User Guide

i-Series Panels

A user guide for i-Series Panels

Part Number: 399G207 Rev A

Date: April 10, 2017

Clear-Com® AN HME COMPANY

i-Series Panels User Guide

Part Number: 399G207 Revision: A

Legal Disclaimers

Clear-Com Offices are located in California, USA; Cambridge, UK; Dubai, UAE; Montreal, Canada; and Beijing, China. Specific addresses and contact information can be found on Clear-Com's corporate website:

www.clearcom.com

Clear-Com Contacts

Americas and Asia-Pacific Headquarters
California, United States
Tel: +1 510 337 6600
Email: CustomerServicesUS@clearcom.com

Europe, Middle East, and Africa Headquarters
Cambridge, United Kingdom
Tel: +44 1223 815000
Email: CustomerServicesEMEA@clearcom.com

China Office
Beijing Representative Office
Beijing, P.R.China
Tel: +8610 65811360/65815577

Contents

1 Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do **not** use this apparatus near water.
6. Clean only with dry cloth.
7. Do **not** block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do **not** install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do **not** defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-cord supply or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. **Warning:** To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

Safety symbols

Familiarize yourself with the safety symbols in **Figure 1-1: Safety symbols**. These symbols are displayed on the apparatus and warn you of the potential danger of electric shock if the system is used improperly. They also refer you to important operating and maintenance instructions in the product user manual.

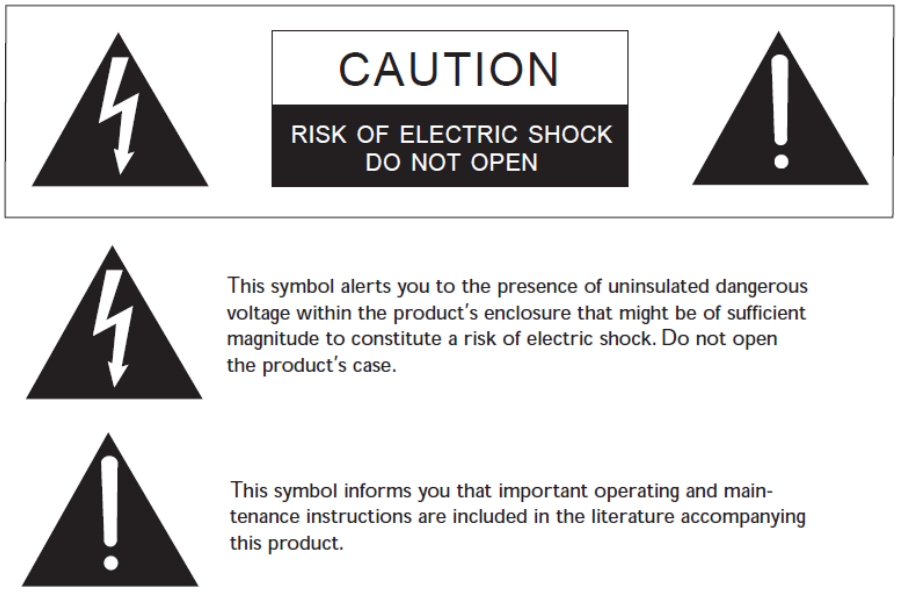


Figure 1-1: Safety symbols

Mains power cord

i-Series panels are powered by an external power supply. The cord to connect the external power supply to the mains supply must conform to the following:

- The mains power cord shall have an **IEC C13 connector** at one end and a mains power plug at the other end.
- An **IEC C13 plug** has three pins, the center pin carrying the earth / ground. The other two pins carry neutral and live circuits.
- The conductors of the mains cords shall have adequate cross-sectional area for rated current consumption of the equipment.
- The mains plug that connects to the mains supply must be approved for use in the country where the equipment is to be used.
- The mains power cord must be an **IEC mains power cord** complying with standard **IEC60320; IEC320/C13**.
- Mains power cords used in the U.S. must also comply with standard **UL817**.

2 Introduction

This guide describes how to install, use and maintain **i-Series™ user panels** from **Clear-Com®**

i-Series user panels are fully compatible with both the Eclipse and Eclipse HX digital matrix systems. Each panel is constructed from several individual units called modules, which can be added or removed in the field. This enables you plan the panel's initial configuration and easily update the configuration as future operational needs change.

The standard configurations include 8, 16 or 32 key panels. Up to five E-1410E expansion panels can be connected to a single i-Series user panel.

2.1 i-Series user panels covered by this guide

The following i-Series user panels are covered by this guide:

i-Series user panel	Description / comments
I-1110E user panel	1x8-key display key module, no keypad.
I-1210E user panel	2x8-key display key modules, no keypad.
I-1410E user panel	4x8-key display key modules, no keypad.
I-1430E user panel	4x8-key display key modules with keypad (both dial and assignment menus).
I-1470E user panel	As for the I-1430E, but with the AUX-101 module option (local audio and GPIs).
E-1410E	4 x 8 display key extension panel

Table 2-1: i-Series user panels covered by this guide

Note: Up to five E-1410E expansion panels can be connected to a single i-Series user panel.

2.2 Terminology

In this guide, the term **source** refers to an intercom device (such as a user panel, interface, or beltpack) that sends audio to your i-Series user panel. This audio from this device represents a **listen** path to your user panel.

The term **destination** refers to a device to which you send audio. The audio sent to this device represents a talk path from your user panel.

2.2.1 Labels

The names of the sources and destinations appear in the display of your user panel and are called **labels**. A label is a 5-character alphanumeric name that identifies a source, destination, or control function accessed by your user panel.

The label is displayed next to the key on the key module. The labels on the upper row refer to the corresponding upper-row keys and the labels on the lower row refer to the corresponding lower-row keys.

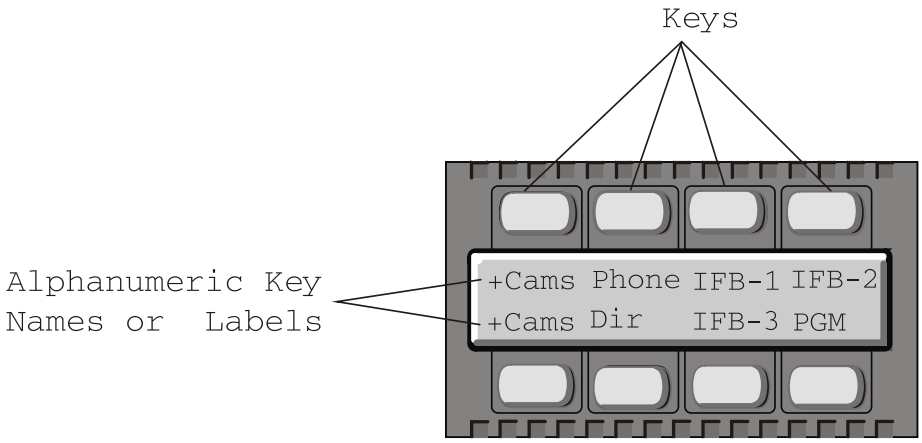


Figure 2-1: Labels on a key module

Display modules have full-graphic LED-backlit displays that you program using the Eclipse / Eclipse HX configuration software (ECS / EHX). Non-display modules have metal grooves into which paper labels can be inserted. Paper labels can be printed from ECS / EHX.

2.3 Further information

i-Series documentation is available from your product CD-ROM. For more information about the i-Series family of panels, see:

http://www.clearcom.com/product/digital-matrix/user-panel

For more information about the Eclipse and Eclipse HX digital matrix systems, referenced by this guide, see:

http://www.clearcom.com/product/digital-matrix.

For sales information, see your Clear-Com sales representative. For contact information and legal disclaimers, see Page 2 of this guide.

3 Overview

This chapter provides a brief overview of the i-Series family of user panels, including:

- Features.
- Chassis assembly.
- Modules (Key modules, Function Key modules, Mic-Headset modules, and Level-Control modules).
- Standard panel configurations (I-1430E, I-1470E, I-111E, I-1410E, I-I210E and E-1410E i-Series panels).

3.1 Features

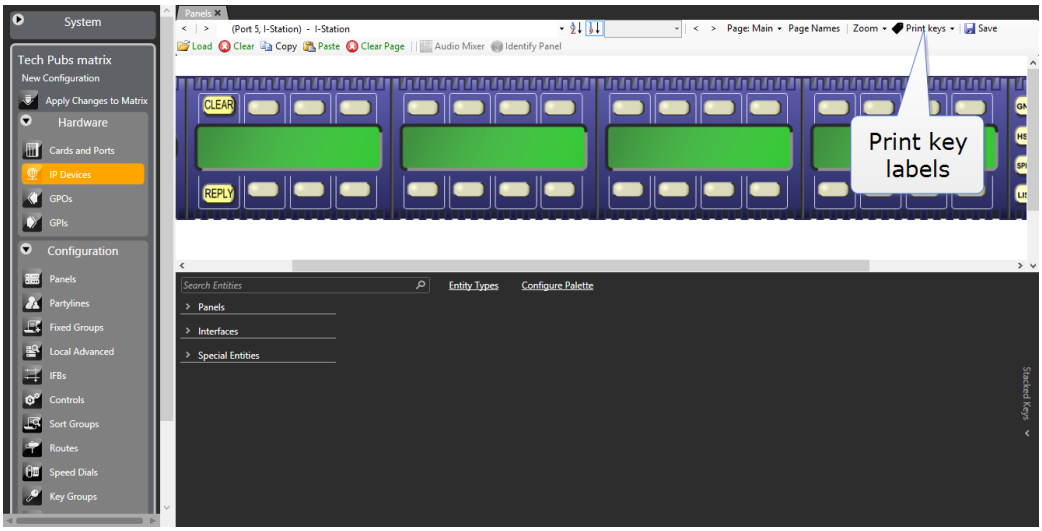
i-Series panels incorporate a wide range of advanced features to enhance usability and audio performance. The i-Series panels feature:

- Full graphic LED-backlit displays for each key.
- A 16-button keypad module for DTMF dialing and panel reprogramming (I-1430E and I-1470E only).
- Adjustable, individual listen level.
- Auto-sensing headset and microphone connectors.
- Access to multiple audio sources and multiple speaker and headset inputs and outputs when an auxiliary options module is installed (I-1470E only).
  Tip: *The auxiliary options module also provides you with two relays and two GPIs (general-purpose inputs) that can be used either locally or system-wide.*
- Advanced menu features, which enable you to perform the following tasks (amongst others):
  - Assign new destinations and sources to your panel directly from your panel.
  - To program IFB sources and destinations.
  - To dial telephone interfaces.
  - To transform your panel into an assignment panel.
  - To reset local volume levels.

3.1.1 What's new in Eclipse 9.0?

New features:

- **Print key labels**. This feature, available in the EHX configuration software, allows you to print out key labels so you can label the panel easily and conveniently.



  - Use the .BMP option and print 'as is'. The file is designed to fit the panel exactly. Please ensure that NO scaling is applied to the file, either in the graphics software or on the printer.
  - To format the labels yourself, select the .CSV option and use appropriate software.

3.2 Chassis assembly

The chassis of the i-Series user panel is constructed of cold-rolled steel. The front-panel modules and removable rack ears are cast from aluminum. All external connectors and switches are structurally reinforced.

The keys feature long-life LED illumination, and the displays are full-graphic LCD with long-life LED backlighting.

The internal architecture of i-Series panels is based on the Motorola M-Core processor. All audio is digitized by CODECs and routed to a DSP that can be controlled as desired by the user.

All i-Series user panels have internal power supplies.

3.3 Modules

i-Series user panels are designed in standardized units called modules.

Modules make it easier to add or remove components (such as keys) in the field, without replacing the entire user panel. This makes upgrading (or repairing) panels easier, faster, and less expensive.

Note: For more information about using modules, see [put link here].

3.3.1 Keyset module

The **keyset module** is the basic building block of the i-Series user panel. A panel can host up to four keyset modules.

The eight backlit keys in each key module are:

- Lit **red** to indicate **talk status**.
- Lit **green** to indicate **listen status**.

Each key has a 5-character alphanumeric display that shows its currently programmed assignment. The alphanumeric name of an assignment is called a **label**.

ECS / EHX, the configuration software for Eclipse / Eclipse HX, is used to program the labels for i-Series panels featuring backlit LCS displays.

User panels without display screens have slots for paper labels.

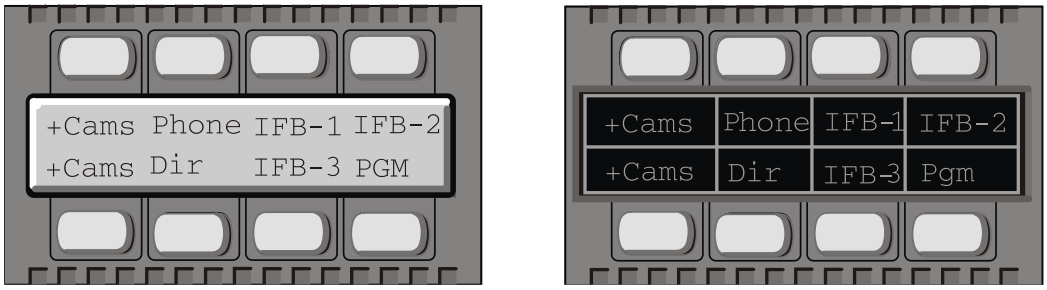


Figure 3-1: Keyset modules (electronic display on left, paper labels on right)

3.3.2 Function Key module

The function key module contains the panel's basic and advanced controls.

4-key module without numeric keypad

A 4-key function key module contains the keys that control basic intercom functions, such as:

- Switching between gooseneck/headset speakers and microphones.
- Sending call signals.
- Adjusting listen levels.

The 4-key module has separate volume controls for intercom and program sources.

16-key module with numeric keypad

The 16-key module includes the basic function keys and adds a 12-button numeric keypad for dialing telephone interfaces and for programming advanced features. Advanced features allow you to:

- Temporarily deactivate all latched keys on a panel.
- Override the on/off or volume settings at a destination.
- Assign new sources and destinations to your panel from your panel.
- Program IFB sources and destinations.
- Reset microphone and sidetone volume levels.
- Receive a variety of information about your panel on the panel's LCD displays.

Figure 3-2: Function key modules (without keypad (left), and with keypad (right))

3.3.3 Mic-headset module

Every i-Series panel has a mic-headset module with:

- An auto-sensing headset and microphone connector.
- An integrated loudspeaker.

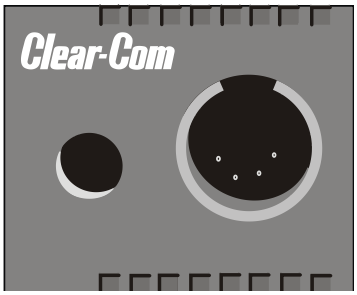


Figure 3-3: Mic-Headset module

3.3.4 Level control module

The level control module is used in conjunction with a key module to give you a constant visual read-out of each key's volume level.

Important note:
This option is no longer available for new sales but remains supported. For more information, contact your Clear-Com sales representative.

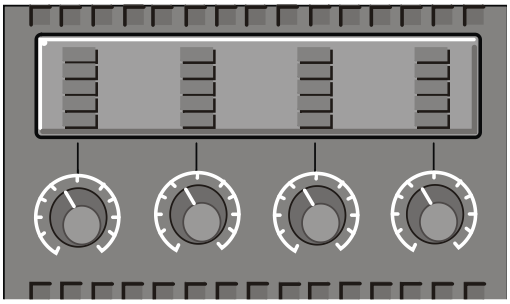


Figure 3-4: Level control module

3.3.5 AUX-101 auxiliary options module

The auxiliary options module connects your i-Series panel to a variety of audio and control inputs and outputs.

Tip: *This optional module can be installed in either the factory or the field, depending on your requirements.*

The AUX-101 module is located on the **rear-panel** of the i-Series chassis, and provides the following functions:

- General purpose inputs.
- Relay outputs.
- Speaker-feed output.
- Line-level output.
- Hot-microphone output.
- Balanced-program input.
- Auxiliary microphone input.

3.4 Standard i-Series user panel configurations

Figure 3-5 I-1430E 32 key I-Station Display with keypad

Figure 3-6 I-1470E 32 key I-Station Display + Aux-101 with keypad

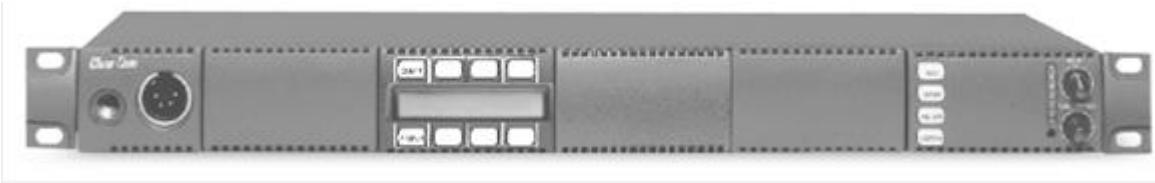


Figure 3-7 I-1110E 8 key I-Station Display, no keypad

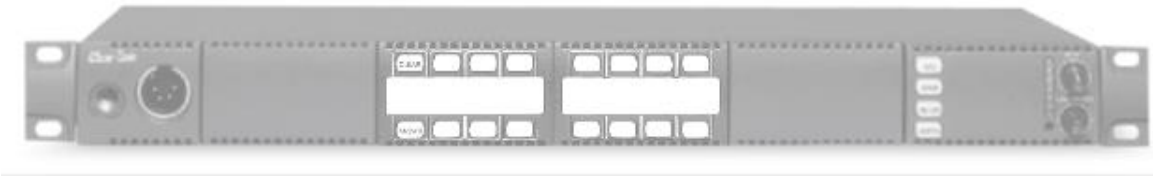


Figure 3-8 I-1200E 16 key I-Station, non-display, no keypad

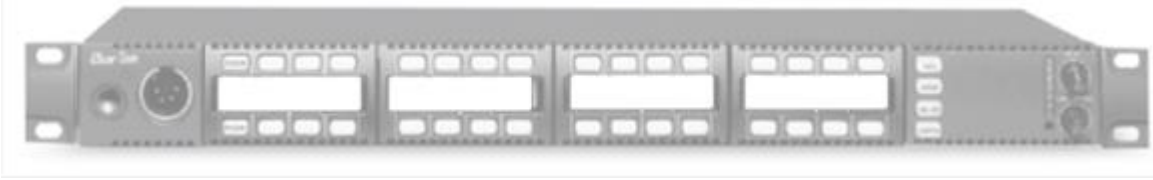


Figure 3-9 I-1400E 32 key I-Station, non-display, no keypad

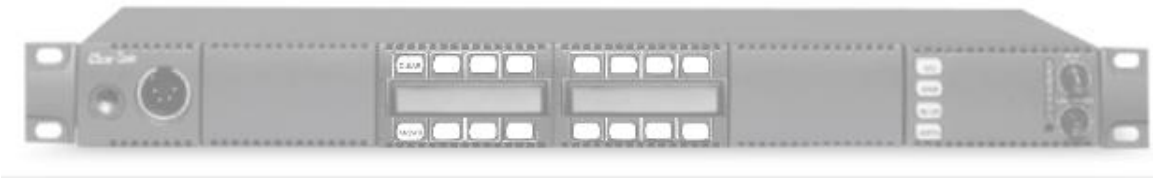


Figure 3-10 I-1210E 16-key I-Station Display, no keypad

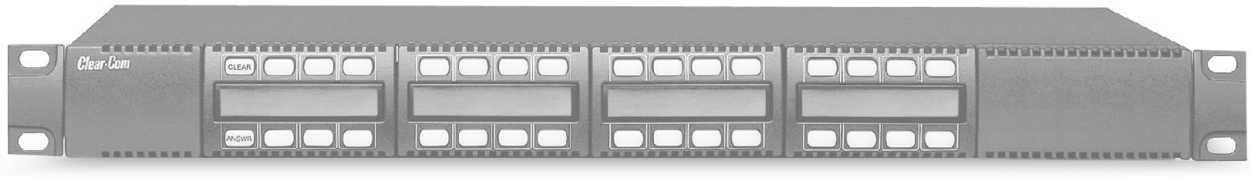


Figure 3-11 E-1410E 32-key I-Station Display Extension

Note: The I-1470E panel is the same as the I-1430E panel with the addition of a AUX-101 option card fitted. The other main panels (but not the expansion panels) may also have the AUX-101 option card fitted.

4 Using i-Series panels

This chapter describes how to use the i-Series panels, including:

- Powering up i-Series panels.
- Front panel lights and controls.
- Key module lights.
- Answer-back (reply key) functionality.
- Volume controls.
- Upgrading i-Series panels.

Tip: *For a brief description of all the 1-Series panels covered by this guide, including product numbers, see* ***Table 2-1: i-Series user panels covered by this guide****.*

4.1 Powering up i-Series panels

4.1.1 Powering up panels with non-display key modules

When a panel with **non-display** key modules is connected to power, the keys on each key module flash **red**, then **green**.

The keys then revert to their programmed colors (**red** for **Talk** or **Talk-with-Listen**, or **green** for **Listen**).

Note: If there is no communication with the Eclipse / Eclipse HX matrix, the keys will **flash red** once per second until communication to the matrix is established.

