

# **MiCollab Advanced Messaging 9.4 Dialogic PCI and Euro PCI Linecards Installation and Replacement Spare Parts Document**

For version 9.4 and above

## Notice

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Networks™ Corporation (MITEL®). Mitel makes no warranty of any kind with regards to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes.

No part of this document can be reproduced or transmitted in any form or by any means - electronic or mechanical - for any purpose without written permission from Mitel Networks Corporation.

## Trademarks

The trademarks, service marks, logos and graphics (collectively "Trademarks") appearing on Mitel's Internet sites or in its publications are registered and unregistered trademarks of Mitel Networks Corporation (MNC) or its subsidiaries (collectively "Mitel") or others. Use of the Trademarks is prohibited without the express consent from Mitel. Please contact our legal department at [legal@mitel.com](mailto:legal@mitel.com) for additional information. For a list of the worldwide Mitel Networks Corporation registered trademarks, please refer to the website: <http://www.mitel.com/trademarks>.

© Copyright 2022, Mitel Networks Corporation

All rights reserved

# Contents

<b>Preface</b>	<b>5</b>
References	5
Documentation	5
Documentation Updates	6
Help	6
Document Conventions	6
Frequently Used Terms	7
<b>Overview</b>	<b>9</b>
Electrostatic Discharge (ESD) Warning	9
Gathering Tools and Equipment	9
<b>Dialogic D/41JCT-LS and D/41JCT-LS Euro PCI Linecard Technical Specifications</b>	<b>10</b>
Cabling D/41JCT-LS Linecards to the Telephone System	11
<b>Dialogic D/42JCT-U and D/82JCT-U PCI Linecard Technical Specifications</b>	<b>13</b>
D/42 JCT-U Linecard	13
D/82JCT-U Linecard	14
Understanding D/42 and D/82 Linecard Identification	15
Cabling D/42JCT-U and D/82JCT-U PCI Linecards to the Telephone System	15
<b>Dialogic D/120JCT-LS and D/120JCT-LS Euro PCI Linecard Technical Specifications</b>	<b>18</b>
Cabling D/120JCT-LS PCI Linecards to the Telephone System	19
<b>Dialogic D/240JCT-T1 PCI Linecard Technical Specifications</b>	<b>21</b>
Cabling D/240JCT-T1 PCI Linecards to the Telephone System	22
<b>Dialogic D/480JCT-T1 PCI Linecard Technical Specifications</b>	<b>24</b>
Cabling D/480JCT-T1 PCI Linecards to the Telephone System	25
<b>Preparing Dialogic PCI Linecards for Installation</b>	<b>27</b>
Assigning the Linecard Identification Number	27
Configuring the Default Line State (D/41 and D/120 only)	28
Removing the Slot Retainer Bracket	28
<b>Installing Dialogic PCI Linecards in the Platform</b>	<b>29</b>
Installing the H.100 Bus Cable	30

<b>Installing Dialogic Software</b>	<b>31</b>
<b>Configuring Dialogic PCI Linecards in Dialogic Configuration Manager – DCM</b>	<b>32</b>
<b>Appendix A—Manually Adding a Linecard to the Configured Devices List</b>	<b>34</b>
<b>Addendum B—Configuring the D/42JCT or D/82JCT for Your Station Set Emulation</b>	<b>35</b>

# Preface

This document is written for Mitel certified MiCollab Advanced Messaging (MiCollab AM) technicians who are experienced with MiCollab AM and are familiar with its procedures and terminology. This document assumes you are familiar with MiCollab AM and the Microsoft Windows® operating system.

This document consists of the following parts:

- An Overview of the Dialogic PCI linecards
- Dialogic D/41 JCT PCI linecard specifications and configurations
- Dialogic D/42 and D/82 JCT PCI linecard specifications and configurations
- Dialogic D/120 JCT PCI linecard specifications and configurations
- Dialogic D/240 JCT PCI linecard specifications and configurations
- Dialogic D/480 JCT PCI linecard specifications and configurations
- Installing the linecard in the Call Server platform
- Configuring the linecard for service in the Call Server platform

## References

A catalog of technical documentation is included on the MiCollab AM Installation Media. If you are installing any advanced applications, such as Networking and Fax Server applications, you should refer to the appropriate technical documentation for application and installation information.

## Documentation

The technical documentation is produced in the PDF format and requires the PDF reader to view it. The MiCollab AM Documentation Library includes the following documents and resources:

- **Administration Documentation.** Available as a PDF only. Contains the following:
  - **Administration Guides.** Available as a PDF only. Contains administrative guides for administrators about how to manage and configure the messaging system.
  - **Quick Reference Cards (QRC).** Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.
  - **User Guides.** Available as a PDF only. Contains user guides for subscribers about accessing the messaging system and checking and sending messages.
- **Server Documentation.** Available as a PDF only. Contains the following:
  - **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.

- **Installation and Configuration.** Available as a PDF only. Contains installation and configuration guides for server administrators about how to install and configure the messaging system.
- **Integration Technical Notes (ITN).** Contains a set of guides that describe the integration methods and instructions for a variety of phone systems to work with MiCollab AM. The ITNs are generally used by resellers or administrators who are experienced with MiCollab AM and familiar with the integration procedures and terminology.
- **Spare Parts Documentation.** Contains a set of guides that describe the instructions for installing and configuring hardware parts to work with MiCollab AM. These documents are written for Mitel-certified MiCollab AM technicians who are experienced with MiCollab AM and familiar with the procedures and terminology.
- **Software Release Notice (SRN).** This notice introduces the new features, capabilities, and hardware/software requirements for the corresponding MiCollab AM version.

## Documentation Updates

Documentation updates may be available from the following sources:

- Mitel-certified technicians can view or download documents and program files from our partner web site: [www.mitel.com](http://www.mitel.com)

## Help

The primary source of information about MiCollab AM is the online help available within any of its administrative utilities. You can access **Help** by clicking the **Help** button in the dialog box or window in which you are working.

## Document Conventions

The following conventions are used in this document:

- **Key Names.** Names of keys on the keyboard are shown in a box.

Example: **Enter**

When two keys must be pressed simultaneously, they are joined by a + sign.

Example: **Alt** + **Tab**

- **Reference to Document** Titles of other documents are shown in italics.

Example: See the *System Installation and Configuration Guide*.

- **User Interface (UI) Element Names.** Names of UI elements such as dialog boxes, windows, screens, menu items, tabs, buttons, and icons are shown in bold.

Example: On the **Startup** screen, click the **Start** icon.

- **User Input.** Information required to be typed is shown in italics.

Example: Type the password *voicemail*.

- **Warning, Caution, Important, and Notes.** Text for the contents that require attention are shown as follows:

**WARNING** A warning paragraph advises you of circumstances that can result in the loss of data, harm to the MiCollab AM System Server platform, or personal harm.

**CAUTION** Failure to follow these recommendations can result in unauthorized access to the system and consequent loss of data.

**IMPORTANT** An important paragraph gives decision-making information or informs you of the order in which tasks need to be completed.

**NOTE** A note gives additional information, provides an explanation, or indicates an exception to the information in the preceding text.

