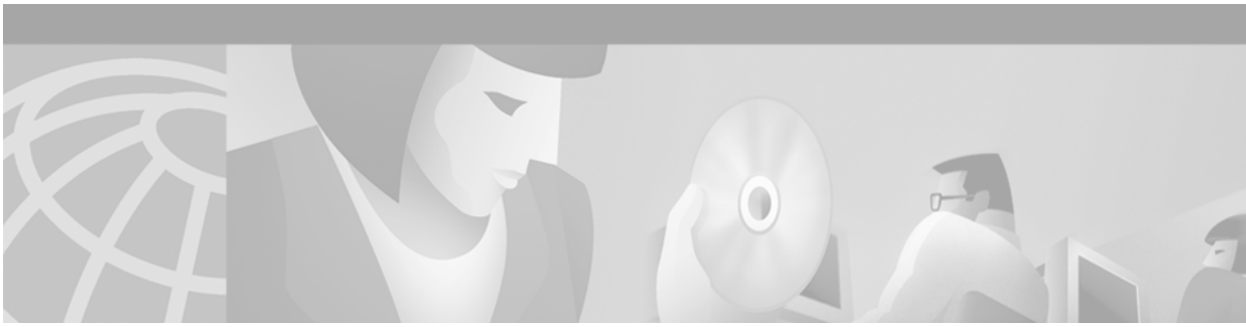


Preface

Objectives

The *Cisco VCO/4K IPRC Supplement* provides hardware and software configuration information for the Cisco VCO/4K Integrated Prompt and Record Card (IPRC).

Audience

This information is intended for system administrators and hardware installation personnel working with the VCO/4K IPRC.

Document Organization

This document is organized as follows:

- Chapter 1, "Overview," provides a general overview of the IPRC hardware and software components.
- Chapter 2, "Installation and Configuration," detailed procedures for installing and configuring IPRCs in the VCO/4K and other legacy VCO series equipment.
- Chapter 3, "Maintenance," provides prompt library maintenance information for the IPRC.

Conventions

This document uses the following conventions:

Note Means *reader take note.* Notes contain helpful suggestions or references to material not covered in the manual.

Caution Means *reader be careful.* In this situation, you might do something that could result in equipment damage or loss of data.

Warning **Warning means *danger.* You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translated versions of the warning, refer to the *Regulatory Compliance and Safety* document that accompanied the device.**

Related Documentation

Related documentation includes:

- *Cisco VCO/4K Hardware Installation Guide*
- *Cisco VCO/4K System Maintenance Manual*
- *Cisco VCO/4K Troubleshooting Guide*
- *Cisco VCO/4K Mechanical Assemblies*
- *Cisco VCO/4K Card Technical Descriptions*
- *Cisco VCO/4K Software Installation Guide*
- *Cisco VCO/4K System Administrator's Guide*
- *Cisco VCO/4K Standard Programming Reference*
- *Cisco VCO/4K Extended Programming Reference*
- *Cisco VCO/4K System Messages*

Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following URL:

http://www.cisco.com

Translated documentation is available at the following URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click **Leave Feedback** at the bottom of the Cisco Documentation home page. After you complete the form, print it out and fax it to Cisco at 408 527-0730.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support

- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

http://www.cisco.com/register/

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.

CHAPTER 1

Overview

The Cisco Systems Integrated Prompt/Record Card (IPRC) for the VCO/4K is a hardware option that provides an easy-to-implement, high-quality, digital voice prompting system.

The IPRC receives commands from a host application via the VCO/4K system software and communicates these commands to its digital voice circuitry to produce voice messages. These messages are then routed by the VCO/4K system software to the designated outgoing VCO/4K port.

The IPRC is available with the following port configurations:

- 8 Playback/4 record ports (IPRC8)
- 64 playback/32 record ports (IPRC64)
- 128 playback/32record ports (IPRC128)

All channels can operate simultaneously. In addition, the IPRC supports up to 16 libraries of up to 256 prompts (audio files) per library provided that the total time of the prompts does not exceed a duration of 35 minutes. Customers may order the following IPRC standard prompt sets at no charge:

- IPRC Prompt Library Domestic/u-law
- IPRC Prompt Library International/A-law

IPRC prompts are composed in a proprietary format. Users may modify these prompts or create their own with a special software package, VFedit, that has been modified to accommodate the proprietary IPRC format. This software package is available only through Cisco Systems. For more information, contact your Cisco Systems sales representative.

Summary of Features

- VCO/4K administration support to create and maintain multiple voice prompt libraries.
- VCO/4K inpulse rule processing and VCO/4K host commands to support recording and playback functionality.
- VCO/4K administration support for user-definable configuration parameters for the IPRC.
- VCO/4K commands and administration processing that supports dynamic prompt updating for IPRC prompt libraries.
- User-configurable and firmware defined IPRC port densities from 8 to 128 ports.
- Run-time diagnostic functionality to verify the integrity of voice prompt data on the IPRC.
- A user-configurable PCM limit to prevent voice prompt playback operations from exceeding acceptable levels within the network.

System Requirements

The components in Table 1-1 are required to implement the voice prompting features of the IPRC.

Table 1-1 IPRC System Requirements

Components Supplied by Cisco	Components Supplied by Customer
VCO/4K	IBM PC/AT-compatible computer with the following characteristics: 386SX (or higher performance) At least 1 MB RAM MS-DOS 3.3 or above Microsoft Windows 3.0 or higher Optional voice digitizing board for recording and playing back prompts
IPRC8, IPRC64, or IPRC128	
IPRC SCSI Adapter Cable	
VFedit Conversion Utility, Audio ToolBox (optional, for creating or editing custom prompts and converting to the IPRC proprietary format)	

Prompt Download Overview

The IPRC prompt download process uses the system SCSI bus to download voice prompt files from the VCO/4K hard drive to an IPRC. The NBC comm bus is used to control the download process, but no voice prompt files are downloaded via the NBC comm bus.

Each side of a redundant system downloads voice prompts from that side's hard drive to the IPRC connected to that particular side. Prompts are also downloaded whenever the IPRC is reset.

Playback Overview

The IPRC's playback capabilities allow the VCO/4K application to play prompts from multiple prompts libraries and to loop the playback of individual prompts or a list or prompts. These capabilities are accessed through iinpulse rule processing and Voice Port Control ($6C) command processing. The IPRC also supports the DTMF "barge-in" capability, where a DTMF digit collection can be used to stop a voice announcement.

Record Overview

The IPRC provides the ability to record PCM data from any DS0 time slot in the VCO/4K. The VCO/4K uses the IPRC record function to update the prompt library information by recording new prompts from a DS0 port. The IPRC record implementation also allows the VCO/4K application to record temporary prompt information on a per call basis. The recording process is accessed through inpulse rule processing and Voice Port Control ($6C) command processing.

Note If C-bus is enabled, the IPRC record feature is not supported.