4.1.2 Powering up panels with display key modules

When a panel with display key modules is connected to power, each of the display modules will show the following message:

```
Clear-Com
Vx.x.x@2000
```

Where `V.x.x.x` represents the firmware version of the panel.

All keys will flash **red**, then **green**, and then display their programmed colors and labels if there is communication with the matrix.

If there is no communication to the matrix, the display will show the following message:

```
No connection to Eclipse.
```

The keys will then **flash red** four times per second until communication to the Eclipse / Eclipse HX matrix is established.

4.1.3 Powering up panels with a function key module

When an i-Series panel is connected to power, all of the keys on the function key module will flash **red**, then **green**, and then revert to their programmed colors if there is communication with the matrix.

Note: If there is no communication to the matrix, the keys will remain dark until communication is established.

4.2 Front panel controls and lights

Each key on any key module can be assigned as a **talk,** a **listen**, or a **talk-with-listen** in ECS / EHX, the configuration software for the Eclipse / Eclipse HX matrix system.

For more information, see the ***ECS User Guide / EHX User Guide***.

4.2.1 Non-latching keys

If the key is non-latched, the key remains active for talk or listen for as long as you hold down the key. Release the key to return the key to its non-active state.

4.2.2 Latching keys

Latching allows you to lock a key into place, so that you can talk or listen hands-free. Quickly tap a key to latch it for talk or listen. The key will glow brightly to indicate that it is active. The key will stay latched until you tap it again to return it to its non-active state.

4.2.3 Active and Non-Active Keys

When you activate a key (by pressing or latching the key to talk or listen) the key is lit:

- Bright red, for a talk or talk-with-listen key.
- Bright green, for a listen key.

The key lights up bright **red** while you talk to the destination. When you press or latch an assigned listen key, the key lights up bright **green** while you listen to the source.

A key that is not active (that is, a key that is not being used to talk or listen) is lit:

- Dim red for a talk or talk-with-listen key.
- Dim green for a listen key.

Key type	Active state	Inactive state
Talk	Bright red	Dim red
Listen	Bright green	Dim green
Talk with Listen	Bright red, when pressed / latched for talk. Bright green, when pressed / latched for listen	Dim red, when pressed / latched for talk. There is no non-active listen mode. A talk with listen key always reverts to non-active talk.

Table 4-1: Keys: active and inactive color coding

4.2.4 Alternative text key

The EHX software can configure an alternative text key called **Show Alt Text** to enable text to change between normal text and alternate text.

The **Show Alt Text** key can be placed anywhere on the panel. This key can be placed on all shift pages concurrently if desired to allow easy access.

When selected it will turn red, and the panel will show the alternate text.

Alias, VSM and PM text labels will override whichever state the panel is in.

One possible use of alternate text is to set up a dual language configuration on the panel, for example to allow panels to display Arabic by default in a particular Middle Eastern broadcast installation. English speakers could then select the Show Alt Text key on a panel to see the English equivalents to the Arabic labels.

Another use could be that both the role name and user name could be configured for each panel or beltpack port. This would allow panel users to see either the name or the role depending on the Alt Text mode selected.

4.3 Using keys to indicate status

A key can be programmed to light up in a variety of ways to indicate its status.

Note: If you decide to use one of the following options, it must usually first be set up in ECS / EHX, the configuration software for the Eclipse / Eclipse HX system.

4.3.1 Call waiting light (ANSWR key)

When a source calls an i-Series panel, the **ANSWR** key will flash **bright red** at the call waiting rate (four times per second). The source will be displayed in the call waiting stack above the **ANSWR** key.

Audio from the source can be heard at the i-Series panel.

Note: If any other key on the panel is assigned to the source this key will also flash at the call waiting rate.

When you press the **ANSWR** key (or another key assigned to the source and flashing) to talk, the **ANSWR** key and any other key assigned to the source **stops flashing** and is lit **bright red** to indicate that the call is active.

When you release the key to take the call it becomes dim red to indicate that it is not active.

Note: Any other key associated with the call is also displayed dim red.

If a call is being answered when a *second* source calls you, the **ANSWR** key will **not** flash at the call-waiting rate, but will continue to glow **solidly bright red** to indicate that:

- The key is active.
- The new call has been added to the call waiting stack on the **ANSWR** key.

If there is a key on the i-Series panel assigned to the source of the new call this will **flash bright red** at the call rate. Audio from the stacked call will **not** be heard. Further calls will also be added to the answerback stack until the limit of eight calls is reached.

To answer the second call, the first call must be terminated by releasing the key pressed to answer the first call.

The first call will then be cleared from the call waiting stack when:

- The Answerback Auto Clear timeout threshold is reached.
- You press the CLEAR key.

The **ANSWR** key will then **flash red** at the call waiting rate to signal the next call is waiting.

Answerback Auto Clear

The **Answerback Auto Clear** option sets the timeout before the current call is removed from the answer-back stack, after the call has been ended. The Answerback Auto Clear timeout option is set in ECS / EHX to a value between 1 – 60 seconds (or Off).

For more information, see the ***ECS / EHX User Guide***.

4.3.2 In use light

A key will **double-flash once per second** to indicate that a destination you are trying to call is in use.

The In-Use light option is set in ECS / EHX. For more information, see the ***ECS / EHX User Guide***.

4.3.3 Telephone off-hook light

A key will **flash red** once per second if a telephone interface is assigned to that key, and the telephone interface is off-hook. The Eclipse / Eclipse HX matrix will cause each key assigned to the telephone interface on every panel

in the system to flash at the off-hook rate whenever the telephone interface module (TEL-14) is active (off-hook) at one or more of the panels.

If you press or latch a key that is flashing at the telephone off-hook rate, the key will glow **solidly bright red** to indicate that the key is active. When you release the key, it will resume flashing at the telephone off-hook rate.

The telephone off-hook light is set in ECS / EHX. For more information, see the ***ECS / EHX User Guide***.

4.3.4 Radio-receiver active light

The light on a key will **flash red** once per second if a radio receiver is assigned to that key, and the radio receiver is active.

The Eclipse / Eclipse HX matrix will cause each key assigned to the radio receiver on every panel in the system to flash at the radio-receiver active rate whenever the radio receiver is active at one or more of the panels.

If you press or latch a key that is flashing at the radio-receiver active rate, the key will glow **solidly red** to indicate that the key is active.

When you release the key, it will resume flashing at the radio-receiver active rate.

The radio-receiver active light requires:

- That the radio receiver is connected using a FOR-22 interface module.
- Enabling in ECS / EHX, in the **Advanced Settings > Tallies** options for the FOR-22 interface module.

For more information, see the ***ECS / EHX User Guide***.

4.3.5 Panel connected light

When the **Station Connected Tally** option is selected in ECS / EHX (under **Advanced Settings > Global Settings**), the key assigned to a destination panel will **flash red** once per second on your user panel, whenever that destination panel is connected to the Eclipse / Eclipse HX matrix.

The Station Connected Tally is set up in ECS / EHX. For more information, see the ***ECS / EHX User Guide***.

Note: This option is primarily used when a destination panel is connected to the matrix using a long-line link that might be active only at certain times.

4.3.6 Audio-presence light

If you assign a source to your panel as a listen-only key, the key will **flash green** once per second if there is audio present at the source.

The audio-presence light is set up in ECS / EHX. For more information, see the ***ECS / EHX User Guide***.

4.3.7 Incompatible firmware light

If the firmware on your panel is incompatible with the matrix, all lights on the panel will blink dim red once per second.

The display shows the following message:

```
No connection to Eclipse.
```

4.4 Key module lights (summary)

Module key	Light color	Blink rate
Listen-only key (inactive)	Dim green	None (solid)
Talk or Talk with listen key (inactive)	Dim red	None (solid)
Listen-only key (active)	Bright green	None (solid)
Talk key (active)	Bright red	None (solid)
Listen component only of Talk with Listen key (active)	Bright green	None (solid)
Call waiting	Bright red	4 x per second
In use	Dim red	2 x per second
Audio presence	Dim green	1 x per second
Panel connected	Dim red	1 x per second
Telephone off-hook	Dim red	1 x per second
Radio receiver active	Dim green	1 x per second
Incompatible firmware	Bright red	1 x per second

Table 4-2: Key module lights (summary)

4.5 Answer-back (ANSWR)

With the **answer-back feature** you can reply to incoming calls from sources not assigned to keys on your i-Series panel. You can also call out to destinations not assigned to keys on your panel.

Tip: *The answer-back feature is known as the **Reply key** on V-Series panels.*

If a second unassigned source calls you while you are speaking to the first unassigned source, the second call is placed in the answer-back stack, a group of up to eight waiting calls that are answered in sequence.

All incoming calls can be answered at the answer-back keys, whether from sources with assigned keys on the intercom panel or from sources without assigned keys. Typically, however, only calls from sources without assigned keys are answered there.

The following sections describe how to use the answer-back feature.

4.5.1 Using the Answer-back (ANSWR) and Clear (CLEAR) keys

The Answer-back key (**ANSWR**) is the leftmost lower key on your i-Series panel. The Clear key (**CLEAR**) is the leftmost upper key on your i-Series panel.

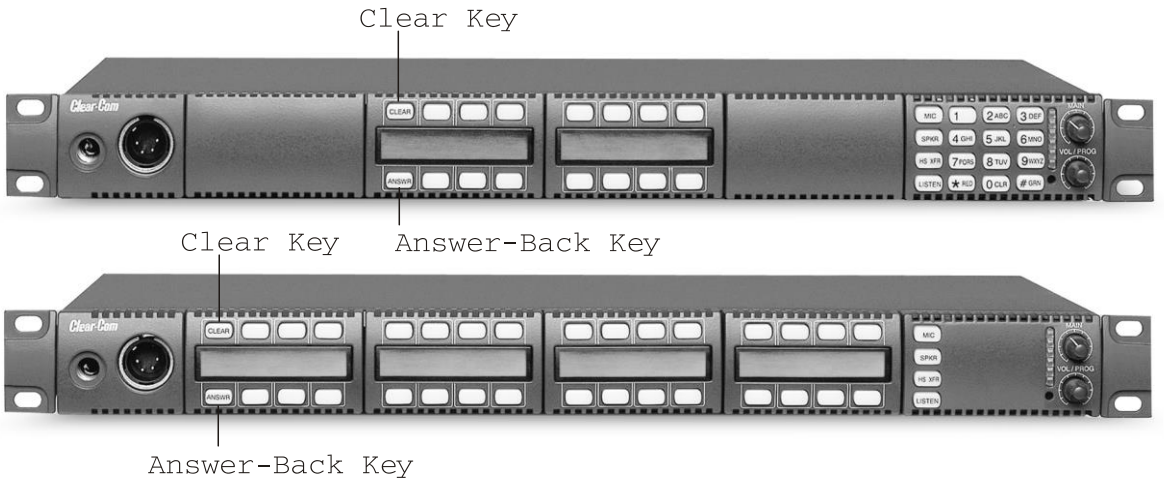


Figure 4-1: Answer-Back (ANSWR) and Clear (CLEAR) keys

To answer a call with the Answer-back (ANSWR) key, when a source that is not assigned to a key on your panel calls you, press the ANSWR key when:

- The calling source's label appears in the display above the ANSWR key.
- The ANSWR key **flashes bright red** to indicate a waiting call.

If you do not press the ANSWR key, the answer-back time-out period lapses and the call is automatically removed from the answer-back stack.

Note: The answer-back time-out period is set in ECS / EHX. It can be set to Off or between 10 - 60 seconds. After the time-out period has elapsed, the call will be r*emoved and will no longer be available to answer.*

To answer a call from an unassigned source at the Answer-back (**ANSWR**) key:

1. Press and hold the **ANSWR** key to talk to the caller. The key is lit solid red to indicate that it is active.

   Note:
   *The **ANSWR** key cannot be latched.*

2. When you complete the call, release the ANSWR key. The key is lit dim red to indicate that it is inactive.
3. Press the **CLEAR** key to remove the caller's label from the display.

   Note:
   *The display clears automatically when the answer-back time-out period elapses after you release the **ANSWR** key.*

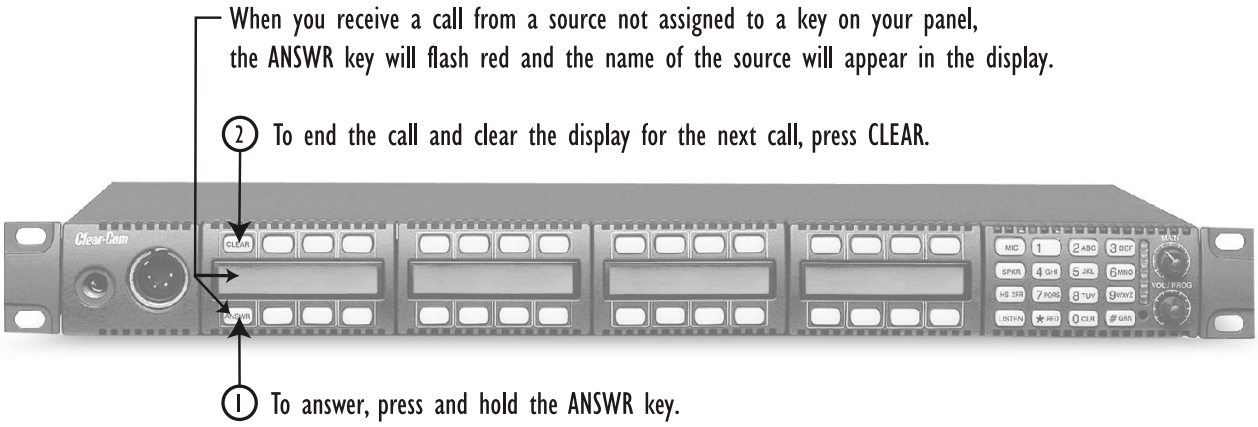


Figure 4-2: Answering a call from an unassigned caller

If a **second** unassigned source calls you while you are talking to the first unassigned source:

- The second caller's audio will come through on your panel's speaker.
- The second call will be placed in the **Answer-back stack** (a call list of up to eight possible waiting calls).
- The second caller's label will appear **directly above** the current caller's label. The current caller's label appears in the display directly above the **ANSWR** key.

The light on the **ANSWR** key will **flash red**, at the call-waiting rate (see above), to show that a call is waiting and that a call is currently in progress.

Note:
*The **ANSWR** key flashes between **bright red**–dim red instead of the usual **bright red**–**off,** to show that a call is also currently in progress.*

To answer a call waiting in the answer-back stack:

1. Press and hold the **ANSWR** key to speak to the caller.

   The new caller's label will appear in the position directly above the **ANSWR** key, while the next waiting call (if there is one) will display in the position directly above it. A total of eight calls can wait in the answer-back stack.

   Note:
   *Only the two most recent caller's labels will appear in the display above the **ANSWR** key*.
2. When you complete the call, release the **ANSWR** key.
3. Press the **CLEAR** key to remove the caller's label from the display.

   The next unassigned caller's label appears in the display above the **ANSWR** key.

Note:
*The display clears automatically when the answer-back time-out period elapses after you release the **ANSWR** key.*

4. When the next caller's label appears above the **ANSWR** key, press the **ANSWR** key to talk to the caller.
5. Repeat steps 2 and 3 until all the calls in the Answer-back stack are answered.

4.5.2 Answer-back (ANSWR) and Clear (CLEAR) key lights (summary)

ANSWR key	Light color	Blink rate
No calls at Answer-back	Off	N / A
Calls received at Answer-back	Bright red	4 x second
Answer-back (ANSWR) key pressed	Dim red	None (solid)
CLEAR key	Light color	Blink rate
No calls at Answer-back	Off	N / A
Answer-back stack not empty	Dim green	None (solid)
Clear (CLEAR) key pressed	Bright green	None (solid)

Table 4-3: Answer-back (ANSWR) and Clear (CLEAR) key lights (summary)

4.6 Speaker and headset volume controls

4.6.1 Adjusting the main volume

The master volume level on your panel's speaker and headset is adjusted using the main volume control on the **function key module**.

Turn the control clockwise to increase the volume, counterclockwise to decrease it.

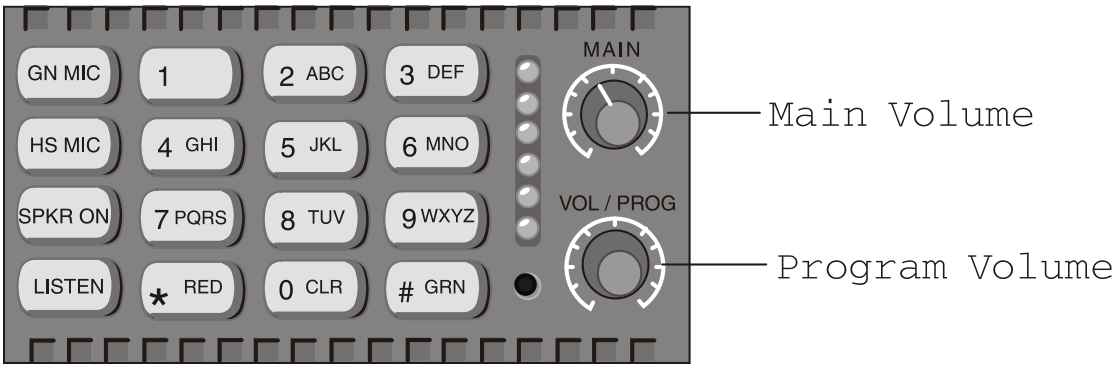


Figure 4-3: Main volume and program input volume controls

4.6.2 Adjusting the program input volume

Note: You receive program input at your panel through the **AUX-101 auxiliary options module.** The AUX-101 module must be installed to the panel before you can adjust the program input.

You adjust the program input volume on your panel's speaker and headset using the program input volume control (**VOL/PROG**) on the function key module.

Turn the knob clockwise to increase the volume, counterclockwise to decrease it.

Program input volume lights

The six LEDs located to the left of the program volume knob indicate the program volume level. As the volume goes up or down, the number of LEDs that are lit changes.

Minimum volume is indicated by **one** illuminated LED. The maximum volume is indicated by **six** illuminated LEDs.

You control the brightness of the six-segment LED with the Display Brightness settings in ECS / EHX. For more information, see the ***ECS / EHX User Guide***.

Tip: *You can also use the program volume knob to adjust listen levels, to scroll through menu items, and to select menu items. These functions are discussed later in this chapter.*

4.6.3 Adjusting listen levels

When you are required to monitor several incoming sources at once, you can vary the volume of the sources by setting the **listen levels**.

For example, in a control room you may be listening simultaneously to the lighting department, the sound department, and the tape editing department, but because you need to cue the director when the show is ready to go on the air, listening to the tape editing department takes highest priority. You need to adjust the volumes (the listen levels) of the monitored sources so that the tape editing department is louder than the others.

Method 1

To adjust the listen level of an incoming source:

1. Press the desired listen key. The listen key is lit **bright green**.
2. Press and release the VOL/PROG control. The listen key flashes dim green.
3. Press and release the listen key again. The listen key is lit **bright green**.

4. To **increase** the source's volume (listen level), turn the VOL/PROG control clockwise.
   To **decrease** the source's volume (listen level), turn the VOL/PROG control counterclockwise.
5. When the required volume has been reached, press and release the VOL/PROG control to accept the setting.
6. Press and release the listen key. The source's volume (listen level) is now set at the required level.

Note: If you try to push an active listen path higher than the maximum possible volume, you will drive the volume of all other active paths downward, putting more emphasis on the desired path.

Method 2

The listen levels may also be adjusted using the **Local Preferences** menu (requires a 16-button key module).This method only works with a 16-button function key module.

To adjust the listen levels, using the **Local Preferences** menu:

1. To display a list of menu items, press the **Enter** key (labeled **#GRN**) on the numeric keypad.

2. The top two menu options are displayed in the panel's leftmost display. Scroll to **Local Preferences**, using the VOL/PROG control.

   To select **Local Preferences**, press the VOL/PROG control or press **7** on the numeric keypad.

   Tip: *You can also scroll through the menu items one at a time by pressing the **CLEAR** key to scroll up the menu and the **ANSWR** key to scroll down the menu.*

3. In Local Preferences, scroll to **Listen Level Adjust**.

   To select **Listen Level Adjust**, press the VOL/PROG control or press **5** on the numeric keypad.

   Listen Level is displayed in the panel's leftmost display, indicating that you are in listen-level-adjust mode.

   Tip: *To quickly enter **Listen Level Adjust** mode, simply press three keys in quick succession: the Enter key (labeled **#GRN**), followed by the **7** key, followed by the **5** key.*

4. Tap any **listen key** or **talk-with-listen key** to select it. The key is lit **bright green**.

5. Rotate the VOL/PROG knob clockwise to increase the source's volume or counterclockwise to decrease the source's volume.

6. Continue adjusting listen levels by first tapping a key to select it, and then rotating the VOL/PROG knob to adjust the source's volume.