For more detailed documents, refer to the following list of references:

Table 1. References

Document Type	Document Title
Administration Documentation	<i>System Administration Guide</i>
Server Documentation	<i>Dialogic and Aculab System Administrator Guide</i>
Spare Parts Documentation	Hardware Warranty Program
Spare Parts Documentation	Installation and Replacement Guides for Aculab/Dialogic

## Frequently Used Terms

Table 2. Frequently Used Terms

Terms	Description
System Server	Term refers to an organization's computer platform(s) that have MiCollab AM software installed and handles the core system functions such as storing messages, database.

	It can also refer generically to the System Server platform, the Call Server platform, or both. The term is most often used to describe a software or hardware installation or configuration practice where the role of the server platform is not specifically expressed.
<b>Call Server</b>	Term refers to an organization's computer platforms that have MiCollab AM software installed and serve as the interface to the system (PBX). The Call Server(s) interface with the System Server for the purpose of accessing messages, and database.

# Overview

This document describes how to install or replace one or more Dialogic® PCI or Euro PCI linecards in a Call Server platform. The information in this document pertains to platforms running MiCollab AM version 5.0 and later.

Specific information pertaining to each type of linecard is contained within a separate section of this document for each linecard type. General information about the Dialogic PCI linecard such as installing the card in the system and installing Dialogic software is located in the section specific to the required task.

Mitel recommends that you read the section specific to the linecard you are installing, and then read remainder of the document before disassembling the hardware.

**IMPORTANT** Hardware conflicts and configuration issues can occur between hardware devices installed in a computer platform. Because Mitel sells Dialogic PCI linecards as a kit for installation in computer platforms that we have not tested, the compatibility of these cards in your computer platform cannot be guaranteed. Mitel can offer troubleshooting advice and assistance to the best of its knowledge and ability. However, you are ultimately responsible for resolving all hardware conflicts and configuration issues in the platform.

**NOTE** Dialogic ISA linecards are not supported in MiCollab AM versions 5.0 and later. If ISA linecards are installed in the platform, they must be removed.

## Electrostatic Discharge (ESD) Warning

Computer components are extremely sensitive to electrostatic discharge (ESD). You must wear an anti-static wrist strap and install the linecard at an ESD-safe workstation. Do not open the static-protective container until necessary. Before removing the linecard from the static-protective container, touch the container to a grounded, unpainted metal surface for at least two seconds (this drains the static electricity from the container and from your body). Turn off and unplug your computer before removing the case.

## Gathering Tools and Equipment

Before you begin disassembling the Call Server platform, verify that you have the following required tools and equipment:

- MiCollab AM Installation Media
- One or more Dialogic PCI or Euro PCI linecards specific to the telephony resources you are installing
- H.100 bus cable to connect multiple PCI cards
- New Feature file or License key to add additional lines
- Linecord adapters, if necessary

# Dialogic D/41JCT-LS and D/41JCT-LS Euro PCI Linecard Technical Specifications

Table 3 lists the technical specifications for the Dialogic D/41JCT-LS and D/41JCT-LS Euro linecards approved for use with MiCollab AM. Figure 1 shows the general layout of these linecards.

**NOTE** Your local telephone company may require some of these specifications. For example, in the United States, some telephone companies require an FCC registration number if the linecard is connected directly to central office (CO) lines. Contact your local telephone company for its requirements.

Table 3. D/41JCT-LS and D/41JCT-LS Euro Technical Specifications

Feature	Specifications
Number of Ports	1—4; the MiCollab AM port assignment is determined by the linecard identification number
Dialing	DTMF
FCC registration number	US: EBZUSA-75385-VM-T
Analog network interface	On-board loop start interface circuits
Voice coding	PCM
Host interface bus	Standard PCI, 3.3-volt or 5-volt slots

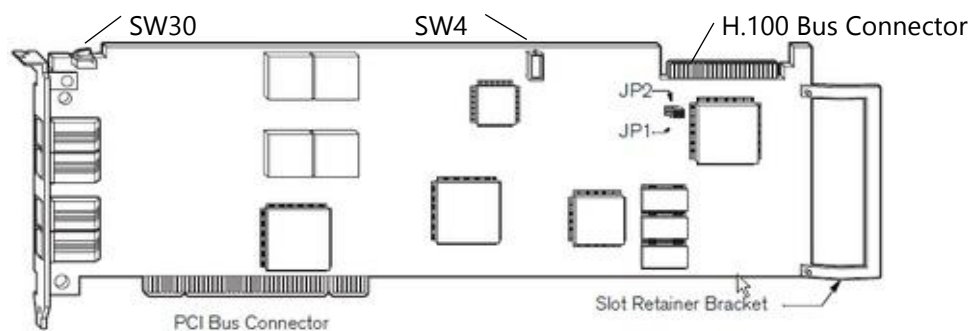


Figure 1. Layout of the D/41-JCT-LS PCI linecard

# Cabling D/41JCT-LS Linecards to the Telephone System

Once the D/41JCT-LS linecard are installed in the platform, you can cable the platform to the telephone system. MiCollab AM assigns port numbers in ascending order based on the linecard identification number.

**For example:**  
A D/41JCT-LS linecard to which you assigned the linecard ID 1 is assigned line numbers 1–4; a D/41JCT-LS linecard to which you assigned the linecard ID 2 is assigned line numbers 5–8 ([Figure 2](#)). Refer to the [Assigning the Linecard Identification Number](#) section for information on assigning the linecard ID.

Keep this assignment scheme in mind when connecting each D/41JCT-LS linecard to the telephone system.

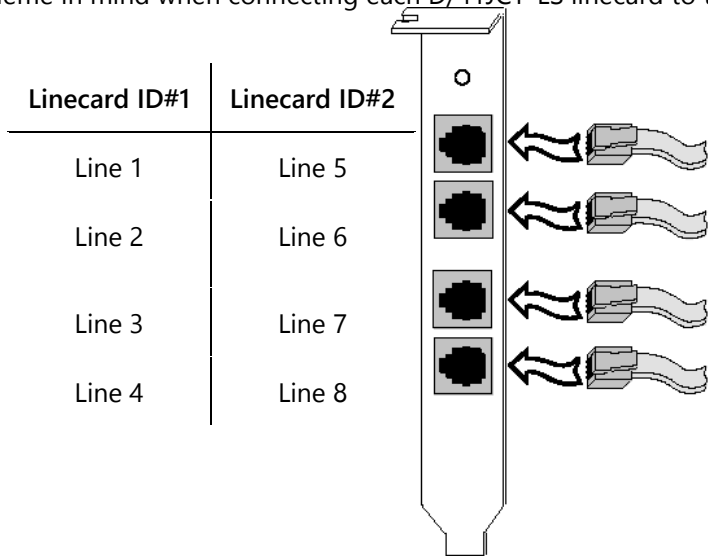


Figure 2. Line assignment scheme for the D/41JCT-LS Linecard

There are four RJ-11 connectors on the rear bracket of the D/120JCT-LS linecards. [Figure 3](#) shows the pin-out of these modified connectors.