Handling of Temporary Prompt Information

A temporary prompt can be recorded for use on a per call basis. This feature allows a unique prompt message to be recorded for each playback port on an IPRC. The temporary prompt is associated with an IPRC playback port and is maintained by the IPRC as long as the associated playback port is involved in a call. The temporary prompt is erased on the IPRC when the playback port is released from the call. An application of this feature is one in which a voice sample is recorded and played back immediately, as in an automated collect call service.

The IPRC can record up to 255 temporary prompts per playback channel. The temporary prompts are accessed for recording and subsequent playback through inpulse rule processing and Voice Port Control ($6C) command processing.

IPRC Record Channel Resource Management

IPRC64 and IPRC128 cards contain 32 channels for recording. The IPRC8 contains four channels for recording. These record channels are managed and allocated internally by the IPRC. The VCO/4K system software does not need to provide any additional administration or configuration functionality to use the record channels on an IPRC. Consequently, the VCO/4K system software cannot group record channels as a resource group, record channels cannot be shared across IPRCs, and record channel behavior cannot be displayed. The Port Display screen displays record state information for any IPRC port performing a record operation.

Multiple Prompt Library Support

You can create up to 16 prompt library directories on the hard drive. The Prompt Library Maintenance screen also provides a means for adding and removing voice prompt files from a library on the hard drive, in addition to other functions which are described in detail in this document.

The prompt library configuration information (library and directory) are maintained automatically on both hard drives of a redundant system. The prompt files themselves must be transferred from floppy disk to each hard drive via the system Disk Utilities.

Assigning Prompt Libraries to IPRCs

You may assign one or more prompt libraries to each IPRC in the system through the IPRC Card Configuration screen. Prompt libraries will be downloaded to the IPRC as part of the IPRC card initialization process. Refer to the "IPRC Configuration" section on page 2-7 for more information.

Allocating IPRCs to Calls

All IPRC ports are assigned to the same resource group. IPRC ports are allocated from this group based on the prompt libraries that the IPRC is configured in the IPRC Card Configuration screen to support. For example, if a prompt announcement from Prompt Library 2 is required, then only an IPRC that supports this library (as viewed from the IPRC Card Configuration screen) is allocated to the call.

If an IPRC port cannot be allocated for a particular library, the Resource Allocation ($D6) report returns the port address of the DS0 port affected and also specifies the library. Refer to the *Cisco VCO/4K Extended Programming Reference* or *Cisco VCO/4K Standard Programming Reference* for more information.

IPRC Prompt Information

There are two methods for updating prompt information on the VCO/4K: through the system administration with the Voice Prompt Maintenance Screen, and by using the record process and prompt maintenance host command.

Updating Prompt Libraries Through System Administration

The Voice Prompt Maintenance screen allows you to add prompts to or delete prompts from a library directory on the hard drive, edit prompt file attributes, and manually update IPRCs. This screen also allows you to define an NFS-mounted directory as the default directory for a prompt library.

Any time you add a prompt file to a prompt library directory on the hard drive, all IPRCs supporting that library (as viewed from the IPRC Card Configuration screen) are updated with the new prompt file. Likewise, if you delete a a prompt file from a library, this prompt is erased on all cards supporting the library.

Updating Prompt Libraries via PCM

You can update prompt library information with the record function of the IPRC. In this case, the IPRC is used to record a specified prompt for the card. This prompt is then accessible by any port on the card. You may then store the prompt to the VCO/4K system disk and subsequently upload it to other IPRCs that support the same prompt library by using the Voice Prompt Maintenance Control ($91) command. If the recorded prompt is not stored to the VCO/4K system disk, it may be lost when the IPRC is redownloaded with prompt information.

Handling Memory Limitations

When you update voice prompt information through system administration or PCM, a memory limitation could occur if the updated or new prompt information extends beyond the prompt capacity on the IPRC. The IPRC will detect this memory exhaust condition and report it to the system controller, which will in turn generate system log messages and a System Card Status ($D9) report. The IPRC will remain active and all prompt data up to the prompt that exceeded the capacity will be accessible.

Verifying Run-Time Integrity

An optional run-time integrity verification process is provided within the IPRC application code to detect when prompt information is corrupted. When this feature is enabled, a checksum is added to each prompt on the IPRC and a message is sent from the VCO/4K system controller to the IPRC instructing it to verify its prompt data according to the specified time interval. The IPRC recalculates the checksum

of the prompts and compares it to the checksum that it had previously calculated when the prompt was loaded or recorded. Checksum failures generate a system log message. Administrative or host action is necessary to diagnose the problem and correct the prompt file.

You configure the frequency of the checksum verification on the IPRC through the IPRC Card Configuration screen in one-hour increments up to 24 hours. You may also disable the checksum verification. The VCO/4K instructs the IPRC to perform the checksum test based on this frequency.

The Card Status ($D9) report returns any prompt verification failure. Refer to the *Cisco VCO/4K Extended Programming Reference* or *Cisco VCO/4K Standard Programming Reference* for more information.

CHAPTER 2

Installation and Configuration

Installation

The following sections describe IPRC installation procedures for the Cisco VCO/4K, as well as installation procedures for legacy Summa Four VCO and SDS systems.

VCO/20 and VCO/4K Installation

To install an IPRC in a VCO/20 or VCO/4K system, perform the following steps:

