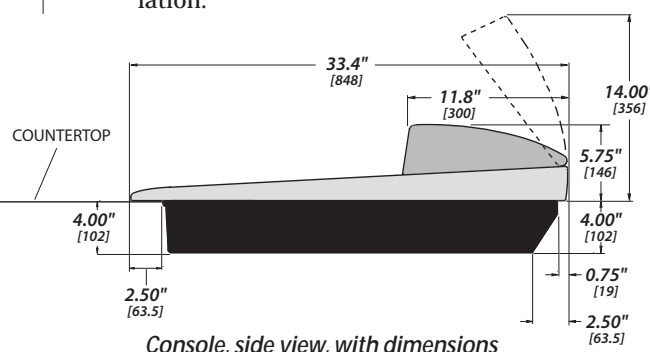
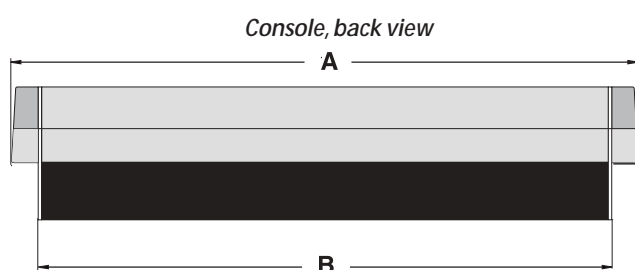


Installation

The BMXdigital mainframe “drops into” a cutout (shown below) in the studio furniture countertop. A minimum of 14 inches [356 mm] of vertical clearance above the countertop is required to fully open the meter panel. The rear 2.5 inches [63.5 mm] of the mainframe bottom is open so wiring can be easily dressed up through the mainframe to the module connectors, which are hidden below the meter panel in normal use.

The BMXdigital console shipment consists of:

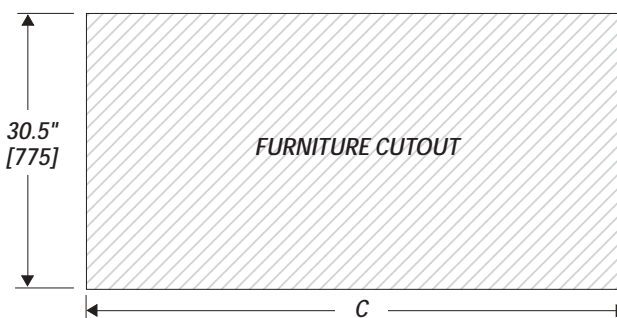
- The 8, 14, 22, 30 or 38 input frame with the standard modules (Mic Preamp, Session, Control Room, three Outputs and DSP Cards) installed. Also installed are any optional items that were also ordered (Universal Input, Telco/Codect and RLS modules, blank panels, Net Card).
- A 2RU rack-mount 48 volt power supply with interconnecting cable.
- A BMXdigital Tool kit (3 AA batteries, AMP MOD IV crimp tool and contact removal tool, hex driver, and module removal tool).
- Audio and logic connector kit. The kit contains all the AMP MOD IV connector housings and receptacle contacts typically needed for installation.



Dimension Table

Mainframe	A	B	C
BMXdigital-8	29.2" [742]	26.1" [663]	26.4" [671]
BMXdigital-14	42.0" [1067]	38.9" [988]	39.2" [996]
BMXdigital-22	54.8" [1392]	51.7" [1313]	52.0" [1321]
BMXdigital-30	67.6" [1717]	64.5" [1638]	64.8" [1646]
BMXdigital-38	80.4" [2042]	77.3" [1963]	77.6" [1971]

Millimeter dimensions in brackets. All dimensional tolerances are: $\pm \frac{1}{4}$ " [6.4], -0" [0.0]. Typical setback from countertop edge to the front of the console is 12" [305]. There must be 14" [356] of clearance above the countertop to open up the meter panel.



Console Installation

To simplify console installation, logic cable wiring diagrams for specific peripheral equipment are available from Harris Technical Support. Refer to page 5-1 for contact information.

INSTALLATION NOTE: Do not locate the console near intense electromagnetic hum fields, such as those produced by large power transformers and by audio amplifiers that use inexpensive power transformers operating in or near saturation. Strong electromagnetic fields may impair the performance of the BMXdigital and neighboring equipment. Route audio cables to achieve maximum practical distance from all AC power mains wiring.

MAINFRAME CONFIGURATION

The BMXdigital design positions the input modules in the physical center of the mainframe. This gives the operator equal reach to peripheral equipment located to either side of the console.

Module Placement

The 8, 14, 22, 30 or 38 input module positions can have any combination or order of the following modules installed: Universal Input, Telco/Codec (six maximum), and Remote Line Selector (RLS). The remaining console positions are fixed. The Microphone Preamp module(s), Session module, Control Room module, optional Studio module, and Output modules must be positioned as shown below.

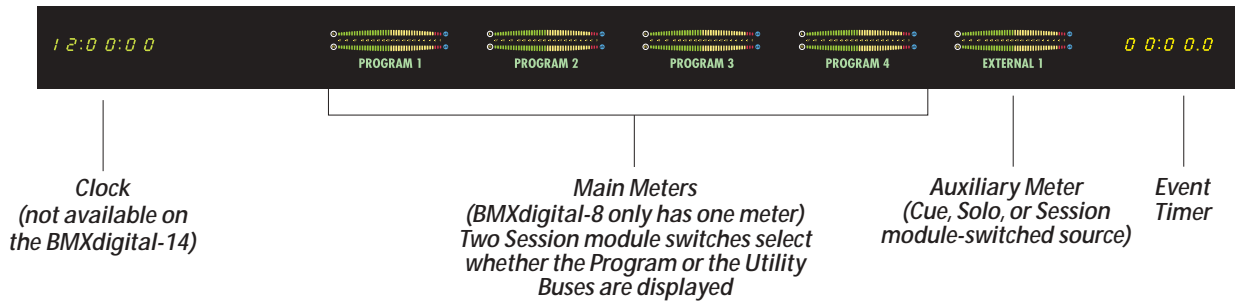
BMXdigital Mainframe, Module Configuration

DSP Card 1		DSP Card 2*		DSP Card 3*		DSP Card 4*		DSP Card 5*		Net Card**		
Mic Preamp (standard)	Mic Preamp 2 (optional) 12.5" blank panel (standard)	Reserved position (covered by a 25" Blank panel) ***		Reserved position (covered by a 25" Blank panel) ***		<div><p>* The number of DSP Cards used is set by the frame size.</p><p>** The optional Net Card is used with the VistaMax Audio Management System.</p><p>*** These two slots are input module positions 1 and 2 on the BMXdigital-8 frame.</p></div>						
				← Input modules →								
				The input module positions are filled with any combination or number of Universal Input and Remote Line Selector modules, and up to six Telco/Codec modules. Unused positions are covered with 25" Blank Panels.								
						Session (standard)						
								Control Room (standard)				
										Studio (optional) 25" blank panel (standard)		
										Output 1 (standard)		
										Output 2 (standard)		
										Output 3 (standard)		

NOTE: The number of input module positions matches the console model number (e.g., BMXdigital-22 has 22 input positions). There is one DSP card in the BMXd-8, two DSP cards in the BMXd-14, three in the BMXd-22, four in the BMXd-30, and five in the BMXd-38.

The areas covered by the five 12.25" Blank Panels can be used for mounting Harris BMXdigital Accessory Panels or custom remote control panels. Since the Harris BMXdigital Accessory Panels are 6" long, a PRE99-1100 Divider Kit (for mounting up to four Accessory Panels in place of two 12.25" Blank Panels), or a PRE99-1101 Divider Kit (for mounting up to six Accessory Panels in place of three 12.25" Blank Panels) is required. Typically, the PRE99-1100 Divider Kit is installed in place of the Blank Panels on the left end of the console and the PRE99-1101 is installed in place of the Blank Panels on the right end of the console. 6" Blank Panels (PRE99-1714-3) cover unused Accessory Panel positions.

BMXdigital Meter Panel



Meter Panel

The meter panel has five horizontal Stereo Bar-graph Meters, except for the BMXdigital-8, which has two meters. An alphanumeric display below each meter identifies the current signal source (PROGRAM 1, UTILITY 1, etc.).

Four of the meters provide simultaneous level monitoring of the four Program or the four Utility bus outputs, as selected by two Session module buttons. On the BMXdigital-8, these two Session module buttons cycle through the four Program and the four Utility buses to select which bus to display on the single main meter.

The right-hand meter (Auxiliary) shows the Cue or Solo bus levels. When neither function is active, the meter shows a source selected on the Session module (from between the four external inputs, the two Sends, the four Utility buses or the Telco Record output).

The meter display mode (peak hold or non-peak hold) and the level where the peak indicators turn on are set for each meter via DIP switches on each meter display board.

On the left end of the meter panel is an ESE-slaveable 12/24-hour digital clock (on all sizes except for the BMXdigital-14). On the right end there is an event timer that can be controlled manually, through buttons on the Session module, or automatically, through module On reset commands.

CONNECTOR ACCESS

Module connectors are hidden below the meter panel, which is hinged on the rear of the main-frame. To access the connectors, open up the meter panel by lifting up on the middle of the meter panel while allowing it to pivot rearward to fully extend the two gas springs.

Caution: Make sure the panel is open all the way so that it does not accidentally fall shut.

To facilitate initial wiring, the meter panel can be entirely removed from the mainframe:

- 1 Open up the meter panel fully and unplug the meter power cable (attached to the rear panel) and the three signal cables plugged into the Session module.
- 2 With another person assisting to hold the meter panel, remove the screw and bushing that attach each gas spring to the meter panel. Lay the gas springs on the mainframe while working.
- 3 Unlatch the hinges by moving the release pins to their unlocked positions and lift the meter panel up and off the mainframe.

To reinstall the meter panel, align the two halves of the hinges, then release the pins out of their unlocked positions.

Reattach each gas spring to the meter panel by inserting a screw through the gas spring and the bushing.

POWER SUPPLY

The 99-1205 power supply requires 2 RU of rack space within the console cabinetry, below and to the left or right of the supporting countertop. The 48 Volt Power Supply must be installed so that the 30 foot power supply cable (90-1709) is not under any tension when routed through the cabinet and connected to the mainframe's rear panel connectors.

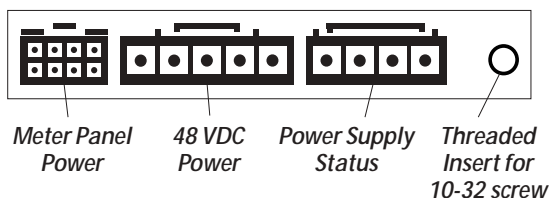
Connecting the Power Supply

The power supply cable has two connectors:

- A 5-pin connector to supply 48 volt DC power to the console.
- A 4-pin connector to supply power status information (Imminent Power Loss) to the console.

Both connectors must be attached to the back of the BMXdigital and to the power supply.

**Power Connections —
Console Mainframe, Rear Panel**



DC GROUNDING NOTE: Do not connect the audio or logic supply ground wiring to the chassis of the power supply.



AC GROUNDING NOTE: Do not defeat the safety ground in any way. Doing so may provide a potentially dangerous condition to the operator.

Redundant Power Supply

To provide redundant console power, two 99-1205 power supplies can be connected to the console through a 99-1203 48 Volt Coupler.

GROUNDING AND SHIELDING

The broadcast facility's technical ground can be connected to the mainframe chassis using the threaded insert on the rear of the console (shown in the Power Connections drawing on this page). Use a 10-32 screw and crimp lug to terminate the facility's technical ground wire.

Connect the cable shields at both the console and the peripheral end when all system components share a common ground potential and are using isolated ground AC outlets tied individually back to the main technical ground.

If isolated ground AC outlets are not available, connect the cable shields at the console end only. The shields should be floated (left unconnected) at the peripheral device end. Ensure the peripheral devices connect to a clean ground through their power cords, or through separate ground wires to the facility's technical ground.



POWER SUPPLY GROUNDING NOTE:

The Power Supply chassis connects to the AC mains safety or "U" ground wire.

AUDIO GROUND NOISES: Buzz pickup is generally electrostatic—such as capacitive coupling between an audio line and a power line. To avoid audio ground noises, do not route audio lines in the same wireway as an AC power line.

INSTALLING BACKUP BATTERIES

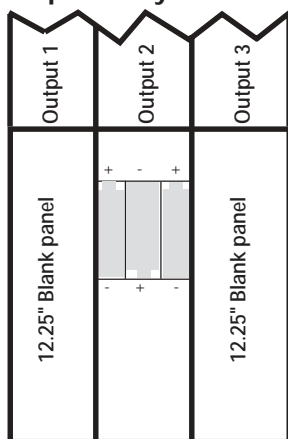
Three AA rechargeable NiCad batteries are supplied in the 76-2001 Tool Kit. They should NOT be installed until the console is completely installed and is ready for everyday use.

The batteries supply a "Keep Alive" voltage that holds each module's logic state during momentary power outages. They mount in a battery clip located below the three 12.25" blank panels on the right end of the console.

To install the backup batteries:

- 1 Remove the blank panels in front of the Output modules using the supplied hex driver.
- 2 Install the batteries into the battery clip, observing the correct polarity as marked on the battery clip and shown below.

Backup Battery Installation



Middle 12.25" Blank Panel removed to show the battery clip

Note: Replace the batteries yearly to ensure continuous backup protection. Use only Panasonic P-50AAH or equivalent batteries designed for continuous slow charge operation. To prolong battery life, remove the batteries when the console is powered down for an extended period.

SETTING THE CLOCK

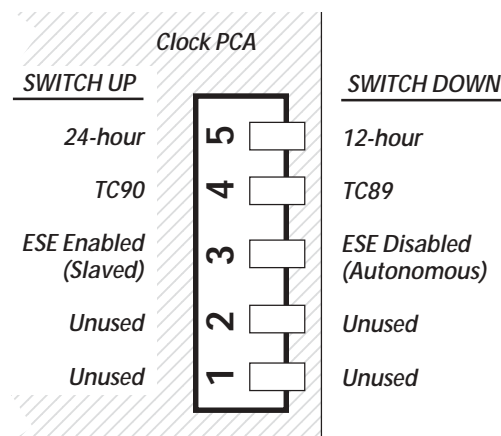
The digital time-of-day clock (not available on the BMXdigital-14) can operate in autonomous or slave modes. When used autonomously (the factory preset), a temperature-controlled quartz crystal oscillator controls the clock timing. In slave mode, clock timing comes from a TC89- or TC90-compatible ESE master clock reference signal.

Master clocks are available from:
ESE
142 Sierra St.
El Segundo, CA 90245.
Telephone: 310.322.2136
www.e-se-web.com

The operating mode (autonomous or ESE slave), the type of ESE signal (TC89 or TC90), and the type of clock time desired (12-hour or 24-hour format) are set using DIP switch DS1 on the clock PCA. DS1 is on the right rear edge of the circuit board.

To access the clock PCA, open the meter panel. The clock PCA is mounted behind the clock display on the meter panel.

Clock Option Switches (DS1)



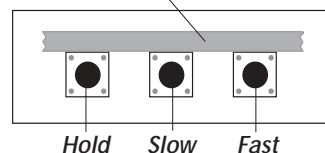
Clock circuit board DIP switch. Factory default settings are DOWN.

With the clock set to autonomous mode, it must be set after power-up. There are three clock set buttons on the bottom left front of the clock PCA.

- Use the right button (Fast) to scroll by minutes at a time.
- Use the middle button (Slow) to scroll by seconds at a time.
- Use the left button (Hold) to synchronize the console clock to an external time reference by setting the clock ahead of the external time reference, then press and hold

Setting the Clock

Clock Circuit Board, lower left front edge



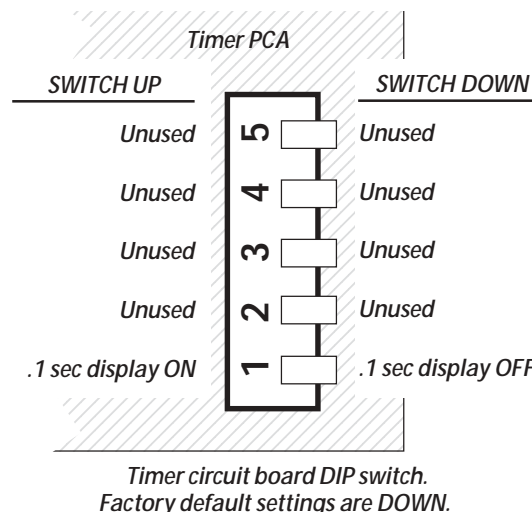
the HOLD button to freeze the time. When the external time reference reaches the time on the BMXdigital clock, release the HOLD button to start the clock.

When an ESE time-code signal is connected to the BNC connector on the clock circuit board, and slave mode is selected (DS1-3 is set UP), the clock does not require setting. If the ESE time-code signal fails, the clock automatically defaults to its internal crystal reference oscillator, flashing the display colons to indicate the loss of time-code.

EVENT TIMER

The event timer displays time in minutes, seconds and tenths of seconds. The only timer option setting is whether to display the tenths of seconds digit as the timer runs. DS1-1 (a DIP switch on the timer circuit board, located behind the timer display), sets whether the tenths are shown or not. In the UP position, the tenths of seconds are displayed. In the DOWN position, the factory default, the tenths do not display while the timer runs. Note that the tenths of seconds are always shown when the timer is in the Stop or Hold mode.

Event Timer Option Switches (DS1)



METER SETUP

The level at which the blue peak indicators turn on, as well as the meter display mode (peak hold or non-peak hold), is set separately for each meter using DIP switches on the edge of each meter PCA.

To access the meter DIP switches, open the meter panel by lifting it up and rotating it toward the rear of the console until it stops. Each meter's DIP switches are located on the underside of the meter panel, directly below the right end of each meter.

Meter DIP Switch Definitions

#	Switch Name	UP Function (switch set up)	DOWN Function (switch set down)
1	Peak Indicator Level	See Switch 1 and 2 Table, below	
2	Peak Indicator Level	See Switch 1 and 2 Table, below	
3	Meter Display Mode *	Non-peak hold	Peak hold
4	Spare Switch		
5	Termination Switch	Set UP for Meter 1	Set DOWN for Meters 2 - 5

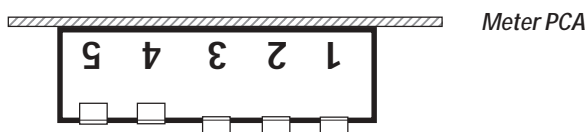
* Active only when meters are set to display Average and Peak (Session module DIP switch 1 set to Off)

Switch 1 and 2 Table

Use these switches to set the level where the Blue peak indicators light.

#1	#2	Peak Level
DOWN	DOWN	0 dB
UP	DOWN	-2 dB
DOWN	UP	-4 dB
UP	UP	-6 dB

Meter Option Switches (DSW2)



Switches 1, 2, 3 shown down, switches 4 and 5 shown up.

Cabling and Wiring

Before installing the console, draw up a facility wiring plan that lists the console interconnections with all peripheral devices. Identify and create tags for all audio and logic cabling. List each connection in a master facility wiring logbook to facilitate wiring installation, future system wiring changes, equipment updates, and system troubleshooting.

Refer to the module Quick Connection Guides, on pages 2-16 to 2-57, for information on each audio and logic connection (including block diagrams for each logic interface connector) and on each module's setup DIP switches.

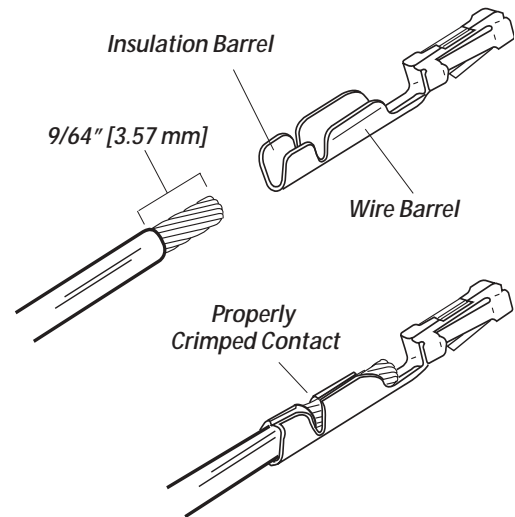
REQUIRED CABLES AND WIRE

The BMXdigital uses the following types of cables and wires:

- Analog audio connections require two-conductor, stranded, insulated, foil-shield cable using a separate shield drain wire (equivalent to Belden 8451, 9451 or 8761).
- AES/EBU connections require 110 ohm two-conductor, stranded, insulated, foil-shield cable containing a separate shield drain wire (equivalent to Belden 1800A).
- Logic control cables require stranded, 22 AWG, multiple-conductor, non-shielded, jacketed cable (equivalent to Belden 9423, 8457 or 9421). The number of conductors used is determined by the application. Typically cables with five and eight wires are most often used for constructing logic cables. Even though there are eighteen distinct signals on the Logic Interface connector, only a handful are typically used for any given application.

WIRE PREPARATION

All BMXdigital audio and logic wiring terminates in AMP MOD IV receptacle contacts at the console. Stranded wire of 22 to 26 AWG, with insulation diameters of .040 to .060 inch, can be used with the AMP MOD IV receptacle contacts.

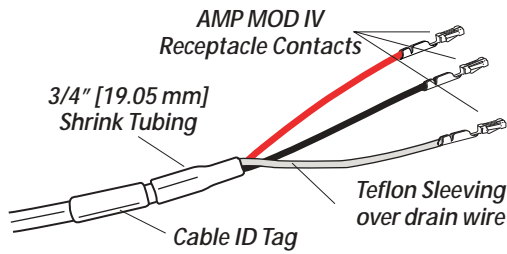


AMP MOD IV Receptacle Contacts

Follow these steps for audio wire preparation:

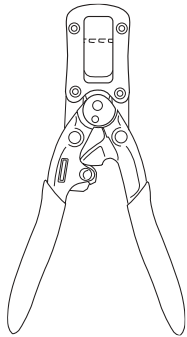
- 1 Strip the cable insulation jacket and foil shield back 1½" [38.10 mm].
- 2 Remove the foil shield and sleeve the drain wire with 20 AWG Teflon sleeving. Leave 9/64" [3.57 mm] of the drain wire exposed.
- 3 Cover the cut end of the jacket with 3/4" [19.05 mm] of heat-shrink tubing. Shrink this tubing, centered on the jacket cut end, to hold the drain wire sleeving in place.
- 4 Strip the signal wire insulation back 9/64" [3.57 mm].
- 5 Crimp the receptacle contact onto the wire and insulation.

Audio Cable Shielding Note: To follow recommended grounding procedures, the drain wires must be sleeved with Teflon sleeving and heat shrink tubing must cover all cable jacket cut ends to insulate the shield wiring.



Audio Wire, ready for insertion into an AMP MOD IV connector housing

Logic control cables are fabricated in a similar manner to the audio wiring. Strip the jacket insulation back 1½" [38.10 mm], sleeve the cut end with ¾" [19.05 mm] of shrink tubing and strip the insulation from each wire 9/64" [3.57 mm].



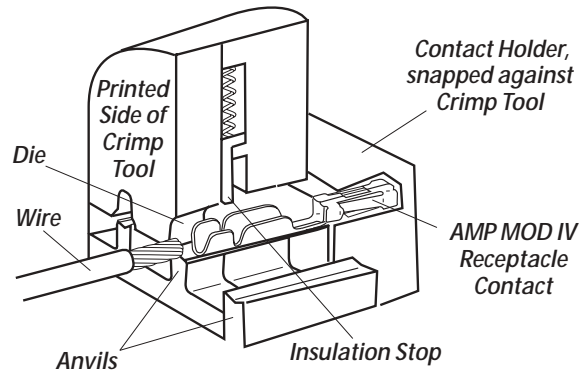
**AMP MOD IV
Contact
Crimp Tool**

CRIMP TOOL OPERATION

A ratcheting AMP crimp tool with contact holder is included. The tool crimps both the insulation and wire barrels on the AMP MOD IV receptacle contact in one crimp. To use the ratcheting crimp tool:

- 1 Insert the contact into the contact holder with the barrel openings up. Typically the middle holder is used (for 20 - 24 AWG wire). Flip the holder up so it magnetically latches against the crimp tool. The end of the insulation barrel will be about 2 mm from the end of the die. Close the tool one click (only until the anvil holds the contact in place, as shown in the cutaway view, above.)
- 2 Insert the prepped wire into the contact until the insulation hits the tool's wire stop. Hold the wire in place while squeezing the tool

handles to crimp the contact onto the wire. The tool handles automatically release and spring open after the crimp cycle is complete.

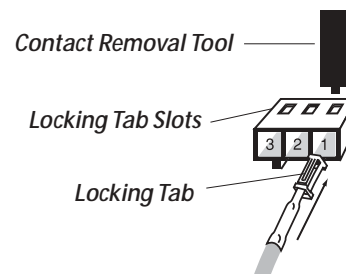


Crimp Tool — Cutaway View

Once the contact has been crimped, insert and lock the contact receptacle into the appropriate connector housing following the pinout diagrams found in the Quick Connection Guides on pages 2-16 to 2-57.

A receptacle contact is inserted into the housing with its locking tab side toward the locking tab slots on the side of the connector housing. A slight click can be heard when the contact's locking tab springs up into the locking tab slot.

To remove a contact from a housing, the PRE70-129 Contact Removal Tool (included in the PRE76-2001 tool kit) is required. Insert the tool's tip into the locking tab slot and press the locking tab down while lightly pulling on the wire to remove the contact from the housing.

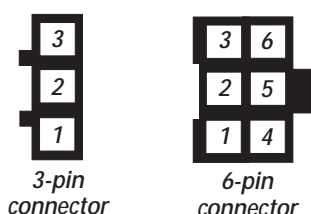


**Receptacle Contact,
Insertion & Removal Detail**

AUDIO CONNECTIONS

Audio connections take advantage of the three-pins per row design of the three- and six-pin AMP MOD IV housings. Three-pin housings are used for balanced digital connections while six-pin housings are used for balanced analog connections. One important exception is the Mic Preamp module, which uses three-pin connectors for balanced analog microphone inputs.