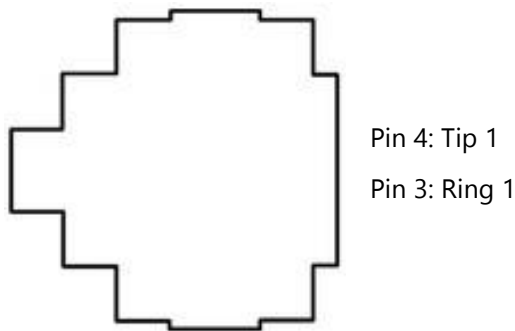


Figure 3. Pin-outs of the Modified RJ-11 Connector

D/41JCT-LS linecards require RJ-11 connectors to interface with the telephone system. You may need linecord adapters to connect to the Cal Server platform depending on the type of line interface installed

at your site. If linecord adapters are required and not included with the linecards, please contact your Customer Service representative.

### **To cable D/41JCT-LS linecards**

Plug the linecords from the telephone system into the RJ-11 connectors on the D.41 JCT-LS.

Or, If the provided telephone line interface is not an Rj-11 connector, plug the linecords into the appropriate linecord adapter, and then plug the RJ-11 linecord(s) of the adapter into the RJ-11 connector of the D/41JCT-LS.

# Dialogic D/42JCT-U and D/82JCT-U PCI Linecard Technical Specifications

## D/42 JCT-U Linecard

The D/42JCT-U linecard is essentially a lower-cost, half-capacity version of the D/82JCT-UNIV linecard.

Table 4 lists the technical specifications for the Dialogic D/42JCT-U PCI linecard approved for MiCollab AM. Figure 4 shows the general layout of these linecards.

Table 4. D/42JCT-U PCI linecard specifications

Feature	Specification
Numer of ports	4 ports per linecard
Total ports/system	16 (if only D/42JCT-U are installed)
Maximum boards/system	4 linecards
Telecommunications registrations	US: EBZUSA-34995-CE-T Canada: IC: 885 10638 A
Analog network interface	On-board loop start interface circuits
Voice coding	PCM (supports OKIADPCM, G.711 $\mu$ -law, G.711 A-law, PCM and GSM codecs)
Host interface bus	Standard PCI, 3.3-volt or 5-volt slots

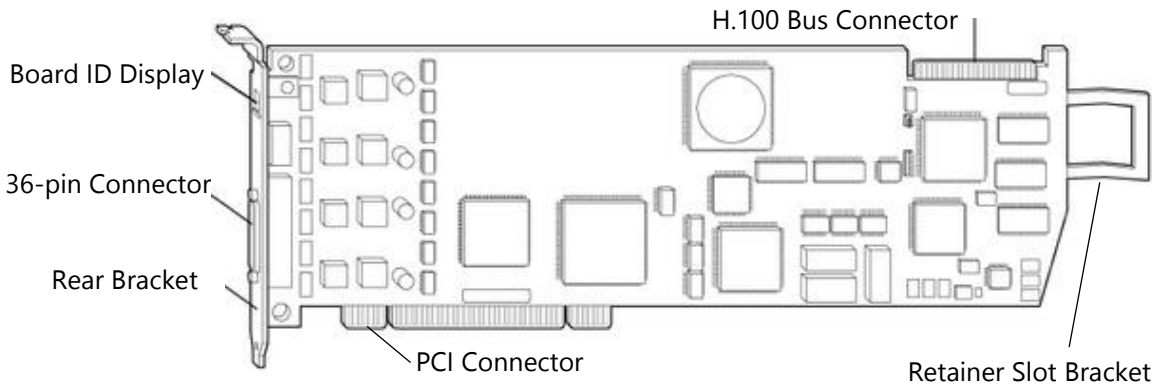


Figure 4. Layout of the D/42JCT-U PCI Linecard

## D/82JCT-U Linecard

Dialogic provides versions of the D/82 linecard to support both 3.3-volt and 5-volt PCI buses. The 5-volt version is referred to as the D/82JCT-U. Because the 3.3-volt version is also compatible with 5-volt buses, Dialogic refers to it as the D/82JCT-U-PCI-UNIV linecard. In this document the abbreviated term, D/82JCT-UNIV refers to the same linecard.

Table 5 lists the technical specifications for the Dialogic D/82JCT-U PCI linecard approved for MiCollab AM. Figure 5 shows the general layout of these linecards.

Table 5. D/82JCT-U linecard Technical Specifications

Feature	Specification
Number of ports	8 ports per linecard
Total ports/system	64
Maximum boards/system	8 linecards
Telecommunications registrations	US:EBZUSA-34995-CE-T Canada: IC: 885 10638 A
Analog network interface	On-board loop start interface circuits
Voice coding	PCM (supports OKIADPCM, G.711 $\mu$ -law, G.711 A-law, PCM and GSM codecs)
Host interface bus	Standard PCI, 5-volt slots only (D/82JCT-U) Standard PCI, 3.3-volt or 5-volt slots (D/82JCT-UNIV)

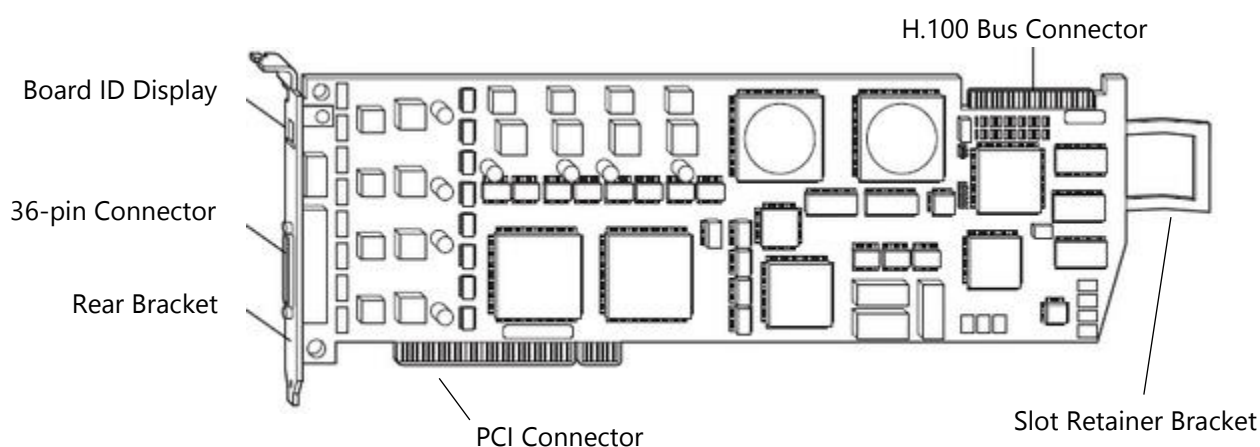


Figure 5. Layout of the D/82CT-U PCI Linecard

## Understanding D/42 and D/82 Linecard Identification

Before installing a Dialogic D/42JCT-U or D/82JCT-U PCI linecard in the Call Server platform, familiarize yourself with the board identification numbering scheme of these cards. Each D/42 or D/82 linecard is assigned a Board ID number automatically as the Call Server platform starts. After the start-up sequence has finished, the Board ID appears on a two-character LED display located on the card's rear bracket.

**NOTE** The interval between system start-up and the Board ID appearing on the LED display varies with system configurations. You may have to wait up to several minutes for the Board ID to appear.

## Cabling D/42JCT-U and D/82JCT-U PCI Linecards to the Telephone System

Each D/42 or D/82 linecard connects to the telephone system through a Dialogic D/82-U PBX interface cable assembly as shown in Figure 6. A cable assembly ships with each D/42 or D/82 linecard.