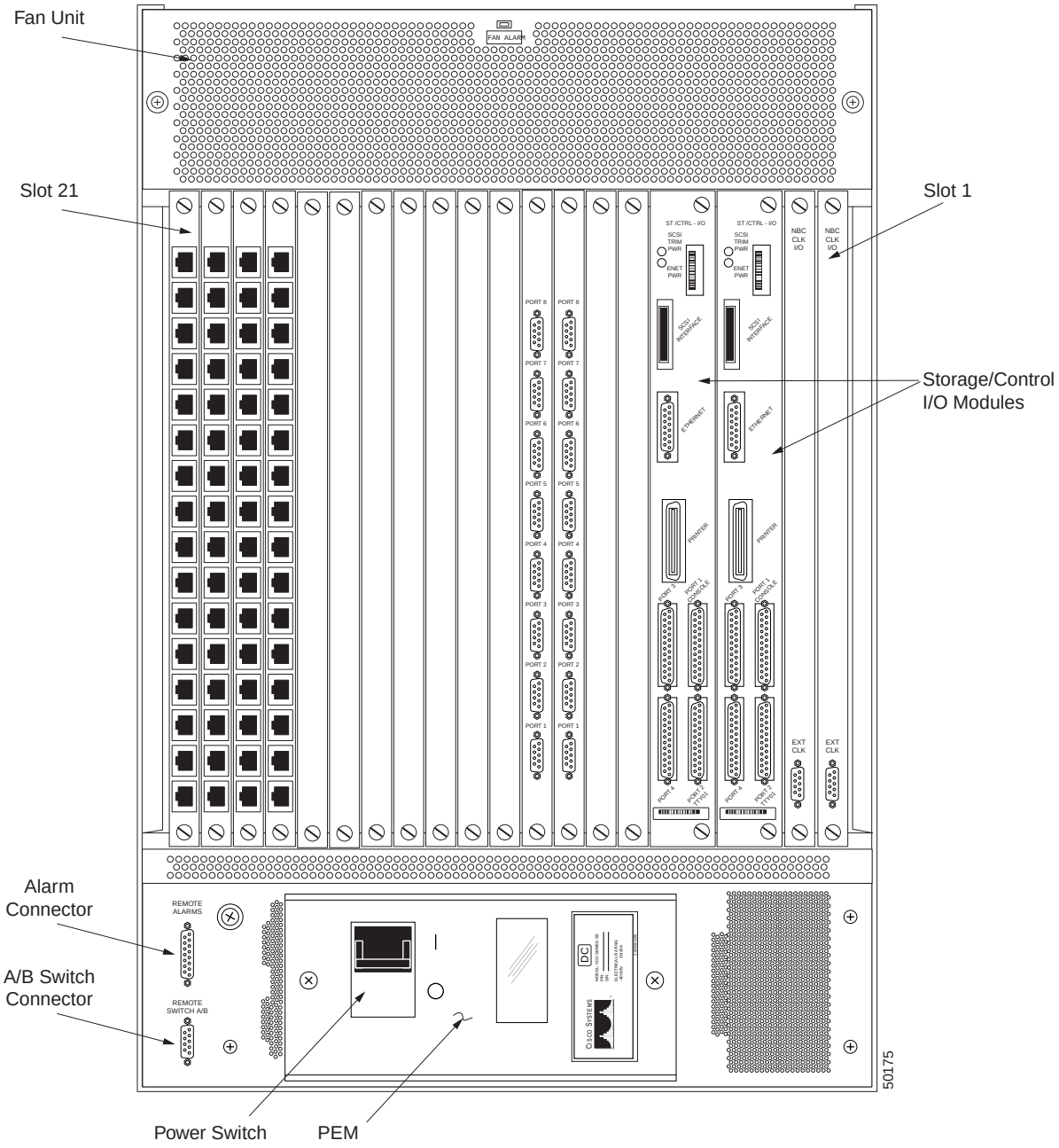
Step 1 Turn off the power to the VCO/4K at the main breaker.

Step 2 Install the IPRCs in the front of the VCO/4K chassis according to the generic installation procedures in the *Cisco VCO/4K Card Technical Descriptions.*

Step 3 Loosen the top and bottom screws on both rear-mounted Storage/Control I/O Modules and remove the modules from the rear of the system. Figure 2-1 shows the location of the Storage/Control I/O Modules. For more information about removing the Storage/Control I/O Modules, refer to the *Cisco VCO/4K Mechanical Assemblies.*

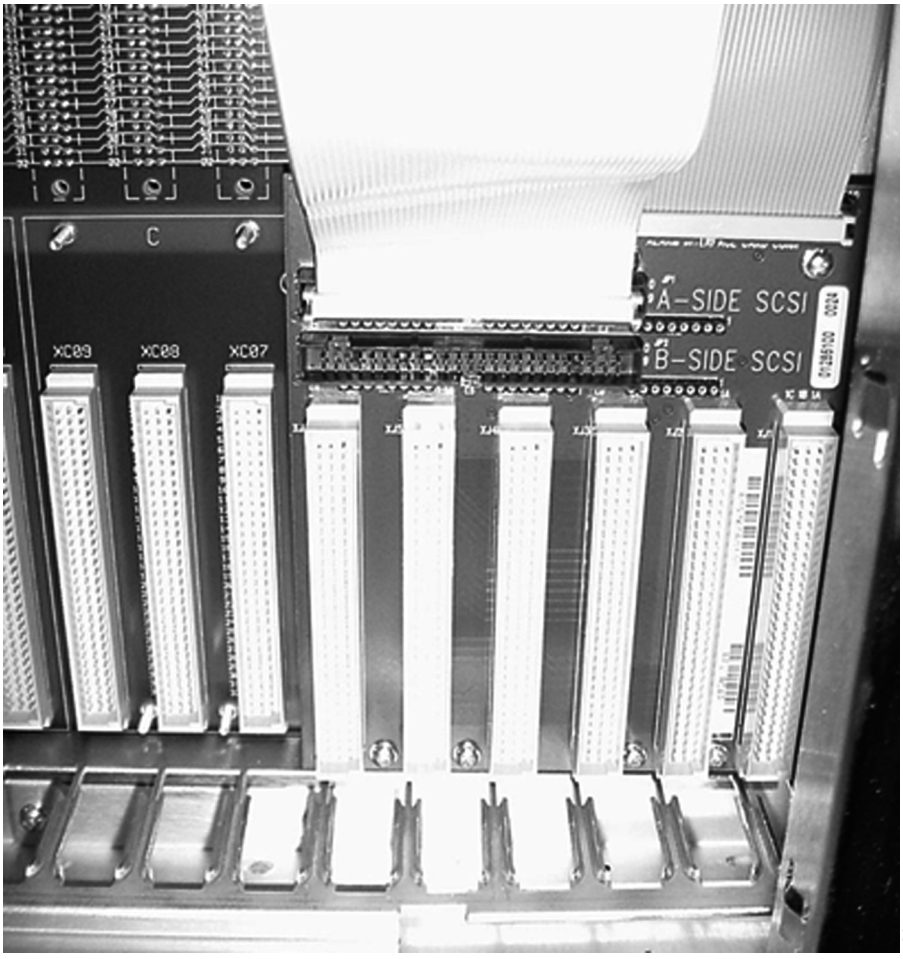
Tip While removing the Storage/Control I/O Modules, use a gentle up-and-down rocking motion to help remove the modules with minimum force.

Figure 2-1 Location of Storage/Control I/O Modules (VCO/4K)



Step 4 Connect the smaller terminator of the Cisco-supplied SCSI ribbon cable to the connector on the A-side SCSI terminal as shown in Figure 2-2. The red wire should be positioned to the leftmost side of the connector.

Figure 2-2 SCSI Connection



Step 5 Using the other end with the four terminators, connect the last terminator to the backplane of the IPRC card.

Step 6 If there is more than one IPRC, connect each additional IPRC to one of the terminators on the SCSI cable. An example set of connections is shown in Figure 2-3. In this example, four IPRCs are mounted in the VCO/4K chassis.

Note The example shown in Figure 2-3 is for a nonredundant configuration. For redundancy, an IPRC can be connected to the A-side SCSI, and a redundant IPRC can be connected to the B-side SCSI.

Figure 2-3 IPRC Installation Example

Step 7 Reinstall the Storage/Control I/O modules.

Step 8 Return power to the VCO/4K.

