

MCII-e System Controller Card

User Manual



9350-7734-000 Rev B April / 2006

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Factory Service Department Telex Communications, Inc. 8601 East Cornhusker Hwy. Lincoln, NE 68507 U.S.A.

Attn: Service

This package should include the following:

This package should include the following:

Component	Description	Qty.
90207734000	MCII-e Front Card Assembly	1
90207734500	MCII-e Back Card Assembly	1
59000240	Screw, M2.5-45x10 PH Pan Head M/S DIN 7985A Zinc	4
93507734000	Master Controller User Manual	1
38110387	RTS Warranty Lincoln 3 year	1
90207562010	Cable, SCSI-III 10 Ft. Amp 750732-4	1

Table

of

Contents

Introduction4	Accessories
Features4	Accessories
Specifications4	XCP-ADAM-MC Master Controller
System Diagram5	Breakout Panel20
Reference View - Front Card6	AZedit20
Reference View - Back Card8	Trunking Systems20
DIP Switches8	<i>UIO-256</i>
Connector Pinouts10	<i>PAP</i> 21
	<i>LCP</i> 21
Configuring the MCII-e13	GPI/O (General Purpose Input/Output)21
System Requirements14	• • • •
Ethernet Setup for MCII-e System Controller 14	Trunking and the MCII-e System23
Set the IP Address for the	Trunking and the MCII-e System Controller 24
MCII-e System Controller14	·
Download Firmware for the	
MCII-e System Controller 16	

CHAPTER 1

Introduction

In this chapter

- $\bullet \, Introduction$
- $\bullet \, Features$
- Specifications
- Reference View Front Card
- Reference View Back Card
- DIP Switches
- Connector Pin-outs

Introduction

Introduction

The RTS MCII-e System controller card is the third generation controller for the ADAM Intercom System. Designed to replace the ADAM-MC, it adds a number of key features. Adding Ethernet connectivity between the ADAM Intercom and the PC running AZedit, the new controller can support up to 35 simultaneous AZedit sessions (32 using Ethernet and up to 3 using serial ports). Using a pair of MCII-e controller cards will provide full redundancy with seamless automatic change-over upon failure.

The speed of Ethernet, combined with expanded memory, allows the card to fully support large matrices with reduced setup file download time.

As with all ADAMTM Intercom family products, the MCII-e card supports all standard, hot-swappable, and configurable features through the AZedit configuration software. It is fully compatible with existing ADAM systems and cards, including AIO-8, AIO-16, AES-3, and RVON VOIP interfaces

*The New MCII-e System Controller card is only for use in the ADAM Matrix Intercom System and cannot be intermixed with older ADAM master controllers in a given frame.

Features

Installation: The MCII-e System Controller card is hot-swappable and installs into slots 19 or 20 in an

ADAMTM Intercom System.

Trunk Capable: The MCII-e System Controller card supports ancillary data control for use with Telex[®] Intelligent

Trunking.

Ethernet Compatible: Fully Ethernet capable. The MCII-e provides a single RJ-45 connection for use with a 10BASE-T

or 100BASE-TX compliant and network. Each system controller has its own IP address network

access.

AZedit Configurations: The MCII-e can connect to AZedit via Ethernet or Serial (RS-232) connections. Also, the new

Intercom Sizing Wizard in AZedit makes configuring the new system controller card easier than

ever.

Controls: Reset push-button switch, general indicators, an LED module for advanced monitoring features and

for gathering additional card information.