Pin Numbers for Analog & Digital Audio Connectors,



Pin numbering shown from the wire insertion end, oriented from the board operator's perspective.

All audio wiring, when plugged into a module connector, has this orientation:

- The audio shields are on pins 1 and 4 (the pins closest to the board operator).
- The audio low wires (typically the black wires) are on pins 2 and 5 (the middle pins).
- The audio high wires (typically the red wires) are on pins 3 and 6 (the back pins).

For stereo applications, the left channel wires plug into the left column of pins and the right channel wires plug into the right column of pins (from the board operator's perspective).

When a six-pin input comes from a mono source (such as an external microphone preamp output), the left and right inputs should be paralleled together (pins 1 and 4 tied together, pins 2 and 5 tied together and pins 3 and 6 tied together). If this is not done, then the module's mode buttons will have to be set for mono operation (see page 3-5 for L/R Mode information on the Universal Input Module).

Analog Connections

There are no analog interstage patch points within the BMXdigital input or output modules. To use the console with a patch bay, connect the line level outputs from the peripheral devices directly to the patch bay. Normal these signals to the appropriate analog input modules.

Likewise, the BMXdigital's analog outputs may be routed through a patch bay normalled to standard peripherals such as analog on-air processing gear, recorders, telephone hybrids, etc.

The Mic Preamp module's line-level outputs (+4 dBu, nominal, balanced, mono outputs) can also be routed through a patch bay normalled to an input module, or to external mic processing.

When a mic processor with only a microphone level input is used, the microphone is connected directly to the mic processor, with the processor's line-level output either directly connected to an input module (using the mono wiring pinout shown below) or through a patch bay normalled to an input module.

Two-Channel (Stereo) Line Input or Output — 6-Pin Housing

Pin	Signal Description
1	Shield for the left channel, or signal 1
2	Low (- input or output), left channel, or signal 1
3	High (+ input or output), left channel, or signal 1
4	Shield for the right channel, or signal 2
5	Low (- input or output), right channel, or signal 2
6	High (+ input or output), right channel, or signal 2

Single Channel (Mono) Line Input — 6-Pin Connector

Pin	Signal Description
1	Shield (connects directly to the chassis)
2	Low (- input) tied to pin 5
3	High (+ input) tied to pin 6
4	Shield (connects directly to the chassis)
5	Low (- input) from pin 2
6	High (+ input) from pin 3

Microphone Input — 3-Pin Connector

Pin Signal Description

- | Pin | Signal Description |
|-----|---|
| 1 | Shield (connects directly to the chassis) |
| 2 | Low (- input) |
| 3 | High (+ input) |

Digital Connections

Digital inputs and outputs are wired like the Microphone Input shown above.

The Universal Input, RLS and Telco/Codec modules have digital inputs. The three-pin digital inputs accept AES-3 (AES/EBU) compatible signals, and as mentioned in the Unbalanced Connections section that follows, can also accept S/PDIF signals in most cases.

Each Output module has multiple digital outputs. Each outputs an AES-3 compatible signal.

Note: The digital outputs cannot connect directly to an S/PDIF input. A signal translation interface is required.

AES/EBU Digital Inputs and External Clock Reference Input

Pin Signal Description

- | Pin | Signal Description |
|-----|---|
| 1 | Shield (connects directly to the chassis) |
| 2 | Low (- input) |
| 3 | High (+ input) |

AES/EBU Digital Outputs

Pin Signal Description

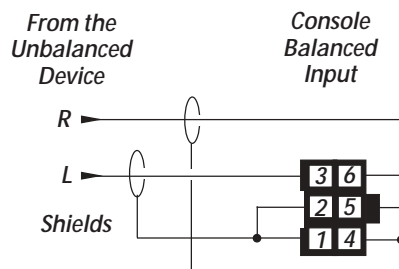
- | Pin | Signal Description |
|-----|---------------------------|
| 1 | Shield for AES/EBU signal |
| 2 | Low (- output) |
| 3 | High (+ output) |

UNBALANCED CONNECTIONS

Although all analog inputs and outputs are active and balanced, unbalanced consumer or “semipro” equipment can be connected to the console. For best results, connect an unbalanced device through an IHF-PRO match box and keep the unbalanced cable lengths as short as possible.

If a match box is not available, connect an unbalanced device to a BMXdigital input using the following illustration.

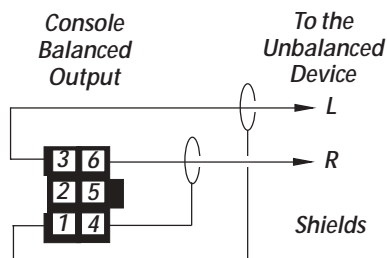
Connecting an Unbalanced Device to a BMXdigital Analog Input



When an unbalanced device must be connected to a BMXdigital balanced analog output, and an IHF-PRO match box is not available, do not tie the low (-) and shield pins together to “unbalance” the signal. The low output pin must always be left “floating” when unbalancing a BMXdigital output, as shown in the following illustration.

Connecting an Unbalanced Device to a BMXdigital Analog Output

(Nominal Output is -2 dBu)

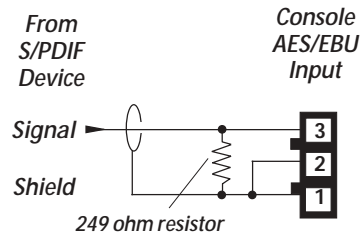


(Make no connections to pins 2 & 5)

S/PDIF Signals

Digital devices with only an S/PDIF digital output can connect to a BMXdigital input, but only when a 249 ohm resistor is used to load the 75 ohm S/PDIF cable. Install the resistor at the AMP MOD IV housing per the illustration on the next page.

Connecting an S/PDIF Device to a BMXdigital AES/EBU Input



An unbalanced-to-balanced line transformer can also be used to interface an S/PDIF signal.

Note 1: A signal conversion interface must be used to connect an AES/EBU output to a S/PDIF input.

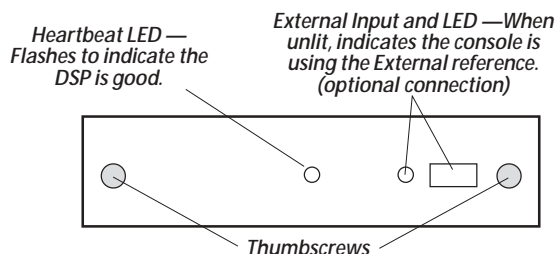
Note 2: Some S/PDIF signals may not work with the BMXdigital's inputs, even with the additional load resistor or a transformer, because of nonstandard levels or protocols in the S/PDIF product.

DIGITAL CLOCK REFERENCE

The BMXdigital has an internal clock for sample rate timing, with sample rate converters on each input to synchronize/convert external digital signals to the console's internal 48 kHz sample rate.

The console can synchronize to an external AES-3 digital reference signal (of 48 kHz, ± 100 ppm only) when using the optional Ext. Input DSP card (99-1356-1). A 3-pin connector on the card has a green LED next to it to indicate whether the internal or external reference is active. When a valid external reference signal is present, the LED is off. If the LED is still lit with an external signal connected, it indicates the reference signal is not present or is out of range.

DSP Card Features



LOGIC CONNECTIONS

BMXdigital modules have built-in logic I/O interfaces that can control, or be controlled by, peripheral devices connected to the console. For example, a CD player connected to a module can be automatically started when the module is turned on. Then, at the end of the cut, the CD Player logic can turn the module audio off and control the off button illumination to indicate that the cut has been played.

When a mic remote control panel is connected, its On, Off, Cough and Talkback buttons control the module while tally outputs from the module control the button tallies on the mic panel.

BMXdigital modules have the following logic connectors:

- Universal Input modules have two MAIN connectors for the devices connected to the A and the B inputs and two T/B OPTION connectors for separate talkback control for the A and B mic inputs.
- Telco/Codec and RLS modules have a single LOGIC I/O connector for the device connected to the module.
- The Session module has three EXTTIMER connectors for resetting studio or producer timers, a DATA (RJ-45) connector for connecting the console to a local LAN and the connectors for the factory-installed wiring that ties the mainframe to the meter panel.
- The Control Room module has a LOGIC connector for the warning light, mute, dim, and talkback. A CUE CNTL connector allows external cue input control.
- The optional Studio module has two LOGIC connectors for dim, mute, and warning indications and two talkback connectors (PRODUCER and EXTERNAL).
- The Output 1 module has a PRODUCER IFB LOGIC connector.

MODULE QUICK GUIDES

Pages 2-16 to 2-57 have Quick Guides to configuring logic connections and DIP switch settings. Each guide covers the audio and logic connector pinouts and signal descriptions, DIP switch setting definitions, and, for some modules, logic block diagrams. The Module Quick Guides:

- **Mic Preamp:** pages 2-16 & 2-17
- **Universal Input:** pages 2-18 to 2-23
- **Telco/Codec:** pages 2-24 to 2-27
- **RLS:** pages 2-28 to 2-31
- **Session:** pages 2-32 & 2-33
- **Control Room:** pages 2-34 to 2-38
- **Studio:** pages 2-40 to 2-49
- **Output 1:** pages 2-50 to 2-53
- **Output 2:** pages 2-54 & 2-55
- **Output 3:** pages 2-56 & 2-57

Note: There are four versions of each Input module: full-featured (shown in the Quick Guides); limited-function modules (without the Utility or Send bus controls); and full-featured or limited-featured Net-only modules (which have no input and logic connectors).

Pages 2-58 to 2-63 show examples of typical logic connections to the Universal Input module from a mic remote control panel, a CD player and a digital delivery system. Pages 2-64 thru 2-66 cover the Net Card and Net-Only modules.

Note: For complete isolation of the console and a peripheral device, use only the opto-isolated control connections. Both logic ground and +5 VDC are referenced to the console's power supply and ground and should only be connected to isolated devices like mic control panels or other Harris Accessory Panels. Connecting logic ground to a non-isolated device may result in a ground loop between the console and the peripheral device.

UNIVERSAL LOGIC INTERFACE

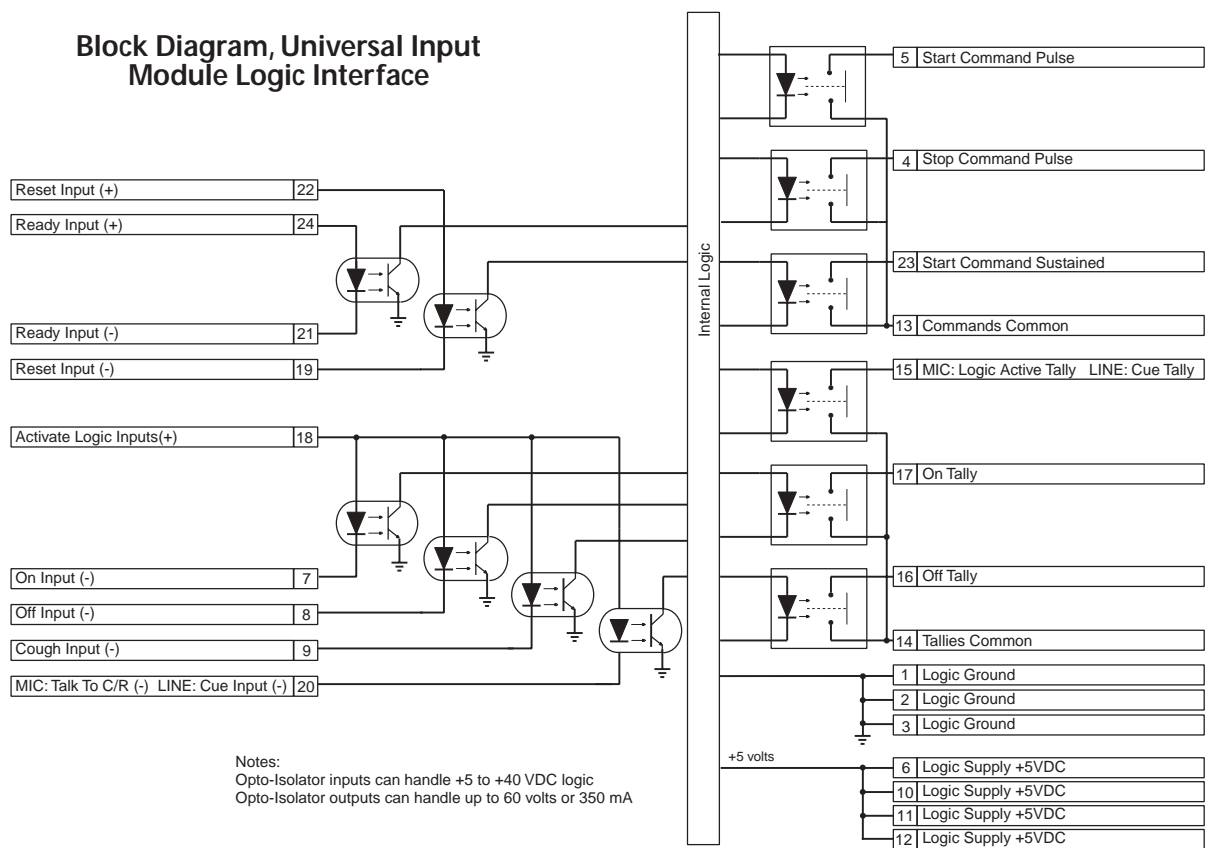
A block diagram of the Universal Input module logic interface is shown on page 2-13. Logic outputs (shown on the right side of the illustration) are isolated from the peripheral device by six solid-state "relays." The "relay contacts" can switch logic voltages of up to 60 volts at 350 mA.

Pressing the On button generates a 220 ms contact closure from pin 5 (Start Command Pulse). A sustained contact closure while On is available on pin 23 (Start Command Sustained). It stays closed as long as the module is On. Pressing the Off button generates a 220 ms closure from pin 4 (Stop Command Pulse). These three command outputs are tied together at pin 13 (Command Common).

Module DIP switches DS2-2 (for the A input) and DS4-2 (for the B input), set whether a single pulse is output when the module status changes (Off to On, or On to Off), or if each additional press of the On or Off buttons produces another contact closure. The default setting (switch 2 set to OFF) is a single contact closure. When DS2-2 or DS4-2 is set to ON, then each additional press of the On or Off button produces another 220 ms contact closure.

The remaining outputs; Logic Active/Cue Tally [pin 15], On Tally [pin 17], and Off Tally [pin 16], are tied together at Tallies Common [pin 14]. They present sustained logic outputs for each function.

There are six logic inputs on the left side of the illustration: Reset, Ready, On, Off, Cough and Talk to Control Room/Ext. Cue. These inputs are opto-isolated and current limited so any logic voltage from +5 to +40VDC can be used. Reset and Ready have both high (+) and low (-) input pins so that either polarity logic can be used. The other inputs use active low logic (pull to ground) that typically come from a mic control panel (although On and Off could be triggered by a peripheral device). To use these inputs, pin 18 (Activate Logic Inputs) must be jumpered to the + logic voltage. Typically



this is pin 6 (Logic Supply +5 VDC), but it can also be supplied by the peripheral device.

The Audio Reset and Ready inputs can use either active low logic (pull to ground) or active high logic (pull to +VDC) from peripheral devices. With active high logic, Ready (-) and Audio Reset (-) are tied to logic ground on the peripheral device. Ready (+) and Audio Reset (+) then connect to the appropriate logic outputs on the peripheral device.

When active low logic is used by the peripheral device, Ready (+) and Audio Reset (+) connect to the logic supply voltage on the peripheral device, and Ready (-) and Audio Reset (-) connect to the appropriate logic outputs.

Pin 15's signal (Logic Active Tally / CueTally) changes depending upon whether the channel logic switches (DS1/DS3) are set to mute any location. When any mute is set (DS1/DS3, switches 2 - 5

are set to On), the module is set as a microphone and the Logic Active Tally output (pin 15) is closed when that input (input A for DS1 or input B for DS3) is active. When no mute is set, the module is set for line logic and pin 15 becomes a Cue Tally.

Setting DIP Switches

When referring to a module's DIP switch setting, a switch is Set to Off when it is to the right and it is Set to On when it is to the left (orientation is from the board operator's perspective). In

the illustration, all odd numbered switches are shown set to On and all even numbered switches are shown set to Off.



*On = set Left
Off = set Right*

Universal Input Module Logic and Mics

Microphone logic has three main functions: to mute the monitor speakers in the room with a “hot” mic; to command a hot mic warning light; and to activate logic functions like talkback and cough.

The warning commands come from the Control Room or Studio modules, but it is the Universal Input modules that tell the monitor modules that the input is a mic and where that mic is located (control room, a studio, or an external site).

Setting a Universal input module as a mic input is done by either setting DIP switch 2, 3, 4 or 5 to On on DS1 (A input) or DS3 (B input) or, when a console is tied into a VistaMax system, by assigning the input using its Room Code. The Room Code is a VistaMax system function that sets the room using a Session file setting that is typically used when the mic is routed through the VistaMax system.

Direct Mic Connections

Pages 2-58 and 2-59 summarize setting up a Universal Input module as a direct microphone input, utilizing a PRE99-1198 Mic Panel (simplified schematic shown below). This is typically how mics in the control room or in a dedicated studio are connected. Both the mic audio and the mic

logic are wired directly to an input module’s connectors. This is typically how mics are wired even when the console is connected to a VistaMax system since the active input mic audio can be made available as a VistaMax source—allowing the mic audio to be routed to another console or other destination in the VistaMax system.

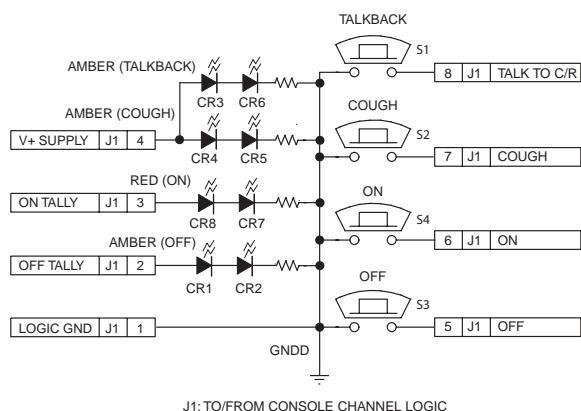
VistaMax Mic Connections

When a studio, voice-over booth, or other external location will be shared by multiple control rooms, then the shared mics should be routed through the VistaMax system. This then allows each BMXdigital console to independently control the mics (just as if they were directly connected to the console) via the VistaMax system.

The shared mics and their mic panels are wired directly to an Analog I/O and a Logic I/O card in a VistaMax frame. The logic signals for the mic panel are “bound” to the mic audio during setup. Thus, selecting a mic as a source by any console automatically routes both the audio and logic to that console through its Net Card. Tally commands from the console to the mic panel are routed through the Net Card and the Logic I/O Card.

For additional networked audio information refer to the VistaMax manual (Harris # 75-52).

Mic Control Panel (Simplified Schematic for PRE99-1197 or PRE9-1198)



Mic Logic To/From a BMXdigital Module

A mic panel connects to a Universal Input module using the MAIN logic connector (a simplified schematic is on page 2-13). To enable the remote control inputs (On, Off, Cough, Talkback), pin 18 (Activate Logic Inputs) must jumper to the +5VDC supply (pin 6, 10, 11, or 12). The On Tally output (pin 17) drives the LEDs in the On button and the Off Tally (pin 16) drives the LEDs in the Off button. The other LEDs (Cough and Talkback) connect to +5 VDC. Switches and LEDs are commoned to Logic Ground.

To make a custom mic panel, use SPST (single

pole, single throw) momentary contact switches with LED or lamp indicators. Lamps must be 6.3 volt type with a current draw of under 50 mA.

Tie one side of each switch and lamp to Logic Common (pin 1, 2 or 3 on the MAIN connector). The other side of the Cough and Talkback lamps are tied together to Logic Active Tally (pin 15).

Each switch is tied to its logic counterpart (the On switch goes to the On (-) input, pin 7, the Off switch goes to Off (-) input, pin 8, etc.). The on/off lamps are tied to their Tally outputs (On lamp to On Tally, pin 17; Off lamp to Off Tally, pin 16).

Tallies Common (pin 16) is jumpered to +5VDC (pin 6, 10, 11 or 12). Pin 18, Activate Logic Inputs (+), is also jumpered to +5 VDC (typically pin 6 is used).

Input Module Logic (Universal Input, Telco/Codec, RLS) and Peripheral Devices

Peripheral devices are controlled through the Start and Stop Command Pulses, or through the Start Command Sustained logic, and the Commands Common connections.

In the basic logic connection example on pages 2-60 and 2-61, active low logic is used, thus Commands Common is connected to the logic ground on the peripheral device (labeled Command Common on the Denon CD player in the example).

In the complex logic example shown on pages 2-62 and 2-63, active high logic is used, thus Commands Common connects to +5 VDC.

Note: This voltage is more typically supplied directly by the peripheral device in order to prevent ground loops.

Peripheral devices control the module through the Reset and Ready logic inputs. In the example on pages 2-60 and 2-61, only the Ready function is used. The Ready function performs an audio Reset, which turns off the module without generating a Stop Command Pulse. In addition, it also controls the Off lamp illumination.

Pages 2-62 and 2-63 show an example where Reset (+) and Ready (+) connect to +5 VDC on the module. The Ready (-) command and the Reset (-) command are pulled low by the active low logic relay outputs on the peripheral device, which all tie to the module's Logic Ground (pin 1).

For devices requiring a steady On signal, the Start Command Sustained output can be used.

Additional Logic Connections

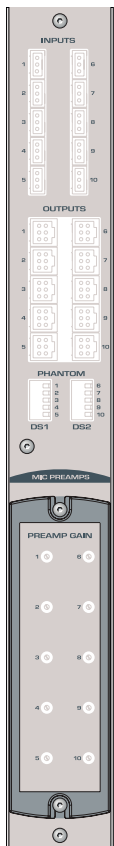
There are additional logic connections on the Session module, Control Room module, optional Studio module, and Output 1 module.

Three 3-pin connectors on the Session module interface remote timers so they can be reset by the console timer reset logic. The Session module also has factory-installed cabling for the clock and timer, the talkback mic, the digital meters and the meter legend display data. For more information on the Session module's logic connections and settings, see pages 2-32 and 2-33.

A 14-pin connector on the Control Room module carries the logic interface for the Control Room warning light, mute, dim and talkback. An 8-pin connector on the Control Room module controls the External Cue input. For more information on the Control Room module's logic connections and settings, see pages 2-34 to 2-38.

The optional Studio module has two 14-pin connectors to control the two studios' logic (warning lights, mutes, dims). The Studio module also has two 16-pin connectors: one for the talkback audio and logic for a producer, the other for talkback audio and logic from an external site. For more information on the Studio module's logic connections and settings, see pages 2-40 to 2-49.

The Output 1 module includes an 8-pin connector to control the producer's talkback to each mix-minus output. For more information on the Output 1 module's logic connections and settings, see pages 2-50 to 2-53.



QUICK GUIDE TO THE MICROPHONE PREAMPLIFIER MODULE

The BMXdigital mic preamp contains two separate PCAs with five mic preamps on each board. The BMXdigital-8 and -14 come standard with five mic preamps, whereas the BMXdigital-22, -30 and -38 come standard with ten mic preamps. Each 3-pin input connects to a separate mic preamp driving its own 6-pin line-level balanced analog output connector. The connectors are hidden by the meter panel in normal operation.

INPUTS

Inputs— The 3-pin analog inputs accept mono microphone signals. Connect only low impedance, balanced, dynamic or condenser microphones, with nominal mic output levels of -65 to -30 dBu, to these inputs.

Analog Mic Inputs

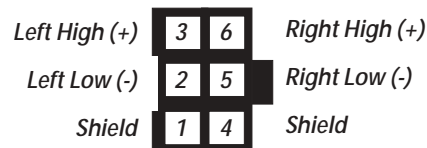


(wire insertion end view)

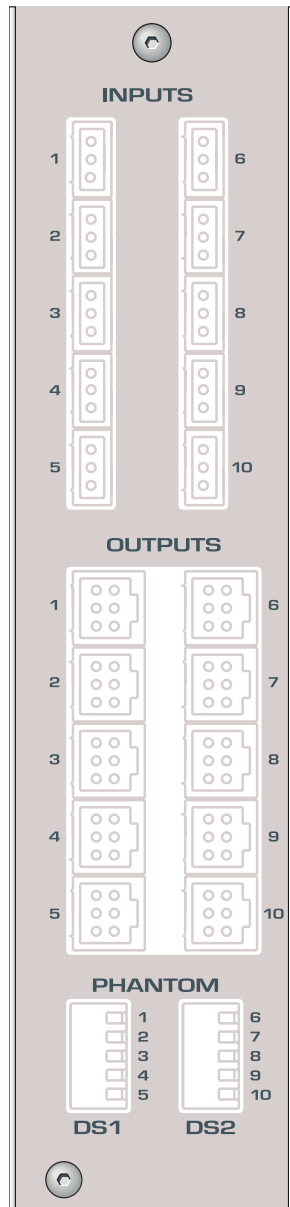
OUTPUTS

Outputs — The 6-pin analog outputs are wired in parallel (mono) using the standard pinout sequence. This allows these outputs to connect directly to Universal Input modules without requiring any setting changes to be made to the Input Mode from a standard stereo input. The preamp output signal level is +4 dBu.

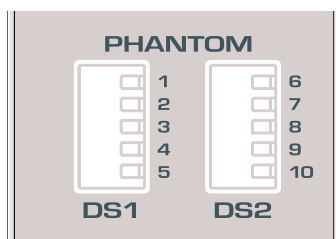
Analog Preamp Outputs



(wire insertion end view)



MICROPHONE PREAMPLIFIER MODULE SWITCHES



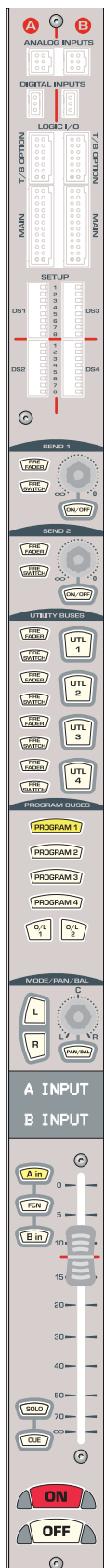
PHANTOM

DS1/DS2 — These DIP switches set whether phantom power is applied to each mic input. The factory default setting for all switches is OFF.