7. To exit **Listen Level Adjust** mode, press the **Escape** key (labeled ***RED**).

   Tip: *You can also exit listen-level-adjust mode by not pressing a key on the numeric keypad* (**0–9, *, #**) *for five seconds. After five seconds the mode times out.*

Method 3

To adjust the listen level of an incoming source:

1. A key lit **bright green** indicates an incoming listen source. To adjust the listen level (volume), press **1** on the numeric keypad.
2. Turn the VOL/PROG control clockwise to increase the source's listen level (volume) or counterclockwise to decrease the source's listen level (volume).

4.6.4 Resetting listen levels to the default level

You can reset all listen levels to the default, which is the highest possible volume. To reset all listen keys back to the default level:

1. Enter **Local Preferences** mode by pressing the **7** key on the numeric keypad.
2. The display on the leftmost key module shows the first two items in a list of local preferences. Scroll to **Reset Listen Levels** by turning the VOL/PROG control.

   Select **Reset Listen Levels** by pressing the VOL/PROG control. The listen levels are reset to their default level (the highest possible volume) and the display reads:

```
Listen Level Reset Sent to Matrix.
```

   Tip: *You can also scroll through the list one item at a time by pressing the **CLEAR** key to scroll up the list and the **ANSWR** key to scroll down the list.*

Note: All listen keys are now reset to the default (the highest possible volume).
When you activate a listen key at your panel, audio will come in at the default level. If a caller sends audio to you, that audio will come into your panel at the highest possible volume.

4.7 Upgrading the i-Series panel firmware

Caution: Central upgrade from EHX is not support on all i-Series panels. When upgrading i-Series panels with the part number 45PC0001 or above, you must first contact your Clear-Com sales representative.

Caution: When a firmware upgrade to an i-Series panel has started, wait for it to complete on all panels before doing any other changes to the matrix.

To upgrade the i-Series panel firmware:

1. Download the i-Series firmware upgrade to the Eclipse / Eclipse HX matrix from ECS / EHX.
2. Provided that the **Panel Prompt** option is set, the i-Series panel displays the following message:

   ```
   UPGRD TO VER nnnnn YES NO
   ```

   Each word corresponds to a key on the panel, and `nnnnn` represents the firmware upgrade number.

   The i-Series panel keys **flash**, indicating that an upgrade is available.

   Note:
   The prompt is displayed provided that the i-Series panel is online.
3. To decline the upgrade, the i-Series user presses the **NO** key (right-hand flashing). The i-Series panel returns to its normal display. If the upgrade is declined it will not be offered again until a black reset is performed on the matrix.

   To accept the upgrade, the i-Series user:

   a. Presses the **YES** key (left-hand flashing). The i-Series panel displays the following:

      ```
      ARE YOU SURE nnnnn YES NO.
      ```

      Each word corresponds to a key on the panel, and `nnnnn` represents the firmware upgrade number.

   b. If the user selects the **NO** key, the upgrade is cancelled and will not be offered again until a black reset is performed on the matrix.

If the user selects the **YES** key, the firmware upgrade is applied to the i-Series panel.

5 Using the basic function keys

The four basic function keys provide convenient one-touch access to such basic intercom functions as turning the microphone on and off.

Tip: *For a brief description of all the i-Series panels covered by this guide, see* ***Table 2-1: i-Series user panels covered by this guide.***

5.1 The four basic function keys

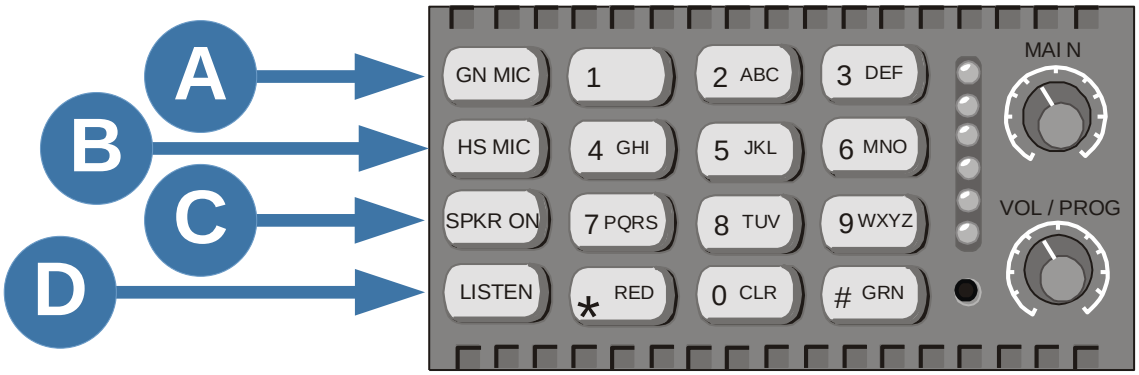


Figure 5-1: Four basic function keys, function module

Key to Figure 16: Four basic function keys, function module		
Call-out	Key	Description
A	GN MIC	Gooseneck microphone on/off
B	HS MIC	Headset microphone on/off.
C	SPKR ON	Speaker on/off.
D	LISTEN	Listen-only, call signaling and remote telephone release functions

Table 5-1: Key to Figure 16: Four basic function keys, function module

5.2 Turning the gooseneck microphone on and off

The gooseneck microphone key (**GN MIC**) on the function module turns your panel's gooseneck microphone on or off.

Press once to turn the microphone on. Press again to turn the microphone off.

If you press a talk key while the gooseneck microphone is plugged in but off, the gooseneck microphone automatically turns on for the duration of the call.

The GN MIC key is lit:

- Dim green whenever the gooseneck microphone is present but off.
- **Bright green** whenever the microphone is present and on.

If a gooseneck microphone is **not** present, the GN MIC key will not be lit.

5.2.1 Switching from the gooseneck microphone to the headset

The gooseneck microphone is your panel's default microphone **unless** a headset is connected.

When a headset is connected, an auto-sensing circuit in the panel automatically turns the headset microphone on and turns the gooseneck microphone off. The headset microphone *always* takes precedence over the gooseneck microphone.

5.3 Turning the headset microphone on and off

The headset microphone key (**HS MIC**) turns your panel's headset microphone on and off.

Press once to turn the microphone on. Press again to turn the microphone off.

The HS MIC key is lit:

- Dim green whenever a headset microphone is present but off.
- **Bright green** whenever a headset microphone is present and on.

When a headset microphone is not present, the key will not illuminate.

5.3.1 Switching from the headset to the gooseneck microphone

When a headset is connected to the panel, the headset microphone automatically becomes active and the gooseneck microphone is switched off. To switch to the gooseneck microphone, press the gooseneck microphone key (GN MIC). When the headset is disconnected, the gooseneck microphone automatically becomes active.

5.4 Turning the speaker on and off

The speaker on/off key (**SPKR ON**) only functions when a headset is connected to the panel.

Press the key once to turn the headset speaker off, and again to turn the headset speaker back on.

Note:
When the headset speaker turns off, the panel speaker will turn on and vice versa.

The **SPKR ON** key is lit:

- Dim green when the headset speaker is off.

- **Bright green** when the headset speaker is on.

Unlike the microphones, you **cannot** turn off both speakers (the panel and the headset speaker) at the same time. The panel loudspeaker is *always* active unless a headset or alternative speaker source has replaced it.

Note:
The SPKR ON key is non-functional when a headset is not connected.

5.5 Using the Listen (LISTEN) key

You can use the Listen (**LISTEN**) key to:

- Place a **talk-with-listen** key in monitor mode.
- Send call signals.
- Release remote telephone lines.

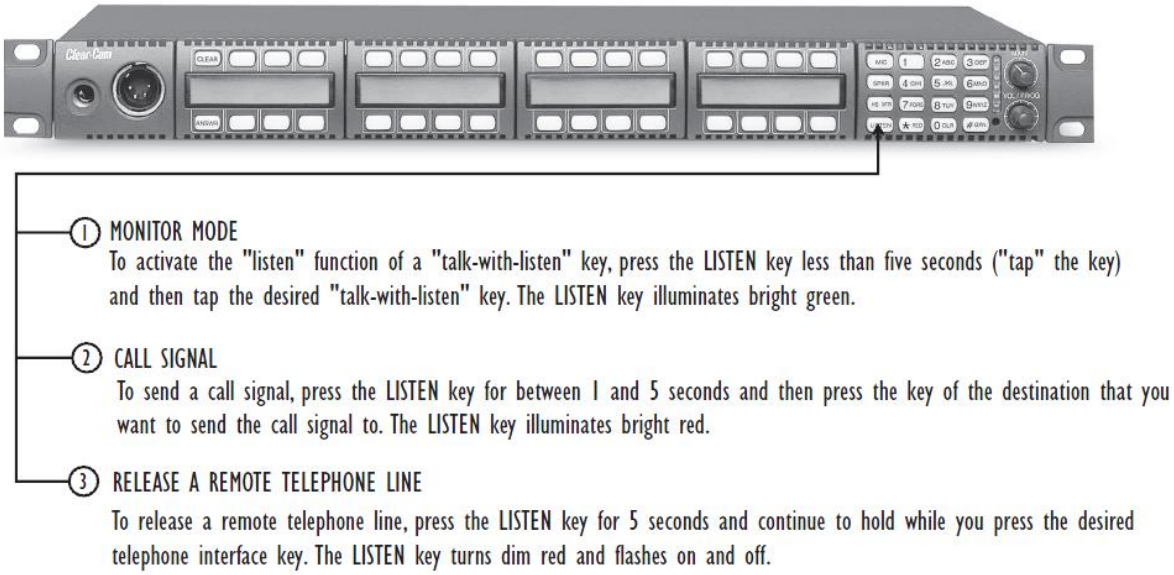


Figure 5-2: The three functions of the LISTEN key

5.5.1 Placing a talk-with-listen key in monitor mode

Monitor mode enables you to momentarily change the status of a key from **listen-only** to **talk-with-listen**. By pressing and holding the listen-only key, you momentarily change it to a talk-with-listen key.

To activate the monitor mode of a talk-with-listen key:

1. Press the **LISTEN** key on the function key module for **less than one second** (tap the key). The **LISTEN** key is lit **bright green**.

   To indicate that its monitor mode is available for activation, each **talk-with-listen** key is lit dim green. To place a t**alk-with-listen** key in monitor mode, press (tap) a dim-green key.

To indicate its change to an active **listen-only** key, the key is lit **bright green**.

2. To talk to the source, press and hold the key.

   To indicate that a talk-with-listen call is active, the key is lit **bright red**. When you release the key, it reverts back to its active **listen-only** mode (**bright green**).

   Note:
   The talk-with-listen function cannot be latched, and is only active while you press the key.

To cancel the key's monitor mode and revert back to **talk-with-listen** mode:

1. Press (tap) the **LISTEN** key on the function-key module.

2. Tap the desired active listen-only key (**bright green**).

   The formerly active listen-only key is now lit dim red to indicate that it has reverted back to its non-active talk-with-listen mode. If you press the key to talk, it is lit **bright red**.

   Note:
   You must tap the LISTEN key on the function key module for each key you activate in monitor mode.

5.5.2 Sending call signals

A call signal is an electronic signal that is sent from one user panel or interface to another to:

- Get a panel operator's attention.
- Activate a relay (for example, to open a door, set off an alarm, or activate a public address (PA) system).

Tip: *To use call tones, call tones must be enabled for the destination user panel or interface in ECS / EHX. For more information, see the **ECS / EHX User Guide**.*

To send a call signal:

1. Press and hold the **LISTEN** key for between 1 and 5 seconds. To indicate that you have entered call-signal send mode, the **LISTEN** key is lit **bright red**.
2. Press the key of the destination that you want to send the call signal to.

   A call signal of **three loud beeps** is sent to the destination every time that you press the destination's key.
3. Repeat step 2 for any other destination you want to send a call signal to.
4. To exit **call-signal send** mode, press (tap) the **LISTEN** key and release.

Tip: *You can also exit **call-signal send** mode by simply not pressing a display key for five seconds. The mode will automatically time-out.*

5. On exiting **call-signal send** mode, the **LISTEN** key changes from **bright red** to **no illumination**.

Sending a call signal to multiple destinations

You can send a call signal to any destination with a designated key on your panel. If more than one destination is assigned to a key, each destination will receive the call signal. If the destination is a partyline, then every panel listening on the partyline will receive the call signal.

Note: The call signal is sent at the page-override volume level, which you set in ECS / EHX. For more information, see the **ECS / EHX User Guide**.

5.5.3 Releasing remote telephone lines

To release a telephone interface that has been left off-hook with the LISTEN key:

1. Enable **remote telephone release** for the panel in ECS/EHX.

   Tip: *Often this feature will already be set up in ECS/EHX. For more information, see the ECS/EHX User Guide.*

2. Press and hold the **LISTEN** key for more than 5 seconds. The **LISTEN** key turns **bright green** and flashes on and off.
3. While still holding the **LISTEN** key, press the desired telephone interface key on any key module.

   The telephone interface will hang up. All audio paths to and from the telephone interface will be deactivated.

4. Release the **LISTEN** key to exit.

5.6 Function key module lights (summary)

Basic function key	Light color	Blink rate
GN MIC key		
Gooseneck microphone off	Dim green	None (solid)
Gooseneck microphone on	**Bright green**	None (solid)
HS MIC key		
Headset not present	**Not lit (off)**	None
Headset present and off	Dim green	None (solid)

Basic function key	Light color	Blink rate
Headset present and on	**Bright green**	None (solid)
SPKR key		
Speaker on	Dim green	None (solid)
Speaker off	**Bright green**	None (solid)
LISTEN key		
No function	**Not lit (off)**	None
Listen-only call mode	**Bright green**	None (solid)
Call-signal send mode	**Bright red**	None (solid)
Remote telephone hang-up	**Bright green**	1 x second
0–9, *, # Keys		
No function	**Not lit (off)**	None
Key pressed or mode active	**Bright green**	None (solid)
Dial mode	Dim red	None (solid)
Dial mode and key pressed	**Bright red**	None (solid)

Table 5-2: Function key module lights (summary)

6 Using the advanced features

This chapter describes the advanced features of the i-Series panels, including assignments (local key, IFB, partyline and Fixed Group assignments) and local system settings (Local Preferences).

Most of the advanced features on i-Series panels are only available when the panel is connected to the Eclipse / Eclipse HX matrix.

6.1 Accessing advanced features

i-Series user panels have advanced features that you can access by either:

- **Pressing the number key associated with the feature**. For example, when you press **1** on the numeric keypad, you enter **telephone dialing mode**.
- **Scrolling through the feature menu**. For example, you can access **telephone dialing mode** by selecting **Dial** in the feature menu. The advantage of a menu is that you do not have to memorize each available key function. See "Selecting Features from the Menu" later in this chapter for more information.

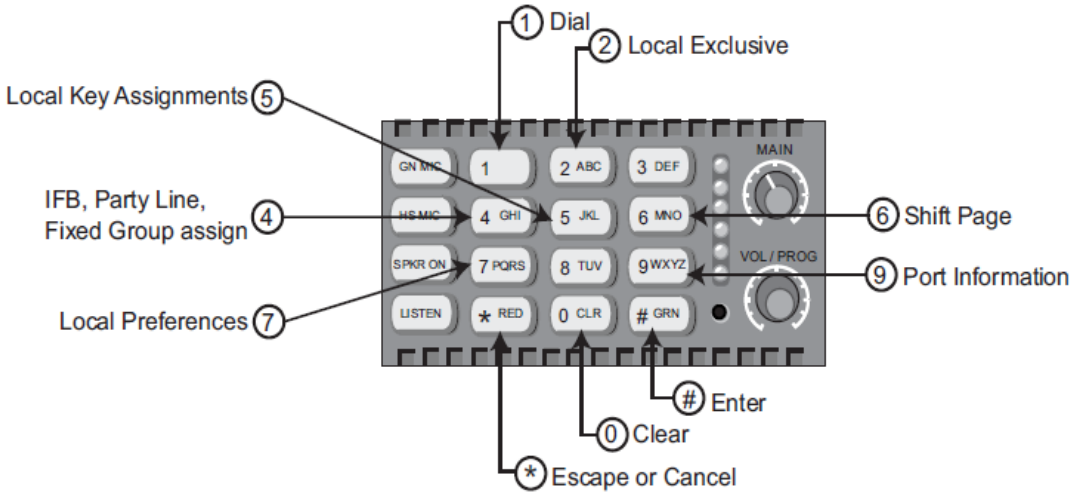


Figure 6-1: Advanced features, accessed from the numeric keypad

6.1.1 Advance features accessed by the numeric keypad (summary)

Key	Feature	Description
1	Dial	Activates telephone dialing mode

Key	Feature	Description
2	Local Exclusive	Mode temporarily deactivates all keys except for the one that is currently being used.
3	Local Page Override	Mode overrides current on/off and volume settings at a destination.
4	IFB, Partyline and Fixed Group Assignments	Mode enables sources to be assigned to IFBs, partylines and Fixed groups.
5	Local Key Assignments	Mode enables the assignment of sources and destinations to keys on your user panel.
6	Swap Page	Enables you to switch between the main page and the swap page on the user panel.
7	Local Preferences	Enables you to adjust **Listen Level Reset, Panel Mic Level, Headset Mic Level, Sidetone Level** and **Listen Level Adjust**.
9	Port Information	Comprises the panel's port number, label, associated CPU card (on the matrix), and current firmware version number.
0 CLR	Clear	Clears the current display entry and takes you back to the previous menu.
*RED	Escape or Cancel	Abandons all unsaved programming and returns the panel to normal use.
#GRN	Enter	Saves the current programming changes and reverts the panel to normal use.
VOL/PROG	Display Contrast Adjust Baud Rate Adjust	Allows you to adjust contrast lighting on displays and to adjust the panel's baud rate.

Table 6-1: Advanced features, accessed by the numeric key pad (Summary)

6.2 Telephone dialing from the keypad (#1 key)

You can dial from the keypad on a function key module as if you were dialing from a standard telephone keypad.

When you press the number keys, standard DTMF tones are generated to all active talk key destinations. Note that this feature is only available when the central matrix is connected and online.

To generate standard DTMF tones to all active talk key destinations:

1. Enter dialing mode by pressing the **1** key on the keypad. The keypad becomes a telephone touch-tone dialing pad.

   Note:
   *The word **Dial** appears in the display below the Clear (**CLEAR**) key.*

2. All 12 valid dialing keys on the keypad are lit dim red. Press keys on the numeric keypad (**0–9, *, #**) to generate standard DTMF tones to all active talk-key destinations.
3. To exit dialing mode, press the CLEAR key.

   Tip: *Dialing mode automatically times out if you do not press a key on the numeric keypad* (**0–9, *, #**) *for five seconds*.

6.3 Accessing Local Exclusive (#2 key)

In **Local Exclusive** mode, all previously latched keys on your panel deactivate temporarily while you talk exclusively to one destination or listen to one source.

Note: ***Local Excl***usive is only available when the Eclipse / Eclipse HX matrix is connected *and online.*

To use Local Exclusive mode:

1. Enter **Local Exclusive** mode by pressing the **2** key on the keypad.
2. Press and release any **talk** or **listen** key (even an already latched key).

   When you press and release a talk or listen key, all previously latched keys (both talks and listens) deactivate temporarily, and you can talk or listen from that key exclusively.

   Note:
   *The feature is only active while the key is latched in **Local Exclusive** mode. The **2** key on the keypad is lit **bright green** while this feature is active.*
3. To exit Local Exclusive mode, press the key you pressed in step 2 again to deactivate it.

   The previously latched keys return to their active state.

   Note:
   *The **Local Exclusive** feature does not work with the answer-back (**ANSWR**) key.*

6.4 Local Page Override (#3 key)

Local Page Override you to talk to one or more destination panels regardless of the on/off or volume settings at each panel's speaker. The feature overrides the current on/off and volume settings at the destination.

Tip: *You can adjust the local page override's volume level in ECS / EHX. By default, the volume is set up at 5 on a 1–10 scale, but it can be adjusted to any value on the scale.*

Note:
***Local Page Override** is only available when the Eclipse / Eclipse HX matrix is connected and online.*

To activate **Local Page Override**:

1. To enter **Local Page Override** mode, press **3** on the keypad.
2. Press any talk key (even an already latched key).

   You can now talk to all destinations associated with that key. The current on/off settings and volume levels are overridden at those panels' speakers.
   Note:
   *The **Local Page Override** feature does not work with the answer-back (**ANSWR**) key. The **3** key on the keypad is lit **bright green** while this feature is active.*

   If a key cannot be page overridden because it is assigned as an interface or partyline, there will not be an error message to indicate that the function is not available on that key.
3. To exit **Local Page Override**, release the pressed talk key.

   Tip: ***Local Page Override*** *mode automatically times out if you do not press a key on the function-key module for five seconds.*

6.5 IFB, partyline and Fixed Group assignments (#4 key)

Pressing the **4** key enables local assignments to be made for IFBs, partylines and Fixed Groups.

To access assignment mode:

1. Press the **4** key. The **CLEAR** key is lit **bright red** and **IFB** is displayed below it.
2. To access **partyline** mode press the **CLEAR** key. **PL** is displayed below the key.
3. To access **Fixed Group** mode press the **CLEAR** key again. **FG** is now displayed below the key.
4. To exist assignment mode, press the **CLEAR** key again.

