

MiCollab Advanced Messaging 9.4 Aculab PCI E1/T1 Digital Access Linecard Installation and Replacement Spare Parts Documentation

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 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

Preface	5
References	5
Documentation	5
Documentation Updates	6
Help	6
Document Conventions	6
Frequently Used Terms	7
Overview	9
Before You Begin	9
Electrostatic Discharge (ESD) Warning	9
Gathering Tools and Equipment	9
Planning an E1 or T1 Application	11
About E1 and T1	11
About the H.100 Bus	11
Aculab PCI Cards	11
Technical Specifications of the Aculab PCI and Dialogic D/160 D/320 Linecards	12
Preparing Dialogic PCI Cards for Installation	13
Configuring the Identification Number	13
Preparing the Call Server for Service	15
Installing Aculab and Dialogic PCI Cards in the Call Server	16
Cabling Aculab Cards to the Telephone System	18
Installing Aculab and Dialogic Software	20
Adding the Aculab and Dialogic Cards to the Boards Tab	21
Appendix A—Manually Configuring the Dialogic Configuration Manager for Aculab	22
Appendix B—Troubleshooting	24
Troubleshooting Aculab PCI E1/T1 Digital Access Cards	24
Viewing Installed Computer Telephony Devices in the Device Manager	25
Troubleshooting Dialogic Voice Resource Cards	26

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 Aculab PCI linecards
- Aculab PCI linecard specifications and configurations
- Preparing the linecards for service
- Preparing the Call Server for service
- Installing the linecards
- Cabling the linecards to the telephone system

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

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	Installation and Replacement Guides for Aculab/Dialogic

Frequently Used Terms

Table 2. Frequently Used Terms

Terms	Description
System Server	<p>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.</p> <p>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.</p>
Call Server	<p>Term refers to an organization's computer platforms that have MiCollab AM software installed and serve as the interface to the</p>

system (PBX). The Call Server(s) interface with the System Server for the purpose of accessing messages, and database.

Overview

This document explains how to install or replace Aculab PCI E1/T1 High Capacity Digital Network Access telephony interface cards, referred to as Aculab cards, and Dialogic D/160 or D/320 voice media resource cards in a Call Server platform.

The Aculab PCI E1/T1 linecard is a telephony interface card that supports a wide range of signaling protocols including: DPNSS, CAS, and Q.sig. The Aculab PCI E1/T1 linecard provides call and signaling control of the telephony interface; it has no telephony voice resource capability. The Aculab PCI E1/T1 linecard must be installed in conjunction with a Dialogic D/160 or D/320 voice resource linecard. The Aculab and Dialogic cards interface through the H.100 bus connection. This combination of Aculab and Dialogic linecards integrate MiCollab AM with a telephone system using one of the supported signaling protocols.

Mitel recommends that you read this document in its entirety before beginning the installation.

NOTE The information in this document applies to Aculab cards of revision level 1.5 and later, with PRM modules of revision level 2.0. For more information on Aculab hardware or software, see the Aculab web site at www.aculab.com

Before You Begin

Review this section before performing any of the procedures in this document. This section provides important information about electrostatic discharge and the tools and equipment required to complete the installation.

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 MiCollab AM platform, verify that you have the following required tools and equipment:

- MiCollab AM Installation Media
- One or more Aculab PCI E1/T1 linecards
- One or more Dialogic PCI D/160 or D/320 cards

- H.100 cable to connect multiple PCI linecards
- One high impedance (120-Ohm) PBX line interface cable with an RJ-45 for each port on the linecard you are installing. If you are using a 75Ω BNC connection to the telephone system, you must use a BNC/RJ45 adapter.
- License (feature) key to enable the correct number of lines

Planning an E1 or T1 Application

About E1 and T1

MiCollab AM supports a variety of H.100 bus telephony linecards to implement E1 or T1. Each E1 format carries data at the rate of 2.048 megabits per second, provides 30 voice channels per span, and is in used in public telephone networks throughout the world (except in North America and Japan). Each T1 format carries data at the rate of 1.544 megabits per second, provides either 23 or 24 voice channels per span depending on your configuration. This format is typical in public telephone networks throughout North America and Japan. E1 and T1 circuits are used in private networks as well, including computer telephony integrations, around the world. To implement E1 or T1 successfully using Aculab PCI cards, you must be familiar with the definitions and guidelines provided in this document.

