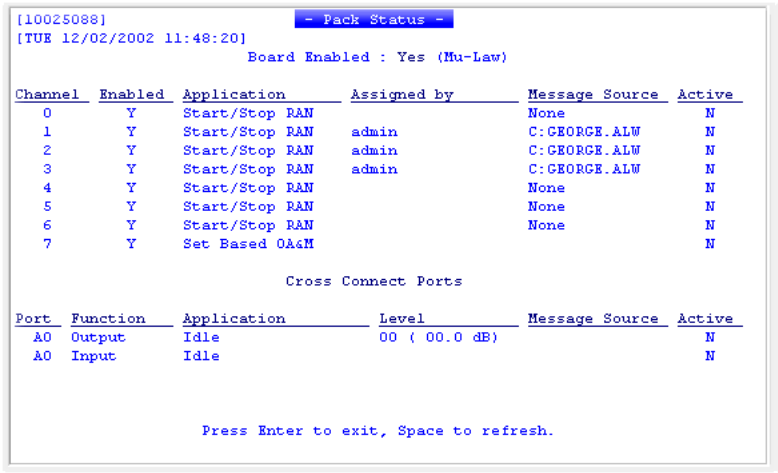
Figure 55 "Pack Status window" (page 148) on Figure 55 "Pack Status window" (page 148) shows the **Pack Status** window, which displays the following:

- current status of the RAN Application version and release
- board status
- current time
- status of eight one-to-one channels and two cross-connect channels

To display up-to-date channels status, refresh the window by pressing the spacebar.

To exit the Pack Status window and return to the Login window, press the **Enter** key. Figure 55 "Pack Status window" (page 148) shows an example of a Pack Status window.

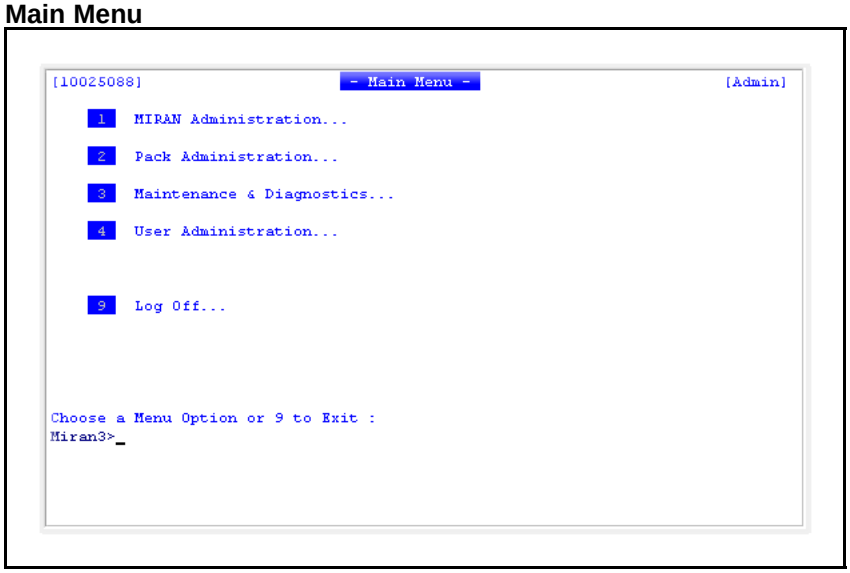
Figure 55
Pack Status window



Main Menu

A successful login displays the **Main Menu**. See Figure 56 "Main Menu" (page 148).

Figure 56
Main Menu



The Main Menu provides five options:

- **MIRAN Administration** – accesses all RAN-specific tasks and menus, such as announcement recording and configuration, operational

statistics, backup and restore configuration, and batch file running.
Refer to “Administration menu” (page 149).

- **Pack Administration** – accesses all Integrated Recorded Announcer-specific tasks and menus, such as file commands, keycode entry, software upgrade, system information, configuration variables, and LAN configuration.
  Refer to “Pack Administration menu” (page 173).
- **Maintenance and Diagnostics** – provides access to system information, password change, command line access, diagnostics, warm reboot, and cold reboot. The distributor can access all functions, and the user can access only system information and password change.
  Refer to “Maintenance and Diagnostics menu” (page 193).
- **User Administration** – provides access to adding, editing, viewing, and deleting users.
  Refer to “User Administration menu” (page 194).
- **Logoff** – logs out of the Main Menu and returns to the Login window.

Administration menu

At the Main Menu, select **1** to access the **MIRAN Administration** menu. See Figure 57 "MIRAN Administration menu" (page 149).

Figure 57
MIRAN Administration menu

At the MIRAN Administration menu, there are seven options:

- **Announcement Configuration**… – displays the Announcement Configuration menu that enables the following actions:

— create calendar and descriptor announcements,

— record and play announcements

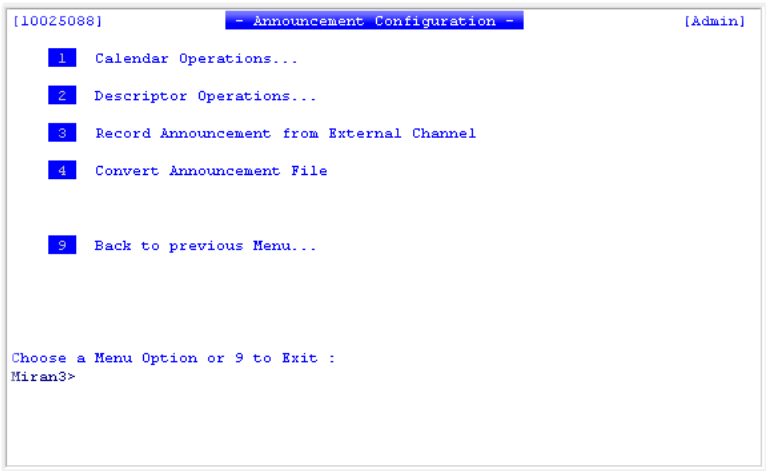
— convert announcement files. Refer to “The Announcement Configuration menu” (page 150).

- **Operational Statistics** – displays RAN channel usage statistics. Refer to “Operational Statistics” (page 168).
- **Backup Configuration** – saves configuration to a PC disk. Refer to “Backup Configuration” (page 170). Backups can also be set to occur automatically by setting the appropriate configuration variables.
- **Restore Configuration** – restores the configuration from a PC disk to the Integrated Recorded Announcer. Refer to “Restore Configuration” (page 171).
- **Run Batch File** – executes a batch file containing OA&M commands. It enables multiple channel assignments with a single command in case of emergency. Refer to “Run Batch File” (page 172).
- **Back to previous Menu**… – returns to the Main Menu.

The Announcement Configuration menu

From the MIRAN Administration menu, select **1** to access the **Announcement Configuration** menu. See Figure 58 "Announcement Configuration menu" (page 150).

Figure 58
Announcement Configuration menu



In the Announcement Configuration menu, there are six options:

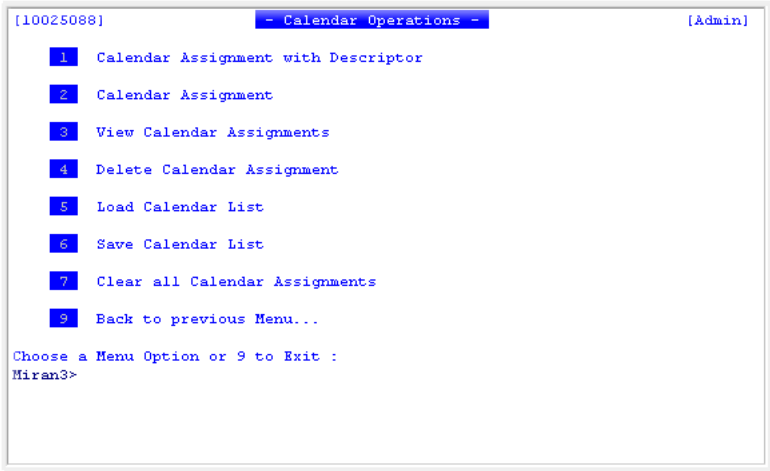
- **Calendar Operations** – used to create calendar assignments with or without descriptors, view calendar assignments, and remove calendar assignments. Refer to “Calendar Operations menu” (page 151).
- **Descriptor Operations** – used to add, edit, view, and delete calendar descriptors. Refer to “The Descriptor Operations menu” (page 159).

  Note: Before working with Calendar Operations and Descriptor Operations, read “Calendar assignment feature” (page 27).
- **Record Announcement from External Channel –** used to record an announcement and determine its filename and duration. Refer to “Record Announcement from External Channel” (page 166).
- **Convert Message File** – used to convert an announcement from .WAV format to .ALW or .ULW format (or the opposite). The filename of the announcement can be changed here. Refer to the “Convert Announcement File” (page 167).
- **Back to previous Menu**… — returns to the MIRAN Administration menu.

Calendar Operations menu

In the Announcement Configuration menu, select **1** to access the **Calendar Operations** menu. See Figure 59 "Calendar Operations Menu" (page 151).

Figure 59
Calendar Operations Menu

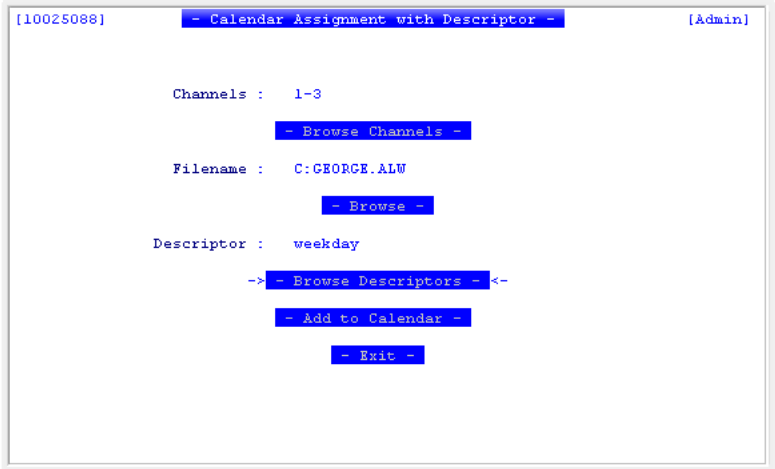


Calendar Assignment with Descriptor Select **1** at the Calendar Operations menu to access the **Calendar Assignment with Descriptor**

window. See Figure 60 "Calendar Assignment with Descriptor window" (page 152).

An announcement is assigned to selected channels and associated with a defined descriptor. Refer to "The Descriptor Operations menu" (page 159) for instructions on how to create a descriptor.

Figure 60
Calendar Assignment with Descriptor window



To create a calendar assignment with a descriptor, follow the steps in Procedure 45 "Creating a calendar assignment with a descriptor" (page 152).

Procedure 45
Creating a calendar assignment with a descriptor

Step	Action
1	Enter the channel(s) where the announcement will be assigned. Select **Browse** to scan and select from the list of available channels. Use **s** to toggle the selection of channels.
2	Enter the filename of the announcement for which the assignment is being created. Select **Browse** to scan the list of available announcement files.
3	Enter the name of the descriptor to be associated with the assignment. Select **Browse Descriptors** to scan the list of available descriptors.
4	Select **Add to Calendar** to add the assignment with descriptor to the calendar.

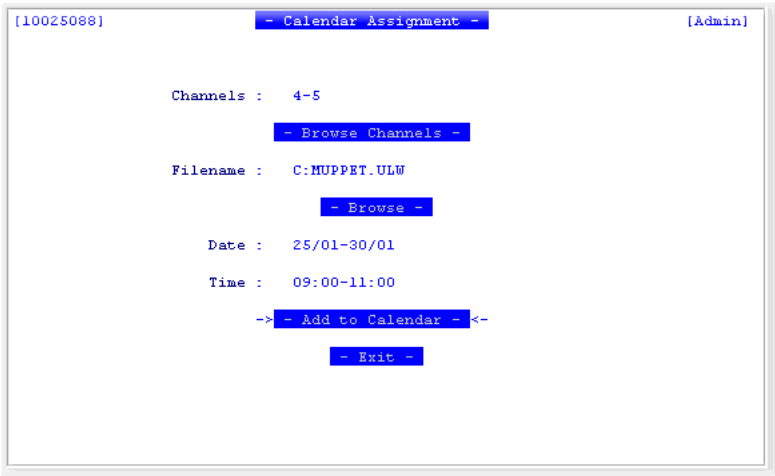
This updates the calendar immediately.

5 Select **Exit** to return to the Calendar Operations menu.

--End--

The Calendar Assignment Select **2** at the Calendar Operations menu to access the **Calendar Assignment** window. See Figure 61 "Calendar Assignment window" (page 153). An announcement is assigned to selected channels and defined directly (instead of using a descriptor) when the announcement plays on those channels.

Figure 61
Calendar Assignment window



To create a calendar assignment (without descriptor), follow the steps in Procedure 46 “Creating a calendar assignment (without descriptor)” (page 153).

Procedure 46
Creating a calendar assignment (without descriptor)

Step	Action
1	Enter the channel(s) where the announcement will be assigned. **Browse** can be used to scan and select from the list of available channels. Use **s** to toggle the selection of channels.
2	Enter the filename of the announcement for which the assignment is being created. Select **Browse** to scan the list of available announcement files.
3	Enter the time of day when the announcement is to be played.

4 Enter the date, dates, or days when the announcement is to be played.

5 Select **Add to Calendar** to add the assignment to the calendar.

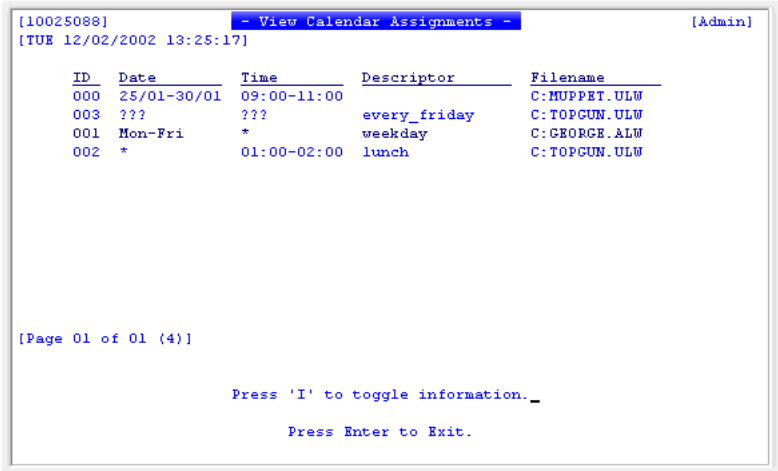
This updates the calendar immediately.

6 Select **Exit** to return to the Calendar Operations menu.

--End--

The View Calendar Assignments Select **3** at the Calendar Operations menu to access the **View Calendar Assignments** window. See Figure 62 "View Calendar Assignments window" (page 154).

Figure 62
View Calendar Assignments window



Note: The View Calendar Assignments window shows TUI assignments by putting "TUI" in the date column and the channel assignments in the time column.

The View Calendar Assignments window lists all Calendar Assignments in order of specificity. The most specific assignments — those with the most specific time and date — come first. The current day, date, and time appear in the upper-left corner of the window. The filename for any assignments that match the current date and time appear in bold type.

The right column lists the name of the user who created the assignment. Only the administrator or the user who created an assignment can remove the assignment.

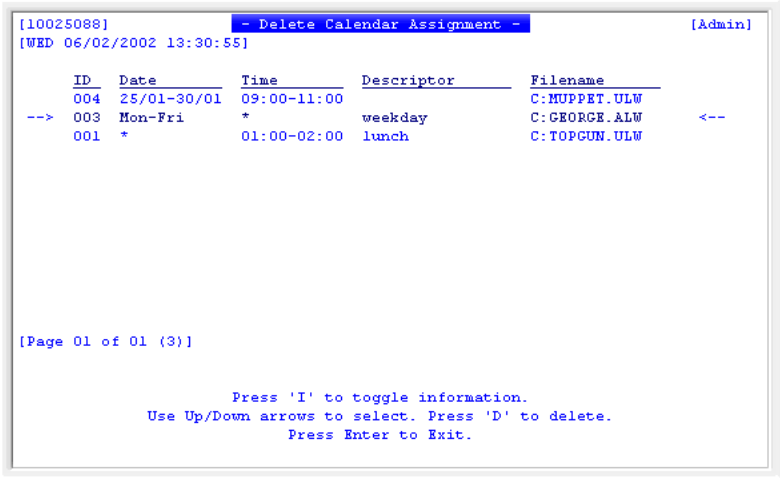
In the sample window that appears in Figure 62 "View Calendar Assignments window" (page 154), notice that the assignment using the descriptor "every_Friday" has a time and date of "?". This indicates that the descriptor "every_Friday" has been deleted and the system could not retrieve the time and date information. The system ignores this assignment until someone redefines "every_Friday".

While in the View Calendar Assignments window, the following actions can be performed:

- Press **I** to toggle the display for more information. The descriptor column lists the descriptor for each assignment, if there is one. The channel column lists the channels for each assignment.
- Press **Space bar** to list any more assignments that do not appear on the window.
- Press **Enter** to exit this window and return to the Calendar Operations menu.

Delete Calendar Assignment window Select **- 4-** at the Calendar Operations menu to access the **Delete Calendar Assignment** window. See Figure 63 "Delete Calendar Assignment window" (page 155).

Figure 63
Delete Calendar Assignment window



To delete a calendar assignment, follow the steps in Procedure 47 “Deleting a calendar assignment” (page 156).

Procedure 47
Deleting a calendar assignment

Step	Action
1	Use the up/down arrows to select the assignment to be deleted.
2	Press **D** to delete the selected assignment.
3	Press **Enter** to exit and return to the Calendar Operations menu.

--End--

While in the Delete Calendar Assignment window, press the **Space bar** to view more assignments.

Load Calendar List Select 5 at the Calendar Operations menu to access the **Load Calendar List** window. See Figure 64 "Load Calendar List window" (page 156).

A calendar list is a file that contains a collection of calendar assignments (for example, A:_ASSIGNS.CAL). Use this window to load a calendar list from any available drive. This window is valuable as a quick way to activate a calendar configuration, such as an emergency configuration, that had been previously saved.

Figure 64
Load Calendar List window

Note: This function only adds assignments to the calendar list. It does not clear (overwrite) existing assignments.

To load a calendar list, follow the steps in Procedure 48 “Loading a calendar list” (page 157).

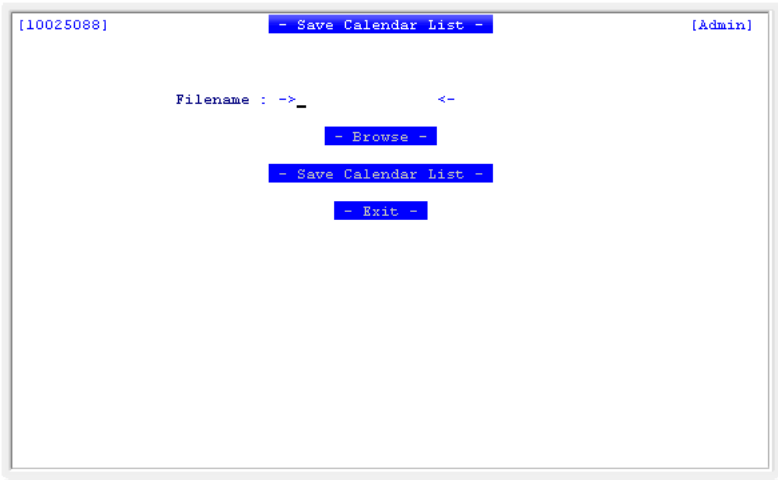
Procedure 48
Loading a calendar list

Step	Action
1	Enter the filename of the calendar list to be loaded. Select **Browse** to scan the list of available calendar lists.
2	Select **Load Calendar List** to load the selected calendar list. A verification message is received.
3	Select **Exit** to return to the Calendar Operations menu.

--End--

Save Calendar List Select 6 at the Calendar Operations menu to access the **Save Calendar List** window. See Figure 65 "Save Calendar List window" (page 157). Use this window to save the current set of calendar assignments in a single file location on any of the available drives. The resulting file can be transferred to another Integrated Recorded Announcer card or saved for future use.

Figure 65
Save Calendar List window



To save a calendar list, follow the steps in Procedure 49 “Saving a calendar list” (page 158).

Procedure 49
Saving a calendar list

Step	Action
1	Enter the filename of the calendar list to be saved. Select **Browse** to scan the list of current calendar lists.
2	Select **Save Calendar List** to save the selected calendar list. A verification message is received.
3	Select **Exit** to return to the Calendar Operations menu.

--End--

Clear All Calendar Assignments Select 7 at the Calendar Operations menu to access the **Clear All Calendar Assignments** window. See Figure 66 "Clear All Calendar Assignments window" (page 158). Use this window to clear all of the current calendar assignments. This window is useful when an Integrated Recorded Announcer card is reconfigured for a new customer or when significant changes to the calendar assignments are necessary.

Figure 66
Clear All Calendar Assignments window

The 'Clear all Calendar Assignments' command clears the current calendar list. If the configuration variable **AutoSave** is TRUE (the default), this command also overwrites the existing calendar file, _ASSIGNS.CAL.

CAUTION
Service Interruption
The **`Clear all Calendar Assignments`** command causes all active announcements to stop playing.

To clear all calendar assignments, follow the steps in Procedure 50 “Clearing all calendar assignments” (page 159).

Procedure 50
Clearing all calendar assignments

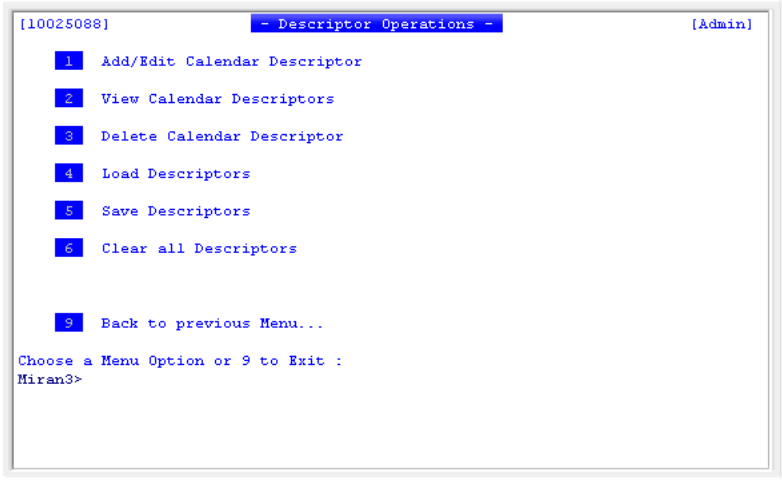
Step	Action
1	Select **Clear all Calendar Assignments** to clear all calendar assignments. A verification message is received.
2	Select **Exit** to return to the Calendar Operations menu.

--End--

The Descriptor Operations menu

At the Announcement Configuration menu, select **2** to access the **Descriptor Operations** menu. See Figure 67 "Descriptor Operations menu" (page 159).

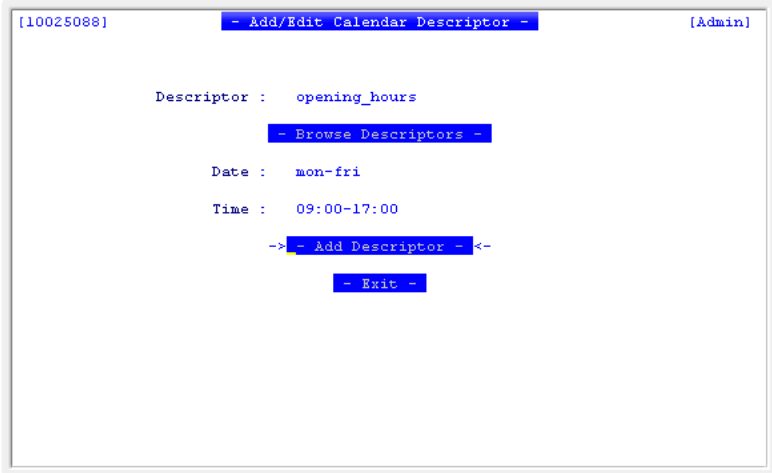
Figure 67
Descriptor Operations menu



Add/Edit Calendar Descriptor Select **1** at the Descriptor Operations menu to access the **Add/Edit Calendar Descriptor** window. See Figure 68 "Add/Edit Calendar Descriptor window" (page 160) on Figure 68 "Add/Edit Calendar Descriptor window" (page 160). Create or edit a calendar using this window.

