CoreAudio Drivers Guide

Version 7.3
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The Digidesign© CoreAudio Driver lets you use your Digidesign-qualified audio interfaces with third-party applications that support the CoreAudio Driver standard.

The following Pro Tools system interfaces are supported:
- Pro Tools|HD®
- Digi 002®
- Digi 002 Rack
- Mbox®

For Mbox 2-series systems, refer to Chapter 2, "Mbox 2-Series CoreAudio Drivers."

Installation

The Digidesign CoreAudio Driver for your Digidesign hardware is automatically installed when you install Pro Tools.

For complete instructions on installing Pro Tools, see the Getting Started Guide for your Pro Tools system.

Standalone Digidesign CoreAudio Drivers

Digidesign CoreAudio Drivers can be installed on Mac systems that do not have Pro Tools installed. Use the standalone version of the Digidesign CoreAudio Drivers installer (Install CoreAudio.mpkg), which is available on the Pro Tools Installer disc.
System Requirements

This version of the Digidesign CoreAudio Driver can be used on Digidesign-qualified Pro Tools|systems running on a Digidesign-qualified version of Mac OS X.

For complete system requirements, visit the Digidesign website (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 hardware systems, Digidesign-qualified computers, operating systems, and devices, and Digidesign-qualified third-party CoreAudio-compatible applications, visit the Digidesign website (www.digidesign.com).

Digidesign CoreAudio Capabilities

The Digidesign CoreAudio Driver is a multi-client, multichannel sound driver that allows CoreAudio-compatible applications to record and play back through Digidesign-qualified Pro Tools audio interfaces.

Full-duplex recording and playback of 24-bit audio is supported at sample rates up to 96 kHz, depending on your Digidesign hardware and CoreAudio client application.

The Digidesign CoreAudio Driver will provide up to 18 channels of input and output, depending on your Pro Tools hardware:

- Up to 8 channels of I/O with Pro Tools|HD systems
- Up to 18 channels of I/O with Digi 002 and Digi 002 Rack
- Up to 2 channels of I/O with Mbox

⚠️ For Pro Tools|HD systems with more than one card and multiple I/Os, only the primary I/O connected to the first (core) card can be used with CoreAudio.

ℹ️ Refer to the Digidesign website (www.digidesign.com) for the latest third-party drivers for Pro Tools hardware, as well as current known issues.
Limitations of the Digidesign CoreAudio Driver

The Digidesign CoreAudio Driver has the following limitations:

◆ Pro Tools is not a CoreAudio application and therefore requires exclusive access to Digidesign hardware. You cannot use CoreAudio applications and Pro Tools at the same time. To use Pro Tools, make sure you quit any CoreAudio applications before starting Pro Tools. To use a CoreAudio application, make sure you quit Pro Tools before starting any CoreAudio application.

◆ The Digidesign CoreAudio Driver cannot be used to preview sound files from the Mac Finder. When a sound file is located in the Mac OS X navigation window, a QuickTime transport bar is displayed next to it. The QuickTime transport bar lets you audition the sound file. The sound will always play back through the Mac’s built-in audio controller (through the Mac speaker or headphone jack). However, if you double-click a sound file, the QuickTime application will launch, and can use the Digidesign CoreAudio Driver for playback.

◆ The Digidesign CoreAudio Driver cannot be used for playback of Mac System Sounds.

Digidesign CoreAudio Manager

You can configure the Digidesign CoreAudio Driver using Digidesign CoreAudio Manager, or from within most third-party CoreAudio-compatible client applications (such as BIAS Peak or Logic Audio). Refer to the manufacturer’s documentation for more information.

Some applications (such as Apple’s iTunes or QuickTime Player), also require that you configure either the Apple Sound Preferences or Apple Audio MIDI Setup to use the Digidesign CoreAudio Driver.

The CoreAudio Manager is configured to auto-hide when first launched. To bring it to the foreground, click on its icon in the dock.

The Core Audio Manager is not used by Pro Tools. It is only used by other CoreAudio applications.