About the H.100 Bus

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

Each telephony linecard in the Call Server platform is equipped with an H.100 connector, to which an H.100 bus cable is attached; connecting each telephony linecard's H.100 bus together through the bus cable. 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 linecard 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.

Aculab PCI Cards

The Aculab PCI telephony card is purchased as a single-span, a dual-span, or a quad-span card. The card is configured with high-impedance (120-ohm) RJ-45 connectors only.

The Aculab card provides no discrete voice channels on its own. Instead, it passes multiplexed voice data to a compatible voice resource card such as a Dialogic D/160 or D/320, which then extracts the voice signal for each active channel on the span. Therefore, you must cable the Aculab card to one or more compatible voice resource telephony cards with an H.100 bus cable to form a complete voice processing subsystem.

Technical Specifications of the Aculab PCI and Dialogic D/160 D/320 Linecards

Table 3 and Table 4 list the technical specifications for the Aculab PCI linecard and Dialogic D/160 and D/320 voice resource linecards approved for use with MiCollab AM.

Table 3. Terms used for H.100 Bus cards

Term	Definition
H.100 Bus card	Any card with a Computer Telephony H.100 bus connector that allows it to be cabled with other H.100 cards.
Voice resource card	The Dialogic D/160 and D/320 cards. An H.100 Bus card that separates out the discrete voice channels encoded in the signal that the telephony interface card receives. This card must be cabled to a telephony interface card.
Telephony interface card	The Aculab PCI card. An H.100 Bus card that provides an interface between an incoming span and the Call Server platform. Because this interface does nothing to separate out the voice channels encoded into the span, this card must be cabled to a voice resource card.

Table 4. H.100 Bus cards used to implement E1 or T1

Card Designation	Function	PCI Slot Compatibility
Aculab E1/T1 PCI High Capacity Digital Access Card	A 30-channel single-span (single-port), 60-channel dual-span (dual-port), or 120-channel (four-port) telephony interface card. The card must be connected to one or more Dialogic D/160, or D/320 voice resource cards.	Full size PCI 32 Universal (3V3/5V), 32 bit, 33MHz
Dialogic PCI D/160JCT-U	A 16-channel voice resource card. The card must be connected to one or more Aculab cards.	Full size PCI 32 Universal (can be used in 5-volt PCI, 3.3-volt PCI, and PCI-X slots)
Dialogic PCI D/320JCT-U	A 32-channel voice resource card. The card must be connected to one or more Aculab cards.	Full size PCI 32 Universal (can be used in 5-volt PCI, 3.3-volt PCI, and PCI-X slots)

Preparing Dialogic PCI Cards for Installation

Before installing a Dialogic D/160 or D/320 card in the Call Server platform, you need to determine its placement in the platform so that you can configure its identification number (board locator ID).

To prepare a Dialogic voice resource card for installation:

- 1 Select the identification number for the Dialogic voice resource card by dialing the rotary switch (SW1).

Table 5. Dialogic Preparations

If you are...	Then...
Replacing an existing card with a card of the same or different type	Select the identification number previously used by the card you are replacing. Refer to the section Configuring the Identification Number for instructions.
Adding another card	Select a new identification number for the card. Refer to the section <i>Configuring the Identification Number</i> for instructions.

Configuring the Identification Number

Each Dialogic voice resource card installed in the Call Server platform must be configured with a unique identification number (board locator ID). This number, from 1 through 15 (or 1-F in hexadecimal), is used by the Dialogic system software to determine which card is sending a signal. Set the card's identification number based on its installation order in the Call Server platform.