A calendar descriptor has a time and date associated with it. The time and date definitions determine when an announcement that has a particular descriptor assignment plays. For example, Figure 68 "Add/Edit Calendar Descriptor window" (page 160) shows an announcement that uses the descriptor 'opening_hours' that plays from 9:00 a.m. to 5:30 p.m., Monday through Friday.

Figure 68
Add/Edit Calendar Descriptor window



To add or edit a calendar descriptor, following the steps in Procedure 51 "Adding or editing a calendar descriptor" (page 160).

Procedure 51
Adding or editing a calendar descriptor

Step	Action
1	Enter the name of the descriptor to be created or edited, a maximum of 16 characters in length. To edit a descriptor, select one from the list of existing descriptors by selecting **Browse Descriptors**.
2	Enter the date, dates, or days of the week during which the descriptor must operate.
3	Enter the time during which the descriptor must operate.

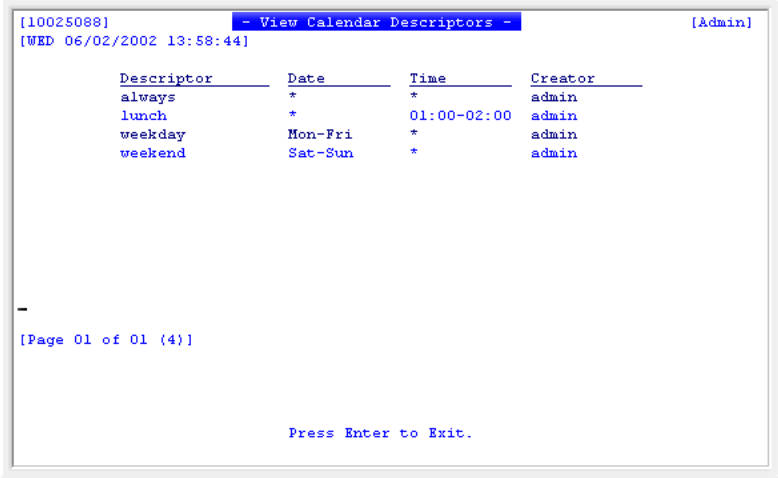
4 Select **Add Descriptor** to add the descriptor. This immediately affects any assignments that contain this descriptor.

5 Select **Exit** to return to the Descriptor Operations menu.

--End--

View Calendar Descriptors Select **2** at the Descriptor Operations menu to access the **View Calendar Descriptors** window. See Figure 69 "View Calendar Descriptors window" (page 161). The right-hand column of the window lists the creator of each descriptor. Only the administrator, or the user who created a descriptor, can delete the descriptor.

Figure 69
View Calendar Descriptors window

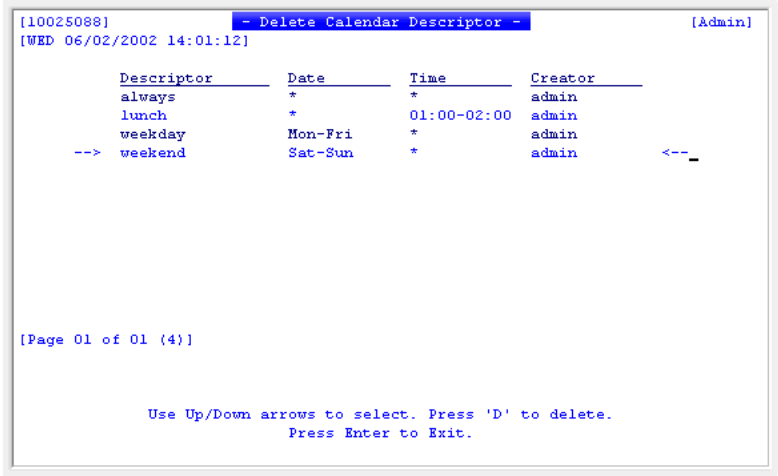


At the View Calendar Descriptors window, the following actions can be performed:

- Press the **Space bar** to view more descriptors that do not appear on the initial window.
- Press **Enter** to exit and return to the Descriptor Operations menu.

Delete Calendar Descriptor window Select **3** at the Descriptor Operations menu to access the **Delete Calendar Descriptor** window. See Figure 70 "Delete Calendar Descriptor window" (page 162). The right-hand column of the window lists the creator of each descriptor. Only the administrator, or the user who created a descriptor, can delete the descriptor.

Figure 70
Delete Calendar Descriptor window



To delete a calendar descriptor, follow the steps in Procedure 52 “Deleting a calendar descriptor” (page 162).

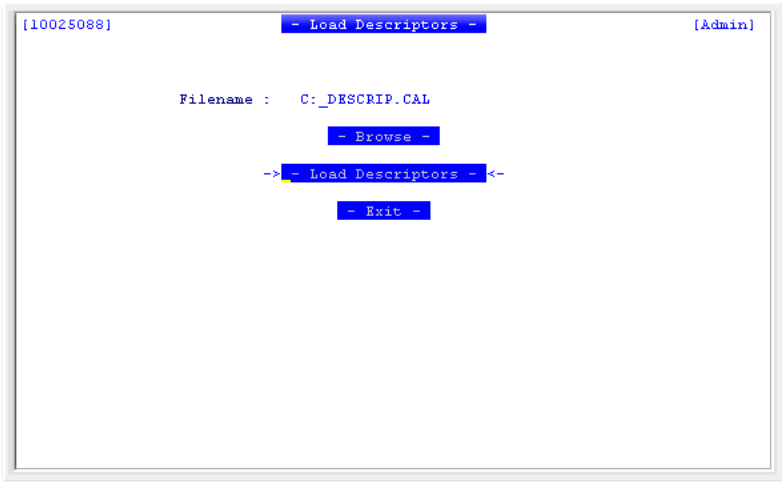
Procedure 52
Deleting a calendar descriptor

Step	Action
1	Use the up/down arrows to select the descriptor to be deleted. Press the **Space bar** to see more descriptors, if there are any.
2	Press **D** to delete the selected descriptor. This immediately affects any assignments that contain this descriptor. Any assignments that use this descriptor immediately become inactive.
3	Press **Enter** to exit and return to the Descriptor Operations menu.

--End--

Load Descriptor List Select **4** at the Descriptor Operations menu to access the **Load Descriptor List** window. See Figure 71 "Load Descriptor List window" (page 163). A descriptor list is a file that contains a collection of descriptors (for example, A:_DESCRIP.CAL). Use this window to load a descriptor list from any available drive. This window provides a quick way to load the same descriptor configuration to several Integrated Recorded Announcer cards.

Figure 71
Load Descriptor List window



Note: This function only adds descriptors to the descriptor list. It does not clear (overwrite) existing descriptors.

To load a descriptor list, follow the steps in Procedure 53 “Loading a descriptor list” (page 163).

Procedure 53
Loading a descriptor list

Step	Action
1	Enter the filename of the descriptor list to be loaded. Select **Browse** to scan the list of available descriptor lists.
2	Select **Load Descriptors** to load the selected descriptor list. A verification message will be received.
3	Select **Exit** to return to the Descriptor Operations menu.

--End--

Save Descriptor List Select 6 at the Descriptor Operations menu to access the **Save Descriptor List** window. See Figure 72 "Save Descriptor List window" (page 164).

Use this window to save the current set of descriptors in a single file location on any of the available drives. The resulting file can be transferred to another Integrated Recorded Announcer card or maintained for future use.

Figure 72
Save Descriptor List window

To save a descriptor list, follow the steps in Procedure 54 “Saving a descriptor list” (page 164).

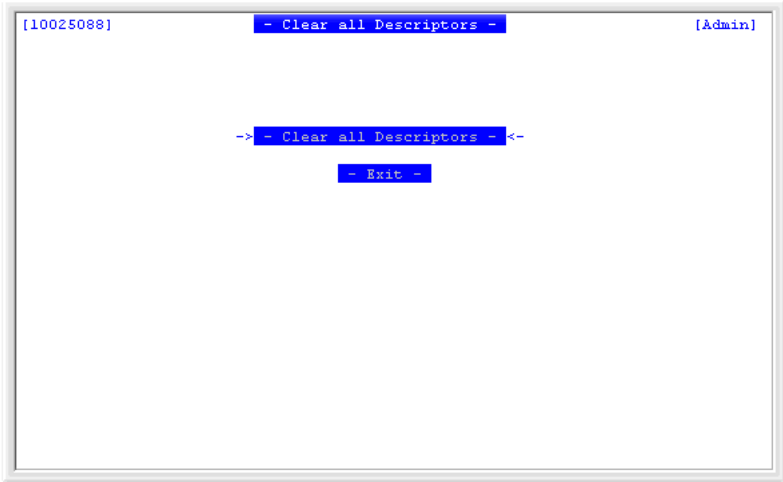
Procedure 54
Saving a descriptor list

Step	Action
1	Enter the filename of the descriptor list to be saved. Select **Browse** to scan the list of available descriptor lists.
2	Select **Save Descriptors** to save the selected descriptor list. A verification message will be received.
3	Select **Exit** to return to the Descriptor Operations menu.

--End--

Clear All Descriptors Select 6 at the Descriptor Operations menu to access the **Clear All Descriptors** window. See Figure 73 "Clear All Descriptors window" (page 165). Use this window to clear all current descriptor definitions. This window is useful when an Integrated Recorded Announcer card is reconfigured for a new customer or when significant changes to the descriptor definitions are necessary.

Figure 73
Clear All Descriptors window



The **`Clear all Descriptors`** command clears the current descriptors. If the configuration variable AutoSave is TRUE (the default), this command also overwrites the existing descriptor file, _DESCRIP.CAL.

CAUTION
Loss of Data
The **`Clear all Descriptors`** command clears all active descriptors. This renders inactive all current calendar assignment that use descriptors. New descriptors must be defined or a new descriptor list loaded to reactivate these calendar assignments.

To clear all descriptors, follow the steps in Procedure 55 “Clearing all descriptors” (page 165).

Procedure 55
Clearing all descriptors

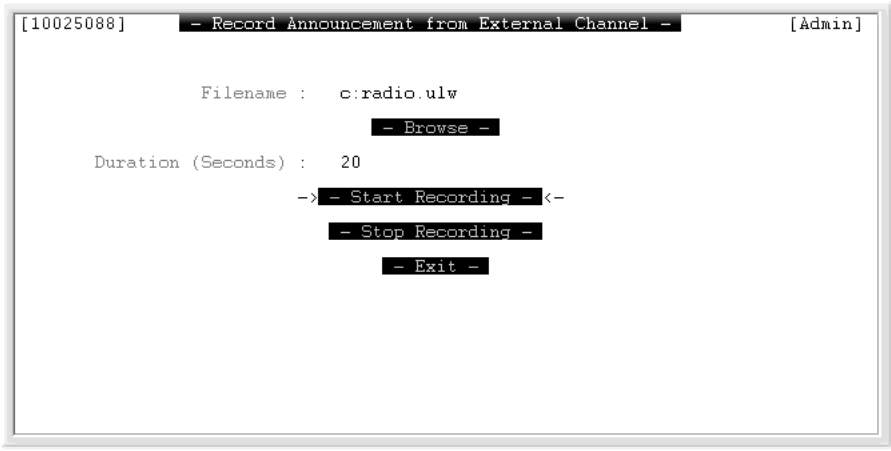
Step	Action
1	Select **Clear all Descriptors** to clear all descriptors. A verification message will be received.
2	Select **Exit** to return to the Descriptor Operations menu.

--End--

Record Announcement from External Channel

At the Announcement Configuration menu, select **3** to access the Record **Announcement from External Channel** window. See Figure 74 "Record Announcement for External Channel window" (page 166). An announcement for the Integrated Recorded Announcer card is recorded here.

Figure 74
Record Announcement for External Channel window



To record an announcement for the Integrated Recorded Announcer card, follow the steps in Procedure 56 “Recording an announcement to the Integrated Recorded Announcer card” (page 166).

Procedure 56
Recording an announcement to the Integrated Recorded Announcer card

Step	Action
1	At the **Filename** prompt, enter the filename of the announcement. A proper filename consists of eight alphanumeric characters with the appropriate three-letter extension (.ULW or .ALW). Remember to indicate on which drive the announcement file is to be saved. ***Note:*** Use **Browse** to ensure that the filename that is chosen does not already exist.
2	At the **’Duration** prompt, enter the length of time, in seconds, the announcement can last (between 5 and 120 seconds).
3	Select **Start Recording** to start recording the announcement.
4	Select **Stop Recording** to stop recording.

The Integrated Recorded Announcer stops recording either when the duration is reached, when **Stop Recording is selected**, or when the file system is full.

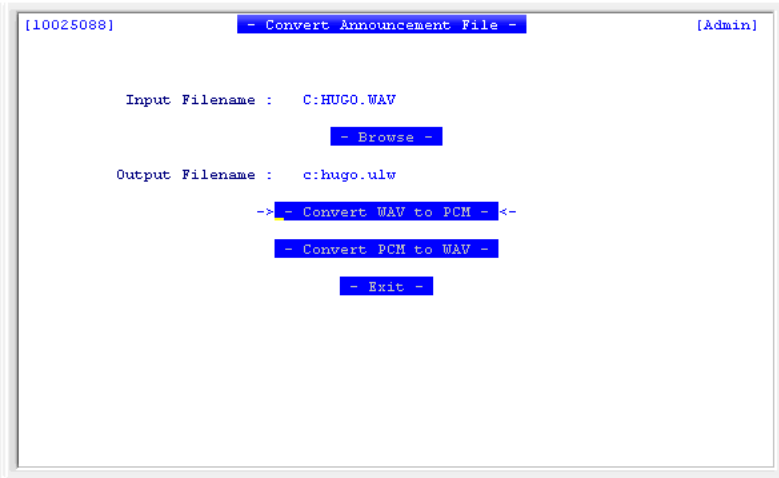
5 Select **Exit** to return to the Announcement Configuration menu.

--End--

Convert Announcement File

At the Announcement Configuration menu, select 5 to access the **Convert Announcement File** window. See Figure 75 "Convert Announcement File window" (page 167). Use this window to convert an announcement file from .WAV format to .ULW or .ALW format, or the reverse.

Figure 75
Convert Announcement File window



To convert an announcement file, follow the steps in Procedure 57 “Converting an announcement file” (page 167).

Procedure 57
Converting an announcement file

Step	Action
1	At the **Input Filename:** prompt, enter the filename to be converted. Select **Browse** to scan and select from the list of available files.
2	At the **Output Filename:** prompt, enter the desired filename for the converted file.

If an output filename is not entered, the file receives the same filename as the input filename, with the appropriate new extension.

3 Select **Convert WAV to PCM** to convert the file from .WAV format to .ULW or .ALW format.

Select **Convert PCM to WAV** to convert the file from .ULW or .ALW format to .WAV format.

Note 1: The conversion process makes a duplicate of the input file. Ensure sufficient disk space is available for the conversion process, and delete unnecessary files.

Note 2: Announcements must be in A-law (.ALW) or m-law (.ULW) format, depending on the system configuration, to play on Integrated Recorded Announcer.

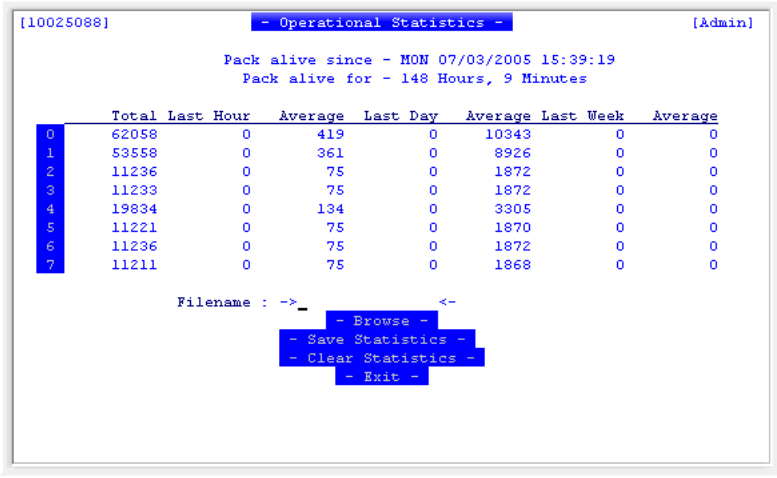
4 Select **Exit** to return to the Announcement Configuration menu.

--End--

Operational Statistics

At the MIRAN Administration menu, select **2** to access the **Operational Statistics** window. See Figure 76 "Operational Statistics window" (page 168). Use this window to check the current traffic statistics of all the internal channels. The Integrated Recorded Announcer card cannot display the statistics of the external channels because it cannot monitor the traffic on these channels.

Figure 76
Operational Statistics window



Note: Integrated Recorded Announcer updates the operational statistics every minute.

The following is an explanation of each statistical column for each channel:

- **Total** – is the total number of calls received for each channel since the last bootup of the Integrated Recorded Announcer card.
- **Last Hour** – is the number of calls received for each channel in the last 60 minutes.
- **Last Hour Average** – is the average number of calls received for each channel per hour since the last bootup of the Integrated Recorded Announcer card.
- **Last Day** – is the number of calls received for each channel in the last 24 hours.
- **Last Day Average** – is the average number of calls received for each channel per day since the last bootup of the Integrated Recorded Announcer card.
- **Last Week** – is the number of calls received for each channel in the last seven days.
- **Last Week Average** – is the average number of calls received for each channel per week since the last bootup of the Integrated Recorded Announcer card.

To save the current operational statistics to a file, follow the steps in Procedure 58 “Saving current operational statistics to a file” (page 169).

Procedure 58
Saving current operational statistics to a file

Step	Action
1	Enter the desired filename for the file to be saved. Remember to indicate the drive where the file is to reside. ***Note:*** Select **Browse** to choose an existing statistics file in which to save the statistics, or use **Browse** to ensure that the new filename does not already exist.
2	Select **Save Statistics** to save the statistics to the filename. Integrated Recorded Announcer generates a text file with values separated by commas.

3 Select **Exit** to return to the MIRAN Administration menu.

Note: Select **Clear Statistics** to reset all statistics on all channels.

--End--

Backup Configuration

At the MIRAN Administration menu, select **3** to access the **Backup Configuration** window. See Figure 77 "Backup Configuration window" (page 170). This window enables backup for the calendar, file descriptor, and configuration variable information. Backups can be configured to occur automatically, by setting the appropriate configuration variables. See “Configuration Variables menu” (page 184).

Figure 77
Backup Configuration window

Note: The Integrated Recorded Announcer card automatically saves user information, such as user names and passwords, to the C: drive. This is not part of the backup process.

To back up the configuration, follow the steps in Procedure 59 “Backing up the configuration” (page 171).

Procedure 59
Backing up the configuration

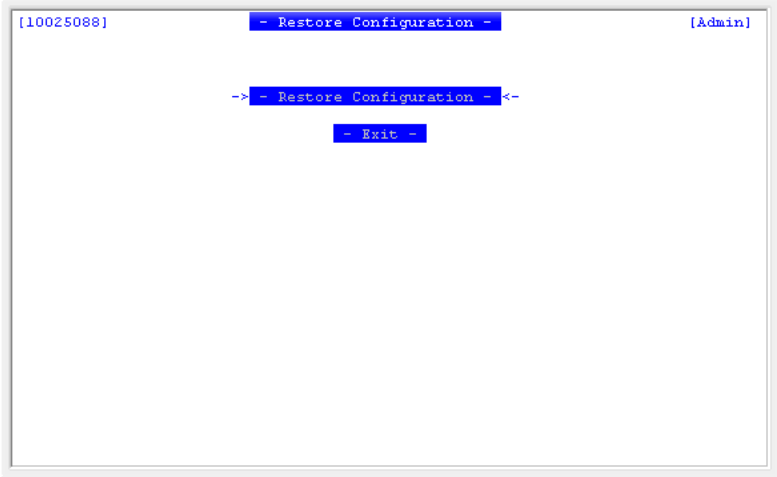
Step	Action
1	Select the storage device where the configuration will be backed up. This is usually a PC Card in the external A: drive.
2	Select **Backup Configuration** to start the backup process to the specified storage device.
3	When the backup is complete, select **Exit** to return to the MIRAN Administration menu.

--End--

Restore Configuration

At the MIRAN Administration menu, select **4** to access the **Restore Configuration** window. See Figure 78 "Restore Configuration window" (page 171). This window enables the calendar, file descriptor, and configuration variable information to be restored. The most common use for this window is to copy the configuration of another Integrated Recorded Announcer card in the system by using a PC Card.

Figure 78
Restore Configuration window



To restore the Integrated Recorded Announcer card configuration from a backup device to a file, follow the steps in Procedure 60 “Restoring the Integrated Recorded Announcer card configuration from a backup device to a file” (page 172).

Procedure 60
Restoring the Integrated Recorded Announcer card configuration from a backup device to a file

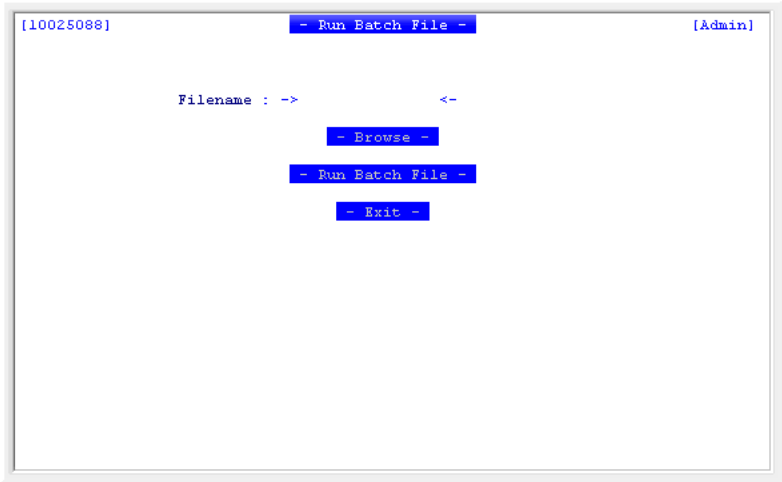
Step	Action
1	Select the storage device where the configuration is saved. This is usually a PC Card in the external A: drive.
2	Select **Restore Configuration** to start the restore process from the specified storage device.
3	When the restoration is complete, select **Exit** to return to the MIRAN Administration menu.

--End--

Run Batch File

At the MIRAN Administration menu, select 5 to access the **Run Batch File** window. See Figure 79 "Run Batch File window" (page 172). This windows retrieves the standard file browser and queries which batch file to run. The batch file runs immediately after it is selected.

Figure 79
Run Batch File window



To run a batch file, follow the steps in Procedure 61 “Running a batch file” (page 173).