Accessing the Digidesign CoreAudio Manager

The Digidesign CoreAudio Manager application launches automatically when the first client application accesses the CoreAudio Driver.
Digidesign CoreAudio Manager cannot be accessed under the following circumstances:

- When Pro Tools is running
- When another application is using Direct IO (such as the Ableton Live Digi Edition)

**Preventing an Application from Accessing CoreAudio Driver**

You can prevent an application from accessing the CoreAudio Driver by holding down the Shift key just before the application would access the CoreAudio Driver, typically during launch of the application. Certain applications (such as Apple Mail and iChat), do not access the CoreAudio application until they first play a sound, so you will need to hold down the Shift key just prior to sound playback in order to prevent the use of Digidesign hardware for playback.

**Using the Digidesign CoreAudio Manager**

Use Digidesign CoreAudio Manager to change the CoreAudio Buffer Size setting, access the Hardware Setup dialog for your Digidesign hardware and control volume and mute for the CoreAudio Driver. Digidesign CoreAudio Manager also identifies your Digidesign hardware, the supported number of Input and Output Channels and the number of attached clients (applications).

**Buffer Size**

You may select from the following buffer sizes (depending on your Digidesign hardware):

- 128 samples
- 256 samples
- 512 samples
- 1024 samples
- 2048 samples

- Small buffers have the advantage of low latency in the record monitor path, but also are more taxing on your computer’s CPU and could contribute to dropouts in your audio during record or playback. (Latency is the time delay between a signal entering the audio inputs and leaving the outputs during recording.)

- Larger buffers have the advantage of making the Digidesign CoreAudio Driver more immune to audio dropouts during playback and recording, but can cause a noticeable delay when monitoring your inputs in the recording process. In some CoreAudio-client applications, performing various tasks will interrupt the CoreAudio Driver and may result in clicks and pops in audio playback or recording. Choosing medium or large buffers (such as 512 or 1024) can help alleviate this problem.

Changing the Buffer Size for the Digidesign CoreAudio Driver does not affect the H/W Buffer Size settings in the Pro Tools Playback Engine dialog.

**To configure Digidesign CoreAudio Hardware Buffer Size:**

1. Double-click the Digi CoreAudio Manager file (located in /Applications/Digidesign).
2. From the Buffer Size pop-up menu, select the desired CoreAudio buffer size (in samples). Generally, smaller buffer sizes are preferable. However, if you experience any problems with performance (such as clicks and pops during recording or playback), try increasing the CoreAudio Buffer Size setting. You can also change the buffer size from within the client application if it is the only client attached to the CoreAudio Driver. Once two or more clients are active, you will not be able to change the sample rate or the buffer size.
**HW Setup Button**

The HW Setup button opens the Hardware Setup dialog for your Digidesign hardware. The HW Setup button will only be available when no clients are using the CoreAudio Driver.

**To configure Digidesign CoreAudio HW Setup:**

1. Quit any CoreAudio client applications.
2. Double-click the Digi CoreAudio Manager file (located in /Applications/Digidesign).
3. Click the HW Setup button to open the Hardware Setup dialog.
4. Configure the Hardware Setup dialog for your Digidesign hardware. If you have more than one audio interface connected to a Pro Tools|HD system, be sure to select and configure only the primary audio interface connected to the HD Core card.

   For more information on the Hardware Setup dialog, refer to your Getting Started Guide or the Pro Tools Reference Guide.

5. When you are finished, click OK to close the Hardware Setup dialog.

**Prefs Button**

The Prefs button opens the Digidesign CoreAudio Manager Preferences dialog for the Manager application. There are several options available for control and configuration of the Manager application. When finished setting these options, click OK to close the Digidesign CoreAudio Manager Preferences windows.

**Digidesign CoreAudio Manager Preferences**

**Hide Manager if Auto-Launched by Client**

Enable this option to hide the Manager panel after the first client application accesses the CoreAudio Driver. To open the Manager panel, click on the Digidesign CoreAudio Manager application icon in the Dock.

