HDx TDM Record/Playback Option Guide

Version 1.0 for D-Show

digidesign

Contents

Chapter 1: Overview

Welcome to the HDx TDM Record/Playback Option for D-Show systems. The HDx Option lets you integrate a Digidesign Pro Tools TDM system with D-Show for multitrack recording and playback.

HDx Capabilities and Features

The HDx Option provides the following:

- Direct digital connection (24-bit, 48 kHz) between D-Show and a Pro Tools TDM system
- Recording of up to 128 channels of D-Show audio (up to 96 Stage inputs and up to 32 assignable channels) into Pro Tools (with two HDx cards)
- Playback of up to 128 Pro Tools tracks directly into D-Show (with two HDx cards)
- Support for Windows XP and Mac OS X-based systems
- Connects to Pro Tools HD with DigiLink cables (purchased separately)

Up to two HDx cards can be installed in the D-Show FOH Rack.

HDx cards and an FWx card cannot be installed simultaneously.

HDx Components

The HDx Option package includes the following items:

- HDx Card (installs into the D-Show FOH Rack)
- HDx card ribbon cable
- Registration card

System Requirements

The following are required to use the HDx Recording/Playback Option:

- A D-Show system that has already been installed and configured.
- A Pro Tools|HD or Pro Tools|HD Accel system running Pro Tools TDM version 6.9 or higher (an HD Audio Interface is not required). Two Pro Tools HD cards per HDx card are required for full channel count.
- Two DigiLink cables per HDx card (purchased separately). All DigiLink cables in the system must be the same length.
- To use two HDx cards, a second D-Show Snake card is required (to provide system clock), even if a second Stage Rack is not being used.

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

Compatibility Information

Digidesign can only assure compatibility and provide support for hardware and software it has tested and approved.

For a list of Digidesign-qualified computers, operating systems, hard drives, and third-party devices, refer to the latest compatibility information on the Digidesign Web site (www.digidesign.com/compato).

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 D-Show 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 HDx

Installing the HDx Card

HDx cards are installed in the FOH Rack.

To install an HDx card:

1 Shut down D-Show.

2 Turn off power on the FOH Rack.

3 Disconnect power, audio, FOH Link, and any MIDI cables attached to the FOH Rack.

4 Remove the front panel faceplate by unscrewing its mounting screws (#1 Phillips). Keep the screws nearby for remounting the front panel later.
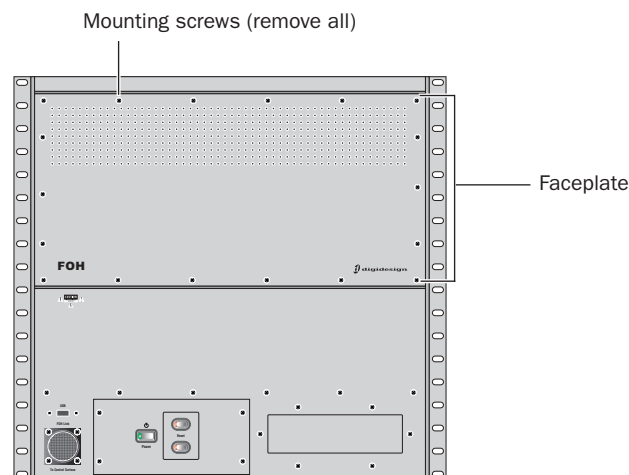
Front panel of the FOH Rack

5 If the system has an FWx FireWire Option card installed, disconnect its ribbon cable and remove the card.

6 On the back panel of the FOH Rack, remove the faceplate on any available expansion slot by removing the screws holding it in place. Keep the screws nearby for securing the HDx card to the FOH Rack later.
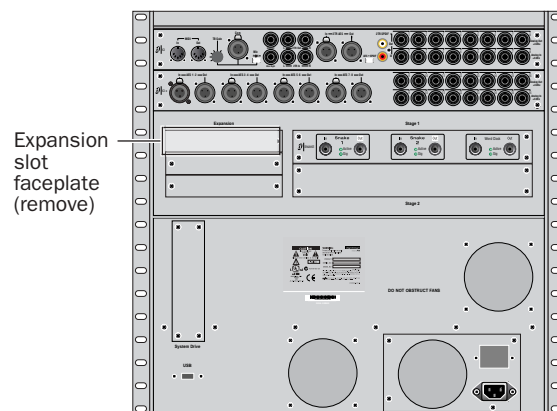
Back panel of the FOH Rack

7 Remove the HDx card from its packing material. Hold the card by its edges.
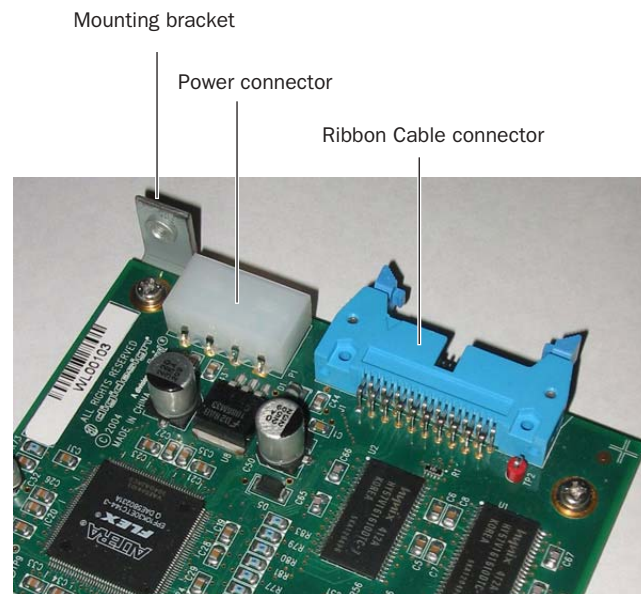
HDx card showing bracket and connectors

8 Free the HDx Ribbon cable from its retaining screw inside the FOH Rack, and hold it out of the way.

9 Gently slide the card into the expansion slot. Make sure it is oriented right-side up.

10 When the card is seated in its slot, secure it to the FOH chassis with the mounting screw at the end of the HDx mounting bracket (accessible from the open front panel of the FOH Rack).

11 Secure the HDx card to the back panel of the FOH Rack using the two screws that held the faceplate.
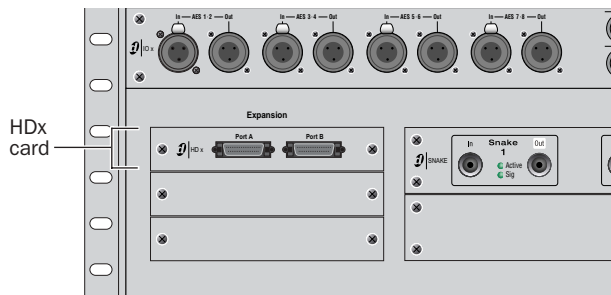
Installing the HDx card to the back panel of the FOH Rack

12 Attach the included ribbon cable to the ribbon connector on the HDx card and to the connector labeled "FireWire" on the first Mix Engine card (the rear-most card when viewed from the open front panel). Make sure the pins are oriented correctly, and that each connector is attached securely. The HDx card connected to this first Mix Engine card will appear as HDx1 in D-Show.