Procedure 61
Running a batch file

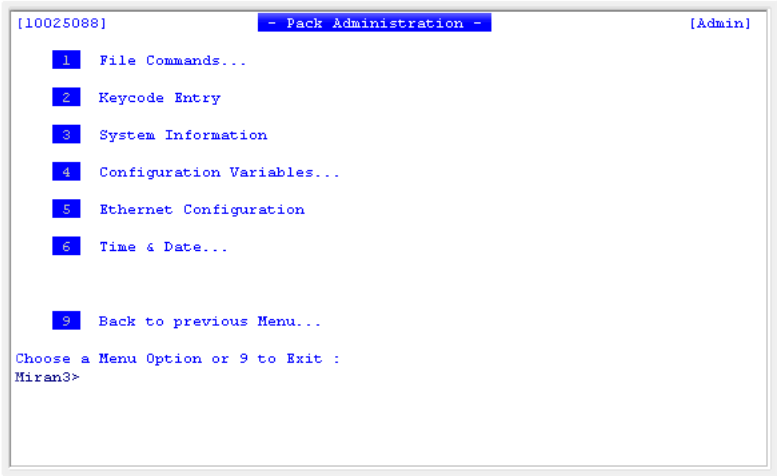
Step	Action
1	Select a batch file to run by using the up/down arrows on the keyboard. Press the **Space bar** to list more batch files.
2	Press **Enter** to run the selected batch file. Integrated Recorded Announcer then returns to the MIRAN Administration menu.

--End--

Pack Administration menu

At the Main Menu, select **2** to access the **Pack Administration** menu. See Figure 80 "Pack Administration menu" (page 173).

Figure 80
Pack Administration menu



On the Pack Administration menu, there are eight options:

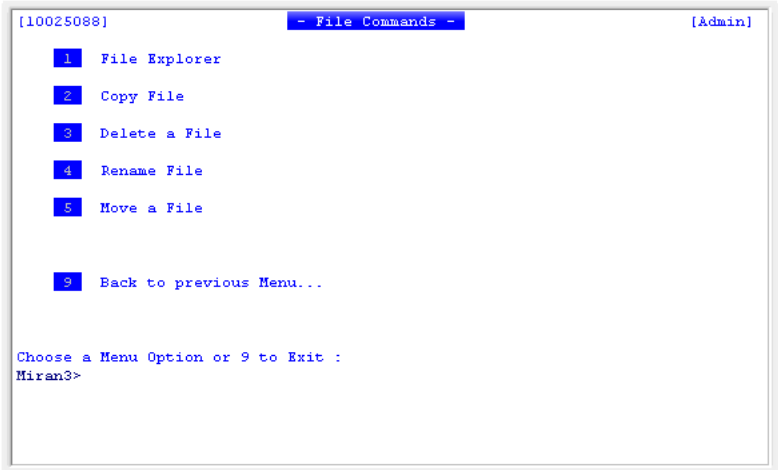
- **File Commands...** – enables the files to be explored, copied, deleted, renamed, and moved. Refer to “File Commands menu” (page 174).
- **Keycode Entry** – enables the keycodes to be entered for new Integrated Recorded Announcer cards, port size increases, and software upgrades. Refer to “Keycode Entry” (page 181).
- **Software Upgrade** – enables software upgrades using a PC Card. Refer to “Software Upgrade” (page 182).

- **System Information** – displays the Integrated Recorded Announcer card configuration and software release information. Refer to “System Information” (page 183).
- **Configuration Variables...** – enables the configuration variables to be viewed, edited, and saved. Configuration variables control certain aspects of the Integrated Recorded Announcer operation that are not obvious to the user. Refer to “Configuration Variables menu” (page 184).
- **Ethernet Configuration** – allows the IP address, subnet mask, and gateway of the Integrated Recorded Announcer card to be configured. This is necessary to enable LAN access to the Integrated Recorded Announcer card. Refer to “Ethernet Configuration” (page 187).
- **Time & Date Configuration** – enables the time and date of the Integrated Recorded Announcer card to be configured in one of two ways: either manually, or by retrieving the time and date automatically from the system. Refer to “Time and Date Configuration menu” (page 189).
- **Back to previous Menu...** – returns to the Main Menu.

File Commands menu

At the Pack Administration menu, select **1** to access the **File Commands** menu. See Figure 81 "File Commands menu" (page 174).

Figure 81
File Commands menu



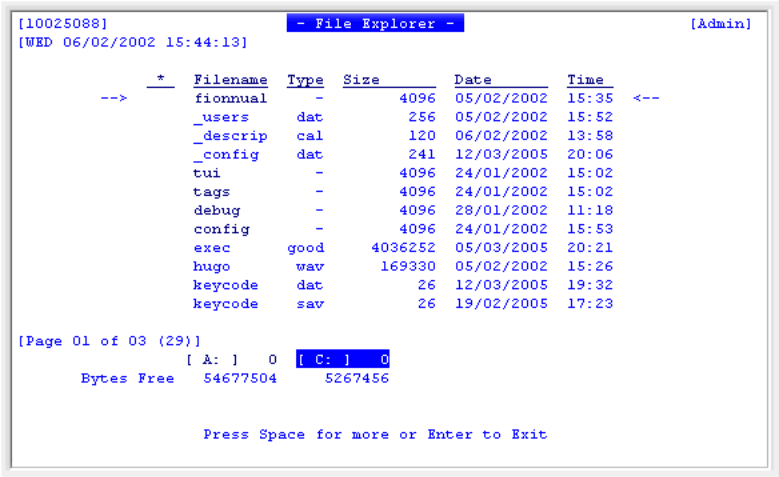
On the File Commands menu, there are six options:

- **File Explorer** – enables browsing through the directory file listings for the internal C: drive and any PC-based stored file lists. Refer to “File Explorer” (page 175).
- **Copy File** – enables a file to be copied to a different file on the same drive or another drive. Refer to “Copy File” (page 176).
- **Delete File** – enables a selected file to be deleted. Refer to “Delete File” (page 177).
- **Rename File** – allows any existing file to be renamed. Refer to “Rename File” (page 178).
- **Move File** – allows a file to be copied to a specified location and the original source file deleted. Refer to “Move File” (page 179).
- **Exit 0** returns to the Pack Administration menu.

File Explorer

On the File Commands menu, select **1** to access the **File Explorer** window. See Figure 82 "File Explorer window" (page 175).

Figure 82
File Explorer window



In the File Explorer window, follow the steps in Figure 70 "Delete Calendar Descriptor window" (page 162) to use File Explorer.

Procedure 62
Using File Explorer

Step	Action
1	Select which drive’s contents to explore.

Use the right and left arrow keys to maneuver. The amount of storage space available on each drive appears below each drive letter.

Note: The PC Cards must be in place in the A: drive before the drive's contents can be checked. Allow approximately ten seconds after inserting a PC Card for the drive to mount.

2 Use the up/down arrows to scroll through the list of files.

3 Press **Enter** to return to the File Commands window.

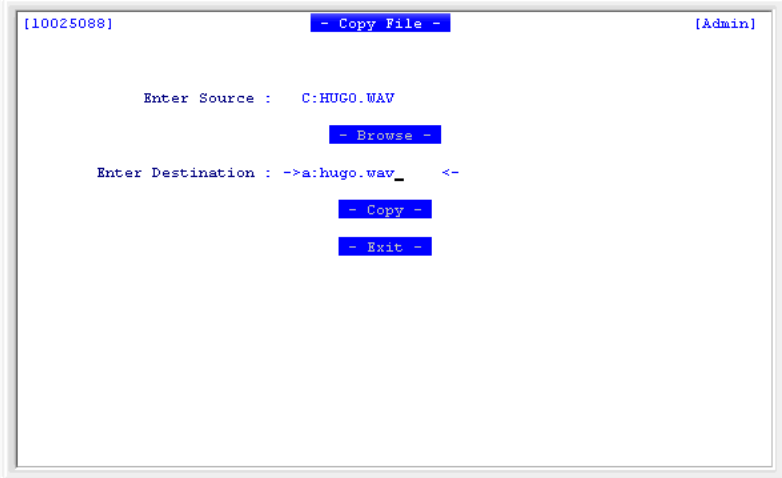
--End--

Copy File

At the File Commands window, select **2** to access the **Copy File** window. See Figure 83 "Copy Files window" (page 176).

CAUTION
Loss of Data
Disable the Integrated Recorded Announcer card before transferring files between drives.

Figure 83
Copy Files window



To copy an existing file to a different file, follow the steps in Procedure 63 "Copying an existing file to a different file" (page 177).

Procedure 63
Copying an existing file to a different file

Step	Action
1	At the 'Source Filename:' prompt, enter the filename to be copied. Include the drive where the file resides. Select **Browse** to scan the list of available files.
2	At the **`Destination Filename:`** prompt, enter the filename, including the drive, where the file will be copied. Select **Browse** to scan the list of available files.
3	Select **Copy** to copy the selected file from the source filename to the destination filename. ***Note:*** Steps 1 through 3 can be repeated as many times as needed before proceeding to step 4.
4	Select **Exit** to return to the File Commands window.

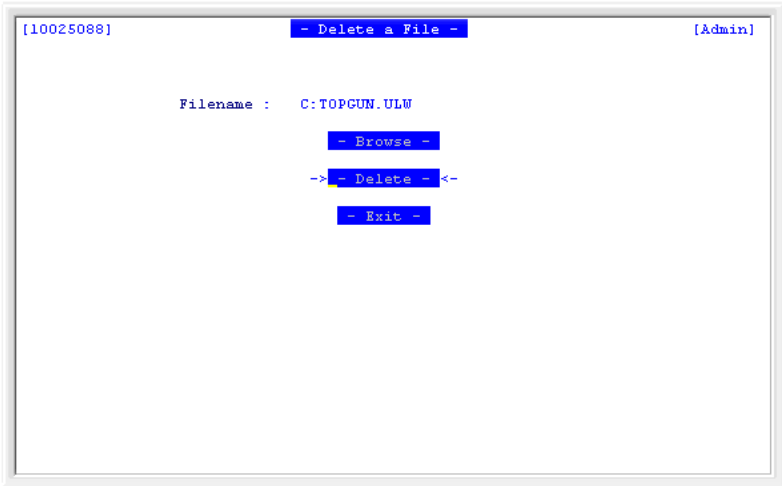
--End--

Delete File

At the File Commands window, select **3** to access the **Delete File** window. See Figure 84 "Delete File window" (page 178).

CAUTION
Loss of Data
Before a file is deleted, ensure that the file is not currently active.

Figure 84
Delete File window



To delete a file, follow the steps in Procedure 64 “Deleting a file” (page 178).

Procedure 64
Deleting a file

Step	Action
1	At the **`Filename:`** prompt, enter the filename to be deleted. Include the drive where the file resides. Select **Browse** to scan the list of available files.
2	Select **Delete** to delete the selected file. ***Note:*** Steps 1 and 2 can be repeated as many times as needed before proceeding on to step 3.
3	Select **Exit** to return to the File Commands window.

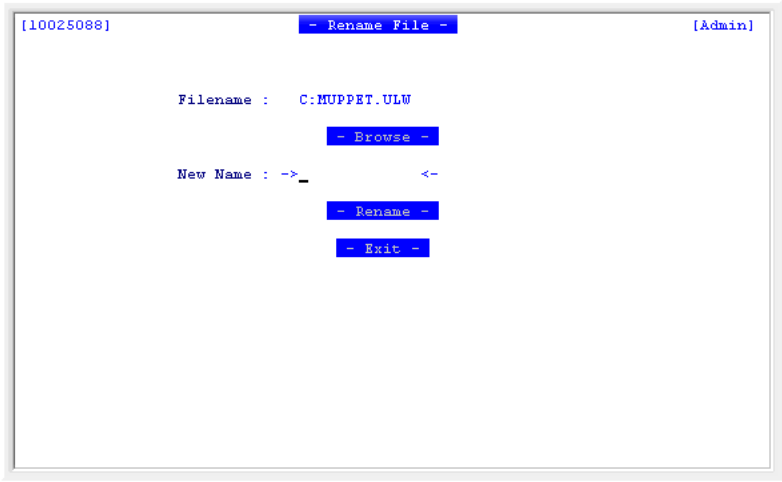
--End--

Rename File

At the File Commands window, select **4** to access the **Rename File** window. See Figure 85 "Rename File window" (page 179).

CAUTION
Loss of Data
Before a file is renamed, ensure that the file is not currently active.

Figure 85
Rename File window



To rename a file, follow the steps in Procedure 65 “Renaming a file” (page 179).

Procedure 65
Renaming a file

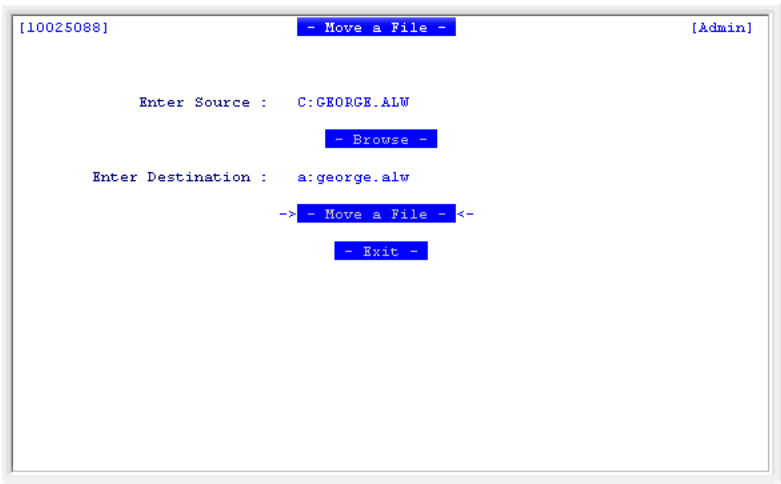
Step	Action
1	At the **`Filename:`** prompt, enter the filename to be renamed. Include the drive where the file resides. Select **Browse** to scan the list of available files.
2	At the **`New Name:`** prompt, enter the new name for the file. Include the drive where the file will reside. Select **Browse** to scan the list of available files.
3	Select **Rename** to rename the selected file. ***Note:*** Steps 1 through 3 can be repeated as many times as needed before proceeding on to step 4.
4	Select **Exit** to return to the File Commands window.
	--End--

Move File

At the File Commands window, select **5** to access the **Move File** window. See Figure 86 "Move File window" (page 180).

CAUTION
Loss of Data
Before a file is moved, ensure that the file is not currently active.

Figure 86
Move File window



To move a file from one location to another, follow the steps in Procedure 66 “Moving a file from one location to another” (page 180).

Procedure 66
Moving a file from one location to another

Step	Action
1	At the **`Source Filename:`** prompt, enter the filename to be moved. Include the drive where the file resides. Select **Browse** to scan the list of available files.
2	At the **`Destination filename:`** prompt, enter the filename, including the drive, where the file is to be moved. Select **Browse** to scan the list of available files.
3	Select **Move File** to move the selected file. This action deletes the source filename and places the file in the destination filename.

Note: Steps 1 through 3 can be repeated as many times needed before proceeding on to step 4.

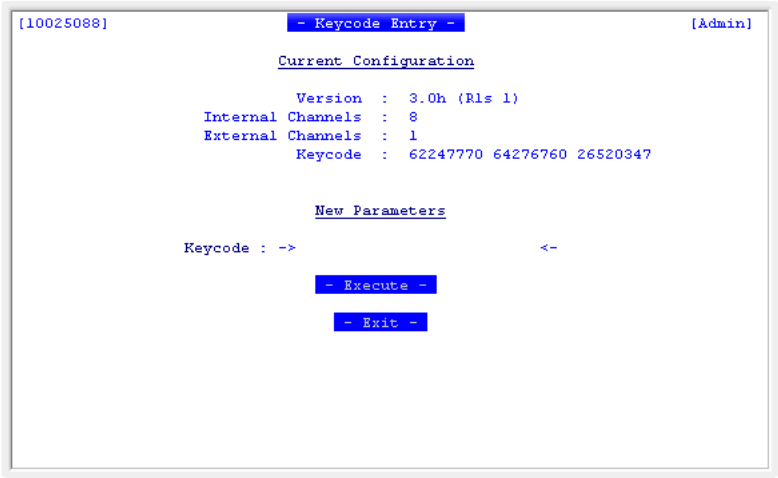
4	Select **Exit** to return to the File Commands window.

--End--

Keycode Entry

At the Pack Administration menu, select **2** to access the **Keycode Entry** window. See Figure 87 "Keycode Entry window" (page 181).

Figure 87
Keycode Entry window



The Keycode Entry window shows the current configuration, listing the Integrated Recorded Announcer software version, the number of internal and external ports, and the current keycode.

To change the keycode, follow the steps in Procedure 67 “Changing the keycode” (page 181).

Procedure 67
Changing the keycode

Step	Action
1	At the **`Keycode:`** prompt, enter the new keycode. Remember to add a space between each group of eight numbers.
2	Select **Execute** to update the keycode.

If the new keycode is valid, a *Keycode Validated* message is displayed, and the system updates the current configuration information.

Note: If performing an upgrade, Step 2 enables the upgrade.

3 Select **Exit** to return to the Pack Administration menu.

Note: To abort the keycode update, select **Exit** without selecting **Execute**.

--End--

Software Upgrade

At the Pack Administration menu, select **3** to access the **Software Upgrade** window. See Figure 88 "Software Upgrade window" (page 182).

Figure 88
Software Upgrade window

The Software Upgrade window can be used to upgrade to a new software version or to reload the existing software to fix a bug. If upgrading to a new software version, a new keycode must be entered. If simply fixing a bug, a new keycode is not needed.

CAUTION
System Failure
Do not reboot or power down the Integrated Recorded Announcer card during the software upgrade process. When the upgrade is complete, the system displays *OK*.

After OK is displayed, do a **cold reboot** on the card to activate the software upgrade.

To perform a software upgrade, follow the steps in Procedure 68 "Performing a software upgrade" (page 183).

Procedure 68
Performing a software upgrade

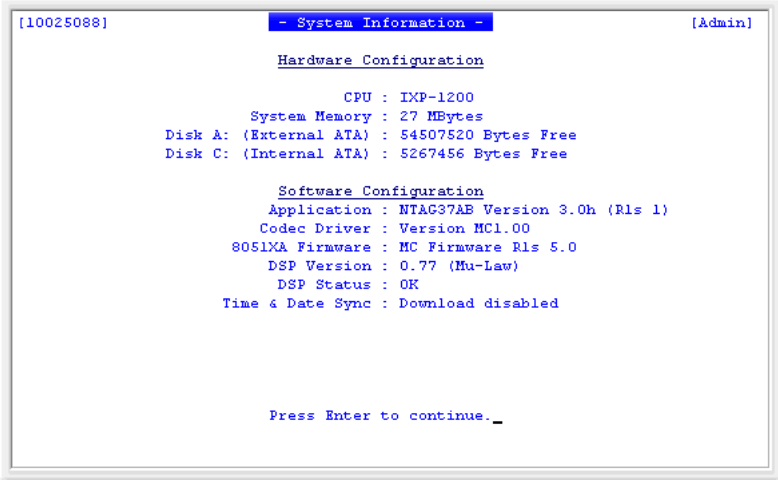
Step	Action
1	At the **`Filename:`** prompt, enter the file to be downloaded from the PC Card to the Integrated Recorded Announcer card's internal Flash memory (C: drive), to upgrade the current software. Select **Browse** to scan the list of available upgrade files.
2	Select **Upgrade** to place the selected file into the internal Flash memory of the Integrated Recorded Announcer card. ***Note:*** The upgrade can take a while. Wait for the *Upgrade successful* message to be displayed before proceeding.
3	After the upgrade is completed, select **Exit** to return to the Pack Administration menu.
4	Access the **Keycode Entry** window to enter the keycode for the software upgrade. See "Keycode Entry" (page 181). ***Note:*** Step 4 is not necessary for a simple bug fix.
5	Go to the **Cold Reboot** window to cold-reboot the Integrated Recorded Announcer card. See "Maintenance and Diagnostics menu" (page 193). This activates the software upgrade.

--End--

System Information

At the Pack Administration window, select **3** to access the **System Information** window. See Figure 89 "System Information window" (page 184).

Figure 89
System Information window



The System Information window displays the following information:

- **Hardware Configuration** – including the CPU, the system memory, and the status of the drives.
- **Software Configuration** – including the application and firmware releases.

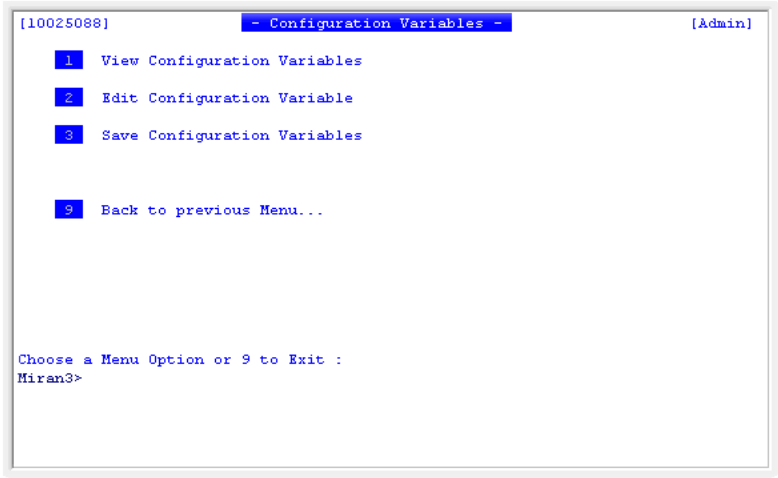
Use this information to help diagnose hardware or software issues that relate to a particular release of the product. After reviewing the system information, press **Enter** to return to the Pack Administration menu.

Configuration Variables menu

Configuration variables are variables that control certain aspects of the operation of the Integrated Recorded Announcer card. These variables are not immediately visible to the user, and the default settings are usually sufficient. However, an administrator can view and change these variables when non-standard options are necessary. Table 22 "Configuration Variables" (page 114) on Table 22 "Configuration Variables" (page 114) lists the configuration variables along with their values and descriptions.

In the Pack Administration window, select **5** to access the **Configuration Variables** menu. See Figure 90 "Configuration Variables menu" (page 185).

Figure 90
Configuration Variables menu



At the Configuration Variables menu, the following options are available:

- **View Configuration Variables** – enables the current values of all the configuration variables to be viewed. Refer to “View Configuration Variables” (page 185).
- **Edit Configuration Variables** – enables the current values of the configuration variables to be edited. Refer to “Edit Configuration Variables” (page 186).
- **Save Configuration Variables** – enables any changes made to the configuration variables to be saved. Integrated Recorded Announcer saves the current configuration variables when the option **3** is selected. There is no separate window for this function; a confirmation message is simply received.

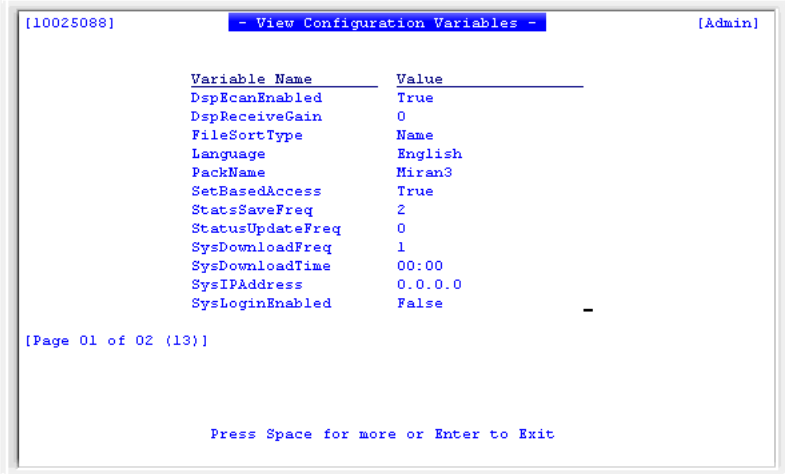
  Note: This function saves the configuration variables to the default drive with the filename _CONFIG.DAT.

- **Back to previous Menu...** – returns to the Pack Administration window. Save any changes made to the configuration variables before exiting.

View Configuration Variables

In the Configuration Variables window, select **1** to access the **View Configuration Variables** window. See Figure 91 "View Configuration Variables window" (page 186).

