

VENUE X016 Analog/Digital Output Card

For VENUE Mix Rack and VENUE SC48™

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Documentation Feedback

At Digidesign, we're always looking for ways to improve our documentation. If you have comments, corrections, or suggestions regarding our documentation, email us at techpubs@digidesign.com.

Communications and Safety Regulation Information

Compliance Statement

This model Digidesign XO16 Analog/Digital Output 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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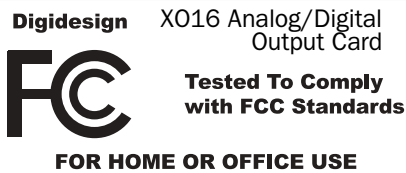
declare under our sole responsibility that the product
XO16 Analog/Digital Output Card
complies with Part 15 of FCC Rules.

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

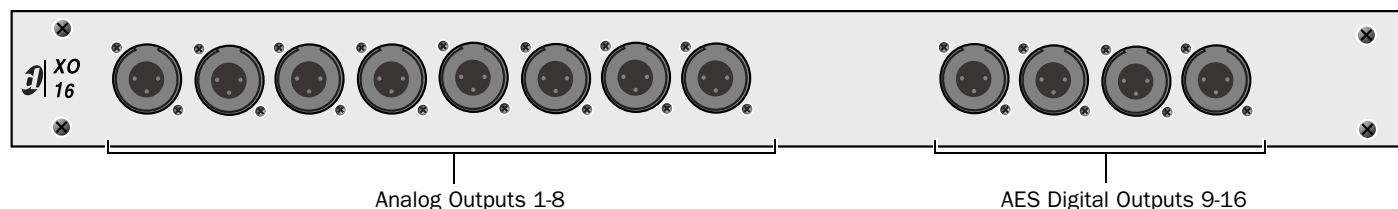


Figure 1. XO16 Analog/Digital Output Card

The XO16 Analog/Digital Output Card from Digidesign® provides eight analog line outputs and four stereo digital outputs to your VENUE Mix Rack or VENUE SC48™ console.

XO16 Card Components

The XO16 Card includes the following items:

- XO16 Card
- Mounting screws
- Digidesign Registration Information Card
- This guide

XO16 Card Capabilities and Features

The XO16 Card provides the following:

- Eight channels of analog line level outputs via XLR3-male connectors
- Eight channels of AES3 digital outputs via four XLR3-male connectors. Each connector carries two digital audio channels.

System Requirements

One of the following are required to use the XO16 Card with your installed and configured VENUE system:

- A Mix Rack with an available output card slot
- or –
- An SC48 console with an available output card slot

For complete system requirements, visit the Digidesign website (www.digidesign.com).


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 names of Commands, Options, and Settings that appear on-screen are in a different font.

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 X016 Card


This chapter provides information on installing an X016 card in a Mix Rack or an SC48 console.

For instructions on installing a card in a Mix Rack, see “Installing an X016 Card in Mix Rack” on page 3.

For instructions on installing a card in an SC48, see “Installing an X016 Card in SC48” on page 5.

Installing an X016 Card in Mix Rack

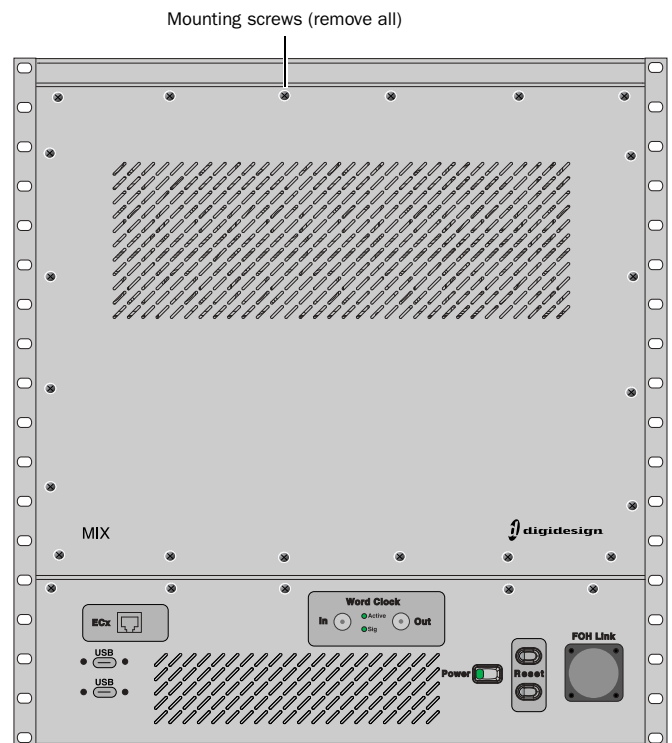
Mix Rack has two available output card slots, slots D and E. X016 cards can be installed in either or both slots. These instructions assume that you already have an Analog Output Card (AO16) installed in slot D and that slot E is empty.