Attaching the ribbon cable to the HDx card
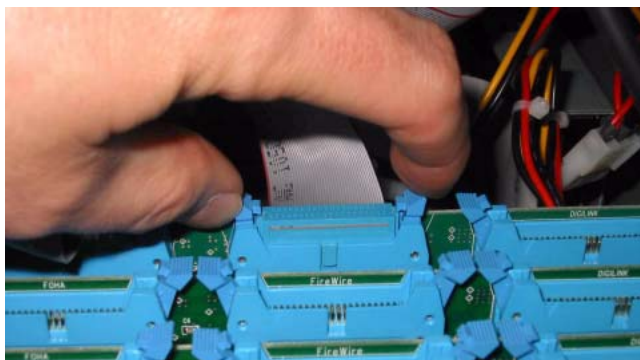
Attaching the ribbon cable to the Mix Engine card

13 If you are connecting a second HDx card, attach its ribbon cable from the ribbon connector on the HDx card to the connector labeled "FireWire" on the second Mix Engine card from the back. The HDx card connected to this second Mix Engine card will appear as HDx2 in D-Show. Make sure the pins are oriented correctly, and that each connector is attached securely.
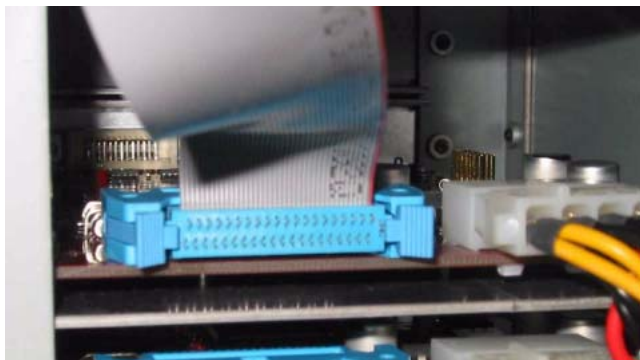
💡 *A single installed HDx card may be connected to the second Mix Engine card, which will then appear on the system as HDx2. A second Snake card is required to use any HDx card as HDx2.*

14 Attach an available power cable plug to the power socket on each HDx card. Make sure they are connected securely.

15 Reattach the FOH Rack front panel faceplate using its screws.

16 Reconnect power, audio, FOH Link, and any MIDI cables to the FOH Rack.

17 Power on all D-Show components.

Checking HDx Card Installation

To check the HDx card installation, go to the Options > Devices page to view D-Show hardware status. When successfully installed, the HDx card is detected and "HDx" is shown on-screen in the lower right of the FOH Rack icon:

◆ The HDx card connected to the rear-most Mix Engine card appears as HDx1.

◆ The HDx card connected to the second Mix Engine card from the back appears as HDx2.

HDx card indicated in the FOH Rack icon in the Devices page
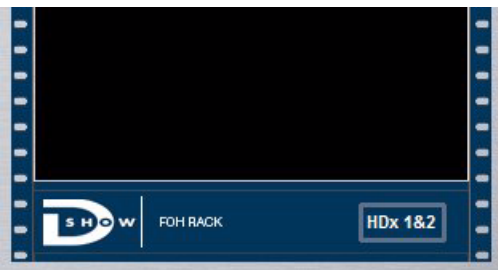
Two HDx cards indicated in the FOH Rack icon in the Devices page

If the proper number of HDx cards is not displayed, power down the system and check all cables and connections.

Connecting Pro Tools|HD to HDx

Pro Tools with HDx supports up to two HDx cards, each with two 32-channel DigiLink connectors, for a total of 128 channels of input or output to D-Show.

Each HDx port is connected with a DigiLink cable (available separately from Digidesign) to an HD Core, Process, or Accel card in the Pro Tools computer or Expansion Chassis.

⚠ *All DigiLink cables connecting the HDx cards to the Pro Tools|HD cards must be the same length.*

Connecting Pro Tools HD Cards to HDx

The HDx card ports can be connected to the Pro Tools HD cards in any sequence, but if you are connecting an HD-series audio interface to the system, it must be connected to the last Pro Tools|HD card in the sequence (the HD card farthest away from the HD Core card).

Basic System

The following is an example connection scheme for a single HDx card and Pro Tools system with an HD Core card and one additional card. See Figure 1 on page 6 for an example system diagram.

1 Pro Tools HD Core card: HDx1 card port A

2 Pro Tools HD Process or Accel card #1: HDx1 card port B

Expanded System

The following is an example connection scheme for two HDx cards and a Pro Tools system with an HD Core and 4 additional cards. See Figure 2 on page 7 for an example system diagram.

1 Pro Tools HD Core card: HDx1 card port A.

2 Pro Tools HD Process or Accel card #1: HDx1 card port B.

3 Pro Tools HD Process or Accel card #2: HDx2 card port A.

4 Pro Tools HD Process or Accel card #3: HDx2 card port B.

5 Pro Tools HD Process or Accel card #4: HD audio interface.

Using an HD Audio Interface with HDx

(Optional)

You can connect one HD audio interface (192 I/O, 192 Digital I/O, 96 I/O, or 96i I/O) to the Pro Tools system to allow remote monitoring of audio by the recording engineer, or remote audio input to the Pro Tool system, such as with audience microphones in live performance.

Word Clock Connections

If a Pro Tools HD audio interface (192 I/O, 192 Digital I/O, 96 I/O, or 96i I/O) is connected to the system, a Word Clock connection between D-Show and the audio interface is required.

If no Pro Tools HD audio interface is used, a Word Clock connection is not needed.

To connect Word Clock between D-Show and a Pro Tools|HD peripheral:

1 Connect one end of a BNC cable to the Word Clock Out port on the D-Show FOH Rack. (If a second FOH Snake card is present in the FOH Rack, connect the cable to the Word Clock Out port on the second FOH Snake card.)

2 Connect the other end of the BNC cable to the Loop Sync in port on the HD audio interface.

Power Sequence

Whenever you are using a Pro Tools TDM system with D-Show and HDx, always power up the system in the following sequence.

Power up D-Show and the Pro Tools system in the following order:

1 Power up D-Show components in the following order: Main Unit, Sidecars, Stage Racks, and FOH Rack.

2 Start up the Pro Tools computer.

3 Launch Pro Tools.

Power down D-Show and the Pro Tools system in the following order:

1 Quit Pro Tools.

2 Shut down the Pro Tools computer.

3 Shut down D-Show in the following order: FOH Rack, Stage Rack, Main Unit, and Sidecars.

USB cable
(to Pro Tools computer)

Stage Rack

DigiLink cables

Computer

Primary Snake ———————

Redundant Snake – – – –

Digital Snake cables

FOH Link cable
(to D-Show control surface)