Figure 91
View Configuration Variables window



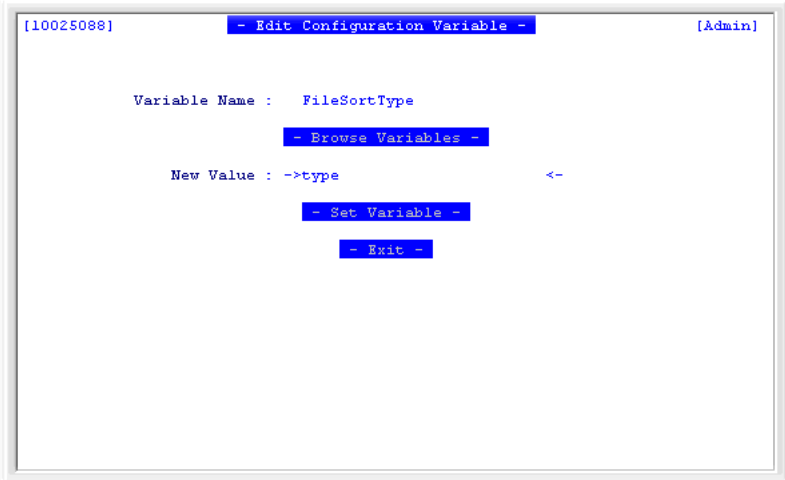
At the View Configuration Variables window, the following options are available:

- Press **Space bar** to see more of the configuration variables.
- Press **Enter** to return to the Configuration Variables menu.

Edit Configuration Variables

At the Configuration Variables window, select **2** to access the **Edit Configuration Variables** window. See Figure 92 "Edit Configuration Variables window" (page 186).

Figure 92
Edit Configuration Variables window



To edit the configuration variables, follow the steps in Procedure 69 “Editing the configuration variables” (page 187).

Procedure 69
Editing the configuration variables

Step	Action
1	At the **`Variable Name:`** prompt, enter the name of the variable to be edited. Select **Browse Variables** to scan and select from the list of available variables.
2	At the **`New Value:`** prompt, enter the new value of the variable selected in step 1. Make sure that the value falls within the range of acceptable values according to Figure 18 "Calendar Assignment window" (page 103) on Figure 18 "Calendar Assignment window" (page 103).
3	Select **Set Variable** to set the new value of the variable. ***Note:*** Steps 1 through 3 can be repeated for as many variables as needed.
4	Select **Exit** to return to the Configuration Variables menu.
5	At the Configuration Variables menu, select **3** to save the current (new) set of configuration variables.

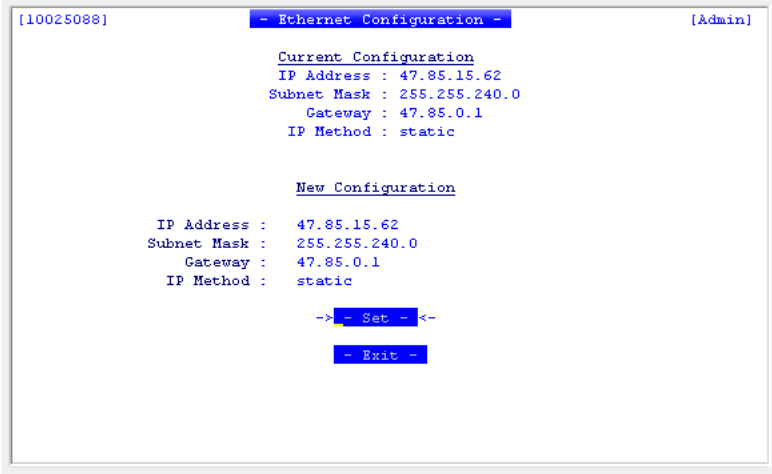
--End--

CAUTION
Loss of Data
After configuration variables are edited at the Edit Configuration Variables window, select **3** (Save Configuration Variables) in the Configuration Variables menu to save the changes. If this is not done, the changes will not take effect.

Ethernet Configuration

At the Pack Administration menu, select **5** to access the **Ethernet Configuration** window. See Figure 93 "Ethernet Configuration window" (page 188).

Figure 93
Ethernet Configuration window



LAN access to the Integrated Recorded Announcer card is optional, but it is necessary to do any of the following:

- use the embedded browser user interface to perform OA&M
- Telnet into the Integrated Recorded Announcer card from a remote site
- transfer files to and from the Integrated Recorded Announcer card using FTP

The IP address, subnet mask, gateway, and the IP method for the Integrated Recorded Announcer card must be configured correctly to enable LAN access to the card. The MAC address is unique to each Integrated Recorded Announcer card; it cannot be changed.

CAUTION
System Failure
Consult with the network administrator before configuring the LAN parameters. Incorrect parameters can cause problems to other users in the network or can lead to network outages.

To configure the Integrated Recorded Announcer card for LAN access, follow the steps in Procedure 70 “Configuring the Integrated Recorded Announcer card for LAN access” (page 188).

Procedure 70
Configuring the Integrated Recorded Announcer card for LAN access

Step	Action
1	Under **New Configuration:**, enter the IP address at the appropriate prompt.

2 Enter the subnet mask at the appropriate prompt.

3 Enter the gateway at the appropriate prompt.

Note: The gateway IP address tells the Integrated Recorded Announcer card where the local gateway router is. This enables access from networks outside of the Integrated Recorded Announcer card's subnet. It is not necessary to enter a gateway IP address if only accessing a local subnet.

4 Enter the IP method at the appropriate prompt.

Note: **Disabled** is the default, which makes the card inaccessible from the network even if the other parameters have been configured. Enter **`static`** if using a static IP address that corresponds to the IP address that was entered on this window. Enter **`bootp`** to indicate that the card must request its IP address from a bootp server on the network.

5 Select **Set** to register the new IP address, subnet mask, gateway, and IP method.

A valid LAN configuration receives an **Ethernet Configuration Set** acknowledgment.

6 Select **Exit** to return to the Pack Administration menu.

--End--

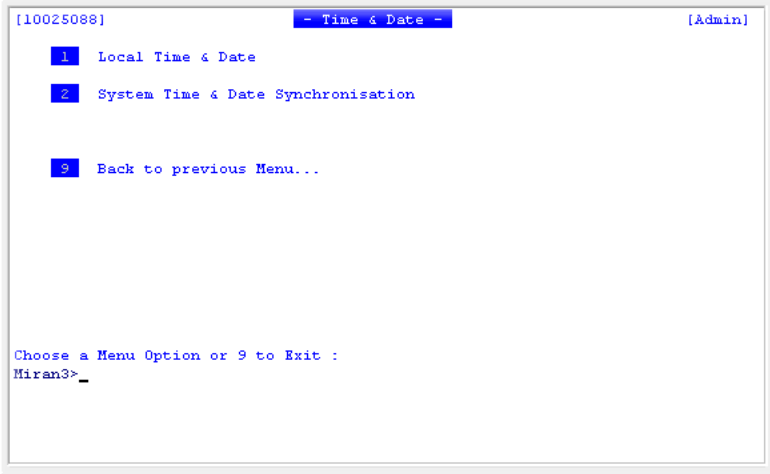
Note: The card must be rebooted for the new LAN configuration parameters to take effect.

Time and Date Configuration menu

Note: To use the Time & Date Synchronization feature, LAN access for the system must be configured. For instruction on how to configure the system, refer to "Configuring Ethernet for Time and Date Synchronization" (page 59).

At the Pack Administration menu, select **6** to access the **Time & Date Configuration** menu. See Figure 94 "Time and Date Configuration Menu" (page 190).

Figure 94
Time and Date Configuration Menu



On the Time & Date Configuration menu, the following options are available:

- **Local Time & Date** – enables the time and date to be set on the Integrated Recorded Announcer card manually. Refer to “Local Time and Date” (page 190).
- **System Time & Date Synchronization** – enables the Integrated Recorded Announcer card to be configured to retrieve the time and date information automatically from the system. Refer to “System Time and Date Synchronization” (page 191).

Local Time and Date

On the Time & Date Configuration menu, select **1** to access the **Local Time & Date** window. See Figure 95 "Local Time and Date window" (page 191).

Figure 95
Local Time and Date window

To set the time and date for the Integrated Recorded Announcer card manually, follow the steps in Procedure 71 “Setting the time and date for the Integrated Recorded Announcer card manually” (page 191).

Procedure 71
Setting the time and date for the Integrated Recorded Announcer card manually

Step	Action
1	Enter the current time at the **`Time:`** prompt.
2	Enter the current date at the **`Date:`** prompt. ***Note:*** Integrated Recorded Announcer automatically calculates the day of the week.
3	Select **-Set-** to set the time and date.
4	Select **-Exit-** to return to the Time & Date Configuration menu.

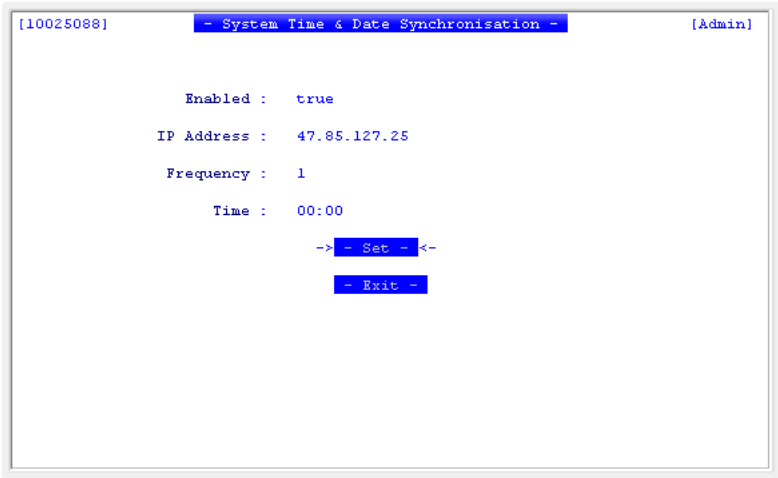
--End--

Note: This procedure performs the same operation as the **`SETTIME`** and **`SETDATE`** commands.

System Time and Date Synchronization

On the Time & Date Configuration menu, select **2** to access the System Time & Date Synchronization window. See Figure 96 "System Time and Date Synchronization window" (page 192).

Figure 96
System Time and Date Synchronization window



To enable time and date synchronization with the system, follow the steps in Procedure 72 “Enabling time and date synchronization with the system” (page 192).

Procedure 72
Enabling time and date synchronization with the system

Step	Action
1	Set the **`Enabled:`** prompt to **true**.
2	Enter the IP address of the system. ***Note:*** The system must be on the same subnet as the Integrated Recorded Announcer card.
3	At the **`Frequency:`** prompt, enter the number of days between each synchronization attempt (for example, enter **1** to synchronize every day).
4	At the **`Time:`** prompt, enter the time of day the Integrated Recorded Announcer card will attempt to synchronize with the system. ***Note 1:*** It is very important to schedule the time for synchronization during the period of lowest use (for example, not during midnight routines). ***Note 2:*** The MIRAN III Succession Media Card makes one attempt to synchronize for each scheduled attempt. If the synchronization fails, the MIRAN III Succession Media Card keeps its current time and date configuration and tries to synchronize again at the next scheduled attempt.

Note 3: The System Time & Date Synchronization requires the MIRAN III Ethernet Configuration to be set to the relevant IP Method. System Time & Date Synchronization should never be set to *enabled* if the IP Method in the Ethernet Configuration is set to *disabled*.

5 Select **-Set-** to set the time and date synchronization.

6 Select **-Exit-** to return to the Time & Date Configuration menu.

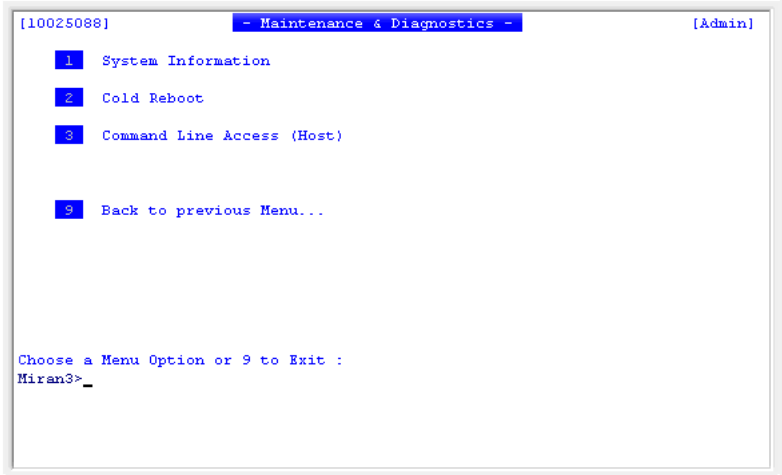
Note: The System Time & Date Synchronization requires the MIRAN III Succession Media Card to log into the Meridian 1 or Succession CS 1000 system. This can affect other operations on the switch. Therefore, careful staging of the synchronization process is necessary.

--End--

Maintenance and Diagnostics menu

On the Main Menu, select **3** to access the **Maintenance and Diagnostics** menu. See Figure 97 "Maintenance and Diagnostics menu" (page 193).

Figure 97
Maintenance and Diagnostics menu



In the Maintenance and Diagnostics menu, with the proper level of access, the following actions can be performed:

- Select **1** to access the System Information window. This is the same window accessed from the Pack Administration menu. Refer to “System Information” (page 183) for details.
- Select **2** to perform a cold reboot of the Integrated Recorded Announcer card. This is a full system reboot.
- Select **3** to open the **Command Line Access Host**. Use this interface to perform PI testing and debugging.
- Select **9** to return to the Main Menu.

User Administration menu

At the Main Menu, select **4** to access the User Administration menu. See Figure 98 "User Administration menu" (page 194). Integrated Recorded Announcer enables the configuration of multiple users for a single Integrated Recorded Announcer system. Only users with administrator privileges and higher have access to this menu.

Figure 98
User Administration menu

There are four options at the User Administration menu:

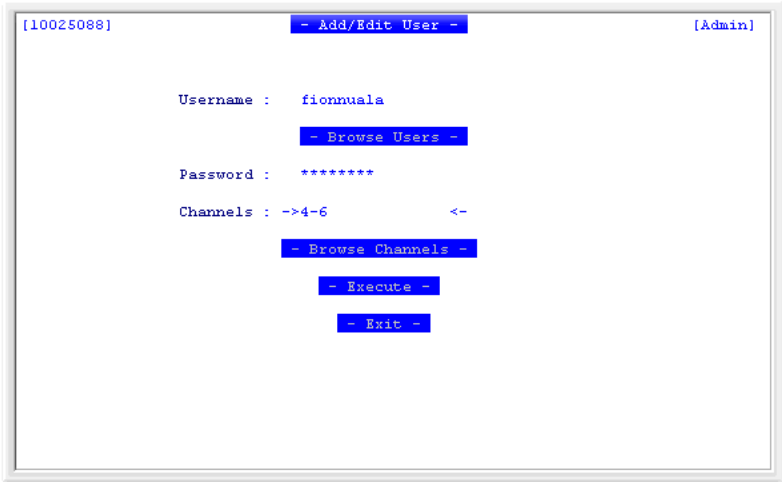
- Select **1** to add or edit a user. Refer to “Add/Edit User” (page 195).
- Select **2** to view a list of the users and their corresponding channel assignments. Refer to “View Users” (page 196).
- Select **3** to delete a user. Refer to “Delete User” (page 196).
- Select 9 to exit and return to the Main Menu.

When a new user is defined, give the user a password and a group of channels that the user can access.

Add/Edit User

At the User Administration menu, select **1** to access the **Add/Edit User** window. See Figure 99 "Add/Edit User window" (page 195).

Figure 99
Add/Edit User window



To add or edit a user, follow the steps in Procedure 73 “Adding or editing a user” (page 195).

Procedure 73
Adding or editing a user

Step	Action
1	Enter the user name, which can be any combination of alphanumeric characters. If adding a new user, select **Browse** to ensure that the user name does not already exist. If editing an existing user, select **Browse** to select a name from the list of users.
2	Enter the new password for the user. The password must be at least eight alphanumeric characters. The maximum length is 12 characters.
3	Enter the channels that the user is allowed to access. Select **Browse Channels** to view and select from the list of available channels. Use ’s’ to toggle the selection of a channel.
4	Select **Add User** to save the new user information.

This step updates the information on the C: drive automatically.

5 Select **Exit** to return to the User Administration menu.

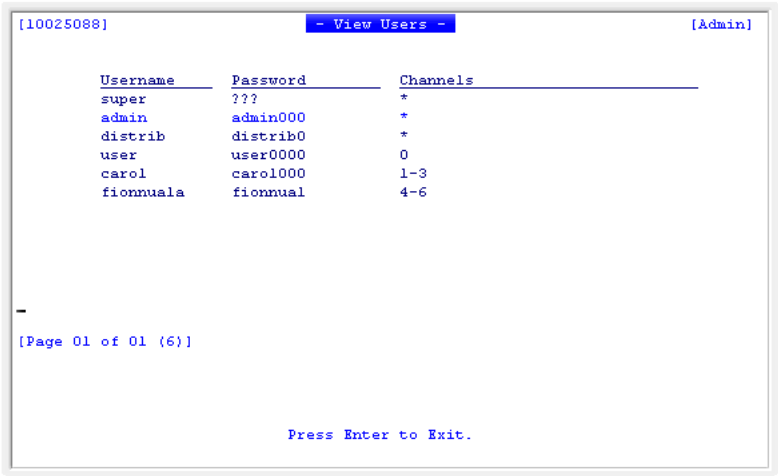
--End--

Note: Integrated Recorded Announcer saves all user information in a file named C_USERS.DAT. All default users and passwords can be restored by deleting the C:_USERS.DAT file.

View Users

On the User Administration menu, select **2** to access the **View Users** window. See Figure 100 "View User window" (page 196). This window lists the users' names and the channels that each user can access.

Figure 100
View User window



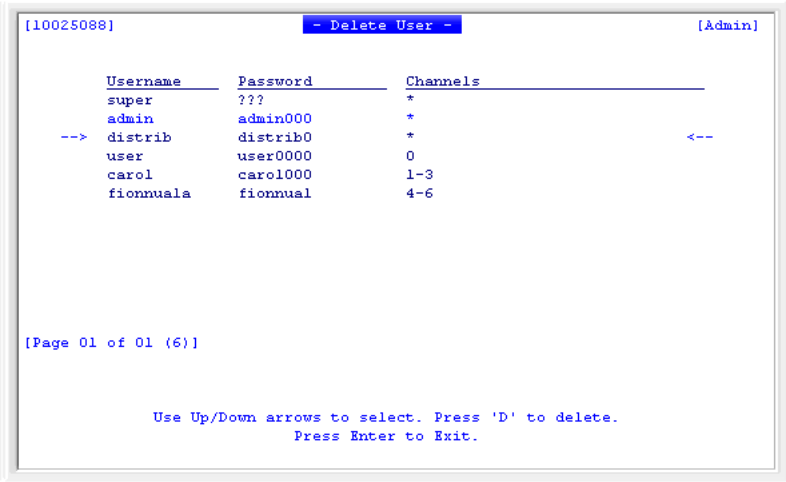
In the View Users window, the following actions can be performed:

- Press the **Space bar** to view more users if they do not all appear on the initial window.
- Press **Enter** to exit and return to the User Administration window.

Delete User

On the User Administration menu, select **3** to access the **Delete User** window. See Figure 101 "Delete User window" (page 197). This window lists the users' names and the channels that each user is allowed to access.

Figure 101
Delete User window



To delete a user, follow the steps in Procedure 74 “Deleting a user” (page 197).

Procedure 74
Deleting a user

Step	Action
1	Use the up/down arrows to select the user to be deleted. If the user does not appear on the initial window, press the **Spacebar** for more users.
2	Press **D** to delete the selected user. This step updates the information on the C: drive automatically.
3	Press **Enter** to exit and return to the User Administration menu.

--End--

Integrated Recorded Announcer card OAM command set

Instead of using the menu structure described in the first half of this chapter, commands can be entered on the command line in the Main Menu. This is advantageous to an experienced user who knows which command to use.

Most of these commands can also be used in batch files to allow complex configurations to be executed in a single command.

Files are specified using the DOS filenaming convention of an eight-character filename followed by a three-character extension. The filename is normally preceded by a device descriptor, as shown in Table 24 "Integrated Recorded Announcer card disk drives" (page 198).

Table 24
Integrated Recorded Announcer card disk drives

Drive name	Designation
External PC Card Drive	A:
Internal Flash Drive	C:

The Integrated Recorded Announcer card channels are listed in Table 25 "Channel designations" (page 198).

Table 25
Channel designations

Channels	Designation
Internal	0-7
Analog Inputs	ANALOG0/codec

These designators are used on the command line when executing Integrated Recorded Announcer card commands.

OAM command summary

OA&M commands are used instead of using different menus to perform system applications configuration. A command is entered on the command line at the bottom of the Main Menu window. See Figure 56 "Main Menu" (page 148). For example:

MIRAN[00]>CON_WAV_PCM PLSWAIT.WAV ANN00005.ULW

Table 26 "OAM command summary" (page 198) lists Integrated Recorded Announcer card OA&M commands along with their descriptions, parameters, and syntax definitions. It also lists terminal-based OA&M access commands that can be entered on the command line on the terminal window.

Table 26
OAM command summary

Command	Parameters	Function
BACKUP	[Device]	Backs up the assignment/configuration information.

Table 26
OAM command summary (cont'd.)

Command	Parameters	Function
CAL_ADD	[Channel list] [Device:Filename.Type] [Descriptor] or [Channel list] [Device:Filename.Type] [Time Entry] [Date Entry]	Adds a Calendar assignment.
CAL_CLEAR		Clears all Calendar assignments.
CAL_LOAD	[Device:Filename.Type]	Loads Calendar assignments from a file.
CAL_REMOVE	[Calendar Entry Number]	Removes a Calendar assignment.
CAL_SAVE	[Device:Filename.Type]	Saves Calendar assignments to a file.
COLD_RESET		Performs a cold reset on the pack.
CONV_PCM_WAV	[Input Device:Filename.ULW] [Output Device:Filename.WAV]	Converts a file from PCM (.ALW or .ULW) to WAV.
CONV_WAV_PCM	[Input Device:Filename.WAV] [Output Device:Filename.ULW]	Converts a file from WAV to PCM (.ALW or .ULW).
COPY	[Source Device:Filename.Type] [Destination Device:Filename.Type]	Copy a file.
CVREAD	[Configuration Variable]	Shows the value of a configuration variable.
CVSAVE		Saves Configuration Variables to the drive specified by the variable 'DefaultDrive'.
CVSET	[Configuration Variable] [value]	Sets the value of a configuration variable. Integrated Recorded Announcer saves values if 'AutoSave' is TRUE.
DELETE	[Device:Filename.Type]	Deletes a file.
DESC_ADD	[Descriptor Name] [Time Entry] [Date Entry]	Adds/changes Calendar Descriptor.
DESC_CLEAR		Clears all Calendar Descriptors.
DESC_LOAD	[Device:Filename.Type]	Loads Calendar Descriptors from a file.
DESC_REMOVE	[Descriptor Name]	Removes a Calendar Descriptor.
DESC_SAVE	[Device:Filename.Type]	Saves Calendar Descriptors to a file.

Table 26
OAM command summary (cont'd.)