 *If you are replacing an X016 Card or you want to install two in your Mix Rack, you must first remove a card. See the Venue Service Guide for more information on removing and replacing cards.*

To install an X016 Card:


- 1 Shut down the VENUE system, and turn off power to the Mix Rack.
- 2 Disconnect all cables from Mix Rack.

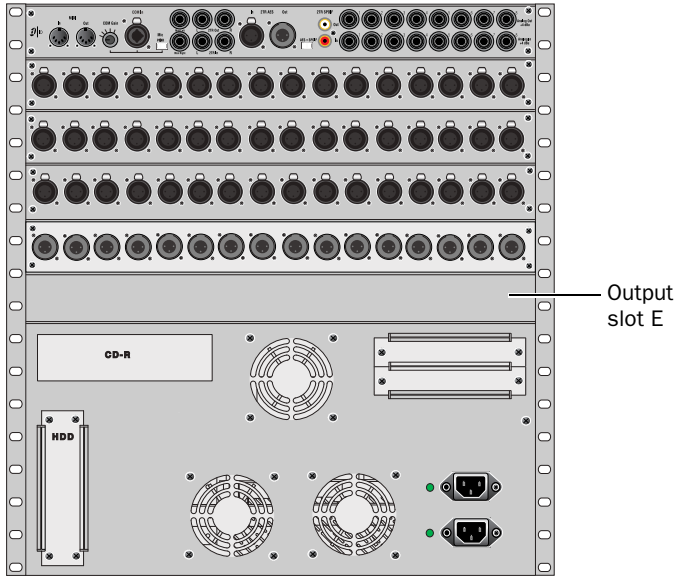
- 3 Remove Mix Rack’s front panel cover by unscrewing its mounting screws (#1 Phillips).



Mix Rack front panel

4 On Mix Rack's back panel, locate output slot E.

 If you are installing the XO16 Card in a slot with a card slot cover, you must first remove the card slot cover.



Mix Rack back panel


5 Remove the card from its packing material. Hold the card by its edges.

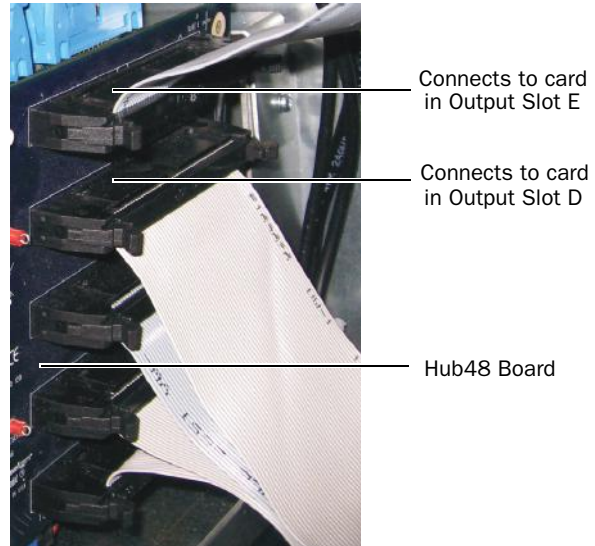
6 Gently slide the card into the output slot.

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 Hub48 Board ribbon cable that corresponds to the output slot in which you have installed the XO16 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 input and output card ribbon connections, and remove the entire assembly from the rack prior to changing connections.