To set the identification number, dial rotary switch SW1 to select an ID number that corresponds with the card's location in the Call Server platform. Refer to [Figure 1](#) and [Table 6](#). D/160 and D/320 ID switch settings and BLTID numbers for assistance in setting the number.

IMPORTANT Do not set two cards to the same card ID number and do not set the thumbwheel to 0. The Dialogic device driver cannot locate cards with an ID of zero or multiple cards with the same identification.

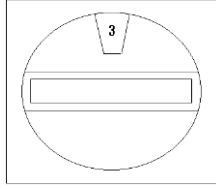


Figure 1. SW1 switch set to linecard ID 3

Table 6. D/160 and D/320 ID switch settings and BLTID numbers

Card	SW1 (Rotary Switch)	BLTID
Not used	0	Not used
1	1	0x01
2	2	0x02
3	3	0x03
4	4	0x04
5	5	0x05
6	6	0x06
7	7	0x07
8	8	0x08
9	9	0x09
10	A	0x0A
11	B	0x0B
12	C	0x0C
13	D	0x0D
14	E	0x0E
15	F	0x0F

Preparing the Call Server for Service

Follow these steps to begin the process of installing or replacing an Aculab or Dialogic voice resource card.

To prepare the platform for service:

- 1 Shut down all running programs, and then shut down the operating system.
- 2 After the operating system shuts down completely, unplug the power cord from the back of the platform.
- 3 Remove the cover from the platform.

Installing Aculab and Dialogic PCI Cards in the Call Server

After you have configured the Dialogic linecard identification numbers, you can install the Aculab linecards and Dialogic voice resource cards in the Call Server platform. They function together as a subsystem; you must cable the Aculab linecard to one or more Dialogic voice resource cards using an H.100 bus cable.

IMPORTANT The Aculab card with the lowest serial number must be connected to the telephone system for the clock source to function properly. When installing your cards, make note of the serial number for each card you are installing.

To install Aculab and Dialogic cards:

- 1 Verify that the identification number is set for each Dialogic card.

NOTE There are no jumper or switch settings on the Aculab card.

IMPORTANT In the following step, do not attempt to force a PCI card into any slot. Not all PCI cards are compatible with all PCI slots. Before proceeding, compare the documentation that accompanied the computer to the information in Table 3 to ensure that the card and the computer are compatible. If not, contact Mitel Technical Support to exchange the card.

- 2 Install the first PCI card into a 32-bit PCI slot, seat it firmly, and then secure it with an end plate clip or screw.
- 3 Cable the linecard based on its location.

NOTE The PCI linecards use a H.100 bus connector. The connectors on the card and the H.100 cable are designed to fit together in one way only, as shown in [Figure 2](#).

Table 7. Linecard options

If the linecard you added is...	Then...
The first card installed in the platform	Attach the first (end) H.100 bus connector on the H.100 bus cable to the H.100 bus connector (J6) on the Aculab card.
Neither the first nor last card installed in the platform	Attach the nearest H.100 bus connector on the H.100 bus cable to the H.100 bus connector on the Aculab card.

The last card installed in the platform

Attach the last (opposite end) H.100 bus connector on the H.100 bus cable to the H.100 bus connector on the Aculab card.

IMPORTANT Always connect both ends of the H.100 bus cable to linecards in the platform. Use the intermediate connectors to connect any intermediate linecards, and then tuck any unused connectors down between the cards. Leaving an end connector flagging loose and unused can create interference on the H.100 bus.

- 4 Repeat **Steps 2-3** for the remaining voice resource and telephony linecards you want to install.