FOH Rack
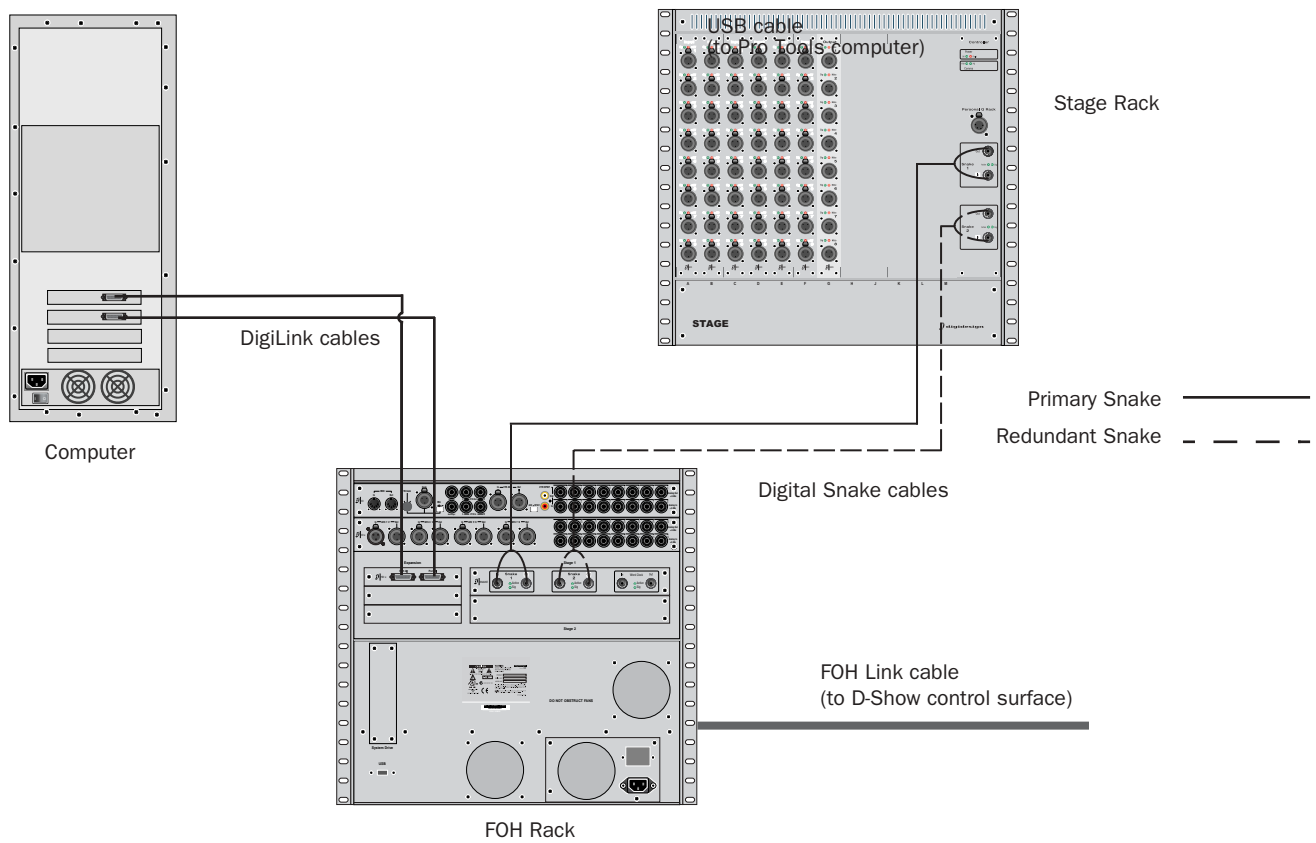
Figure 1. Basic D-Show system with one HDx card and 2-card Pro Tools system

Expansion Chassis cable
(to Pro Tools computer)

USB cable
(to Pro Tools computer)

MIDI Interface (optional)

Stage Rack 1

MIDI cables

DigiLink cables

PCI Expansion Chassis

DigiLink cables

Digital Snake cables

DigiLink cable

FOH Link cable
(to D-Show control surface)

FOH Rack

Digital Snake cables

HD Audio Interface (optional)

Word Clock cable

Output to remote Pro Tools monitoring system

Mic Preamp

Stage Rack 2

Audience mics
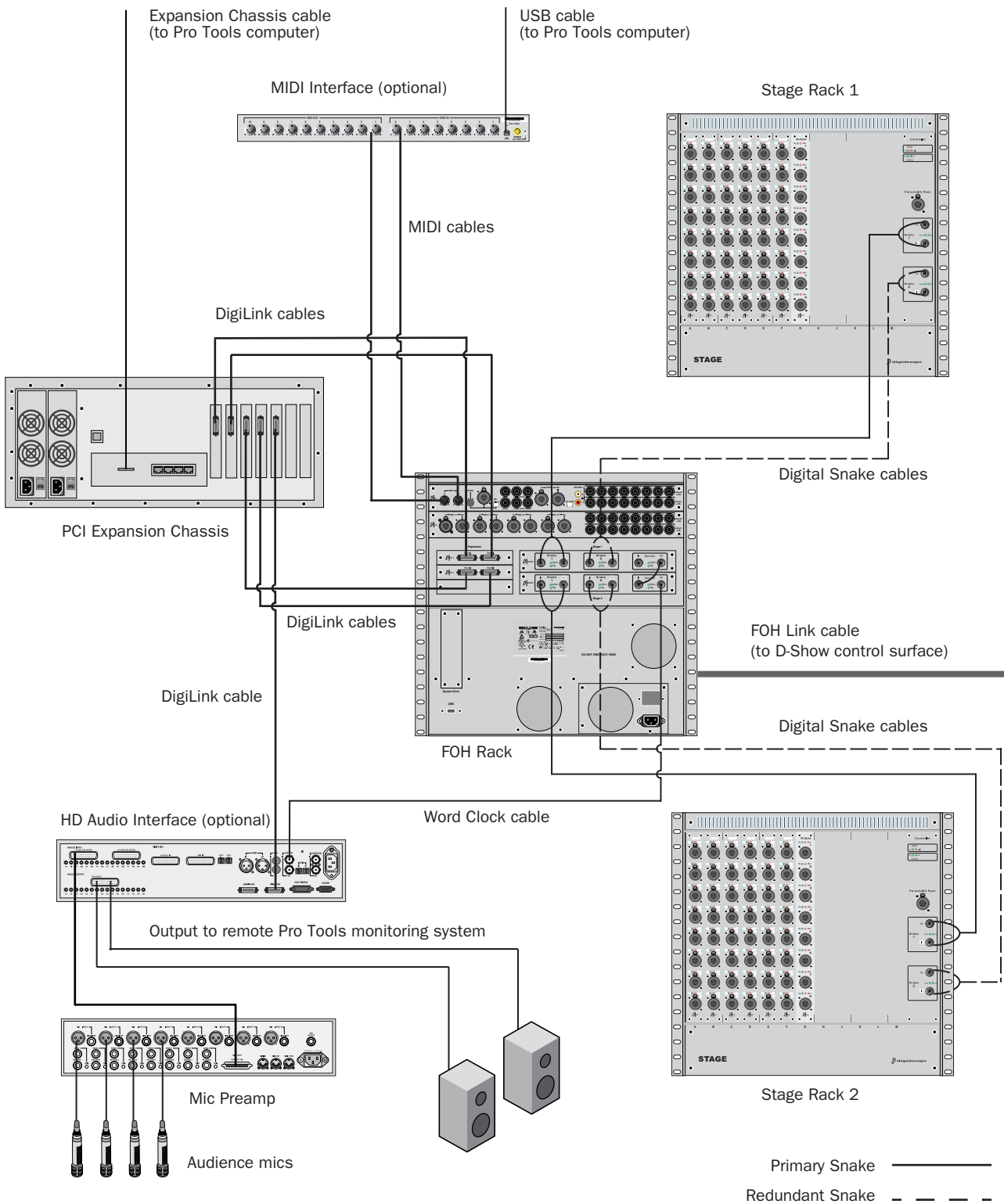
Primary Snake

Redundant Snake

Figure 2. Expanded D-Show system with 2 HDx cards, 5-card Pro Tools system and optional HD audio interface

Chapter 3: Using HDx

Overview

Each HDx card allows up to 64 channels of audio to be recorded into or played back from Pro Tools. With a maximum configuration of two HDx cards, up to 128 channels of recording or playback are possible. Signal routing for recording or playback is configured in D-Show and in Pro Tools.