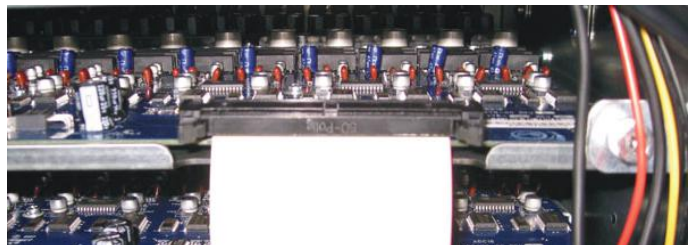


Detail of back of Mix Rack, the Hub48 Board, and the ribbon cables

 Mix Rack contains 5 ribbon cables that connect to the input and output cards. The top two ribbon cables connect to the output cards installed in Output Slots D and E.

10 Connect the ribbon cable to the card socket on the XO16 card.

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.




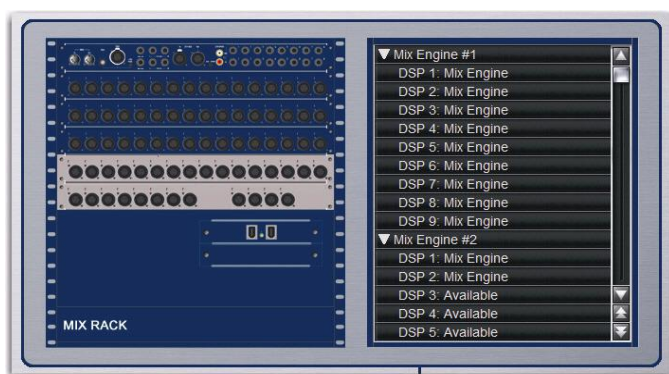
A properly connected Expansion Card

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 XO16 Card should be displayed.

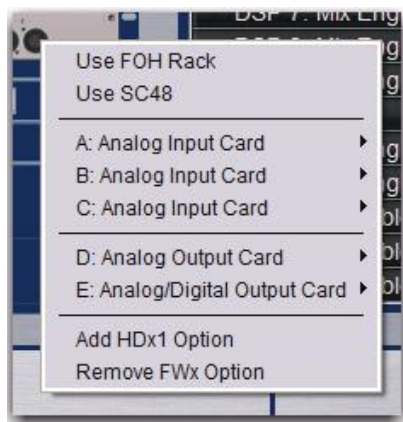
 If the Expansion Card does not appear in the Mix Rack graphic, check the ribbon cable connection. Disconnect and reconnect the ribbon cable to the Expansion Card, making sure to properly seat the connector in its card socket.



Detail of Devices tab indicating presence of one XO16 Card

5 Go to the Patchbay page and click the Stage tab to verify that the XO16 card appears in the patchbay. The XO16's analog outputs appear under "Analog Card D." The digital outputs appear under "Digital Card E."


6 In the standalone software, right-click the Mix Rack graphic to see and modify your Mix Rack's input and output card configuration. XO16 Cards appear as "Analog/Digital Output Card" in the pop-up menu.



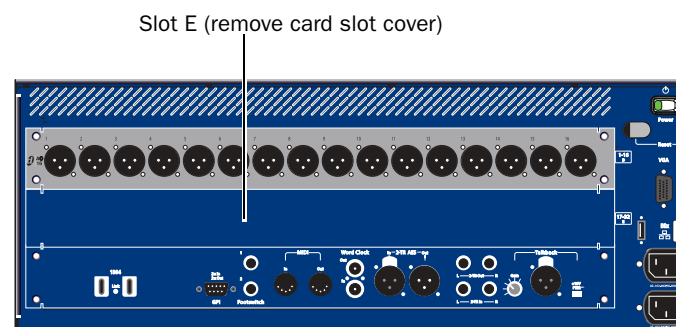
Detail of standalone software's Devices tab pop-up menu showing XO16 Card in Slot E of Mix Rack

Installing an XO16 Card in SC48

Your SC48 has two available output card slots, slots D and E. These instructions assume you already have an output card installed in slot D and that slot E is empty.


 If you are replacing an XO16 Card or you want to install two in your SC48, you must first remove an output card. See the *VENUE SC48 Service Guide* for more information on replacing or removing cards.

- 1 Shut down your system, and turn off power to the SC48.
- 2 Disconnect any power cables from the SC48, as well as any other audio cables that may get in your way.
- 3 On the back panel of the SC48, locate output slot E.