6.5.1 Setting up IFB sources and destinations

Note: Only **Global IFBs with talk** are valid as IFB destinations and only **sources with listen** are valid for assignment to an IFB.

To set up IFB sources and destinations on an i-Series panel

1. Press the **4** key. The **CLEAR** key is lit **bright red** and **IFB** is displayed below it.

   All valid IFB destinations **flash red**.
2. Press the front-panel button for the required IFB destination. The destination is lit **bright red**, while all valid sources **blink green**.
3. Press a source's button to assign it to the destination. The source is lit **bright green**. Pressing the button again deactivates the assignment.

4. Repeat steps 3 and 4 until all sources are assigned to the IFB destination.
5. To exit IFB mode, press the CLEAR key three times.

6.5.2 Setting up partyline members

Note: Only **talk** and **listen** keys can be members of a partyline.

To set up partyline members on an i-Series panel:

1. Press the **4** key. The **CLEAR** key is lit **bright red** and **IFB** is displayed below it.
2. To access **partyline** mode press the **CLEAR** key. **PL** is displayed below the key.
3. All available partylines **flash red**. Press the key for the desired partyline.

   The key is lit **bright red** and all available members **flash green**.
4. Add a member to the partyline by pressing a **flashing green** key.

   The key is lit **bright green** to indicate the member has been added to the partyline.
5. To remove a member from the partyline, press that member's key (lit **bright green**).

   The key **blinks green** to indicate it is now available.
6. Repeat steps 6 and 7 until the Partyline contains all desired members.
7. To exit partyline mode, press the **CLEAR** key twice.

6.5.3 Setting up Fixed Group members

Note: Only **talk** and **listen** keys can be members of a Fixed Group.

To set up Fixed Group members on an i-Series panel:

1. Press the **4** key. The **CLEAR** key is lit **bright red** and **IFB** is displayed below it.
2. Press the **CLEAR** key. **PL** is displayed below the key.
3. To access **Fixed Group** mode, press the **CLEAR** key again. **FG** is now displayed below the key.
4. All available Fixed Groups **flash red**. Press the key for the desired Fixed Group.

   The key is lit **bright red** and available members **flash green**.
5. Add a member to the Fixed Group by pressing a **flashing green** key.

   The light is lit **bright green** to indicate the member has been added to the Fixed Group.

6. To remove a member from the Fixed Group, press the key for that member (lit **bright green**).

   The key **blinks green** to indicate it is now available.

7. Repeat steps 7 and 8 until the Fixed Group contains all desired members.
8. Press the **CLEAR** key to exit Fixed Group mode.

6.6 Local Key Assignment (#5 Key)

Local Key Assignment enables you to assign any user panel or interface in the system to a key on your panel directly from your panel. You can assign the panel or interface to your panel as a talk key, a listen key, or a talk-with-listen key.

Note: **Local Key Assignment** is only available when the Eclipse / Eclipse HX matrix is connected and online.

6.6.1 Assigning a remote destination to a talk or talk-with-listen key

To assign a remote destination to a key on your panel as a talk or talk-with-listen key:

1. Press the **5** key on the numeric keypad. A list of current panels and interfaces in the system that may be assigned as either **talk** keys or as **talk-with-listen** keys is displayed on the function key module screen.
2. Scroll through the list of current available talks and listens by either:
   - Turning the **PROG/VO**L control.
   - Pressing the **CLEAR** key to scroll up the list and the **ANSWR** key to scroll down the list.

   Tip: *The lists are sorted alphanumerically (symbols first, then numbers, then letters. You can jump to the desired alphabetical area of the list by pressing the corresponding letter key on the keypad. Press the A key to jump to the first label that begins with an A, press the B key to jump to the first label that begins with a "B," and so on.*
3. Select the desired panel or interface when it is highlighted in the display by pressing in and releasing the VOL/PROG knob.
4. Assign the selected remote panel or interface to a key on your panel by either tapping or pressing the desired key.

   Press (tap) a key for **less than** a second to assign it as a **talk-only**.

   Press (tap) a key for **more than** a second to assign it as a **talk-with-listen** key.

5. To exit assignment mode, press the Escape key (***RED**).

Tip: *To exit the current menu only, and return to the previous menu, press the **FUNCTION-CLEAR** key (**0 CLR**).*

Note: If PIN codes are set up in ECS / EHX, you must enter one of the four possible 4-digit PIN codes before entering Local Key Assignment mode. The display will ask for the PIN code at which time you must enter the correct 4-digit code.

6.6.2 Clearing a talk assignment

To clear a key's **talk** assignment on your panel:

1. Press the **5** key on the numeric keypad. A list of current panels and interfaces in the system that may be assigned as either **talk** keys or as **talk-with-listen** keys is displayed on the function key module screen.
2. The first item on the talk list is **clear**. Select **clear** by pressing in and releasing the VOL/PROG knob.

   The display reverts to showing currently assigned sources and destinations.
3. Press (tap) the key with the talk assignment that you want to clear.

   You will hear a confirmation tone of two loud beeps to indicate that the key's assignment is cleared. The key's label disappears from the display and the key itself will **not illuminate**.

6.6.3 Assigning a Remote Source to a Listen Key

To assign a remote source to a key on your panel as a listen:

1. Press the **5** key on the numeric keypad. A list of current panels and interfaces in the system that may be assigned as either **talk** keys or as **talk-with-listen** keys is displayed on the function key module screen.
2. Press the **LISTEN** key to display a list of current panels and interfaces that are available to assign as **listen** keys.
3. Scroll through the list of current available listen keys by either:
   - Turning the **PROG/VO**L control.
   - Pressing the **CLEAR** key to scroll up the list and the **ANSWR** key to scroll down the list.

   Tip: *The lists are sorted alphanumerically (symbols first, then numbers, then letters. You can jump to the desired alphabetical area of the list by pressing the corresponding letter key on the keypad. Press the A key to jump to the first label that begins with an A, press the B key to jump to the first label that begins with a "B," and so on.*
4. Select the desired panel or interface when it is highlighted in the display by pressing in and releasing the VOL/PROG knob.

   The key is lit **bright green** to indicate it is a listen key. The new label for that key appears in the display.

5. To exit assignment mode, press the Escape key (***RED**).

   Tip: *To exit the current menu only, and return to the previous menu, press the **FUNCTION-CLEAR** key (**0 CLR**).*

Note: If PIN codes are set up in ECS / EHX, you must enter one of the four possible 4-digit PIN codes before entering Local Key Assignment mode. The display will ask for the PIN code at which time you must enter the correct 4-digit code.

6.6.4 Clearing a listen assignment

To clear a key's **listen** assignment on your panel:

1. Press the **5** key on the numeric keypad. A list of current panels and interfaces in the system that may be assigned as either **talk** keys or as **talk-with-listen** keys is displayed on the function key module screen.
2. Press the LISTEN key to display all listens (sources) in the system.
3. The first item on the talk list is **clear**. Select **clear** by pressing in and releasing the VOL/PROG knob.

   The display reverts to showing currently assigned sources and destinations.
4. Press (tap) the key with the listen assignment that you want to clear.

   You will hear a confirmation tone of two loud beeps to indicate that the key's assignment is cleared. The key's label disappears from the display and the key itself will **not illuminate**.

6.7 Swap Page (#6 Key)

The **6** key toggles between the main page and the swap page.

Pressing the 6 key with the main page displayed (normally the default panel state) causes the main panel assignments to be replaced by the swap page assignments.

Pressing the 6 key again reverts to the main page display.

6.8 Local Preferences (#7 Key)

The **Local Preferences** feature enables you to adjust your panel's volume settings. Local Preferences enables you to:

- Reset listen levels to the default.
- Adjust the gooseneck microphone volume level.
- Adjust the headset microphone volume level.
- Adjust the sidetone volume level.

Note: **Local Preferences** is only available when the Eclipse / Eclipse HX matrix is connected and online.

6.8.1 Adjusting volume settings in Local Preferences

To adjust a volume setting in Local Preferences:

1. Press the **7** key on the numeric keypad. The following options are displayed in the leftmost display of the panel:
   - **Listen Level Reset.**
   - **Gooseneck Mic Volume Level Reset.**
   - **HS Mic Volume Level Reset.**
   - **Sidetone volume level reset.**
   - **Exit.**
2. Scroll through the list by:
   - Turning the **VOL/PROG** control.
   - Using the **CLEAR** key to scroll up the list and the **ANSWR** key to scroll down the list.
3. When the desired item appears in the display above the **ANSWR** key, select it by either:
   - Pressing the **VOL/PROG** control.
   - Pressing the **ENTER** key (**#GRN**).
4. Follow the directions given in the display. Go to the setting you are adjusting.
5. To exit "local preferences" mode, press the ESCAPE key (labeled "*RED") on the function keypad module. To return to the previous menu without saving any changes, press the "0" key (labeled "CLR"). You can also select "exit" from the local preferences menu to exit "local preferences" mode.

LOCAL PREFERENCE OPTIONS

Listen Level Reset

When you select Listen Level Reset, all listen keys are reset to the default level which is the highest possible volume. The leftmost display on the panel will read: "Listen Level Reset Sent to Matrix" for one second.

Gooseneck Microphone Volume Level

When you select this menu item, the leftmost display on the panel shows the current gooseneck microphone volume level, with choices for increasing or decreasing it. For example, the display may read:

Set Gooseneck Mic Volume Level

+2 dB with increase/decrease choices of:

(+7,+6,+5,+4,+3,+2,+1,0-1,-2,-3,-4,-5,-6,-7,-8)

In this example, the current gooseneck volume level is 2 dB. To increase the volume, press the ANSWR key. To decrease the volume, press the CLEAR key. Each time you press either the ANSWR key or the CLEAR key, you change the volume level by one increment. The selected volume level is highlighted in the display. You can also change the volume level by rotating the VOL/PROG knob.

When you reach the desired volume level, press either the ENTER key (labeled "#GRN"), or press the VOL/PROG knob in, as if it were a key, to save the information. Then exit "local preferences" mode.

The default outgoing microphone audio level is the highest possible level of +7 dB.

Note: As you scroll through the volume-level scale, you will hear the gooseneck microphone's volume level change accordingly. To make the change permanent however, you must select the desired value on the scale by either pressing in the VOL/PROG knob or by pressing the ENTER key (labeled "#GRN") when the value appears in the display. *If you change this parameter locally, the EHX software can only change it by performing a black reset. Otherwise, the EXH software can download changes without a black reset.*

Headset Microphone Volume Level

When you select Headset Microphone Volume Level from the menu, the leftmost display on the panel shows the current headset microphone volume level, with choices for increasing or decreasing it. For example, the display may read:

Set HS Mic Volume Level

+2 dB with increase/decrease choices of:

(+7,+6,+5,+4,+3,+2,+1,0,-1,-2,-3,-4,-5,-6,-7,-8)

In the example above, the current headset volume level is 2 dB. To increase the volume, you press the ANSWR key, and to decrease the volume, you press the CLEAR key. Each time you press either the ANSWR or CLEAR key, you change the volume level by one increment. The selected volume level is highlighted in the display. You can also change the volume level by rotating the VOL/PROG knob.

When you reach the desired volume level, either press the ENTER key (labeled "#GRN"), or press the VOL/PROG knob in, as if it were a key, to save the information. Then exit "local preferences" mode.

The default outgoing microphone audio level is the highest possible level of +7 dB.

As you scroll through the volume-level scale, you will hear the headset microphone's volume level change accordingly. To make the change permanent however, you must select the desired value on the scale by either pressing in the VOL/PROG knob or by pressing the ENTER key (labeled "#GRN") when the value appears in the display.
Note:
If you change this parameter locally, the EHX software can only change it by

performing a black reset. Otherwise, the EXH software can download changes without a black reset.

Sidetone Volume Level

When you select Sidetone Volume Level from the display, the leftmost display on the panel shows the current sidetone level, with choices for increasing or decreasing it. For example, the display may read:

Set Sidetone Volume Level

+10 dB with increase/decrease choices of:

(+30, +28, +26, +24, +22, +20, +18, +16, +14, +10, +8, +6, +4, +2, 0)

In this example, the current sidetone level is 10 dB. To increase the sidetone, you press the ANSWR key, and to decrease the sidetone, you press the CLEAR key. Each time you press either the ANSWR or CLEAR key, you increase the sidetone level by one increment. The selected volume level is highlighted in the display. You can also change the sidetone level by rotating the VOL/PROG knob.

When you reach the desired volume level, either press the ENTER key (labeled "#GRN"), or press the VOL/PROG knob in, as if it were a key, to save the information. Then exit "local preferences" mode.

As you scroll through the volume-level scale, the sidetone volume level will change accordingly. To make the change permanent however, you must select the desired value on the scale by either pressing in the VOL/PROG knob or by pressing the ENTER key (labeled "#GRN") when the value appears in the display.
Note:
If you change this parameter locally, the EHX software can only change it by performing a black reset. Otherwise, the EXH software can download changes without a black reset.

Exit

When you select the "exit" menu item, you exit "local preferences" mode. To select the item, scroll to it, then press the VOL/PROG knob in or press the ENTER key (labeled "#GRN").

6.9 Accessing port information (#9 Key)

The port information feature gives you the following information about your panel:

- The panel's port number at the central matrix
- The panel's label at the central matrix
- The panel's current firmware version number

Your panel must be connected to the central matrix to access all of the port information. If your panel is not connected to the central matrix, only the panel's current firmware version number will be displayed.

To obtain port information:

1. Press the "9" key on the numeric keypad to enter "port information" mode.
   The leftmost display on the panel will show the panel's current matrix port number, matrix label, and firmware version number.
2. Press the ESCAPE key (labeled "*RED") to exit.
   The display will automatically time out after five seconds.

You can also access this feature through the menu. For more information, see "Accessing Feature Menus" later in this chapter.

6.10 Clearing the Current Programming:

1. Press the CLEAR key (labeled "0 CLR") on the numeric keypad to clear the current entry on the leftmost display and take you back to the previous menu, if any.

6.11 Escaping the Current Programming

1. Press the ESCAPE key (labeled "*RED") on the numeric keypad to abandon all unsaved programming and revert the panel to normal use.

6.12 Entering the Current Programming

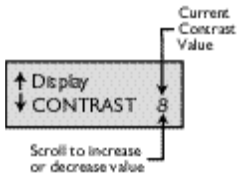
1. Press the ENTER key (labeled "#GRN") on the numeric keypad to save the current programming changes and revert the panel to normal use.

6.13 Adjusting Background Lighting

You can adjust the background lighting on front-panel displays directly from your i-Series panel. You can also adjust the panel's baud rate directly from the panel.

To adjust background lighting on all front-panel displays on the panel:

1. Press the VOL/PROG knob in, as if it were a key, for three seconds.
   The panel's leftmost display shows the first two items in a five-item list: (1) Set Baud Rate, (2) Display Contrast, (3) Module Information, (4) panel Information, and (5) Exit.
2. Scroll through the list by rotating the VOL/PROG knob.
   You can also scroll through the list one item at a time by pressing the "CLEAR" key to scroll up the list and the "ANSWR" key to scroll down the list.
3. When the list item "Display Contrast" is highlighted, select it by pressing in and releasing the VOL/PROG knob, as if it were a key.
   A submenu, as shown in Figure 3-6, appears in the display showing the current contrast value for the panel's displays.



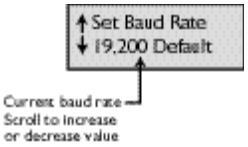
Submenu of Display Contrast Values

4. Scroll through the range of values by rotating the VOL/PROG knob. The values range from the lowest contrast value of 0 to the highest contrast value of 10.
5. When the desired value appears in the display, select it by pressing the ENTER key (labeled "#GRN"). The selected value goes into effect immediately.
6. Exit from the submenu by pressing the ESCAPE key (labeled "*RED"). To escape the submenu and return to the previous menu, press the CLEAR key (labeled "CLR").

To change the panel's baud rate:

1. Press the VOL/PROG knob in, as if it were a key, for three seconds. The panel's leftmost display shows the first two items of a five item list: (1) Set Baud Rate, (2) Display Contrast, (3) Module Information, (4) Panel Information, and (5) Exit.
2. Scroll through the list by rotating the VOL/PROG knob. You can also scroll through the list one item at a time by pressing the CLEAR key to scroll up the list and the ANSWR key to scroll down the list.
3. When the list item "Set Baud Rate" is highlighted, select it by pressing in and releasing the VOL/PROG knob, as if it were a key.

A submenu, as shown in Figure 3-7, appears in the display showing the current baud rate.



Submenu of Baud Rate Values

4. Scroll through the submenu of baud rates by rotating the VOL/PROG knob.
   The submenu gives you a choice of four baud rates: 19,200 (Default), 9600, 4800, and 2400 baud.
5. When the desired baud rate appears in the display, select it by pressing the ENTER key (labeled "#GRN"). The selected baud rate goes into effect immediately.
6. Exit from the submenu by pressing the ESCAPE key (labeled "*RED"). To escape the submenu and return to the previous menu, press the CLEAR key (labeled "0 CLR").

The Eclipse MVX-A16 card does not accept anything other than 19k2 baud rate. These baud rates are useful when used with 3rd party interfaces only).

6.14 Selecting a Feature from the Feature Menu

The advantage of using the menus is that you can see all of the available features listed and then select the desired feature simply by pressing the VOL/PROG knob when the feature's menu item appears in your panel's display.

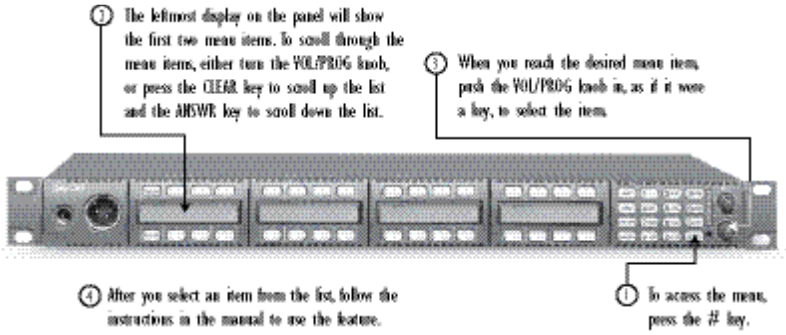


Figure 6-2 Selecting a Feature from the Feature Menu

To select a feature from the feature menu:

1. Press the ENTER key (labeled "#GRN") on the numeric keypad.
   The leftmost display on the panel will show the first two menu items.
2. Scroll through the menu items by pressing the "ANSWR" key to scroll down the list and the "CLEAR" key to scroll up the list. Each time you press the "ANSWR" key or the "CLEAR" key, you scroll one item on the list.
   You can also rotate the VOL/PROG knob to scroll through the menu items.
3. When you reach the desired menu item, press the VOL/PROG knob in, as if it were a key, to select the item.
   To exit from the menu, press the ESCAPE key (labeled "*RED").
4. After you select a feature, follow the instructions from the appropriate section in this chapter to use the feature.

You can also select a menu item simply by first pressing the ENTER key (labeled "#GRN"), then pressing the number key that corresponds to the menu item—for example, the 1 key for the first menu item, the 2 key for the second menu item, and so on. This method is often quite faster than scrolling through several menu items to select an item. The same procedure can be used for submenus.

7 Connecting to an Eclipse Matrix, to AC Power, and to Audio Options

7.1 Rear-Panel Modules

- You connect an i-series intercom panel to the central matrix, to audio options, and to an expansion panel through the connectors located on the panel's rear panel. The connectors are organized into the following two modules:
- The communications module, which is standard on all i-series intercom panels. This module connects an i-Series panel to the central matrix and, if required, to an expansion panel.
- The auxiliary options module, which as its name implies, is optional. This module connects an i-Series panel to a variety of audio and control functions. The functions available from this module are described later in this chapter.

The panel's rear panel also contains an AC power connector to the panel's internal universal AC power supply.

Figure 7-1 Rear Panel of an i-Series Intercom Panel illustrates the rear panel of an i-Series intercom panel.

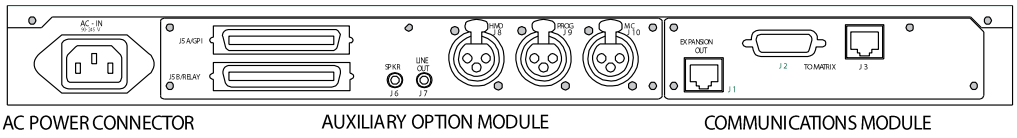


Figure 7-1 Rear Panel of an i-Series Intercom Panel

7.2 AC Power

The leftmost connector in the illustration, labeled "AC Power Connector," connects the panel to the internal universal AC power supply. The power supply operates over a voltage range of 90 to 245 VAC and a frequency range of 45 to 65 Hz. The maximum power input is 60 watts, with 30 watts typical and 30 A (amps) peak inrush.

7.3 Communications Module

The communications module connects an i-Series panel to the central matrix and to an expansion panel. There are three connectors on the communications module, labeled J1 through J3, as shown in Figure 7-2 Communications Module Connectors.