Command	Parameters	Function
ERASE_DIR	[Device:Directory]	Removes a directory and its contents.
IPCONFIG	[IP Address] [Subnet Mask] [Gateway Address] [IP Method]	Configures the IP information on the pack.
KEYCODE	[Keycode]	Capacity upgrade by means of a keycode.
LIST	[Device:Filename.Type]	Lists files for a given drive.
LOCAL_TIME	[Time hh:mm] [Date dd/mm/yyyy]	Sets the time and date on the pack.
LOGOFF		Logs off and bring user back to the login window.
MKDIR	[Device:Directory name]	Creates a directory.
MOVE	[Source Device:Filename.Type] [Destination Device:Filename.Type]	Moves a file.
PLAYSTOP	[External Channel]	Stops playback of a file on an external channel.
RECORD	[Device:Filename.Type] [Duration]	Records from an external channel to a file for a given duration.
RECORDSTOP	[External Channel]	Stops recording on an external channel.
RENAME	[Device:Old_File_Name.Type] [New_File_Name.Type]	Renames a file.
RESETSTAT		Resets channel statistics.
RESTORE	[Device]	Restores the backed-up assignment/configuration information.
RMDIR	[Device:Directory]	Removes an empty directory.
RUN	[Device:Filename.BAT]	Runs a batch file.
SAVESTATS	[Device:Filename.Type]	Saves channel statistics to a file.
SERIAL_PORT		Hands control of the serial port to the 8051XA for debugging purposes.
SETDATE	[dd:mm:yyyy]	Sets the date on the pack.
SETTIME	[hh:mm]	Sets the time-of-day on the pack.
SETUP_PROMPTS	[Device:Directory]	Copies TUI voice prompts to a directory.
SHELL		Enters the vxWorks shell for debugging.
STATS		Shows channel statistics window.

Table 26
OAM command summary (cont'd.)

Command	Parameters	Function
STATUS		Shows the pack status window.
SW_UPGRADE	[Device:Filename.Type]	Upgrades the Integrated Recorded Announcer software.
SYSINFO		Shows the system information window.
SYSTEM_TIME	[Enabled] [IP Address] [TTY Username] [TTY Password] [Frequency] [Time]	Sets the parameters for System Time & Date Synchronization.
SYSTEM_TIME_SYNC		Initiates the download of the System Time & Date from the system.
TIME		Shows the current day, time, and date
TUI_ASSIGN	[Channel] [Device:Filename.Type]	Makes a TUI calendar assignment.
TUI_UNASSIGN	[Channel]	Unassign a TUI assignment.
USER_ADD	[User Name] [Password] [Channel List]	Adds a new User.
USER_REMOVE	[User Name]	Removes a User.
VIEW	[Device:Filename.Type]	Views a text file.

OAM commands

The command syntax explains in detail each command and its parameters.

Read configuration variable

Use this command to show the value of a particular configuration variable.

Syntax	**CVREAD** [Configuration Variable]
[Configuration Variable]	The configuration variable to be read.

Save configuration variables

Use this command to save the configuration variables to the drive specified by the variable 'DefaultDrive'.

Syntax	**CVSAVE**

Set configuration variable

Use this command to set the value of a configuration variable. The Integrated Recorded Announcer card saves the value if the variable AutoSave is TRUE.

Syntax	**CVSET** [Configuration Variable] [Value]
[Configuration Variable]	The configuration variable to be read.
[Value]	The desired value of the configuration variable.

Keycode entry

Enter a keycode to upgrade/activate software functionality.

Syntax	**KEYCODE** [keycode]
[keycode]	The keycode received in the upgrade/installation kit.

Operational statistics

Use this command to display a report of the RAN statistics.

Syntax	**STATS**

System Information

Use this command to display a report of the system hardware configuration.

Syntax	**SYSINFO**

View text file

Use this command to view a text file.

Syntax	**VIEW** [dev:filename.type]
[dev:filename.type]	Device indicates on which drive the file resides. The filename is eight characters.

Configure IP information

Use this command to configure the IP information for the pack.

Syntax	**IPCONFIG** [IP address] [subnet mask] [gateway address] [IP method]
[IP address]	The IP address for the Integrated Recorded Announcer card.
[subnet mask]	The subnet mask for the Integrated Recorded Announcer card.

[gateway address]	The gateway on which the Integrated Recorded Announcer card resides.
[IP method]	The method the Integrated Recorded Announcer card uses to obtain the IP address. The choices are: bootp – to obtain an IP address upon bootup static – to have a constant IP address disabled – to disable IP capability

Allow 8051XA debugging

Use this command to hand control of the serial port to the 8051XA for debugging purposes.

Syntax	**SERIAL_PORT**

Allow vxWorks debugging

Use this command to enter the vxWorks shell for debugging purposes.

Syntax	**SHELL**

Synchronize time and date

Use this command to initiate the download of time and date information from the system.

Syntax	**SYSTEM_TIME_SYNC**

Announcement commands

The following commands deal with announcements.

Announcement Record

This command records an announcement and stores it in a file. Recording starts immediately and terminates after the specified duration.

Syntax:	**RECORD** [source] [device:filename] [duration]
[source]	ANALOG1, ANALOG2, CHANNEL 7 (for set)
[device:filename]	Device indicates on which device the file resides. The file name is a maximum of eight characters with a three-character extension.
[duration]	Maximum play duration in seconds.

Stop Recording Announcement

This command halts all announcement recording.

Syntax:	**RECORDSTOP**

Convert Announcement File

This command converts audio files from one format to another. Raw PCM (.ULW or .ALW) is the default format used by the Integrated Recorded Announcer card. This utility allows conversion between any combination of the following formats:

Windows™ format audio file	.WAV
Raw PCM	.ULW, .ALW

Syntax and description of announcement files

Syntax:	**CONV_PCM_WAV** [src dev:filename.ULW (or .ALW)] [dest dev:filename.WAV]
[src dev:filename.ext]	Device indicates on which device the file resides. The filename contains a maximum of eight characters.
[dest dev:filename.ext]	Device indicates on which device the converted file will be placed. The filename contains a maximum of eight characters.

Calendar commands

The following commands deal with the calendar function.

Add a calendar assignment

This command creates a calendar assignment using either a descriptor or a time and date entry to determine when the announcement plays.

Syntax:	**CAL_ADD** [channel list] [dev:filename.type] [descriptor] or **CAL_ADD** [channel list] [dev:filename.type] [time entry] [date entry]
[channel list]	Specifies on which channels the announcement will play.
[dev:filename.type]	Device indicates on which drive the file resides. The filename is eight characters.
[descriptor]	A previously defined descriptor that describes the times and date the announcement will play.
[time entry]	This is the time of day the announcement will play. Refer to Table 4 "Time entry examples - sorted from most specific to least specific" (page 28) for available formats.
[date entry]	This is the days or dates the announcement will play. Refer to Table 5 "Date entry examples - most specific to least specific" (page 28) for available formats.

Remove a calendar assignment

This command deletes a calendar assignment from the list of calendar assignments.

Syntax:	**CAL_REMOVE** [calendar entry number]
[calendar entry number]	Specifies which calendar assignment to delete from among the list of calendar assignments.

Load calendar assignments from a file

Use this command to load a group of calendar assignments that were previously saved in a file.

Syntax:	**CAL_LOAD** [dev:filename.type]
[dev:filename.type]	Device indicates on which drive the file resides. The filename is eight characters in length.

Save a calendar list to a file

Use this command to save the active list of calendar assignments to a file.

Syntax:	**CAL_SAVE** [dev:filename.type]
[dev:filename.type]	Device indicates on which drive the file is to be saved. The filename is eight characters.

Clear current calendar assignments

Use this command to clear the currently active list of calendar assignments.

Syntax:	**CAL_CLEAR**

Assign TUI announcement

Use this command to assign a TUI announcement to a group of channels.

Syntax	**TUI_ASSIGN** [channel] [dev:filename.type]
[channel]	The channel, or channels, on which the assignment is to be made. Use "*" (asterisk) for all channels.
[dev:filename.type]	Device indicates on which drive the file resides. The filename is eight characters.

Unassign TUI announcement

Use this command to unassign a TUI announcement from a group of channels.

Syntax	**TUI_UNASSIGN** [channel]
[channel]	The channel, or channels, from which the assignment is to be removed. Use "*" (asterisk) for all channels.

Descriptor commands

The following commands deal with the descriptor function.

Add a descriptor

Use this command to create a descriptor, which can be used for multiple calendar assignments.

Syntax:	**DESC_ADD** [descriptor name] [time entry] [date entry]
[descriptor name]	The name for the descriptor, from 1 to 16 characters in length.
[time entry]	This is the time of day an announcement with this descriptor will play. Refer to Table 4 "Time entry examples - sorted from most specific to least specific" (page 28) for available formats.
[date entry]	This is the days or dates an announcement with this descriptor will play. Refer to Table 5 "Date entry examples - most specific to least specific" (page 28) for available formats.

Remove a descriptor

Use this command to delete a descriptor from the current list of descriptors.

Syntax:	**DESC_REMOVE** [descriptor name]
[descriptor name]	The name of the descriptor to be removed.

Load descriptors from a file

Use this command to load a group of descriptors that was previously saved in a file.

Syntax:	**DESC_LOAD** [dev:filename.type]
[dev:filename.type]	Device indicates on which drive the file resides. The filename is eight characters.

Save current descriptors to a file

Use this command to save the active list of descriptors to a file.

Syntax:	**DESC_SAVE** [dev:filename.type]
[dev:filename.type]	Device indicates on which drive the file is to be saved. The filename is eight characters.

Clear current descriptors

Use this command to clear the currently active descriptors.

Syntax:	**DESC_CLEAR**

User commands

The following commands deal with the list of users.

Add a user

Use this command to define a user.

Syntax:	**USER_ADD** [user name] [password] [channel list]
[user name]	The name of the user (the login ID).
[password]	The password the user must enter to access the Integrated Recorded Announcer card. The password *must* be eight characters long.
[channel list]	The list of channels that the user will be able to access. For access to all channels, enter "*" (asterisk).

Note: Integrated Recorded Announcer saves all user information in a file named "C_USERS.DAT". All default users and passwords can be restored by deleting the C:_USERS.DAT file.

Remove a user

Use this command to delete a user from the current list of users.

Syntax:	**USER_REMOVE** [user name]
[user name]	The name of the user to be removed.

File commands

This command controls RAN and music files.

List Files

Use this command to list all the files on the specified device or drive.

Syntax:	**LIST** [device:] [filename] [.extension]
[device:]	Device indicates on which device the file resides.

[filename:]	Filename, max eight characters or wildcard "*" (asterisk). If a filename is omitted then all files on the specified device will be listed.
[.extension:]	The extension can be a maximum of three characters or wildcard "*" (asterisk). If an extension is omitted then all files with a null extension on the specified device will be listed.

Copy File

Use this command to copy files.

Syntax:	**COPY** [src device:filename.ext] [dest device:filename.ext]
[src dev:filename.ext]	Device indicates on which device the file resides. Filename is a maximum of eight characters and the extension a maximum of three characters.
[dest dev:filename.ext]	Device indicates on which device the copied file will be placed. Filename is a maximum of eight characters and the extension a maximum of three characters.

Move File

This command moves files from a source to a destination location.

Syntax:	**MOVE** [src device:filename.ext] [dest device:filename.ext].
[src dev:filename.ext]	Device indicates on which device the file resides. Filename is a maximum of eight characters and the extension a maximum of three characters.
[dest dev:filename.ext]	Device indicates on which device the moved file will be placed. Filename is a maximum of eight characters and the extension a maximum of three characters.

Delete File

This command deletes a file.

Syntax:	**DELETE** [dev:filename.ext]
[dev:filename.ext]	Device indicates on which device the file resides. Filename is a maximum of eight characters and the extension a maximum of three characters.

Rename File

This command renames a file.

Syntax:	**RENAME** [old dev:filename.ext] [new filename.ext].
[old dev:filename.ext]	Device indicates on which device the original file resides. Filename is a maximum of eight characters and the extension a maximum of three characters.
[new filename.ext]	The new filename is a maximum of eight characters and the extension a maximum of three characters.

Backup configuration

This command copies all active configuration announcement files to the specified destination.

Syntax:	**BACKUP** [destination]
[destination]	This can be one of the following, device: - logical storage device A: or C: ANALOG0 - Analog output port 0

Restore configuration

This command restores files that were backed up using the BACKUP command. Only files that were backed up to a logical device can be restored.

Syntax:	**RESTORE** [device:]
[device:]	Device indicates on which device the backed up file resides.

Software upgrade

This command upgrades the Integrated Recorded Announcer operating system and application software to the version stored on the specified device.

Syntax:	**SW_UPGRADE** [device:]
[device:]	Device indicates on which device the new software resides.

Run Batch File

This command runs batch files.

Syntax:	**RUN** [device:filename.BAT]
[device:filename]	Device indicates on which device the file resides. Filename is a maximum of eight characters. The extension .BAT will be assumed.

Make a directory

Use this command to create a directory on a particular drive.

Syntax	**MKDIR** [device:directory]
[device:	The drive where the directory is to be made, either A: or C: drive.
directory]	The name for the directory

Remove a directory

Use this command to remove a directory from a particular drive.

Syntax	**RMDIR** [device:directory]
[device:	The drive from where the directory will be removed, either A: or C: drive.
directory]	The name of the directory to be removed

Erase a directory

Use this command to remove a directory and its contents from a particular drive.

Syntax	**ERASE_DIR** [device:directory]
[device:	The drive from where the directory is to be removed, either A: or C: drive.
directory]	The name of the directory to be erased.

Copy royalty-free music to the C: drive

Use this command to copy the files, MUSIC.MCF and MIRANII.PDF, from the A: drive to the C: drive.

Syntax	**SETUP_C** [device]
[device]	The drive from where the files are to be copied, A: drive.

Copy TUI voice prompts to a directory

This command copies the TUI voice prompts to a directory.

Syntax:	**SETUP_PROMPTS** [device:directory]
[device:	The drive to which the prompts will be copied, either A: or C: drive.
directory]	The name of the directory where the prompts are to be copied.

Miscellaneous commands

These commands configure and display time and date parameters.

Set Time and Date

This command sets the time and date on the Integrated Recorded Announcer card.

Syntax:	**LOCAL_TIME** [Time] [Date]
[Time]	Time of day in hours and minutes (hh:mm).
[Date]	The date (dd/mm/yyyy).

Set Time of Day

This command sets the time of day.

Syntax:	**SETTIME** [HH:MM]
[HH:MM]	Time of day in hours and minutes.

Set the date

This command sets the date for the internal calendar.

Syntax:	**SETDATE** [day of month / month / year]

Configure System Time and Date synchronization

This command sets the parameters for System Time and Date synchronization.

Syntax:	**SYSTEM_TIME** [enabled] [IP address] [TTY username] [TTY password] [frequency] [time]
[enabled]	Must be 'true' for System Time & Date synchronization to work.
[IP address]	The IP address of the system.
[TTY username]	The username used to access the system through the ELAN subnet.
[TTY password]	The password used to access the system through the ELAN subnet.
[frequency]	The number of days between each synchronization attempt, from 1 to 7 days.
[time]	The time of day for the Integrated Recorded Announcer card to attempt to synchronize with the system. Set the time for the period of *lowest* technician use.

Display Day and Time

This command shows the current day-of-week and time.

Syntax:	**TIME**

Show Pack Status

This command shows the Pack Status window.

Syntax: **STATUS**

Show Statistics

This command shows the current statistics for channel usage.

Syntax: **STATS**

Save Statistics

Saves the current operational statistics to a file.

Syntax:	**SAVESTATS** [dev:filename.type]
[dev:filename.type]	Device indicates to which drive the file will be saved. The filename is eight characters.

Clear Statistics

This command resets all of the statistics values to zero.

Syntax: **RESETSTAT**

Cold reset

This command activates a cold reset of the Integrated Recorded Announcer card.

Syntax: **COLD_RESET**

Logoff

This command logs the user out of the terminal OA&M.

Syntax: **LOGOFF**

Integrated Recorded Announcer batch file support

The Integrated Recorded Announcer batch files are used to execute sequences of frequently used commands. The syntax of these commands is the same as for the command line. Comments are indicated by "#" (octothorpe) in the left-most column.

Restrictions

The maximum number of lines for each batch file (including comments) is limited to 255.

Commands and comments cannot be mixed on the same line.

Batch file example

```
# Batch file INIT.BAT
# Initial channel assignments
# Copy speech file pls_hold from device A: to internal flash
device C:
COPY A:PLS_HOLD.ULW C:
# Assign "please hold" announcement to channel 0
ASSIGN MON 0 C:PLS_HOLD.ULW 00:00
# Assign music connected to analog port 0 to channel 1
ASSIGN MON 1 ANALOG0 00:00
```

Setting up emergency announcements quickly

Situations can arise where an emergency announcement must be set up to play on all channels and override all other announcements. Integrated Recorded Announcer provides an easy way to do this, using TUI.

To set up an emergency announcement on all channels, follow the steps in Procedure 75 “Setting up an emergency announcement on all channels” (page 213).

Procedure 75
Setting up an emergency announcement on all channels

Step	Action
1	Log into the TUI.
2	Record the emergency announcement.
3	Assign the emergency announcement to all channels. ***Note:*** This assignment through the TUI overrides any previous assignments.
4	Once the emergency has passed, delete the TUI assignment through the browser or Text-based User Interface windows. This returns the Integrated Recorded Announcer to normal operation. ***Note:*** For instructions on using the TUI, refer to “Telephone User Interface” (page 215).

--End--

Telephone User Interface

Contents

This section contains information on the following topics:

Introduction

This chapter describes the Integrated Recorded Announcer Telephone User Interface (TUI), which can be used to perform certain OA&M functions.

To enable the TUI, first perform the following actions:

- Use LD 16 to build a DID route. "Configuring the DID route for the TUI" (page 57)
- Use LD 14 to configure port/channel 7 of the Integrated Recorded Announcer card as a DID trunk. "Configuring the Integrated Recorded Announcer trunks" (page 57)

- Enter the keycode for the Integrated Recorded Announcer card. “Keycode Entry” (page 181)
- Ensure that the configuration variable, ’SetBasedAccess’, is set to TRUE. “Configuration Variables menu” (page 184)

The TUI reduces the number of Integrated Recorded Announcer card ports available for RAN or music from eight to seven. Because there is no messaging between Integrated Recorded Announcer cards, port 7 must be reserved for the TUI on each Integrated Recorded Announcer card that requires this interface.

Note: If an Integrated Recorded Announcer card does not require the TUI, then all eight ports on the card are available for RAN or music.

Description

A TUI within the Integrated Recorded Announcer application allows the application to be accessed from any local DTMF telephone.

Note: The DTMF telephone must have an Unrestricted Class of Service to access the TUI.

The TUI uses a series of simple voice menus and prompts for quick modification of announcements and other simple tasks. Extensive changes must be implemented through the Text-based User Interface or the Browser User Interface (BUI).

The TUI enables the following actions:

- record new announcements
- play announcements
- assign and unassign announcements to Integrated Recorded Announcer card ports
- access the Integrated Recorded Announcer card security ID

The following *cannot* be done through the TUI:

- set the Recorded Announcer card clock
- assign time-of-day restrictions to announcements
- access system configuration functions.
- change passwords

The TUI allows a user to login and issue specific commands through the dialpad of a digital telephone or any standard DTMF telephone. For security, login requires a valid user name and password, which the

administrator supplies. The Integrated Recorded Announcer card does not identify itself until a valid user name and password is entered. The following pages describe the TUI menus.

Restrictions on TUI access

Toll calls (that is, dialing 0 or 1 as the first digit) to the TUI channel disconnect automatically if the NATL response is set to YES in LD 16. The same thing happens when the NFCR response is set to YES in LD 15.

Set both prompts to NO to allow toll calls to the TUI. Set **CLS = UNR** in LD 11 to allow a DTMF telephone access to the TUI.

Using the TUI

To perform application tasks over the DTMF telephone, the dialpad must be used. Press specific digits on the dialpad to log in and issue specific commands, as described in the following sections.

Login

To log into the Integrated Recorded Announcer card, follow the steps in Procedure 76 “Logging to the Integrated Recorded Announcer card” (page 217).

Procedure 76
Logging to the Integrated Recorded Announcer card

Step	Action
1	Go off-hook.
2	Dial the DID route access code of the Integrated Recorded Announcer card.
3	At the voice prompt, enter **#** (octothorpe), then a user name followed by * (asterisk). The default user name is **8737** (= "user").
4	At the next voice prompt, enter the password followed by * (asterisk). The default password is **87370000** (= "user0000").

--End--

If the login is valid, the TUI accesses the Main Menu. If the login is not valid after three attempts, the system disables further access attempts for 20 minutes.

The following conditions can prevent a user from accessing the Integrated Recorded Announcer card through the TUI:

- The user has made three invalid login attempts.
- NCOS, TGAR, or the Class of Service (for example, CLS = TENA) is restricted.
- The configuration variable 'SetBasedAccess' is set to FALSE.

Navigating the Main Menu

When the Main Menu is accessed, a recorded announcement lists the options for this menu. At the Main Menu, users can perform the following actions:

- Dial **1** to assign the current announcement to a channel.
- Dial **2** to play the current announcement.

  Note: When login first occurs, the current announcement is the same as the first announcement within the available disk volumes.
- Dial **3** to review channel assignments.
- Dial **4** to go to the previous announcement.
- Dial **5** to record an announcement.
- Dial **6** to go to the next announcement.
- Dial **76** to delete the current announcement.

  Note: When users dial 76 to delete the current announcement, all channel assignments that use the announcement must be removed.
- Dial **8** to hear the eight-digit Integrated Recorded Announcer security ID.
- Dial * (asterisk) to stop an announcement that is playing.

  Note: If no announcement is playing, dialing "*" (asterisk) saves any announcements that have been credited and logs the user off of the TUI.
- Dial **9** to repeat the list of options.

Recording an announcement

An announcement can be recorded through the TUI. The announcement can be assigned to channels through the TUI, Text-based User Interface, or BUI.

To record an announcement, follow the steps in Procedure 77 "Recording an announcement" (page 219).

Procedure 77
Recording an announcement

Step	Action
1	At the Main Menu, dial **5** to enter the Record menu.
2	At the Record menu, dial **5** to begin recording.
3	Dial * (asterisk) to end the recording. ***Note:*** If the drive capacity is reached *while* recording, the recording stops automatically.
4	Dial **2** to review the announcement, and/or dial **5** to record the announcement again. This step is optional.
5	Dial **1** to save the announcement.

--End--

When the announcement is saved, Integrated Recorded Announcer assigns it the filename ANNxxxxx, where xxxxx is the announcement number. Integrated Recorded Announcer adds the announcement to the first disk volume with available space of at least 64 kbytes or 8 seconds of recording. Then the TUI returns to the Main Menu.

Note: Except while recording an announcement, dial 9 for help and then * (asterisk) to return to the Main Menu.

Assigning an announcement

Through the TUI, an announcement can be assigned to channels 0 to 7. Nortel Networks does not recommend that an announcement be assigned to channel 7, as the Integrated Recorded Announcer card uses channel 7 for the TUI.

Note: An announcement can be assigned to channel 7, but it will not play unless channel 7 is reprogrammed as a RAN trunk.

Table 27 "Port/channel number assignments for the TUI" (page 219) lists the internal and cross-connect Integrated Recorded Announcer card ports/channels.

Table 27
Port/channel number assignments for the TUI

Channel Number	Description
0	Internal one-to-one port/channel
1	Internal one-to-one port/channel

Table 27
Port/channel number assignments for the TUI (cont'd.)

Channel Number	Description
2	Internal one-to-one port/channel
3	Internal one-to-one port/channel
4	Internal one-to-one port/channel
5	Internal one-to-one port/channel
6	Internal one-to-one port/channel
7	Internal one-to-one port/channel (alternatively used for TUI access).

To assign an announcement to a channel, follow the steps in Procedure 78 "Assigning an announcement to a channel" (page 220).

Procedure 78
Assigning an announcement to a channel

Step	Action
1	On the Main Menu, dial **2** to learn what the current announcement is. (This step is optional.)
2	At the Main Menu, dial **1** to enter the Assignment menu.
3	Enter the list of channels to which the announcement must be assigned. Dial * (asterisk) after each channel to separate it from the next channel.
4	Dial * (asterisk) a second time to end the list.
	--End--

For example, at the Assignment menu enter **2*3**** to assign the current announcement to internal channels 2 and 3.