Specifications

Power

7.5W/ 1.5A @ 5V

Physical

5.687" (144.45mm) W x 11.024" (280.01 mm) L

Connectors

SCSI connector via backcard RJ-45 Ethernet via backcard

Miscellaneous

4 Mbytes of Code Flash

32 MB of SDRAM 8Mbytes Configuration Flash

System Diagram

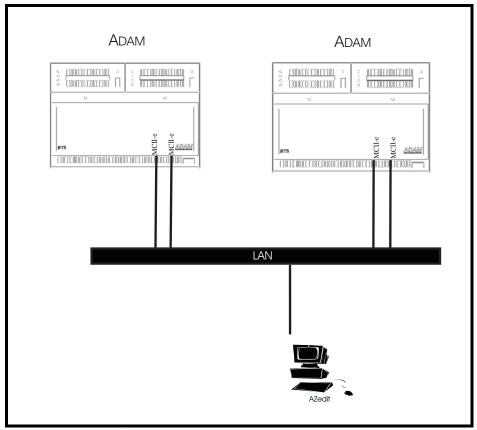


Figure 1. System Diagram - MCII-e Master Controller

Reference View - Front Card

Settings

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2 must

4 must

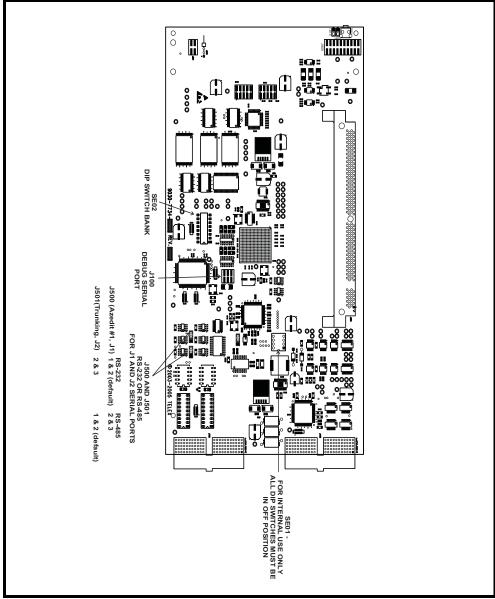


Figure 2. MCII-e System Controller Card Board view.

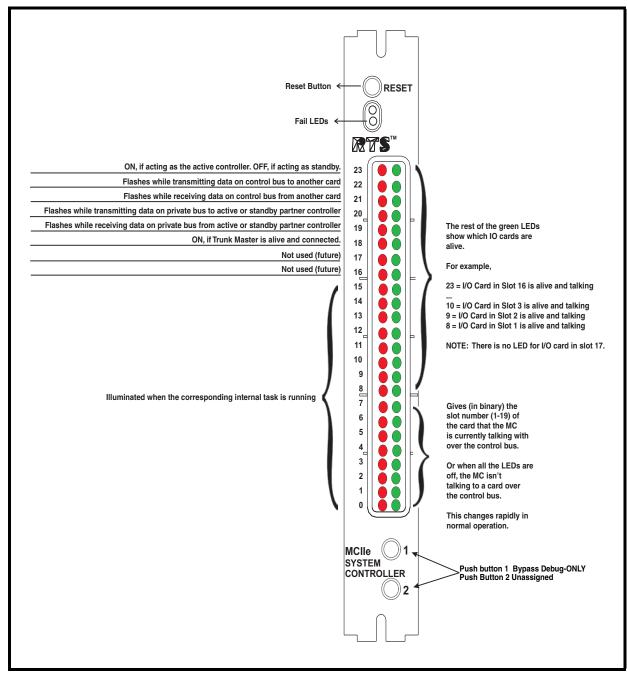


Figure 3. LED Descriptions for the MCII-e

Reference View - Back Card

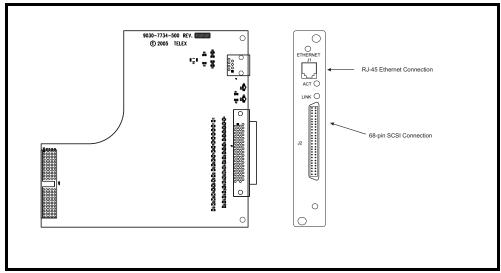


Figure 4. Back Card

DIP Switches

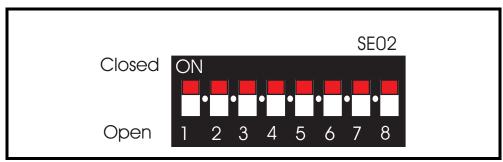


Figure 5. Dip Switch SE02

DIP Switch 1: Debug Only! Must be in OPEN position.

DIP Switch 2: Sets the baud rate for the AZedit serial connection via J1. By default, AZedit is set for COM 1

and 38,400 kbps (38.4K). The baud rate set in AZedit must match the baud rate setting of the

Master Controllers in ADAM.