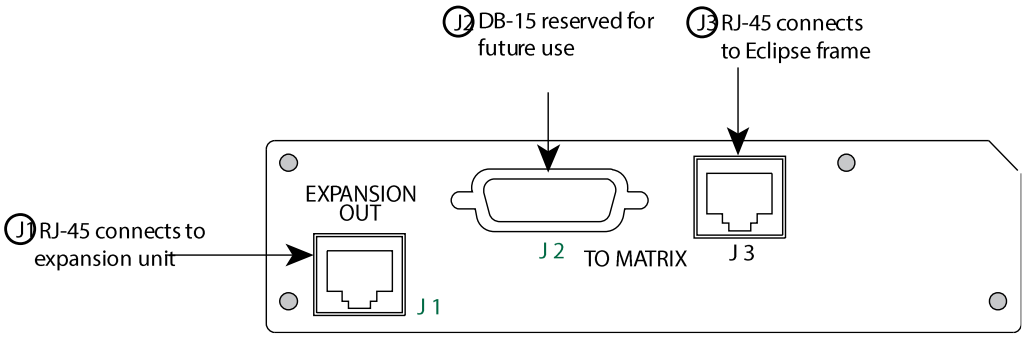


Figure 7-2 Communications Module Connectors

7.3.1 Expansion Out Connector

The connector labeled J1 is an RJ-45F that connects the i-Series panel to an expansion panel. Shielded category-5 cable is required.

7.3.2 DB-15M Connector (Reserved for Future Use)

The connector labeled J2 is a DB-15M connector reserved for future use.

7.3.3 To Matrix Connector

The connector labeled J3 is an RJ-45F that connects the i-Series panel to an Eclipse matrix. Shielded category-5 cable is required.

7.4 AUX-101 Auxiliary Options Module

The auxiliary options module connects your i-Series panel to the following audio and control inputs and outputs:

- General purpose inputs
- Relay outputs
- Speaker-feed output
- Line-level output
- Hot-microphone output
- Program input
- Auxiliary microphone input

Figure 7-3 Auxiliary Options Module Connectors shows the location of each connector on the auxiliary options module.

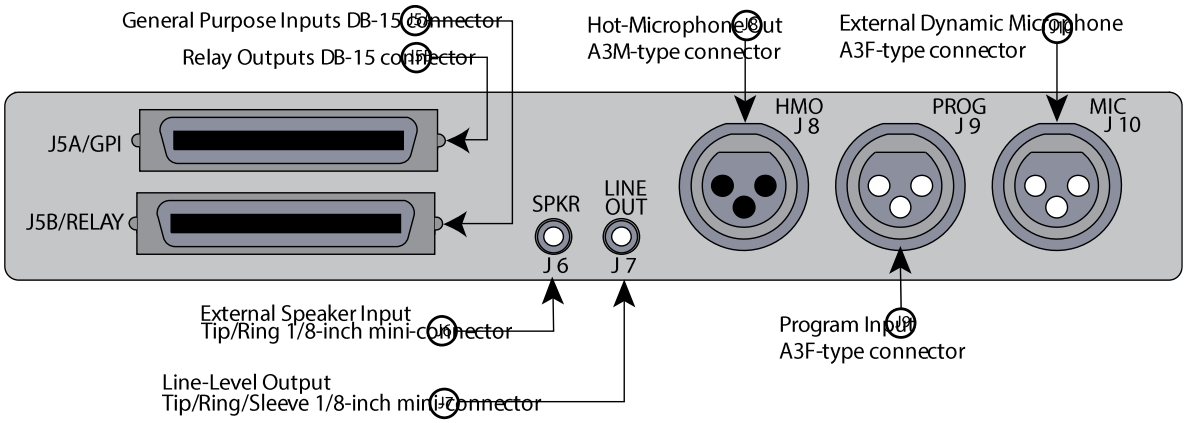


Figure 7-3 Auxiliary Options Module Connectors

7.4.1 General Purpose Inputs Connector

The DB-15F connector labeled "J5A" connects your i-Series panel to two local general purpose inputs (GPIs). The remaining six local general purpose inputs are reserved for future use.

The general purpose inputs connector is provided so that you can connect an external logic device—such as an external foot switch, a panel-mounted switch, or the logic output of some other device—to your panel.

When the external logic device is activated, it sends a control signal into your panel's microprocessor to perform one of several preset functions, such as turning the panel's microphone off or on, muting the microphone's output, or turning the panel's speaker off. You choose the function to be performed from the Eclipse Configuration System under "Advanced Settings" in the "Logic Inputs" menu. This allows the logic inputs to be configured from a drop-down list of items described below.

Before wiring a logic device to the GPI connector, you must first select the logic device's function in the Eclipse Configuration System. For more information, refer to the *Eclipse Configuration System Manual*.

The setting options are:

- Microphone On/Off
- Mute Mic Output to Matrix
- Microphone Off (Momentary)
- Answerback Talk/Clear
- Studio Announce
- Speaker Off
- PTT: Activate All Talk Keys
- Activate Talk Switch #1
- Activate Talk Switch #2

- Activate Listen Labels
- PTT: Activate Two-Way Radio Talk Keys

These settings are described in detail in the following sections.

Microphone On/Off (Toggle)

The Microphone On/Off function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to shut the panel's microphone on or off.

To use a logic device to turn the panel's microphone off and on:

Select the Microphone On/Off option in the Eclipse Configuration System.

Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.

Switch on the logic device to turn the panel's microphone on. Switch off the logic device to turn the panel's microphone off.

Mute Microphone Output to Matrix

The Mute Mic Output to Matrix function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to shut off the audio going from the panel to the matrix.

Note that this feature does not turn off the hot-microphone output described later in this chapter. The A3M standard XLR connector labeled "J8" on the back of your i-Series panel is the hot-microphone output connector. It provides a line-level output of the selected microphone's audio (headset or panel) that is always "on" (or "hot"). Only the panel's microphone on/off key can override this output.

To use a logic device to shut off the audio going from the panel to the matrix:

1) Select the Mute Mic Output to Matrix option in the Eclipse Configuration System.
2) Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.
3) Switch on the logic device to shut off the audio going from the panel to the matrix.
4) Note that the hot-microphone output has not been shut off.

Microphone Off (Momentary)

The Microphone Off function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to momentarily shut off the panel's microphone.

While you press and hold the switch on the remote device, the microphone is shut off, but when you release the switch, the microphone resumes normal operation.

To use a logic device to turn the panel's microphone off momentarily:

1) Select the Microphone Off (Momentary) option in the Eclipse Configuration System.

Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.

Switch on the logic device to shut the panel's microphone off momentarily.

While you press and hold the switch on the logic device, the microphone is shut off, but when you release the switch, the microphone resumes normal operation. This function cannot be latched.

Answerback Talk/Clear

The "Answerback Talk/Clear" function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to function as the panel's answer-back key.

To use a logic device to activate the panel's answerback key:

1) Select the "Answerback Talk/Clear option in the Eclipse Configuration System.
2) Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.
3) Switch on the logic device to activate the panel's answer-back key. Holding down the switch activates a talk path to the current destination in the answer-back stack.
4) Note that the logic switch, like the answer back key itself, cannot be latched. It functions momentarily only.
5) To clear the current call, and go to the next call in the answer-back stack, quickly press and release the switch.

Studio Announce

The Studio Announce function momentarily turns off all talk paths leaving the panel and sends the panel's microphone audio out through the Studio Announce output. This function overrides external IFB and ISO, interrupting matrix communications to these external systems.

To use a logic device to activate studio announce:

1) Select the Studio Announce option in the Eclipse Configuration System.
2) Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.

3) Switch on the logic device to activate the panel's studio announce. Holding down the switch activates a talk path to the studio announce output.

4) Note that the logic switch, like studio announce itself, cannot be latched. It functions momentarily only.

Speaker Off

The Speaker Off function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to shut off the panel's loudspeaker.

To use a logic device to shut off the panel's loudspeaker:

Select the Speaker Off option in the Eclipse Configuration System.

Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.

Switch on the logic device to shut off the panel's loudspeaker.

PTT: Activate All Talk Keys

The PTT: Activate All Talk Keys function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate all latched keys at your panel. When the logic device is not activated, you will not be able to talk from any latched key at your panel.

For example, some headsets are equipped with a push-to-talk switch on their headset cords. The push-to-talk switch can be wired to operate as a logic device. When an intercom operator wants to talk to any destination with a latched key on his panel, he will only be able to do so if he first pushes the push-to-talk switch on the headset cord.

To use a logic device to activate all latched talk keys:

1) Select the "PTT: Activate All Talk Keys" option in the Eclipse Configuration System.

2) Attach a logic device (such as a foot switch, panel-mounted switch, a push-to-talk headset, and so on) to the i-Series panel's GPI connector.

3) Switch on the logic device to activate all latched keys at your panel.

The logic device will activate keys latched both before and after you enabled this function in the Eclipse Configuration System.

The latched keys at your panel may appear to be active, since their talk lights will illuminate, but they actually only activate when you switch on the connected logic device. Any controls (relays, etc.) assigned to the keys along with the audio functions are now also only activated when signaled by the remote device.

You can, however, activate a talk path on any key by pressing and holding the key in momentary mode while you talk. The PTT: Activate All Talk Keys function only affects latched keys.

Activate Talk Switch #1

The Activate Talk Switch #1 function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate the panel's upper leftmost talk key.

To use a logic device to activate the panel's leftmost talk key:

1) Select the Activate Talk Switch #1 option in the Eclipse Configuration System.
2) Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.
3) Switch on the logic device to activate the panel's upper leftmost talk key.
4) This feature is momentary only, so that you must press and hold the logic device's switch to activate the panel's talk key. When you release the switch, the panel's talk key is no longer activated. The panel's talk key cannot be latched with the Activate Talk Switch #1 option.

Activate Talk Switch #2

The Activate Talk Switch #2 function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate the panel's *second* upper leftmost talk key (the key directly to the right of the leftmost upper key).

To use a logic device to activate the panel's second upper leftmost talk key:

1) Select the Activate Talk Switch #1 option in the Eclipse Configuration System.
2) Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.
3) Switch on the logic device to activate the panel's second upper leftmost talk key.
4) This feature is momentary only, so that you must press and hold the logic device's switch to activate the panel's talk key. When you release the switch, the panel's talk key is no longer activated. The panel's talk key cannot be latched with the Activate Talk Switch #2 option.

Activate Listen Labels

The Activate Listen Labels function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate all latched keys that are listen keys.

To use a logic device to activate the listen keys:

1) Select the Activate Listen Labels option in the Eclipse Configuration System.

2) Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel's GPI connector.

3) Switch on the logic device to activate the panel listen keys.

PTT: Activate 2-Way Radio Talk Keys

The PTT: Activate 2-Way Radio Talk Keys function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate all latched keys at your panel *that are assigned to a 2-Way Radio Interface*. The PTT: Activate 2-Way Radio Talk Keys function operates similarly to the PTT: Activate All Talk Keys function, except that it only affects latched keys *assigned to a 2-Way Radio Interface*. All other latched keys at your panel operate normally and are not activated by the logic device.

When the logic device is not activated, you will not be able to talk from any latched key *assigned to a 2-way radio* at your panel.

For example, some headsets are equipped with a push-to-talk switch on their headset cords. In this case, when the intercom operator wants to talk to a *2-way radio* from a latched key, he will only be able to do so if he first pushes the push-to-talk switch on the headset cord.

This function is valuable in applications that use 2-way radios because typically these systems transmit on only one frequency, and if more than one person transmits on the same frequency at any one time, the radio waves are interfered with so that no radio operator in the system can hear.

Using the PTT: Activate 2-Way Radio Talk Keys function allows an operator to determine precisely when he transmits audio on a 2-way radio interface.

To use a logic device to activate a key assigned to a 2-way radio:

1) Select the "PTT: Activate 2-Way Radio Talk Keys" option in the Eclipse Configuration System.

2) Connect a logic device (such as a foot switch, panel-mounted switch, a push-to-talk headset, and so on) to the i-Series panel's GPI connector.

3) Switch on the logic device to activate all latched keys *assigned to 2-way radios* at your panel.

The logic device will activate keys latched both before and after you enabled this function in the Eclipse Configuration System.

The latched keys *assigned to two-way radio keys* at your panel may *appear* to be active, since their talk lights will illuminate, but they are only active when you switch on the connected logic device. Any controls (relays, etc.) assigned to the 2-way radio keys along with the audio functions now also are only active when signaled by the remote device.

You can, however, activate a talk path from any key *assigned to a 2-way radio* by pressing and holding the key in momentary mode while you talk. The PTT: Activate 2-Way Radio Keys function only affects latched keys.

7.4.2 Relay Outputs Connector

The DB-15F connector labeled J5B connects your i-Series panel to three single-pole double-throw (SPDT) relays with contact ratings of 30 VDC (volts direct current) at 1 A (ampere).

A relay is a switch that you control remotely. You program the relay in the Eclipse Configuration System to close a contact whenever an intercom panel's key is pressed. When the contact is closed it completes an electronic circuit's signal path so that a remote device, such as a light, is powered.

You can program a relay to mute a speaker, to turn on an applause light, to turn on a door lock, or for a variety of other functions. For example, to get the attention of a panel operator working in a high-noise environment such as a control booth, you can program a relay to switch on a light at his panel each time he receives an incoming call, thus insuring that he will not miss the incoming call.

The i-Series panel has three relays: the auxiliary relay, the mute relay, and the studio announce (SA) relay.

Mute Relay

The mute relay is controlled by the Eclipse Configuration System. It is typically used to decrease or shut off an externally mounted loudspeaker. When you activate this feature, pressing any talk key on the panel will decrease or shut off the volume at an externally mounted loudspeaker. This function helps to ensure that noise from the external loudspeaker does not disrupt the communication at the intercom panel.

Both normally open and normally closed contacts are provided. They are rated at 30 VDC (volts direct current) at 1 A (ampere). The mute relay is not designed for switching mains AC line voltage. To switch an external device running on mains AC line voltage, use an external relay (or other switching mechanism) activated by the relay.

Auxiliary Relay

The auxiliary relay is controlled by the Eclipse Configuration System. When you attach the programmable relay to any source or destination's label in the intercom system through the Eclipse Configuration System, whenever that label's key is pressed on any panel in the system, the relay activates as well.

Typically, a relay is used to activate an external device such as an applause light in a studio, a cue light, or a security door lock. For example, you can program a relay so that whenever anyone in the intercom system presses a key to talk to a specific panel, the relay in that panel will activate and turn on a visual indicator (such as a light) to get the panel operator's attention.

You can activate a relay that is independent of any talk-or-listen function by creating a control label in the Eclipse Configuration System. When you activate the control label, only the relay activates. No audio signal activates in conjunction with the relay.

Studio Announce (SA) Relay

The Studio Announce (SA) relay is controlled by the Eclipse Configuration System. The SA relay momentarily turns off all "talk" paths leaving the panel and sends the panel's microphone audio out through the SA output. This function overrides external IFB and ISO, interrupting matrix communications to these external systems.

You can program the relay to activate whenever you press a designated source or destination's key at the intercom panel.

7.4.3 External Speaker Input Connector

The 1/8-inch tip/sleeve mini-connector labeled "J6" connects to and powers an external speaker. Its impedance rating is 4–8 Ohms and its power rating is 1/2 watt at 4 Ohms.

Note that when you plug an external speaker into this connector, the front-panel internal speaker is still active. You can deactivate one or both speakers through the Eclipse Configuration System.

The front-panel's main-volume knob controls the volume for both the rear-panel and front-panel speakers. The volume of both speakers is the same.

7.4.4 Line-Level Output Connector

The 1/8-inch tip/ring/sleeve mini-connector labeled "J7" is a line-level, transformer-balanced output of all of the audio that comes to the panel from the central matrix. All of the audio that you would hear at a panel's speaker, from all sources, is sent through this connector. The output's volume is at line level, bypassing the panel's audio controls.

This output is typically connected to an externally powered speaker, amplifier, or ceiling speaker system.

The line-level output connector's output impedance is 600 Ohms and its level is nominally 0 dBu. Frequency response is 50 Hz–15 kHz (± 2 dB).

7.4.5 Hot-Microphone Output Connector

The A3M standard XLR connector labeled "J8" provides a line-level output of the selected microphone's audio (headset or panel) that is always "on" (or "hot"). Only the panel's microphone on/off key can override this output.

This connector's output impedance is 600 Ohms. Its level is nominally 0 dBu. Frequency response is 50 Hz–15 kHz (± 2 dB).

A typical application is to permanently wire the panel's microphone audio output to all cameras so that the camera operators can hear the director at all times, regardless of what other tasks they are performing. This audio output can also be connected to many types of external speakers, such as external wall speakers. The purpose of this output is to provide an audio output that is always "on" and cannot be interrupted by other audio sources.

The Eclipse Configuration System's listen or eavesdropping function will accomplish the same results as the hot-microphone output. See the Eclipse Configuration System Manual for more information.

7.4.6 Balanced Program Input Connector

The A3F standard XLR connector labeled "J9" connects an external source of audio to your panel so that you can hear it in addition to the intercom audio at your panel. The external source of audio, or "program" audio, can be heard on your panel's speaker and headset, but it cannot be heard by other panels in the Eclipse matrix system.

7.4.7 External Dynamic Microphone Input Connector

The A3F standard XLR connector labeled "J10" is a balanced input for an external dynamic microphone. It is not transformer isolated. Its input level is -40 dBu with a gain adjustment range of ± 5 dB. Impedance is 200 Ohms.

Dynamic microphones generate their own power while electret microphones do not. The J10 connector cannot be modified for an electret microphone.

7.5 Connecting to an i-Series Expansion Panel

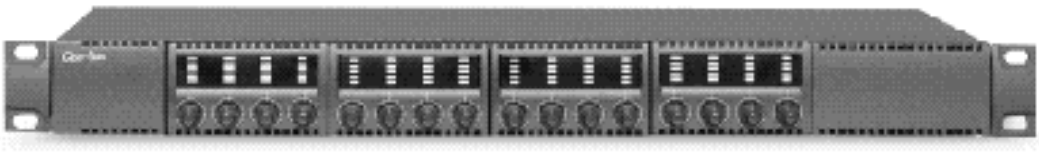
An i-Series expansion panel connects to an i-Series intercom panel and gives you access to 32 additional keys. Figure 7-4 i-Series panel Expansion Panel illustrates an i-Series expansion panel. Both the basic and advanced keys on an expansion panel operate the same as their corresponding keys on an i-Series panel.

The expansion panel is available with either five-character LCD displays or with areas for paper labels. It connects to an i-Series panel through an RJ-45 connector on the rear panel.

Figure 7-4 i-Series panel Expansion Panel

8 Operating a v-Station

The v-station expansion panel, referred to as the "v-station," gives you separate rotary control knobs for adjusting source listen levels, with a real-time visual display of listen levels as you adjust them. The v-station's four level-control modules (v-modules) allow you to adjust listen levels for 16 individual sources. v-Station Expansion Panel illustrates a v-station expansion panel.



v-Station Expansion Panel

One v-station controls the listen levels for the upper row of key assignments on the i-Series panel or i-Series expansion panel. A second v-station controls the listen levels for the lower row of key assignments on the i-Series panel or i-Series expansion panel, as shown in

Figure 8-1 Two v-stations control and display listen levels for one .

Note that any v-station rotary control knob associated with a "clear" or "answer-back" key on an i-Series panel does not operate, as those keys have special functions.

A v-station connects to an i-Series panel through RJ-45 connectors labeled "expansion in" and "expansion out" on the rear of each panel. Figure 8-2 Connecting two v-stations to an i-Series panel shows how to wire the panels using CAT-5 cable.

If you connect two v-stations to an i-Series panel, the v-station connected to the i-Series panel's "expansion out" connector controls the volume for the sources assigned to the i-Series panel's upper row of keys. The next v-station, which connects to the first v-station's "expansion out" connector, controls the listen levels for the sources assigned to the i-Series panel's lower row of keys.

V-station panels are no longer available to new sales.