D-Show Settings

HDx Outputs (Recording)

Each HDx card provides 48 fixed outputs and 16 assignable outputs for recording of D-Show channels into Pro Tools:

◆ Use the Options > System Config page to route Stage Rack inputs 1–48 (or 49–96) to D-Show Input Channels. HDx fixed output channels 1–48 (or 49–96) receive a direct digital split of the signal from inputs 1–48 (or 49–96) of the corresponding Stage Rack.

◆ Use the Patchbay > Outputs page (or Directs page) to route D-Show output busses (or channel Direct Outputs) to HDx assignable output channels 1–16 (or 17–32).

HDx Inputs (Playback)

Each HDx card provides 48 fixed inputs and 16 assignable inputs for playback of Pro Tools tracks through D-Show:

◆ Use the Options > System Config page to replace Stage Inputs 1–48 (or 49–96) with HDx fixed input channels 1–48 (or 49–96), which can then be routed to any Input Channel or FX Returns in the D-Show Patchbay.

◆ Use the Patchbay > Inputs page to route HDx assignable input channels 1–16 (or 17–32) to any available D-Show Input Channels or FX Returns.

Pro Tools Settings

HDx outputs and inputs appear in Pro Tools in the same way as Pro Tools|HD Audio Interface outputs and inputs.

Each port on an HDx card carries 32 channels of input and output to Pro Tools, and appears as two interfaces (related groups of 16 channels) in the Pro Tools Hardware Setup dialog, as follows:

• HDx1 card Port A appears as *HDx1 A1* and *HDx1 A2*.

• HDx1 card Port B appears as *HDx1 B1* and *HDx1 B2*.

• HDx2 card Port A appears as *HDx2 A1* and *HDx2 A2*.

• HDx2 card Port B appears as *HDx2 B1* and *HDx2 B2*.

HDx Assignable Inputs and Outputs correspond to the 16 input and output channels on HDx1 B2, and on systems with two HDx cards, on HDx2 B2.

HDx card in the Pro Tools Hardware Setup window

HDx outputs and inputs appear in the Pro Tools I/O Setup window with similar labels, allowing you to assign Pro Tools track inputs and outputs to HDx.
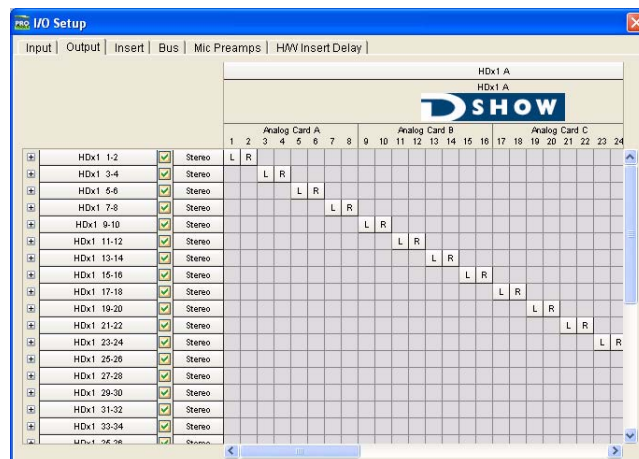
HDx inputs in the Outputs page of the Pro Tools I/O Setup window

D-Show Signal Routing for HDx Recording

Each HDx card provides 48 fixed outputs and 16 assignable outputs that can be routed directly to Pro Tools for multitrack recording. The HDx fixed output channels mirror the input signal from the corresponding Stage Rack inputs. The signal coming from each Stage Rack Input is split immediately after the input stage and output directly to Pro Tools. These fixed channels do not appear separately in the D-Show Patchbay.
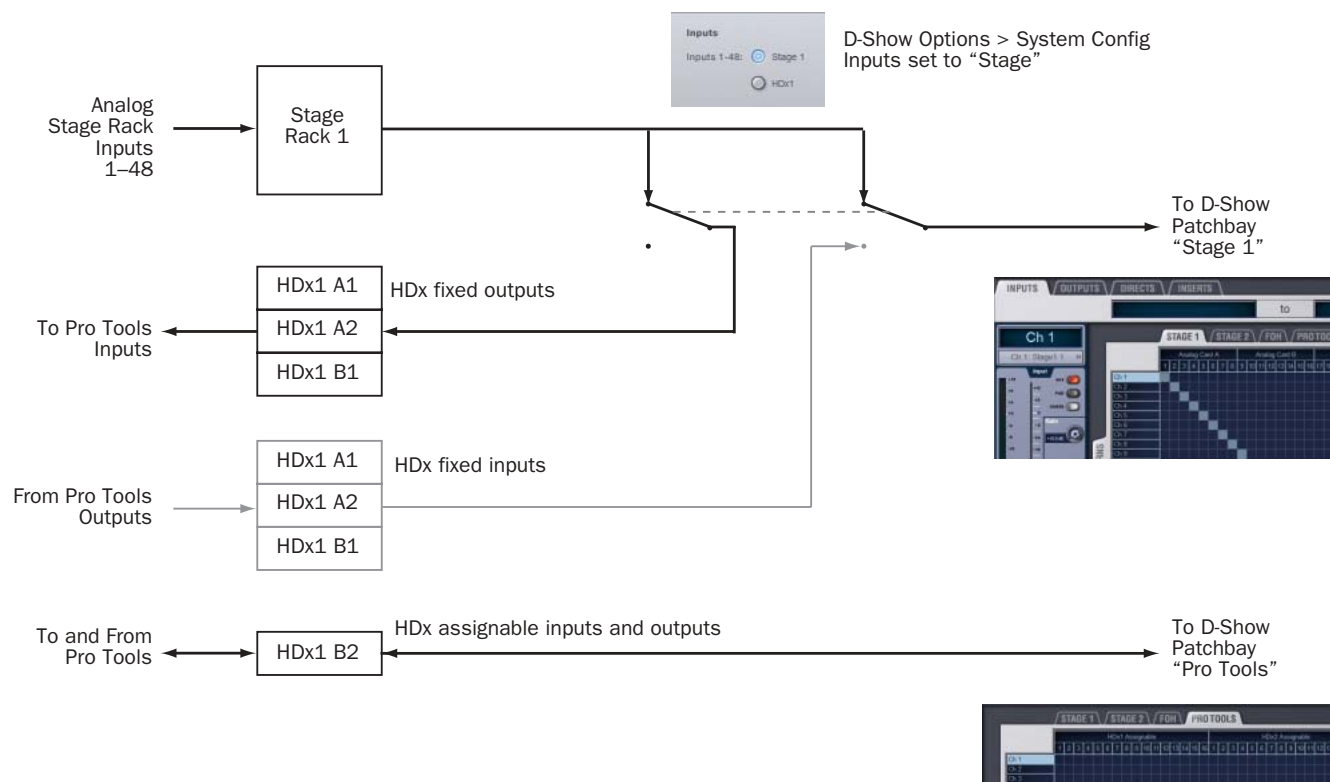

Figure 3. HDx signal flow for recording into Pro Tools

Configuring HDx Fixed Outputs

HDx fixed output channels (1–48, and 49–96 on systems with two Stage Racks) mirror the input signal from the corresponding Stage Rack inputs (1–48, 49–96).