**NOTE** The cable assembly is less than 18 inches (45.7 cm). A 25-pair cable with RJ-21 Amphenol ends may be required to connect to the telephone system's distribution frame.

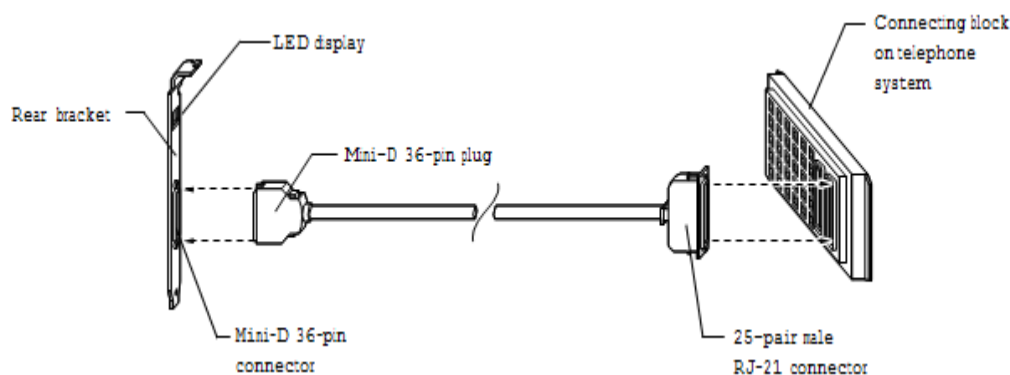


Figure 6. Cabling a D/42 or D/82 Linecard to the Telephone System

To cable Dialogic D/42JCT-U, D/82JCT-U, or D/82JCT-UNIV linecards to the telephone system:

- Attach the 25-pair male RJ-21 plug to the wired RJ-21 connector of the telephone system.
- Attach the mini-D 36-pin plug to the mini-D 36-pin connector on the rear bracket of the linecard.

**NOTE** Country-specific linecord adapters may be required to connect the Call Server platform to the telephone system. If these adapters are required and not included with the linecards, please contact a telecom equipment supplier in your area.

Table 6 details the wiring connections for both 4-wire and 2-wire digital stations. The 4-wire stations use both the odd and even wire pairs, while the 2-wire station connect to the even numbered pairs only. Note

that because the D/42JCT-U linecard has half the capacity of the D/82 linecards, it uses only the first four 4-wire or 2-wire pairs in the D/82-U cable assembly.

Table 6. Dialogic D/42 and D/82 wire connections

Pair	Color	4-wire	2-wire	Usage
1	White/Blue	T (Port 1)		D/42 and D/82 linecards
	Blue/White	R (Port 1)		D/42 and D/82 linecards
2	White/Orange	T1 (Port 1)	T (Port 1)	D/42 and D/82 linecards
	Orange/White	R1 (Port 1)	R (Port 1)	D/42 and D/82 linecards
3	White/Green	T (Port 2)		D/42 and D/82 linecards
	Green/White	R (Port 2)		D/42 and D/82 linecards
4	White/Brown	T1 (Port 2)	T (Port 2)	D/42 and D/82 linecards
	Brown/White	R1 (Port 2)	R (Port 2)	D/42 and D/82 linecards
5	White/Slate	T (Port 3)		D/42 and D/82 linecards
	Slate/White	R (Port 3)		D/42 and D/82 linecards
6	Red/Blue	T1 (Port 3)	T (Port 3)	D/42 and D/82 linecards
	Blue/Red	R1 (Port 3)	R (Port 3)	D/42 and D/82 linecards
7	Red/Orange	T (Port 4)		D/42 and D/82 linecards
	Orange/Red	R (Port 4)		D/42 and D/82 linecards
8	Red/Green	T1 (Port 4)	T (Port 4)	D/42 and D/82 linecards
	Green/Red	R1 (Port 4)	R (Port 4)	D/42 and D/82 linecards
9	Red/Brown	T (Port 5)		D/82 linecards only
	Brown/Red	R (Port 5)		D/82 linecards only
10	Red/Slate	T1 (Port 5)	T (Port 5)	D/82 linecards only
	Slate/Red	R1 (Port 5)	R (Port 5)	D/82 linecards only
11	Black/Blue	T (Port 6)		D/82 linecards only
	Blue/Black	R (Port 6)		D/82 linecards only

12	Black/Orange	T1 (Port 6)	T (Port 6)	D/82 linecards only
	Orange/Black	R1 (Port 6)	R (Port 6)	D/82 linecards only
13	Black/Green	T (Port 7)		D/82 linecards only
	Green/Black	R (Port 7)		D/82 linecards only
14	Black/Brown	T1 (Port 7)	T (Port 7)	D/82 linecards only
	Brown/Black	R1 (Port 7)	R (Port 7)	D/82 linecards only
15	Black/Slate	T (Port 8)		D/82 linecards only
	Slate/Black	R (Port 8)		D/82 linecards only
16	Yellow/Blue	T1 (Port 8)	T (Port 8)	D/82 linecards only
	Blue/Yellow	R1 (Port 8)	R (Port 8)	D/82 linecards only

# Dialogic D/120JCT-LS and D/120JCT-LS Euro PCI Linecard Technical Specifications

Table 7 lists the technical specifications for the Dialogic D/120JCT-LS and D/120JCT-LS Euro PCI linecards approved for use with MiCollab AM. Figure 7 shows the general layout of these linecards.

**NOTE** Your local telephone company may require some of these specifications. For example, in the United States, some telephone companies require an FCC registration number if the linecard is connected directly to central office (CO) lines. Contact your local telephone company for its requirements.

Table 7. D/120JCT-LS Technical Specifications

Feature	Specification
Number of Ports	1-12; the Call Server port assignment is determined by the linecard identification number
Dialing	DTMF
FCC registration	US: EBZUSA-34827-KX-N
Analog network interface	On-board loop start interface circuits
Voice coding	PCM
Host interface bus	Standard PCI, 5-volt slots only (D/120JCT-LS) Standard PCI, 3.3-volt or 5-volt slots (D/120JCT-LS Euro) Standard PCI, 3.3-volt or 5-volt slots (D/120 JCT-LS Rev 2)

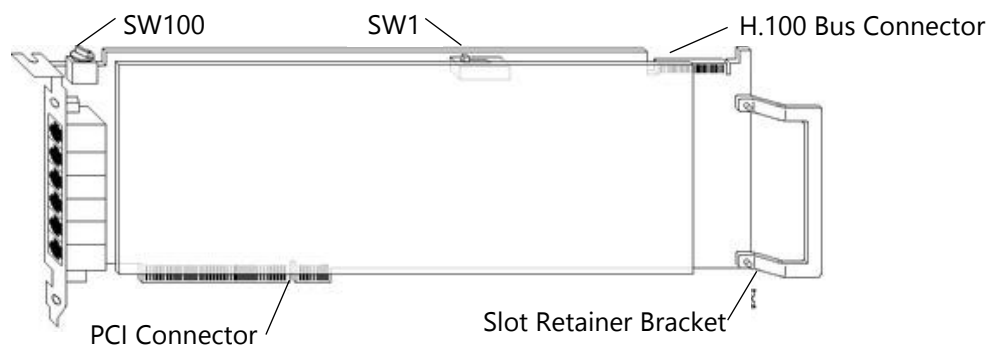


Figure 7. Layout of the D/120JCT-LS PCI Linecard

# Cabling D/120JCT-LS PCI Linecards to the Telephone System

Once the D/120JCT-LS linecards are installed in the platform, you can cable the platform to the telephone system. MiCollab AM assigns port numbers in ascending order based on the linecard identification number.