**Auto-Quit Manager when Last Client Quits**

Enable this option to make the Manager application quit when there are no longer any clients using the CoreAudio Driver.

**Use XMON Stereo Routing (L/R to 1/5)**

When using D-Control or D-Command, enable this option to configure the CoreAudio Driver to output through the D-Control or D-Command standard stereo routing (outputs 1 and 5).

**Mirror Analog Outs 1 & 2 to Digital Outs (002 Only)**

When using Digi 002 or Digi 002 Rack, enable this option to mirror the main outputs through the digital outputs that are selected in the Hardware Setup dialog.
**Connect Button**

The Connect button is available when the Digidesign CoreAudio Manager is launched and cannot connect with the Digidesign hardware (such as when Pro Tools is launched and the hardware is disconnected or disabled). Before trying to connect, make sure to quit Pro Tools and make sure that your hardware is connected and turned on. You can then click on the Connect button to acquire the hardware.

⚠️ *If any application is launched prior to pressing the Connect button and you want that application to use the CoreAudio Driver for playback, you will need to quit and relaunch the application for it to connect properly to the Digidesign CoreAudio Manager.*

**Quit Button**

Use the Quit button to quit the Digidesign CoreAudio Manager. Be sure to quit any client applications before using the Quit button in the Manager. If any applications are currently attached to the Manager application when quitting, you may get an error message indicating that the Digidesign hardware is no longer available. You may have to change the application’s preferences to use different hardware for playback or possibly quit and relaunch the application for proper playback to be resumed.

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**Configuring a Pro Tools|HD Audio Interface for Third-Party Applications**

When using a Pro Tools|HD interface with an application other than Pro Tools HD (such as Apple GarageBand), you can configure hardware settings through the audio preference settings available in that application.

**To configure hardware settings through a client application (such as Apple GarageBand):**

1. Choose Digidesign CoreAudio for Audio Output and Audio Input.

2. Select a buffer size for your system by choosing an Optimize For option (Maximum/Large buffer size, or Minimum/Small buffer size).

   - Small buffers have the advantage of low latency in the record monitor path, but also are more taxing on your computer’s CPU and could contribute to dropouts in your audio during record or playback. (Latency is the time delay between a signal entering the audio inputs and leaving the outputs during recording.)

   - Larger buffers have the advantage of making the Digidesign CoreAudio Driver more immune to audio dropouts during playback and recording, but can cause a noticeable delay when monitoring your inputs in the recording process. In some CoreAudio-client applications, performing various tasks will interrupt the CoreAudio Driver and may result in clicks and pops in audio playback or recording. Choosing a large buffer can help alleviate this problem.
Refer to the documentation for your third-party application to learn more about how these options affect that application.

Changing the Buffer Size for the Digidesign CoreAudio Driver does not affect the H/W Buffer Size settings in the Pro Tools Playback Engine dialog.

Configuring the Apple Sound Preferences or Apple Audio MIDI Setup
(Required for Using Digidesign-Qualified Pro Tools System Interface with Apple iTunes or QuickTime Player)

To use your Digidesign hardware with certain CoreAudio-compatible playback applications (such as Apple iTunes or QuickTime Player), you will need to configure either Sound Preferences or Audio MIDI Setup in addition to Digidesign CoreAudio Manager. However, for most CoreAudio-compatible client applications (such as BIAS Peak or Cubase SX) this is unnecessary, because you can configure the CoreAudio Buffer Size setting and input and output channels from within the client application.

Apple Sound Preferences

To configure the Apple Sound Preferences:
1. Launch System Preferences (Apple menu > System Preferences).
2. Click Sound.
3. Click Output and select Digidesign HW as the device for sound output.

Changing the Buffer Size for the Digidesign CoreAudio Driver does not affect the H/W Buffer Size settings in the Pro Tools Playback Engine dialog.