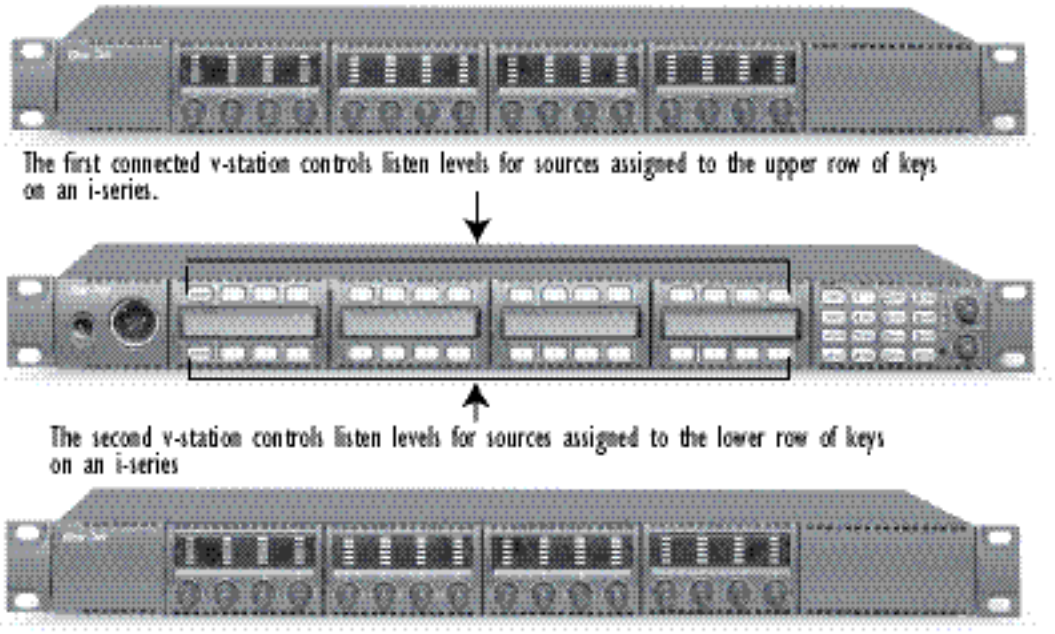
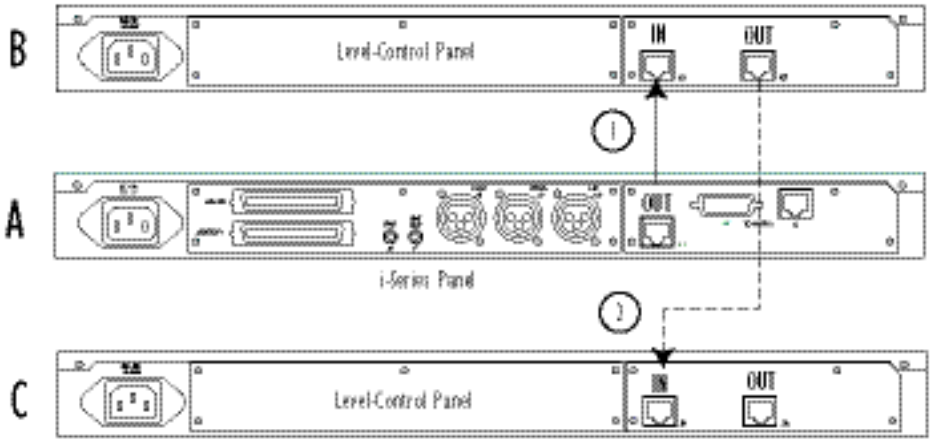


Figure 8-1 Two v-stations control and display listen levels for one i-Series panel

Connecting an i-Series Panel to two v-Station Expansion Panels ...



1. Connect the OUT connector of the main i-Series panel (A) to the IN connector of the first v-station expansion panel (B).
2. Connect the OUT connector of the first v-station expansion panel (B) to the IN connector of the second v-station expansion panel (C).

*NOTE: The connectors are actually labeled "expansion out" and "expansion in," but have been shortened to IN and OUT on the diagram for clarity.

Figure 8-2 Connecting two v-stations to an i-Series panel

8.1 Allowable Configurations

You can connect one i-Series panel expansion panel and up to four v-stations to an i-Series intercom panel. To form a valid configuration, you cannot connect more than two v-stations together in the "daisy-chain."

The following table shows all panel combinations which form a valid configuration. A configuration starts with the main panel, which is an i-Series panel with four display key modules, and proceeds with the various combinations of i-Series panel expansion panels and v-stations. The "expansion out" connector of each panel connects to the "expansion in" connector of the next panel in the configuration, forming a "daisy-chain."

In the table "main i-Series panel" refers to an i-Series panel with four display key modules, "I-expansion" refers to an i-Series panel expansion panel with four display key modules, and "v-station" refers to a v-station expansion panel.

first position	second position	third position	fourth position	fifth position	sixth position
main i-Series panel					
main i-Series panel	v-station				
main i-Series panel	v-station	v-station			
main i-Series panel	i-expansion				
main i-Series panel	v-station	i-expansion			
main i-Series panel	v-station	v-station	i-expansion		
main i-Series panel	v-station	I-expansion	v-station		
main i-Series panel	v-station	v-station	i-expansion	v-station	
main i-Series panel	v-station	i-expansion	v-station	v-station	
main i-Series panel	v-station	v-station	i-expansion	v-station	vstation

Table 8-1 All Possible Valid Configurations of v-Stations

8.1.1 A Fully Populated Configuration

Figure 8-3 A fully populated configuration of v-stations shows an example of a fully populated configuration, as the configuration would appear in an equipment rack. Figure 8-4 Connecting a fully populated configuration of v-stations shows how to connect the panels together with CAT-5 cable.

You can remove any of the v-stations in a fully populated system without affecting the key assignments of the remaining v-stations.

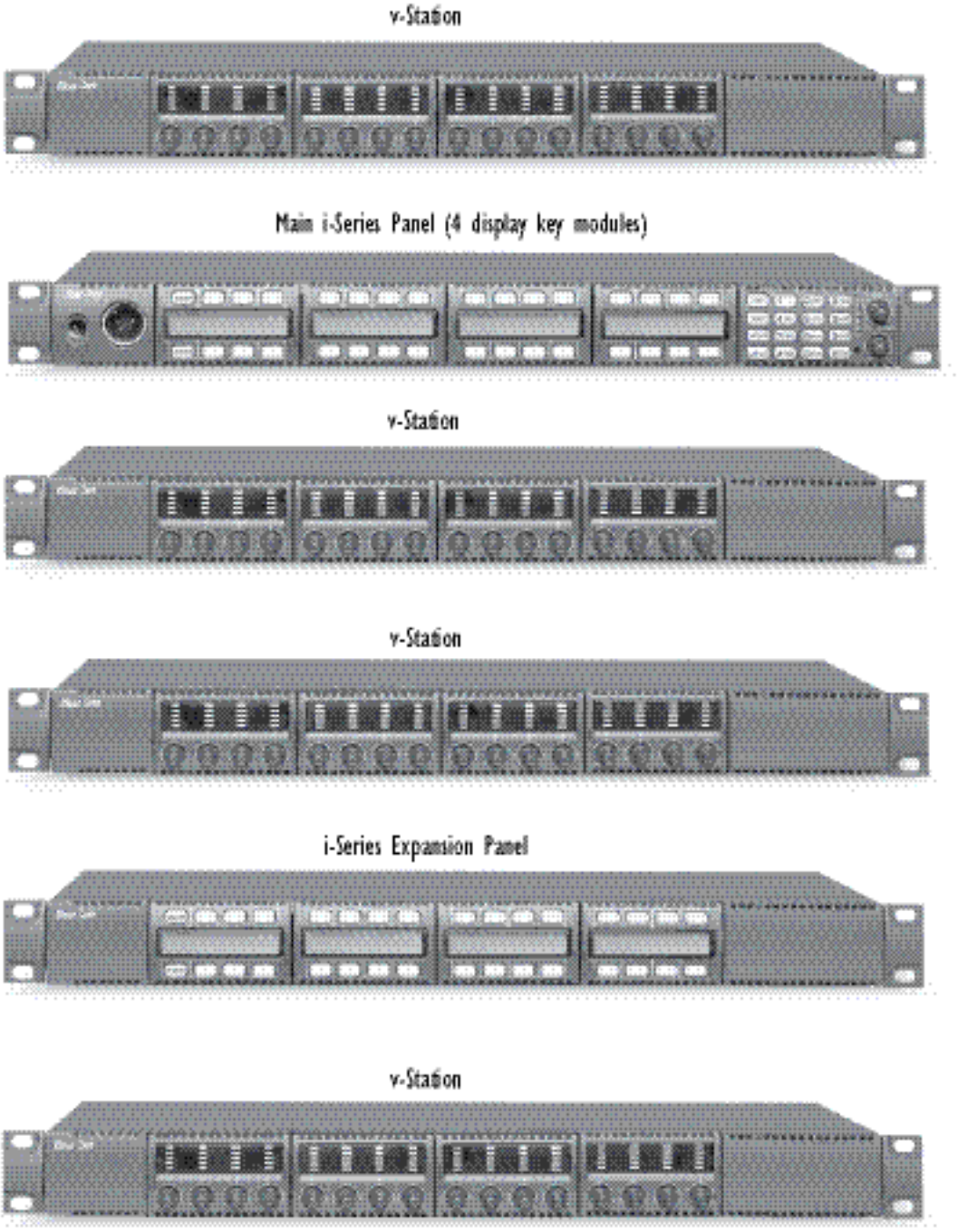


Figure 8-3 A fully populated configuration of v-stations

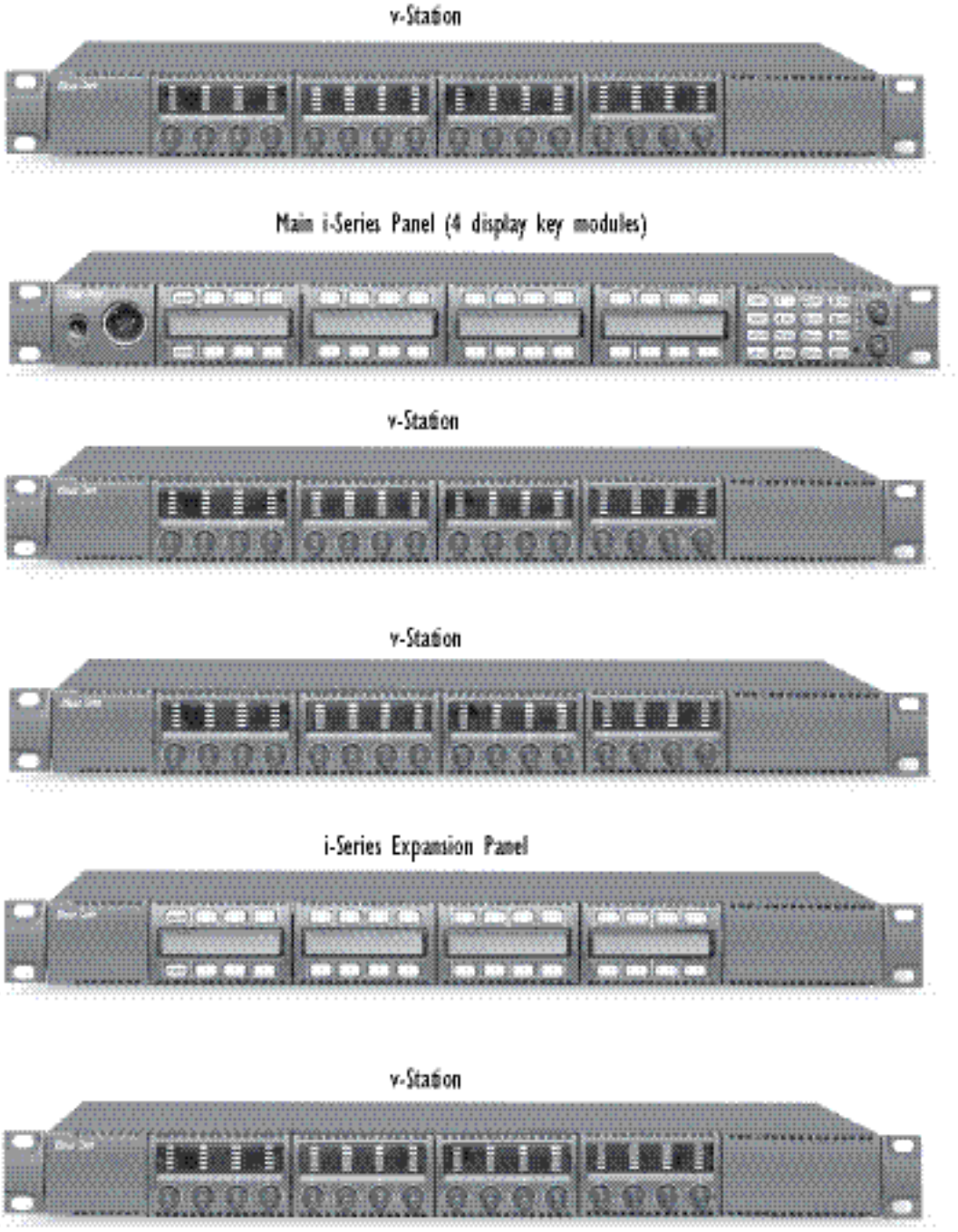


Figure 8-4 Connecting a fully populated configuration of v-stations

9 Installing an i-Series Intercom Panel

This chapter describes how to install an i-Series intercom panel. It also gives wiring diagrams for the panel's rear-panel connectors. For programming information, see the *Eclipse Configuration System Manual*.

9.1 Equipment Placement

All i-Series intercom panels require one rack unit of space (1 RU) in a standard 19-inch (48.26 cm) rack.

Put all intercom panels at a comfortable operational height. Leave at least 2 inches (5 cm) of clearance at the rear of the panel's chassis to allow for cable connectors and access to the rear-panel controls. For proper ventilation, make sure ventilation openings are not blocked.

WARNING: To reduce the risk of fire or electric shock, do not expose the unit to rain or moisture.

9.2 Mains AC Power

Each i-Series panel has an internal power supply, with a removable AC power cord. The power supply is "universal," operating over a voltage range of 90 to 245 VAC and 50 to 60 Hz. The maximum dissipation is 40 W.

9.3 Adjustments

No initial adjustments are required to set up the panels other than the standard input level adjustment made through the Eclipse Configuration System.

9.4 Configuration

Assign each panel's name and other parameters by using the Eclipse Configuration System. For instructions, see the *Eclipse Configuration System Manual*.

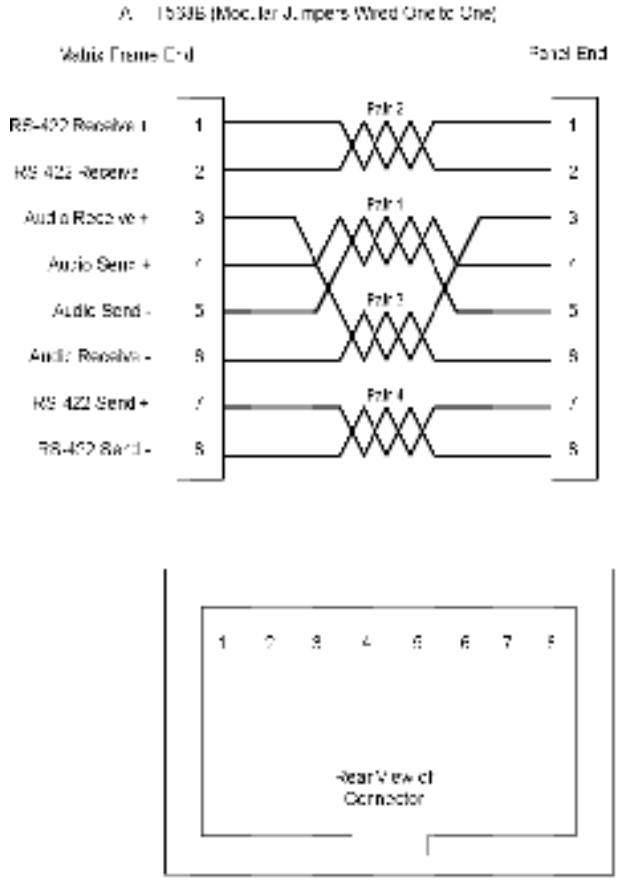
9.5 Wiring

IiSeries intercom panels use a twisted 4-pair transmission scheme to connect them to the matrix matrix using the industry standard RJ-45 connector. Refer to *Installing an Eclipse Matrix System: An Overview* for connector installation and use, and the type of cable needed for connection between panels and matrices.

Each pair of the twisted 4-pair wire has the following function:

- Pair 1 transmits analog audio from the matrix port to the panel.
- Pair 2 transmits digital data from the panel back to the matrix card port.
- Pair 3 transmits audio from the panel to the matrix card port.

- Pair 4 transmits digital data from the matrix port back to the panel.



Matrix to Panel Wiring

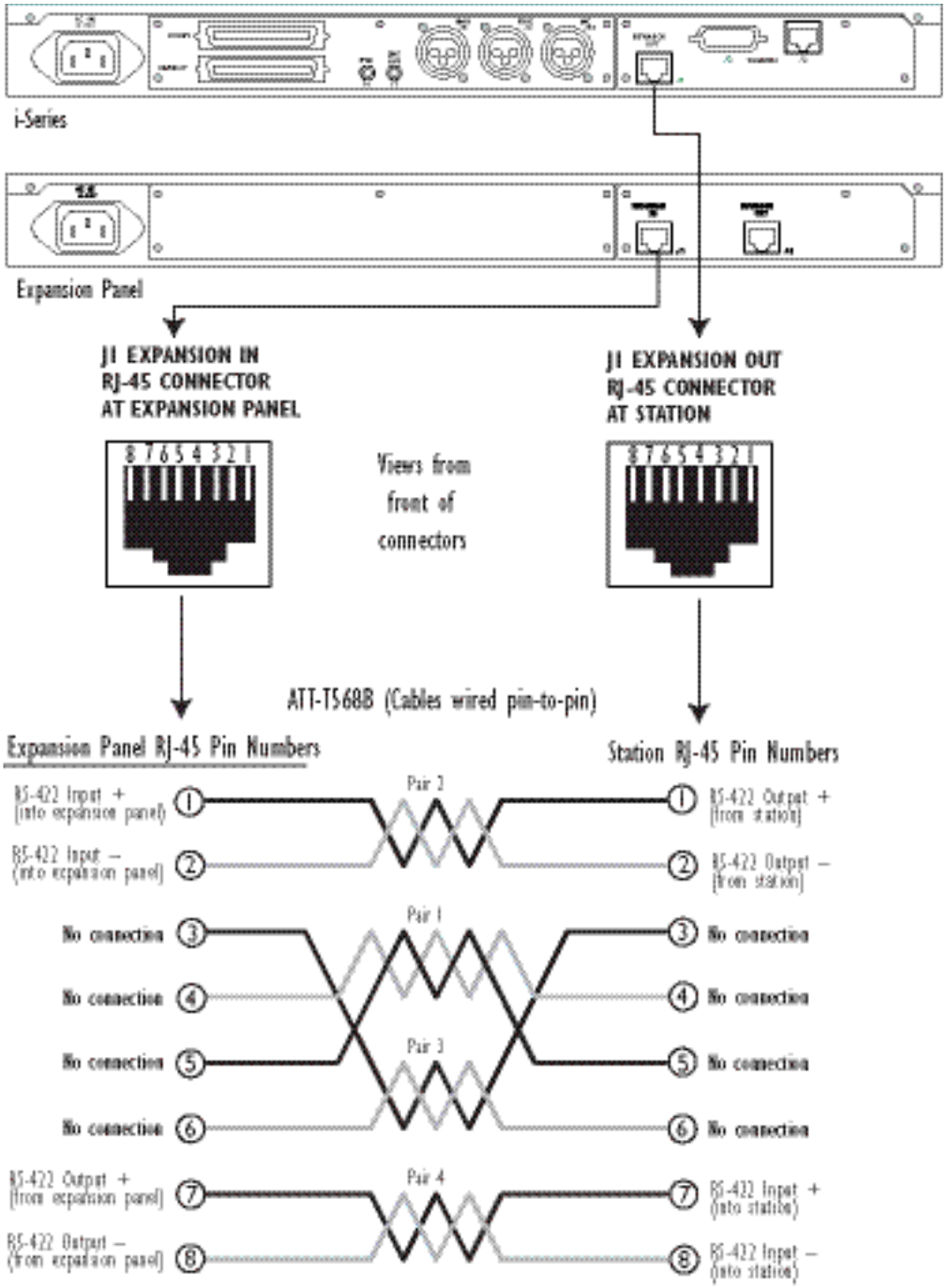
Pinout Diagrams

The diagrams on the following pages give you the pinout configurations of the i-Series panel's rear-panel connectors. For operating instructions for each connector's output or input, refer to the Operation Chapter of this manual.