If the channel assignment is not valid, the TUI prompts the user to try again. If the channel assignment is valid, the Integrated Recorded Announcer card clears all TUI assignments for the selected channels and assigns the current announcement to them. The TUI announces a successful assignment and returns to the Main Menu.

Note: Announcement assignments through the TUI cannot include time and date restrictions. To restrict an announcement on a channel to particular times and days, make the assignment through the Text-based User Interface or the BUI.

Retrieving channel information

Through the TUI, the Integrated Recorded Announcer card can be queried for information about its channels. In the Channel Information menu, the announcements assigned to each channel can be heard.

Dial **3** at the Main Menu to enter the Channel Information menu. At the Channel information menu, the following options are available:

- Dial **4** to go to the previous channel.
- Dial **6** to go to the next channel.
- Dial **76** to unassign any announcement from the current channel.
- Dial **9** for help.
- Dial * (asterisk) to return to the Main Menu.

Unlike deleting an announcement in the Main Menu, dialing 76 in the Channel Information menu only unassigns the announcement from the current channel. Dialing 76 in the Channel Information menu does not delete the announcement.

Example of using the TUI

Table 28 "An example of using the TUI" (page 221) lists the steps to follow to record and assign an announcement through the TUI.

Table 28
An example of using the TUI

Step	User action	Integrated Recorded Announcer response	Comments
1	Go off-hook.	Not Applicable	
2	Dial the access code for the Integrated Recorded Announcer card.	Voice prompt for user name	
3	Enter **#** (octothorpe), followed by the user name and "*" (asterisk).	Voice prompt for user password	
4	Enter the password, followed by "*" (asterisk).	"Main Menu"	A "Login incorrect" message is received for wrong input.
5	Dial 5 to access the Record menu.	Voice menu of options available	
6	Dial 5 to record the announcement.	<BEEP>	Records one announcement into a temporary file.
7	Dial * (asterisk) to stop recording.	Menu of available options	Recording stops.

Table 28
An example of using the TUI (cont'd.)

Step	User action	Integrated Recorded Announcer response	Comments
8	Dial **2** to verify the announcement.	Plays announcement from temporary file	If the announcement is acceptable, save it.
9	Dial **1** to save the announcement.	"Announcement saved as announcement xxxxx"; "Main Menu"	The announcement is saved to storage and becomes the currently selected announcement.
10	Dial **1** to assign the announcement to Integrated Recorded Announcer card port(s).	"Assignment menu. Enter a list of channels separated by star. End the list with an extra star."	
11	Enter list of channels separated by "*" (asterisk). (Follow last channel by "**" (2 asterisks).	"Assignments made"; "Main Menu"	Integrated Recorded Announcer assigns the announcement to the selected channel(s).
12	Dial "*" (asterisk) to exit Integrated Recorded Announcer.	"Good-bye"	The TUI disconnects the user from Integrated Recorded Announcer.
13	Go on-hook.	Not Applicable	

Voice prompts

Table 29 "TUI voice prompts" (page 222) lists voice prompts and corresponding voice prompt IDs.

Table 29
TUI voice prompts

Prompt ID	Prompt content
0 – 31	"Zero" to "thirty one"
32	"Analog..." as in "**Analog** Zero."
33	"Channel..."as in "**Channel** 5."
34	<BEEP>
35	"Access is currently disabled."
36	"Please try again later."
37	"Goodbye."
38	"Please enter your user name followed by star."
39	"Please enter your password followed by star."
40	"Three login attempts have failed. Access will be temporarily disabled."
41	"Login incorrect."

Table 29
TUI voice prompts (cont'd.)

Prompt ID	Prompt content
42	"Please try again."
43	"Main Menu."
44	"Commands you can use are: Assign 1, play 2, record 5, delete 7-6, ID 8."
45	"To go to the next announcement, press 6."
46	"To go to the previous announcement, press 4."
47	"To exit, press star."
48	"There are no announcements available."
49	"Start of list."
50	"End of list."
51	"Pack ID is..." as in "**Pack ID is** 1-0-0-0-1-2-3-4."
52	"That option is not available."
53	"For help, press 9."
54	"Assignments saved."
55	"Assignment menu."
56	"Enter a list of channels, separated by star. End the list with an extra star."
57	"Invalid assignment."
58	"You do not have access to the following channels:"
59	"Assignments made."
60	"Record menu."
61	"To begin recording, press 5. To end recording, press star."
62	"Drive capacity exceeded."
63	"Error saving announcement."
64	"Recording stopped."
65	"To save the announcement, press 1. To review it, press 2. To rerecord it, press 5."
66	"Announcement saved as announcement..."
67	"Error deleting announcement."
68	"Announcement deleted."
69	"Channel Information Menu."
70	"For Channel Information, press 3."
71	"To review the current channel, press 2."

Table 29
TUI voice prompts (cont'd.)

Prompt ID	Prompt content
72	"To go to the next channel, press 6."
73	"To go to the previous channel, press 4."
74	"To unassign the current channel, press 7-6."
75	"There is no announcement assigned to this channel."
76	"Assignment cleared."
77	"Welcome to Recorded Announcer."
78	"Assignment cleared on channel..."
79	"OK"
80	"... and..."
81	"... to..."
82	"You have access to the following channels:"
83	"Invalid channel assignment."
84	"All internal channels."
86	"Channels..."
89	"Assignments cleared on channel..."
90	"Assignments cleared on..."

TUI flowcharts

Refer to the TUI flowcharts starting on Figure 102 "TUI Login flowchart" (page 225) for further information on the following TUI functions:

- Login (Figure 102 "TUI Login flowchart" (page 225))
- Main Menu (Figure 103 "TUI Main Menu flowchart" (page 226))
- Record menu (Figure 104 "TUI Record Menu flowchart" (page 228) and Figure 105 "TUI Assignment menu flowchart" (page 231))
- Assignment menu (Figure 105 "TUI Assignment menu flowchart" (page 231))
- Channel Information menu (Figure 106 "TUI Channel Information menu flowchart" (page 232))
- Delete menu (Figure 107 "TUI Delete menu flowchart" (page 233))

Login flowchart

Enter the user name and password to access the Integrated Recorded Announcer TUI.

Figure 102
TUI Login flowchart

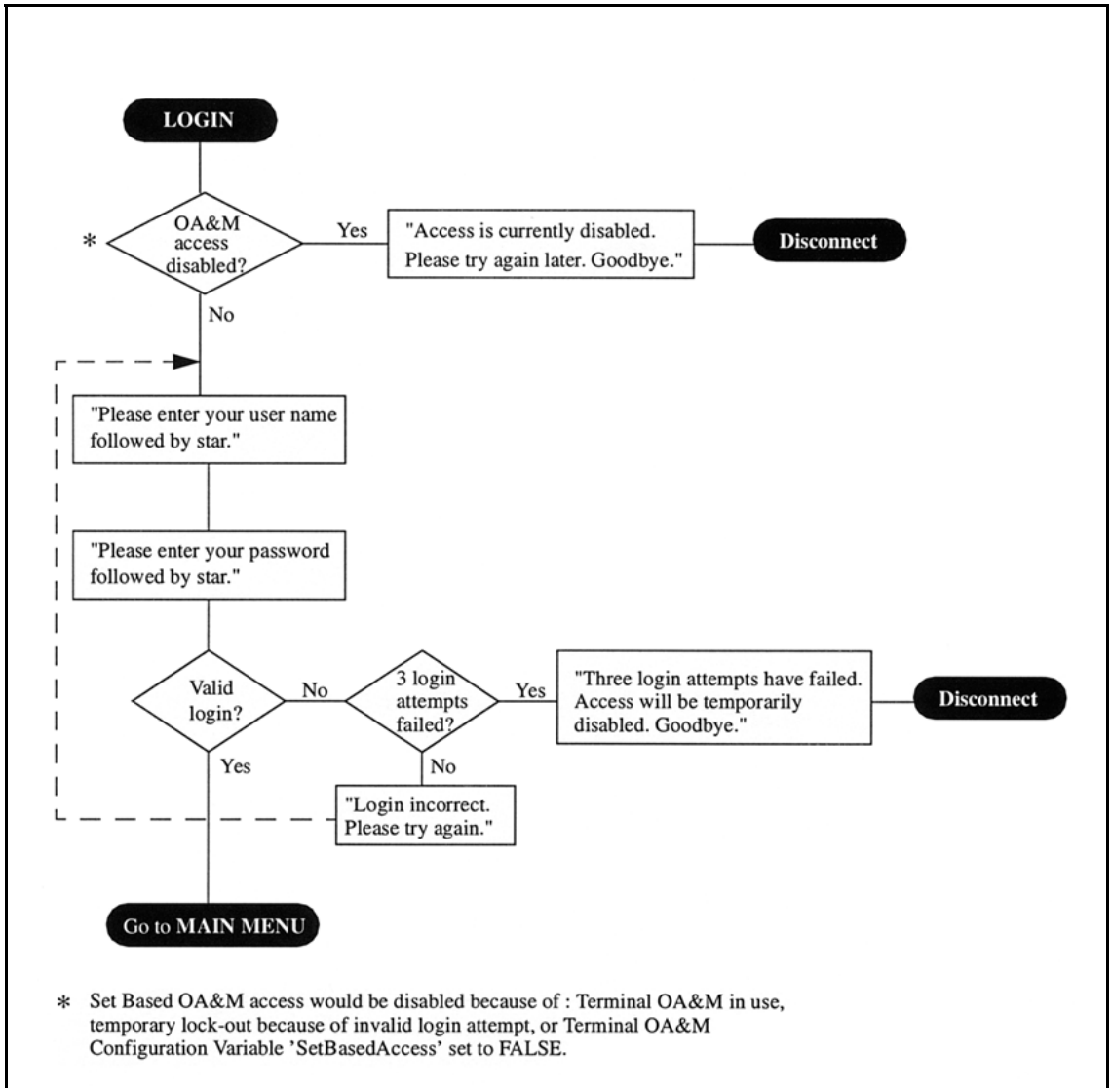
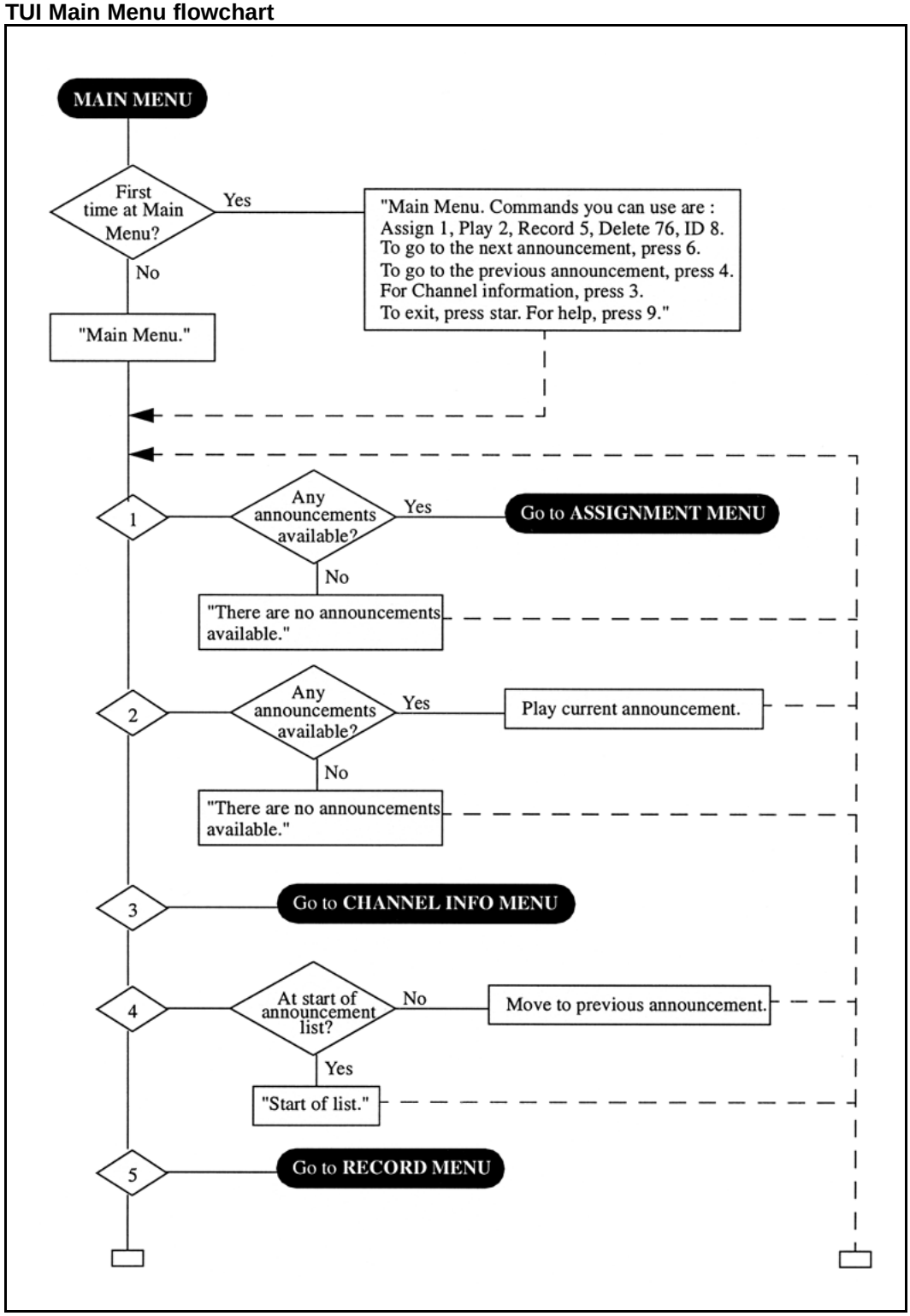
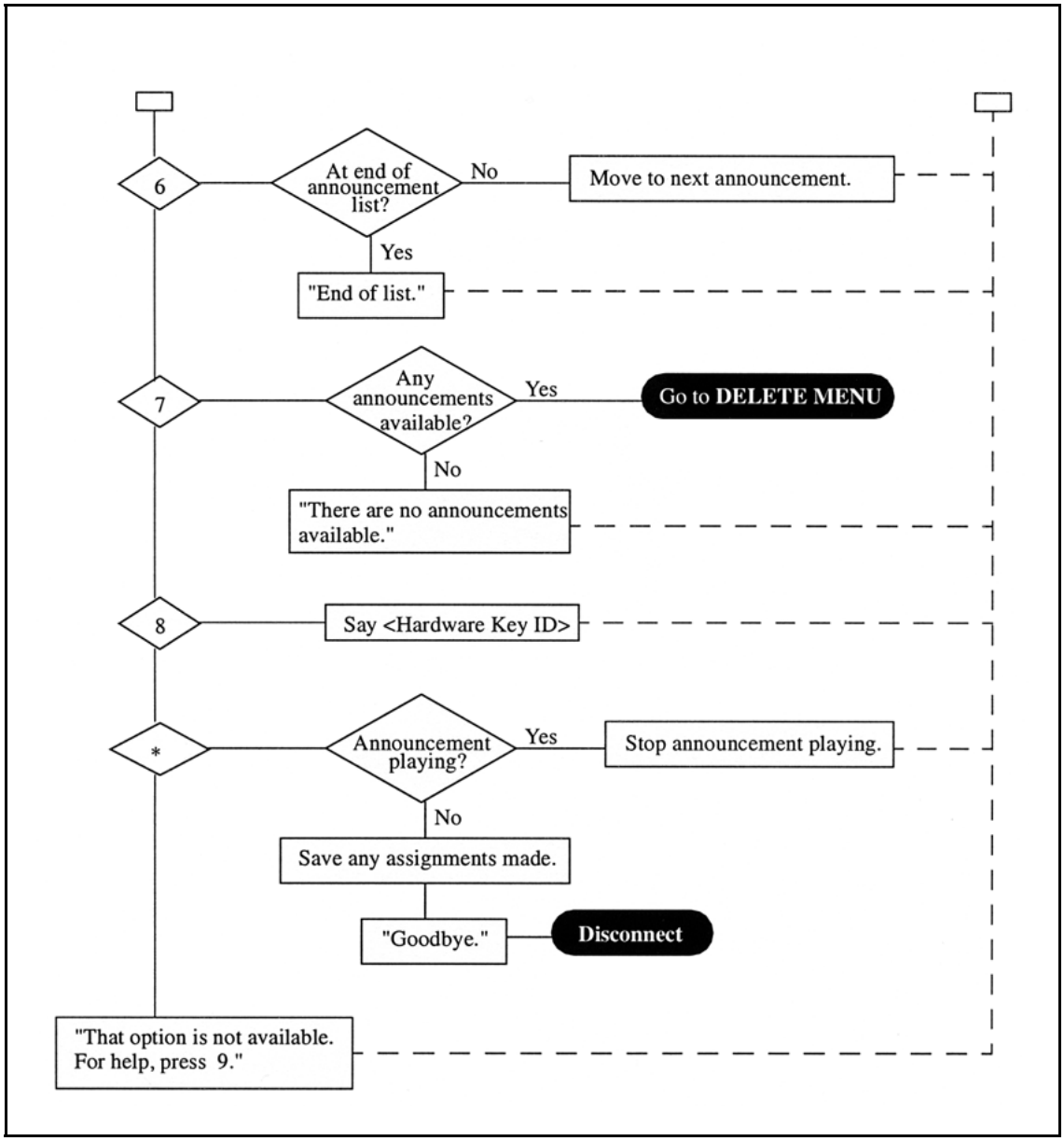


Figure 103
TUI Main Menu flowchart

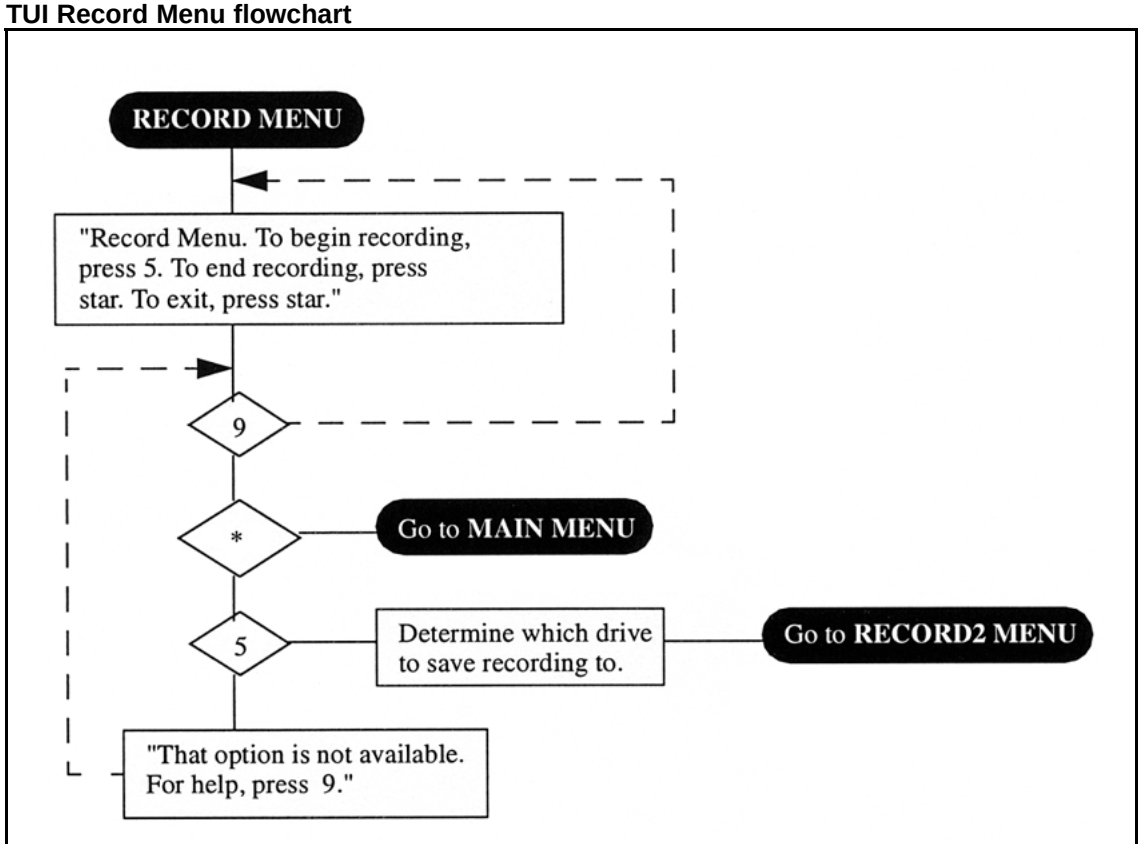


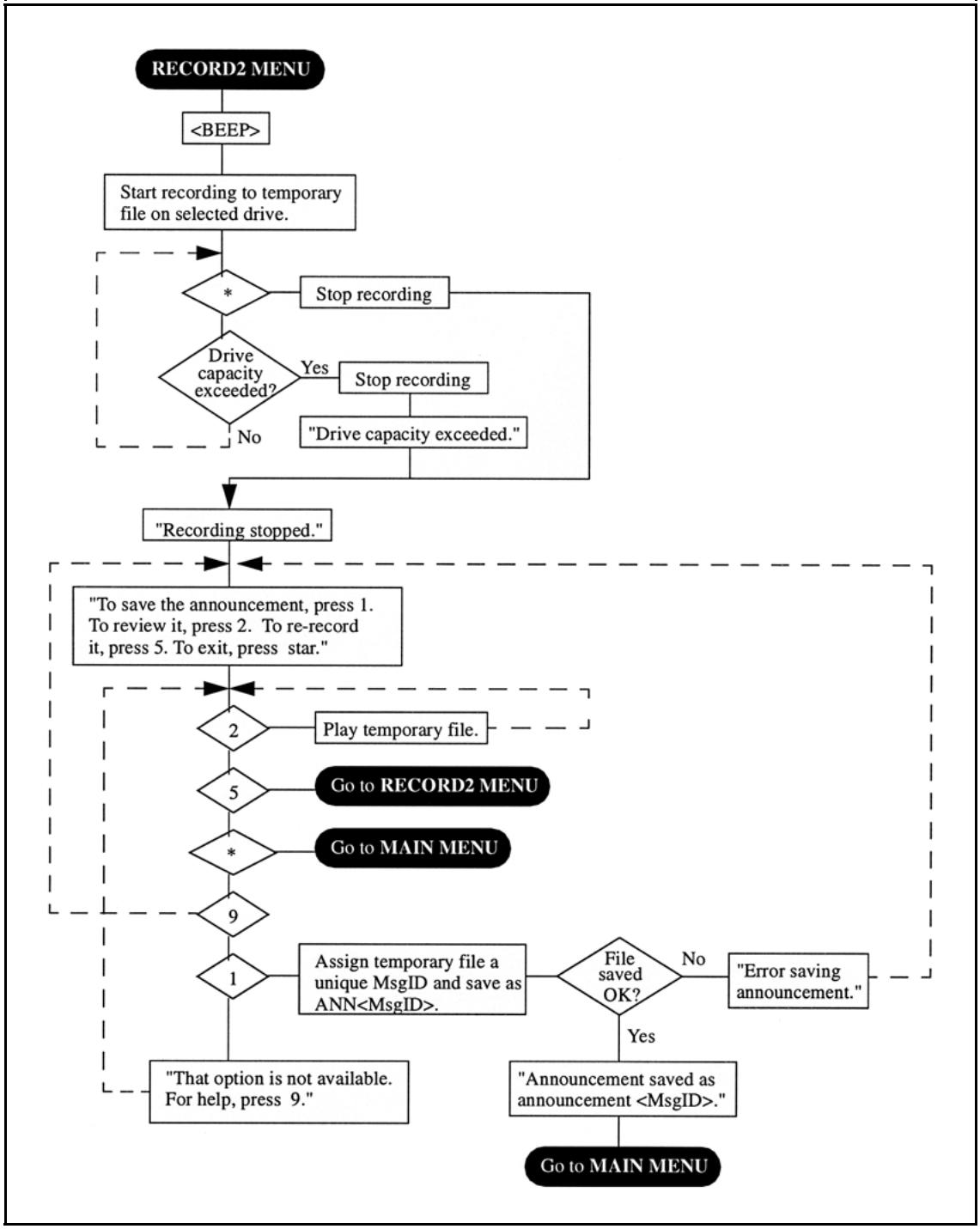


Record menu

Dial **5** in the Main Menu to access the **Record** menu. This function allows announcements to be recorded.