4. Click Input and select Digidesign HW as the device for sound input.

5. Quit System Preferences.
Apple Audio MIDI Setup

To configure the Apple Audio MIDI Setup:

1. Launch Audio MIDI Setup (located in Home/Applications/Utilities).
2. Click Audio Devices.
3. From the System Settings Default Input pop-up menu, choose Digidesign HW.
4. From the System Settings Default Output pop-up menu, choose Digidesign HW.
5. In the Audio Input or Audio Output section, select the Format (sample rate). Note that the input sample rate and output rate are linked.

⚠️ When Properties For Digidesign HW is selected, you can click the Configure Device button to open System Preferences, where the CoreAudio Manager can be accessed.

For information on configuring MIDI devices in AMS, see the Getting Started Guide for your Pro Tools system.


⚠️ Leave System Output set to Built-in Audio. The Digidesign CoreAudio Driver cannot be used for system sounds.
Digidesign® Mbox 2-series CoreAudio Drivers let you use your Digidesign-qualified Mbox 2-series audio interfaces with third-party applications that support the CoreAudio Driver standard.

The following Pro Tools Mbox 2-series system interfaces are supported:

- Mbox 2™ Pro
- Mbox 2
- Mbox 2 Academic
- Mbox 2 Mini

For other Pro Tools systems, refer to Chapter 1, “Digidesign CoreAudio Driver.”

**Installation**

Digidesign Mbox 2-series CoreAudio Drivers for your Digidesign hardware are automatically installed when you install Pro Tools.

For complete instructions on installing Pro Tools, see the Getting Started Guide for your Pro Tools system.

**Standalone Digidesign CoreAudio Drivers**

Digidesign CoreAudio Drivers can be installed on Mac systems that do not have Pro Tools installed. Use the standalone version of the Digidesign CoreAudio Drivers installer (Install CoreAudio.mpkg), which is available on the Pro Tools Installer disc.

**System Requirements**

This version of Mbox 2-series CoreAudio Drivers can be used on Digidesign-qualified Mbox 2-series systems running on a Digidesign-qualified version of Mac OS X.

For complete system requirements, visit the Digidesign website (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 hardware systems, Digidesign-qualified computers, operating systems, and devices, and Digidesign-qualified third-party CoreAudio-compatible applications, visit the Digidesign website (www.digidesign.com).
Mbox 2-Series CoreAudio Driver Capabilities

Digidesign Mbox 2-series CoreAudio Drivers are multi-client, multichannel sound drivers that allow CoreAudio-compatible applications to record and play back through Digidesign-qualified Mbox 2-series audio interfaces.

Full-duplex recording and playback of 24-bit audio is supported at sample rates up to 96 kHz, depending on your CoreAudio client application.

Digidesign Mbox 2-series CoreAudio Drivers will provide up to 6 channels of input and 8 channels of output, depending on your Pro Tools hardware:
- Up to 6 channels of inputs and eight channels of output with Mbox 2 Pro
- Up to 4 channels of input and 2 channels of output with Mbox 2 or Mbox 2 Academic
- Up to 2 channels of I/O with Mbox 2 Mini

Limitations of the Mbox 2-series CoreAudio Drivers

Mbox 2-series CoreAudio Drivers have the following limitation:
- When Pro Tools is running, the Mbox 2-series interface is set to the session sample rate. If another application changes the sample rate, Pro Tools will immediately change it back.

Mbox 2 Pro Driver Control Panel

(Mbox 2 Pro Only)

You can configure the Mbox 2 Pro CoreAudio Driver using the Mbox 2 Pro Control Panel, or from within most third-party CoreAudio-compatible client applications (such as BIAS Peak or Logic Audio). Refer to the manufacturer’s documentation for more information.

Some applications (such as Apple’s iTunes or QuickTime Player), also require that you configure either the Apple Sound Preferences or Apple Audio MIDI Setup to use the Mbox 2 Pro CoreAudio Driver. See “Configuring Mbox 2-Series Interfaces for Third-Party Applications” on page 13.