DEFAULT = OPEN **OPEN** = 9600

CLOSED = 38.4k Baud

DIP Switches 3, 4, and 5: Reserved, keep in OPEN position.

DIP Switch 6: Debug Only! Must be in OPEN position.

DIP Switch 7: Determines Master/Slave Frame in a multi-frame

system.

DEFAULT = CLOSED **OPEN** = Slave Frame **CLOSED** = Master Frame

DIP Switch 8: Debug Only! Must be in OPEN position.

Warning: DIP Switches 1, 6, and 8 should always be left in the OPEN position. These are reserved for debugging

and can have unintended consequences.

Connector Pinouts

AZedit #1			
68-pin Master Controller	J-1 of XCP-ADAM- MC	Assignment 2W	
1	1	RS485 TX/RX-	
3	2	RS232C RX	
37	3	RS232C TX	
4	4	RS422 TX-	
2	5	Ground	
2	6	Ground	
38	7	RS422 TX+	
35	8	RS485 TX/RX+	
	9		

Trunking System			
68-pin Master Controller	J-2 of XCP-ADAM- MC	Assignment 2W	
5	1	RS485 TX/RX-	
36	2	Ground	
6	3	RS232C RX	
	4	Not Used	
41	5	RS422 TX+	
39	6	RS485 TX/RX+	
36	7	Ground	
40	8	RS232C TX	
7	9	RS422 TX-	

UIO-256/PAP/LCP			
68-pin Master Controller	J-3 of XCP-ADAM- MC	Assignment 2W	
8	1	RS485 TX/RX-	
9	2	Ground	
	3	Not Used	
	4	Not Used	
44	5	RS422 TX+	
42	6	RS485 TX/RX+	
9	7	Ground	
	8	Not Used	
10	9	RS422 TX-	

General Purpose			
68-pin Master Controller	J-4 of XCP-ADAM- MC	Assignment 2W	
11	1	RS485 TX/RX-	
43	2	Ground	
	3	Not Used	
	4	Not Used	
46	5	RS422 TX+	
45	6	RS485 TX/RX+	
43	7	Ground	
	8	Not Used	
12	9	RS422 TX-	

General Purpose			
68-pin Master Controller	J-5 of XCP-ADAM- MC	Assignment 2W	
11	1	RS485 TX/RX-	
14	2	Ground	
	3	Not Used	
	4	Not Used	
	5	Not Used	
47	6	RS485 TX/RX+	
14	7	Ground	
	8	Not Used	
	9	Not Used	

General Purpose / Bus Exp.		
68-pin Master Controller	J-6 of XCP-ADAM- MC	Assignment 2W
15	1	RS485 TX/RX-
48	2	Ground
	3	Not Used
	4	Not Used
	5	Not Used
49	6	RS485 TX/RX+
48	7	Ground
	8	Not Used
	9	Not Used

General Purpose / Bus Exp.			
68-pin Master Controller	J-7 of XCP-ADAM- MC	Assignment 2W	
16	1	RS485 TX/RX-	
17	2	Ground	
	3	Not Used	
	4	Not Used	
	5	Not Used	
50	6	RS485 TX/RX+	
17	7	Ground	
	8	Not Used	
	9	Not Used	

General Purpose / Bus Exp.			
68-pin Master Controller	J-8 of XCP-ADAM- MC	Assignment 2W	
18	1	RS485 TX/RX-	
51	2	Ground	
	3	Not Used	
	4	Not Used	
	5	Not Used	
52	6	RS485 TX/RX+	
51	7	Ground	
	8	Not Used	
	9	Not Used	

AZedit #2			
68-pin Master Controller	J-9 of XCP-ADAM- MC	Assignment 2W	
	1	Not Used	
19	2	Ground	
20	3	RS232C RX	
	4	Not Used	
	5	Not Used	
	6	Not Used	
19	7	Ground	
53	8	RS232C TX	
	9	Not Used	

AZedit #3					
68-pin Master Controller	J-10 of XCP-ADAM- MC	Assignment 2W			
	1	Not Used			
67	2	Ground			
21	3	RS232C RX			
	4	Not Used			
	5	Not Used			
	6	Not Used			
67	7	Ground			
54	8	RS232C TX			
	9	Not Used			

