

AI16 Analog Input Card

For Mix Rack

Digidesign

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email: techpubs@digidesign.com

Communications and Safety Regulation Information

Compliance Statement
This model Digidesign AI16 Analog Input Card complies with the following standards regulating interference and EMC:

- FCC Part 15 Class B
- EN 55103-1 E3
- EN 55103-2 E3
- AS/NZS 3548 Class B
- CISPR 22 Class B

Radio and Television Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

DECLARATION OF CONFORMITY

We Digidesign,
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declare under our sole responsibility that the product
AI16 Analog Input Card
complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Communication Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or locate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



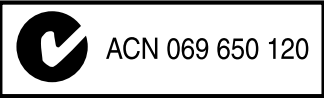
Any modifications to the unit, unless expressly approved by Digidesign, could void the user's authority to operate the equipment.

Canadian Compliance Statement:

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Australian Compliance



European Compliance



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Chapter 1: Overview



Figure 1. AI16 Analog Input Card

The AI16 Analog Input Card provides 16 channels of software controlled and fully recallable analog microphone/ line inputs to the Digidesign® Mix Rack.

AI16 Card Components

The AI16 Card includes the following items:

- AI16 Card
- Mounting screws
- Digidesign Registration Information Card
- This guide

AI16 Card Capabilities and Features

The AI16 Card provides the following:

- 16 channels of analog microphone and line inputs via XLR3-Female connectors
- +48V Phantom Power (selectable per channel via D-Show software)
- 20 dB pad (selectable per channel via D-Show software)
- Gain adjustable in 0.1dB steps
- Polarity invert (selectable per channel via D-Show software)

System Requirements

The following are required to use the AI16 Card with your installed and configured VENUE system:

- Digidesign Mix Rack
- D-Show software version 2.7 or higher

Conventions Used in This Guide

All Digidesign guides use the following conventions to indicate menu choices and key commands in D-Show and Pro Tools:

Convention	Action
File > Save Session	In Pro Tools, choose Save Session from the File menu.
Options > System Config	In the D-Show software screen, click Options to display the Options page, then click the System Config tab.
Ctrl+N	Hold down the Control key and press the N key.
Ctrl-click	Hold down the Control key and click the mouse button.

The following symbols are used to highlight important information:

 *User Tips are helpful hints for getting the most from your VENUE system.*

 *Important Notices include information that could affect data or performance.*

 *Shortcuts show you useful keyboard or mouse shortcuts.*

 *Cross References point to related sections in the D-Show or Pro Tools Guides.*

Chapter 2: Installing the AI16 Card

The AI16 Analog Input Card is installed in Mix Rack and is connected to the appropriate Mix Rack ribbon cable. Mix Rack supports a total of three AI16 Cards. In its base configuration, input slots A, B, and C contain an AI16 Card.

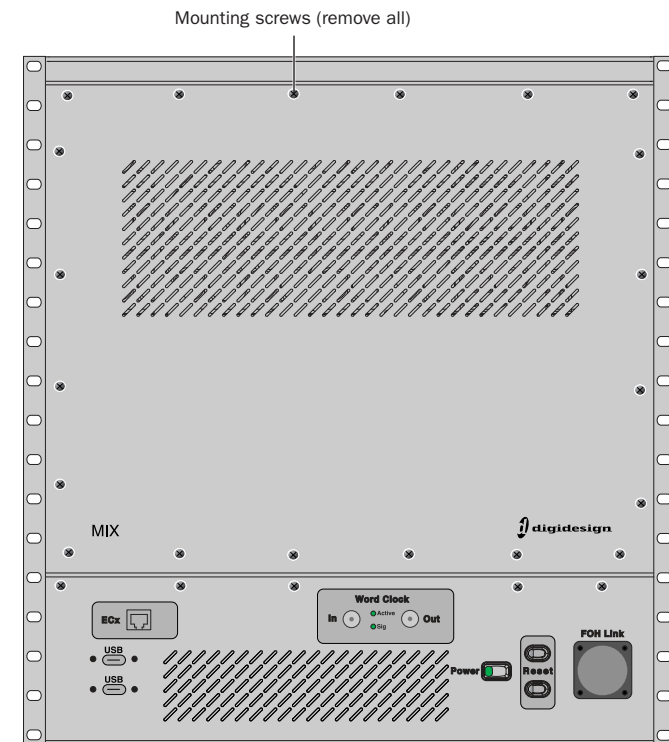
If you want to remove an AI16 Card from the Mix Rack, see “Removing an AI16 Card” on page 4.

Installing an AI16 Card

Your Mix Rack has three available input slots: slots A, B, and C. You must install the AI16 Card in one of these three input slots.