Accessing the Mbox 2 Pro Control Panel

The Mbox 2 Pro Control Panel can be accessed without opening a third-party application (from the Mac System Preferences folder), or from within some third-party programs.

To access the Mbox 2 Pro Control Panel without opening a third-party application:
- In the System Preferences window, click Digidesign Mbox 2 Pro.

Refer to the Digidesign website (www.digidesign.com) for the latest third-party drivers for Pro Tools hardware, as well as current known issues.
To access the Mbox 2 Pro from a third-party application:
- Refer to your program’s documentation.

**Using the Mbox 2 Pro Control Panel**

Use the Mbox 2 Pro Control Panel to identify your Digidesign hardware, check firmware, view or change the Clock Source, and enable S/PDIF mirroring of analog outputs 1 and 2.

⚠️ Changing the Clock Source in the Mbox 2 Pro Control Panel will not dynamically update the setting in the Pro Tools Hardware Setup or Session Setup window if it is open. The Pro Tools Hardware Setup and Session Setup window will update when you close and reopen them.

**Digidesign Hardware Connection Status Display and Text**

This display area shows the hardware (Mbox 2 Pro) detected by the Control Panel.

If your hardware is not connected or cannot be detected, the text below the display will read “No Hardware Detected.” In this case, check the FireWire connection between the computer and Mbox 2 Pro. If reconnecting the cable does not correct the problem, check that you have installed Pro Tools LE correctly.

**Digidesign Firmware**

This area displays the firmware version of your Mbox 2 Pro.

**Clock Source**

This pop-up menu lets you choose the clock source for Mbox 2 Pro:

- **Internal** Use this setting for normal playback of audio, or if you are recording audio through the analog inputs.
- **S/PDIF** Use this setting if you are recording audio through the S/PDIF input.

⚠️ S/PDIF input is only available when S/PDIF is the Clock Source.

- **Word Clock** Use this setting to clock Pro Tools to a Word clock source connected to the Mbox 2 Pro Word Clock In port.

**Mirror Analog 1–2 on S/PDIF**

Check this box to set the S/PDIF output channels to always mirror analog outputs 1 and 2.

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**Mbox 2, Mbox 2 Academic and Mbox 2 Mini Driver Control Panels**

(Mbox 2, Mbox 2 Academic, Mbox 2 Mini Only)

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**Configuring CoreAudio Driver**

You can configure the Mbox 2, Mbox 2 Academic, or Mbox 2 Mini CoreAudio Driver using their Control Panel, or from within most third-party CoreAudio-compatible client applications (such as BIAS Peak or Logic Audio). Refer to the manufacturer’s documentation for more information.
Some applications (such as Apple’s iTunes or QuickTime Player), also require that you configure either the Apple Sound Preferences or Apple Audio MIDI Setup to use the Mbox 2 CoreAudio driver. See “Configuring Mbox 2-Series Interfaces for Third-Party Applications” on page 13.

**Digidesign Mbox 2, Mbox 2 Academic, and Mbox 2 Mini Control Panel**

Use the Control Panel to identify your Digidesign hardware, check firmware, and view Clock Source and AC-3 mode.

With Mbox 2 and Mbox 2 Academic, you can also change the Clock Source and enable or disable AC-3 mode.

**To access the Control Panel:**

- In the System Preferences window, click your Digidesign audio interface.

**Clock**

This pop-up menu lets you choose the clock source for Mbox 2 or Mbox 2 Academic interfaces. Choices include Internal and S/PDIF. Use Internal whenever you are playing back audio through Mbox 2 or Mbox 2 Academic. Use S/PDIF when you are recording into Mbox 2 or Mbox 2 Academic from a digital device through the Mbox 2 or Mbox 2 Academic’s S/PDIF inputs.

On Mbox 2 Mini, this option is greyed out and cannot be changed. Mbox 2 Mini is always set to Internal.

**AC-3 Mode**

This option lets you enable AC-3 mode for Mbox 2 and Mbox 2 Academic interfaces. When enabled, the interface’s S/PDIF output switches to a 24-bit clean passthrough mode for AC-3 or DTS encoded audio from a DVD or other media player application (the interface’s analog output is muted whenever AC-3 mode is enabled).