General Purpose						
68-pin Master Controller	J-11 of XCP-ADAM-MC	Assignment	Signal			
22	1	MI (0)	Logical Input (0)			
23	2	MI (1)	Logical Input (1)			
24	3	MI (2)	Logical Input (2)			
25	4	MI (3)	Logical Input (3)			
26	5	MI (4)	Logical Input (4)			
27	6	MI (5)	Logical Input (5)			
28	7	MI (6)	Logical Input (6)			
29	8	MI (7)	Logical Input (7)			
30	9	Ground	Ground			
31	10	Ground	Ground			
32	11	Ground	Ground			
33	12	Ground	Ground			
34	13	Ground	Ground			
55	14	MO (0)	Logical Output (0)			
56	15	MO (1)	Logical Output (1)			
57	16	MO (2)	Logical Output (2)			
58	17	MO (3)	Logical Output (3)			
59	18	MO (4)	Logical Output (4)			
60	19	MO (5) Logical Output (5				
61	20	MO (6)	Logical Output (6)			
62	21	MO (7)	Logical Output (7)			
63	22	Ground	Ground			
64	23	Ground	Ground			
65	24	Ground Ground				
66	25	Ground	Ground			

CHAPTER 2

Configuring the MCII-e

In this chapter

- System Requirements
- Ethernet Setup for the MCII-e System Controller
- Download Firmware for the MCII-e System Controller

Configuring the MCII-e

System Requirements

Before you configure your MCII-e System Controller card, verify the following items are updated:

- AZedit v 2.08.01 or later
- AIO-8 v 10.3.4 or later
- AIO-16 v 1.0.0 or later
- Periph-IIe, requires DBX v1.14.0 or later

NOTE: Field upgrade of DBX will requires Boot Code upgrade to version 0.0.3. If the Boot Code is not upgraded, the DBX card will not work with the MCII-e. Refer to *DBX Boot Code Upgrade* (pn 38110-472.

Ethernet Setup for MCII-e System Controller

Set the IP Address for the MCII-e System Controller

NOTE: The PC must be running version 2.08.01 or later of AZedit and have an Ethernet card installed. The MCII-e can support up to 32 concurrent sessions of AZedit on Ethernet.

Verify the MCII-e is connected to the PC using a RS232 (ADAM standard) cable. Connect J1 on the XCP-ADAM-MC to the COM port on the PC.

NOTE: For more information on Network Basics, see the Basic Networking Guide found at <u>our website</u> (http://www.telex.com/Intercoms/files.nsf/sitemap#Brochures), under *Applications*.

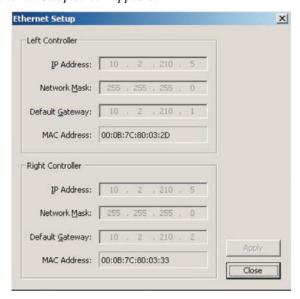
If there are two controllers, they must each have their own unique IP Addresses (different from each other and any other devices sharing the same network).

To connect the Active MCII-e to the PC with a serial cable, do the following:

1. Open AZedit.

The Keypanels/Ports screen appears.

2. From the Option menu, select **Ethernet Setup**. *The Ethernet Setup screen appears*.



- 3. In the IP Address field, enter the **IP Address** for the current MCII-e System Controller.
- 4. In the Network Mask field, enter the **Network Mask** number for the current MCII-e System Controller.
- **5.** Where appropriate, in the Default Gateway field, enter the **Gateway** number for the MCII-e System Controller.

NOTE: If the MCII-e will communicate with hosts outside its network, enter the IP address of a host or router which will serve as the **Gateway**. Otherwise, if the MCII-e only needs to communicate with the local network, leave the Default Gateway field at its default setting (0.0.0.0).

The Default Gateway is normally configured the same on both the active and standby MC-II-e System Controller Cards.

The same screen you use to set the network settings can be used to view the settings as well. You must be connected using a serial connection via J1 to make changes, but you can view them with any type of AZedit connection (J1, J9, J10, or Ethernet).

- 6. Click Apply.
- 7. Click Close.

The Ethernet Setup window is closed.