Microphone Preamplifier Module Switch Definitions

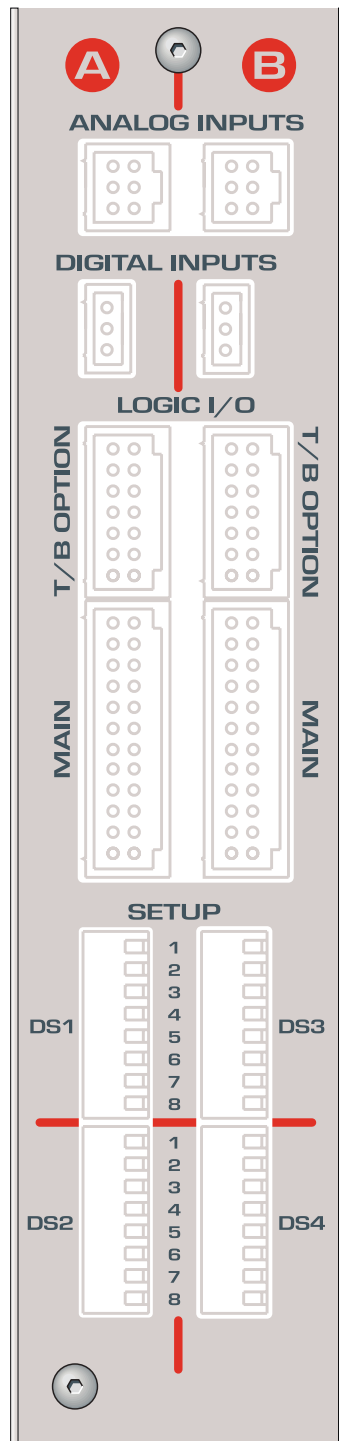
#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
DS1	1 Mic Input #1	Phantom power on	Phantom power off
	2 Mic Input #2	Phantom power on	Phantom power off
	3 Mic Input #3	Phantom power on	Phantom power off
	4 Mic Input #4	Phantom power on	Phantom power off
	5 Mic Input #5	Phantom power on	Phantom power off
DS2*	6 Mic Input #6	Phantom power on	Phantom power off
	7 Mic Input #7	Phantom power on	Phantom power off
	8 Mic Input #8	Phantom power on	Phantom power off
	9 Mic Input #9	Phantom power on	Phantom power off
	10 Mic Input #10	Phantom power on	Phantom power off

* Optional on the BMXdigital-8 and BMXdigital-14, standard on the other frame sizes.



QUICK GUIDE TO THE UNIVERSAL INPUT MODULE

Eight connectors come standard on each Universal Input module: two 6-pin analog audio input connectors, two 3-pin digital audio input connectors, two 14-pin logic connectors, and two 24-pin logic connectors. The connectors are hidden by the meter panel in normal operation.



AUDIO INPUTS

ANALOG INPUTS A & B — The 6-pin analog inputs accept stereo or mono line level signals. Mono signals, like those from a preamplified microphone, should be paralleled to the left and right inputs.

Analog Inputs - Stereo

Left High (+)	3	6	Right High (+)
Left Low (-)	2	5	Right Low (-)
Shield	1	4	Shield

(wire insertion end view)

Analog Inputs - Mono

High (+)	3	6	High (+)
Low (-)	2	5	Low (-)
Shield	1	4	Shield

(wire insertion end view)

DIGITAL INPUTS A & B — The two 3-pin digital inputs accept AES-3 (AES/EBU) or S/PDIF signals (when the circuit shown on page 2-11 is used).

Digital Inputs

High (+)	3
Low (-)	2
Shield	1

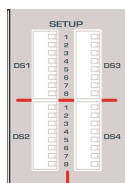
(wire insertion end view)

LOGIC I/O

T/B OPTION A & B — Two 14-pin Talkback connectors allow separate A/B input control of talkback when microphone logic is active. Connects to a PRE99-1199 Mic Remote Panel with five Talks, or a custom talkback control panel. For additional information, see pages 2-22 and 2-23.

MAIN A & B — Two 24-pin logic connectors allow separate A/B input control of the peripheral devices connected to the A and B inputs. For additional information, see pages 2-20 and 2-21.

UNIVERSAL INPUT MODULE SWITCHES



SETUP

DS1/DS2 — These 16 DIP switches affect the logic settings for the A input. Individual switch definitions are listed below.

DS3/DS4 — These 16 DIP switches affect the logic settings for the B input. Individual switch definitions are listed below.

Universal Input Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Signal Source	Digital	Analog
2	CR Mute	Mutes C/R speakers at module on ¹	No monitor muting
3	Studio 1 Mute	Mutes Studio 1 speakers at module on ¹	No monitor muting
4	Studio 2 Mute	Mutes Studio 2 speakers at module on ¹	No monitor muting
5	External Site Mute	Mutes external site speakers at module on ¹	No monitor muting
6	Local On Cough	Hold down On button as Cough button	On button not used for Cough
7	Timer Reset	Resets timer at module on	No timer reset
8	Off Lamp Control	Local (Off lamp follows on/off status)	Remote (Off lamp follows ready logic)
DS1 / DS3	1 Fader Start	Moving Fader from/to full-off (bottom) turns module On/Off	Fader movement does not affect module On/Off
	2 Start/Stop Pulses	Multiple (each press of On/Off button generates another pulse)	Single (pulse is only generated when changing state, Off to On, or On to Off)
	3 Start/Stop Control (no mute location set)	All (pulses are generated no matter where On/Off control originates)	Local (pulses are only generated by module On/Off buttons)
	Dim Function Control (mute location is set)	Disables the Dim function when receiving talkback	Enables the Dim function (the default setting)
	4 Sample Rate Converter (SRC)	Bypasses the internal SRC (use only when the console and all the audio sources are locked to an external reference) ²	Uses internal SRC (normal setting)
	5 Mute Setting Control	Use local DIP switches to set Mute location	VistaMax Room Code sets Mute location
	6 Spare Switch		
	7 Input Level Set	See table below	See table below
DS2 / DS4	8 Input Level Set	See table below	See table below

Switches 7 & 8 Table

These switches are used together to set the nominal reference levels for the A and B inputs. The factory default settings are both OFF.

7	8	Analog ³	Digital ⁴
Off	Off	+4 dBu	0 dB
Off	On	+6 dBu	-6 dB
On	Off	+8 dBu	-12 dB
On	On	-10 dBV	-18 dB

¹ The module logic is set as Microphone when any of these switches are set to On with a directly connected mic. When the mic is a net source, then switch DS2/4-5 sets how the mute location is set (using a DIP switch or using Room Code).

² Refer to page 2-11, Digital Clock Reference for details on an external reference.

³ The nominal input to achieve -20 FSD (equal to a +4 dBu output), with the fader set to the red reference line.

⁴ The amount of gain reduction applied to the digital input signal.

UNIVERSAL INPUT MODULE — MAIN LOGIC

The left connector connects to the A Input device; the right connector connects to the B Input device.

Pins 15 and 20 have dual logic functions. With the module set as a Mic Input (DS1 or DS3 switch 2, 3, 4, or 5 is set to ON) then pin 15 is a Logic Active Tally and pin 20 is the Talk to Control Room logic input. However, when the module is used as a Line Input (DS1 or DS3 switches 2, 3, 4, and 5 all set to OFF), then pin 15 is a Cue Tally output and pin 20 is an external Cue command.

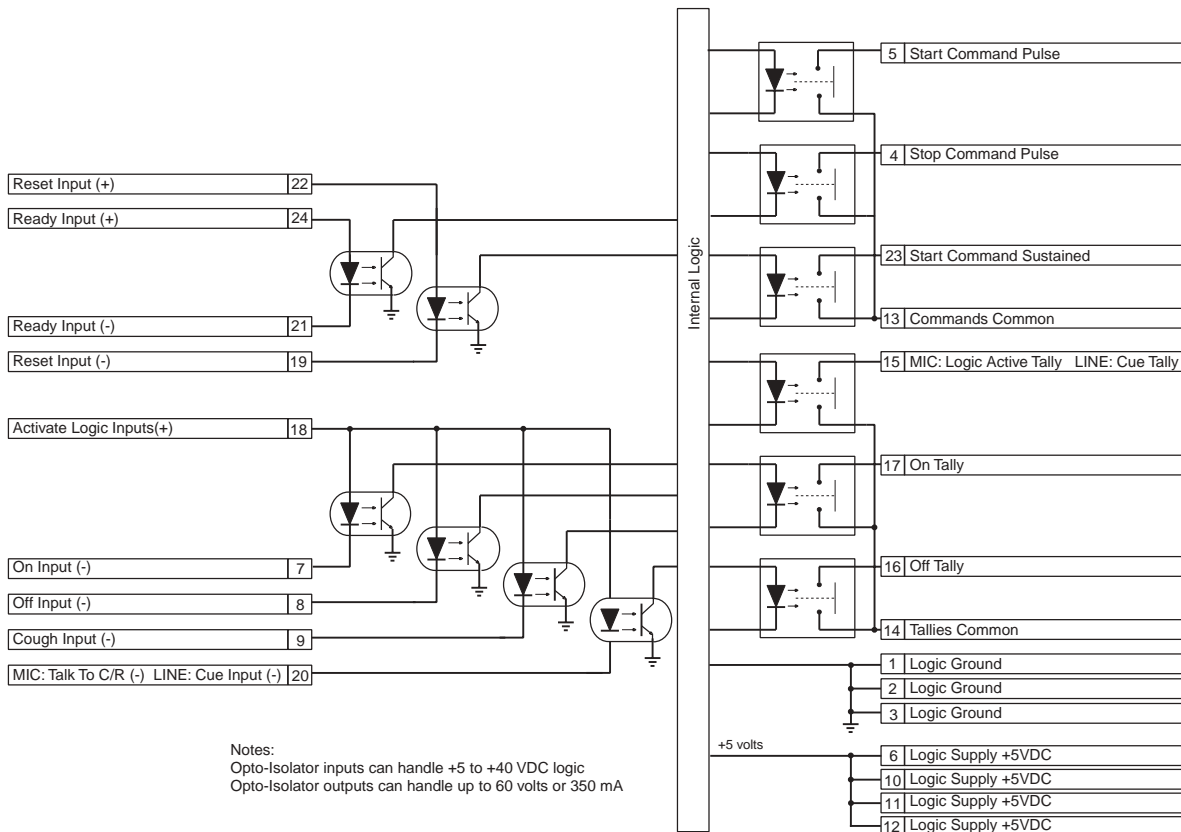
See pages 2-58 to 2-63 for examples of typical logic connections.

MAIN Connector

Logic Supply +5 VDC	12	24	Ready (+)
Logic Supply +5 VDC	11	23	Start Command Sustained
Logic Supply +5 VDC	10	22	Reset (+)
Cough (-)	9	21	Ready (-)
Off (-)	8	20	MIC: Talk to C/R (-) LINE: Ext Cue (-)
On (-)	7	19	Reset (-)
Logic Supply +5 VDC	6	18	Activate Logic Inputs (+)
Start Command Pulse	5	17	On Tally
Stop Command Pulse	4	16	Off Tally
Logic Ground	3	15	MIC: Logic Active Tally LINE: Cue Tally
Logic Ground	2	14	Tallies Common
Logic Ground	1	13	Commands Common

(wire insertion end view)

Universal Input Module, MAIN — Simplified Logic Diagram



Universal Input Module MAIN Logic Signal Definitions

PIN NAME/NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
START COMMAND PULSE (pin 5)	Equivalent to a Normally Open (N/O) relay contact. A momentary "contact closure" of 220 ms is generated when the module On button is pressed. Typically connects to the Remote Start logic input on the peripheral device. When DS2-2 or DS4-2 is set to On, each press of the On button generates another contact closure.
STOP COMMAND PULSE (pin 4)	Same as the Start Command Pulse, except it is initiated by the module Off button. Typically connects to the Remote Stop or Pause logic input on the peripheral device.
START COMMAND SUSTAINED (pin 23)	Same as Start Command Pulse, except it is a maintained contact closure for as long as the module is on. Typically connects to the Remote Start logic input on a peripheral device that cannot use a start pulse.
COMMANDS COMMON (pin 13)	The Common (C) relay contact output for the three Start and Stop Command outputs. Sets whether the Start and Stop Commands are active high (connect this pin to the logic supply voltage on the peripheral device) or active low (connect this pin to logic ground on the peripheral device).
ACTIVATE LOGIC INPUTS (+) (pin 18)	To enable the control inputs: On, Off, Cough, Talk/Ext Cue, tie this pin to + logic voltage (+5 to +40). When tied to an isolated device like a mic remote panel, use the Logic Supply +5 VDC (jumper pin 18 to pin 6, 10, 11 or 12).
ON (-) (pin 7)	When pulled low, turns the module on from off, generating a Start Pulse if DS2-3 or DS4-3 is set to On. Input is ignored if the module is already on, unless DS2-2 or DS4-2 is set On (each press generates a Start Pulse output).
OFF (-) (pin 8)	When pulled low, turns the module off from on, generating a Stop Pulse if DS2-3 or DS4-3 is set to On. Input is ignored if the module is already off, unless DS2-2 or DS4-2 is set On (each press generates a Stop Pulse output).
COUGH (-) (pin 9)	When pulled low, mutes the audio from all assigned buses for as long as the Cough button is pressed.
TALK TO C/R or CUE (-) (pin 20)	When pulled low, and the module is set as a Mic, the input audio is muted from all output buses and only routed to the talkback bus. When set as a Line, routes the input audio to the Cue bus while the input is low.
TALLIES	All Tally outputs are N/O "dry contact" type outputs. Typically used to drive indicators, the outputs can sink or source up to 60 volts at 350 mA. The "C" or common contact for all the tallies is Tallies Common (pin 14).
OFF TALLY (pin 16)	This output connects to Tallies Common while the module is off when DS1-8 or DS3-8 is set to On. When DS1-8 or DS3-8 is set to Off, then this output is controlled by the Ready logic.
ON TALLY (pin 17)	This output connects to Tallies Common while the module is on.
LOGIC ACTIVE TALLY or CUE TALLY (pin 15)	This output connects to Tallies Common when the module is set as a Mic and the matching A or B input is selected. When set as a Line input, the output is connected to Tallies Common while Cue is active.
TALLIES COMMON (pin 14)	The "C" relay contact for the three Tallies, it must be tied high or low to provide the return path for the Tallies. Typically, the tally lamps are all tied to ground and Tallies Common connects to the lamp supply voltage (+5 to +60 VDC). If the Tallies are tied to +VDC, then this pin would tie to ground.
READY (+) & (-) RESET (+) & (-)	These complementary logic inputs require +5 to +40 VDC between the (+) input and the (-) input for activation. This can be done by connecting an active high logic to the (+) input and grounding the (-) input, or by supplying +5 to +40 VDC to the (+) input and an active low logic to the (-) input.
READY (+) & (-) (pins 24 & 21)	When activated while the module is on, turns the module off without generating a stop pulse. When activated while the module is off, it controls the Off lamp to indicate device status. Typically, no lamp indicates the peripheral is not ready to play, a steady lamp on indicates the device is ready, and a flashing lamp indicates the device has already played or is not yet cued up.
RESET (+) & (-) (pins 22 & 19)	When activated while the module is on, turns the module off without generating a stop pulse. Input is ignored if the module is already off.
LOGIC SUPPLY +5 VDC (pins 6, 10, 11, 12)	Module logic voltage output sources that can deliver up to 300 mA of current to isolated control panels. All pins are simply paralleled for convenience.
LOGIC GROUND (pins 1, 2, 3)	Module logic ground. Should be connected to isolated control panels only.

UNIVERSAL INPUT MODULE — T/B OPTION LOGIC

The left logic connector has the talkback features for the A input; the right logic connector has the talkback features for the B input. Talkback is only active when the module is set as a Microphone (a mute location is set on switches 2 thru 5 on DS1 and/or DS3).

The control logic can come from a PRE99-1199 Mic Panel with Five Talks, or from a custom talkback panel. Each Talk command input (Talk to Studio 1 (-), Talk to Studio 2 (-), etc.), when held low, routes the pre-fader, pre-switch module audio to the selected talk destination.

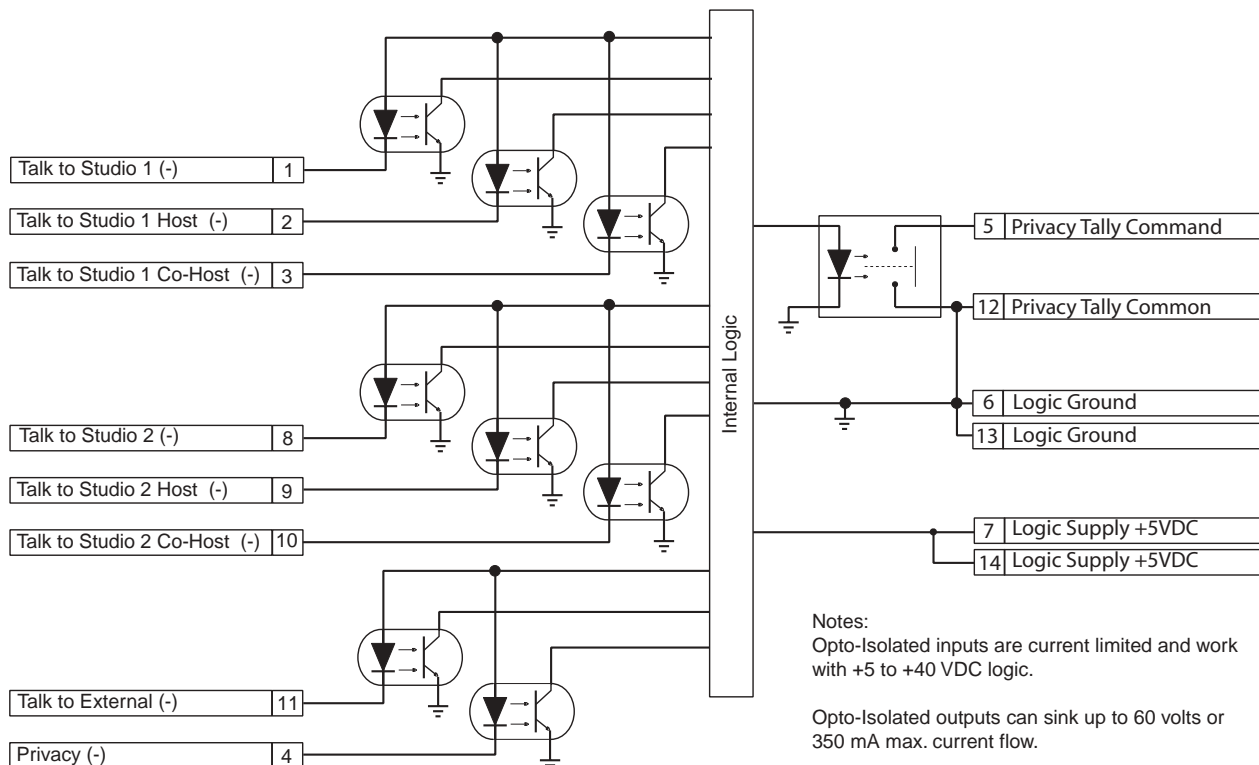
Privacy, when active, prevents anyone from monitoring the pre-switch audio in the console. While Privacy (-) is pulled low, Privacy Tally Command (pin 5) is tied to Privacy Common (pin 12), to provide a low output for activating a lamp or LED Privacy Active indicator.

T/B OPTION Connector

Logic Supply +5 VDC	7	14	Logic Supply +5 VDC
Logic Ground	6	13	Logic Ground
Privacy Tally Command	5	12	Privacy Tally Common
Privacy (-)	4	11	Talk to External (-)
Talk to Studio 1 Co-Host (-)	3	10	Talk to Studio 2 Co-Host (-)
Talk to Studio 1 Host (-)	2	9	Talk to Studio 2 Host (-)
Talk to Studio 1 (-)	1	8	Talk to Studio 2 (-)

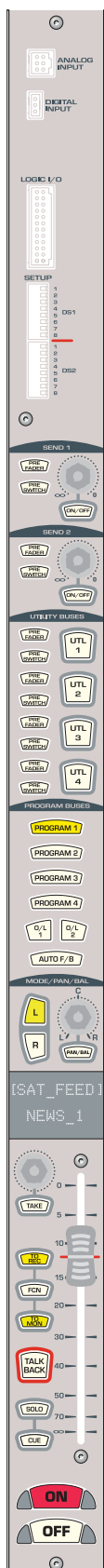
(wire insertion end view)

Universal Input Module, T/B OPTION — Simplified Logic Diagram



Universal Input Module T/B OPTION Signal Definitions

<i>PIN NAME/NUMBER</i>	<i>FUNCTIONAL DESCRIPTION OF CONNECTION</i>
TALK TO STUDIO 1 (-) (pin 1)	When pulled low, routes the module audio to the Studio 1 outputs.
TALK TO STUDIO 1 HOST (-) (pin 2)	When pulled low, routes the module audio to the host's headphones in Studio 1.
TALK TO STUDIO 1 CO-HOST (-) (pin 3)	When pulled low, routes the module audio to the co-host's headphones in Studio 1.
PRIVACY (-) (pin 4)	When pulled low, prohibits the console operator from hearing the talent mic unless the channel is turned On. Privacy applies to solo, cue, and any pre-switch assignments.
PRIVACY TALLY COMMAND (pin 5)	Output that goes low when Privacy is active.
TALK TO STUDIO 2 (-) (pin 8)	When pulled low, routes the module audio to the Studio 2 outputs.
TALK TO STUDIO 2 HOST (-) (pin 9)	When pulled low, routes the module audio to the host's headphones in Studio 2.
TALK TO STUDIO 2 CO-HOST (-) (pin 10)	When pulled low, routes the module audio to the co-host's headphones in Studio 2.
TALK TO EXTERNAL (-) (pin 11)	When pulled low, routes the module audio to the external output.
PRIVACY TALLY COMMON (pin 12)	Common connection to logic ground for the Privacy Tally Command.
LOGIC GROUND (pins 6 & 13)	Module logic ground. Connects to the Talkback control panel to provide switch returns.
LOGIC SUPPLY +5 VDC (pins 7 & 14)	Module logic voltage output source that can deliver up to 300 mA of current.



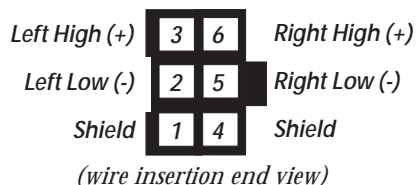
QUICK GUIDE TO THE TELCO / CODEC MODULE

Three connectors come standard on the optional Telco module: one 6-pin analog audio input connector, one 3-pin digital audio input connector, and one 24-pin logic connector. The connectors are hidden by the meter panel in normal operation.

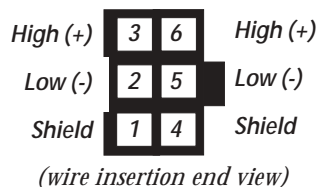
AUDIO INPUTS

ANALOG INPUT — The 6-pin analog input accepts line level stereo or mono signals. When a mono signal is connected, parallel the signal to the left and right input pins.

Analog Inputs - Stereo

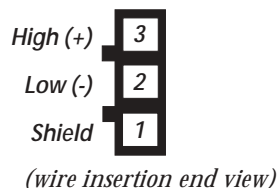


Analog Inputs - Mono



DIGITAL INPUT — The 3-pin digital input accepts AES-3 (AES/EBU) or S/PDIF signals (when the circuit shown on page 2-11 is used).

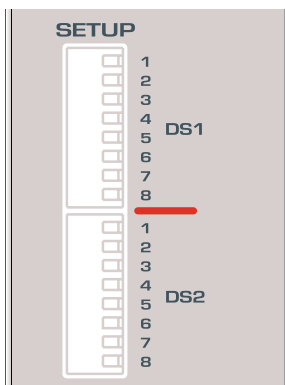
Digital Inputs



LOGIC

LOGIC I/O — The 24-pin logic connector allows control of the connected device by the module, or external control of the module by the device. When the device connects to the module through a switcher (router or External RLS), source selection addressing is output from this connector. The source (analog or digital input), whether a switcher is used and other logic selections are configured by the SETUP DIP switches (see Switch Definitions, page 2-25). For additional module information, see pages 2-26 and 2-27.

TELCO / CODEC MODULE SWITCHES



SETUP

DS1 / DS2 — These 16 DIP switches set logic functionality for the module, per the Telco/Codec Module Switch Definitions table below.

Telco / Codec Module Switch Definitions

#	Switch Name	ON Function (set to the operator's left)	OFF Function (set to the operator's right)
DS1	1 Set Telco ID	On (sets the module as Telco / Codec #1) ¹	Off
	2 Set Telco ID	On (sets the module as Telco / Codec #2) ¹	Off
	3 Set Telco ID	On (sets the module as Telco / Codec #3) ¹	Off
	4 Set Telco ID	On (sets the module as Telco / Codec #4) ¹	Off
	5 Set Telco ID	On (sets the module as Telco / Codec #5) ¹	Off
	6 Set Telco ID	On (sets the module as Telco / Codec #6) ¹	Off
	7 Signal Source	Digital Input	Analog Input
	8 Timer Reset	Resets timer at module on	No timer reset
DS2	1 Off Lamp Control	Local (Off lamp follows module on/off status)	Ready (External device controls lamp)
	2 Fader Start/Stop	Fader movement, from full off, turns module on; to full off, turns module off.	Fader movement does not affect module on/off
	3 Sample Rate Converter (SRC)	Bypasses the internal SRC (use only when the console and all the audio sources are locked to an external reference) ²	Uses internal SRC (normal setting)
	4 Source Type	Switcher (VistaMax or External RLS is used)	Direct (device plugs into module)
	5 Switcher Type	VistaMax (see Appdx. A about other routers)	External RLS (PRE99-947)
	6 O/L & Record Source	Pre-fader with module off (only when Session module switch 6 is set for Pre-Fader)	Post-fader regardless of module on/off
	7 Input Level	See DS2 table below	See DS2 table below
	8 Input Level	See DS2 table below	See DS2 table below

DS2 — Switches 7 and 8

These switches are used together to set the nominal input level. The factory default is both OFF.