Left side of the SC48 back panel

4 Remove the four screws holding the card slot cover in place. You can use a flathead screwdriver to pry the cover away from the output slot after removing the screws.

 Use care when prying away the card slot cover. The ribbon cable that you connect to the output card is attached to the inside of the card slot cover.

Keep the screws nearby for securing the card to the SC48.

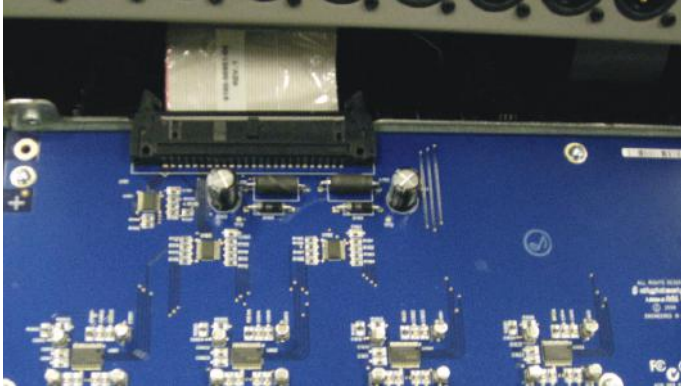
5 Clip the cable tie to free the ribbon cable that is attached to the inside of the card slot cover.



Clip the cable tie to free the ribbon cable

6 Remove the card from its packing material. Hold the card by its edges.

7 Connect the ribbon cable to the card socket. Make sure the pins on the socket are correctly aligned with the ribbon cable connector. The retaining clips on each side of the socket connector automatically close when the cable connector is properly seated. Check to make sure the ribbon cable is connected securely.



Connecting the ribbon cable to the card socket

8 Slide the output card into the slot, firmly pressing on both ends of the card so that it fits snugly in the slot.




Installing the XO16 Card

9 Secure the card to the rear panel using the four screws you removed earlier.

Completing and Confirming Installation

To complete and confirm installation:

- 1 Reconnect the power cable and any other cables to the SC48.
- 2 Turn on your SC48.
- 3 Go to the Options page and click the Devices tab to view your system hardware status. The newly installed card should be displayed.

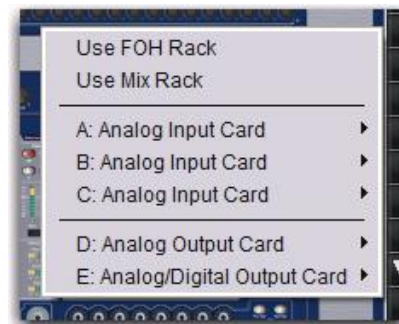
 If the card does not appear in the graphic, check the ribbon cable connection. Shut down your system, then disconnect and reconnect the ribbon cable to the output card, making sure to seat the connector properly in its card socket.



Detail of Devices tab indicating presence of an XO16 card

4 Go to the Patchbay page and click the Stage tab to verify that the XO16 Card appears in the patchbay. The XO16's eight analog outputs appear under "Analog Card D." The eight digital outputs appear under "Digital Card E."

5 In the standalone software, click the Devices tab on the Options page. You can right-click the SC48 graphic to see and modify your SC48's input and output card configuration.



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

Chapter 3: Specifications

Audio Specifications

XO16 Analog Line Outputs

Parameter	Specifications	Limit	Units	Condition/Comment
Type	Balanced, XLR3-Male			
Impedance	50		Ohm	Each leg to ground
Maximum Output Level	+24	max	dBu	
D/A Converter Latency	0.58		ms	Fs=48kHz

XO16 Digital Outputs

Parameter	Specifications	Limit	Units	Condition/Comment
Type	Balanced, XLR3-Male			
Format	AES3 (IEC-60958 Type I)			
Impedance	110		Ohm	Each leg to ground
Word Length	24		bit	
Sample Rate	48		kHz	
Sample Rate Conversion	None			
Dithering	None			
Channel Status Info	Pro, Audio 48K, No Emphasis			
Max Cable Length	100		meter	Without equalization, 110 Ohm cable

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

0 dBu = 0.775Vrms.