Pinout configurations for the following connectors are included:

- Expansion Out Connector (J1)
- RJ-45 to Matrix Connector (J3)
- General Purpose Inputs Connector (J5A)
- Relay Output Connector (J5B)
- Speaker-Feed Output Connector (J6)
- Line-Level Output Connector (J7)
- Hot Microphone Output Connector (J8)
- Program Input Connector (J9)
- Auxiliary Microphone Input Connector (J10)

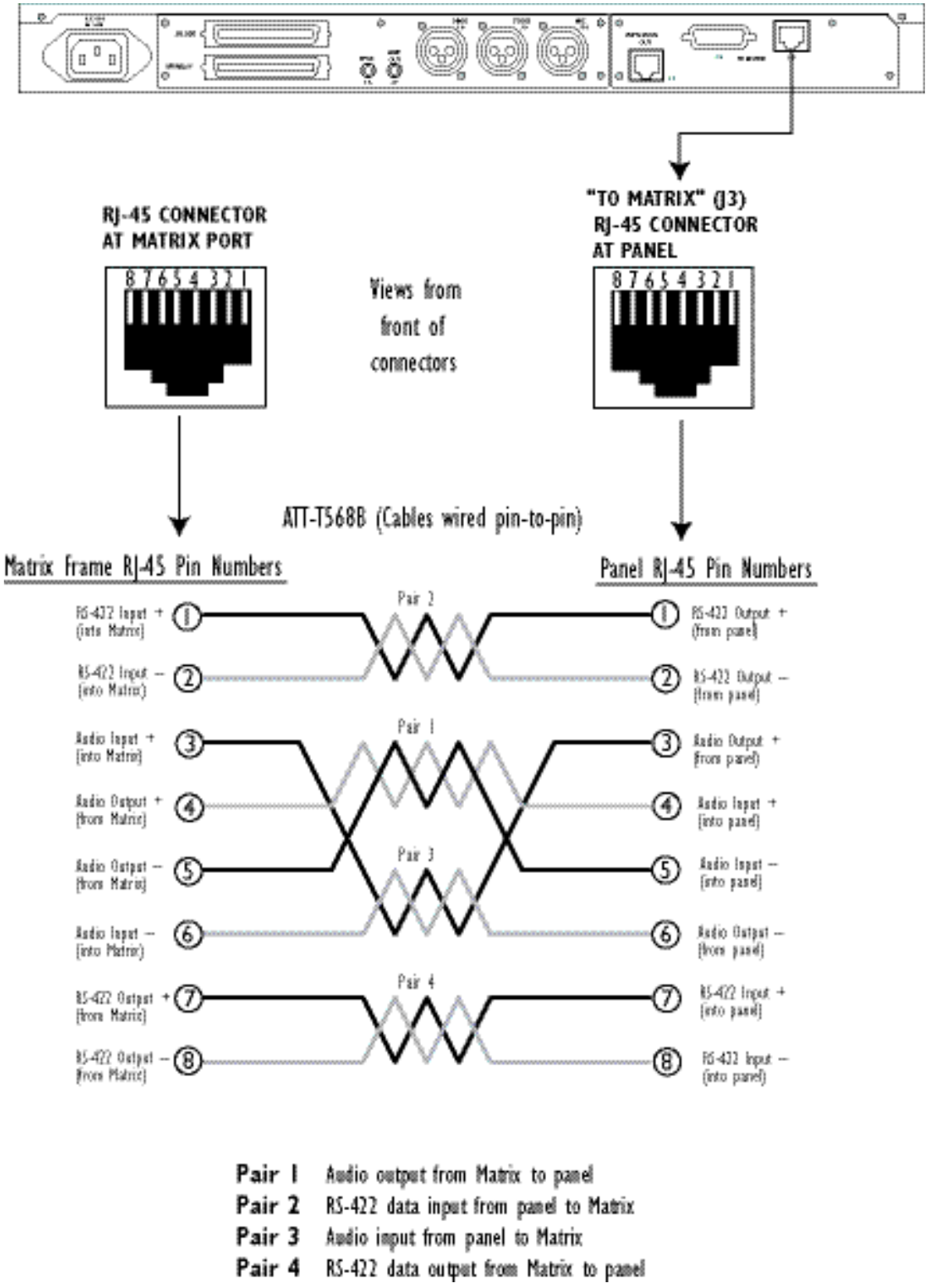
Expansion Out Connector (J1)



Pair 1 No connection
Pair 2 RS-422 data input from station to Matrix
Pair 3 No connection
Pair 4 RS-422 data output from Matrix to station

Figure 9-1 Expansion Out Connector Pinout Diagram

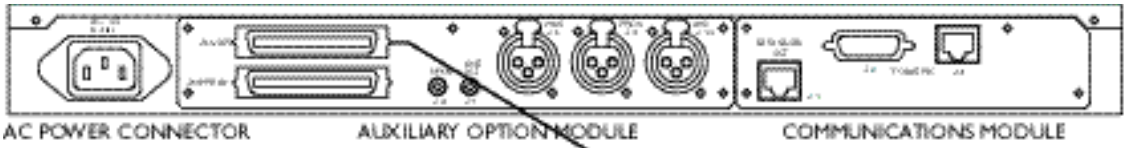
RJ-45 to Matrix Connector (J3)



Pair 1 Audio output from Matrix to panel
Pair 2 RS-422 data input from panel to Matrix
Pair 3 Audio input from panel to Matrix
Pair 4 RS-422 data output from Matrix to panel

Figure 9-2 RJ-45 to Matrix Connector Pinout Diagram

General Purpose Inputs Connector (J5A)



DB-25 Female Connector

PIN	DESCRIPTION
1	+5 Volts
2	GPI 1, Pin A
3	GPI 2, Pin A
4-9	Reserved for future use
10	+5 Volts
11	Headset Ground
12	Headset Ground
13	Right Headset Out
14	Digital Ground
15	GPI 1, Pin B
16	GPI 2, Pin B
17-22	Reserved for future use
23	Digital Ground
24	Headset Ground
25	Left Headset Out

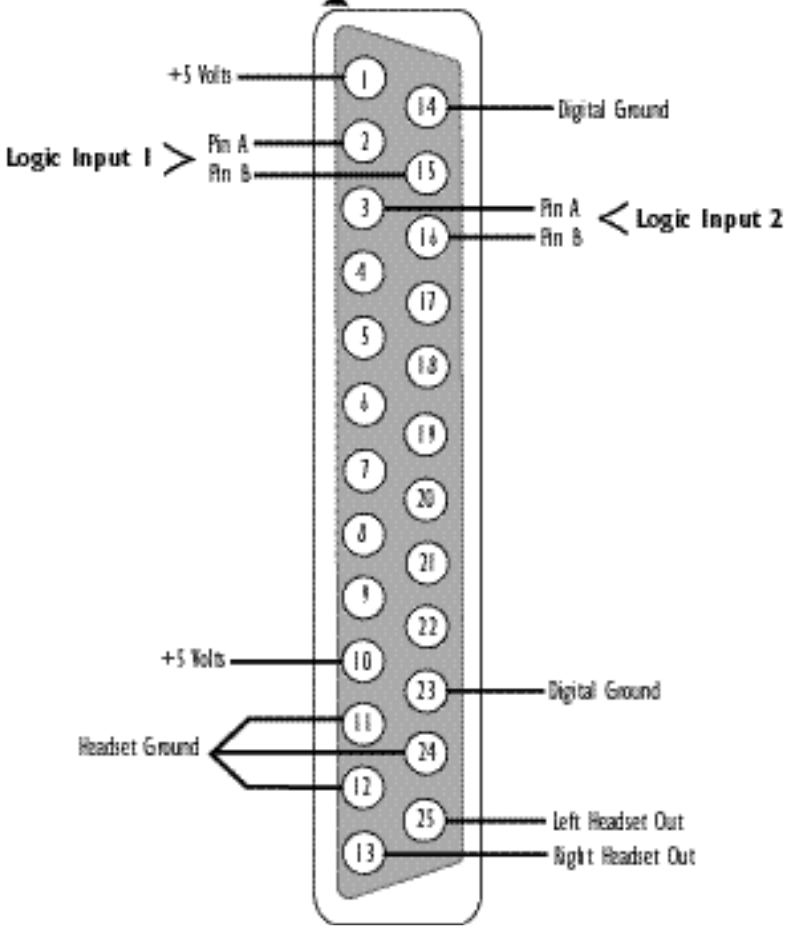
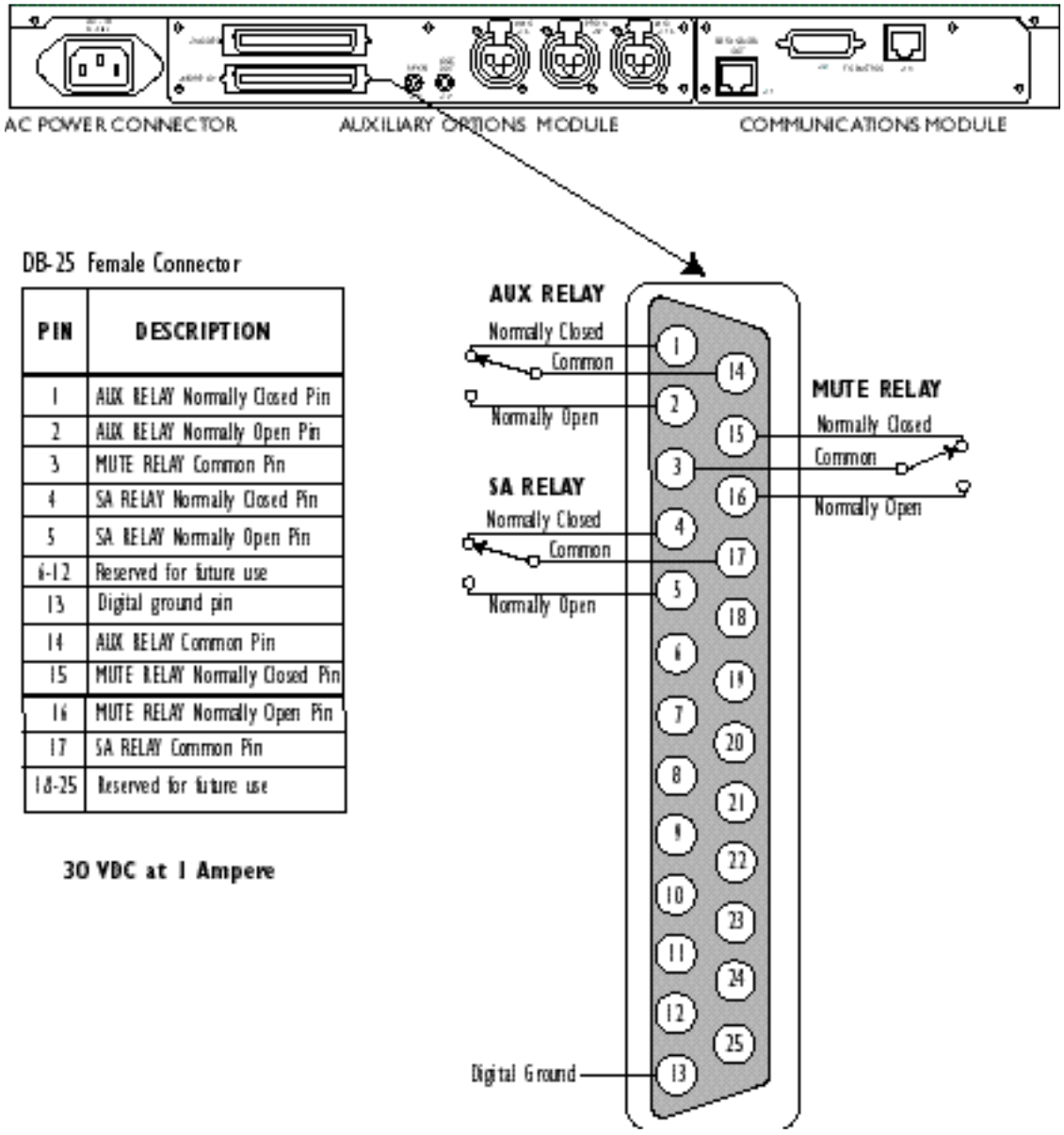


Figure 9-3 General Purpose Inputs Connector Pinout Diagram

Relay Output Connector (J5B)



PIN	DESCRIPTION
1	AUX RELAY Normally Closed Pin
2	AUX RELAY Normally Open Pin
3	MUTE RELAY Common Pin
4	SA RELAY Normally Closed Pin
5	SA RELAY Normally Open Pin
6-12	Reserved for future use
13	Digital ground pin
14	AUX RELAY Common Pin
15	MUTE RELAY Normally Closed Pin
16	MUTE RELAY Normally Open Pin
17	SA RELAY Common Pin
18-25	Reserved for future use

Figure 9-4 Relay Outputs Connector (J3) Pinout Diagram

Speaker-Feed Output (J6)

Line-Level Output (J7)

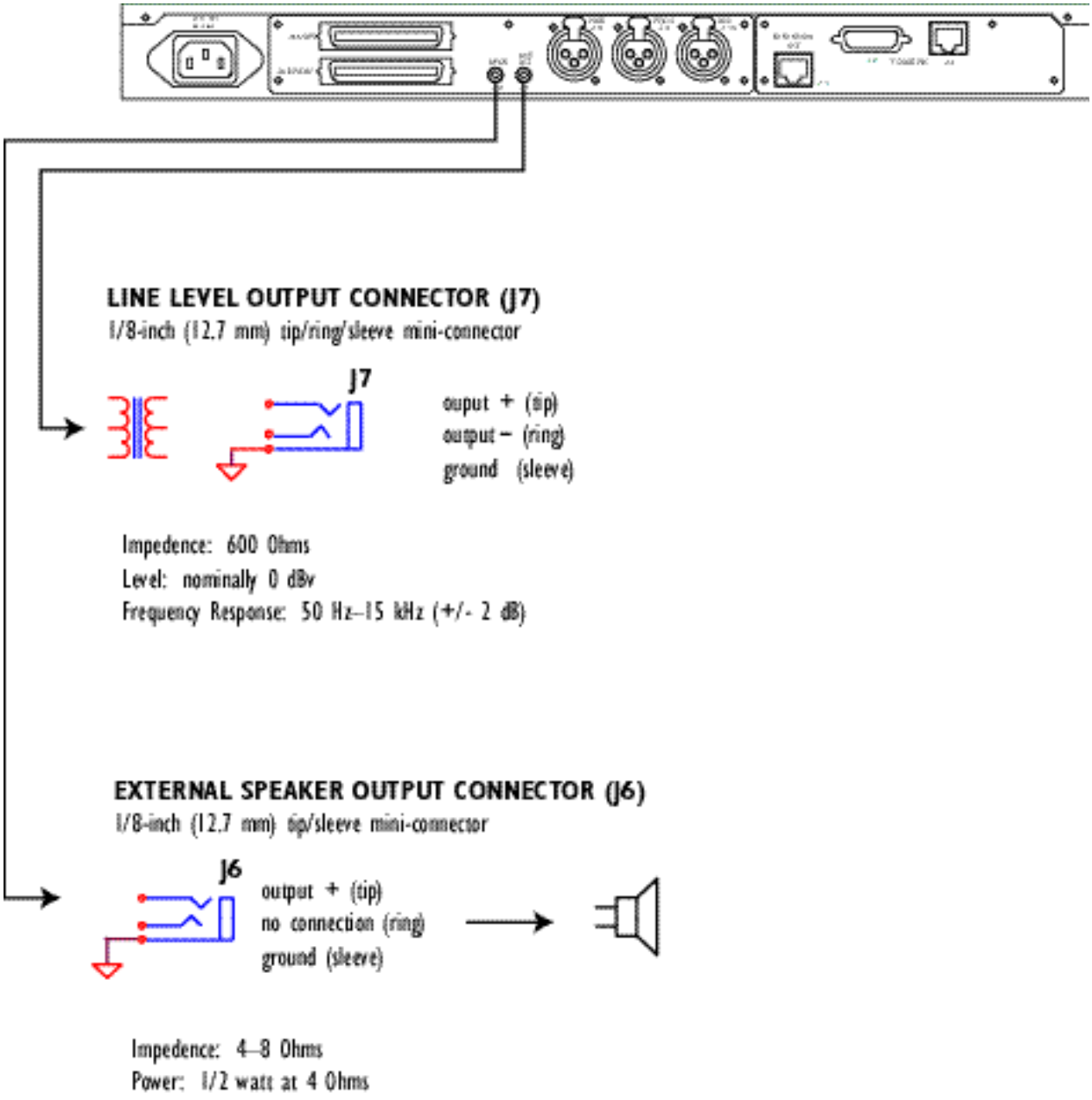


Figure 9-5 Connector Pinout Diagrams for Speaker-Feed Output and Line-Level Output

Hot Microphone Output (J8)

Program Input (J9)

Auxiliary Microphone Input (J10)

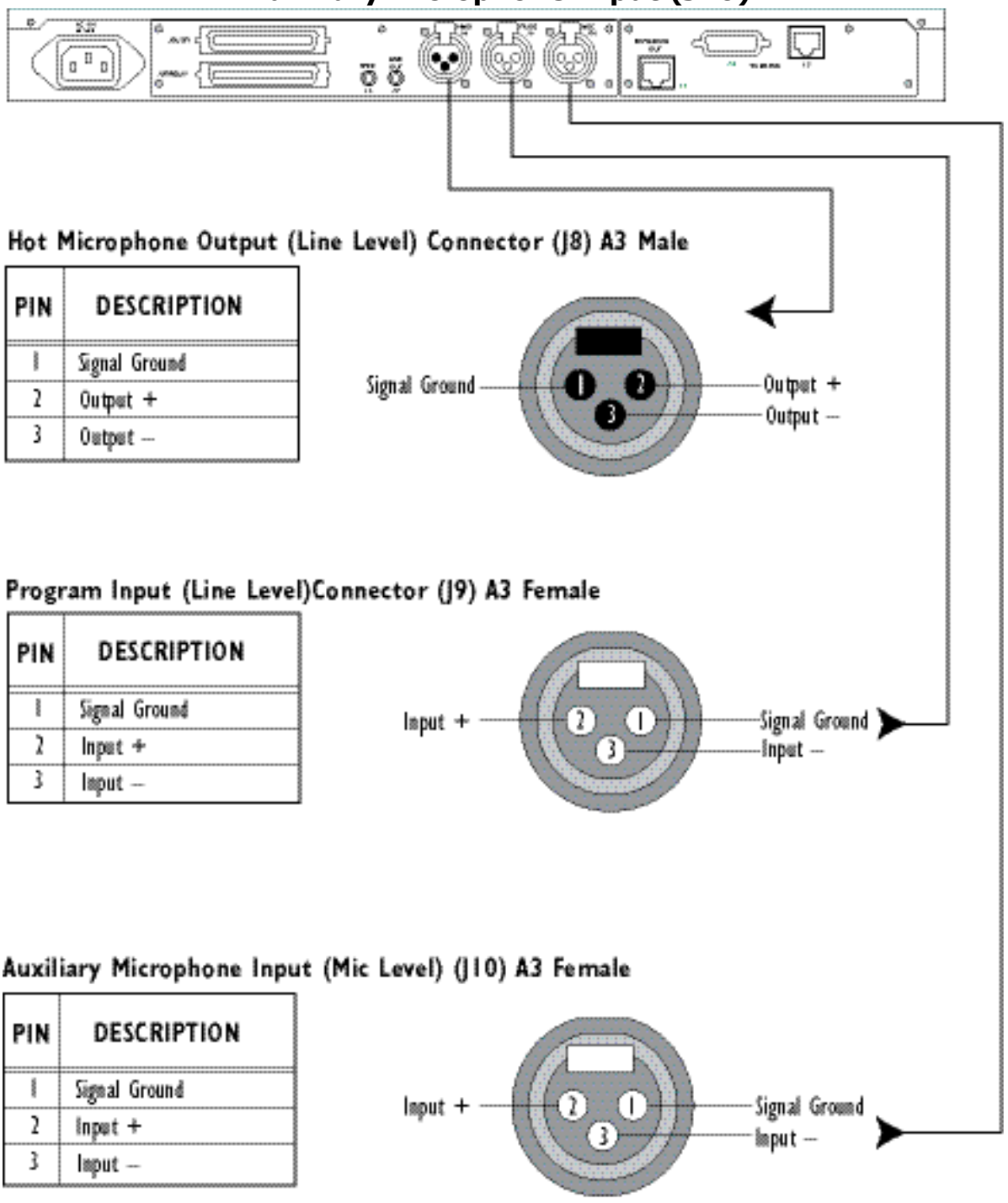


Figure 9-6 Connector Pinout Diagrams for Hot Microphone Output (J8), Program Input (J9), and Auxiliary Microphone Input (J10)

10 Maintaining an i-Series Intercom Panel

This chapter provides maintenance information: troubleshooting tips, block diagrams, component layout drawings, bills of materials, and schematics.

CAUTION: These servicing instructions are for use by qualified personnel only. To reduce the risk of electrical shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

10.1 General Troubleshooting

Every i-Series panel's microprocessor has a reset button located, as shown in Figure 1, in an unmarked hole located next to the program volume knob (labeled "VOL/PROG"). If a panel acts erratically, try resetting it. Often this will clear the problem.

To reset a panel, insert a small screwdriver or a piece of wire (such as a bent paper clip) into the hole and push the reset button. Another way to reset the panel is to disconnect and re-connect the AC power cord.

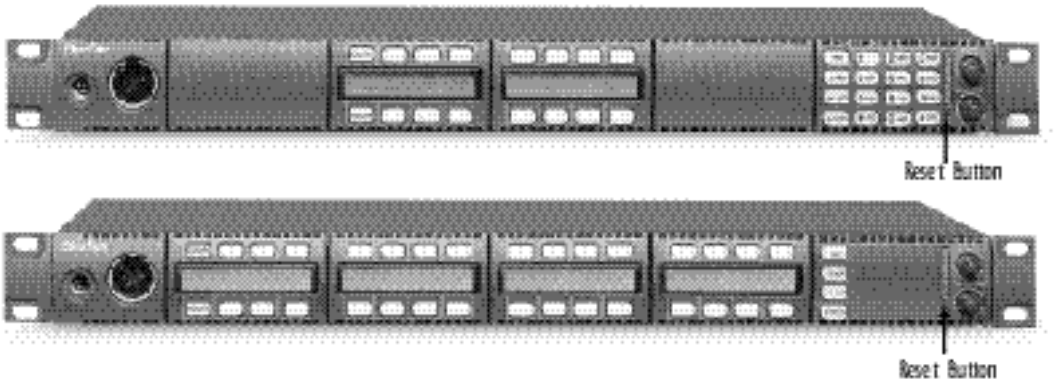


Figure 10-1 Reset the panel if problems occur

10.2 Troubleshooting Tips

Listed below are some of the more common problems you may experience while using an i-Series panel, the possible causes, and suggested solutions.