Installing an IPRC in an SDS or VCO/80

To install an IPRC in an SDS or VCO/80, perform the following steps:

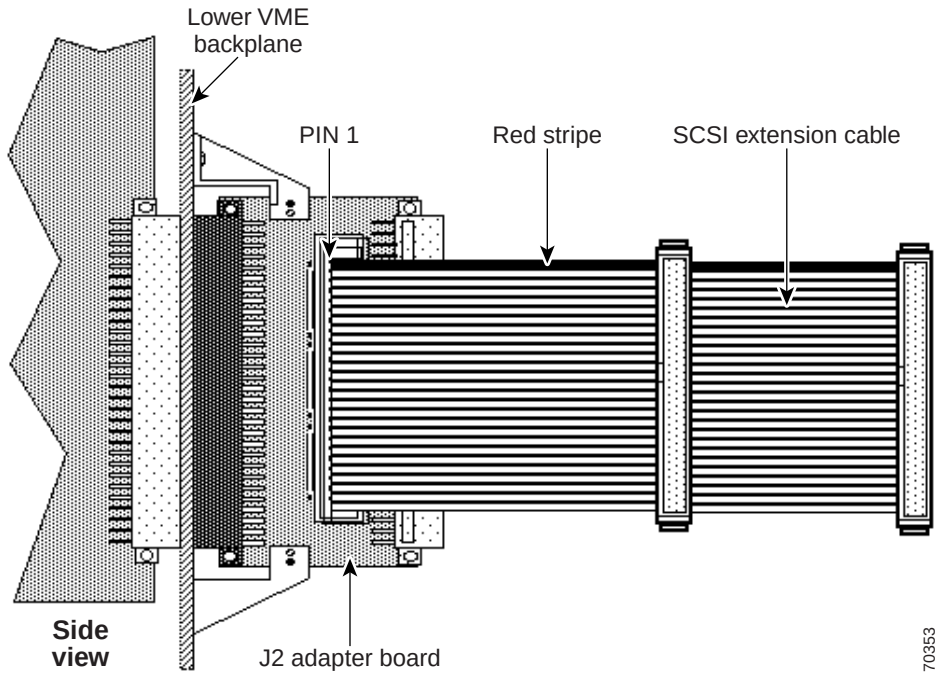
Step 1 Turn off the power to the SDS or VCO/80 at the main breaker.

Step 2 Remove the disk SCSI cable from the J2 adapter board on the back side of the VME backplane.

Caution Be careful not to damage the SCSI cable and the retaining clips on the adapter board.

Step 3 Install the Cisco-supplied 6-inch SCSI Extension Cable onto the J2 adapter board, making sure that Pin 1 of the cable is up. Pin 1 is indicated by the red stripe on the cable. See Figure 2-4 for an illustration of this connection.

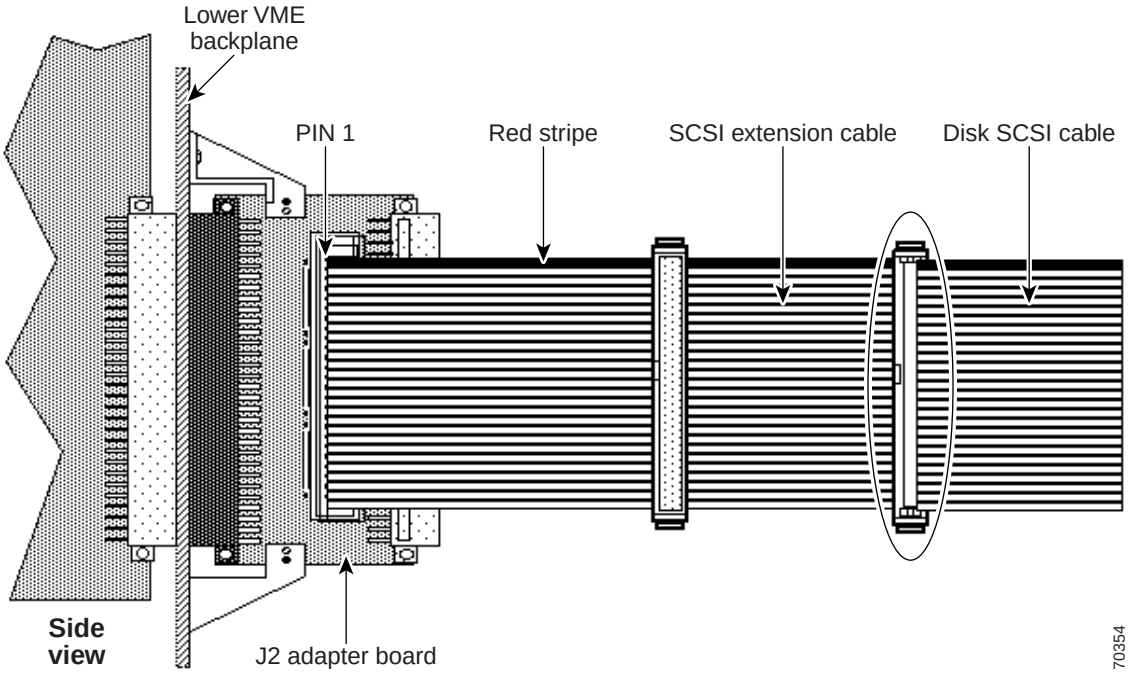
Figure 2-4 SCSI Extension Cable Connection



Caution Be careful not to install the cable upside down. If the cable is improperly installed, the fuse on the J2 adapter board will blow.

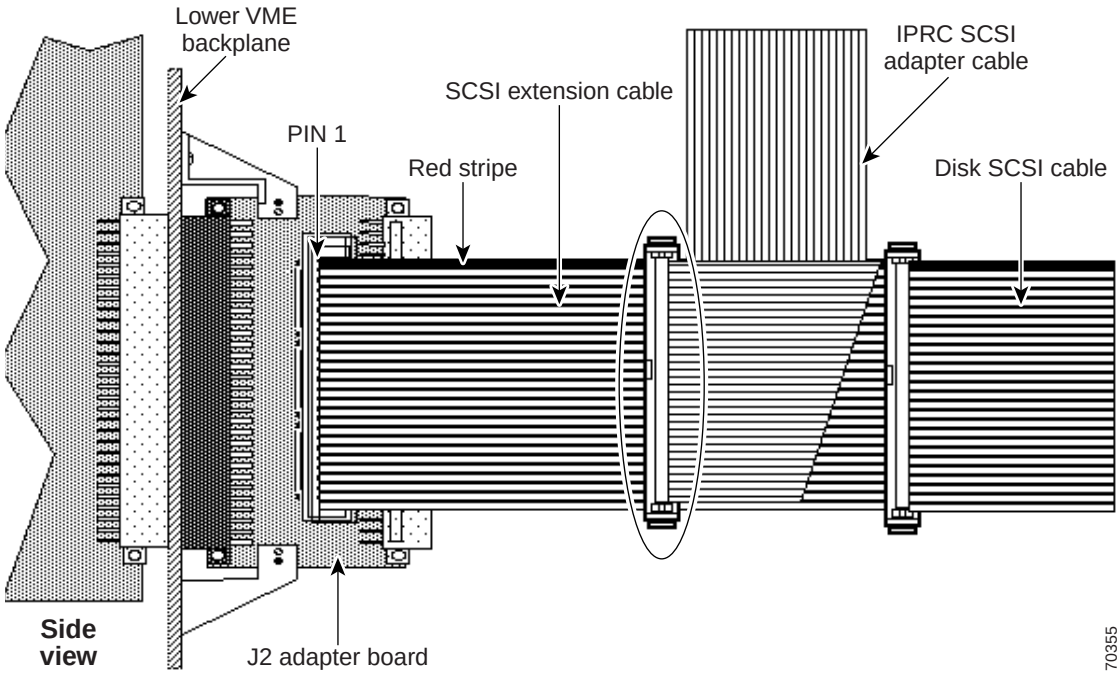
Step 4 Install the disk SCSI cable into the end socket of the SCSI Extension Cable. Again, make sure that Pin 1 is aligned properly (see Figure 2-5).