For example, a D/120JCT-LS linecard to which you assigned the linecard ID 1 is assigned line numbers 1–12; a D/120JCT-LS linecard to which you assigned the linecard ID 2 is assigned line numbers 13–24 ([Figure 8](#)). Refer to the [Assigning the Linecard Identification Number](#) section for information on assigning the linecard ID. Keep this line number scheme in mind when connecting each D/120JCT-LS linecard to the telephone system.

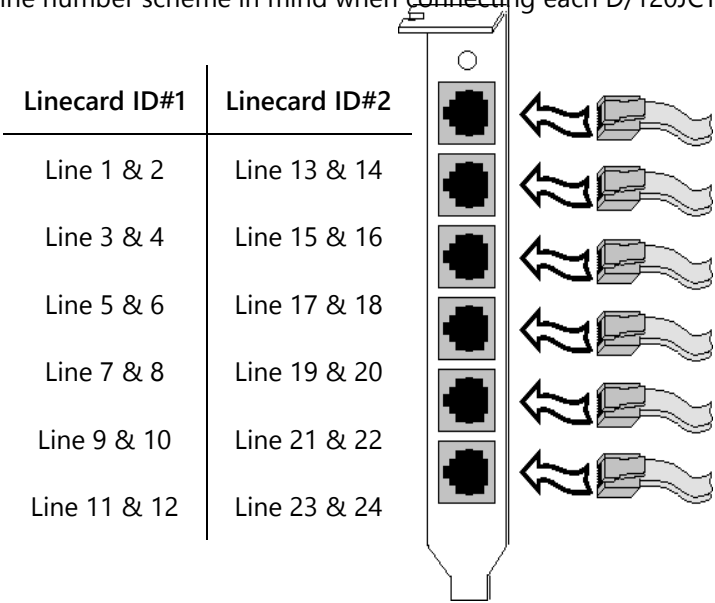


Figure 8. The MiCollab AM line assignment scheme for D/120JCT-LS Linecard

There are six modified RJ-14 connectors on the rear bracket of the D/120JCT-LS linecards. [Figure 9](#) shows the pin-out of these modified connectors.

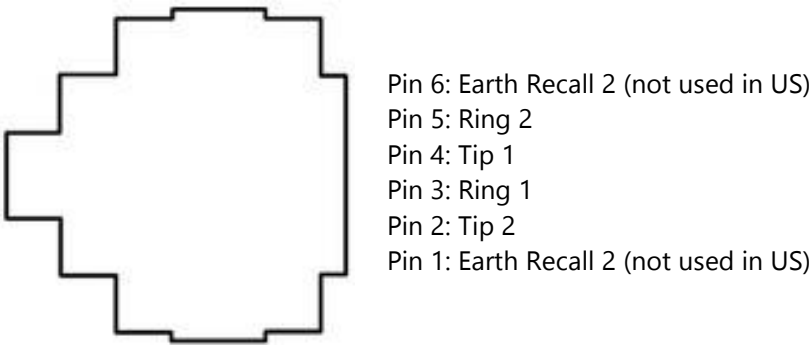


Figure 9. Pin-outs of the Modified RJ-14 Connector

**NOTE** Pins 1 and 6 are not used in the United States and should not be connected to the telephone system. The connectors on the rear bracket of the D/120JCT-LS linecard accept linecords equipped with standard RJ-14 connectors.

Depending on the type of telephony interface provided for connectivity to the telephone network, you may require linecord adaptors to connect the Call Server platform to the telephone system. If linecord adaptors are required but not included with the linecards, contact your Customer Service Representative.

### To cable D/120JCT-LS linecards:

Plug the linecords from the telephone system into the RJ-14 connectors on the D/120JCT-LS ([Figure 7](#)).

Or,

If the provided telephone line interface is not an RJ-14 connector, plug the linecords into the appropriate linecord adapter, then plug the RJ-14 linecord(s) of the adapter into the RJ-14 connector of the D/120JCT-LS.

# Dialogic D/240JCT-T1 PCI Linecard

## Technical Specifications

Each Dialogic D/240JCT-T1 linecard provides voice channel support for one T1 link or span. Installations that use “robbed-bit” signaling, such as most MiCollab AM applications, the 1.544-megabit-per-second bit stream carried by each T1 span typically contains twenty-four 64-kilobit-per-second voice channels, plus some additional signaling bits. The physical cabling for each T1 span includes two pairs of wires (transmit and receive), one pair for each direction in which the bit stream must travel.

Although T1 spans can be fitted with connectors of various types, the end of the span that connects to the D/240 card must have an RJ-48C connector on it. The section, [Cabling D/240JCT-T1 PCI Linecards to the Telephone System](#) later in this document provides a pin-out of the RJ-48C connector for your reference.

[Table 8](#) lists the technical specifications for the Dialogic D/240JCT-T1 PCI linecards approved for use with MiCollab AM. [Figure 10](#) shows the general layout of the D/240JCT-T1 linecards.

**NOTE** Your local telephone company may require some of these specifications. For example, in the United States, some telephone companies require an FCC registration number if the linecard is connected directly to central office (CO) lines. Contact your local telephone company for its requirements.

Table 8. D/240JCT-T1 Technical Specifications

Feature	Specification
Number of Ports (Channelization)	1-24 (channel order); the correlation between channelization and MiCollab AM ports is determined by the linecard identification number
Dialing	DTMF
FCC registration number	US: EBZUSA-20078-XD-N
Framing Type	D4, also known as Superframe (SF)
Digital network interface	On-board DSX-1 interface
Line Coding RX and TX	AMI
Ringer Equivalence	0.0A
Supervisory signal	2 or 4-wire wink start E&M (the recommended and default signaling) 2 or 4-wire immediate start (requires manual configuration) FXS immediate start (requires manual configuration)
T-1 signaling	Robbed bit

T-1 span support	Full 24 time-slots (partial and fractional T1 are not supported)
Timing synchronization	Loop timing (external clock)
Other Equipment (Required if you are connecting directly to the PSTN)	A CSU is required. A DSU may also be required depending on the capabilities of the CSU. The CSU must have an RJ-48C connector to connect to the D/240JCT-T1 linecard.
Voice coding	PCM
Host interface bus	Standard PCI, 5-volt slots only Standard PCI, 3.3-volt or 5-volt slots