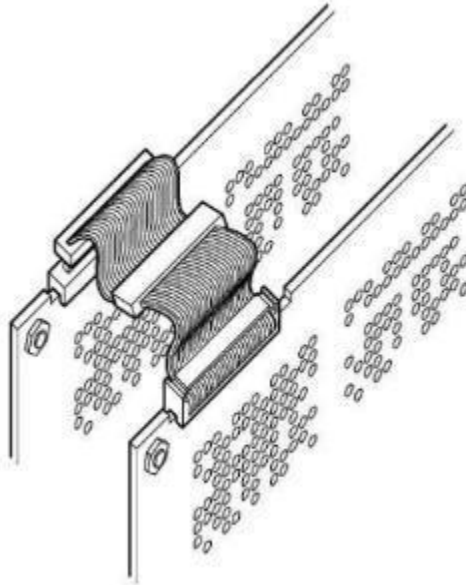


Figure 2. H.100 bus cable connected between two H.100 bus cards

Cabling Aculab Cards to the Telephone System

After you have connected the Aculab telephony linecard to the Dialogic voice resource cards through the H.100 bus, connect the line interface cable to the telephone system.

To cable Aculab cards to the telephone system:

- 1 Connect the PBX line interface cables to the RJ-45 line interface connectors on the Aculab card.

Refer to [Figure 3](#). Typical line interface RJ-45 pin-out (single-span card) for the pin-out view of a single span connector and to [Table 8](#) for the RJ45 pin-outs. Pin 1 is always the top pin of the connector.

Refer to [Figure 4](#) for the location of RJ45 connectors. The first span (span 0) is always the bottom most RJ45 connector, the second span the second connector, and so on.

- 2 Proceed to the [Installing Aculab and Dialogic PCI Cards in the Call Server](#) section.

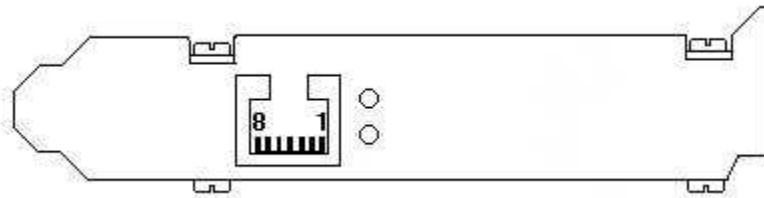


Figure 3. Typical line interface RJ-45 pin-out (single-span card)

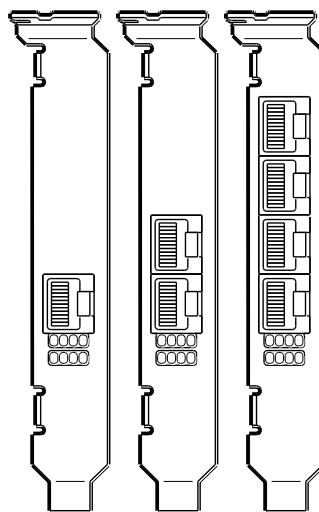


Figure 4. End plate view of single, dual, and quad span cards

Table 8. RJ-45 connector pin-outs

Pin	Description	Direction
1	Line receive (Tip)	In (Rx)
2	Line receive (Ring)	In (Rx)
3	Receive cable shield (unused)	
4	Line transmit (Tip)	Out (Tx)
5	Line transmit (Ring)	Out (Tx)
6	Transmit cable shield (unused)	
7	Unused	
8	Unused	

Installing Aculab and Dialogic Software

Aculab and Dialogic software are installed automatically with the MiCollab AM Server software. However, you must select the Aculab and Dialogic hardware support components on the Select Hardware Support Components dialog box during setup.

The software is installed as a hardware support component of the MiCollab AM Server software found on the Installation Media. The Aculab and 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 Aculab and Dialogic software, refer to MiCollab AM help or the *Dialogic & Aculab System Administrator Guide*.

IMPORTANT If you are removing Dialogic and Aculab 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.