Figure 2-5 Disk SCSI Cable Connection



Step 5 Install the IPRC SCSI Adapter Cable into the middle socket of the SCSI Extension Cable. Make sure that Pin 1 is aligned properly (see Figure 2-6).

Figure 2-6 IPRC SCSI Adapter Cable Connection



Step 6 Install the other end of the IPRC SCSI Adapter Cable into the J3 socket for the slot containing the IPRC card.

Caution Be sure to install the IPRC SCSI Adapter Cable into the slot containing the IPRC only. Installing the cable into any other slot will cause the SCSI interface to fail.

Caution The IPRC SCSI Adapter Cable has four connectors on the end that plugs into the J3 sockets. Use only the connector at the end of the cable.

Step 7 Power up the SDS or VCO/80 system.

IPRC Configuration

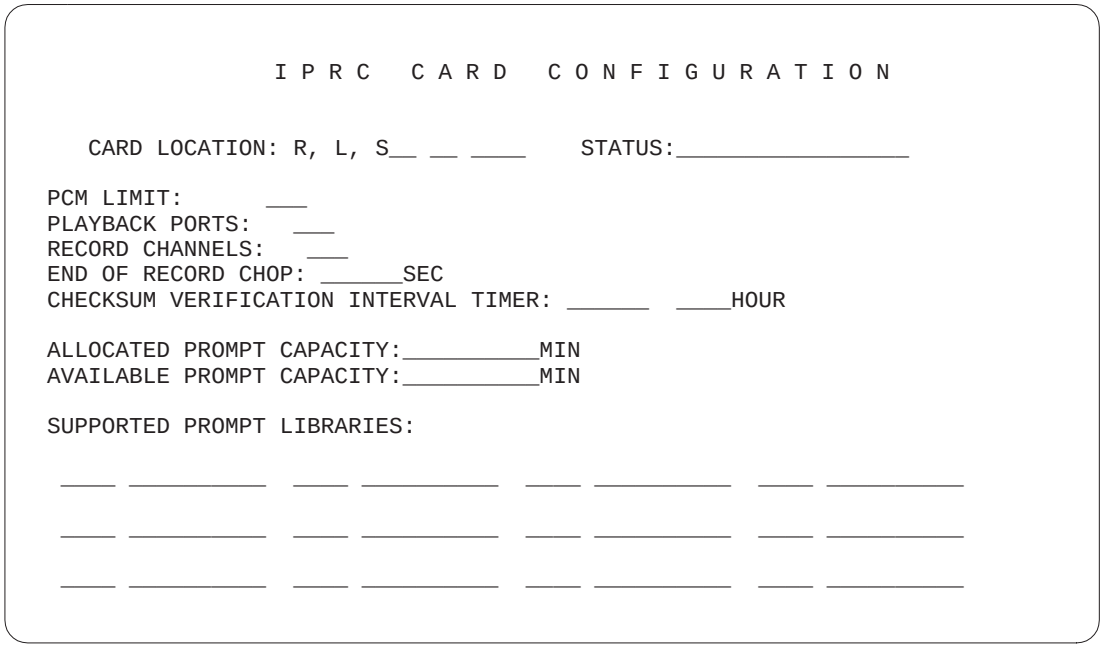
Use the IPRC Card Configuration screen to define IPRC configuration parameters. This screen provides fields in which you specify the length of time after which to chop the end of a newly recorded prompt, the interval timer for checksum verification, and the prompt libraries supported by the card. The IPRC Card Configuration screen also contains fields that display information such as rack position and card operating state.

This screen also provides fields that enable you to control the configuration of the port density for the IPRC when one is added to the system. You can configure 64 and 128- port IPRCs in 8-port increments, to support less than the physical port capacity through the IPRC Card Configuration screen. Field processing for this option allocates or deallocates time slots for the IPRC based on the number of ports you define for the card. Field processing also prevents you from configuring a limited-port IPRC card with more ports than the physical limit.

For information about the IPRC Card Configuration screen and a description of each of its fields, refer to the *Cisco VCO/4K System Administrator's Guide*.

Note Due to the potential reallocation of time slots and removal of prompt information loaded on the IPRC, you must remove the IPRC from service prior to making any changes on this screen.

Figure 2-7 IPRC Card Configuration Screen



Accessing the IPRC Card Configuration Screen

From the Administrator Main Menu, choose Database Administration Menu (A). From the Database Administration Menu, choose Card Summary (A). In the Card Summary screen, press the Next Screen key until you see the Prompt/Record card listed.

Press Next Field until the cursor is located in the Display Card field opposite the Prompt/Record card. Type any character and press **Enter.**

Copying Prompts Onto the VCO/4K Hard Disk

The following procedure describes how to copy prompts from a floppy diskette onto the VCO/4K hard drive.

Step 1 Log in to the VCO/4K.

Step 2 Insert the diskette containing the prompts into the floppy disk drive in the VCO/4K.

Step 3 In the Administrator Main Menu, type **C** for the Maintenance menu, and press **Enter**.

Step 4 If you are creating a new prompt library, proceed to step 5.

If you are modifying an existing prompt library, proceed to step 10.

Step 5 Type **J** and press **Enter** to bring up the Create Directory screen. The cursor is located in the screen's data entry field.

Step 6 Type the following directory:

C:/BOOT/VOICE0

For each additional voice prompt directory you want to create, type

C:/BOOT/DIRECTORY#

where DIRECTORY is the name of the directory and # is an optional number you assign to each directory, as in VOICE3, for example.

Step 7 Press **Enter.** The following message appears at the bottom of the screen while the directory is being created:

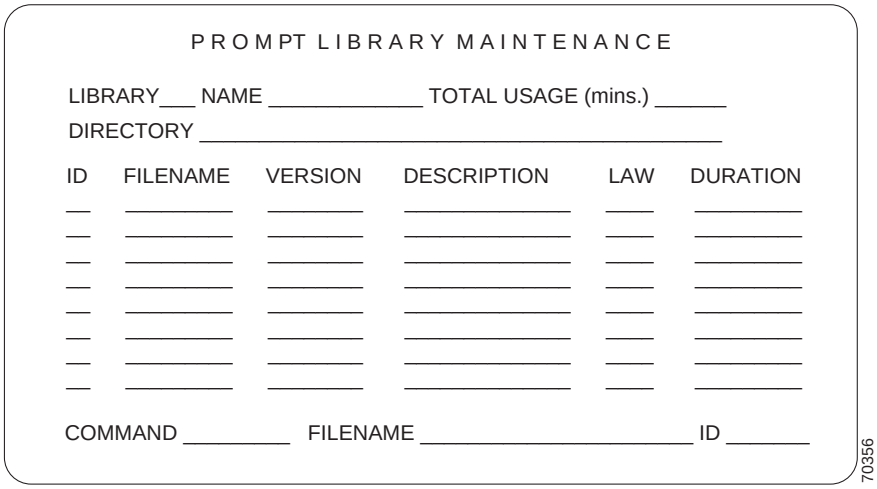
Creating Directory...