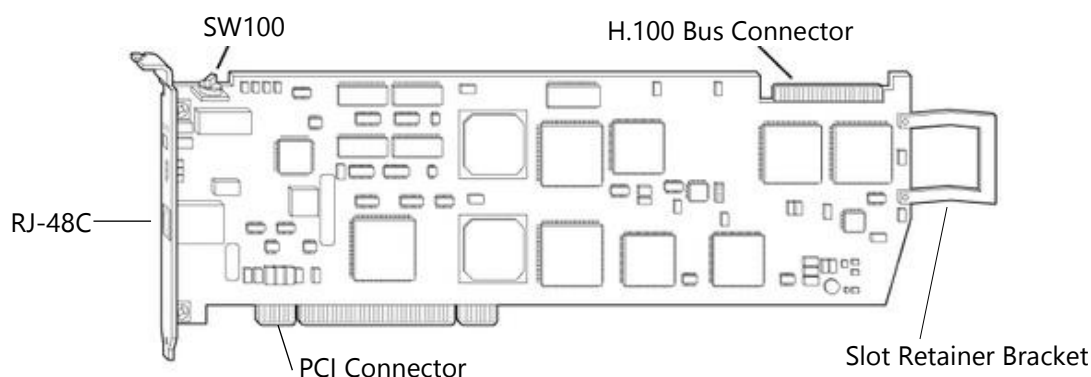
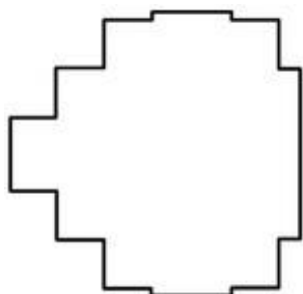


Figure 10. Layout of the D/240JCT-T1 PCI Linecard

## Cabling D/240JCT-T1 PCI Linecards to the Telephone System

MiCollab AM assigns port numbers in ascending order based on the linecard identification number. For example, a D/240JCT-T1 linecard to which you assigned the linecard ID 1 is assigned line numbers 1–24; a D/240JCT-T1 linecard to which you assigned the linecard ID 2 is assigned line numbers 25–48. Refer to the [Assigning the Linecard Identification Number](#) section for information on assigning the linecard ID. Keep this line assignment scheme in mind when connecting each D/240JCT-T1 linecard to the telephone system.

There is one RJ-48C connector on the rear bracket of each D/240JCT-T1 linecard. These are 120-Ohm high impedance connectors. [Figure 11](#) shows the pin-out of these modified connectors.



- Pin 8: Shield
- Pin 7: Shield
- Pin 6: Reserved
- Pin 5: TX Tip (T1)
- Pin 4: TX Ring (R1)
- Pin 3: Reserved
- Pin 2: RX Tip (T)
- Pin 1: RX Ring (R)

Figure 11. Pin-out of the RJ-48C Connector

# Dialogic D/480JCT-T1 PCI Linecard

## Technical Specifications

Each Dialogic D/480JCT-T1 linecard provides voice channel support for two T1 links or spans. Installations that use “robbed-bit” signaling, such as most MiCollab AM applications, provide a 1.544-megabit-per-second bit stream carried by each T1 span. Typically, each T1 span contains twenty-four 64-KB (kilobit-per-second) voice channels, plus some additional bits for signaling. The physical cabling for each T1 span includes two pairs of wires (transmit and receive), one pair for each direction in which the bit stream must travel.

Although T1 spans can be fitted with connectors of various types, the end of the span that connects to each port of the D/480 card must have an RJ-48C connector on it. The section [Cabling D/480JCT-T1 PCI Linecards to the Telephone System](#) provides a pin-out of the RJ-48C connector for your reference.

**NOTE** The D/480 cards that Mitel sells all require high-impedance (120-ohm) wiring. By comparison, low-impedance (75-ohm) T1 wiring is attached using two BNC-type coaxial connectors.

Table 9 lists the technical specifications for the Dialogic D/480JCT-T1 PCI linecards approved for use with MiCollab AM. Figure 12 shows the general layout of the D/480JCT-T1 linecards.

**NOTE** Your local telephone company may require some of these specifications. For example, in the United States, some telephone companies require an FCC registration number if the linecard is connected directly to central office (CO) lines. Contact your local telephone company for its requirements.

Table 9. D/480JCT-T1 Technical Specifications

Feature	Specification
Number of Ports (Channelization)	1-48 (channel order); the correlation between channelization and MiCollab AM ports is determined by the linecard identification number
Dialing	DTMF
FCC registration number	US: EBZUSA-20078-XD-N
Framing Type	D3/D4, also known as Superframe (SF)
Digital network interface	On-board DSX-1 interface
Line Coding RX and TX	AMI, B8ZS

Ringer Equivalence	0.0A
Supervisory signal	2 or 4-wire wink start E&M (the recommended and default signaling) 2 or 4-wire immediate start (requires manual configuration) FXS immediate start (requires manual configuration)
T-1 signaling	Robbed bit
T-1 span support	Two full 24 time-slots (partial and fractional T1 are not supported)
Timing synchronization	Loop timing (external clock)
Other Equipment (Required if you are connecting directly to the PSTN)	A CSU is required. A DSU may also be required depending on the capabilities of the CSU. The CSU must have an RJ-48C connector to connect to each port of the D/480JCT-T1 linecard.
Voice coding	PCM
Form Factor	PCI long card 12.3 in w/o edge retainer, 13.3 w/ edge retainer
Host interface bus	PCI +5, +!2, -12 VDC respectively

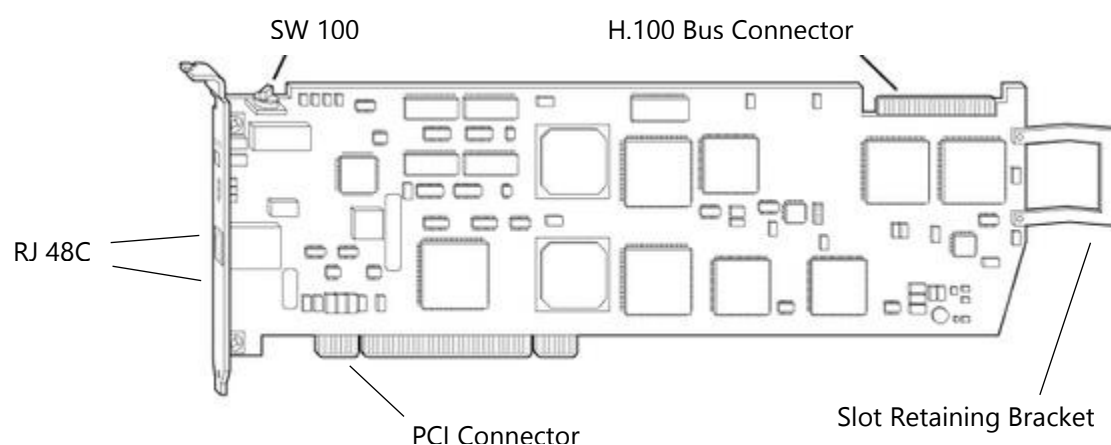


Figure 12. Layout of the D/480JCT-T1 PCI Linecard

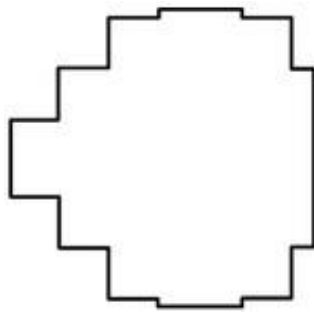
## Cabling D/480JCT-T1 PCI Linecards to the Telephone System

MiCollab AM assigns port numbers in ascending order based on the linecard identification number. For example, a D/480JCT-T1 linecard to which you assigned the linecard ID 1 is assigned line numbers 1–48; a D/480JCT-T1 linecard to which you assigned the linecard ID 2 is assigned line numbers 49–96. Refer to the [Assigning the Linecard Identification Number](#) section for information on assigning the linecard ID. Keep

this line assignment scheme in mind when connecting each D/480JCT-T1 linecard to the telephone system.