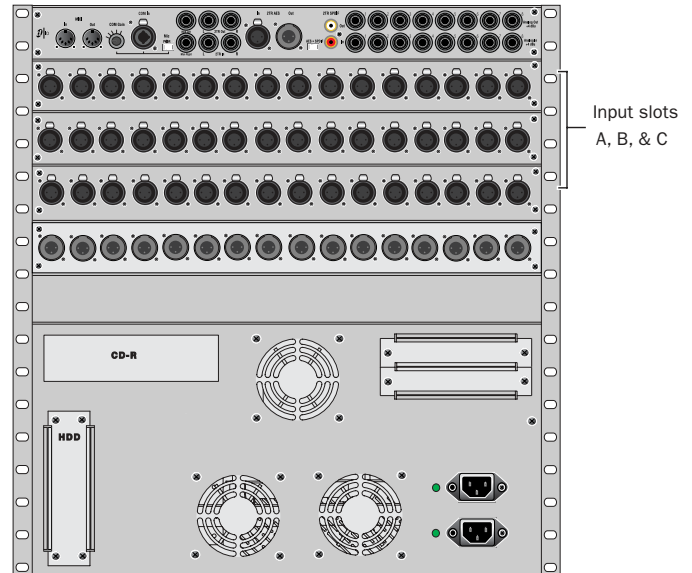
To install an AI16 Card:

- 1 Shut down the VENUE system, and turn off power to the Mix Rack.
- 2 Disconnect all cables from Mix Rack.
- 3 Remove Mix Rack’s front panel cover by unscrewing its mounting screws (#1 Phillips).



Mix Rack front panel

- 4 On Mix Rack’s back panel, locate input slot A, B, or C.



Mix Rack back panel

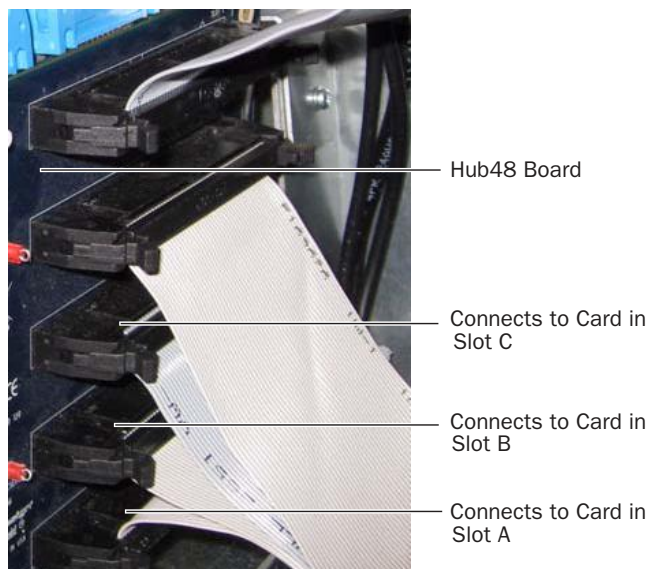
 If you are replacing an AI16 Card, you must first remove one of the cards. See “Removing an AI16 Analog Input Card” on the next page, then proceed with these instructions.

- 5 Remove the card from its packing material. Hold the card by its edges.
- 6 Gently slide the card into the input slot.
- 7 When the card is seated in its slot, use the captive thumb-screws to secure the card to Mix Rack’s chassis in the back of Mix Rack.
- 8 Secure the card to the front panel of Mix Rack using the four mounting screws you removed earlier.
- 9 Find the ribbon cable that corresponds to the input slot in which you have installed the AI16 Card.

 **Mix Rack contains 5 ribbon cables that connect to the Input and Output Cards. The are aligned vertically. The bottom ribbon cable corresponds with input slot A, the next with input slot B, the next with input slot C, the next with output slot D, and the top ribbon cable corresponds with output slot E.**

10 Find the Hub48 Board ribbon cable that corresponds to the input slot in which you have installed the AI16 Card. The Hub48 board's five ribbon cables connect to the Input and Output Expansion Cards.

⚠ Do not remove or re-seat the ribbon cable connections on the Hub48 Board while the board is installed in the Mix Rack. This may cause excessive flexing of the Hub48 Board. If necessary, disconnect the Hub48 and all Expansion Card ribbon connections, and remove the entire assembly from the rack prior to changing connections.

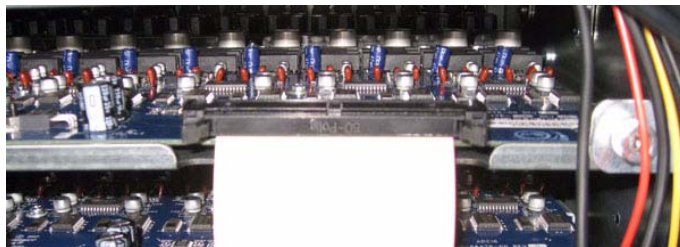


Detail of back of Mix Rack, the Hub48 Board, and the ribbon cables

⚠ Mix Rack contains 5 ribbon cables that connect to the Input and Output Cards. The bottom three ribbon cables connect to the AI16 Cards installed in Slots A, B, and C.

11 Connect the AI16 Card's ribbon cable socket.

Make sure the pins on the socket are correctly aligned with the ribbon cable connector. Secure the connection by moving the retaining clips on each side of the socket connector inward. Check to make sure the ribbon cable is connected securely.