Step 8 Press **Main Menu** to return to the Administrator Main Menu.

Step 9 Type **C** for the Maintenance Menu and press **Enter.**

Step 10 In the Maintenance Menu press **J** for the Prompt Library Maintenance screen.

Figure 2-8 Prompt Library Maintenance Screen



Step 11 In the Library field, type a number for the new or existing library. You may have up to 16 prompt libraries per IPRC.

Step 12 Press **Next Field**. You may optionally enter a name for the library in the Name field.

Once you have established a number and name for a library, each time you subsequently enter the library number, its name, directory, and prompts will automatically display in the Prompt Library Maintenance screen.

This step sorts prompts in numerical order and displays the list of prompts to be downloaded to the IPRC.

Note When adding a new or modified prompt, or after copying prompts onto the hard disk for the first time, check that the prompt ID numbers are sequential. If there are duplicate ID numbers, either delete the duplicate prompt file that is no longer needed or renumber the prompt file with the EDIT function in the Prompt Library Maintenance screen.

CHAPTER 3

Maintenance

Prompt Library Maintenance

You can update, test, edit, delete, and add prompts in any IPRC supported library through the Prompt Library Maintenance screen. The following procedure takes you to the field in which you specify what you want to do.

Step 1 Open the Prompt Library Maintenance screen.

Step 2 If you have assigned a library number to each of the libraries, enter the number of the library in which you want to update prompts in the LIBRARY field. Press **Enter.**

Step 3 The name of the library, the directory it's in, and a list of its prompts appear on-screen.

If you have not assigned a library number to the library, press **Next Field** and enter the library name in the NAME field. Press **Enter.**

The library's directory and a list of its prompts appear.

To specify the directory of a library, press **Next Field** until the cursor is in the DIRECTORY field and type the directory and path. Press **Enter.**

A list of the library's prompts appears.

Step 4 Press **Next Field** until the cursor is in the COMMAND field.

Step 5 Continue with one of the following procedures.

Adding Prompts to a Library

The Add function downloads prompts to an IPRC that were copied onto the hard drive.

Step 1 Do steps 1 through 3 in the "Prompt Library Maintenance" section.

Step 2 Press **Select** until ADD appears.

Step 3 Insert the diskette.

Step 4 Enter the source file name for the prompt you want to add. To add all the prompts in a library, type **`*.SU4`** in the Filename field. Be sure to specify the complete path for the prompt file(s) to copy into the library. For example: **`A:/DIR/XXX.SU4`**

Deleting Prompts from a Library

The Delete function permanently erases the prompt(s) you specify from the hard drive.

Step 1 Do steps 1 through 3 in the "Prompt Library Maintenance" section on page 3-1.

Step 2 Press **Select** until DELETE appears.

Step 3 Enter the filename of the prompt you want to delete. To delete all the prompts in a library, type **`*.SU4`** in the Filename field.

Editing Prompt Header Information in a Library

The Edit function in the Prompt Library Maintenance screen allows you to change the header information for prompts: the ID, filename, version, description, and law. Note that the Edit function does not change any of a file's contents.

Step 1 Do steps 1 through 4 in the "Prompt Library Maintenance" section on page 3-1.

Step 2 Press **Select** until EDIT appears.

Step 3 Enter the filename of the prompt file you want to edit. Press **Next Field** to display the current attributes.

Step 4 Enter the new information for the file in each of the fields. Press **Next Field** between each entry.

Step 5 Press **Enter** when you are done.

Testing Prompts in a Library

Before you test prompts, you must first deactivate the line/trunk port that you want to use for the test. Place the port in diagnostic mode through the Card Maintenance screen. You must also make sure that there is an IPRC in service which supports the library you are testing. Refer to the *Cisco VCO/4K System Administrator's Guide*.

Step 1 Do steps 1 through 3 in the "Prompt Library Maintenance" section on page 3-1.

Step 2 Press **Select** until TEST appears.

Step 3 Press **Next Field** until the cursor is in the first RLSP field.

Step 4 Enter the R, L, S, and P positions of the port you are using to test the prompts.

Step 5 Enter the prompt IDs in the order in which you want to test them. Press **Enter**.

Step 6 Listen to the prompts through a handset.

Updating Prompts in a Library

When you update an IPRC, the system takes the contents of the library you specify and downloads it to IPRCs that support that library. You can update individual prompts one at a time or you can update an entire library.

Step 1 Do steps 1 through 3in the "Prompt Library Maintenance" section on page 3-1.

Step 2 Press **Select** until UPDATE appears.

Step 3 To specify a particular prompt to update, press **Next Field** and enter the filename of the prompt file. Enter ***.SU4** to update an entire library.

Step 4 Press **Enter.**

IPRC Administration Messages

The following messages are specific to the IPRC. For more detailed information, refer to *Cisco VCO/4K System Messages*.

Diagnostic Messages

The Service Circuit Test Utility screen from the Diagnostic Menu enables you to run diagnostics on the IPRC. The diagnostic tests include a DRAM test, a SCSI interface test, and a PCM interface test for the specified channels. The DRAM part of the diagnostic takes about 45 to 60 seconds to complete. The SCSI interface test takes about one second to complete. The PCM interface test takes about 10 seconds to complete. In each of the following messages, "R,L,S" refers to the rack, level, and slot location of the IPRC. Refer to the *Cisco VCO/4K System Administrator's Guide* for more information.

DGN 08: IPRC R,L,S No Response From XXX Test

Issued when the IPRC under test does not respond to the diagnostic test request. "XXX" may be DRAM, SCSI Interface, or PCM Interface.

DGN 15: IPRC R,L,S XXX Test Passed

Issued following each executed test if the user has selected "N" in the screen field labeled, "Print Error Messages Only".

Log/Status Messages

As you perform the prompt download procedure, you will see the following log or status messages. "R,L,S" refers to the rack, level, and slot location of the IPRC.

FRM 190: IPRC Prompt Verification Error - RLS X,X, X

The IPRC has detected the corruption of one or more prompts. Reload the IPRC with a new copy of the prompt library. Subsequent occurrences of this error may indicate an IPRC hardware problem.

FRM320: Initiating Prompt Download — RLS X, X, XX —SCSI Dev X

This message is issued when prompts are being downloaded to the specified IPRC. The SCSI device assigned to the IPRC is also specified.