Systems with One Stage Rack and One HDx Card

On D-Show systems with one Stage Rack and one HDx card, Stage Rack Inputs 1–48 can be selected in D-Show at any time to enable recording of live input into Pro Tools.

To select HDx fixed outputs for the first Stage Rack (1–48):

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 In the Inputs section of the System Config page, next to Inputs 1–48, select Stage 1.
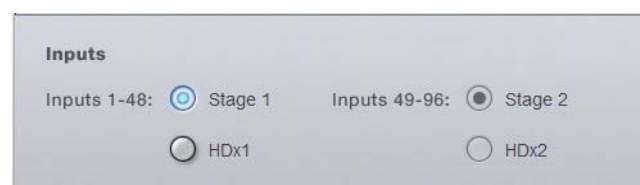
Selecting Stage 1 inputs

5 Click Apply. D-Show restarts with the Stage 1 inputs active.

Inputs 1–48 on the first HDx card appear in the Inputs page of the Pro Tools I/O Setup dialog as Inputs "HDx1 1–48."

HDx outputs 1–48 are always active and available within Pro Tools when Stage Inputs 1–48 are selected.

Systems with Two Stage Racks and Two HDx Cards

Enabling the Second Stage Rack and HDx Card

On D-Show systems with two Stage Racks and two HDx cards, to make Stage Rack Inputs 49–96 available in the Inputs page of the Pro Tools I/O Setup dialog, the second Stage Rack and the second HDx card must be first be enabled in D-Show. This is typically done once when you are setting up the system.

To enable the second Stage Rack and HDx card:

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 Select Enable Stage 2.

5 Select Enable HDx2.
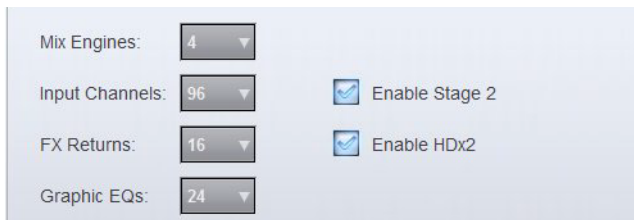
*Enabling the second Stage Rack and HDx card*

6 Click Apply. D-Show restarts with the second Stage Rack and HDx card enabled.

Selecting Fixed Outputs for the Second Stage Rack

When Stage Rack Inputs 49–96 are made available, they can then be selected in D-Show to enable recording of live input from the corresponding channels into Pro Tools.

To select HDx fixed outputs for the second Stage Rack (49–96):

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 In the Inputs section of the System Config page, next to Inputs 49–96, select Stage 2.
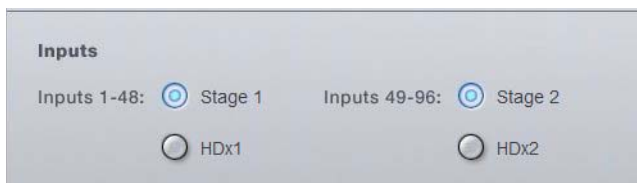
Selecting Stage 2 inputs

5 Click Apply. D-Show restarts with the Stage 2 inputs active.

Inputs 1–48 on the second Stage Rack appear in the Inputs page of the Pro Tools I/O Setup dialog as Inputs "HDx2 1–48."

Configuring HDx Assignable Outputs

HDx assignable output channels (HDx1 Assignable 1–16, and HDx2 Assignable 1–16 on systems with two HDx cards) can receive signal from any mono or stereo D-Show channel, including channel Direct Outputs, Auxes, mono or stereo Groups, Matrix outputs, PQ outputs, or Mains.

💡 *The HDx Assignable Outputs can be configured and routed independently from the HDx Fixed Outputs.*

Configuring Assignable Outputs on Systems with One HDx Card

On D-Show systems with one HDx card, HDx assignable outputs are automatically available in the Inputs page of the Pro Tools I/O Setup dialog as Inputs "HDx1 Assignable 1–16."

Configuring Assignable Outputs on Systems with Two HDx Cards

Enabling the Second HDx Card

On D-Show systems with two HDx cards, to make the assignable outputs on the second HDx card available in the Inputs page of the Pro Tools I/O Setup dialog, the card must first be enabled in D-Show. This is typically done once when you are setting up the system.

💡 *A second Snake card in the FOH Rack is required to use a second HDx card, but a second Stage Rack does not need to be present or enabled for the HDx2 card to be enabled.*

To enable the second HDx card:

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 Select Enable HDx2.

Enabling the second HDx card

5 Click Apply. D-Show restarts with the second HDx card enabled.

HDx assignable outputs on the second HDx card appear in the Inputs page of the Pro Tools I/O Setup dialog as Inputs "HDx2 Assignable 1–16."

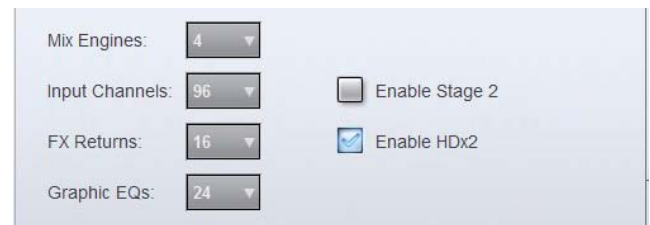## Routing Assignable HDx Outputs

With HDx assignable outputs available in Pro Tools, you can route any mono or stereo D-Show channel to HDx assignable outputs, including channel Direct Outputs, Mains, Auxes, mono or stereo Groups, Matrix outputs, and PQ outputs.

◆ Using Direct Outputs lets you record discrete channels from the pickoff point you choose.

◆ Using Mains, Aux, Group, Matrix, or PQ outputs lets you record a stereo main mix, one or more stereo submixes, or any combination of these, up to the number of available HDx assignable outputs.

To route a D-Show channel to an HDx assignable output:

1 Go to the D-Show Patchbay and do one of the following:
- Click the Outputs tab, and click the Mains, PQ, Matrix, Aux or Group tab to the left of the channel grid.
- Click the Directs tab, and click the Channels, FX Returns, or Outputs tab to the left of the channel grid.