7	8	Analog ³	Digital ⁴
Off	Off	+4 dBu	0 dB
Off	On	+6 dBu	-6 dB
On	Off	+8 dBu	-12 dB
On	On	-10 dBV	-18 dB

¹ Caution: Set only one of these six DIP switches to ON. This setting identifies the module, affecting signal routing and module controls. Each Telco module in the console MUST have a unique ID setting.

² Refer to page 2-11, Digital Clock Reference for details.

³ The nominal analog input to achieve -20 FSD (equal to a +4 dBu output), with the fader set to the red reference line.

⁴ The amount of gain reduction applied to the digital input.

TELCO / CODEC MODULE — LOGIC I/O

The 24-pin LOGIC I/O connector allows the module to control, or be controlled by, the device attached to the module.

A device can connect directly to the module or it can connect through a switcher. Two types of switchers are supported: VistaMax and the PRE99-947 External Remote Line Selector (Ext. RLS). The source (switcher or direct) and the switcher type (VistaMax or Ext. RLS) are set via DIP switches DS2-4 and DS2-5.

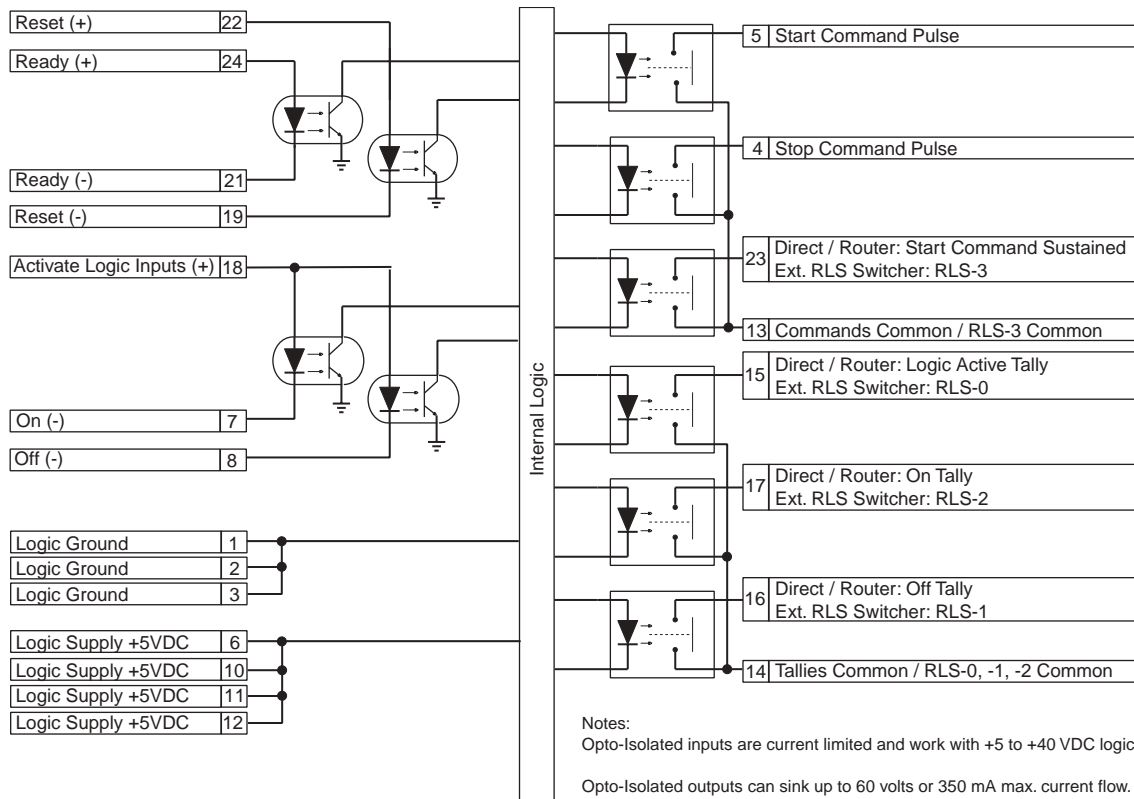
When the module connects to an Ext. RLS, several logic connections (pins 15, 16, 17 and 23) become RLS address outputs. This change occurs only when DS2-4 is set ON and DS2-5 is set to OFF. When a VistaMax or other router is used (DS2-5 is set ON), these pins do not change function since addressing is done through the Session module.

LOGIC I/O Connector

Logic Supply +5 VDC	12	24	Ready (+)
Logic Supply +5 VDC	11	23	Start Command Sustained / RLS-3
Logic Supply +5 VDC	10	22	Reset (+)
no connection	9	21	Ready (-)
Off (-)	8	20	no connection
On (-)	7	19	Reset (-)
Logic Supply +5 VDC	6	18	Activate Logic Inputs (+)
Start Command Pulse	5	17	On Tally / RLS-2
Stop Command Pulse	4	16	Off Tally / RLS-1
Logic Ground	3	15	Logic Active Tally / RLS-0
Logic Ground	2	14	Tallies/ RLS-0, -1, -2 Common
Logic Ground	1	13	Commands/ RLS-3 Common

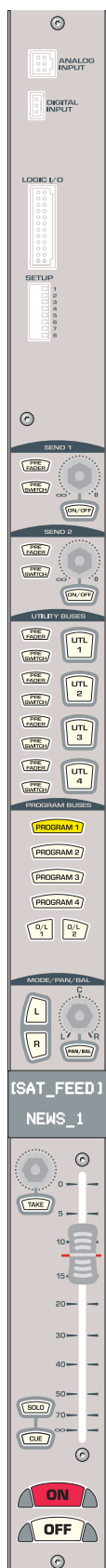
(wire insertion end view)

Telco / Codec Module, Logic I/O — Simplified Logic Diagram



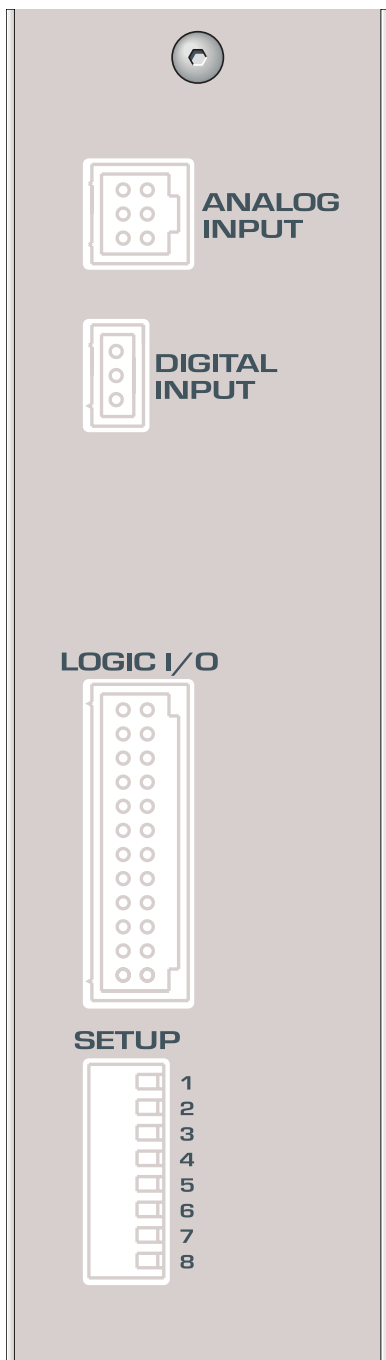
Telco / Codec Module LOGIC I/O Logic Signal Definitions

<i>PIN NAME/NUMBER</i>	<i>FUNCTIONAL DESCRIPTION OF CONNECTION</i>
START COMMAND PULSE (pin 5)	Equivalent to a Normally Open (N/O) relay contact. A momentary "contact closure" of 220 ms is generated each time the module turns on from off. Typically connects to the Remote On logic input on the peripheral device.
STOP COMMAND PULSE (pin 4)	Same as the Start Command Pulse, except it is initiated by the module Off button. Typically connects to the Remote Stop or Off logic input on the peripheral device.
START COMMAND SUSTAINED / RLS-3 (pin 23)	Direct: Same as Start Command Pulse, except it is a maintained contact closure for as long as the module is on. Typically connects to the Remote On logic input on a peripheral device that cannot use a start pulse. Ext. RLS: Outputs addressing bit 3.
COMMANDS / RLS-3 COMMON (pin 13)	The Common (C) relay contact output for the three Start and Stop Command outputs. Sets whether the Start and Stop Commands are active high (connect this pin to the logic supply voltage on the peripheral device) or active low (connect this pin to logic ground on the peripheral device).
ACTIVATE LOGIC INPUTS (+) (pin 18)	To enable the control inputs: On, Off, tie this pin to + logic voltage (+5 to +40). When tied to an isolated device like a remote panel, use the Logic Supply +5 VDC (jumper pin 18 to pin 6, 10, 11 or 12).
ON (-) (pin 7)	When pulled low, turns the module on. Input is ignored if the module is already on.
OFF (-) (pin 8)	When pulled low, turns the module off. Input is ignored if the module is already off.
TALLIES	All Tally outputs are N/O "dry contact" type outputs. Typically used to drive indicators, the outputs can sink or source up to 60 volts at 350 mA. The "C" or common contact for all the tallies is Tallies Common (pin 14).
OFF TALLY / RLS-1 (pin 16)	Direct: This output connects to Tallies Common while the module is off. When DS2-1 is set OFF, then this output is controlled by the Ready logic. Ext. RLS: Outputs addressing bit 1.
ON TALLY / RLS-2 (pin 17)	Direct: This output connects to Tallies Common while the module is on. Ext. RLS: Outputs addressing bit 2.
LOGIC ACTIVE TALLY / RLS-0 (pin 15)	Direct: This output connects to Tallies Common when module is powered up. Ext. RLS: Outputs addressing bit 0.
TALLIES / RLS-0, -1, -2 COMMON (pin 14)	The "C" relay contact for the three Tallies, it must be tied high or low to provide the return path for the Tallies. Typically, the tally lamps are all tied to ground and Tallies Common connects to the lamp supply voltage (+5 to +60 VDC). If the Tallies are tied to +VDC, then this pin would tie to ground.
READY (+) & (-) RESET (+) & (-)	These complementary logic inputs require +5 to +40 VDC between the (+) input and the (-) input for activation. This can be done by connecting an active high logic to the (+) input and grounding the (-) input, or by supplying +5 to +40 VDC to the (+) input and an active low logic to the (-) input.
READY (+) & (-) (pins 24 & 21)	When activated while the module is on, turns the module off without generating a stop pulse. When activated while the module is off, it controls the Off lamp to indicate device status. Typically, no lamp indicates the peripheral is not ready to play, a steady lamp on indicates the device is ready, and a flashing lamp indicates the device has already played or is not yet cued up.
RESET (+) & (-) (pins 22 & 19)	When activated while the module is on, turns the module off without generating a stop pulse. Input is ignored if the module is already off.
LOGIC SUPPLY +5 VDC (pins 6, 10, 11, 12)	Module logic voltage output sources that can deliver up to 300 mA of current to isolated control panels. All pins are simply paralleled for convenience.
LOGIC GROUND (pins 1, 2, 3)	Module logic ground. Should be connected to isolated control panels only.



QUICK GUIDE TO THE REMOTE LINE SELECTOR (RLS) MODULE

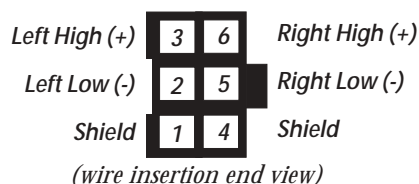
Three connectors come standard on the optional Remote Line Selector (RLS) module: one 6-pin analog audio input connector, one 3-pin digital audio input connector, and one 24-pin logic connector. The connectors are hidden by the meter panel in normal operation.



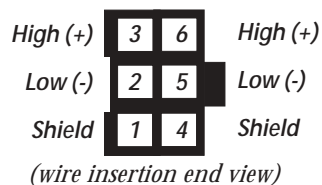
AUDIO INPUTS

ANALOG INPUT — The 6-pin analog input accepts stereo signals or mono signals. When a mono input is used, parallel the signal to the left and right inputs.

Analog Inputs - Stereo

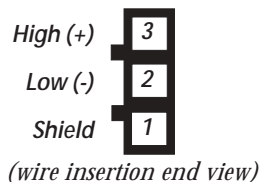


Analog Inputs - Mono



DIGITAL INPUT — The 3-pin digital input accepts AES-3 (AES/EBU) or S/PDIF signals (when the circuit shown on page 2-11 is used).

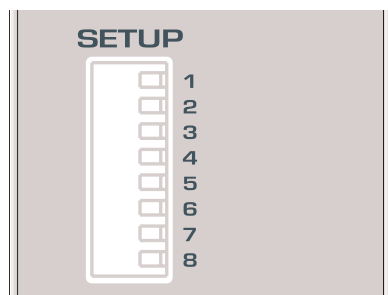
Digital Inputs



LOGIC

LOGIC I/O — The 24-pin logic connector controls the device connected to the module. Devices typically connect through a switcher (an External RLS under module control or a router), although a device can connect directly to the module as well. The source type and switcher type are configured via the module's **SETUP** DIP switches (settings listed on page 2-29). Logic connections vary depending on the type of device connection. For more information, see pages 2-30 and 2-31.

REMOTE LINE SELECTOR (RLS) MODULE SWITCHES



SETUP

Setup — These eight DIP switches set logic functionality for the module per the Switch Definitions table below.

Remote Line Selector (RLS) Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Signal Source	Digital	Analog
2	Timer Reset	Resets timer at module on	No timer reset
3	Bypass Sample Rate Converter (SRC)	Bypasses internal SRC (use only when the console and all the audio sources are locked to an external reference) ¹	Uses internal SRC (normal setting)
4	Source Type	Switcher (VistaMax or External RLS)	Direct
5	Switcher Type	VistaMax (see Appdx. A about other routers)	External RLS (PRE99-947)
6	Spare Switch		
7	Input Level Set	See table below	See table below
8	Input Level Set	See table below	See table below

SETUP — Switches 7 and 8

These switches are used together to set the nominal reference level for the inputs. The factory default settings are both OFF.

7	8	Analog ²	Digital ³
Off	Off	+4 dBu	0 dB
Off	On	+6 dBu	-6 dB
On	Off	+8 dBu	-12 dB
On	On	-10 dBV	-18 dB

¹ Refer to page 2-11, Digital Clock Reference for details.

² The nominal analog input to achieve -20 FSD (equal to a +4 dBu output), with the fader set to the red reference line.

³ The amount of gain reduction applied to the digital input.

REMOTE LINE SELECTOR MODULE — LOGIC I/O

The 24-pin LOGIC I/O connector allows the RLS module to control, or to be controlled by, the device connected to the module. A device can connect directly to the module, but more commonly input selection would be done through a switcher. Two types of switchers are supported: VistaMax (or other routers) and the PRE99-947 External Remote Line Selector (Ext. RLS).

The source type (switcher or direct) and the switcher type (VistaMax or Ext. RLS) are set via the module's SETUP DIP switches (see page 2-29).

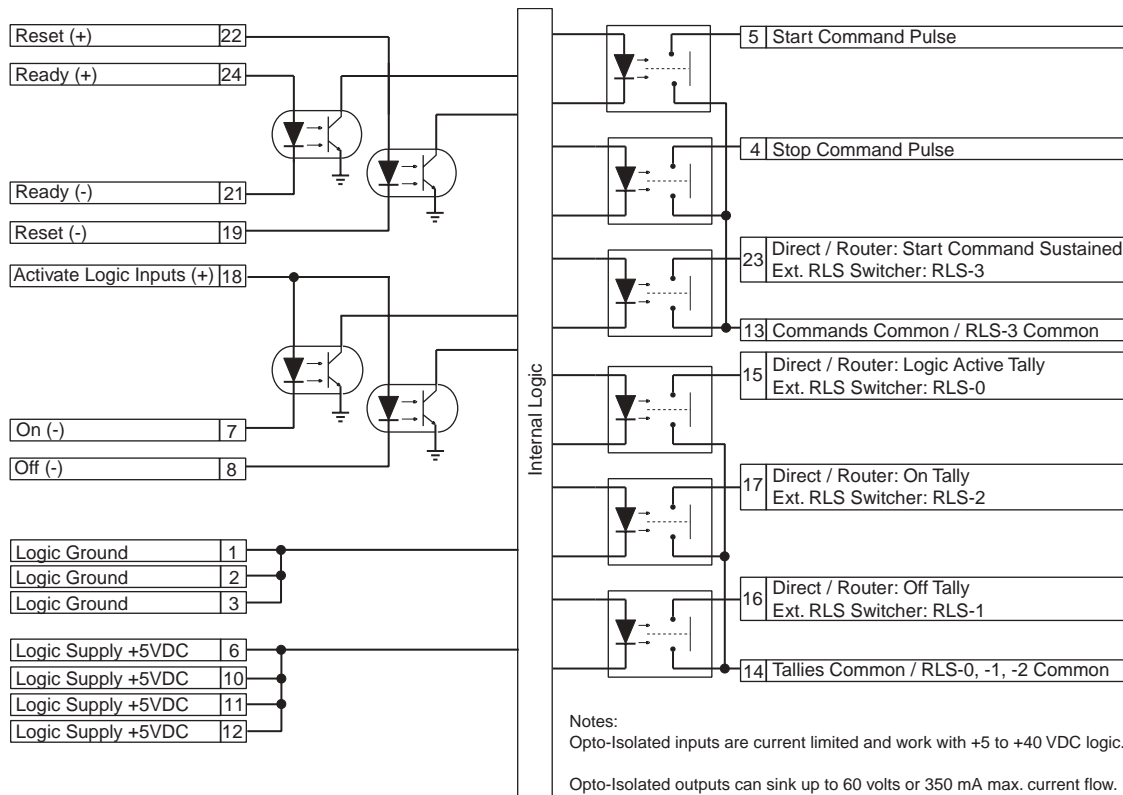
When the module connects to an Ext. RLS, several logic connections (pins 15, 16, 17 and 23) become RLS address outputs. This change occurs only when DS2-4 is set ON and DS2-5 is set to OFF. When a VistaMax or other router is used (DS2-5 is set ON), these pins do not change function since addressing is done through the Session module.

LOGIC I/O Connector

Logic Supply +5 VDC	12	24	Ready (+)
Logic Supply +5 VDC	11	23	Start Command Sustained / RLS-3
Logic Supply +5 VDC	10	22	Reset (+)
no connection	9	21	Ready (-)
Off (-)	8	20	no connection
On (-)	7	19	Reset (-)
Logic Supply +5 VDC	6	18	Activate Logic Inputs (+)
Start Command Pulse	5	17	On Tally / RLS-2
Stop Command Pulse	4	16	Off Tally / RLS-1
Logic Ground	3	15	Logic Active Tally / RLS-0
Logic Ground	2	14	Tallies / RLS-0, RLS-1, RLS-2 Common
Logic Ground	1	13	Commands / RLS-3 Common

(wire insertion end view)

Remote Line Selector (RLS) Module, LOGIC I/O — Simplified Logic Diagram

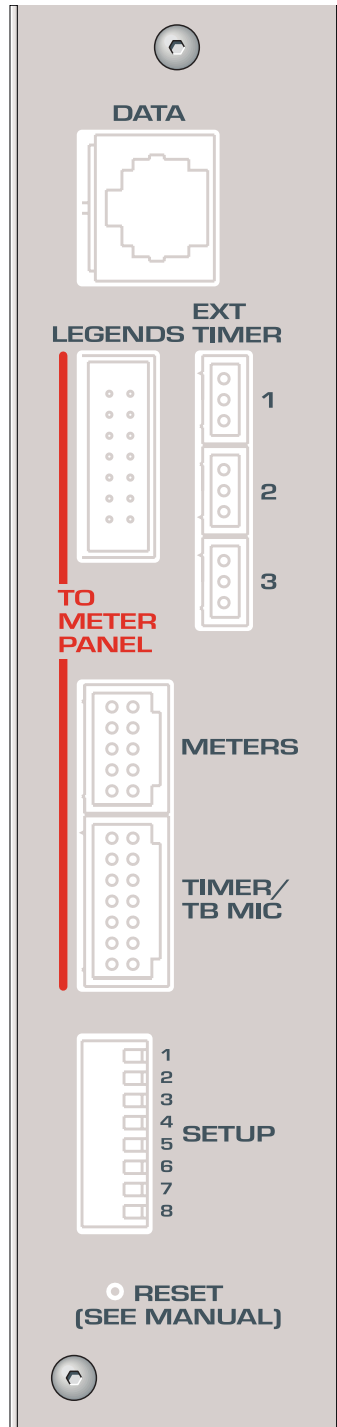
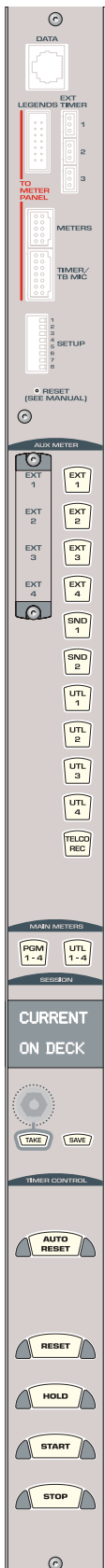


RLS Module LOGIC I/O Logic Signal Definitions

PIN NAME/NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
START COMMAND PULSE (pin 5)	Equivalent to a Normally Open (N/O) relay contact. A momentary "contact closure" of 220 ms is generated each time the module turns on from off. Typically connects to the Remote On logic input on the peripheral device.
STOP COMMAND PULSE (pin 4)	Same as the Start Command Pulse, except it is initiated by the module Off button. Typically connects to the Remote Stop or Off logic input on the peripheral device.
START COMMAND SUSTAINED / RLS-3 (pin 23)	Direct: Same as Start Command Pulse, except it is a maintained contact closure for as long as the module is on. Typically connects to the Remote On logic input on a peripheral device that cannot use a start pulse. Ext. RLS: Outputs addressing bit 3.
COMMANDS / RLS-3 COMMON (pin 13)	The Common (C) relay contact output for the three Start and Stop Command outputs. Sets whether the Start and Stop Commands are active high (connect this pin to the logic supply voltage on the peripheral device) or active low (connect this pin to logic ground on the peripheral device).
ACTIVATE LOGIC INPUTS (+) (pin 18)	To enable the control inputs: On, Off, Cough, Talk to C/R, tie this pin to + logic voltage (+5 to +40). When tied to an isolated device like a remote panel, use the Logic Supply +5 VDC (jumper pin 18 to pin 6, 10, 11 or 12).
ON (-) (pin 7)	When pulled low, turns the module on, generating a Start Pulse. Input is ignored if the module is already on.
OFF (-) (pin 8)	When pulled low, turns the module off, generating a Stop Pulse. Input is ignored if the module is already off.
TALLIES	All Tally outputs are N/O "dry contact" type outputs. Typically used to drive indicators, the outputs can sink or source up to 60 volts at 350 mA. The "C" or common contact for all the tallies is Tallies Common (pin 14).
OFF TALLY / RLS-1 (pin 16)	Direct: This output connects to Tallies Common while the module is off. When DS2-1 is set OFF, then this output is controlled by the Ready logic. Ext. RLS: Outputs addressing bit 1.
ON TALLY / RLS-2 (pin 17)	Direct: This output connects to Tallies Common while the module is on. Ext. RLS: Outputs addressing bit 2.
LOGIC ACTIVE TALLY / RLS-0 (pin 15)	Direct: This output connects to Tallies Common when module is powered up. Ext. RLS: Outputs addressing bit 0.
TALLIES / RLS-0, -1, -2 COMMON (pin 14)	The "C" relay contact for the three Tallies, it must be tied high or low to provide the return path for the Tallies. Typically, the tally lamps are all tied to ground and Tallies Common connects to the lamp supply voltage (+5 to +60 VDC). If the Tallies are tied to +VDC, then this pin would tie to ground.
READY (+) & (-) RESET (+) & (-)	These complementary logic inputs require +5 to +40 VDC between the (+) input and the (-) input for activation. This can be done by connecting an active high logic to the (+) input and grounding the (-) input, or by supplying +5 to +40 VDC to the (+) input and an active low logic to the (-) input.
READY (+) & (-) (pins 24 & 21)	When activated while the module is on, turns the module off without generating a stop pulse. When activated while the module is off, it controls the Off lamp to indicate device status. Typically, no lamp indicates the peripheral is not ready to play, a steady lamp on indicates the device is ready, and a flashing lamp indicates the device has already played or is not yet cued up.
RESET (+) & (-) (pins 22 & 19)	When activated while the module is on, turns the module off without generating a stop pulse. Input is ignored if the module is already off.
LOGIC SUPPLY +5 VDC (pins 6, 10, 11, 12)	Module logic voltage output sources that can deliver up to 300 mA of current to isolated control panels. All pins are simply paralleled for convenience.
LOGIC GROUND (pins 1, 2, 3)	Module logic ground. Should be connected to isolated control panels only.

QUICK GUIDE TO THE SESSION MODULE

Four user connectors come standard on the Session module: one 10base-T connector (DATA) and three 3-pin EXT. TIMER connectors. There are also three meter panel connectors, which are factory connected. All connectors are hidden by the meter panel in normal operation.



INPUTS/OUTPUTS

DATA — Connect a standard CAT-5 cable to this 10base-T connector to tie the BMXdigital Server into a Local Area Network (LAN). See Chapter 4 for more information on configuring and using the BMXdigital Server.

LOGIC OUTPUTS

EXT TIMER — Three 3-pin External Timer connectors are available to reset external event timers. For more information, see page 2-33.

TO METER PANEL

LEGENDS — Factory harnessed connector that outputs the alphanumeric meter names.