8. Connect the MCII-e System Controller to your network with an Ethernet cable.

NOTE: The unique Ethernet MAC address assigned to each MCII-e card during manufacturing is displayed in the field MAC Address. It is NOT possible to modify this address.

9. Connect the PC to your network with an Ethernet cable.

NOTE: If you do not know these numbers, your system administrator can give you the IP Address and Netmask to use.

Once you have entered the IP Address and Network Mask, do the following:

1. From the Options menu, select **Communications**. *The Communication screen appears*



- 2. In the Connection area, select the **Network** radio button.
- 3. In the IP Address field, either enter the MCII-e IP Address you wish to connect with, or click the Search button. The search button scans the network for any MCII-e devices. If multiple units are on the network, each will appear in the list.



- 4. Select the MCII-e System Controller you wish to work with.
- 5. Click **OK**

The Communications screen closes. The IP Address is configured in AZedit for the MCII-e System Controller.

Download Firmware for the MCII-e System Controller

WARNING:

The following procedure will cause one or more brief disruptions in intercom communications. Also, *SAVE* your intercom system configuration. From the File menu, select *SAVE*. Later, if you need to restore the intercom configuration from disk, use *Send File* in the *Online* Menu.

Before you begin, be sure to verify that SERVER mode has been disabled. Also, it is extremely important to take the Standby Controller card out of the frame, if one is installed.

NOTE: The Active Master Controller will have the topmost red LED (#23) on in the status window lit.

To download master controller firmware, do the following:

1. From the Status Menu, select **Software Versions**.

A popup list appears.

2. From the Software Versions popup list, select **Master Controllers**.

The Master Controller Version Information screen appears.

3. Right-click the active Master Controller, and then select **Download Firmware**.

The Firmware Download screen appears.

NOTE: You can also press **Ctrl+Shift+D** to open the Firmware Download screen once the Master Controller is highlighted.

- **4.** From the Firmware Download screen, select the **firmware update file**. Or use the browse button to navigate where the new file resides.
- 5. Click Open.

The firmware update appears in the Download Firmware screen.

6. Click Begin Download.

This process can take as little as 30 seconds with "Fast Ethernet" or as long as five minutes when using a serial connection at 9600 baud.

NOTE: If there is any disruption in the communications link during the download, you will get an error message. In this case, repeat the download.

7. When the file has been completely downloaded, the MCII-e System Controller will begin processing the update.

IMPORTANT! Any disruption at this point, such as loss of power, removing or resetting cards may result in Master Controller failure. If this happens, you will have to return the affected unit for replacement or repair.

The AZedit session goes offline for 15-20 seconds when the card performs a reset. It automatically will reconnect when it is finished.

When the Master Controller is finished, the new software version will appear in the version field of the Version Status screen.

If you do not have a Standby Master Controller Card, you can skip steps eight and nine.

- **8.** Once the Active Master Controller is updated, **remove it** from the frame.
- 9. Insert the Standby Master Controller and repeat steps three through eight.
- 10. When the Standby Master Controller is finished, insert both controllers and resend your system setup file.

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CHAPTER 3

Accessories

In this chapter

- Accessories
- AZedit
- UIO-256
- PAP
- LCP
- General Purpose

Accessories

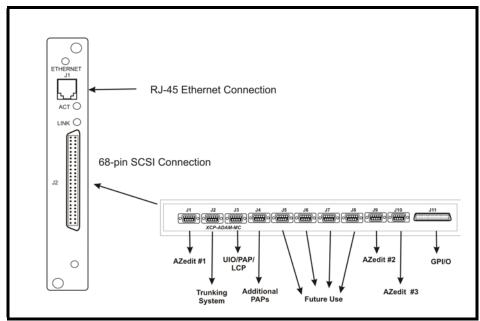


figure 6. Connection Diagram. The 68-pin SCSI can be attached to the XCP-ADAM-MC.

NOTE: AZedit sessions are only enabled on J9 or J10 when the advanced communication boxes are enabled from "communications" screen and the correct baud rates are configured.

XCP-ADAM-MC Master Controller Breakout Panel

The XCP-ADAM-MC Breakout Panel allows many different peripherals to be connected to the master controller of an ADAM Intercom System, such as AZedit, trunking systems, UIOs, PAPs, LCPs, GPI/Os, etc. For the breakout panel pinouts, see pages 9-15.