FRM321: Prompt Download Complete —RLS X, X, XX

Prompt data has been downloaded to the IPRC in the slot location specified in the message.

FRM322: Prompt Download Error—RLS X, X, XX—SCSI Dev X

The prompt data download from the hard disk to the IPRC in the specified slot location has been abnormally interrupted. The SCSI device assigned to the IPRC is also specified.

FRM323: Prompt Upload Complete - RLS X, X,XX

Prompt data has been uploaded to the IPRC in the slot location specified in the message.

FRM 324: Prompt Upload Error - RLS X,X,XX

The prompt data upload to the IPRC has failed.

FRM 325: Error Removing IPRC from SCSI Bus - RLS X,X,XX - SCSI Dev XX

The system was unable to release the IPRC from the SCSI bus after the IPRC was downloaded. Reset the card.

General-Purpose Download-Specific Messages

In each of the following messages, “R,L,S” refers to the rack, level, and slot location of the IPRC.

FRM230: Phase 3—IPRC Download Complete

The application code has been broadcast to all in-service IPRCs in the system.

FRM231: IPRC Download Complete—RLS X, X, XX

The application code has been downloaded to the IPRC in the slot location specified in the message. A single card download occurs whenever an IPRC is removed and replaced in a subrack.

FRM232: Starting IPRC Application Download

At this point in a system restart, the IPRC application is being broadcast to all in-service IPRCs in the system. Also used to indicate that a directed download to an IPRC has begun.

FRM234: IPRC Download Did Not Reach Completion

The download of application code from the hard disk to the IPRCs has been abnormally interrupted. A minor system alarm has been set. A previous FRM message should appear in the log showing the aborted download.

Inpulse Rule Processing

Inpulse rule processing selects an IPRC port from a resource group if the rule specifies to present voice prompts. If all IPRC ports are unavailable, inpulse rule processing aborts. An Inpulse Rule Complete ($DD) report is generated indicating the rule was aborted because no IPRC ports were available, followed by a Resource Limitation ($D6) report (reported only for the first resource limitation encountered until the condition has been cleared).

An IPRC Port is allocated to the call and enabled when inpulse rule processing encounters a SPEAK [xx] token. The IPRC port remains allocated to the call until rule processing ends. Any number of SPEAK [xx] tokens can be used in a rule. This token is most commonly used to prompt a user to enter digits or wait while a call is processed. Up to three digits can be entered in the additional data field to specify the prompt to present. When specifying a prompt number, verify that there is a prompt associated with that number. If no prompt can be found for a number, the call can hang waiting for a prompt to complete.

Refer to the *Cisco VCO/4K System Administrator's Guide* for more information on the SPEAK [xx] Inpulse Rule token.

Updating Prompt Libraries via PCM

You can update prompt library information through the record function of the IPRC. In this case, the IPRC is used to record a specified prompt for the card. This prompt is then accessible by any port on the card. The prompt may then be stored on the VCO/4K system disk and subsequently uploaded to other IPRCs that support the same prompt library. If the recorded prompt is not stored to the VCO/4K system disk, it may be lost when the IPRC is downloaded again with prompt information. Use the $6C command to record the prompts, and the $91 command to store the prompts to disk. Refer to the *Cisco VCO/4K Extended Programming Reference* or *Cisco VCO/4K Standard Programming Reference* for more information.

Creating and Updating Prompt Libraries with the Editing Package

If you choose to create your own prompt set, the prompts must be recorded with

- An 8-bit sample size
- A u-Law encoding format
- An 8,000-Hz sample rate

The IPRC recognizes only a Cisco Systems proprietary format. The conversion utility SU4PAK modifies the 8-bit u-Law prompts into the IPRC-recognizable format. This conversion utility is supplied by Cisco Systems with the VFedit Prompt Editing Package. IPRC prompts must be modified with the SU4CHP utility before you edit them in VFedit.

An installation for creating prompts would consist of a PC-resident voice digitizing board, a microphone, and a speaker arrangement.

Standard IPRC Prompt Library

This listing identifies the Cisco Systems standard prompt library. The prompts are available in a two diskette set at no charge to customers. Contact a Cisco Systems sales representative if you wish to order.

The prompt number is shown in both decimal (for use in inpulse rules) and hexadecimal (for use in commands).

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
1	$01	one	
2	$02	two	
3	$03	three	
4	$04	four	
5	$05	five	
6	$06	six	
7	$07	seven	
8	$08	eight	
9	$09	nine	
10	$0A	ten	
11	$0B	eleven	
12	$0C	twelve	
13	$0D	thirteen	
14	$0E	fourteen	
15	$0F	fifteen	
16	$10	sixteen	
17	$11	seventeen	
18	$12	eighteen	
19	$13	nineteen	
20	$14	twenty	
21	$15	thirty	
22	$16	forty	
23	$17	fifty	
24	$18	sixty	
25	$19	seventy	
26	$1A	eighty	
27	$1B	ninety	
28	$1C	hundred	
29	$1D	thousand	
30	$1E	million	

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law) (continued)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
31	$1F	zero	
32	$20	oh	
33	$21	January	
34	$22	February	
35	$23	March	
36	$24	April	
37	$25	May	
38	$26	June	
39	$27	July	
40	$28	August	
41	$29	September	
42	$2A	October	
43	$2B	November	
44	$2C	December	
45	$2D	Sunday	
46	$2E	Monday	
47	$2F	Tuesday	
48	$30	Wednesday	
49	$31	Thursday	
50	$32	Friday	
51	$33	Saturday	
52	$34	day	
53	$35	week	
54	$36	month	
55	$37	year	
56	$38	the time	(at the tone) **the time** (will be...)
57	$39	minutes	(...twelve o’clock, and thirteen) **minutes**.
58	$3A	seconds	(...twelve thirteen, and twenty) **seconds**.
59	$3B	a.m.	
60	$3C	p.m.	
61	$3D	dollars	
62	$3E	cents	
63	$3F	a	
64	$40	again	
65	$41	to play back	

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law) (continued)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
66	$42	the	
67	$43	is	
68	$44	is not	
69	$45	are	
70	$46	are not	
71	$47	I didn't understand that.	
72	$48	that	
73	$49	will be	
74	$4A	is being	
75	$4B	has been	
76	$4C	of	
77	$4D	and	
78	$4E	you have	**you have** (entered a number...)
79	$4F	your	
80	$50	later	
81	$51	with	
82	$52	or	
83	$53	yes	
84	$54	no	
85	$55	no longer	(are) **no longer** (in service)
86	$56	in service	(are no longer) **in service.**
87	$57	out of service	(is) **out of service.**
88	$58	now	(press one) **now.**
89	$59	another	(make) **another** (selection)
90	$5A	to send	
91	$5B	sent	(has been) **sent.**
92	$5C	to receive	
93	$5D	received	(has been) **received.**
94	$5E	at the tone	(please speak your name) **at the tone**.
95	$5F	at the prompt	(please speak your name) **at the prompt.**
96	$60	when you hear the tone	(please speak) **when you hear the tone.**
97	$61	message	(to record a) **message,...**
98	$62	fax	(to send a) **fax,...**
99	$63	today is	**today is** (Tuesday)
100	$64	speed dial	(press # to) **speed dial.**