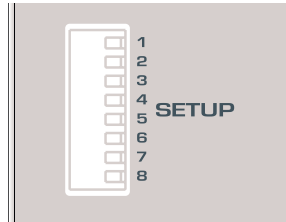
METERS — Factory harnessed connector that outputs the meter level data.

TIMER / TB MIC — Factory harnessed connector that has the audio from the meter panel-mounted talkback microphone and the timer control signals from the Session module Start, Stop, Reset, and Hold buttons.

RESET (SEE MANUAL)

RESET — This switch resets all operational parameters on all modules. Typically, this switch is **only used for test or servicing purposes** and has no normal operational use since this switch does not reset the DSP cards nor the BMXdigital Server—it only resets the input module operational parameters.

SESSION MODULE SWITCHES



SETUP

SETUP — These eight DIP switches affect logic settings for the meters and for the entire console per the Session Module Switch Definitions table below.

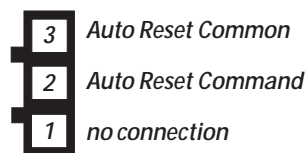
Session Module Switch Definitions

	#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
Meters Console-wide Settings	1	Meter Display Mode	Average only	Average and peak
	2	Auxiliary Meter Display Priority	Cue is displayed (when both Cue and Solo are selected)	Solo is displayed (when both Cue and Solo are selected)
	3	Channel On Cancels Cue or Solo	Cue and Solo are canceled when channel is turned on	Cue and Solo are not affected by channel on
	4	Cue Lamp Control	Cue indicators blink when Cue is on	Cue indicators are solid when Cue is on
	5	Solo function latch	Solo buttons are latched (alternate action)	Solo buttons are momentary
	6	Off-Line buses signal source	All modules Post-fader, but Pre-Switch * See page 2-25 about an additional Telco module switch that affects their Off-Line source.	Universal/RLS, Pre-fader and Pre-Switch *
	7	PGM/UTL 1- 4 function	BMXd-8 sequential meter source selection	Meter switching for all other frame sizes
	8	Spare Switch		

SESSION MODULE — EXTERNAL TIMER

These connectors reset up to three external timers (like the timer in the PRE99-1211 Turret Clock & Timer). They operate independently of the Session module timer buttons. The two active pins (pins 2 and 3) momentarily short together when a reset command is issued by turning on a module that is set to reset the timer.

EXT TIMER 1, 2, 3 Connectors

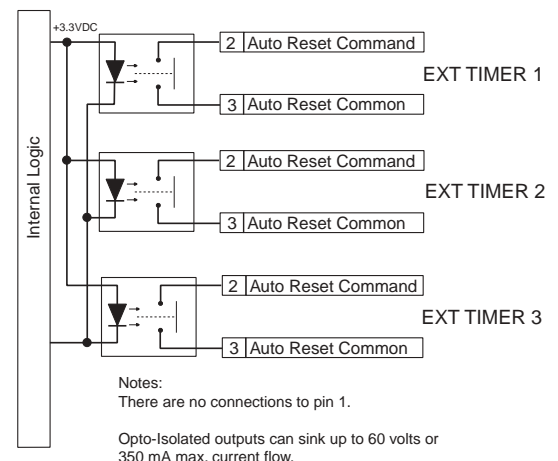


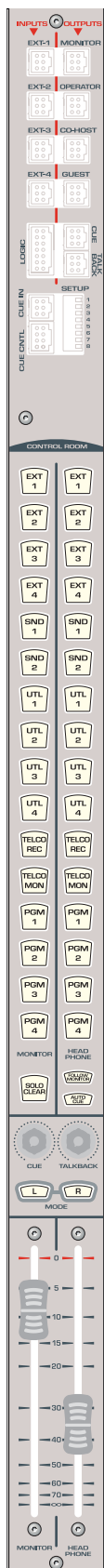
(wire insertion end view)

Session Module EXT TIMER Logic Signal Definitions

PIN NAME/NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
AUTO RESET COMMAND (pin 2)	Equivalent to a Normally Open (N/O) relay contact. A momentary "contact closure" of 220 ms (to the Auto Reset Common pin) is generated each time a module is turned on that has the Timer Reset Command active (DS1-7 or DS3-7 is set ON). Connect this pin to J4-4 on the PRE99-1211 timer.
AUTO RESET COMMON (pin 3)	The Common (C) relay contact for the Auto Reset Command. Tie this pin to the Timer's logic ground pin when an active low logic is required or tie it to the Timer's Logic Voltage when an active high logic is required. Connect this pin to J4-3 on the PRE99-1211 timer.

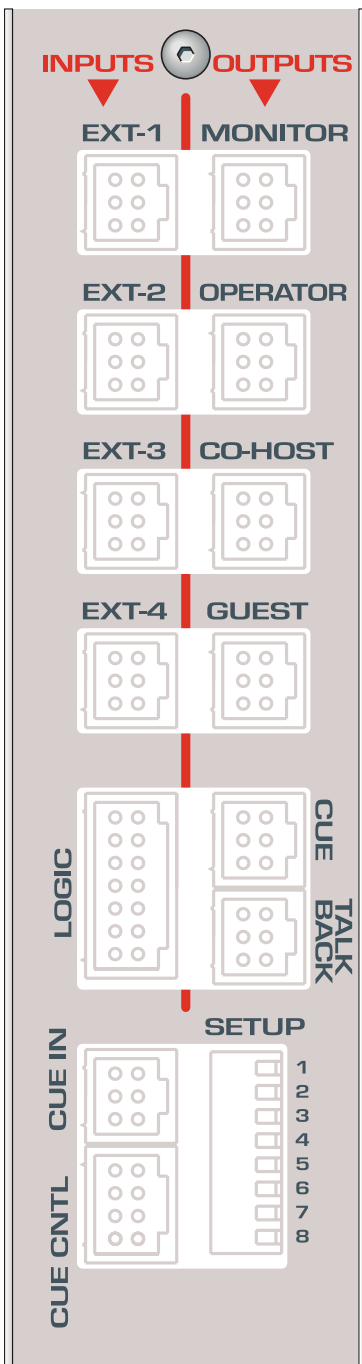
Session Module, External Timer Reset — Simplified Logic Diagram





CONTROL ROOM MODULE CONNECTORS

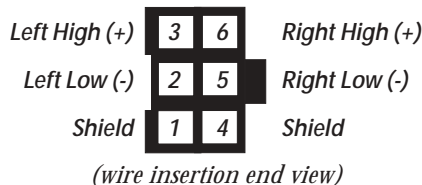
Thirteen connectors come standard on each Control Room module: five 6-pin analog audio input connectors, six 6-pin analog audio output connectors, one 14-pin logic connector, and one 8-pin logic connector. The connectors are hidden by the meter panel in normal operation.



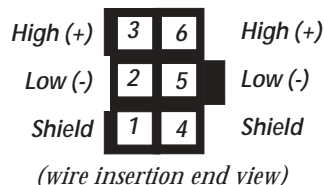
AUDIO INPUTS

EXT-1, EXT-2, EXT-3, EXT-4, CUE IN — These 6-pin analog inputs accept stereo or mono signals from external monitor sources such as off-air tuners, a synthetic air monitor, VistaMax monitor output, etc. When a mono source is connected, parallel the signal to the left and right inputs.

Analog Inputs / Outputs - Stereo



Analog Inputs - Mono



AUDIO OUTPUTS

MONITOR, OPERATOR, CO-HOST, GUEST, CUE, TALKBACK

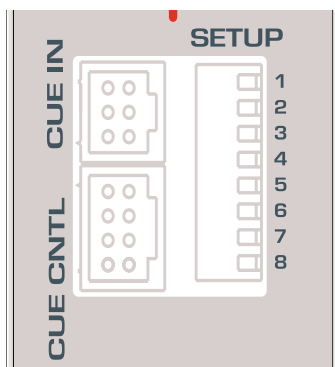
— The 6-pin analog outputs for the control room monitor speaker amplifier (Monitor); three outputs for the headphone amplifiers for the board operator (Operator), co-host or host (Co-host) and for one or more guests (Guest); a Cue amplifier feed (Cue); and a separate Talk to Control Room output (Talkback) for a powered Talkback monitor speaker or amplifier.

LOGIC I/O

LOGIC — This 14-pin connector has four “relay” outputs (Control Room warning, mute, dim, and talkback) and two remote inputs (Dim and Mute). See pages 2-36 and 2-37 for details on these signals.

CUE CNTL — This 8-pin connector has an external cue control input. See page 2-38 for details on this signal.

CONTROL ROOM MODULE SWITCHES



SETUP

SETUP — These eight DIP switches affect logic functionality for the module per the Control Room Module Switch Definitions below.

Control Room Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Headphone AutoCue functions (when active)	Cue is summed to the left channel, monitor is summed to the right channel	Cue feeds both headphone channels (Cue in stereo), monitor is muted
2	Talkback to Co-Host Headphones	Adds talkback to the co-host's headphones	Does not add talkback to the co-host's headphones
3	Talkback to Cue	Adds talkback audio to the Cue output	Talkback audio does not go to Cue
4	Dim Monitors when Receiving Talkback	Monitors dim by 12 dB when receiving talkback	Monitors do not dim when receiving talkback
5	Auto-switch External Inputs 1 & 2 ¹	Automatic switching from External Input 1 to Input 2 while there is a hot mic in the Control Room	No automatic monitor source switching with a hot mic in the Control Room
6	Auto-switch External Inputs 3 & 4 ²	Automatic switching from External Input 3 to Input 4 while there is a hot mic in the Control Room	No automatic monitor source switching with a hot mic in the Control Room
7	Spare Switch		
8	Spare Switch		

¹ When set to ON, the monitor source automatically switches between External Input 1 (which typically has the off-air monitor, with delay) and External Input 2 (which has a synthetic air signal with little or no delay). When External 1 is selected as the monitor source, and a Control Room mic module is turned on, the monitor source automatically changes to External Input 2. When all Control Room mic modules are off, then External Input 1 is automatically selected.

² When set to ON, the monitor source automatically switches between External Input 3 (which would be the off-air monitor, with delay), and External Input 4 (which has a synthetic air signal with little or no delay). When External 3 is selected as the monitor source, and a Control Room mic module is turned on, the monitor source automatically changes to External Input 4. When all Control Room mic modules are off, then External Input 3 is automatically selected.

CONTROL ROOM MODULE — LOGIC

The 14-pin LOGIC connector has the hot mic warning output (Warning Relay) for a control room warning lamp interface, two remote inputs; Mute (-) and Dim (-), and various tally outputs (Mute, Dim and Talkback Tally).

The two Warning Relay outputs short together when a control room mic is on. They can be used as two “dry contacts” or one can be jumpered to + voltage to present a high logic, or to ground to present a low logic (on isolated ground devices, these can come from the Logic Supply +5 VDC or Logic Ground on the connector).

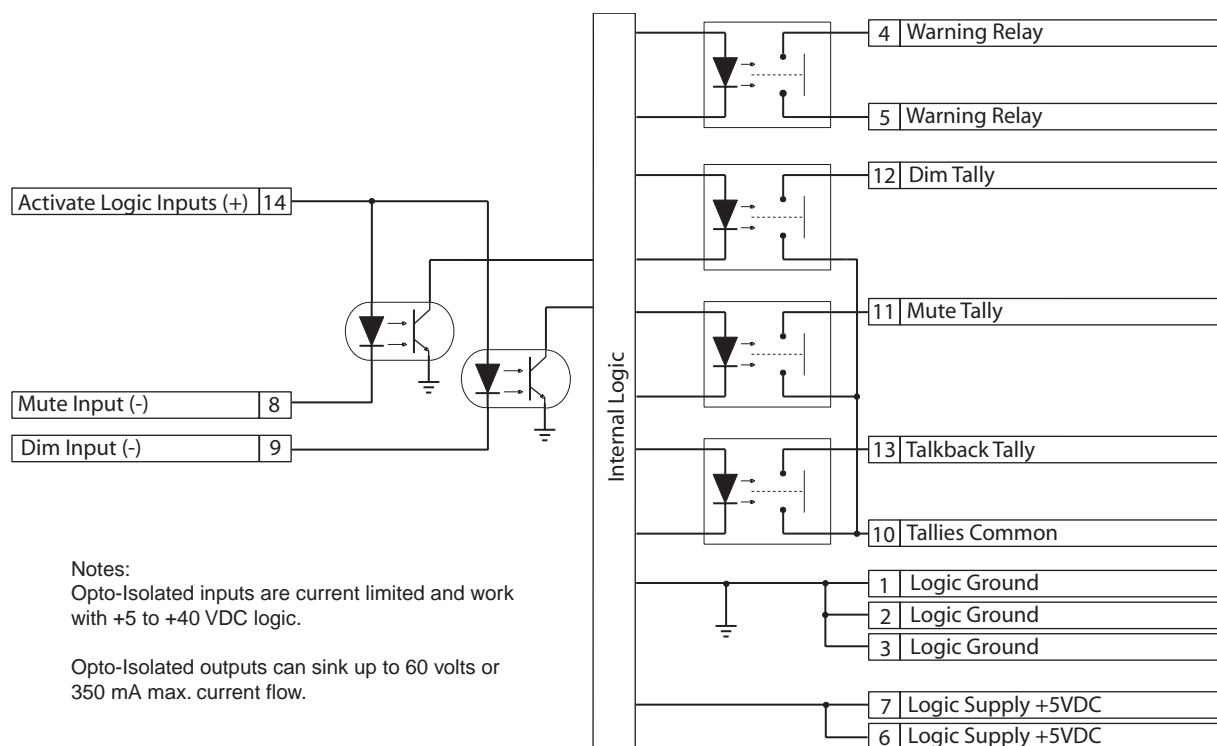
Note: The warning relay and control room mute functions are only activated by modules set as control room microphones (DS1/DS3, switch 2 is On) and that are assigned to at least one PGM or UTL bus.

LOGIC Connector

Logic Supply +5 VDC	7	14	Activate Logic Inputs (+)
Logic Supply +5 VDC	6	13	Talkback Tally
Warning Relay	5	12	Dim Tally
Warning Relay	4	11	Mute Tally
Logic Ground	3	10	Tallies Common
Logic Ground	2	9	Dim (-)
Logic Ground	1	8	Mute (-)

(wire insertion end view)

Control Room Module, LOGIC — Simplified Logic Diagram



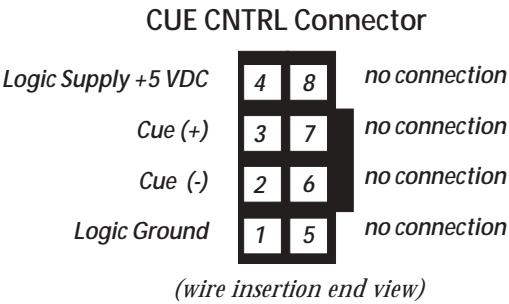
Control Room Module, LOGIC, Logic Signal Definitions

<i>PIN NAME/NUMBER</i>	<i>FUNCTIONAL DESCRIPTION OF CONNECTION</i>
WARNING RELAY (pins 4 and 5)	A pair of Normally Open (N/O) relay contacts. The two contacts maintain a "contact closure" while a Control Room mic module (with DS1-2 or DS3-2 set to ON) is turned on. The two pins can be used as a "dry contact" output, or one can be connected to the Warning Lamp control input while the other is tied to ground (to generate an active low logic output) or to + logic voltage (to generate an active high logic output).
MUTE TALLY (pin 11)	This Normally Open (N/O) contact connects to Tallies Common while the control room speakers are muted.
DIM TALLY (pin 12)	This Normally Open (N/O) contact connects to Tallies Common while the control room speakers are dimmed.
TALKBACK TALLY (pin 13)	This Normally Open (N/O) contact connects to Tallies Common while Talkback is received by the Control Room.
TALLIES COMMON (pin 10)	This pin must be tied high or low to provide the return path for the various Tally outputs. Typically, the tally lamps (or external relays) are all tied to ground and Tallies Common is the source for the lamp / relay supply voltage (+5 to +60 VDC). If the Tallies / relays are tied to +VDC, then this pin ties to ground.
ACTIVATE LOGIC INPUTS (+) (pin 14)	To enable the control inputs: Mute and Dim, tie this pin to + logic voltage (+5 to +40). When tied to an isolated device like a remote panel, use the Logic Supply +5 VDC (jumper pin 14 to pin 6 or 7).
MUTE (-) (pin 8)	When pulled low, mutes the Control Room monitors.
DIM (-) (pin 9)	When pulled low, dims the Control Room monitors by 12 dB.
LOGIC SUPPLY +5 VDC (pins 6 and 7)	Module logic voltage output sources that can deliver up to 300 mA of current to isolated control panels. The pins are simply paralleled for convenience.
LOGIC GROUND (pins 1, 2, 3)	Module logic ground. Should be connected to isolated control panels only.

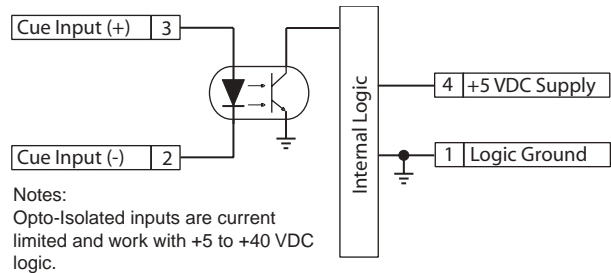
CONTROL ROOM MODULE — CUE CONTROL LOGIC

The 8-pin CUE CNTRL connector has the External Cue on/off logic. Only four pins (1 - 4) are used on this connector.

Typically the Cue (+) pin is jumpered to Logic Supply +5 VDC and the Cue (-) and Logic Ground go to an External Cue switch (maintained SPST). The logic connector is hidden by the meter panel in normal operation.

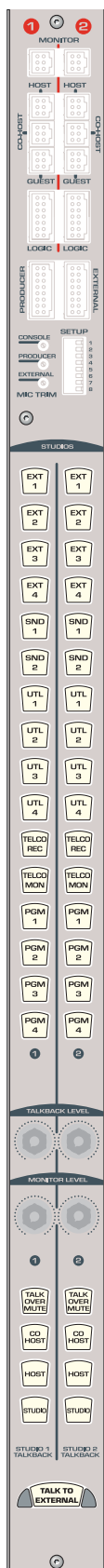


Control Room Module, CUE CNTRL — Simplified Logic Diagram



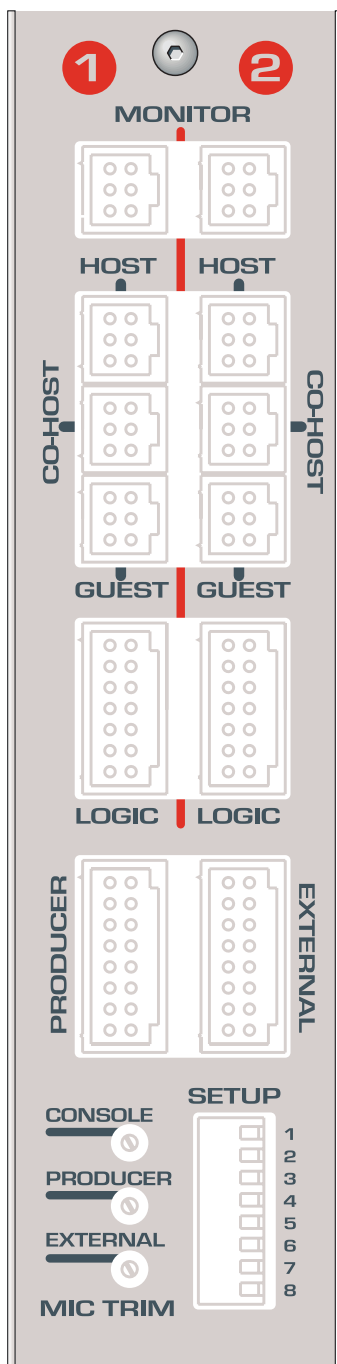
Control Room Module, CUE CNTRL , Logic Signal Definitions

PIN NAME/NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
CUE (+) (pin 3)	Tie this input to +5 to +40 VDC to use the Cue (-) input as the External Cue trigger. Conversely, when the Cue (-) input is tied to ground, then this input requires a high logic voltage (+5 to +40 VDC) to add the External Cue audio to the Cue bus.
CUE (-) (pin 2)	When this input is tied to ground, then the Cue (+) input requires +5 to +40 VDC to activate External Cue. Conversely, when Cue (+) is tied to +V (+5 to +40 VDC), then a low logic input to this pin adds the External Cue audio to the Cue bus.
LOGIC SUPPLY +5 VDC (pin 4)	Module logic voltage output source that can deliver up to 300 mA of current to an isolated control panel.
LOGIC GROUND (pin 1)	Module logic ground. Should be connected to an isolated panel only.



QUICK GUIDE TO THE STUDIO MODULE

Twelve connectors come standard on the Studio module: eight 6-pin analog audio output connectors (four for each studio), two 14-pin main logic connectors (one for each studio), and two 16-pin logic connectors (one for a Producer's talkback and one for an External location talkback). The connectors are hidden by the meter panel in normal operation.



AUDIO OUTPUTS

MONITOR — The 6-pin analog outputs for the monitor speaker amplifiers in Studio 1 and Studio 2. The outputs are wired using the standard pinout sequence.

HOST, CO-HOST, GUEST — The 6-pin analog outputs for the headphone amplifiers for a host, co-host, and the guests in Studio 1 and Studio 2. The outputs are wired using the standard pinout sequence.

Analog Outputs

Left High (+)	3	6	Right High (+)
Left Low (-)	2	5	Right Low (-)
Shield	1	4	Shield

(wire insertion end view)

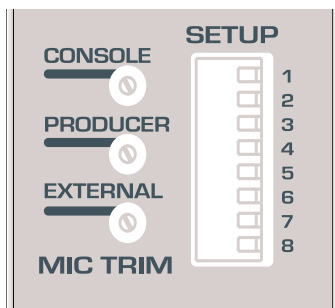
LOGIC I/O

LOGIC 1, LOGIC 2 — The two 14-pin Main logic connectors have dimming, muting, and warning light commands for the two studios. For more information, see pages 2-42 and 2-43.

PRODUCER — The 16-pin Producer connector has the producer's talkback audio and logic inputs and Tally outputs. For additional information, see pages 2-44 and 2-45.

EXTERNAL — The 16-pin External connector has the external location's talkback audio and logic inputs and Tally outputs. For additional information, see pages 2-46 to 2-49.

STUDIO MODULE SWITCHES AND MIC TRIMS



SETUP

SETUP — These eight DIP switches set logic functionality for Studio outputs per the Studio Module Switch Definitions table below.

MIC TRIM

CONSOLE, PRODUCER, EXTERNAL — These three trimpots set the talkback levels for the console mic, the producer's mic, and the external location's mic.

Studio Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Studio 1: Auto-switch External Inputs 1 & 2 ¹	Automatic switching from External Input 1 to Input 2 while there is a hot mic in Studio 1	No automatic monitor source switching with a hot mic in Studio 1
2	Studio 1: Auto-switch External Inputs 3 & 4 ²	Automatic switching from External Input 3 to Input 4 while there is a hot mic in Studio 1	No automatic monitor source switching with a hot mic in Studio 1
3	Studio 2: Auto-switch External Inputs 1 & 2 ¹	Automatic switching from External Input 1 to Input 2 while there is a hot mic in Studio 2	No automatic monitor source switching with a hot mic in Studio 2
4	Studio 2: Auto-switch External Inputs 3 & 4 ²	Automatic switching from External Input 3 to Input 4 while there is a hot mic in Studio 2	No automatic monitor source switching with a hot mic in Studio 2
5	Studio 1: Co-host receives talkback only	Allows co-host in Studio 1 to receive talkback only and disables selector audio	Selector audio is enabled
6	Studio 2: Co-host receives talkback only	Allows co-host in Studio 2 to receive talkback only and disables selector audio	Selector audio is enabled
7	External mute/dim output enable	Pins 4 and 5 are logic outputs: pin 4 is an External Mute Command and pin 5 is External Dim Command.	Pins 4 and 5 are logic inputs: pin 4 is Talk to Studio 1 (-) and pin 5 is Talk to Studio 1 Host (-)
8	Spare Switch		

¹ When set to ON, the monitor source automatically switches between External Input 1 (which typically has the off-air monitor, with delay) and External Input 2 (which has a synthetic air signal with little or no delay). When External 1 is selected as the monitor source, and a Control Room mic module is turned on, the monitor source automatically changes to External Input 2. When all Control Room mic modules are off, then External Input 1 is automatically selected.

² When set to ON, the monitor source automatically switches between External Input 3 (which would be the off-air monitor, with delay), and External Input 4 (which has a synthetic air signal with little or no delay). When External 3 is selected as the monitor source, and a Control Room mic module is turned on, the monitor source automatically changes to External Input 4. When all Control Room mic modules are off, then External Input 3 is automatically selected.