Figure 104
TUI Record Menu flowchart

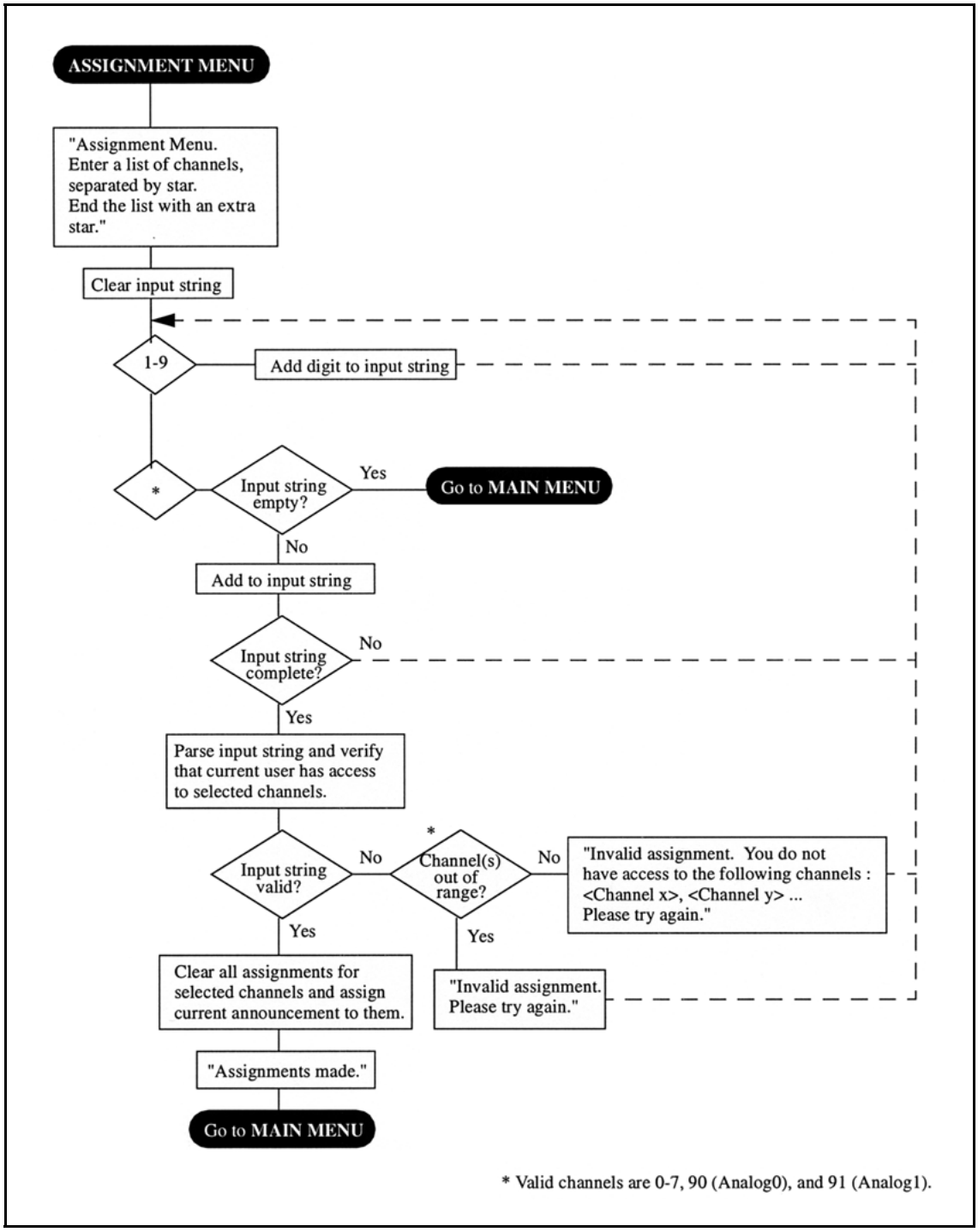




Assignment Menu

Dial **1** in the Main Menu to access the **Announcement** menu. This function allows announcements to be assigned to Integrated Recorded Announcer card channels.

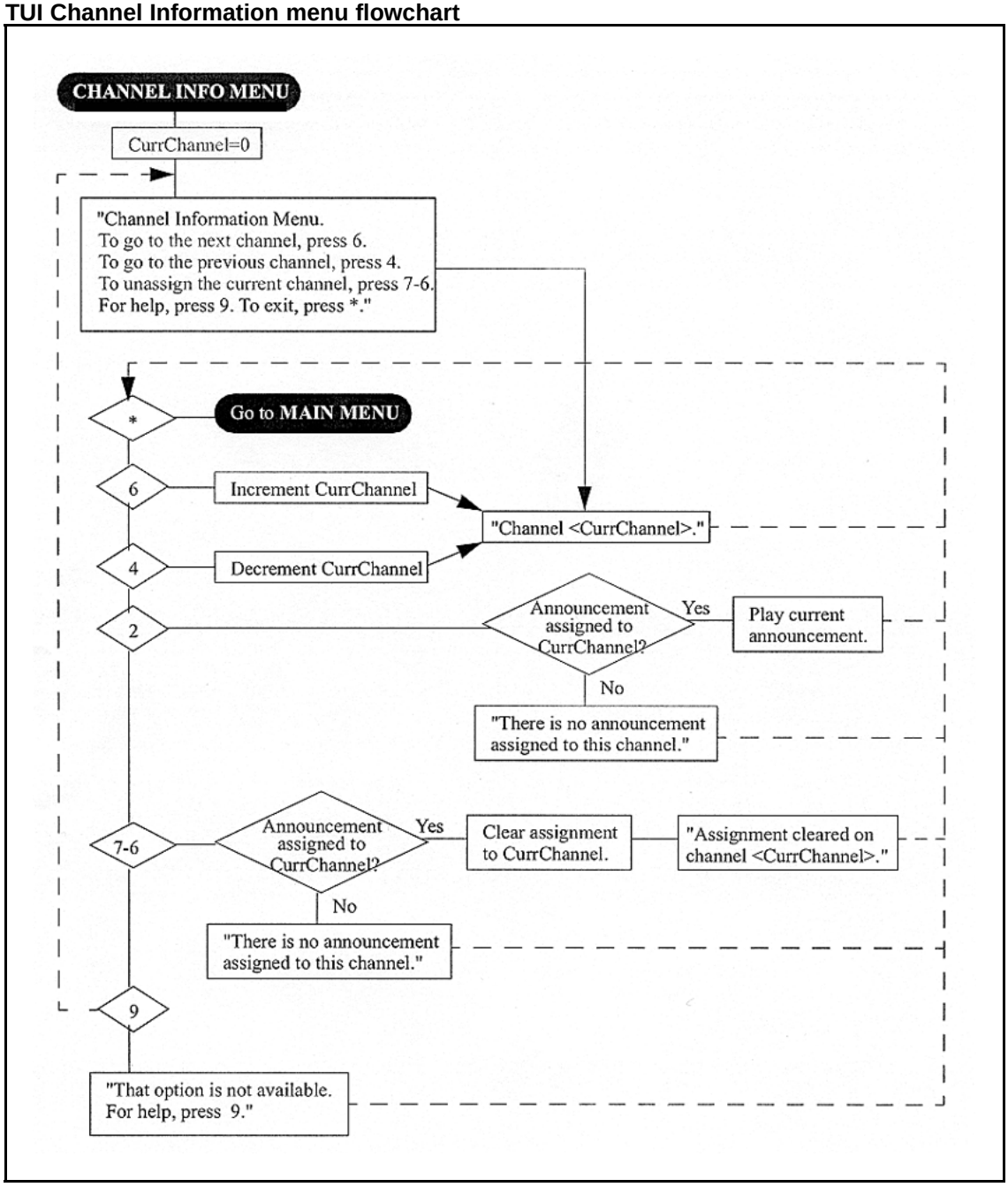
Figure 105
TUI Assignment menu flowchart



Channel Information menu

Dial **3** at the Main Menu to access the **Channel Information** menu. This function allows the announcement assigned to an Integrated Recorded Announcer card channel to be heard. This function also allows an announcement to be removed from a channel.

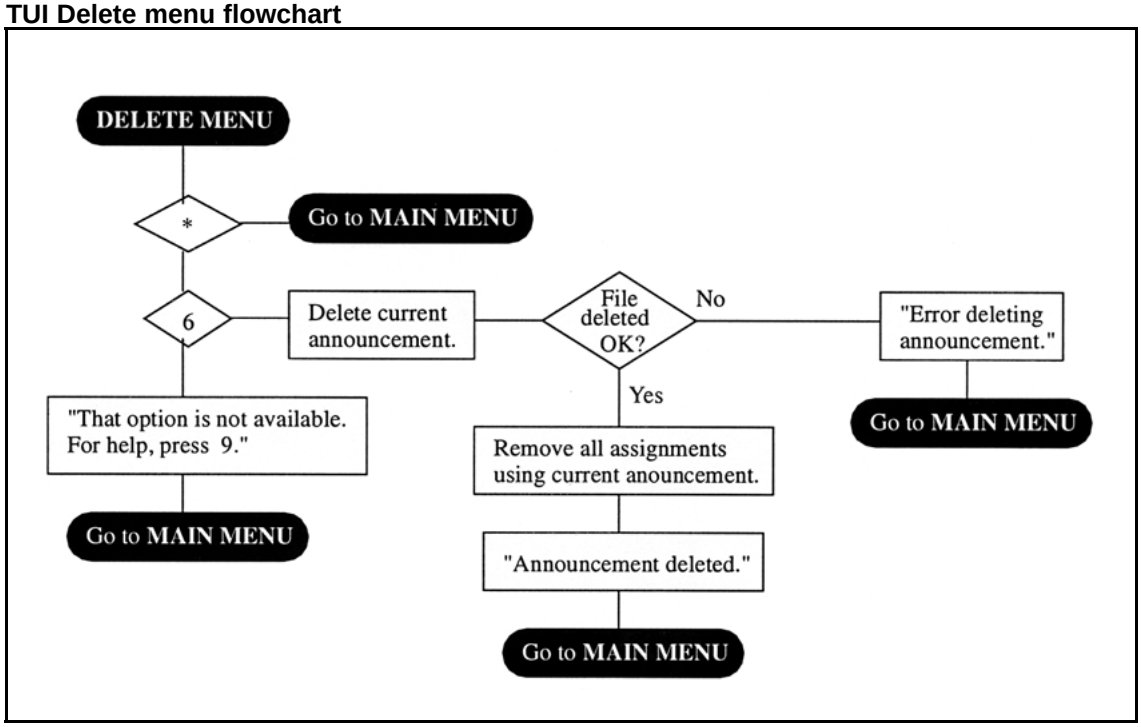
Figure 106
TUI Channel Information menu flowchart



Delete Menu

Dial **7** in the Main Menu to access the **Delete** menu. This function allows the announcement to be deleted.

Figure 107
TUI Delete menu flowchart



Maintenance

Contents

This section contains information on the following topics:

Introduction

This chapter describes Integrated Recorded Announcer card maintenance tools and procedures to help in identifying the Integrated Recorded Announcer card faults, locating defective equipment, correcting problems by fixing or replacing defective equipment, and verifying the operation of the Integrated Recorded Announcer card after corrections or replacements have been made.

Maintenance overview

Approach problem identification systematically. A problem can have more than one cause. To isolate the cause, a knowledge of Integrated Recorded Announcer card operation is required. Once the cause is identified, correct the problem by replacing the defective card, connecting accidentally disconnected cables, or correcting the software security problem.

The system and Integrated Recorded Announcer card provide built-in self-diagnostic indicators and software and hardware tools. These diagnostic facilities simplify system troubleshooting and reduce Mean-Time-To-Repair (MTTR).

This chapter focuses on the maintenance of the Integrated Recorded Announcer equipment. It requires that the system be operating correctly before starting a diagnosis of the Integrated Recorded Announcer card problems.

Communication Server 1000M and Meridian 1 Large System Maintenance (NN43021-700), *Communication Server 1000M and Meridian 1 Small System Maintenance (NN43011-700)*, and *Communication Server 1000E Maintenance (NN43041-700)* describe how to maintain the entire system. This chapter describes how to maintain the Integrated Recorded Announcer card as an integral part of the system.

Diagnostic tools

Diagnostic tools are used to troubleshoot problems in the system including problems with the Integrated Recorded Announcer card. When diagnosing Integrated Recorded Announcer card problems, more than one of these tools can be used.

System diagnostic tools consist of:

- LED indicators
- display codes
- card self-tests
- sanity monitoring
- overlay commands

LED indicators

System cards are equipped with red LED indicators and module power supplies are equipped with green LED indicators. These indicators show the status of each card or power supply.

Integrated Recorded Announcer card maintenance LED indicator

The Integrated Recorded Announcer card has a red LED indicator at the top of the faceplate. It indicates the status of the card. If the LED is on, the card can be faulty or disabled. The LED turns off when the card is softwareenabled.

Display codes

The Integrated Recorded Announcer card is equipped with a four-digit alpha-numeric hexadecimal display on the faceplate.

The hexadecimal display indicates the progress of the internal self-test in the form of T:xx. Refer to “Integrated Recorded Announcer card hexadecimal codes” (page 246). Upon successful completion of the test and the start-up of the RAN application, it will display the code "MRN3".

The maintenance display on the Integrated Recorded Announcer card faceplate provides detailed maintenance information. The display includes the following types of information:

- self-test results on power-up
- maintenance routine results
- upgrade and backup information
- reading and writing to and from A: and C: drives.

Overlay commands

Diagnostics are performed for every card as part of the daily routines. It can be invoked from a maintenance TTY. See *Communication Server 1000M and Meridian 1 Large System Maintenance (NN43021-700)* and *Communication Server 1000M and Meridian 1 Small System Maintenance (NN43011-700)*.

The Integrated Recorded Announcer card appears as an Enhanced Extended Universal Trunk (EXUT) card to a system in which it is installed. All relevant system maintenance commands for an EXUT card can, therefore, be used with the Integrated Recorded Announcer card. Use LD 32, the Network and Peripheral Equipment Diagnostics program, to enable and disable RAN channels. To test the music and RAN device, use LD 36, the Trunk Diagnostics program.

The Integrated Recorded Announcer card communicates with the Call Server by sending 0057 at the start of a Recorded Announcement (RAN) file, and 0077 at the end of a RAN file. Upon receipt of the 0077 the Meridian1 starts a 2 second timer and waits for the next 0057. If no 0057 is received before the timer expires, the Meridian1 will BUSY OUT the MIRAN channel and print out ERR220 to TTY for the specific customer and route.

There is no message showing the BUSY OUT MIRAN channel is now in non-active mode and no possibility to distinguish between the status of non-active and not configured MIRAN channels. The messages (TRK041 and TRK044), which are printed out during the test of the RAN device, are the same for non-active or unequipped channels.

Table 30 "Commands to enable/disable and test the Integrated Recorded Announcer card channels" (page 238) lists some of the commands used to control the Integrated Recorded Announcer card status and functions.

Table 30
Commands to enable/disable and test the Integrated Recorded Announcer card channels

Overlay	Command	Operation performed
32	DISC / ENLC	Disables/Enables specified card.
32	DISU / ENLU	Disables/Enables specified channel.
36	RAN	Tests RAN device for specified customer and route.
32	STAT	Gets status of specified card/channel.

All the above commands are handled by the Integrated Recorded Announcer card exactly as they are by the EXUT card, transparently to the system.

Integrated Recorded Announcer fault isolation and correction

Fault clearing procedures for the Integrated Recorded Announcer card are the same as for other IPE cards. Refer to *Communication Server 1000M and Meridian 1 Small System Maintenance (NN43011-700)* and *Communication Server 1000E Maintenance (NN43041-700)* for more information.

Table 31 "Integrated Recorded Announcer equipment problems" (page 239) deals specifically with Integrated Recorded Announcer card service problems. To diagnose these problems, the table refers to the test procedures in this manual that will most likely fix these problems, based on the symptoms.

Table 31
Integrated Recorded Announcer equipment problems

Symptoms	Diagnosis	Solution
Red card LED on the Integrated Recorded Announcer card is permanently on.	Card is disabled or faulty.	Read “Self-test sequence” (page 239) about the card status and self-test.
Display on the Integrated Recorded Announcer card shows fault codes.	Card faulty, failed self-test or problem communicating with peripheral equipment.	Read “Reset sequence” (page 240) about reset. Also refer to Hex Codes in “Sound recording, codes, and interfaces” (page 245) for a list of error codes. Based on the maintenance display codes description, take the appropriate action and resolve the problem.
Error messages printed on the TTY or VDT terminal.	Hardware or software problems with the Integrated Recorded Announcer card.	Note various error messages. Refer to *Software Input Output Reference - System Messages (NN43001-712)* for a list of these messages and their description. Based on the code’s description, take the appropriate action to resolve the problem.

If the problem cannot be resolved after using all available diagnostic tools and test procedures, make a list of all the symptoms observed, and contact the field service representative. Refer to “Sound recording, codes, and interfaces” (page 245) to identify the HEX codes that indicate possible problems with the Integrated Recorded Announcer card.

Self-test sequence

The Integrated Recorded Announcer card self-test sequence is as follows:

1. The card self-tests.
2. The Card LAN polls the card.
3. If the self-test passed, the card sends back "powered-up occurred" message.
4. The Card LAN requests configuration data.
5. The card returns configuration data (card type, A07 signaling type, and TN mapping type 2).
6. The Card LAN enables the DS-30X signaling channel.
7. The Integrated Recorded Announcer card waits until it receives configuration data (such as, trunk type, signaling type, and balance impedance) through the DX-30X, but then discards this data.
8. The card goes into its main program loop.

Reset sequence

The Integrated Recorded Announcer card reset sequence is as follows:

1. The software sends a reset message to the card if no channels are busy.
2. The card sets all appropriate resources to disabled state and turns on the faceplate LED.
3. The Integrated Recorded Announcer card resets and self-tests. Self-test results are stored in case a later query is performed by the system. Refer to Table 32 "Integrated Recorded Announcer card hexadecimal codes" (page 246).
4. The card LAN polls the card.
5. If the self-test passes, the card sends back a message: "power-up occurred".
6. Card LAN requests configuration data.
7. The card returns configuration data (card type, A07 signaling type, and TN mapping type 2) and enable DS-30X link.
8. Card LAN enables the DS-30X signaling channel
9. The card waits until it receives download configuration data (such as, trunk type, signaling type, and balance impedance) through the DS-30X, but then discards this data.
10. The card goes to its main program loop.

Integrated Recorded Announcer fault isolation using the menu system

Refer to “Text-based User Interface” (page 141) for details on using the menu system. The Main Menu is seen when accessing the text-based OA&M. Each option listed on the Main Menu leads to another task window or submenu.

Main Menu

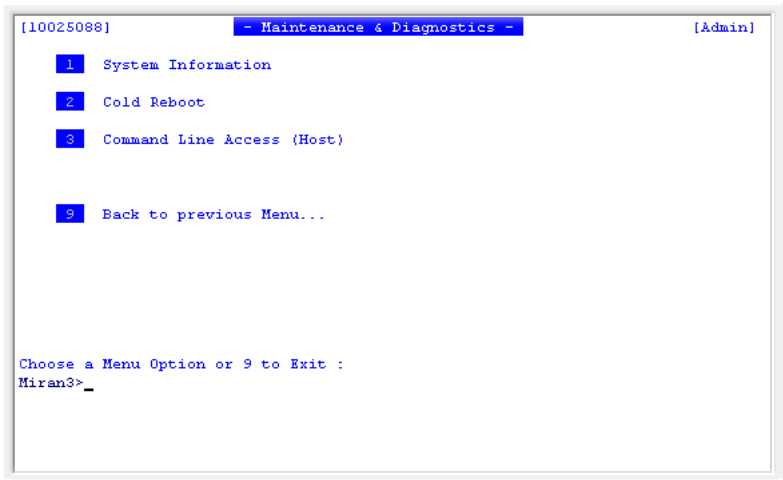
Log into the Text-based User Interface to access the Main Menu (see Figure 108 "Main window Menu" (page 241)). This OA&M window presents the highest level of end-user maintenance access and provides all functions needed to configure, maintain, and upgrade the Integrated Recorded Announcer card.

Figure 108
Main window Menu

Maintenance and Diagnostics menu

To troubleshoot the Integrated Recorded Announcer card using the menu system, select 3 in the Main Menu and press the **Enter** key to display the Maintenance and Diagnostics submenu. See Figure 109 "Maintenance and Diagnostics menu" (page 241).

Figure 109
Maintenance and Diagnostics menu



Card replacement

The Integrated Recorded Announcer card is based on Flash EPROM technology. This allows the Integrated Recorded Announcer card to be removed from the card slot indefinitely without loosing the configuration data.

To replace the Integrated Recorded Announcer card, follow the steps in Procedure 79 “Replacing the Integrated Recorded Announcer card” (page 242).

Procedure 79
Replacing the Integrated Recorded Announcer card

Step	Action
1	Disable the Integrated Recorded Announcer card by loading LD 32 and executing the **DISC l s c** command for Large Systems or CS 1000E systems (**l** = loop, **s** = shelf or module, **c** = card in the module), or the **DISC c** command for Small Systems and CS 1000S systems (**c** = card).
2	Remove the card from the card slot.
3	Remove all PC Cards from the faulty Integrated Recorded Announcer card – the internal PC Card and the PC Cards installed in the Integrated Recorded Announcer card faceplate slots.
4	Transfer the Security Device from the faulty Integrated Recorded Announcer card to the replacement.
5	Transfer all PC Cards to the new Integrated Recorded Announcer card. ***Note:*** This procedure moves all software, configuration, and records to the replacement Integrated Recorded Announcer card.
6	Install the new Integrated Recorded Announcer card into the IPE module card slot.
7	Enter the same keycode to enable the new Integrated Recorded Announcer card.
8	Enable the new card by executing the **ENLC l s c** command for Large Systems or CS 1000E systems, or the **ENLC c** command for Small Systems and CS 1000S systems.
9	Configure the newly-installed Integrated Recorded Announcer card.

10 Package the faulty Integrated Recorded Announcer card and ship it to the repair center.

--End--

Appendix Sound recording, codes, and interfaces

Contents

This section contains information on the following topics:

Introduction

This appendix describes a typical sound recording configuration, lists the Integrated Recorded Announcer card hexadecimal codes that are displayed on the four-digit display on the Integrated Recorded Announcer card faceplate, and describes the external connectors and their pin assignments. The hex codes provides the status of the card during power-up and on the operational status when in service.

Sound recording configuration

The following is an example of a PC-based digital sound recording. Alternate configurations can be used that produce the 8 kHz A-law or U-law PCM format output files required by Integrated Recorded Announcer either in .ULW or .WAV format.

Minimum PC requirements:

- 100 MHz Pentium processor
- 32 Mbytes of RAM
- 1 Gbyte hard drive
- x4 CD-ROM
- Windows 95
- speakers

Recommended sound card:

- Creative Labs AWE 32 Plug and Play audio card Model CT3601 (comes with the microphone)

PC drive:

- DATABOOK ThinCard Drive Model TMB-240

Software:

- GoldWave sound editor.