Adding the Aculab and Dialogic Cards to the Boards Tab

The Aculab card is the clock source for all Dialogic cards installed in the Call Server, so all of the Aculab and Dialogic cards installed in the system must be connected to the same H.100 bus. Before you can start the Dialogic Service, the Aculab card must be installed, configured, and running in the system. Once the Aculab software is installed the Aculab card is automatically configured in the Call Server. You must configure the correct integration in the Integrations tab and run the Auto Detect wizard in the Boards tab of MiCollab AM Configuration.

To Auto Detect the Aculab card in the Boards tab:

- 1 Select **Start > Settings > Control Panel**. The Control Panel displays.
- 2 Double-click **MiCollab AM Configuration**. MiCollab AM Configuration displays on the Main tab.
- 3 Click the **Shutdown** button to shut down MiCollab AM.
- 4 Click the **Boards** tab, and then click the **Auto Detect** button.
- 5 The **Auto-Detect** wizard starts, and then finds each installed Aculab and Dialogic linecard.
- 6 The wizard prompts you to select the type of interface. Click **Yes** if you are connecting to a T1 interface. Click **No** if you are connecting to an E1 interface.
- 7 The system adds any new boards not previously found and automatically configures the Aculab card in the **Dialogic Configuration Manager** with the correct settings.
- 8 Click **OK** when you are finished.

Now you are ready to finish installing MiCollab AM. See *System Installation and Configuration Guide* and *System Administration Guide*, or refer to the MiCollab AM online help system, for instructions. For general information on integrations, you may also wish to consult the topic, *Integrating MiCollab AM with the Telephone System*, in *System Installation and Configuration Guide*, and the topic *Integrate the Telephony Server with the telephone system*, in the online help system.

Appendix A—Manually Configuring the Dialogic Configuration Manager for Aculab

MiCollab AM attempts to configure new Aculab boards automatically when they are added to the Boards tab. If you need to configure the Dialogic Third Party Client software manually or change the parameters of existing boards, follow the procedure described in this section to configure the Dialogic Configuration Manager software. The Third Party Client software must be configured correctly before the Dialogic boards can be configured and the Dialogic service is started.

To configure the Dialogic Third Party Client software:

- 1 Point to **Start > Programs > Dialogic System Release > Configuration Manager – DCM**.
- 2 From the Device Menu, select **Add Device**.
- 3 In the Family list, select **ThirdPartyTech**, and then click **Next**.
- 4 In the **ThirdPartyDevice** dialog box, type a name, such as “Aculab,” and then click **Next**.
- 5 In the Third Party TDM Bus Capabilities dialog box, select the **H.100 Slave**, and the **H.100 Master** check boxes. Select **Primary Master** as the TDM Bus Master/Slave Assignment, and then click **Next**.
- 6 In the Third Party Time Slot Allocation dialog box, type **512** in the Starting box and **1023** in the Ending box.
- 7 Click **Allocate**, and then click **Finish**.
- 8 If the Third Party Client software is configured properly, the Aculab card appears as a configured device in the Configured Devices list.
- 9 From the Configured Devices list double-click the **Bus-0** icon. Verify the following properties in the TDM Bus Configuration dialog box:
 - TDM bus type (User Defined) is set to H.100
 - TDM Bus Type (Resolved) is set to H.100
 - Primary Master FRU (User Defined) is set to ThirdPartyDevice-Aculab
 - Primary Master FRU (Resolved) is set to ThirdPartyDevice-Aculab
- 10 Click **OK**.
- 11 If the Dialogic cards do not display in the Configured Devices list click **System**, and then **Auto detect devices**.

NOTE If the Dialogic cards do not display in the list of Configured Devices after auto-detection, call Mitel Technical Support.

- 12** Double-click the first Dialogic card, and then click the Telephony Bus tab.
- 13** Double-click the PCM Encoding parameter.

Table 9. PCM Encoding options

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

- 14** Click the **Country** tab, and then click **Country** in the **Parameter** list.
- 15** Select your country in the **Value** list box, and then click **OK** to apply the changes you have made.
- 16** Repeat **Steps 12-15** for each Dialogic voice resource card installed in the platform.