AZedit

AZedit is a Windows[®]-based, full-featured configuration software, providing online and offline configuration capabilities. It gives you the ability to manage multiple intercom systems, assign and reassign users to different ports, as well as dynamically add hardware to your system setup without jumper changes, rewiring, or taking the system offline. AZedit has the capability to load pre-set configuration files, which means configurations saved to a disk can be uploaded to the "live" application at anytime, without interruption.

The XCP-ADAM-MC breakout panel has three DB-9 connectors that can be used to connect to AZedit (AZedit #1, #2, and #3).

Trunking Systems

The RTSTM Trunking System manages intercommunications between separate intercom systems using intercom ports that have been reserved and interconnected between the intercom systems with devices in other frames. Keypanels or other data devices can then communicate with devices in other frames.

UIO-256

Each UIO-256 provides 16 GPI inputs and 16 GPI outputs. The GPI inputs can be used just like keypanel keys to activate intercom ports, party lines, relays, etc. Each relay output provides a choice of normal open and normal closed contacts. The

Accessories

relays can be assigned for activation from keypanel keys, and can be used to control lighting, or to key remote transmitters, paging systems, etc.

PAP

Program Assist Panels provide a fast and easy method of selecting any of several program sources (connected to input ports of the intercom system) for use with the IFB outputs feature of the intercom system.

LCP

The LCP panel (Level Control Panel) combines the functionality of three products into one. The LCP allows you to adjust analog input and output gains, assign sources to IFB outputs and make changes on the fly, and to add members to a party line on the fly.

GPI/O (General Purpose Input/Output)

J11 provides 8 general purpose control inputs and 8 general purpose control outputs. The control inputs can be used just like keypanel keys to activate intercom ports, party lines, relays, etc. The control outputs are open-collector, active-low outputs. They can be activated by keypanel keys and can be used to control lighting, to key a remote transmitter, to activate a paging system, etc.

Pin-outs for the digital inputs and outputs are summarized in the table on page 15.

Accessories

CHAPTER 4

Trunking and the MCII-e System

In this chapter

- Enable Trunk Support for MCII-e System Controller Card
- Connect MCII-e to the Trunk Master (Data)
- Configure TrunkEdit and AZedit to Communicate with the MCII-e System Controller Card

Trunking and the MCII-e System Controller

Trunking allows one intercom system to communicate with another remote intercom system with devices in other frames. For example, a user in New York can talk to a user in Los Angeles if the systems they are using are trunked together. Trunking can be configured to work with cables, fiber optics, voice over internet protocol, or any form of audio/data transfer media, to allow communication between systems.

To trunk the MCII-e System Controller Card, do the following:

ENABLE TRUNK SUPPORT IN AZEDIT

- 1. From the AZedit main menu, select **Options**. *The Options sub-menu appears*.
- **2.** From the Options sub-menu, select **Preferences**. *The Applications Preferences screen appears*.
- **3.** On the Applications Preferences screen, click the **Advanced** tab. *The Advanced screen appear*.
- 4. On the Advanced screen, select **Enable trunking support**.
- 5. Click **OK** to save the change and close the screen. Or, click **Apply** to save the change and leave the screen open.

When your system has limited bandwidth, you want to set the Allow for Remote Trunk Master. By setting this option, the baud rate is changed to 9600 baud, instead of the default, 38.4K.

To enable the Remote Trunk Master, do the following:

WARNING!: Enabling this option will cause the system to reset. All data will be erased in the frame. Be sure to save your system setup to disk before performing this task.

- 1. Remove the **Standby Master Contoller**.
- **2.** From the AZedit main menu, select **Options**. *The Options sub-menu appears*.
- 3. From the Options sub-menu, select **Intercom Configuration**.

The Intercom Configuration screen appears.

- **4.** On the Intercom Configuration screen, click the **Options** tab. *The Options screen appears*.
- 5. On the Options screen, select **Allow for remote trunk master**.
- **6.** Click **Test** to verify the intercom will accept the new settings.
- 7. Click Apply.

The intercom will stop communicating with AZedit, reconfigure itself, and then reset.

- **8.** Resend the **current setup**.
- 9. Replace the standby controller.