STUDIO MODULE — STUDIO 1 & 2 LOGIC SCHEMATIC AND DESCRIPTION

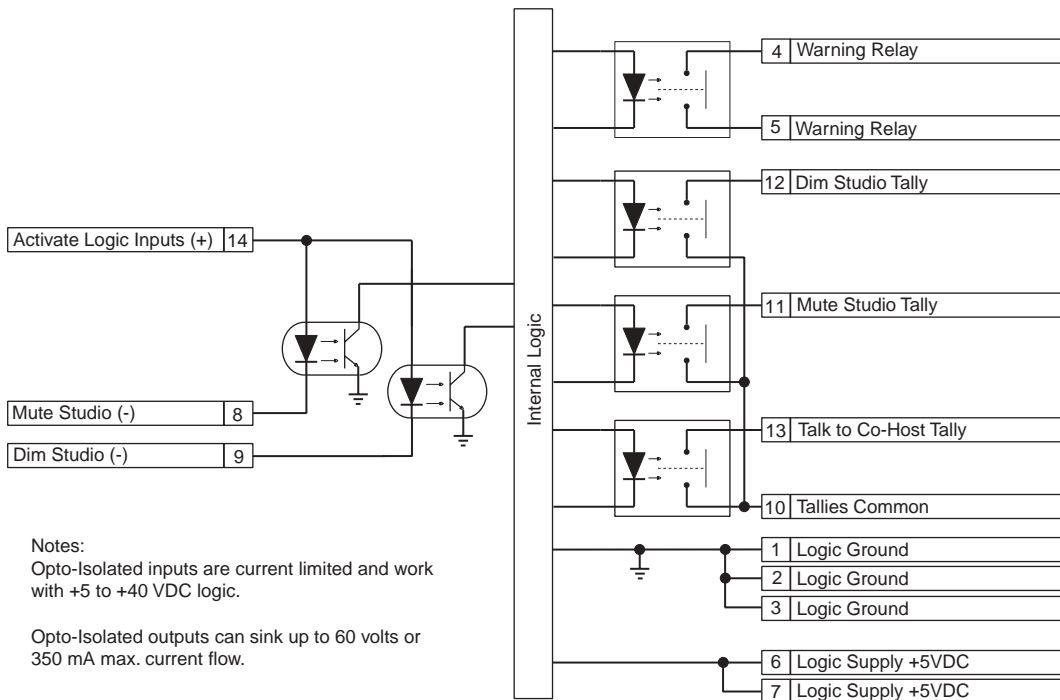
The two 14-pin Logic connectors (one for each Studio) control the warning, mute, and dim functions of the module. The logic connectors are hidden under the meter panel in normal operation.

LOGIC Connectors

Logic Supply +5 VDC	7	14	Activate Logic Inputs (+)
Logic Supply +5 VDC	6	13	Talk to Co-Host Tally
Warning Relay	5	12	Dim Tally
Warning Relay	4	11	Mute Tally
Logic Ground	3	10	Tallies Common
Logic Ground	2	9	Dim Studio (-)
Logic Ground	1	8	Mute Studio (-)

(wire insertion end view)

Studio Module, Studio 1 & 2 — Simplified Logic Schematic



Studio Module, Studio 1 & 2 LOGIC — Logic Signal Definitions

<i>PIN NAME/NUMBER</i>	<i>FUNCTIONAL DESCRIPTION OF CONNECTION</i>
WARNING RELAY (pins 4 and 5)	A pair of Normally Open (N/O) relay contacts. A “dry contact closure” between the pins is generated each time the studio has a live mic.
ACTIVATE LOGIC INPUTS (+) (pin 14)	Connect +V logic to this input to enable the active low inputs: Mute and Dim Studio. If the inputs are isolated from other devices (e.g., on a remote control panel), the +VDC can come from Logic Supply +5 Logic.
MUTE STUDIO (-) (pin 8)	When pulled low, mutes the studio MONITOR output.
DIM STUDIO (-) (pin 9)	When pulled low, dims the studio MONITOR output by 12 dB.
TALK TO CO-HOST TALLY (pin 13)	Normally Open (N/O) contact output. A “contact closure” to Tallies Common (pin 10) is generated while any location talks to the Co-Host.
MUTE TALLY (pin 11)	Normally Open (N/O) contact output. A “contact closure” to Tallies Common (pin 10) is generated when the studio MONITOR output is muted.
DIM TALLY (pin 12)	Normally Open (N/O) contact output. A “contact closure” to Tallies Common (pin 10) is generated when the studio MONITOR output is dimmed.
TALLIES COMMON (pin 10)	The Common (C) contact output for the Mute, Dim, and Talk to Co-Host Tally outputs.
LOGIC SUPPLY +5 VDC (pins 6 and 7)	Module logic voltage output source that can deliver up to 300 mA of current to an isolated control panel. Outputs are paralleled for convenience.
LOGIC GROUND (pins 1, 2, 3)	Module logic ground for isolated control panels only.

STUDIO MODULE — PRODUCER AUDIO & LOGIC

The 16-pin PRODUCER connector has the producer's talkback switch inputs and talkback audio input (+4 dBu, balanced).

The PRODUCER signals come from a PRE99-1188 Producer Talkback/IFB panel or from a custom panel. The switch inputs (Talk to Studio 1 (-), Talk to Studio 2 (-), etc.) are activated by a logic low. This is done through SPST momentary switches commoned to Logic Ground (pin 16).

When the Producer is in the control room, the Control Room Dim (-) input (pin 10) can be used to dim the C/R MONITOR output. Use DPST talkback switches to connect separately to the switches and to pin 10; or use signal diodes to sum SPST talkback switches.

PRODUCER Connector

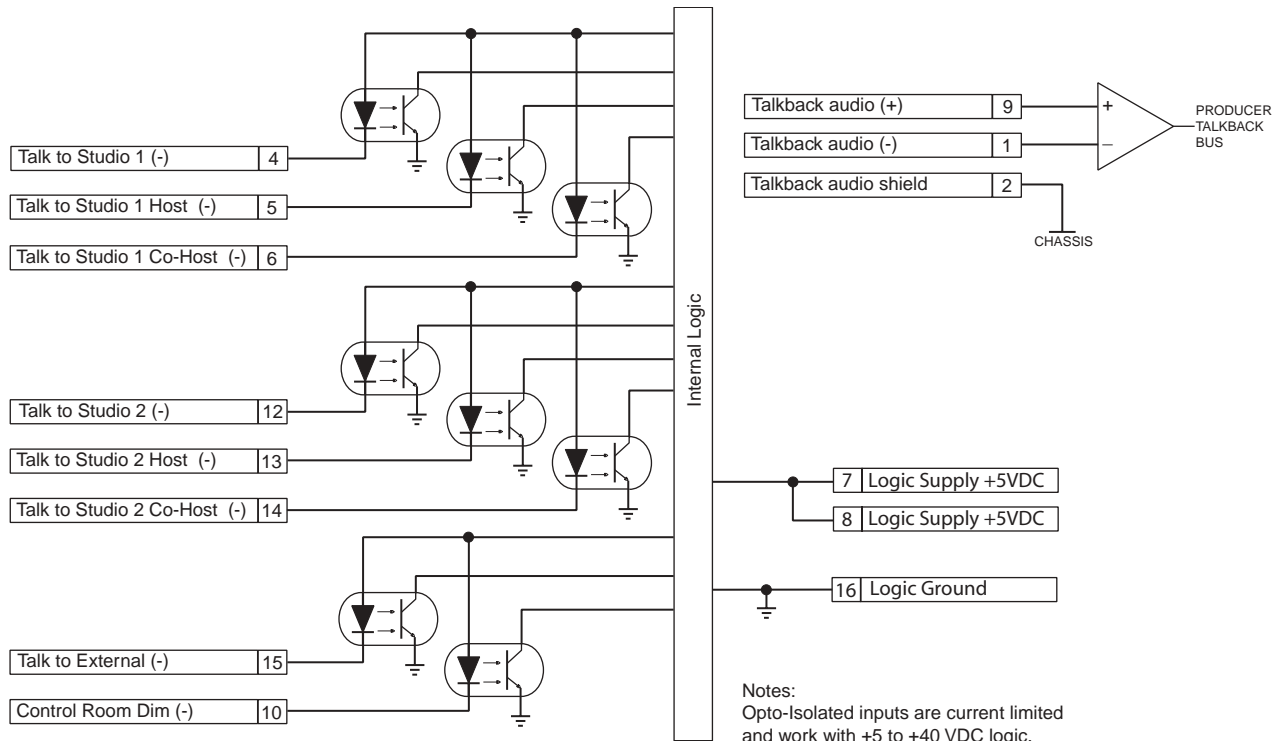
Logic Supply +5 VDC	8	16	Logic Ground
Logic Supply +5 VDC	7	15	Talk to External (-)
Talk to Studio 1 Co-Host (-)	6	14	Talk to Studio 2 Co-Host (-)
Talk to Studio 1 Host (-)	5	13	Talk to Studio 2 Host (-)
Talk to Studio 1 (-)	4	12	Talk to Studio 2 (-)
no connection	3	11	no connection
Talkback Audio Shield	2	10	Control Room Dim (-)
Talkback Audio (-)	1	9	Talkback Audio (+)

Audio Connection

(pins 1, 2, 9)

(wire insertion end view)

Studio Module, PRODUCER — Simplified Logic & Audio Diagram



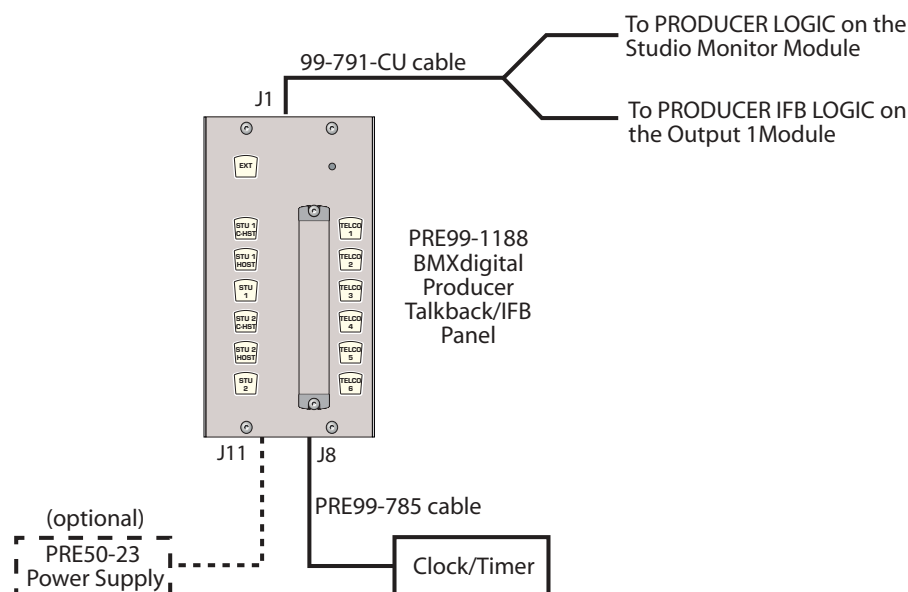
Studio Module, PRODUCER — Logic & Audio Signal Definitions

<u>PIN NAME/NUMBER</u>	<u>FUNCTIONAL DESCRIPTION OF CONNECTION</u>
TALK TO STUDIO 1 (-) (pin 4)	When pulled low, routes the Producer talkback audio to Studio 1 MONITOR and HOST outputs.
TALK TO STUDIO 1 HOST (-) (pin 5)	When pulled low, routes the Producer talkback audio to the Studio 1 HOST output only.
TALK TO STUDIO 1 CO-HOST (-) (pin 6)	When pulled low, routes the Producer talkback audio to the Studio 1 CO-HOST output only.
TALK TO STUDIO 2 (-) (pin 12)	When pulled low, routes the Producer talkback audio to Studio 2 MONITOR and HOST outputs..
TALK TO STUDIO 2 HOST (-) (pin 13)	When pulled low, routes the Producer talkback audio to the Studio 2 HOST output only.
TALK TO STUDIO 2 CO-HOST (-) (pin 14)	When pulled low, routes the Producer talkback audio to the Studio 2 CO-HOST output only.
TALK EXTERNAL (-) (pin 15)	When pulled low, routes the Producer talkback audio to the EXTERNAL connector, Talkback audio output.
CONTROL ROOM DIM (-) (pin 10)	When pulled low, dims the Control Room MONITOR output by 12 dB. Only used when the Producer is located in the control room.
LOGIC SUPPLY +5 VDC (pins 7 & 8)	Module logic voltage output source that can deliver up to 300 mA of current to an isolated control panel. The two outputs are paralleled for convenience.
LOGIC GROUND (pin 16)	Module logic ground that can connect to an isolated control panel.

AUDIO CONNECTION:

AUDIO SHIELD (pin 2)	Tied to chassis ground.
TALKBACK AUDIO (+) & (-) (pin 9 & 1)	Producer's talkback microphone input. The input is line-level (+4 dBu), differential. If not using a Producer Panel, route the producer's talkback mic through a Mic Preamp module preamp to boost it to line level.

PRE99-1188 Producer Panel connection to the BMXdigital console



STUDIO MODULE — EXTERNAL AUDIO & LOGIC, WITH SETUP DIP SWITCH 7 OFF

The 16-pin EXTERNAL connector has the external site's talkback logic inputs and command output as well as the External site's talkback audio in and out.

Both audio in and out are balanced +4 dBu analog connections. A mic preamp is required for the External site's talkback microphone. One of the Mic Preamp module's ten mic preamps could be used for this function.

A Talk to External Tally (that pulls low) is available to command a lamp or LED indicator that talk to external is being received.

Pins 4 and 5 change their functions depending upon whether SETUP DIP switch 7 is set On or Off. When DIP switch 7 is off (the default setting, as shown on this page), pins 4 and 5 are the logic inputs Talk to Studio 1 and Talk to Studio 1 Host.

When DIP switch 7 is on (see pages 2-50 and 2-51), pins 4 and 5 become the command outputs External Mute and External Dim.

EXTERNAL Connector, with DIP Switch 7 set Off

Logic Supply +5 VDC	8	16	Logic Ground
Logic Supply +5 VDC	7	15	Activate Logic Inputs (+)
Talk to External Tally	6	14	Talk to Control Room (-)
Talk to Studio 1 Host (-)	5	13	Talk to Studio 2 Host (-)
Talk to Studio 1 (-)	4	12	Talk to Studio 2 (-)
Talkback Audio Out (-)	3	11	Talkback Audio Out (+)
Talkback Audio In Shield	2	10	Talkback Audio Out Shield
Talkback Audio In (-)	1	9	Talkback Audio In (+)

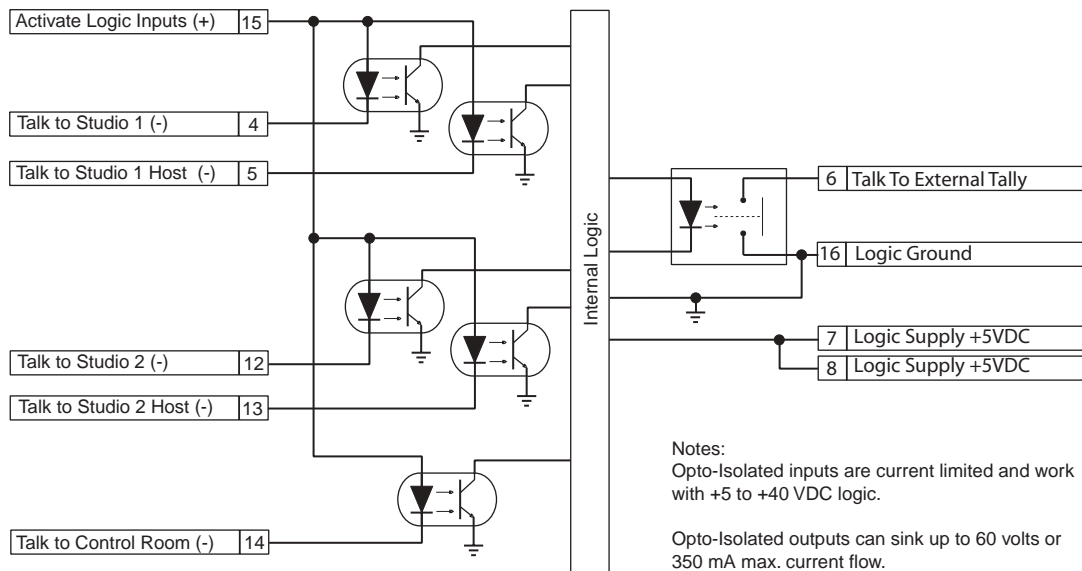
(wire insertion end view)

Talkback Audio Pins

Audio Out (pins 3,10,11)

Audio In (pins 1, 2, 9)

Studio Module, EXTERNAL (DIP switch 7 Off) — Simplified Logic Diagram



Notes:
Opto-Isolated inputs are current limited and work with +5 to +40 VDC logic.

Opto-Isolated outputs can sink up to 60 volts or 350 mA max. current flow.

Studio Module, EXTERNAL (DIP switch 7 Off) Audio & Logic Signal Definitions

PIN NAME / NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
TALK TO STUDIO 1 (-) (pin 4)	When pulled low, routes the External Talkback Audio Input to Studio 1 MONITOR and HOST outputs. NOTE: When DIP switch 7 is on, Talk to Studio 1 is disabled (see page 2-51).
TALK TO STUDIO 1 HOST (-) (pin 5)	When pulled low, routes the External Talkback Audio Input to the Studio 1 HOST output. NOTE: When DIP switch 7 is on, Talk to Studio 1 Host is disabled (see page 2-51).
TALK TO STUDIO 2 (-) (pin 12)	When pulled low, routes the External Talkback Audio Input to Studio 2 MONITOR and HOST outputs.
TALK TO STUDIO 2 HOST (-) (pin 13)	When pulled low, routes the External Talkback Audio Input to the Studio 2 HOST output.
TALK TO CONTROL ROOM (-) (pin 14)	When pulled low, routes the External Talkback Audio Input to the control room TALKBACK and OPERATOR outputs.
ACTIVATE LOGIC INPUTS (+) (pin 15)	Connect this pin to Logic Supply +5 VDC (pin 7 or 8) to enable the active low logic inputs (Talk to C/R, and the four Talk to Studios) when they come from an isolated control panel.
EXTERNAL TALK TALLY (-) (pin 6)	Normally Open (N/O) contact. A "contact closure" to ground is generated whenever Talk to External is activated from the Control Room, the Producer, or a microphone module.
LOGIC SUPPLY +5 VDC (pins 7 & 8)	Logic voltage source that can deliver up to 300 mA of current to isolated remote panels. Pins 7 and 8 are simply paralleled for convenience.
LOGIC GROUND (pin 16)	Logic ground. Connect only to isolated remote panels only.
AUDIO CONNECTIONS:	
TALKBACK AUDIO OUTPUT (-) & (+) (pins 3 & 11)	The balanced line-level Talk To External audio output. This can drive a powered talkback speaker, or, if the External location goes on-air, it can be summed into the External location's headphone feed.
TALKBACK AUDIO INPUT (-) & (+) (pins 1 & 9)	The balanced line-level Talkback From External audio input. One of the Mic Preamp module's preamplifiers can be used to boost the External location's talkback microphone to line-level to feed this input.
TALKBACK IN & OUT SHIELDS (pins 2 & 10)	Shields for the balanced Talkback Audio Input and Output. Connects to the chassis.

STUDIO MODULE — EXTERNAL AUDIO & LOGIC, WITH SETUP DIP SWITCH 7 ON

The 16-pin EXTERNAL connector has the external site's talkback logic inputs and command outputs as well as the External site's talkback audio in and out.

Both audio in and out are balanced +4 dBu analog connections. A mic preamp is required for the External site's talkback microphone. One of the Mic Preamp module's ten mic preamps could be used for this function.

A Talk to External Tally (that pulls low) is available to command a lamp or LED indicator that talk to external is being received.

Pins 4 and 5 change their functions depending upon whether SETUP DIP switch 7 is set On or Off. When DIP switch 7 is on (as shown on this page), pins 4 and 5 are the command outputs Mute External and Dim External. These are used to control the monitor speakers at the external location.

When DIP switch 7 is off (the default setting as shown on pages 2-48 and 2-49), pins 4 and 5 are the logic inputs Talk to Studio 1 and Talk to Studio 1 Host.

EXTERNAL Connector, with DIP Switch 7 set ON

Logic Supply +5 VDC	8	16	Logic Ground
Logic Supply +5 VDC	7	15	Activate Logic Inputs (+)
Talk to External Tally	6	14	Talk to Control Room (-)
Dim External Command	5	13	Talk to Studio 2 Host (-)
Mute External Command	4	12	Talk to Studio 2 (-)
Talkback Audio Out (-)	3	11	Talkback Audio Out (+)
Talkback Audio In Shield	2	10	Talkback Audio Out Shield
Talkback Audio In (-)	1	9	Talkback Audio In (+)

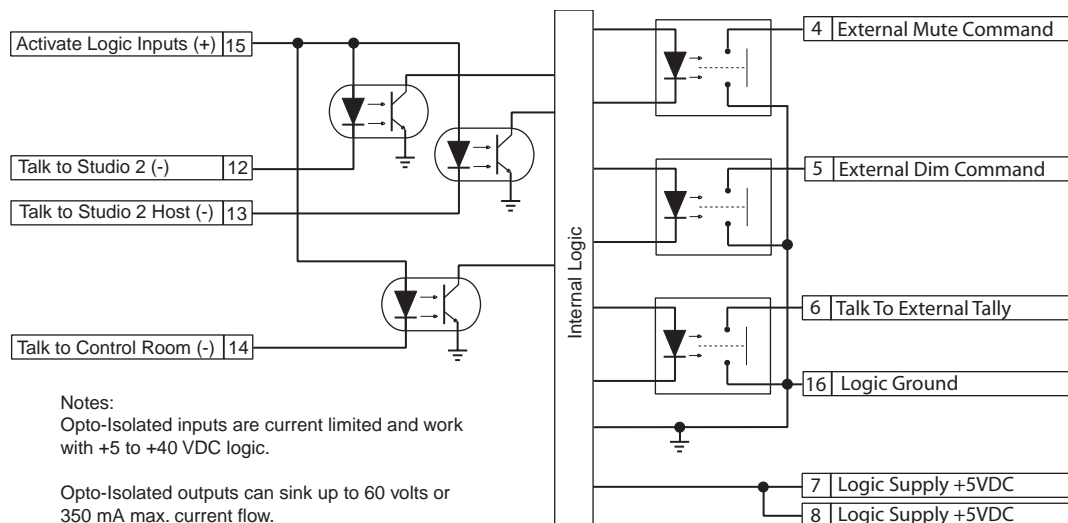
(wire insertion end view)

Talkback Audio Pins

Audio Out (pins 3, 10, 11)

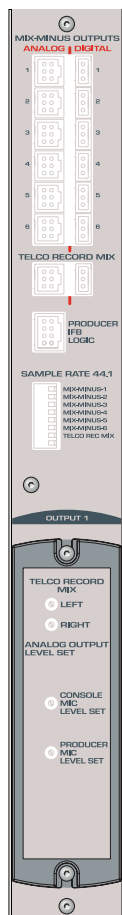
Audio In (pins 1, 2, 9)

Studio Module, EXTERNAL (DIP switch 7 On) — Simplified Logic Diagram



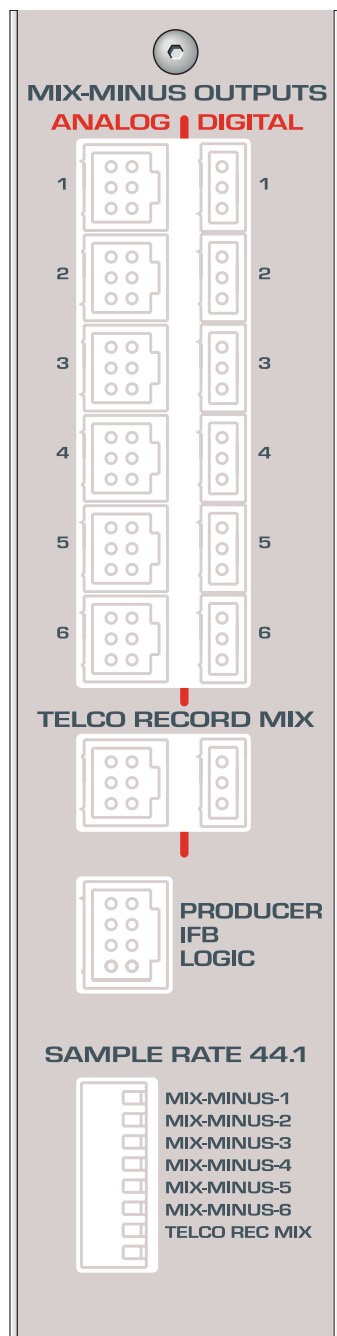
Studio Module, EXTERNAL (DIP switch 7 On) Audio & Logic Signal Definitions

PIN NAME/NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
TALK TO STUDIO 2 (-) (pin 12)	When pulled low, routes the External Talkback Audio Input to Studio 2 MONITOR and HOST outputs.
TALK TO STUDIO 2 HOST (-) (pin 13)	When pulled low, routes the External Talkback Audio Input to the Studio 2 HOST output.
TALK TO CONTROL ROOM (-) (pin 14)	When pulled low, routes the External Talkback Audio Input to the control room TALKBACK and OPERATOR outputs.
ACTIVATE LOGIC INPUTS (+) (pin 15)	Connect this pin to Logic Supply +5 VDC (pin 7 or 8) to enable the active low logic inputs (Talk to C/R, and the four Talk to Studios).
MUTE EXTERNAL COMMAND (-) (pin 4)	Normally Open (N/O) contact. A "contact closure" to logic ground (pin 16) is generated whenever a Universal Input module, that is set to Mute External (DS1-5 or DS3-5 is set to On), is on. Consult Harris Radio Systems Engineering for design information on using this logic output.
DIM EXTERNAL COMMAND (-) (pin 5)	Normally Open (N/O) contact. A "contact closure" to logic ground (pin 16) is generated whenever another location is talking to External. Consult Harris Radio Systems Engineering for design information on using this logic output.
TALK TO EXTERNAL TALLY (-) (pin 6)	Normally Open (N/O) contact. A "contact closure" to logic ground (pin 16) is generated whenever Talk to External is activated from the control room, the producer, or a microphone module.
LOGIC SUPPLY +5 VDC (pins 7 & 8)	Logic voltage source that can deliver up to 300 mA of current to isolated remote panels. Pins 7 and 8 are simply paralleled for convenience.
LOGIC GROUND (pin 16)	Logic ground. Connect only to isolated remote panels only.
AUDIO CONNECTIONS:	
TALKBACK AUDIO OUTPUT (-) & (+) (pins 3 & 11)	The balanced line-level Talk To External audio output. This can drive a powered talkback speaker, or, if the External location goes on-air, it can be summed into the External location's headphone feed.
TALKBACK AUDIO INPUT (-) & (+) (pins 1 & 9)	The balanced line-level Talkback From External audio input. One of the Mic Preamp module's preamplifiers can be used to boost the External location's talkback microphone to line-level to feed this input.
TALKBACK IN & OUT SHIELDS (pins 2 & 10)	Shields for the balanced Talkback Audio Input and Output. Connects to the chassis.