There are two RJ-48C connectors on the rear bracket of each D/480JCT-T1 linecard. These are 120-Ohm high impedance connectors. [Figure 13](#) shows the pin-out of these connectors.

**NOTE** The bottom T1 port or T1 port closest to the PCI edge connector is port 1, channels 1-24.



- Pin 8: Shield
- Pin 7: Shield
- Pin 6: Reserved
- Pin 5: TX Tip (T1)
- Pin 4: TX Ring (R1)
- Pin 3: Reserved
- Pin 2: RX Tip (T)
- Pin 1: RX Ring (R)

Figure 13. Pin-out of the RJ-48C Connector

# Preparing Dialogic PCI Linecards for Installation

You must configure some or all of the following components of the Dialogic PCI linecard before installing it in the MiCollab AM platform:

- Assign the linecard ID number based on the ports it provides

**IMPORTANT** D/42JCT-U and D/82JCT-U linecards are assigned board ID's automatically during system startup.

- Configure the linecard's default line state (D/41JCT-LS and D/120JCT-LS linecards only)
- Remove the slot retainer bracket from the linecard (if the platform requires it)

## Assigning the Linecard Identification Number

Each Dialogic linecard installed in the MiCollab AM platform must be configured with a unique linecard identification number (referred to by Dialogic as the Board Locator ID). This number, from 1 through F hex (1–15 decimal), is used by Dialogic system software to determine which linecard is sending a signal. If two or more linecards installed in the platform are configured to use the same linecard identification number, the Dialogic system software (device driver) is unable to locate either linecard. If your Call Server has more than one linecard, make note of the linecard identification number of each linecard to clarify the process of connecting the ports to the telephone system.

**IMPORTANT** Unique linecard identification numbers must be assigned in ascending order to each linecard starting at 1. Do not configure any Dialogic PCI linecard to the linecard identification number 0. MiCollab AM does not support the automatic linecard identification scheme for PCI linecards (called Geographic Sequencing by Dialogic).

To set the linecard identification number, dial the rotary switch (SW30 on D/41JCT-LS, SW100 on D/120JCT-LS, D/240JCT-T1 and D/480JCT-T1 linecards) to select a unique linecard identification number as shown in the example in [Figure 14](#). (For the location of the rotary switch, refer to the specific linecard figure for the linecard you are installing.)

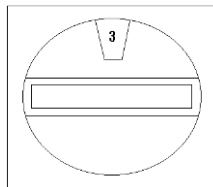


Figure 14. SW30 or SW100 Switch Set to Linecard ID 3

## Configuring the Default Line State (D/41 and D/120 only)

D/41JCT-LS and D/120JCT-LS linecards have a switch to configure the initial hook state. This switch determines how the linecards responds to incoming telephone calls when the Call Server platform power is on, but either MiCollab AM or the Dialogic system software is not running.

- If the switch is in the OFF position, the default line state is onhook; callers get a ring-no-answer (RNA) response. (This is the factory default setting)
- If the switch is in the ON position, the default line state is offhook; callers get a busy signal.

**NOTE** If the computer platform is powered off, callers get an RNA response.

Mitel recommends that you set the default line state to offhook. To change the default hook-switch line state of the linecard to offhook, flip the line state switch (SW4 on the D/41JCT-LS or SW1 on the D/120JCT-LS) to the ON position as shown in [Figure 15](#).

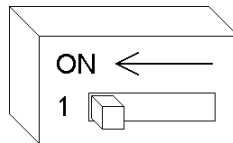


Figure 15. SW1 or SW4 Line State Switch

## Removing the Slot Retainer Bracket

In certain platforms it may be necessary to remove the slot retainer bracket from the inside edge of the linecard.

### To remove the slot retainer bracket:

- 1 Refer to the specific linecard figure for the location of the slot retainer bracket.
- 2 Remove the slot retainer bracket by removing the two retaining screws.

# Installing Dialogic PCI Linecards in the Platform

The following procedures detail how to install a Dialogic linecard into your platform. For more information, refer to the documentation that came with your platform.

## To install Dialogic PCI Linecards in the platform:

- 1 Verify that the linecard identification number, the H.100 bus, and the default line state are configured correctly for each linecard.
- 2 If necessary, configure the Dialogic service to start manually.

Table 10. Dialogic Software Installation Steps

If Dialogic system software is...	Then...
Installed on the platform	Continue to <b>Step 3</b> .
Not installed on the platform	Skip to <b>Step 7</b> .

- 3 If the MiCollab AM software is running, use the MiCollab AM Configuration utility to shut it down and then clear the **Automatic Startup** checkbox to prevent MiCollab AM from starting automatically when the platform restarts.
- 4 Select **Start > Programs > Dialogic System Release**, and then select **Configuration Manager – DCM**.
- 5 From the menu bar, select **Settings > System/Device autostart** and then select **Detect Only**.
- 6 From the File menu, select **Exit**.
- 7 Shut down the operating system.
- 8 Turn off the computer, unplug its power cord, and then remove its cover.
- 9 Select a PCI expansion slot.

Table 11. Linecard installation options

If the linecard...	Then...
Replaces an existing linecard	Remove the existing linecard from the chassis and then select an available PCI expansion bus slot for the replacement linecard.
Adds ports to the MiCollab AM platform	Select an available PCI expansion bus slot and then remove its cover plate.

- 10 Insert the linecard into the PCI bus slot. Gently press the linecard down to seat the edge connector into the slot, applying pressure only to the top edge of the board. Rocking the card or applying excess pressure may damage the card or the bus connector.
- 11 Secure the card with the appropriate retaining screw or locking clip.

**NOTE** If you do not secure the card, it may become unseated when you attach the H.100 bus cable later in the installation process.

- 12 Repeat **Steps 9–11** for each linecard you are installing.

## Installing the H.100 Bus Cable

To support MiCollab AM, Mitel sells PCI linecards that exchange data with one another through a H.100 bus-compliant resource bus. The H.100 bus standard specifies a hardware design that supports signals from several earlier resource bus specifications including CTbus, SCbus, MVIP, and others.

Each Dialogic PCI linecard is equipped with an H.100 bus connector to which an H.100 bus cable attaches. Because the MiCollab AM software is designed to work without terminated resource buses, it is not necessary to add a terminator pack of any sort to either end of the H.100 bus cable or to change the termination settings on any H.100 bus board in the system.

**NOTE** The terms CT Bus and H.100 are often encountered together. H.100 refers to the specific variant of the CT Bus specification used in PCI linecards.

If you have more than one PCI card installed, you must cable the cards together with an H.100 bus cable.

**IMPORTANT** Do not terminate the board at either end of the H.100 bus cable.

### Installing the H.100 Bus Cable:

- 1 Plug the first (end) connector on the H.100 bus cable to the H.100 bus edge connector on the top edge of the first PCI card.
- 2 The connectors are designed to fit together one way only. If the connector does not seat fully on the card, turn the cable around and try again. When attached correctly, the colored stripe on the cable faces the rear bracket. (The stripe must be adjacent to pin 1 on the card connector.)
- 3 Plug the last (opposite end) connector on the H.100 bus cable to the H.100 bus connector on the last PCI card installed in the platform.
- 4 Plug a connector on the H.100 bus cable to the H.100 bus connector on each remaining intermediary PCI card installed in the platform.
- 5 Tuck any extra connectors or loose ribbon cable down into the chassis so that it does not snag when you replace the platform cover.
- 6 Replace the cover on the platform and plug in the power cord.