2 Click the Pro Tools tab at the top right of the channel grid to show the available HDx assignable outputs.

3 Click in the channel grid to route a D-Show channel (listed on the left) to an available HDx assignable output (listed across the top).

4 (Direct Outputs Only) Activate and set the level for each Direct Output by clicking its In button and dragging its on-screen encoder in the Direct Out section.

Activating a Direct Output in the Directs page of the Patchbay

5 (Direct Outputs only) Click the Pickoff column in the Patchbay to specify one of the following the pickoff sources for each Direct Output:
- top of channel (indicated by a "T")
- pre-fader (indicated by a lowercase "p")
- post-fader (indicated by an uppercase "P")

Click to display Pickoff menu

Specifying the channel Pickoff source

The available Direct Output pickoff points for Input Channels and FX Returns can configured globally as pre- or post-fader in the Options > Pickoffs page.

Signal Levels in D-Show and Pro Tools

Signals within normal operating range on the D-Show input meters (around 0 dB) have an average level of –20 dBFS. This 20 dB of mixer headroom helps prevent clipping and distortion in live program material.

HDx does not provide independent gain control for the HDx fixed outputs before they are split off to Pro Tools, so program material coming into D-Show at 0 dB will be recorded into Pro Tools at –20 dBFS.

For gain control of HDx outputs to Pro Tools, use Direct Outputs to route D-Show channels to HDx assignable outputs, and adjust the gain on the Direct Output control for each channel.

D-Show Signal Routing for HDx Playback

Each HDx card provides 48 fixed inputs and 16 assignable inputs, allowing playback of multiple Pro Tools tracks directly through D-Show. When enabled, the HDx fixed inputs replace the corresponding Stage Rack inputs one-for-one, and appear in place of those Stage Inputs in the D-Show Patchbay.
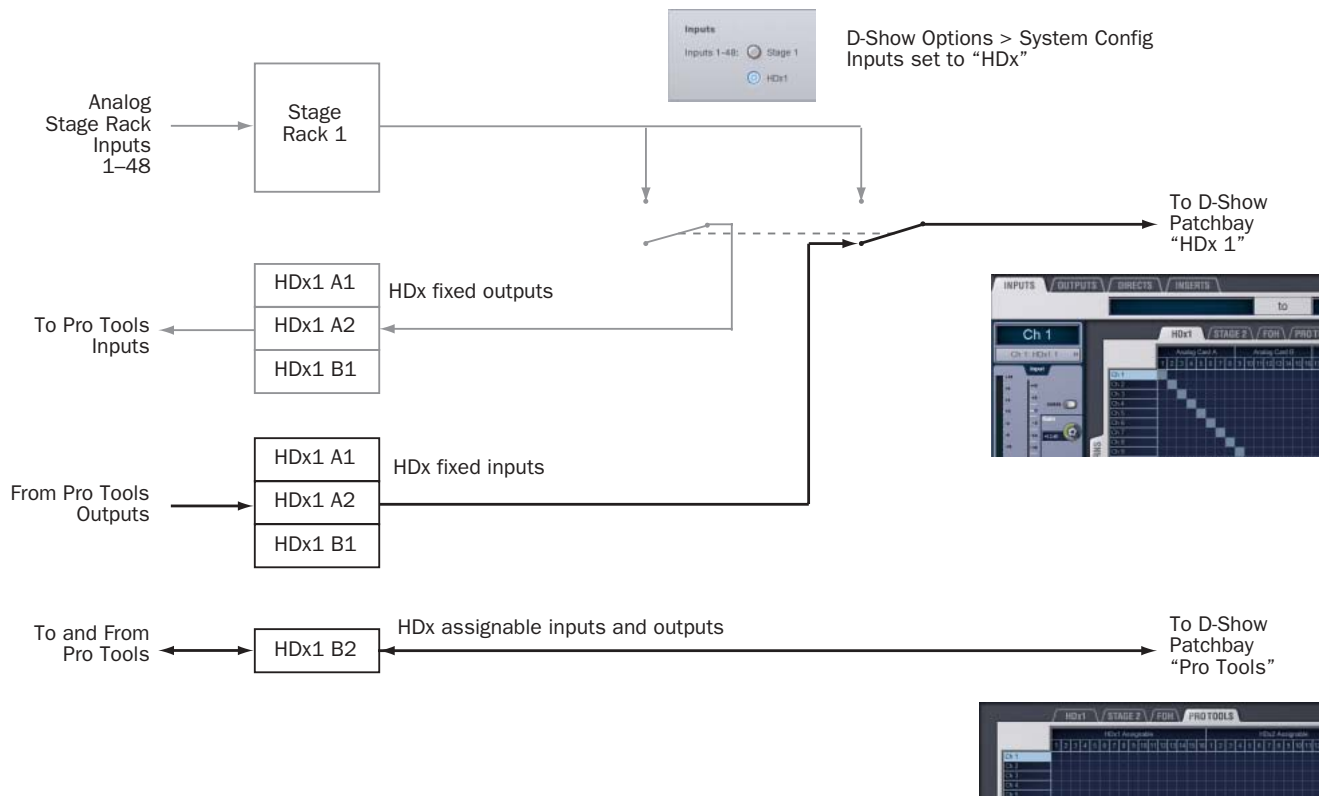

Figure 4. HDx signal flow for playing back from Pro Tools

Configuring HDx Fixed Inputs

HDx fixed inputs (1–48, and 49–96 on systems with two HDx cards) replace the corresponding Stage Rack inputs (1–48, and 49–96 if a second Stage Rack is connected).

On D-Show systems with two HDx cards, you can select either HDx card independently, allowing a combination of live inputs (from Stage Rack 1 or Stage Rack 2) and playback from Pro Tools (from HDx1 or HDx2).

Systems with One HDx Card

On D-Show systems with one HDx card, HDx Inputs 1–48 can be selected in D-Show at any time to enable playback from Pro Tools. When selected, HDx Inputs 1–48 replace Stage Rack inputs 1–48.

To enable HDx fixed inputs 1–48:

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 In the Inputs section of the System Config page, next to Inputs 1–48, select HDx1.
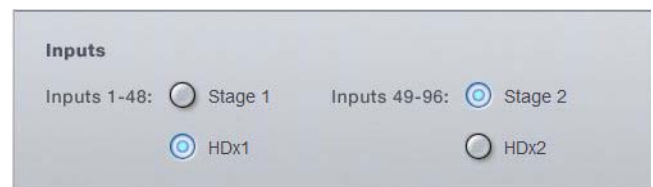
Selecting HDx1 input

5 Click Apply. D-Show restarts with the HDx1 inputs active.

The Stage 1 tab in the D-Show Patchbay is replaced by an HDx1 tab, and all Stage 1 routing is preserved. Inputs 1–48 on the first HDx card appear in the Outputs page of the Pro Tools I/O Setup dialog as Outputs "HDx1 1–48."