A properly connected Expansion Card

Removing an AI16 Card

If you want to replace an AI16 Input Expansion Card in your Mix Rack, you must first remove a card.

To remove an AI16 Card:

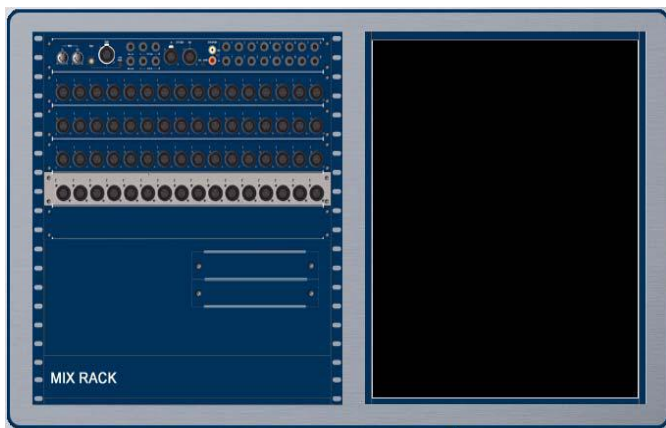
- 1** Shut down the VENUE system, and turn off power to the Mix Rack.
- 2** Disconnect all cables from Mix Rack.
- 3** Remove Mix Rack's front panel cover by unscrewing its mounting screws (#1 Phillips).
- 4** On the back panel, locate the input card you want to remove.
- 5** Remove the mounting screws that secures the output card to the front panel of Mix Rack's chassis.
- 6** Disconnect the card's ribbon cable.
- 7** Loosen the thumbscrews that secure the input card to the Mix Rack's chassis.
- 8** Gently slide the card out of the slot.

Completing and Confirming Installation

To complete and confirm installation:

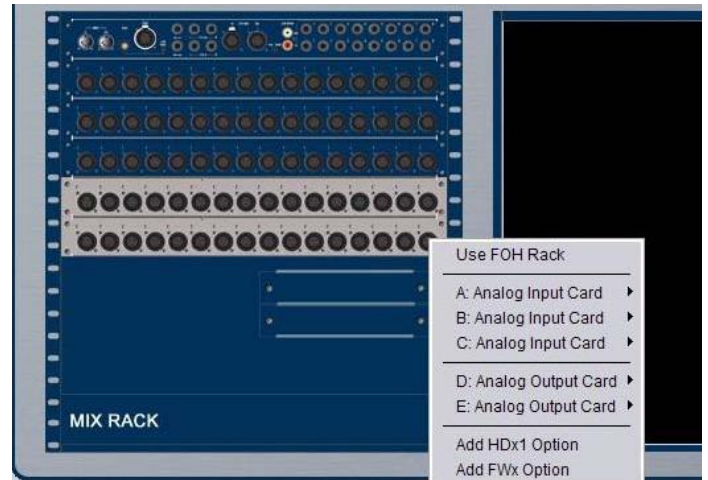
- 1 Reattach the Mix Rack's front panel.
- 2 Reconnect the power and any audio cables to the Mix Rack.
- 3 Turn on the system.
- 4 Go to the Options page and click the Devices tab to view your system hardware status. The newly installed AI16 Card should be displayed.

 *If the AI16 Card does not appear in the Mix Rack graphic, check the ribbon cable connection. Disconnect and reconnect the ribbon cable to the Card, making sure to properly seat the connector in its socket.*



Detail of Devices tab indicating presence of three AI16 Cards

- 5 In the standalone software, right-click the Mix Rack graphic to see your Mix Rack's Input and Output Card configuration. AI16 Cards appear in slots A, B, and C of the pop-up menu as "Analog Input Card".



Detail of standalone software's Devices tab pop-up menu showing AI16 Cards

- 6 Go to the Patchbay page and click the Stage tab to verify that the AI16 Card appears in the patchbay.

Chapter 3: Specifications

Audio Specifications

AI16 Analog Mic/Line Inputs

Parameter	Specifications	Limit	Units	Condition/ Comment
Type	Balanced, XLR3-Female			
Gain	+10 to +60		dB	6 dB analog steps with 0.1 dB digital increments and crossfade at analog relay switch point
Max Input Level	+32		dBu	Pad ON
Pad	20		dB	
Input Impedance, pad OFF	5.5k		Ohm	Each leg to ground
Input Impedance, pad ON	3.8k		Ohm	Each leg to ground
Phantom Power	+48		VDC	10 mA max per channel
EIN	-126	max	dBu	Max gain, 150 ohm source, 20 Hz-20 kHz BW, unweighted
THD + N	0.003		%	Minimum gain, pad OFF, -1 dBFS output, 20 HZ – 20 kHz BW
A/D Converter Latency	0.25		ms	Fs=48kHz

All measurements at $F_s=48$ kHz with 150 Ohm source impedance and 600 Ohm load impedance, unless otherwise specified.

0 dBu = 0.775Vrms.