It will automatically reconfigure itself to match the new settings.

CONNECT THE MCII-e TO THE TRUNK MASTER (DATA)

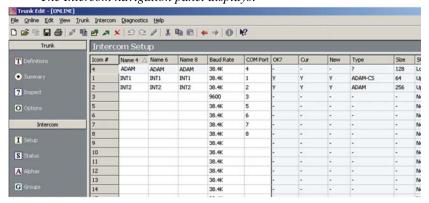
To connect MCII-e to the Trunk Master, do the following:

1. Connect the MCII-e System Controller Card data connector to one of the eight DB-9 connections on the ICP-2000.

CONFIGURE THE TRUNKMASTER TO COMMUNICATE WITH THE MCII-e SYSTEM CONTROLLER CARD

To setup the TrunkMaster to be able to communicate with MCII-e, do the following:

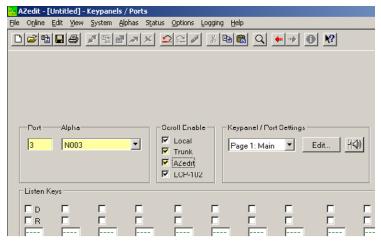
- Open TrunkEdit.
- **2.** In the left navigation, open the **Intercom slide screen**. *The Intercom navigation panel displays*.



- **3.** From the Intercom navigation, select **Setup**. *The Intercom Setup screen appears*.
- 4. In the Intercom Setup screen, enter the **Intercom System Name** (i.e.; **ADAM**) in the appropriate ICOM port (for example, if the MCII-e System Controller is cabled to the ICP-2000's J4 connector, then in the Intercom Setup screen, enter the MCII-e's machine name in the line which corresponds with the COM port #4 field).
- **5.** Select the Baud Rate field and enter the **baud rate** to match the baud setting of the Intercom Trunking port (38.4K or 9600).
- 6. When you are finished, click the **Send** button to send the changes to the Trunk Master. When the changes are sent to the Trunk Master, the MCII-e connects to the Trunk Master and uploads the remote ports. Once the MCII-e has uploaded this data, it sends its port alphas to the Trunk Master.

In AZedit

- Open AZedit.
- 2. On the main screen, select the **port** you want to make available remotely..



3. In the Scroll Enable field, select **Trunk** and **AZedi**t.

By enabling Trunk and AZedit on this port, remote users will display in AZedit and remote keypanel users will be able to see enabled ports.

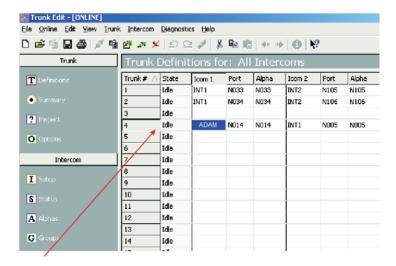
NOTE: We recommend that you only enable user positions that will be used by remote systems.

4. Send the **changes** to AZedit.

In TrunkEdit - Define the trunk line

NOTE: We recommend you map out your system before defining the trunk lines.

Defining the trunk line shows where a trunk line begins and ends, as well as shows the audio connections between frames.



To define trunk lines, do the following:

- 1. Open TrunkEdit.
- **2.** In the left navigation, open the **Trunk slide screen**. *The Trunk Definitions for: All Intercoms panel displays.*
- 3. In the ICOM 1 field, enter the **intercom name of one end** of the trunk connection (i.e.; ADAM).
- **4.** In the Port Field, enter the **port number** where ICOM1 is assigned (i.e.; N014). Or, in the Alpha field, enter the **Alpha** of the ICOM1 system (i.e.; N014).
- 5. In the ICOM2 field, enter the **name of the system** ICOM1 is linked to (i.e.; INT1).
- **6.** In the Port field, enter the **port number** where ICOM2 is assigned (i.e.; N005). Or, in the Alpha field, enter the **alpha** of the ICOM2 system.
- 7. Once finished with all your definitions, **Send** the changes to the TrunkMaster.

In AZedit

Once you are finished defining the trunk lines of your system, you can use AZedit to make key assignments for the keypanels. With Trunking enabled, you will be able to see all trunked system and their ports enabled in AZedit.