Any changes made to HDx1 Input routing will be reflected in the Stage 1 Input routing when you switch back to Stage 1 Inputs.
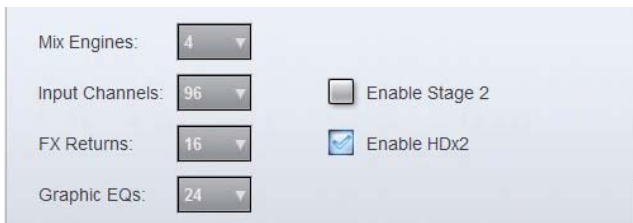
Systems with Two HDx Cards

Enabling the Second HDx Card

On D-Show systems with two HDx cards, to make HDx Inputs 49–96 available in the Outputs page of the Pro Tools I/O Setup dialog, the second HDx card must first be enabled in D-Show. This is typically done once when you are setting up the system.

💡 *A second Snake card in the FOH Rack is required to use a second HDx card, but a second Stage Rack does not need to be present or enabled for the HDx2 card to be enabled.*

To enable the second HDx card:

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 Select Enable HDx2.

Enabling the second HDx card

5 Click Apply. D-Show restarts with the second HDx card enabled.

Selecting Fixed Inputs for the Second HDx Card

When HDx Inputs 49–96 are made available, they can then be selected in D-Show to enable playback of the corresponding channels from Pro Tools. When selected, HDx Inputs 49–96 replace Stage Rack inputs 49–96.

To select HDx fixed inputs 49–96:

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 In the Inputs section of the System Config page, next to Inputs 49–64, select HDx2.

Selecting HDx2 input

5 Click Apply. D-Show restarts with the HDx2 inputs active.

The Stage 2 tab in the D-Show Patchbay is replaced by an HDx2 tab, and all Stage 2 routing is preserved. Inputs 49–96 on the second HDx card appear in the Outputs page of the Pro Tools I/O Setup dialog as Outputs "HDx2 1–48."

💡 *Any changes made to HDx2 Input routing will be reflected in the Stage 2 Input routing when you switch back to Stage 2 Inputs.*

HDx Assignable Inputs

HDx assignable input channels (HDx1 Assignable 1–16, HDx2 Assignable 1–16) can be used to route tracks from Pro Tools to D-Show Input Channels and FX Returns.

Configuring Assignable Inputs on Systems with One HDx Card

On D-Show systems with one HDx card, HDx assignable inputs are automatically available in the Outputs page of the Pro Tools I/O Setup dialog as Outputs "HDx1 Assignable 1–16."

Configuring Assignable Inputs on Systems with Two HDx Cards

On D-Show systems with two HDx cards, to make the assignable inputs on the second HDx card available in the Pro Tools I/O Setup dialog, the card must be enabled in D-Show.

💡 *A second Snake card in the FOH Rack is required to use a second HDx card, but a second Stage Rack does not need to be present or enabled for the HDx2 card to be enabled.*

To enable HDx assignable inputs for the second HDx card:

1 Put D-Show into Config mode.

2 Go to the Options page and click the System Config tab.

3 Click Edit.

4 Select Enable HDx2.
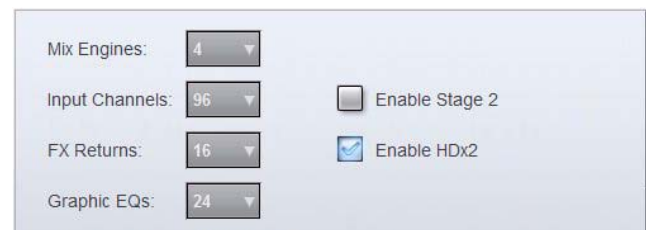
Enabling the second HDx card

5 Click Apply. D-Show restarts with the second HDx card enabled.

HDx assignable inputs on the second HDx card appear in the Outputs page of the Pro Tools I/O Setup dialog as Outputs "HDx2 Assignable 1–16."

Routing Assignable HDx Inputs

To route an HDx assignable input to a D-Show channel:

1 Go to the D-Show Patchbay and click the Inputs tab.

2 Click the Channels or FX Returns tab to the left of the channel grid to display the type of channels you want to use.

3 Click the Pro Tools tab at the top right of the channel grid to show the available HDx assignable inputs.

4 Click in the channel grid to route a D-Show channel (listed on the left) to an available HDx assignable input (listed across the top).

Patching HDx channels to D-Show FX Returns for playback

⚠ *To avoid potential feedback loops, make sure no D-Show channels are simultaneously routing to and receiving from any record-enabled Pro Tools tracks.*

Example Recording and Playback Configurations

The following sections summarize the steps for recording and playback with typical HDx configurations. For Pro Tools operational instructions, see the *Pro Tools Reference Guide*.

Recording up to 64 (or 128) Channels to Pro Tools while Playing Back up to 16 (or 32) Channels

On D-Show systems with one Stage Rack and one HDx card, the following are available simultaneously:

- 48 fixed outputs to Pro Tools (recording)
- 16 assignable outputs to Pro Tools (recording)
- 16 assignable inputs from Pro Tools (playback)

On D-Show systems with two Stage Racks and two HDx cards, the following are available simultaneously:

- 96 fixed outputs to Pro Tools (recording)
- 32 assignable outputs to Pro Tools (recording)
- 32 assignable inputs from Pro Tools (playback)

D-Show

On D-Show systems with one Stage Rack and one HDx card:

■ Go to the Options > System Config page and set Inputs 1–48 to "Stage 1." HDx1 output channels 1–48 automatically mirror the input signal from Stage Rack 1 inputs 1–48.

■ Go to the Patchbay > Outputs or Directs page, click the Pro Tools tab, and route channels to any of the 16 HDx1 assignable outputs.

■ Go to the Patchbay > Inputs page, click the Pro Tools tab, and route any of the 16 HDx1 assignable inputs to D-Show channels.

A total of 64 channels are made available for recording and 16 channels for playback in Pro Tools.

On D-Show systems with two Stage Racks and two HDx cards:

■ Go to the Options > System Config page, enable Stage 2 and HDx2, and set Inputs 1–48 to "Stage 1" and Inputs 49–96 to "Stage 2." HDx1 output channels 1–48 will automatically mirror the input signal from Stage Rack 1 inputs 1–48, and HDx2 output channels 1–48 will automatically mirror the input from Stage Rack 2 inputs 1–48.

■ Go to the Patchbay > Outputs or Directs page, click the Pro Tools tab, and route channels to any of the 32 HDx1 and HDx2 assignable outputs.

■ Go to the Patchbay > Inputs page, click the Pro Tools tab, and route any of the 32 HDx1 and HDx2 assignable inputs to D-Show channels.

A total of 128 channels are made available for recording and 32 channels for playback in Pro Tools.

Pro Tools

In the Inputs tab of the I/O Setup dialog:

■ Assign available D-Show fixed output channels to "HDx" input paths in Pro Tools.