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law) (continued)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
101	$65	call	(to place a collect) **call,** (press 1)
102	$66	all circuits	**all circuits** (are busy)
103	$67	person	(that) **person** (is not available)
104	$68	name	(speak the) **name** (of the person you are calling)
105	$69	telephone number	(enter your) **telephone number.**
106	$6A	number	(please enter your credit card) **number** (now)
107	$6B	the number you are calling	the number you are calling, (555-1212, is ...)
108	$6C	the number you have entered	the number you have entered (is invalid)
109	$6D	pound sign	(press) **pound sign** (when complete)
110	$6E	star	(press) **star** (when complete)
111	$6F	an international	(to place) **an international** (call,)
112	$70	a direct call	(to place) **a direct call,**
113	$71	a domestic	(to place) **a domestic** (call,)
114	$72	a collect call	(to place) **a collect call,**
115	$73	a person-to-person call	(to place) **a person-to-person call**,
116	$74	a long-distance	(to place) **a long-distance** (call,)
117	$75	account code	(please enter your) **account code.**
118	$76	authorization code	(please enter your) **authorization code.**
119	$77	calling card	(please enter your) **calling card** (number)
120	$78	credit card	(please enter your) **credit card** (number)
121	$79	P-I-N code	(please enter your) **P-I-N code.**
122	$7A	Social Security Number	
123	$7B	debit card	(please enter your) **debit card** (number)
124	$7C	selection	(please enter your) **selection.**
125	$7D	location code	(please enter your) **location code.**
126	$7E	password	(please enter your) **password.**
127	$7F	mailbox	(please enter your) **mailbox** (number)
128	$80	digit	(please enter your three-) **digit** (number)
129	$81	area code	(please enter your) **area code.**
130	$82	conference call	(to place a) **conference call,** (press)
131	$83	will be with you shortly	(an operator) **will be with you shortly**
132	$84	for additional	**for additional** (assistance)
133	$85	directory	(for) **directory** (assistance)

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law) (continued)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
134	$86	assistance	(for additional) **assistance,** (please stay on the line)
135	$87	information	(for additional) **information,** (please stay on the line)
136	$88	services	(for additional) **services,** (please stay on the line
137	$89	customer service	(for) **customer service,** (press 1)
138	$8A	operator assistance	(for) **operator assistance,** (press 0)
139	$8B	an operator	(to speak with) **an operator,** (press 0)
140	$8C	all operators	**all operators** (are busy)
141	$8D	all representatives	**all representatives** (are busy)
142	$8E	a representative	**a representative** (will be with you shortly)
143	$8F	when finished	(press pound) **when finished.**
144	$90	to call beyond the local area	**to call beyond the local area**, dial 1, 0)
145	$91	press	(for directory assistance) **press** (4,1,1)
146	$92	to place	**to place** (a long distance call)
147	$93	make	(please) **make** (another selection)
148	$94	dial	**dial** (one plus...)
149	$95	please enter	**please enter** (your social security number)
150	$96	try again	(please) **try again**
151	$97	to erase	**to erase** (the message)
152	$98	to record	**to record** (a message)
153	$99	...speak	**...speak** (distinctly)
154	$9A	...speak your name	**...speak your name** (at the prompt)
155	$9B	to speak with...	**to speak with** (an operator, press 0)
156	$9C	if this is	**if this is** (correct, press 2)
157	$9D	correct	(if this is) **correct,** (press 1)
158	$9E	valid	(is no longer) **valid**.
159	$9F	available	(an operator is not) **available** (at this time)
160	$A0	activated	(that service is not) **activated**
161	$A1	are busy	(all circuits) **are busy,...**
162	$A2	is being processed	(your call) **is being processed**
163	$A3	please	**please** (hold)
164	$A4	begin over	(to) **begin over,** (press pound)
165	$A5	please hold	please hold.
166	$A6	please wait	please wait.

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law) (continued)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
167	$A7	please stay on the line.	please stay on the line.
168	$A8	will be right with you	(an operator) **will be right with you**
169	$A9	please hang up and try your call again.	
170	$AA	please check the number and call again.	
171	$AB	please call the customer service number located on the back of your card.	
172	$AC	please dial the number you wish to reach.	
173	$AD	please enter your...	**please enter your** (credit card number)
174	$AE	...then dial your call when requested to do so.	
175	$AF	your call cannot be completed at this time...	
176	$B0	your call cannot be completed as dialed...	
177	$B1	the area code and number you wish to call	(please dial) **the area code and number you wish to call**.
178	$B2	we are processing your credit card information	
179	$B3	all connections to the selected carrier are busy	
180	$B4	the credit card that you have selected cannot be used for this call	
181	$B5	calls within this area code cannot be presently billed to a credit card	
182	$B6	you are not authorized to use this service	
183	$B7	the following service is not available for 800 numbers	
184	$B8	calls inside the local service area.	(it is not necessary to dial 1 for) **calls inside the local service area.**
185	$B9	this service is not available	**this service is not available** (to your area code)
186	$BA	operator assistance is not available through this service.	
187	$BB	you have entered an invalid...	
188	$BC	We’re sorry...	

Table 3-1 VCO/4K IPRC Prompt Library Set (Mu-Law or A-Law) (continued)

Prompt No.[1,2]	Hex	Message	Inflection, as used in:
189	$BD	...your call will be billed by	**...your call will be billed by** (AT&T)
190	$BE	if you want to record a message to be delivered to this number,	**if you want to record a message to be delivered to this number,** (press 4)
191	$BF	has exceeded the daily use limit	(your credit card) **has exceeded the daily use limit.**
192	$C0	please call customer service at...	
193	$C1	thank you.	
194	$C2	thank you for using...	**thank you for using** (AT&T)
195	$C3	AT&T	
196	$C4	MCI	
197	$C5	Sprint	
198	$C6	LOGICALL	
199	$C7	VT 1	
200	$C8	SITEL	(SIGH-TEL)
201	$C9	VIATEL	(VEE-AH-TEL)
202	$CA	World Phone Card	
203	$CB	For English service, press 1.	
204	$CC	That is not a valid key.	
205	$CD	one, zero, two eight eight, plus	(pausing as in: **“1, 0, ATT, plus...”**)
206	$CE	Welcome to Simon 800 Access	
207	$CF	...using a one.	
208	$D0	the number is	**the number is** (555...)
209	$D1	please speak...	
210	$D2	...you have entered	
211	$D3	o’clock	
212	$D4	...at this time	
213	$D5	(one second of silence)	
214	$D6	(three seconds of silence)	
215	$D7	(Stutter Dial Tone)	

1. As viewed from the Prompt Library Maintenance Screen.
2. Prompt filenames are structured as follows: Pn.su4 where n is the number of the prompt.