QUICK GUIDE TO THE OUTPUT 1 MODULE

Fifteen connectors come standard on the Output 1 module: seven 6-pin analog audio output connectors, seven 3-pin digital audio output connectors, and one 8-pin logic connector. The connectors are hidden by the meter panel in normal operation.



MIX-MINUS AUDIO OUTPUTS

ANALOG — The 6-pin analog outputs are wired using the standard pinout sequence. All mix-minus analog outputs are MONO audio outputs with a fixed level of +4 dBu. The left output includes talkback; the right output is a “clean mono feed” that does not have talkback. For more information on the composition of this signal pair, see page 3-8 and 3-9.

DIGITAL — The 3-pin digital outputs send AES-3 (AES/EBU) compatible signals. The left channel contains the mono mix-minus audio plus talkback; the right channel is a “clean mono feed” that does not have talkback. The sample rate (48 kHz or 44.1 kHz) for each output is set independently by the SAMPLE RATE DIP switches.

TELCO RECORD MIX

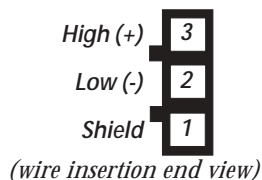
Analog Output — The 6-pin analog output is wired using the standard pinout sequence. The left channel has those Telco/Codec modules that have TO REC active; the right channel has the base record mix. For more information on the composition of this signal pair, see pages 3-8 and 3-9.

Digital Output — The 3-pin digital output is an AES-3 (AES/EBU) compatible signal. The left channel has those Telco/Codec modules that have TO REC active; the right channel has the base record mix. The sample rate (48 kHz or 44.1 kHz) is set using SAMPLE RATE DIP switch 7.

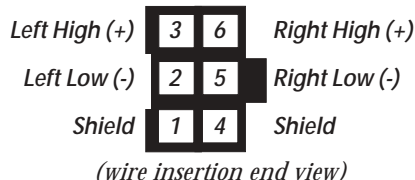
PRODUCER IFB LOGIC

Producer IFB Logic — The 8-pin Producer IFB logic connector controls talkback from the Producer to the Mix-Minus outputs. For more information, see pages 2-52 and 2-53.

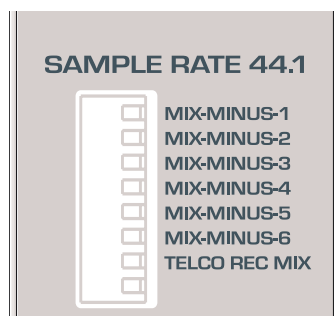
Digital Outputs



Analog Outputs



OUTPUT 1 MODULE SWITCHES



SAMPLE RATE 44.1

Sample Rate 44.1 — *These eight DIP switches set the sample rate for each digital output per the Output 1 Module Switch Definitions table below.*

Output 1 Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Mix-minus Output 1	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
2	Mix-minus Output 2	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
3	Mix-minus Output 3	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
4	Mix-minus Output 4	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
5	Mix-minus Output 5	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
6	Mix-minus Output 6	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
7	Telco Record Mix	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
8	Spare Switch		

OUTPUT 1 MODULE — PRODUCER IFB LOGIC

The 8-pin PRODUCER IFB LOGIC connector has the talkback commands to add Producer talkback to the various Mix-Minus outputs.

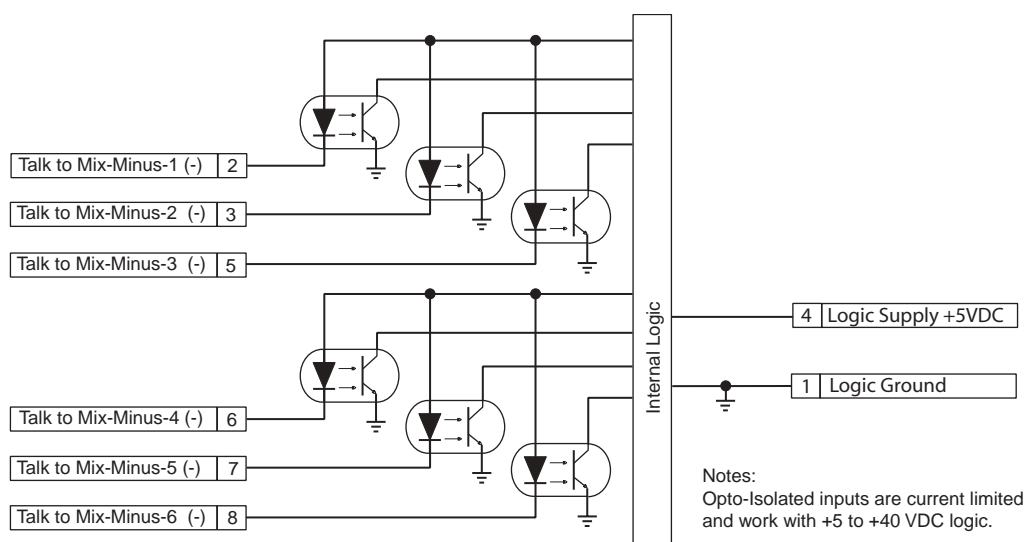
The Talk to Mix-Minus 1 to 6 logic inputs come from the Producer Talkback IFB Panel (PRE99-1189), or from a custom talkback panel. Use cable PRE99-791-CU to connect the Producer Panel to this connector and to the PRODUCER logic connector on the Studio module.

PRODUCER IFB LOGIC Connector

Logic Supply +5 VDC	4	8	Talk to Mix-Minus 6
Talk to Mix-Minus 2	3	7	Talk to Mix-Minus 5
Talk to Mix-Minus 1	2	6	Talk to Mix-Minus 4
Logic Ground	1	5	Talk to Mix-Minus 3

(wire insertion end view)

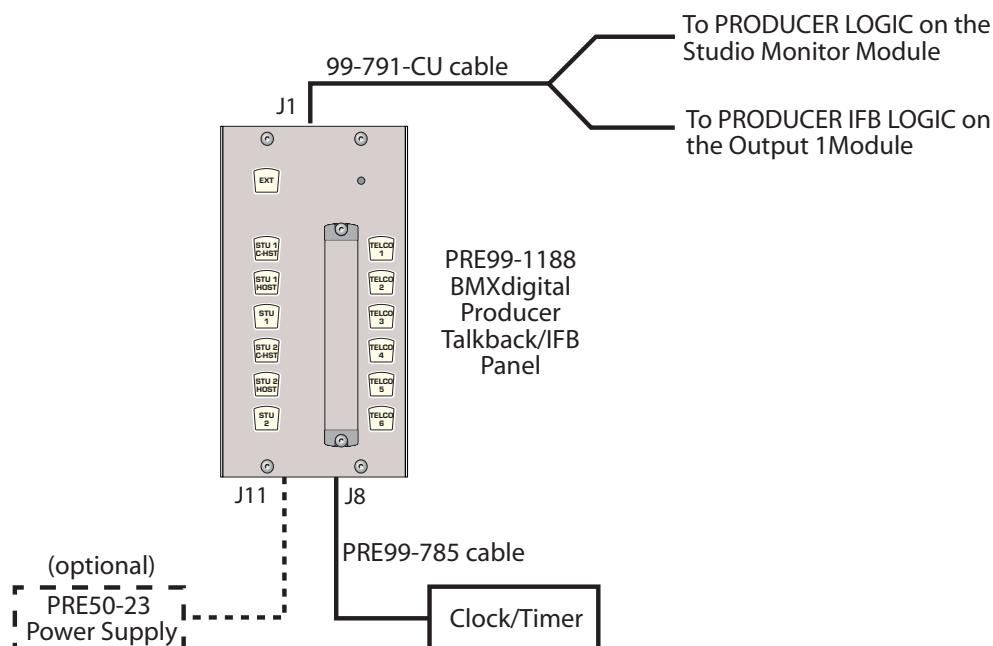
Output 1 Module, PRODUCER IFB LOGIC — Simplified Logic Diagram



Output 1 Module, PRODUCER IFB LOGIC Signal Definitions

PIN NAME / NUMBER	FUNCTIONAL DESCRIPTION OF CONNECTION
TALK TO MIX-MINUS-1 (pin 2)	When pulled low, Producer talkback audio is added to the left channel of the Mix-Minus 1 outputs.
TALK TO MIX-MINUS-2 (pin 3)	When pulled low, Producer talkback audio is added to the left channel of the Mix-Minus 2 outputs.
TALK TO MIX-MINUS-3 (pin 5)	When pulled low, Producer talkback audio is added to the left channel of the Mix-Minus 3 outputs.
TALK TO MIX-MINUS-4 (pin 6)	When pulled low, Producer talkback audio is added to the left channel of the Mix-Minus 4 outputs.
TALK TO MIX-MINUS-5 (pin 7)	When pulled low, Producer talkback audio is added to the left channel of the Mix-Minus 5 outputs.
TALK TO MIX-MINUS-6 (pin 8)	When pulled low, Producer talkback audio is added to the left channel of the Mix-Minus 6 outputs.
LOGIC SUPPLY +5 VDC (pin 4)	Module logic voltage output source that can deliver up to 300 mA of current to an isolated control panel.
LOGIC GROUND (pin 1)	Module logic ground. Should connect to isolated control panels only.

PRE99-1188 Producer Panel connections to the console
(Studio module PRODUCER LOGIC, and Output 1 Module PRODUCER IFB LOGIC)



PRE99-791-CU Producer Panel Interface Cable, connector pin outs

J1 on Producer Talkback / IFB Panel

P1	Signal	Pin
	Telco 1 switch	1
	Telco 2 Switch	2
	Telco 3 Switch	3
	Telco 4 Switch	4
	Telco 5 Switch	5
	Telco 6 Switch	6

Talk Audio (-)	8
Talk Audio (+)	9
Talk to Studio 2 Switch	10
Talk to St 2 Host Sw	11
Talk to St 2 Co-Host Sw	12
Talk to Studio 1 Switch	13
Talk to St 1 Host Sw	14
Talk to St 1 Co-Host Sw	15
Talk to External Switch	16
Dim Monitors	17
Ground	18

BLK
WHT
RED
GRN
ORG
BLU
RED / BLK
GRN / BLK
ORG / BLK
BLU / BLK
BLK / WHT
RED / WHT
GRN / WHT
BLU / WHT
BLK / RED
WHT / RED
ORG / RED

Output 1 Module, Producer IFB Logic

Pin	Signal	P2
2	Talk to Mix-Minus 1	
3	Talk to mix-Minus 2	
5	Talk to mix-Minus 3	
6	Talk to mix-Minus 4	
7	Talk to mix-Minus 5	
8	Talk to mix-Minus 6	

Pin	Signal	P3
1	Talkback Audio (-)	
9	Talkback Audio (+)	
12	Talk to Studio 2 (-)	
13	Talk to St 2 Host (-)	
14	Talk to St 2 Co-Host (-)	
4	Talk to Studio 1 (-)	
5	Talk to St 1 Host (-)	
6	Talk to St 1 Co-Host (-)	
15	Talk to External (-)	
10	C/R Dim (-) ***	
16	Logic Ground	

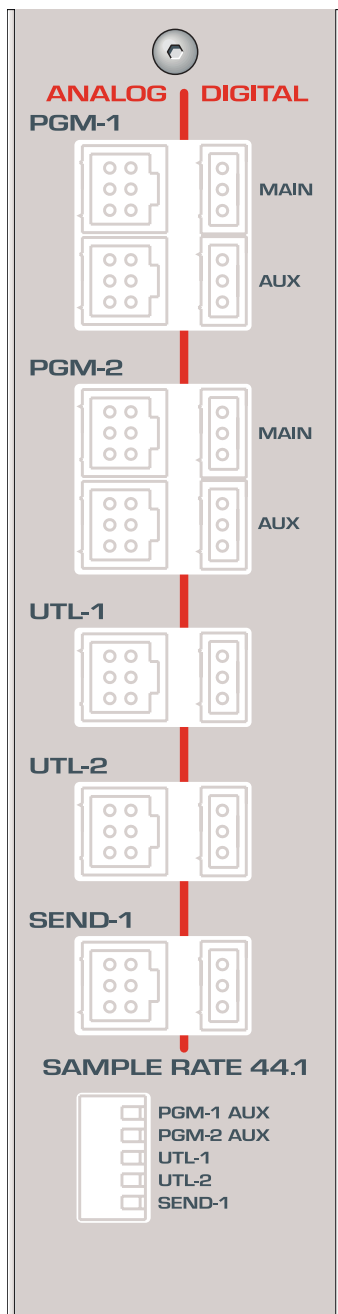
Studio Module,
Producer Logic

*** C/R Dim is only connected when the Producer Panel is located in the control room. Each time the producer talks to any location the C/R monitors are dimmed by 12 dB.



QUICK GUIDE TO THE OUTPUT 2 MODULE

Fourteen connectors come standard on the Output 2 module: seven 6-pin analog audio output connectors and seven 3-pin digital audio output connectors. The connectors are hidden by the meter panel in normal operation.



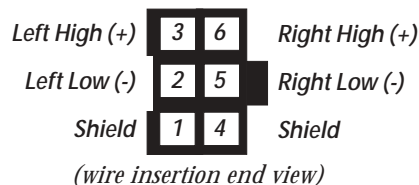
ANALOG OUTPUTS

PGM-1, PGM-2 — The 6-pin analog outputs for the Program 1 and Program 2 buses are wired using the standard pinout sequence shown below. The MAIN and AUX connectors are isolated outputs that carry the same signals (the Program 1 bus or the Program 2 bus).

UTL-1, UTL-2 — The 6-pin analog outputs for the Utility 1 and 2 buses are wired using the standard pinout sequence shown below.

SEND-1 — The 6-pin analog output for the Send 1 bus is wired using the standard pinout sequence shown below.

Analog Outputs



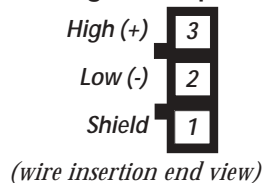
DIGITAL OUTPUTS

PGM-1, PGM-2 — The 3-pin AES-3 (AES/EBU-compatible) digital outputs of the Program 1 and Program 2 buses. The MAIN and AUX connectors are isolated outputs that carry the same signals (the Program 1 bus or the Program 2 bus), but the AUX output can be set to either 48 kHz or 44.1 kHz sampling by SAMPLE RATE DIP switches. The MAIN output is fixed at 48 kHz sampling.

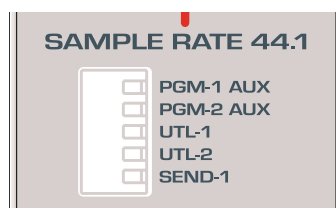
UTL-1, UTL-2 — The 3-pin AES-3 (AES/EBU-compatible) digital outputs of the Utility 1 and Utility 2 buses. The outputs can be set to either 48 kHz or 44.1 kHz sampling by SAMPLE RATE DIP switches.

SEND-1 — The 3-pin AES-3 (AES/EBU-compatible) digital outputs the Send 1 bus. The output can be set to either 48 kHz or 44.1 kHz sampling by a SAMPLE RATE DIP switch.

Digital Outputs



OUTPUT 2 MODULE SWITCHES

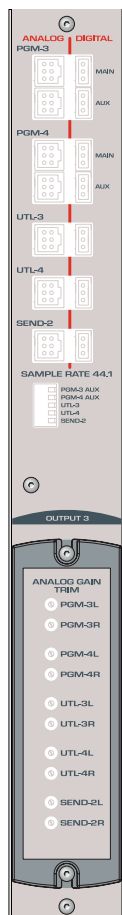


SAMPLE RATE 44.1

Sample Rate 44.1 — These five DIP switches set the sample rate for the Output 2 module's digital outputs per the Output 2 Module Switch Definitions table below.

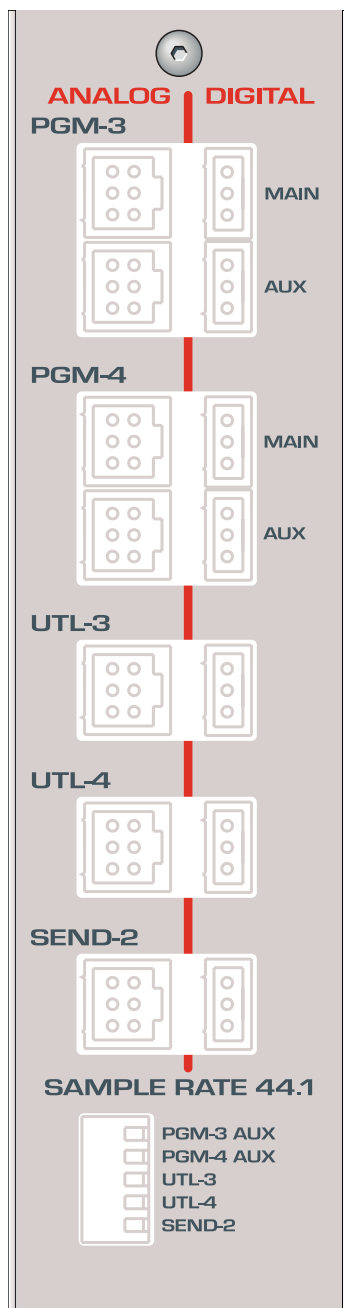
Output 2 Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	PGM-1 Aux Out	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
2	PGM-2 Aux Out	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
3	UTL-1 (Utility 1 bus)	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
4	UTL-2 (Utility 2 bus)	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
5	SEND-1	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz



QUICK GUIDE TO THE OUTPUT 3 MODULE

Fourteen connectors come standard on the Output 3 module: seven 6-pin analog audio output connectors and seven 3-pin digital audio output connectors. The connectors are hidden by the meter panel in normal operation.



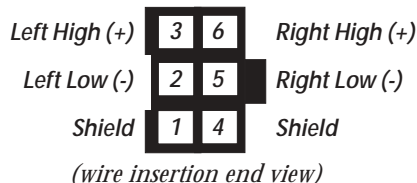
ANALOG OUTPUTS

PGM-3, PGM-4 — The 6-pin analog outputs for the Program 3 and Program 4 buses are wired using the standard pinout sequence shown below. The MAIN and AUX connectors are isolated outputs that carry the same signals (the Program 3 bus or the Program 4 bus).

UTL-3, UTL-4 — The 6-pin analog outputs for the Utility 3 and 4 buses are wired using the standard pinout sequence shown below.

SEND-2 — The 6-pin analog output for the Send 2 bus is wired using the standard pinout sequence shown below.

Analog Outputs



DIGITAL OUTPUTS

PGM-3, PGM-4 — The 3-pin AES-3 (AES/EBU-compatible) digital outputs of the Program 3 and Program 4 buses. The MAIN and AUX connectors are isolated outputs that carry the same signals (the Program 3 bus or the Program 4 bus), but the AUX output can be set to either 48 kHz or 44.1 kHz sampling by SAMPLE RATE DIP switches. The MAIN output is fixed at 48 kHz sampling.

UTL-3, UTL-4 — The 3-pin AES-3 (AES/EBU-compatible) digital outputs of the Utility 3 and Utility 4 buses. The outputs can be set to either 48 kHz or 44.1 kHz sampling by SAMPLE RATE DIP switches.

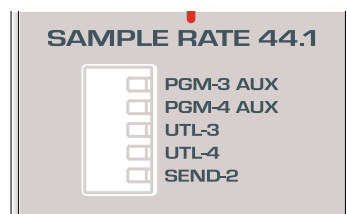
SEND-2 — The 3-pin AES-3 (AES/EBU-compatible) digital outputs the Send 2 bus. The output can be set to either 48 kHz or 44.1 kHz sampling by a SAMPLE RATE DIP switch.

Digital Outputs



(wire insertion end view)

OUTPUT 3 MODULE SWITCHES



SAMPLE RATE 44.1

Sample Rate 44.1 — These five DIP switches set the sample rate for the Output 3 module's digital outputs per the Output 3 Module Switch Definitions table below.

Output 3 Module Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	PGM-3 Aux Out	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
2	PGM-4 Aux Out	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
3	UTL-3 (Utility 3 bus)	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
4	UTL-4 (Utility 4 bus)	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz
5	SEND-2	Sets the digital sample rate to 44.1 kHz	Sets the digital sample rate to 48 kHz

Mic Remote Control Connection Example

This example shows setting up a Universal Input module as a control room mic using the A input, with a mic remote control panel connected to the module. Additional information on logic connections and DIP switch settings for the Universal Input module are on pages 2-18 through 2-23.

UNIVERSAL INPUT MODULE MAIN LOGIC CONNECTOR SIGNAL TABLE

PIN #	SIGNAL	FUNCTION
1	LOGIC GROUND	Module logic ground.
2	LOGIC GROUND	Module logic ground.
3	LOGIC GROUND	Module logic ground.
4	STOP COMMAND PULSE	Stop command output. N/O contact.
5	START COMMAND PULSE	Start command output. N/O contact.
6	LOGIC SUPPLY +5 VDC	5 volt source.
7	ON INPUT (-)	Remote On switch input (active low).
8	OFF INPUT (-)	Remote Off switch input (active low).
9	COUGH INPUT (-)	Remote Cough switch input (active low).
10	LOGIC SUPPLY +5 VDC	5 volt source.
11	LOGIC SUPPLY +5 VDC	5 volt source.
12	LOGIC SUPPLY +5 VDC	5 volt source.
13	COMMANDS COMMON	Start/Stop Pulse, Start Sustained common. C contact.
14	TALLIES COMMON	Tally relays common connection. C contact.
15	LOGIC ACTIVE TALLY	Logic active tally output. N/O contact.
16	OFF TALLY	Off tally output. N/O contact.
17	ON TALLY	On tally output. N/O contact.
18	ACTIVATE LOGIC INS (+)	+VDC to enable external inputs On, Off, Cough, Talkback.
19	RESET (-)	Remote Audio Off input (active low).
20	TALK TO C/R INPUT (-)	Remote Talkback input (active low).
21	READY (-)	Remote Ready input (active low).
22	RESET (+)	+VDC to enable Audio Reset function (audio off control).
23	START SUSTAINED	Start sustained command output. N/O relay contact.
24	READY (+)	+VDC to enable the Ready function (Off lamp control).

(wire insertion
end view)

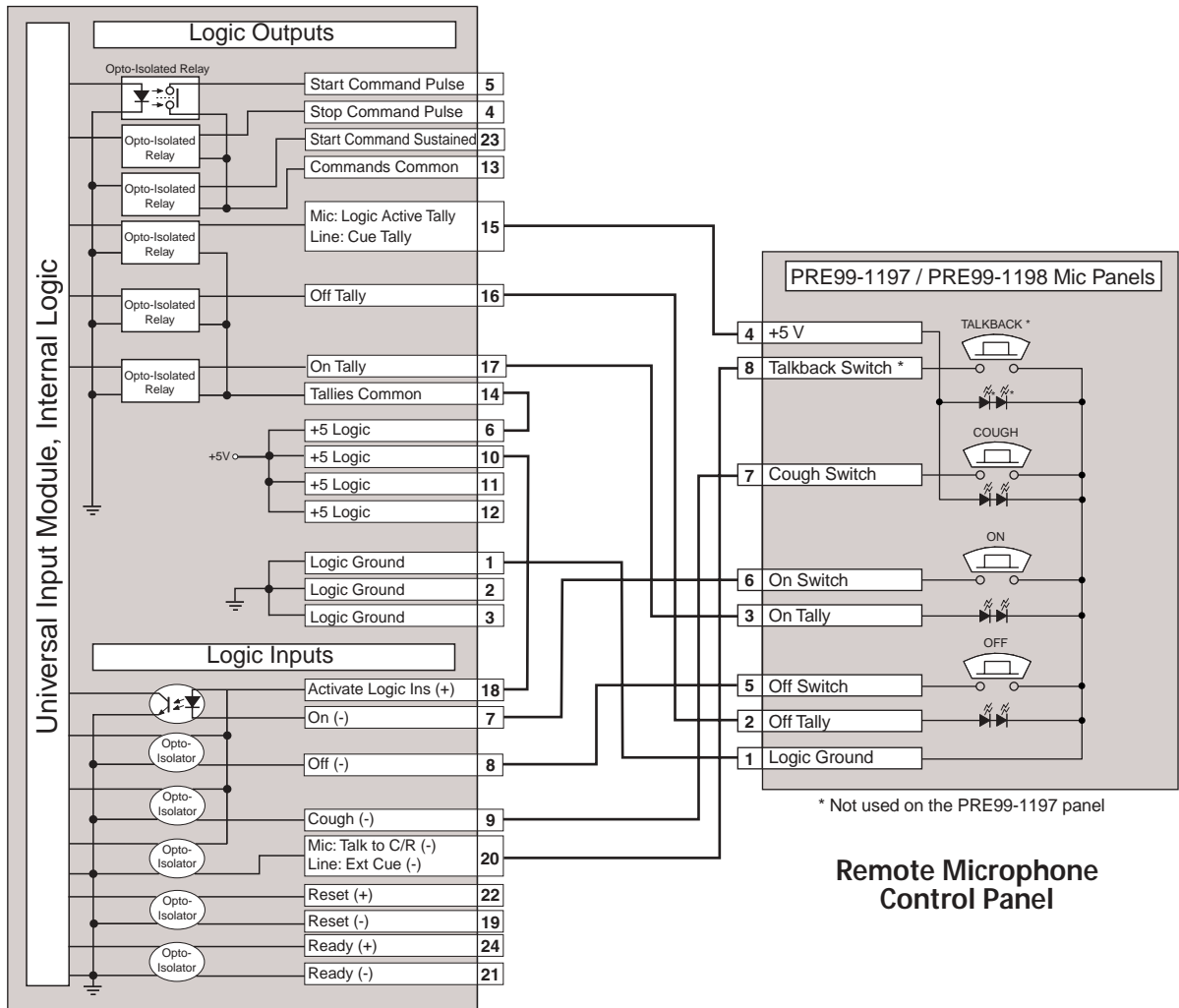
Notes: +VDC is between +5 and +40 VDC.
Output tallies/relays can switch voltages up to +60 VDC
Bold indicates connections used in this example.