Configuring the Start System mode:

- 1** From the menu bar, select **Settings**.
- 2** Select **Start Services Preferences**, and then select **Start All Devices**.
- 3** From the menu bar, select **Settings**.
- 4** Select **System Device autostart**, and then select **Start System**.

To start the Dialogic service:

- 1** Do one of the following: Click the green **Start** icon on the toolbar, or from the menu bar select System, and then click **Start system**.
- 2** Once the Service is started the System Status at the bottom of the DCM window displays **Running**.
- 3** From the **File** menu, select **Exit**.

Appendix B—Troubleshooting

You might find that you need to troubleshoot the cards that make up the application. This section describes how to troubleshoot the Aculab card and Dialogic voice resource cards.

Troubleshooting Aculab PCI E1/T1 Digital Access Cards

Table 10. Aculab PCI E1/T1 Troubleshooting

If the problem is...	Then...
Not all board appear in the Boards tab in MiCollab AM Configuration	<ol style="list-style-type: none">1 On the Boards tab in MiCollab AM Configuration, click AutoDetect. You may be prompted to restart the system, but the boards should appear on the tab prior to restarting. If they do not appear, proceed to Step 2.2 Make sure the Aculab Resource Manager and the Aculab Startup services are started. If the services do not exist, previous versions Aculab software need to be removed, and then MiCollab AM software with Aculab and Dialogic components reinstalled. Once the service is installed and started, try Step 1. If the boards still do not appear, proceed to Step 3.3 Verify all the boards exist in the Windows Device Manager based on their serial numbers, which are printed on each board. For each board, there should be an Aculab Call Driver and an Aculab Switch Driver. If the boards are not listed, see <i>Only some or none of the Aculab boards appear in the Device Manager</i> in the next row.
Only some or none of the Aculab boards appear in the Device Manager	On the Action menu in the Windows Device Manager , select Scan for Hardware Changes . If the boards appear, try clicking AutoDetect on the Boards tab. If the cards still do not appear, the cards may not have been properly installed. Try reseating the cards.
The Aculab boards exist in the Device Manager, but there is an error (yellow exclamation or red cross)	<ol style="list-style-type: none">1 Right-click on the device with the error, and then select Uninstall. Then on the Action menu, select Scan for Hardware Changes. If the error still exists, proceed to Step 2.2 Verify that the boards are listed in the Device Manager. If they appear, try clicking AutoDetect on the Boards tab. If the boards do not appear, contact Mitel Technical Support.
The red LED for the port in use is continually lit	The firmware did not downloaded properly or is not current. Check the error in the event viewer and contact Mitel Technical Support.

The green LEDs flash on the back of the card	Flashing green lights indicate that a span on the card has lines open, but it is disconnected. Verify that all spans in use (those that have open MiCollab AM lines) are connected to the telephone system.
An Aculab error in the Windows Event Viewer indicating one or more missing .cfg files	<ol style="list-style-type: none"> 1 Install MiCollab AM software if it has not been previously installed. 2 Click AutoDetect on the Boards tab in MiCollab AM Configuration. This error typically occurs if you have changed the Aculab cards in the system but have not updated MiCollab AM.
The Aculab card continues to malfunction after you have tried all of the previous troubleshooting measures	<p>In the System log within the Windows Event Viewer, verify that an Information entry reporting a successful start exists for each of the following sources:</p> <ul style="list-style-type: none"> • Aculab Call • Aculab Switch • Aculab V6 Config • Aculab Resource Manager <p>For further assistance, contact Mitel Technical Support.</p>

Viewing Installed Computer Telephony Devices in the Device Manager

The following procedure describes how to open the Windows Device Manager to view the installed Aculab cards.