On Mbox 2 Mini, this option is greyed out and cannot be changed.

⚠️ **Enabling AC-3 mode in the Control Panel will prevent Pro Tools LE from being able to access the Mbox 2. Always turn off AC-3 mode before using Pro Tools LE.**

On Mbox 2 Mini, this option is greyed out and cannot be changed.

**Connection Status and Device**

This display area shows the hardware detected by the Control Panel.
Configuring Mbox 2-Series Interfaces for Third-Party Applications

When using Mbox 2-series interfaces with an application other than Pro Tools LE (such as Apple GarageBand), you can configure hardware settings through the audio preference settings available in that application.

To configure hardware settings through a client application (such as Apple GarageBand):  
1. Choose Digidesign Mbox 2-series interface for Audio Output and Audio Input.

2. Select a buffer size for your system by choosing an Optimize For option (Maximum/Large buffer size, or Minimum/Small buffer size).

- Small buffers have the advantage of low latency in the record monitor path, but also are more taxing on your computer’s CPU and could contribute to dropouts in your audio during record or playback. (Latency is the time delay between a signal entering the audio inputs and leaving the outputs during recording.)

- Larger buffers have the advantage of making the Mbox 2-series CoreAudio Driver more immune to audio dropouts during playback and recording, but can cause a noticeable delay when monitoring your inputs in the recording process. In some CoreAudio-client applications, performing various tasks will interrupt the CoreAudio Driver and may result in clicks and pops in audio playback or recording. Choosing a large buffer can help alleviate this problem.

Refer to the documentation for your third-party application to learn more about how these options affect that application.

💡 Changing the Buffer Size for the Mbox 2-series CoreAudio Driver does not affect the H/W Buffer Size settings in the Pro Tools Playback Engine dialog.
Configuring the Apple Sound Preferences or Apple Audio MIDI Setup
(Required for Using Mbox 2-Series Interfaces with Apple iTunes and QuickTime Player)

To use your Mbox 2-series interface with certain CoreAudio-compatible playback applications (such as Apple iTunes or QuickTime Player), you will need to configure either Sound Preferences or Audio MIDI Setup in addition to the Mbox 2 Pro Control Panel. However, for most CoreAudio-compatible client applications (such as BIAS Peak or Cubase SX) this is unnecessary, because you can configure hardware settings, and input and output channels from within the application.

Apple Sound Preferences

To configure the Apple Sound Preferences:
1. Launch System Preferences (Apple menu > System Preferences).
2. Click Sound.
3. Click Output and select Digidesign Mbox 2 Pro as the device for sound output.
4. Click Input and select your Digidesign Mbox 2-series interface as the device for sound input.
5. Quit System Preferences.

Apple Audio MIDI Setup

To configure the Apple Audio MIDI Setup for Mbox 2 Pro audio:
1. Launch Audio MIDI Setup (located in Home/Applications/Utilities).
2 Click Audio Devices.

3 From the System Settings Default Input pop-up menu, select Digidesign Mbox 2 Pro.

4 From the System Settings Default Output pop-up menu, select Digidesign Mbox 2 Pro.

5 If you want to play Mac System sounds through Mbox 2 Pro, click the System Output pop-up menu and select Mbox 2 Pro.

6 From the Properties For pop-up menu, select Digidesign Mbox 2 Pro and select the Clock Source.

7 In the Audio Input or Audio Output section, select the Format (sample rate). Note that the input sample rate and output rate are linked.

8 Choose Audio MIDI Setup > Quit Audio MIDI Setup.

Apple Audio MIDI Setup application showing Audio settings for Mbox 2 Pro

When Properties For Mbox 2 Pro is selected, you can click the Configure Device button to open System Preferences, where the Mbox 2 Pro Control Panel can be accessed.

For information on configuring MIDI devices in AMS, see the Mbox 2 Pro Getting Started Guide.