UNIVERSAL INPUT MODULE SWITCH SETTINGS

DS1			DS2		
#	Switch Name	Setting	#	Switch Name	Setting
1	Signal Source	OFF	1	Fader Start	OFF
2	CR Mute	ON	2	Start Pulse	OFF
3	Studio 1 Mute	OFF	3	Dim Control	OFF
4	Studio 2 Mute	OFF	4	Bypass SRC Converter	OFF
5	External Site Mute	OFF	5	Mute Setting Control	ON
6	Local On, Cough	OFF	6	Spare Switch	OFF
7	Timer Reset	OFF	7	Input Level Set	OFF
8	Off Lamp Status	ON	8	Input Level Set	OFF

Note: ON settings are to the operator's left. OFF settings are to the operator's right.

SIMPLIFIED DIAGRAM FOR INTERFACING A MIC REMOTE CONTROL PANEL

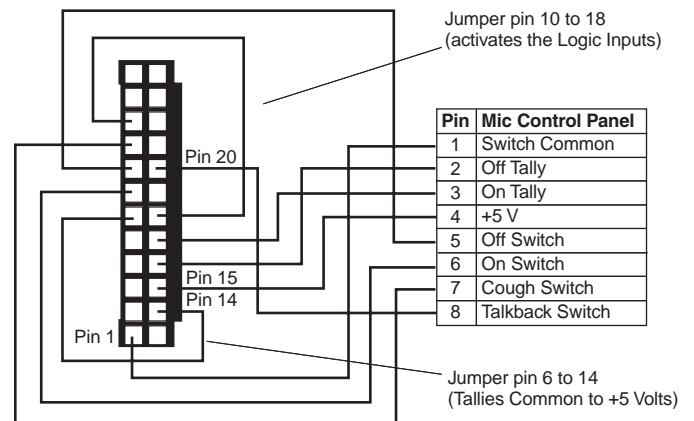


Remote Microphone Control Panel

Universal Input Module

Wiring diagram for a PRE99-1198 Mic Remote Control Panel with Talkback

This diagram shows the wiring for the PRE99-787-CU cable. It connects either the PRE99-1197 Mic Panel (with On/Off/Cough buttons) or the PRE99-1198 Mic Panel (with On/Off/Cough/Talkback buttons) to a Universal Input module..



Basic Peripheral Device Logic Connection Example

This example shows a Universal Input module set up as a line, using the A analog input, to interface a CD player (Denon DN-951/961 shown in the example). For more information on logic connections and DIP switch settings for the Universal Input module, see pages 2-18 through 2-23.

UNIVERSAL INPUT MODULE MAIN LOGIC CONNECTOR SIGNAL TABLE

PIN #	SIGNAL	FUNCTION
1	LOGIC GROUND	Module logic ground.
2	LOGIC GROUND	Module logic ground.
3	LOGIC GROUND	Module logic ground.
4	STOP COMMAND PULSE	Stop command output. N/O contact.
5	START COMMAND PULSE	Start command output. N/O contact.
6	LOGIC SUPPLY +5 VDC	5 volt source.
7	ON INPUT (-)	Remote On switch input (active low).
8	OFF INPUT (-)	Remote Off switch input (active low).
9	CUE INPUT (-)	Remote Cue switch input (active low).
10	LOGIC SUPPLY +5 VDC	5 volt source.
11	LOGIC SUPPLY +5 VDC	5 volt source.
12	LOGIC SUPPLY +5 VDC	5 volt source.
13	COMMANDS COMMON	Start/Stop Pulse, Start Sustained common. C contact.
14	TALLIES COMMON	Tally relays common connection. C contact.
15	CUE TALLY	Cue tally output. N/O contact.
16	OFF TALLY	Off tally output. N/O contact.
17	ON TALLY	On tally output. N/O contact.
18	ACTIVATE LOGIC INS (+)	+VDC to enable external inputs On, Off, Cough, Talkback.
19	RESET (-)	Remote Audio Off input (active low).
20	REMOTE CUE (-)	Activates Cue function (active low).
21	READY (-)	Remote Ready input (active low).
22	RESET (+)	+VDC to enable Audio Reset function (audio off control).
23	START SUSTAINED	Start sustained command output. N/O relay contact.
24	READY (+)	+VDC to enable the Ready function (Off lamp control).

(wire insertion
end view)

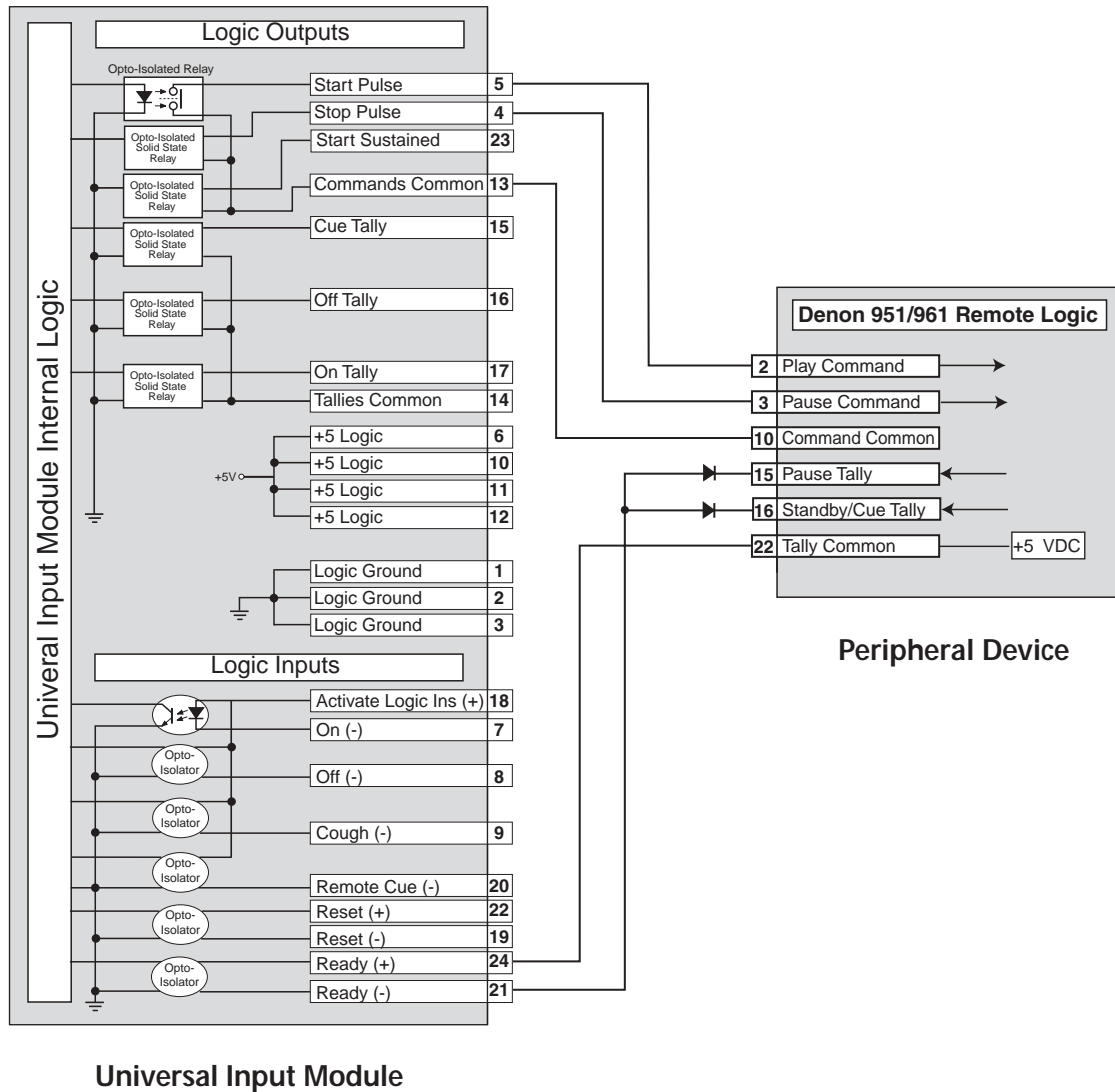
Notes: +VDC is between +5 and +40 VDC.
Output tallies/relays can switch voltages up to +60 VDC
Bold indicates connections used in this example.

UNIVERSAL INPUT MODULE SWITCH SETTINGS

DS1			DS2		
#	Switch Name	Setting	#	Switch Name	Setting
1	Signal Source	OFF	1	Fader Start	OFF
2	CR Mute	OFF	2	Start Pulse	OFF
3	Studio 1 Mute	OFF	3	Start/Stop Pulse	OFF
4	Studio 2 Mute	OFF	4	Bypass SRC Converter	OFF
5	External Site Mute	OFF	5	Spare Switch	OFF
6	Local On, Cough	OFF	6	Spare Switch	OFF
7	Timer Reset	ON	7	Input Level Set	OFF
8	Off Lamp Status	OFF	8	Input Level Set	OFF

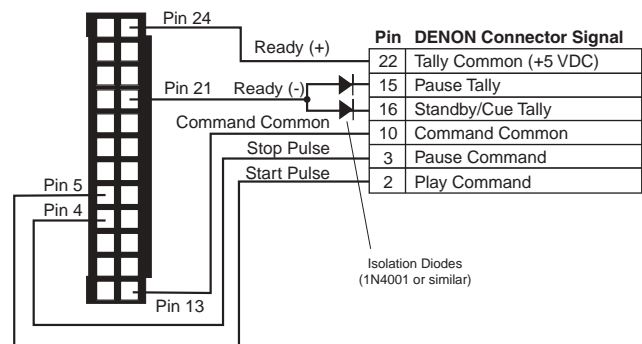
Note: ON settings are to the operator's left. OFF settings are to the operator's right.

SIMPLIFIED DIAGRAM FOR INTERFACING A DENON DN-951/961 CD PLAYER



Wiring diagram for a Denon DN-951/962 CD Player

This diagram shows the wiring between a typical CD player and a Universal Input module set as a line input.



Complex Logic Connection Example

This example shows setting up a Universal Input module (A input, analog) to interface with a remote logic device, such as an ENCO DADpro. For more information on logic connections and DIP switch settings for the Universal Input module, see pages 2-18 through 2-23.

UNIVERSAL INPUT MODULE MAIN LOGIC CONNECTOR SIGNAL TABLE

PIN #	SIGNAL	FUNCTION
1	LOGIC GROUND	Console logic ground.
2	LOGIC GROUND	Console logic ground.
3	LOGIC GROUND	Console logic ground.
4	STOP COMMAND PULSE	Stop command output. N/O relay contact.
5	START COMMAND PULSE	Start command output. N/O relay contact.
6	LOGIC SUPPLY +5 VDC	5 volt source.
7	ON INPUT (-)	Remote On switch input (active low).
8	OFF INPUT (-)	Remote Off switch input (active low).
9	COUGH INPUT (-)	Remote Cough switch input (active low).
10	LOGIC SUPPLY +5 VDC	5 volt source.
11	LOGIC SUPPLY +5 VDC	5 volt source.
12	LOGIC SUPPLY +5 VDC	5 volt source.
13	COMMANDS COMMON	Start/Stop Pulse, Start Sustained common. C relay contact.
14	TALLIES COMMON	Tally relays common connection. C relay contact.
15	CUE TALLY	Cue tally output. N/O relay contact.
16	OFF TALLY	Off tally output. N/O relay contact.
17	ON TALLY	On tally output. N/O relay contact.
18	ACTIVATE LOGIC INS (+)	+VDC to enable external inputs On, Off, Cough, Talkback.
19	RESET (-)	Remote Audio Off input (active low).
20	REMOTE CUE (-)	Activates the Cue function (active low).
21	READY (-)	Remote Ready input (active low).
22	RESET (+)	+VDC to enable Audio Reset function (audio off control).
23	START SUSTAINED	Start sustained command output. N/O relay contact.
24	READY (+)	+VDC to enable the Ready function (Off lamp control) .

(wire insertion
end view)

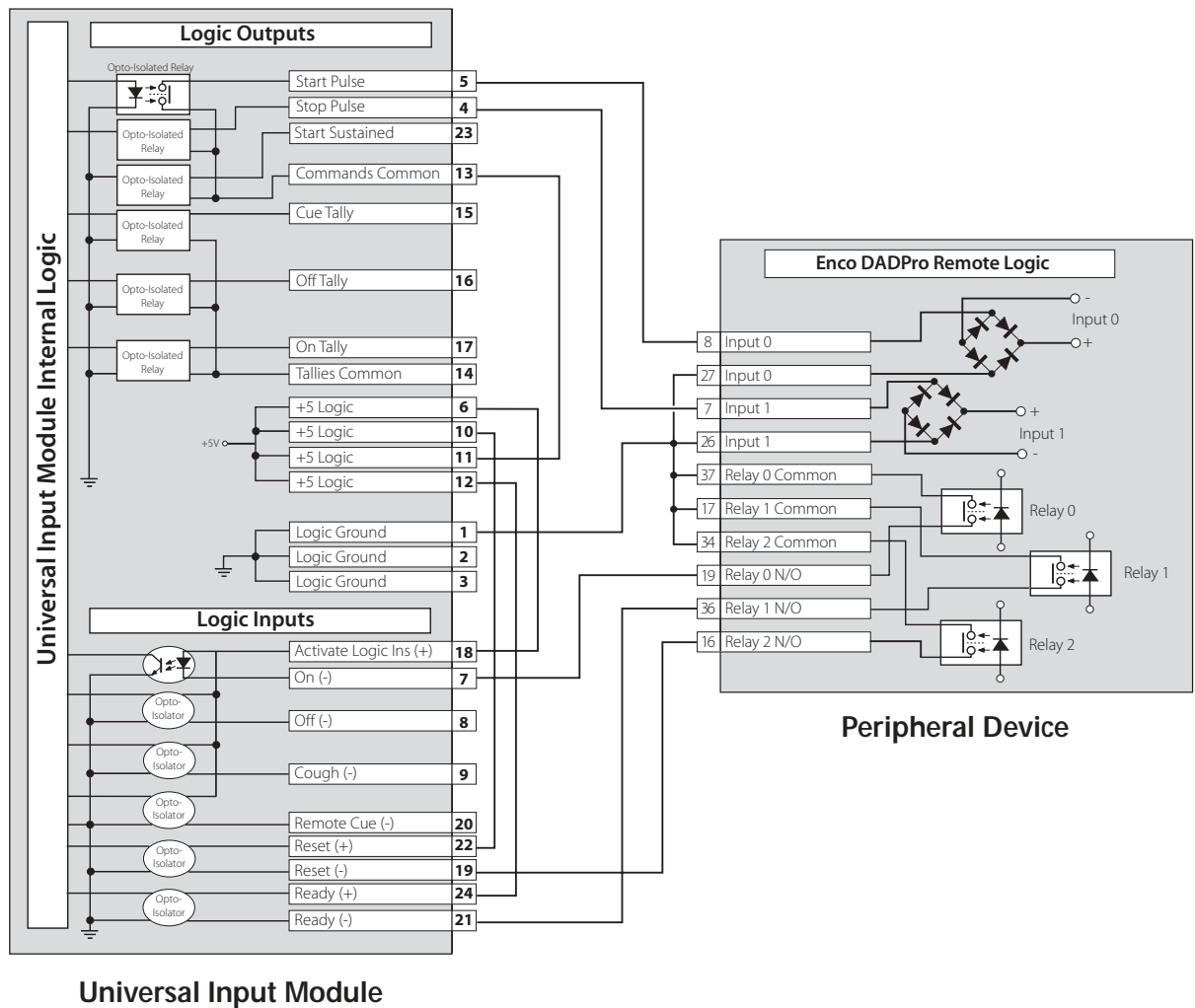
Notes: +VDC is between +5 and +40 VDC.
Output relays can switch voltages up to +60 VDC
Bold indicates connections used in this example.

UNIVERSAL INPUT MODULE SWITCH SETTINGS

DS1			DS2		
#	Switch Name	Setting	#	Switch Name	Setting
1	Signal Source	OFF	1	Fader Start	OFF
2	CR Mute	OFF	2	Start Pulse	OFF
3	Studio 1 Mute	OFF	3	Start/Stop Pulse	OFF
4	Studio 2 Mute	OFF	4	Bypass SRC Converter	OFF
5	External Site Mute	OFF	5	Spare Switch	OFF
6	Local ON Cough	OFF	6	Spare Switch	OFF
7	Timer Reset	ON	7	Input Level Set	OFF
8	Ready Lamp Status	OFF	8	Input Level Set	OFF

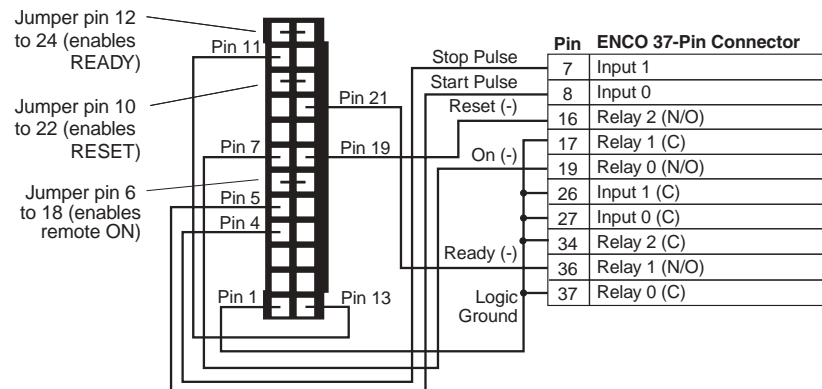
Note: ON settings are to the operator's left. OFF settings are to the operator's right.

SIMPLIFIED DIAGRAM FOR INTERFACING AN ENCO DADPRO



Wiring diagram for an ENCO DADpro Digital Delivery System

This diagram shows the wiring between a typical Digital Delivery System and a Universal Input module, set as a line input.



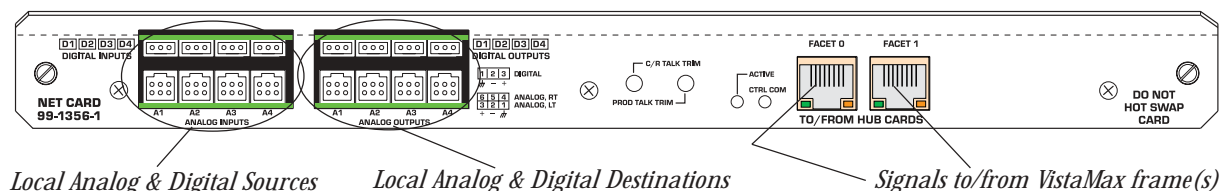
NET CARD

Only BMXdigital consoles with the optional Net Card installed can directly communicate with and control a VistaMax system. The Net Card (shown below) plugs into the motherboard at the right rear corner of the mainframe, behind the output modules. It is hidden by the meter panel in normal use. There are two talkback level trim controls on the card to set control room and producer talkback levels at installation. A blank panel covers the Net Card slot when the card is not present.

Some typical uses of the Net Card outputs include routing analog audio to the External Monitor inputs on the control room module, VistaMax intercom talk into the External Talk input, and for in-room recording equipment.

The Net Card inputs can connect Talk from External audio into the VistaMax system along with outputs of in-room equipment that do not require an input channel on the console yet still need to be made available throughout the facility through the VistaMax system.

BMXdigital Net Card Front Panel Features



Without the Net Card, a BMXdigital console is treated like any other console connected to a VistaMax system: input channel sources and console outputs must connect to VistaMax frame I/O inputs while I/O card outputs connect to the console inputs. Any in-room devices connected directly to the console would only be available through a bus output connection. VistaMax selector panels would then be used to select the input sources for the console inputs tied to the VistaMax.

With the addition of the Net Card, the BMXdigital console is integrated into the VistaMax system. A Net Card functions as the audio, logic and control interface between the entire console and the VistaMax system through the two Facet connectors. It automatically makes available to the VistaMax system any, or all, of the console input sources and console bus outputs.

The Net Card also provides eight local audio sources (four analog and four digital inputs) and eight local destinations (four analog and four digital outputs) for the VistaMax system.

The two Facet connections (CAT-5e, as shown above, or alternately Optical connections, not shown) each simultaneously send 64 signals to the VistaMax frame with 64 return signals coming from the VistaMax frame. Each signal may consist of: one channel of audio; any number of common logic commands; or it can be an audio signal with logic “bound” to the audio.

Although only one facet cable is required to tie the BMXdigital into the VistaMax system, both facet connections can be used to double the signal carrying capability (128 signals coming from the console with another 128 signals returning to the console) or for connection redundancy.

Refer to the VistaMax manual (75-52) for additional connection and applications information.

NET-ONLY MODULES

These are input modules that do not have any of the external audio or logic connections found on the full-featured and limited-feature input modules. They are designed to directly interface with a

VistaMax system. To use Net-Only modules, the BMXdigital console must have the optional Net Card installed, and it must be connected to a VistaMax system.

Although the same type of VistaMax direct routing can be done using standard input modules, if no in-room audio connection is required on a module, then a less-expensive Net-Only input module can be used in lieu of any standard module.

There are two types of Net-Only modules: full-featured and limited feature (without Send and Utility bus controls) available for each type of input module (Universal Input, Telco, and RLS).

Net-Only Module Operation

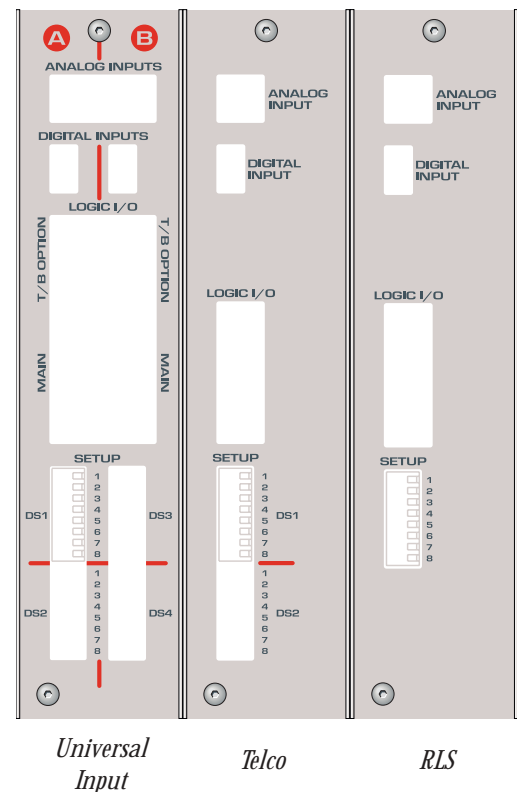
Net-Only modules look identical to, and function the same as, standard modules—at least as far as the operator is concerned. They have the same controls as the standard modules. It is only when the meter panel is opened up that any differences can be seen.

Net-Only modules do not have audio or logic connections and only have one set of DIP switches on them (as shown to the right). Their inputs can only be a VistaMax source. But, that input can be controlled by the console logic, if set to do so in the Session file. Likewise, the logic from the source signal can be set to control the module (e.g., control the Off lamp and turn the module on or off).

Net-Only Module Installation

Net-Only modules can be placed into any input module position. The only limitation is on Telco modules: there can only be six Telco modules in a frame (regardless of what type of Telco module—standard or Net-Only, full-featured or limited feature set, is installed).

Both the Telco and RLS Net-Only modules are automatically setup as “switchers”—controlling a single destination on the VistaMax system. Input source selection for the Net-Only Universal Input



Net-Only Module DIP Switches

module is made by a Session file setting. The Net-Only Telco and RLS modules also have Session-specific settings (the destination they are assigned to, a source include list, a source exclude list, etc.). Refer to Chapter 4: Server or to the VistaMax manual (Harris # 75-52) for additional information on VistaMax source selection.

The eight DIP switches on Net-Only modules have different settings than on standard modules. Net-Only Module Switch Definition tables are on page 2-66. On Net-Only Universal Input modules, mute locations can be automatically set following the VistaMax Room Code. If Room Code is not used, then the mute location is set using the mute location DIP switches. On the Net-Only RLS modules the switches are not active. On the Net-Only Telco the switches set the Telco ID number and set whether the Off-line and Record source is pre or post fader.

NET-ONLY MODULE DIP SWITCH SETTINGS

Net-Only Universal Input Module: DS1 Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Spare Switch		
2	CR Mute	Mutes C/R speakers at module on ¹	No monitor muting
3	Studio 1 Mute	Mutes Studio 1 speakers at module on ¹	No monitor muting
4	Studio 2 Mute	Mutes Studio 2 speakers at module on ¹	No monitor muting
5	External Site Mute	Mutes external site speakers at module on ¹	No monitor muting
6	Spare Switch		
7	Spare Switch		
8	Spare Switch		

¹ These switches are only active if the VistaMax Room Code function is not being used. Set only one switch to On to activate mic logic functions (trigger room warning command and mute monitor speakers at channel on).

Net-Only Telco / Codec Module: DS1 Switch Definitions

#	Switch Name	ON Function (set to the operator's left)	OFF Function (set to the operator's right)
1	Set Telco ID	Sets the module as Telco / Codec #1 ¹	Off
2	Set Telco ID	Sets the module as Telco / Codec #2 ¹	Off
3	Set Telco ID	Sets the module as Telco / Codec #3 ¹	Off
4	Set Telco ID	Sets the module as Telco / Codec #4 ¹	Off
5	Set Telco ID	Sets the module as Telco / Codec #5 ¹	Off
6	Set Telco ID	Sets the module as Telco / Codec #6 ¹	Off
7	O/L & Record Source	Pre-fader when module is off (only when Session module switch 6 is set for Pre-Fader)	Post-fader regardless of module on/off
8	Spare Switch		

¹ Caution: Set only one of these six DIP switches to ON. This setting identifies the module, affecting signal routing and module controls. Each Telco module in the console MUST have a unique ID setting.

Net-Only Remote Line Selector (RLS) Module: DS1 Switch Definitions

#	Switch Name	ON Function (set to operator's left)	OFF Function (set to operator's right)
1	Spare Switch		
2	Spare Switch		
3	Spare Switch		
4	Spare Switch		
5	Spare Switch		
6	Spare Switch		
7	Spare Switch		
8	Spare Switch		