To view the installed Aculab cards:

- 1 From the Start menu point to **Settings**, and then click **Control Panel**.
- 2 In the Control Panel window, double-click **Administrative Tools**.
- 3 In the Administrative Tools window, double-click **Computer Management**.
- 4 In the Tree panel of the Computer Management window, expand the Computer Management (Local) tree if necessary and click **Device Manager**.
- 5 In the right-hand pane of the Computer Management window, expand the tree representing the local system if necessary. Find and expand the branch labeled **Computer Telephony Devices**, as shown in the image below.

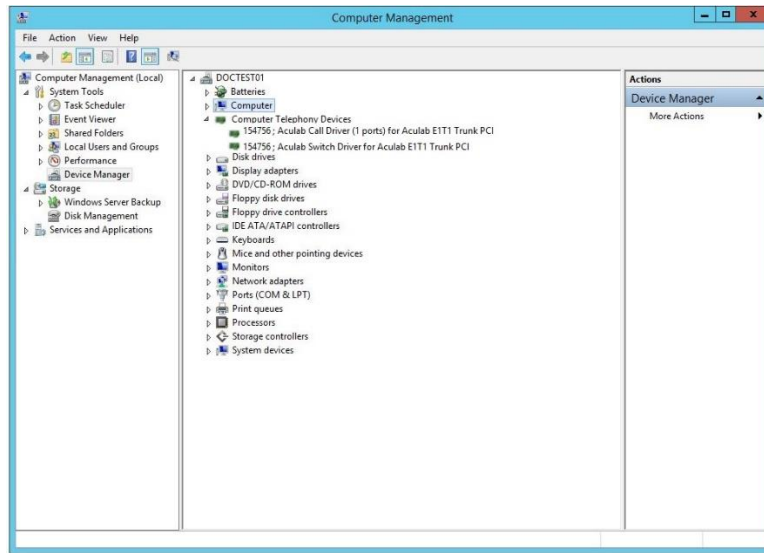


Figure 5. Computer Management

Troubleshooting Dialogic Voice Resource Cards

You might find that you need to troubleshoot the Dialogic cards. This section describes how to troubleshoot Dialogic service startup.

Table 11. Dialogic Voice Resource Cards Troubleshooting

If the problem is...	Then...
Dialogic service does not start	<ol style="list-style-type: none"> 1 Verify that the Aculab cards are installed correctly. Verify MiCollab AM is installed and platform has been rebooted. 2 Verify the Aculab card appears as the Primary Master FRU (Resolved) card in the Bus-0 TDM property sheet of the Dialogic Configuration Manager (DCM)
MiCollab AM prompts sound distorted	Verify the correct PCM encoding scheme used by the telephone system (switch) in the Dialogic Configuration Manager program. μ -Law PCM encoding is used by telephone systems in North America and Japan. A-Law PCM encoding is used by telephone systems in most other countries.

NOTE The Dialogic Configuration Manager (DCM) has a comprehensive online help system. Consult the Dialogic Installation and Configuration Knowledge Base book in the help system for troubleshooting advice regarding Dialogic System Release software.

Appendix C—Adding or Replacing Aculab and Dialogic Cards

After you add or replace an Aculab or Dialogic linecard and configure it, you must also add or replace it in the Board tab of MiCollab AM Configuration.

To add or replace a linecard in the Call Server:

- 1 From the Start menu, point to **Settings**, and then click **Control Panel**.
- 2 Double-click **MiCollab AM Configuration**.
- 3 If MiCollab AM is running, click **Shutdown**.
- 4 Click the **Boards** tab, and then click **Auto Detect**.

NOTE The Auto Detect button detects only Aculab cards and Dialogic cards that are configured using the Dialogic Configuration Manager.

- 5 If the Select Board Mode dialog box appears, proceed according to the type of card or cards you are configuring.

Table 12. Configuration options

If you are configuring...	Then...
An Aculab card for E1 spans	Click No.
An Aculab card for T1 spans	Click Yes.
A Dialogic linecard or voice resource card	Skip to Step 6 .

- 6 After the linecard appears in the Boards list, click **OK**.
- 7 Restart **MiCollab AM**.