Symptom	Cause	Solution
A key does not light when pressed.	The key has not been assigned in the Eclipse Configuration System.	1. Ensure that key has a label assigned to it in the Eclipse Configuration System. (The key will not light without an assigned label.) 2. Reset the panel. 3. Replace the panel.

Symptom	Cause	Solution
The panel's displays and keys do not light.	Power to the panel is off.	1. Check mains AC power to the panel. 2. Replace the panel.
The display shows unexpected characters.		Power the panel off and turn it back on. Reset the panel's matrix card in the matrix. Replace the panel.
Keypad function keys do not operate, or the panel beeps when a key is pressed.	The function may have been inhibited from the Eclipse Configuration System.	Check the Eclipse Configuration System to be sure the function is enabled. Reset the panel. Replace the panel.
The panel appears to activate talk paths, but other panels can't hear the panel operator.	Correct microphone may not be selected or on. The panel may have been defined as a nearby panel in the Eclipse Configuration System. The panel does not have eavesdropping enabled.	Check MIC and HS XFR keys to ensure the intended microphone is selected and on. Check Eclipse Configuration System to make sure the panel has not been defined as a nearby panel. Check Eclipse Configuration System to make sure eavesdropping is enabled. Test the integrity of the panel's audio path by temporarily setting a forced listen to it. Reset the panel. Replace the panel.

Symptom	Cause	Solution
The panel is inoperative and all red keys flash slowly.	1. The matrix has just been powered up and is still downloading the configuration to the matrix cards. 2. Cable is disconnected. 3. Data paths are corrupted. 4. Panel has not been assigned correct port type. 5. Matrix card type does not match panel. Panels with COM-10 Communications Modules should have MTX-A8 or MVX-A8. Panels with COM-20 Communications Modules should have MTX-D8 or MVX-D8.	1. Wait 60 seconds. 2. Make sure the cable to panel and matrix is plugged in at both ends. 3. Check the integrity of the data paths, especially the polarity for panels using a COM-10 Communications Module. 4. Check Eclipse Configuration System to make sure the panel has been assigned the correct port type. 5. Confirm that the matrix card type matches the panel. 6. Reset the panel's matrix card in the matrix. 7. Reset the panel. 8. Replace the panel.
No audio from the panel's speaker.	1.Volume knob (labeled VOL) on keypad module is turned down. 2. Speaker key (labeled SPKR) is off. 3. Audio cannot be heard in a headphone. 4. Speaker may have been disabled in Eclipse Configuration System.	1. Turn VOL knob up. 2. Make sure SPKR key is on. 3. Check whether audio can be heard in a headphone. 4. Check Eclipse Configuration System and the panel's logic inputs to make sure the speaker has not been disabled in the software. 5. Test the integrity of the panel's audio path by temporarily setting a forced listen to it. 6. Reset the panel's matrix card in the matrix. 7. Replace the panel's matrix card in the matrix. 8. Reset the panel. 9. Replace the panel.

Symptom	Cause	Solution
The operator cannot hear another panel's page or call signal tones.	1. Page volume control needs adjusting in Eclipse Configuration System. 2. Page override is enabled in Eclipse Configuration System.	1. Adjust the panel's page volume control using Eclipse Configuration System (refer to the Eclipse Configuration System Manual for more information.) 3. Check the Eclipse Configuration System to make sure page override is not enabled for the panel. 4. Reset the panel. 5. Replace the panel.
Announce tones (eavesdropping indication, change tones, and so on) are not heard at the panel.	Monitoring tones and change tones are not enabled in Eclipse Configuration System.	Check Eclipse Configuration System to make sure monitoring tones and change tones are enabled.
No speaker audio from the external program feed.	1. Program volume knob (labeled VOL/PROG) is not turned up. 2. Program source is not producing audio.	1. Turn up VOL/PROG knob. 2. Check program source. 3. Reset the panel. 4. Replace the panel.
The headphone is not receiving audio from the external program feed.	1. Program may have been disabled for the second program feed in Eclipse Configuration System.	1. If the external program feed is audible in the speaker, check Eclipse Configuration System to make sure the program was not disabled for the second earphone feed. 2. Replace the panel.

10.3 Analog Block Diagram

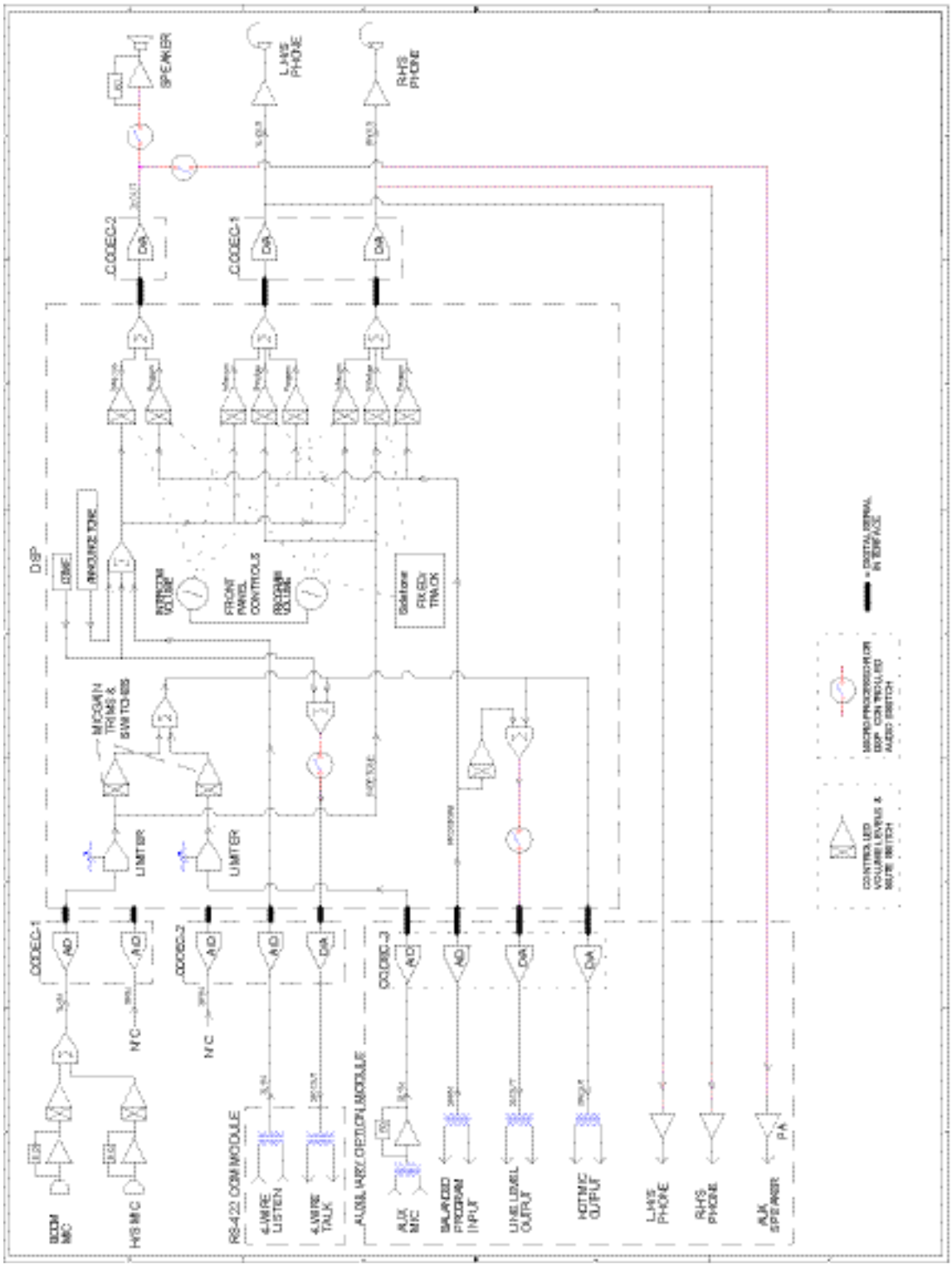


Figure 7-1: Analog Block Diagram

10.4 Panel Block Diagram

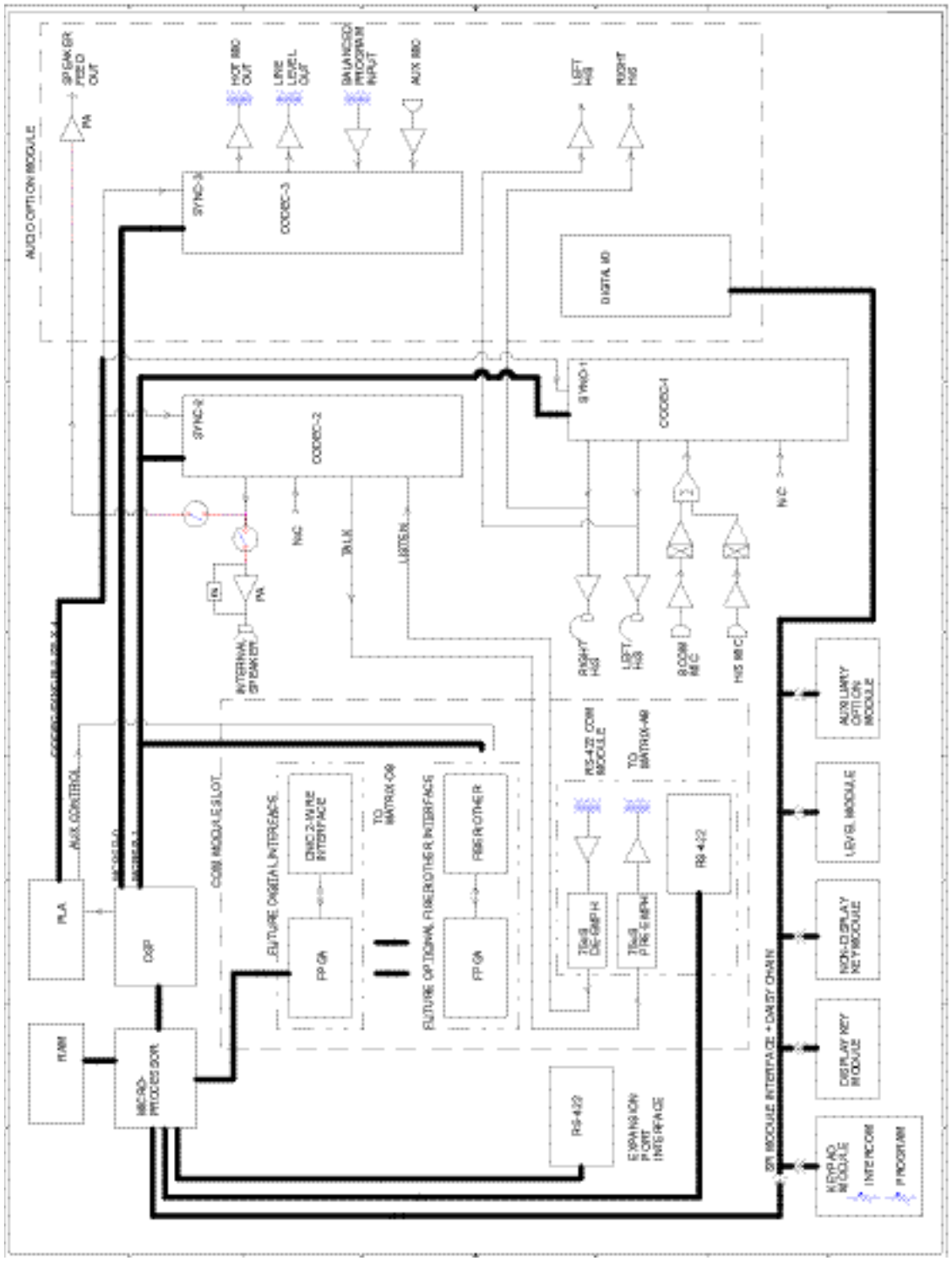


Figure 7-2: Panel Block Diagram

11 Specifications

0 dBu is referenced to 0.775 volts RMS

11.1 BASIC PANEL

11.1.1 Front-Panel Controls and Connectors

Talk/Listen Buttons 6 (1 key module)

14 (2 key modules)

22 (3 key modules)

30 (4 key modules)

Function Buttons 4

Telephone Keypad Buttons (optional) 12

Answer Back Button 1

Clear Button 1

Volume Controls Main, Vol/Prog

Headset Connector XLR-4M only

Panel Mic Connector Locking 1/4-in. phone jack

Rear-Panel Connectors

To Matrix DB-15 (for 2-wire interfaces)

RJ-45 (for 4-wire interfaces)

Expansion Option RJ-45

Panel Microphone Input

Type Electret with proprietary phone jack

Input Level - 40 dBu

Gain Adjustment Range 0 to 20 dB

Impedance 200 Ohms

Headset Microphone Input

Type Dynamic

Input Level - 55 dBu

Gain Adjustment Range 0 to 20 dB

Impedance 200 Ohms

Line Input/Output

Type Transformer Balanced

Input Impedance 8k Ohms Bridging

Output Impedance 150 Ohms

Level 0 dBu nominal

Frequency Response 50 Hz to 15 kHz, ± 2 dB

Headphone Outputs

Impedance 50 to 600 Ohms

Power 1/2 W into 50 Ohms

Temperature

Operating 0° to 50° C (32° to 125° F)

Humidity 20% to 90%, noncondensing

Power

In-Line Power Supply, with 3-pin EIA connector, UL approved power supply

Voltage 90 to 245 VAC, 50 to 60 Hz, 40 VA max.

Dimensions

Height1.75 in. (45 mm)

Width 17 3/8 in. (436 mm)

Depth 8.25 in. (210 mm)

Weight

7.5 lbs.

EXPANSION PANEL

Front-Panel Controls and Connectors

Talk/Listen Buttons30 (4 key modules)

Rear-Panel Connectors

Expansion Option RJ-45

Auxiliary Options Module

Balanced Program Input

Type Transformer Balanced

Input Impedance 8K Ohms Bridging

Frequency Response 50 Hz to15 KHz, ± 2 dB

Connector 3-pin XLR female

Auxiliary Microphone Input

Type Dynamic

Input Level -40 dBu

Gain Adjustment Range ±5 dB (software)

Impedance 200 Ohms

Connector 3-pin XLR female

Line Level Output

Type Transformer Balanced

Output Impedance 600 Ohms

Level 0 dBu nominal

Frequency Response 50 Hz to 15 kHz, ± 2 dB

Connector mini-phone

Hot Microphone Output

Type Transformer Balanced

Output Impedance 600 Ohms

Level 0 dBu nominal

Frequency Response 50 Hz to 15 kHz, ± 2 dB

Connector 3-pin XLR male

Speaker Feed Output

Impedance 4 to 8 Ohms

Power 1/2 watt at 4 Ohms

Connector mini-phone

Relay Output

Two relay outputs

SPDT

Contact Rating 30 VDC at 1 ampere

Connector DB-25 female

GPI Input

Two GPI inputs

Connector DB-25 female

12 Glossary

Term	Definition
Analog Port	Any of the matrix's analog input/output RJ-45 connectors that are used to connect cable from the matrix to panels and interfaces. Each port connects to a separate audio channel in the matrix.
Alias label	A label that is temporarily assigned and replaces a previously labeled port or conference.
Bus	A bus is the channel or path between the components in the matrix along which electrical signals flow to carry information from one component to the next. In the Eclipse matrix the bus is located in the etched surface of the midplane.
Call signal	A call signal is an electronic signal sent from one panel or interface to another. A call signal can be audible and/or visual. Typically a call signal is sent to get the attention of a panel operator who may have turned down their intercom speaker's volume or removed their headset. It can also be sent to activate an electronic relay.
Canvas	The assignment area of the Production Maestro software which can have any user labeled background.
Category-5 (CAT-5) cable	EIA/TIA 568 category specification relating to network cabling. Shielded category-5 cabling is required for Eclipse matrix wiring.
CellCom®	Digital wireless communications product. Sold under the CellCom name in USA and as FreeSpeak® in Europe and Asia.
Central matrix	The term central matrix is used to differentiate the central hardware and software of the intercom system from the connected audio devices. The central matrix consists of: The metal housing for the circuit cards and power supplies. The circuit cards. The power supplies.

	The rear panel connectors which connect the matrix's hardware to panels and interfaces.
Conference	An internal matrix virtual partyline or busbar where many panels and interfaces can talk onto or listen from the party line without talking to themselves.
Destination	A device such as an intercom panel, beltpack, or interface to which audio signals are sent. The device from which audio signals are sent is called a source.
Duplex	All real-time communication between individuals talking face to face is full duplex, meaning that they can both talk and listen simultaneously. The Eclipse matrices provide full-duplex audio.
ECS	ECS is the Eclipse configuration software. ECS guides the operation of the matrix circuit cards and connected panels.
Ethernet	International standard which describes how information is transmitted across a network. Provides for the efficient organization of network components.
Fiber optic cable	A fiber-optic cable consists of a glass core covered with a reflective material called cladding and several layers of buffer coating to protect the cable from the environment. A laser sends light pulses through the glass core to the other end of the cable.
FreeSpeak®	Digital wireless communications product. Sold under the FreeSpeak name in Europe and Asia and CellCom name in USA.
FreeSpeak II™	Digital wireless communications product.
Full duplex	Refers to transmission of signals in two directions simultaneously.
Hopping	Refers to making a trunk connection through other matrices to a destination matrix.
IFB	Interruptible Foldback. The term foldback refers to sending program audio / feed, or some other audio mix, back to announcers while they are on the air. Doing so allows announcers to monitor themselves, other announcers, videotapes of commercials, or some mix of sources, while they on the air. This is typically found in television news and live broadcast events. Announcers typically wear a small ear piece so they can hear the selected foldback audio mix. When a director wants to give directions to an announcer on air, or to announce changes in the program, the director must interrupt the foldback. To do this, the

	director uses a channel specifically set up to interrupt the foldback audio.
Interface module	A piece of electronic hardware designed to convert the 4-wire signals of a central matrix port to some other form of communication, such as 2-wire partyline, telephone, etc. The interface module is connected to a central matrix port. The external non-4-wire device is then connected to the interface module.
ISO	The ISO function, short for panel ISOlation, allows a panel operator to call a destination and interrupt all of that destination's other audio paths and establish a private conversation. When the call is completed the destination's audio pathways are restored to their original state before the interruption.
Keygroup	KeyGroups provide a way of assigning a label to multiple panels simultaneously even within a networked matrix system. Once the KeyGroups have been defined using ECS, all the keys within a KeyGroup can be changed with a single assignment in Production Maestro (Pro mode only).
Label	A label is an alphanumeric name of up to five characters that identifies a source, destination, or control function accessed by an intercom panel. Labels appear in the displays of the intercom panel. Labels can identify panels, ports interfaced to other external equipment, fixed groups, party lines, and special control functions.
MADI	Multichannel Audio Digital Interface. The MADI or AES10 electronic communications protocol defines the data format and electrical characteristics of an interface carrying multiple channels of digital audio.
Multiplexing	The process by which two or more signals are transmitted over a single communications channel. Examples include time division and wavelength division multiplexing.
Non-volatile Memory	Data stored in the CPU's firmware (ROM) that is not lost when the power is turned off.
Palette	The port, keyGroup and Monitor selection screen in Production Maestro Pro.
Panel	Any intelligent intercom device connected to the rear-panel analog ports of the central matrix. This term does not refer to devices connected through interface modules.
Partyline	A wired shared communication system based on a single screened pair of wires. See the Encore range. Matrix requires the CCI-22 to interface to it.

Port	Any of the input/output connections (RJ-45 connectors) on the back panel of the central matrix. These connectors and the attached cables connect the central matrix to remote intercom devices. The term port emphasizes that the connection is a portal between the central matrix and the remote intercom devices.
Program	Any separate audio source that is fed into the intercom channels. In television applications, for example, the program audio is the audio that is broadcast on air.
Rack Unit (RU)	Standardized unit of mounting space on a rack panel. Each rack unit is 1.75 inches (44.45 mm) of vertical mounting space. Therefore 1 RU is 1.75 inches (44.45 mm) of vertical mounting space, 2 RU is 3.5 inches (88.9 mm), 3 RU is 5.25 inches (133.35mm), and so on.
Remote panel	Any intelligent intercom device connected to the back-panel ports of the system matrix. This term does not refer to devices connected through interfaces.
Sidetone	The sound of the panel operator's voice, as heard in their own earphone(s) as they speak.
Source	In this guide, the term source refers to a device (such as an intercom panel, interface, or beltpack) that sends audio into the matrix. The device to which audio is sent is called a destination.
VOX	In the Eclipse / Eclipse HX system, when audio at a panel exceeds a threshold, a light switches on at the panel's port card to visually cue the operator. The threshold level is set in the ECS / EHX configuration software.