Note: When recording announcements, use the following recommendations. To remove sharp transitions at the boundaries of an announcement, add fade-in (from 0) at the start of the announcement and fade-out (to 0) at the end of announcement. Users must add one second of silence to the beginning and to the end of each announcement.

When the internal RAM test, ALU test, address mode test, boot ROM test, timer test, or external RAM test fails, the Integrated Recorded Announcer card goes into a maintenance loop and no further processing is possible. A failure message is displayed to indicate which test failed. For example, the message changes to **F:xx** if the timer test fails (F:05 is displayed).

Integrated Recorded Announcer card hexadecimal codes

Table 32
Integrated Recorded Announcer card hexadecimal codes

Codes	Description
T:00	Initialization
T:01	Testing internal RAM
T:02	Testing ALU
T:03	Testing address modes
T:04	Testing watchdog

Table 32
Integrated Recorded Announcer card hexadecimal codes (cont'd.)

Codes	Description
T:05	Testing 8051 coprocessor
T:06	Testing timers
T:07	Testing external RAM
T:08	Testing dongle
T:09	Programming time switch FPGA
T:10	Programming ISPDI FPGA
T:11	Testing host dual-port RAM
T:12	Testing DS-30 dual-port RAM
T:13	Testing SEEPROM
T:14	Boosting Host Processor, waiting for response with self-test information
T:15	Reserved for future use
T:16	Reserved for future use
T:17	Reserved for future use
T:18	Reserved for future use
T:19	Reserved for future use
T:20	Waiting for application start-up message from Host Processor
T:21	CardLAN enabled, waiting for request configuration message
T:22	CardLAN operational, A07 enabled, display now under host control. Integrated Recorded Announcer card is operational

Integrated Recorded Announcer card interface connectors

The interface connectors connect the Integrated Recorded Announcer card to the external equipment at the faceplate and the Audio-adaptor.

Maintenance serial port

For occasional OA&M purposes, a serial port is provided on the Integrated Recorded Announcer card faceplate, through an 8-pin mini DIN connector. For a permanently connected terminal, the maintenance serial port is duplicated on the Audio-adaptor.

Table 33 "Faceplate 8-pin mini-DIN connector signals" (page 248) displays pinouts for the Integrated Recorded Announcer card faceplate 8-pin mini-DIN connector.

Table 33
Faceplate 8-pin mini-DIN connector signals

Pin No.	Signal	Description
1	BDTRB-	Port B Data Terminal Ready
2	BSOUTB-	Port B Serial Data Out
3	BSINA-	Port B Serial Data In
4	SGRD	Signal Ground
5	BSINA-	Port A Serial Data In
6	BCTSA-	Port A Clear To Send
7	BSOUTA-	Port A Serial Data Out
8	BDTRA-	Port A Data Terminal Ready

Table 34 "Port A and port B pinout and wire color code on the 50-pin connector" (page 248) lists the port A and port B connections at the I/O panel 50-pin connector. It lists the pins signal assignments, wire color code, and the description of the signals. Total distance from the Integrated Recorded Announcer card to the MDF and from the MDF to the terminal must not exceed 50 feet.

Table 34
Port A and port B pinout and wire color code on the 50-pin connector

I/0 Panel 50-pin connector pin assignment and wire color code	Integrated Recorded Announcer signal name	Integrated Recorded Announcer signal description
16 (BL-Y)	Reserved	Future use
41 (Y-BL)	BDCDA-	Port A Data Carrier Detect
17 (O-Y)	BSINA-	Port A Serial Data In
42 (Y-O)	BSOUTA-	Port A Serial Data Out
18 (G-Y)	BDTRA-	Port A Data Terminal Ready
43 (Y-G)	SGRD	Signal Ground
19 (BR-Y)	BDSRA-	Port A Data Set Ready
44 (Y-BR)	BRTSA-	Port A Request to Send
20 (s-y)	BCTSA-	Port A Clear to Send
45 (Y-S)	BSINB-	Port B Serial Data In
21 (BL-V)	BSOUTB-	Port B Serial Data Out
46 (V-BL)	BDCDB-	Port B Data Carrier Detect
22 (O-V)	BDTRB-	Port B Data Terminal Ready
47 (V-O)	BDSRB-	Port B Data Set Ready

Analog port and pinouts

Table 35 "Analog port backplane signals" (page 249) lists the 50-pin I/O panel connector pins and their signal assignment for the analog port.

The 3.5 mm audio jack provides access to a single analog input (ANALOG0). It is used to connect external analog sources, such as a tape recorder or CD player, in order to record to file or to route it directly through a trunk emulation port into the system for MOH.

The audio jack provides an external connection to Port ANALOG0 for a short term connection of an external analog source.

Table 35
Analog port backplane signals

I/0 Panel 50-pin connector pin assignment and wire color code	Integrated Recorded Announcer card signal name	Integrated Recorded Announcer card signal description
5 (S-W)	AGND	Analog Ground
30 (W-S)	AGND	Analog Ground
7 (O-R)	AIN0	Analog In, Port 0
32 (R-O)	AIN1	Analog In, Port 1
9 (BR-R)	AGND	Analog Ground
34 (R-BR)	AGND	Analog Ground
Note: Cross-connect audio pairs can be used to connect to external recording devices for the purpose of backing up announcements to a tape.		

I/O panel to modem cable

"Browser User Interface" (page 24) shows the I/O panel to modem cable pin assignments.

Table 36
I/O panel connector to modem cable pinouts

Signal name	50-pin I/O panel parallel connector Pin No.	25-pin male (RS-232) (Modem side) Pin No.
TX	21	2
RX	45	3

Table 36
I/O panel connector to modem cable pinouts (cont'd.)

Signal name	50-pin I/O panel parallel connector Pin No.	25-pin male (RS-232) (Modem side) Pin No.
DTR	22	20
GRN	43	7

Modem setup

To set up the modem, use a terminal connected to the modem. Configure the terminal as follows:

- 9600 bps
- 8 bits
- 1 start
- 1 stop
- no parity.

Follow the steps in Procedure 80 "Configuring the modem" (page 250) to configure the modem.

Procedure 80
Configuring the modem

Step	Action
1	To configure the modem to auto-answer: • Connect the terminal to the modem. • Type **AT** for a Hayes-compatible modem. If the modem is connected properly, it replies **OK**. • Type **ATS0 = 1**. • Type **AT&W0** to save the settings.
2	Disable result codes. • Type **AT** for a Hayes-compatible modem. If the modem is connected properly, it will reply "OK". • Type **ATQ1**. • Type **AT&W0** to save the settings.

3 Connect the modem to the Integrated Recorded Announcer card using one of the cable configurations previously described.

--End--

Appendix Environmental and electrical regulatory data

Contents

This section contains information on the following topics:

Introduction

This chapter presents information about the Integrated Recorded Announcer card reliability, environmental specifications, and electrical regulatory standards.

Environmental specifications

This section describes the operating and storage temperature ranges and humidity for the Integrated Recorded Announcer card. The ideal operating temperature is obtained when the environmental temperature is regulated using air-conditioning. However, the Integrated Recorded Announcer card is designed to operate in the standard telephony equipment accepted temperature and humidity ranges.

Table 37 "Temperature-related specifications" (page 253) displays measurements of performance under test conditions of temperature and shock.

Table 37
Temperature-related specifications

Specification	Minimum	Maximum
Normal Operation		

Table 37
Temperature-related specifications (cont'd.)

Specification	Minimum	Maximum
Recommended	15° C	30° C
Relative humidity	10%	55% (non-condensing)
Absolute (less than 72 hours)	0° C	45° C
Relative humidity	5% ---- 95% (non-condensing)	
Rate of change	Less than 1° C for each 3 minutes	
Storage		
Recommended	-50° C	+70° C
Relative humidity	0%	95% (non-condensing)
Temperature Shock		
In 3 minutes	-50° C	25° C
In 3 minutes	70° C	25° C
	-40° to 70° C (non-condensing)	

Electrical regulatory standards

Table 38 "Safety regulations" (page 254) through Table 40 "Electromagnetic immunity" (page 255) list the safety and electromagnetic compatibility regulatory standards for the Integrated Recorded Announcer card, listed by geographic region. Specifications for the Integrated Recorded Announcer card meet or exceed the standards listed in these regulations.

Table 38 "Safety regulations" (page 254) provides a list of safety regulations met by the Integrated Recorded Announcer card in any CS 1000 or Meridian 1system, along with the type of regulation and the country/region covered by each regulation.

Table 38
Safety regulations

Regulation Identifier	Regulatory Agency
c(CSA)us 950	Safety of Canada, UL 1950 Safety, United States, CALA
EN 60950	Safety Europe
AS3260, TS001	Safety Australia
JATE Network/Safety	Japan
IEC 60950-CB	report including country deviations

Electromagnetic Compatibility (EMC)

Table 39 "Electromagnetic emissions" (page 255) lists electromagnetic emissions regulations met by the Integrated Recorded Announcer card, along with the country's standard that lists each regulation.

There are no limitations on the number of Integrated Recorded Announcer card that can be installed in any CS 1000 or Meridian 1system, with the following exception: the number of Integrated Recorded Announcer cards that can be installed in an IPE module (Large System) for Class B compliance (EN55022:1998 and EN55024:1998) is limited to four. There are no limitations for Class A installations.

Table 39
Electromagnetic emissions

Regulation Identifier	Regulatory Agency
FCC part 15 Class A	United States Radiated Emissions
CSA C108.8	Canada Radiated Emission
EN50081-1	European Community Generic Emission Standard
EN55022/CISPR 22 CLASS B	Radiated Emission (Basic Std.)
BAKOM SR 784.103.12/4.1/1	EMC/Safety (Switzerland)
SS-447-20-22	Sweden EMC Standard
AS/NZS 3548	EMC (Australia/New Zealand)
NFC 98020	France EMC Standard

Table 40 "Electromagnetic immunity" (page 255) lists electromagnetic immunity regulations met by the Integrated Recorded Announcer card, along with the country's standard that lists each regulation.

Table 40
Electromagnetic immunity

Regulation Identifier	Regulatory Agency
CISPR 22 Sec. 20	Class B I/O conducted noise
IEC 801-2 (level 4)	ESD (Basic Standard)
IEC 801-3 (level 2)	Radiated Immunity (Basic Standard)
IEC 801-4 (level 3)	Fast transient/Burst Immunity (Basic Standard)
IEC 801-5 (level 4, preliminary)	Surge Immunity (Basic Standard)
IEC 801-6 (preliminary)	Conducted Disturbances (Basic Standard)
BAKOM SR 784.103.12/4.1/1	EMC/Safety (Switzerland)
SS-447-20-22	Sweden EMC Standard

Table 40
Electromagnetic immunity (cont'd.)

Regulation Identifier	Regulatory Agency
AS/NZS 35481	EMC (Australia/New Zealand)
NFC 98020	France EMC Standard
EN55024 Class	B I/O conducted noise
EN61000-4-2 (level 4)	ESD (Basic Standard)
EN61000-4-3 (level 2)	Radiated Immunity (Basic Standard)
EN61000-4-2 (level 3)	Fast transient/Burst Immunity (Basic Standard)
EN61000-4-5 (level 4, preliminary)	Surge Immunity (Basic Standard)
EN61000-4-6 (preliminary)	Conducted Disturbances (Basic Standard)
EN6100-4-11	Dips, Interruptions (system level)
EN61000-3-2	Harmonics and Flickers (system level)

Appendix NT8D37 cable connections

Contents

This section contains information on the following topics:

NT8D37 cable connections

Cables are designated by the letter of the I/O panel cutout (such as, A, B, and C) where the 50-pin cable connector is attached. Each cable has three 20-pin connectors (16 positions are used) designated 1, 2 and 3, that attach to the backplane.

Using the designations given for the connectors, the backplane ends of the first cable are referred to as A-1, A-2, and A-3. Locations of the cable connectors on the backplane are designated by the slot number (L0 through L9 for NT8D11; L0 through L15 for NT8D37) and the shroud row. Using these designations, the slot positions in the first slot are referred to as L0-1, L0-2, and L0-3.

In NT8D37BA and NT8D37EC (and later vintage) modules, all 16 IPE card slots support 24-pair cable connections. In earlier vintage modules, slots 0, 4, 8, and 12 support 24-pair cable connections. This eliminates the need to rewire if the slots are free.

Table 41 "NT8D37 cable connections" (page 258) shows the cable connections from the backplane to the inside of the I/O panel.

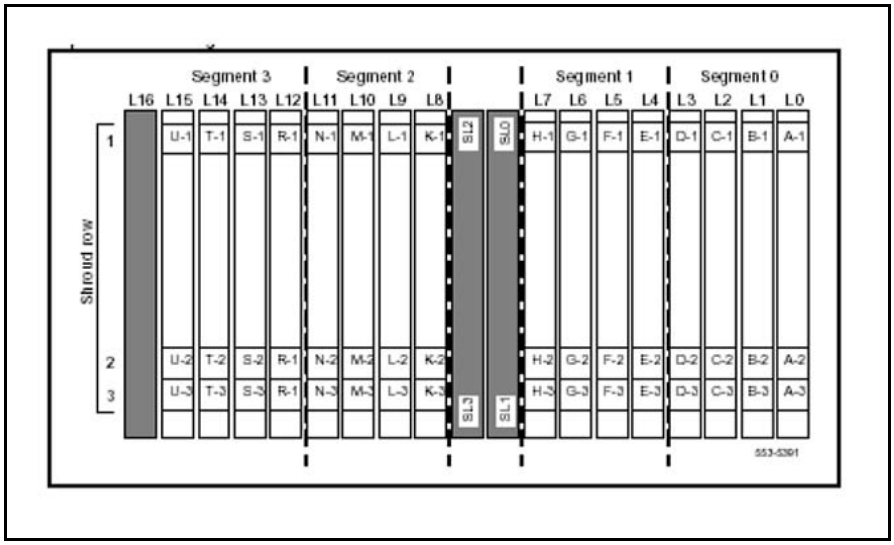
Table 41
NT8D37 cable connections

Backplane slots – shroud rows	I/O panel/cable designation
L0-1,2,3	A
L1-1,2,3	B
L2-1,2,3	C
L3-1,2,3	D
L4-1,2,3	E
L5-1,2,3	F
L6-1,2,3	G
L7-1,2,3	H
L8-1,2,3	K
L9-1,2,3	L
L10-1,2,3	M
L11-1,2,3	N
L12-1,2,3	R
L13-1,2,3	S
L14-1,2,3	T
L15-1,2,3	U

Figure 110 "Large Systembackplane slot designations" (page 259) shows the following:

- the designations for the backplane end of the cables
- the backplane slot designations for the cable connections
- the associated network segments for the backplane slots

Figure 110
Large Systembackplane slot designations



Tools list

The following tools are required for cable connections:

- Tie-wrap cutter
- Tie-wraps
- Needle nose pliers
- Slotted screwdriver

NT8D81BA cable removal procedure

To remove the NT8D81BA cable, follow the steps in Procedure 81 “Removing NT8D81BA cable” (page 259).

Procedure 81
Removing NT8D81BA cable

Step	Action
1	Identify the I/O panel and backplane designation that corresponds to the slot in which the Integrated Recorded Announcer card is installed.
2	Power down the IPE shelf.
3	Remove the IPE module I/O safety panel.
4	Remove the ribbon cables from the IPE backplane:

- Apply gentle pressure on the tab on the right side of the shroud until the connector pulls free from the shroud.
- First, remove connector 1. Then remove connectors 2 and 3.

--End--

NT8D81BA cable installation procedure

To install the NT8D81BA cable, follow the steps in Procedure 82 “Installing NT8D81BA cable” (page 260).

Procedure 82
Installing NT8D81BA cable

Step	Action
1	Install the NT8D81BA ribbon cable connectors in the IPE module backplane. Install the connector so that the label is facing to the right with the arrow pointing up. • Install connector 1 (labelled UP1^) into backplane shroud 1. • Install connector 2 (labelled UP2^) into backplane shroud 2. • Install connector 3 (labelled UP3^) into backplane shroud 3.
2	Dress ribbon cables back individually inside the rear of the IPE module, and restore the original arrangement. Start with the cables that are going to be underneath.
3	Attach the NT8D81BA 50-pin connector to the IPE filter using bail clips.
4	Restore power to the IPE module.
5	Replace the I/O safety panel.

--End--

List of terms

Meridian PBXs

ALU

Arithmetic Logic Unit.

API

Application Programming Interface. High level language software used as components in the development of an application. Also, graphics routines that perform basic graphics tasks or other functions when called by high-level application programs.

ASIC

Application-Specific Integrated Circuit. A microprocessor chip designed to do specific tasks; providing graphics capability is one such task.

ATA

AT Attachment interface. Normally used to refer to the PC Card version of the IDE disk drive interface found in a PC. For an Integrated Recorded Announcer card, standard ATA-based cards are required instead of the simpler memory-based cards. The later are lower in cost but require custom driver software both at the PC and at the Integrated Recorded Announcer card.

AUI

Autonomous/Attachment User Interface. Refers to the 15-pin, D-type connector and cables used to connect single- and multiple-channel equipment in an Ethernet transceiver.

BIOS

Basic Input/Output System. A set of permanently stored program outlines in buffers that allow software to interact with hardware components (for example, a keyboard) in a device-independent manner.

bootp

An IP protocol that allows the automatic assignment of an IP address to a client device upon bootup.

Boundary scan

Test methodology for integrated circuits that provides visibility and control of on-chip logic.

BUI

Browser User Interface. The interface a user can use to interact with the Integrated Recorded Announcer card through the web.

CD-ROM

Compact Disk Read-Only Memory.

CE-MUX

Common Equipment bus with Multiplexed address and data.

CPE

Customer Premise Equipment. Equipment that resides on a customer's premises and is controlled by the customer as opposed to the Central Office

CPU

Central Processing Unit. A chip that performs logic, control, and arithmetic functions. The part of the switch that performs these functions and any others needed to carry out call processing.

DIN

A German standardization organization.

DS-30X

Parallel serial transmission from a superloop (XNET) card to a Controller Card in an IPE shelf.

DRAM

Dynamic Random Access Memory. A type of semiconductor memory that is characterized by its high density (smaller packages for a given amount of memory). It typically has slower access time as compared with SRAM and requires external memory refresh circuitry.

DSP

Digital Signal Processing. A specialized computer chip that performs speedy and complex operations on digitized waveforms. Useful in processing sound and video.

DTMF

Dual Tone Multi-Frequency. A term describing push-button or touch-tone dialing.

EIDE

Enhanced IDE (see IDE). This feature provides a significant improvement in performance over the standard IDE; it is comparable to standard SCSI in terms of throughput.

EMC

ElectroMagnetic Compatibility. Refers to equipment units that are collectively performing each of their functions without causing or suffering unacceptable degradation due to electromagnetic interference from other equipment/systems in the same environment.

EMI

ElectroMagnetic Interference. Unwanted electromagnetic coupling, such as a ham radio heard on an electric organ or church music heard in hearing aids. Also known as "static".

EPLD

Erasable Programmable Logic Device. An electronic device for performing logical operations that can easily be erased and reprogrammed.

ESS

Environmental Stress windowing.

EST

Environmental Stress Testing.

EXUT

Enhanced Extended Universal Trunk card. See *XUT*.

Field programmable

A program to which changes can be made while it is installed.

Firmware

Hardwired logic, software, data, and programming instructions such as that stored by threading wires through ferrite cores. May also refer to software programmed in the factory or burnt in the field, and is semipermanently stored within ROM.

Flash memory

Electrically erasable memory that is nonvolatile (not affected by power disruptions).

FPGA

Field Programmable Gate Array.

FTP

File Transfer Protocol. This is an industry standard protocol for transferring files between a server and a client on a TCP/IP network.

Gate array

A circuit consisting of an array of logic gates (network nodes) aligned on a substrate (piece of silicon) in a regular pattern.

IDE

Integrated Drive Electronics. A low-cost hard disk drive interface.

IP

Internet Protocol.

IPE

Intelligent Peripheral Equipment. A range of cards that contain micro- processors that provide off-loading of the CPU function and the flexibility to make changes to the system parameters without revising the hardware.

ISA

Industry Standard Architecture. A particular type of bus architecture on an IBM-DOS motherboard.

IVR

Interactive Voice Response. An application that allows telephone callers to interact with a host computer through prerecorded announcements and prompts.

Kernel

That part of a computer's operating system that performs basic functions such as switching between tasks.

LCA

Logic Cell Array. A Xilinx product that is a form of Field Programmable Gate Array. See *FPGA*.

Loader

A device that moves a program or data from a floppy or hard disk and stores it into a computer's RAM memory.

MAU

Media Access Unit. A device used to allow connection of the Ethernet AUI signals on Integrated Recorded Announcer to an external LAN.

MCF

Integrated Recorded Announcer card Compressed format. The compressed file format used by Integrated Recorded Announcer to store prompts and royalty-free music.

MDS

Modular Documentation System.

MINT

Message INTerrupt. This occurs when a message being transmitted receives an interrupt signal from an outside device, which must process a task of its own. Then the transmission of the original message can resume, or be resent.

MOH

Music On Hold. Refers to telephony equipment, supplied by a Nortel switch through one or more trunk cards, to provide recorded music or radio to each caller on hold until the called party becomes available.

MTBF

Mean Time Between Failure. A measure of reliability: the time that a user may reasonably expect a device or system to work before an incapacitating fault occurs. Also, the average number of hours between one random failure and the next under stated conditions.

MTTR

Mean Time To Repair. The average time required for corrective maintenance.

NTP

Nortel Networks Publications; customer documentation. Each NTP is identified by a unique ten-digit document number.

OA&M

Operation, Administration, and Maintenance.

OEM

Original Equipment Manufacturers.

OTM

A Nortel Networks Windows™ application that is available for configuring the CS 1000 and Meridian 1 systems.

PAS

Product Administration System.

PBX

Private Branch eXchange. A telephony switch that is privately owned.

PCB

Printed Circuit Board.

PCI

Peripheral Component Interconnect. An Intel device that enables high performance in an interface between a CPU bus and a peripheral device. A high-speed PC local expansion bus, capable of interconnecting ICs and plug-in boards to the hose processor.

PCM

Pulse Code Modulation. A method for encoding an analog voice signal into a digital bit stream.

PC Card

Personal Computer Card. A credit card-sized plug-in board for use in PCs. These cards are the only way to get to a laptop bus without using a docking station. In addition, application software can be stored on the card into system address space so that the software can run directly from the card, resulting in a faster start and less memory required from the host computer.

PDF

Portable Document Format.

RAN

Recorded ANnouncement trunks - A trunk that provides a link between the system and a recorded announcement device, used to provided recorded information to callers.

RTC

Real Time Clock. System clocking influenced/determined by connection to a time process external to processing by the system.

SBC

Sub-Band Coding. Algorithm for compressing speech data down to just over a quarter of its original size.

Scalable architecture

A way of designing a system that allows it to be resized with relative ease; the cost required to increase its size in proportion to the new size.

SDI

Serial Data Interface. For some systems, provides ports between the CPU and external devices like a teletype or maintenance telephone. More generally, an SDI is a mechanism for changing the parallel arrangement of data within computers to the serial form used on transmission lines, and vice versa.

STA

Single Terminal Access.

Telnet

An IP-based protocol for accessing a host computer over a network. Telnet can be used to access the Integrated Recorded Announcer Text-based User Interface over an LAN.

TUI

Telephone User Interface. The interface a user can use to record, play, and assign and unassign announcements over a DTMF telephone.

VxWorks

Wind River RTOS (Real Time Operating System). See RTOS.

.WAV

File format used for storing voice files created under Microsoft Windows.

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Nortel Communication Server 1000

Integrated Recorded Announcer Fundamentals

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