■ Assign available D-Show assignable output channels to "HDx Assignable" input paths in Pro Tools.
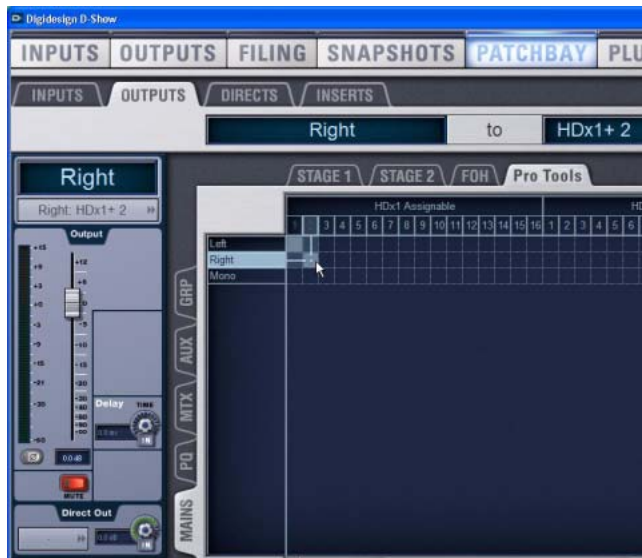
In the Outputs tab of the I/O Setup dialog:

■ Assign available D-Show assignable input channels to "HDx Assignable" output paths in Pro Tools.

Recording the D-Show Main Mix or a Submix

D-Show

In the D-Show Patchbay, do any of the following:

■ To route the main mix, go to the Outputs page, click the Pro Tools tab, and route the Mains to available HDx assignable outputs.

■ To route a submix, go to the Directs page, and route from the Top of Channel Pickoff point on Auxes, Groups, Matrixes, or PQ bus outputs to available Direct Outputs.

Patching the Main busses to HDx channels for recording

Pro Tools

In the Inputs tab of the I/O Setup dialog:

■ Assign the corresponding D-Show assignable output channels or channel pairs to "HDx Assignable" input paths in Pro Tools.

Managing D-Show Settings During HDx Playback

Gain Compensation in HDx Playback Mode

D-Show uses a hybrid analog/digital gain approach for analog Stage inputs. When switching to HDx Playback mode, the digital component of the gain stage (up to +3 dB) is preserved, so recorded tracks play back at precisely the same level as the Stage Rack inputs. As a result, input gain settings will typically vary across all channels by as much as +3 dB in playback mode.

Changing Gain While in HDx Playback Mode

If you change the digital gain of any channel from the D-Show console while Inputs are set for HDx playback, D-Show gives you the option of keeping or discarding those gain changes when you switch back to Stage Rack input.

D-Show will automatically activate or deactivate the Pad on a channel to compensate for large gain changes.

⚠ *Gain compensation is applied to all applicable channels. It is not possible to preserve gain for an individual channel or individual HDx card.*

To keep or discard gain changes made in HDx mode:

■ When switching back to Stage Rack inputs (from playback mode to recording mode) click one of the following:

Apply Any gain changes made in HDx Playback mode are added to the total Stage Rack gain on each channel.

Discard Any gain changes made in HDx Playback mode are lost and the Stage Rack gain is returned to its previous value on each channel.
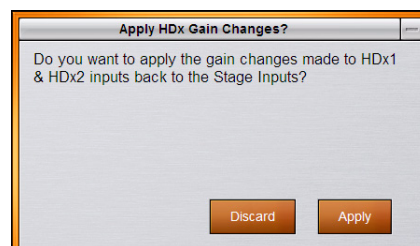
Gain change dialog

For example, if you set the Stage Rack gain for a channel to +30 dB, then switch to HDx inputs, a digital gain of +2.2 dB is preserved in HDx mode to yield the same overall gain on that channel (because 2.2 dB of the 30 dB setting was digital gain as compared to analog gain).

While in HDx mode, if you increase the digital gain by 6 dB (to a displayed setting of +8.2 dB), and then switch back to Stage Rack inputs, you can do one of the following:

- Apply the gain change, yielding a Stage Rack gain increase of 6 dB, or a final setting of (30+6) or +36 dB.

– or –

- Discard the gain change, leaving the original Stage Rack gain unchanged at +30 dB.

Snapshot PRE Settings and HDx Playback Mode

While all current PRE settings are saved in the Show file, the storage of PRE settings in snapshots scoped for PRE depends on the current HDx mode.

- Snapshots created while a channel is in HDx Playback mode will not contain Gain, Phantom Power, and Pad settings. These settings can only be stored in snapshots when a channel is configured for Stage Rack input.
- Any snapshots created for a channel in HDx Playback mode will contain only HPF, Phase and Delay values.

PRE settings stored and recalled with Snapshots in HDx mode

PRE Parameter	Recall	Store
HPF freq and state	Yes	Yes
Phase	Yes	Yes
Delay	Yes	Yes
Gain	No	No
Phantom Power	No	No
Pad	No	No

Using Synchronization and Time Code with HDx

The HDx Option only communicates audio data between D-Show and Pro Tools.

If you plan to use Pro Tools as a MIDI Time Code master or slave, a separate MIDI connection for the Pro Tools host computer is required. Use a USB MIDI interface with Pro Tools, and connect its ports to the MIDI In/Out ports on the FOH Rack.

📄 *For complete information on D-Show synchronization and time code features, see the D-Show Guide.*

Monitoring HDx Recordings

Monitoring Recording with an HD Audio Interface

If your D-Show HDx installation includes a Pro Tools|HD audio interface, you can use the I/O Setup dialog in Pro Tools to monitor the HDx recording independently of HDx inputs and outputs.

To configure the Pro Tools system to monitor the recording, send the outputs of the Pro Tools session to the signal path that corresponds to the audio interface outputs connected to your monitoring system.

📄 *For complete information on signal routing in Pro Tools, see the Pro Tools Reference Guide.*
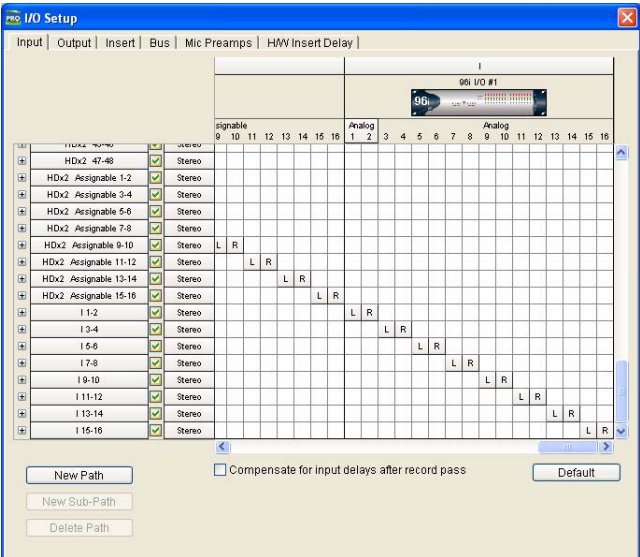
HD audio interface outputs in the Pro Tools I/O Setup dialog

Auditioning Files in Pro Tools with HDx

The audition function in Pro Tools, used for previewing audio files in the Import Audio dialog, the Audio Regions list, the Create Fades dialog, and for previewing AudioSuite processes, is limited to the first 8 channels of the primary audio interface.

For D-Show with HDx, the primary interface is always the first HDx card, so audition output goes to this default output path. When you have set Inputs 1–48 to "HDx1," audition output will be sent to the first 8 channels of the D-Show console.

It is not possible to send Pro Tools audition output to an audio interface that is connected at the end of the HDx card chain.