# Installing Dialogic Software

Dialogic software is installed automatically with the MiCollab AM Server software. However, you must select the Dialogic System Release component on the Select Hardware Support Components dialog box during setup.

The Dialogic software is installed as a hardware support component of the MiCollab AM Server software found on the MiCollab AM Installation Media. The Dialogic software is typically installed at the time of the initial Call Server software installation. However, if it was not previously installed, you must install it by re-installing the MiCollab AM Server software.

If you are upgrading from a previous version of MiCollab AM, you may have to un-install a previous version of Dialogic software before you begin the installation. If the MiCollab AM InstallShield Wizard detects an existing version of Dialogic software during the setup process, the installation is aborted and you are prompted to un-install all Dialogic software first.

For more information on removing and/or installing Dialogic software, refer to MiCollab AM help or the *Dialogic and Aculab System Administrator Guide*.

**IMPORTANT** If you are removing Dialogic software and you are not installing another version of Dialogic software, you must re-install MiCollab AM software after you un-install any previous version of Dialogic software.

# Configuring Dialogic PCI Linecards in Dialogic Configuration Manager – DCM

The Dialogic Configuration Manager (DCM) is a utility that allows you to configure the parameters used by the Dialogic system software to control the Dialogic linecards installed in the platform. Each time you start the DCM, it automatically detects any installed linecards. The DCM matches the linecards it detects with the corresponding configuration data.

The DCM has a comprehensive online help system. Consult the *Dialogic Installation and Configuration Knowledge Base* book in the help system for advice about troubleshooting the Dialogic system software.

## To configure a Dialogic linecard:

- 1 Go to **Start > All Programs > Dialogic System Release**, and then click **Configuration Manager – DCM**.
- 2 If the Computer Name dialog box appears, select **Local**, and then click **Connect** to continue. The **Dialogic Configuration Manager** dialog box displays.
- 3 Double-click the **Bus-0 icon**.
- 4 From the Parameter list, click **TDM Bus Type (User Defined)** if it exists.

Table 12. TDM Bus Type Parameter possibilities

If the TDM Bus Type (User Defined) parameter	Then...
Exists	Continue to <b>Step 5</b> .
Does not exist	Verify that the TDM Bus Type (Resolved) parameter is set to H.100. If it is not, contact Mitel Technical Support for assistance.

- 5 From the Value list, select **H.100**, and then click **OK**.
- 6 Do one of the following:

Table 13. Voice card configuration possibilities

If the Dialogic voice resource cards installed in the platform	Then...
Appear automatically in the Configured List	Double-click the first card Devices list in the Configured Devices.

Do not appear automatically in the Configured List	From the System menu, select Auto-detect device from the Configured Devices List. If the card(s) do not appear, contact Mitel Technical Support for assistance.
--	---

- 7 In the Properties dialog box for the selected linecard, click the **Telephony Bus** tab, and then select **PCM Encoding** in the Parameter list.
- 8 Select the PCM encoding scheme used by your telephone switch:

Table 14. PCM encoding scheme possibilities

If the PCM encoding scheme used by the telephone switch is...	Then...
U-law	Select ULAW in the Value list box
A-law	Select ALAW in the Value list box

- 9 Click the **Country** tab, and then click **Country** in the **Parameter** list.
- 10 Select your country in the Value list box, and then click **OK** to apply the changes you have made.
- 11 Repeat **Steps 3-10** for each Dialogic voice-resource card installed in the platform.
- 12 Click the green **Start** icon on the toolbar to start the Dialogic Service. The Dialogic Service starts.
- 13 Once the service has started the **Red Stop** icon displays on the toolbar and the **System Status** on the bottom of the dialog box displays, *Running*.
- 14 From the menu bar, select **Settings > System/Device autostart**, and then click **Start System**.
- 15 From the menu bar, select **File**, and then click **Exit**.
- 16 Select **Start > Control Panel**, and then double-click **MiCollab AM Configuration**. The MiCollab AM Configuration utility starts.
- 17 Select the **Automatic Startup** check box on the utility's Main tab.
- 18 Click the **Boards** tab, and then click **Auto Detect**.
- 19 Verify that all of the linecards installed in the platform appear in the Boards list and are associated with the correct range of port numbers.
- 20 To exit the **MiCollab AM Configuration** utility, click **OK**.
- 21 Restart the Call Server.
- 22 After the restart has completed, start the **MiCollab AM Configuration** and **Line Status** utilities. Verify that the MiCollab AM Service has started and is running normally.

# Appendix A—Manually Adding a Linecard to the Configured Devices List

If the DCM fails to detect a linecard in the platform automatically, you can add the linecard manually using the DCM.

## To manually add a linecard:

- 1 Select **Start** > **Programs** > **Dialogic System Release**, and then select **Configuration Manager – DCM**.
- 2 If the Computer Name dialog box appears, select **Local**, and then click **Connect** to continue.
- 3 If the Dialogic service is running, click the red **Stop** icon on the toolbar.
- 4 From the menu bar, select **System**, and then select **Auto detect devices**.
- 5 Do one of the following:

Table 15. Linecard Detection Steps

If the linecard	Then...
Is detected	It displays in the Configured Devices list. Go to the section, <a href="#">Configuring Dialogic PCI Linecards in Dialogic Configuration Manager – DCM</a> for instructions.
Is not detected	Proceed to step 6.

- 6 From the menu bar, select **Device**, and then click **Add Device**. The Add Hardware Wizard dialog box displays.
- 7 Select the board you installed from the Family column, the type from the Model column, and then click **Next**. The **Device Name** dialog box displays.
- 8 Give the Device a unique name.
- 9 Follow the **DCM Add Hardware** Wizard's on-screen instructions to add the board. If necessary, refer to the [Configuring Dialogic PCI Linecards in Dialogic Configuration Manager – DCM](#) section for instructions.

# Addendum B—Configuring the D/42JCT or D/82JCT for Your Station Set Emulation

By default, the Dialogic Configuration Manager sets the parameter *PBXSwitch* to Nortel\_Norstar. You must change this parameter to the appropriate PBX type you are integrating with MiCollab AM.

## To program the Dialogic Configuration Manager:

- 1 On the Start menu at the MiCollab AM platform, go to **Programs > Dialogic System Release > Configuration Manager-DCM**.
- 2 Stop the Dialogic service if it is running.
- 3 Double-click the first installed D/42 or D/82 linecard to open the Properties sheet.
- 4 On the Miscellaneous tab, select the *PBXSwitch* parameter.
- 5 In the Values box, select the appropriate PBX type for your station set emulation integration.

**NOTE** For more information, refer to the Integration Technical Note that is specific to the Station Set Emulation integration you are installing.

- 6 On the **Telephony Bus** tab, verify that the correct PCM encoding scheme is selected. The default value is automatic or U-Law; you must change this value to A-Law outside of the U.S. and Japan.
- 7 Click **OK** to close the **Properties** sheet.
- 8 Repeat **Steps 3** through **7** for each installed D/42 or D/82 linecard.
- 9 Restart the Dialogic service and close **Dialogic Configuration Manager**.