# Mbox 2™ Basics Guide

## Version 6.8.1 for LE Systems on Windows XP or Mac OS X


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# Mbox 2 Introduction

Welcome to the *Mbox 2 Basics Guide*. This guide is designed to give new users specific methods for accomplishing common tasks with the Mbox 2 desktop audio interface and Pro Tools LE software.

Once you are familiar with basic Mbox 2 operation with Pro Tools, we recommend that you read the "Working With Pro Tools" tutorial in the *Getting Started with Mbox 2 Guide*. For the most complete resource for using Pro Tools software, please refer to the *Pro Tools Reference Guide*.

## Online Resources

Many resources for learning to use Pro Tools are also available online at the Digidesign Web site (www.digidesign.com), including the following:

**DiSK (Digidesign Sound Knowledge)** Instructional material about how to use Pro Tools, including DiSK Flix movies that show how to do a number of popular tasks using Pro Tools.

**DigiZine** A magazine for and about Pro Tools users, providing product news, user stories, and many tips and ideas.

## Mbox 2 Basics Requirements

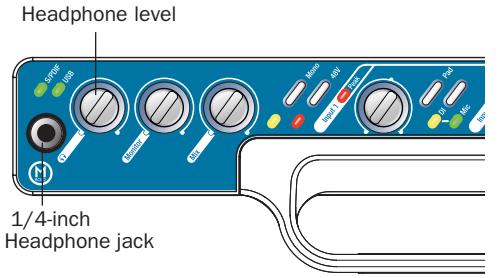
Before proceeding, make sure you have completed installation of Pro Tools LE software and the Mbox 2 to your computer. Refer to the appropriate Windows or Macintosh configuration chapter in the GS with SB Guide for configuration and installation steps.

# Getting Sound In and Out of Mbox 2

To hear audio recorded into a Pro Tools session, you will need to connect headphones or an external sound system (such as powered monitors or a home stereo) to Mbox 2. Sound from Mbox 2 cannot be played through your computer's speakers or your computer's sound output.

## Connecting Headphones

On the front panel of the Mbox 2 is a 1/4-inch jack to connect headphones, and a headphone level control to adjust headphone volume.




***Headphone jack on front of Mbox 2***

**To connect headphones:**

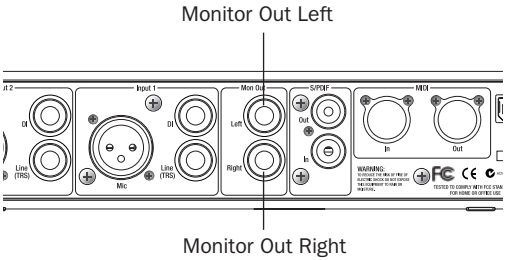
- Connect headphones with a 1/4-inch stereo connector (or adapter) to the Headphone jack.

## Connecting a Sound System

The monitor outputs on the back of the Mbox 2 support 1/4-inch plugs. These connections can be balanced, TRS (Tip, Ring, Sleeve) style connectors, or unbalanced connectors. To listen to your Pro Tools session, these outputs can be connected to any amplification system: powered speakers, home stereo system, or an audio mixer.

When connecting to a stereo system, connect the left channel (often the white plug) to Mon Out Left, and right channel (often the red plug) to Mon Out Right.

*Home stereo systems often use RCA connectors. You can use an adaptor or a special cable to convert from the TRS or TS connectors used by Mbox 2 to the RCA connectors on your home stereo.*

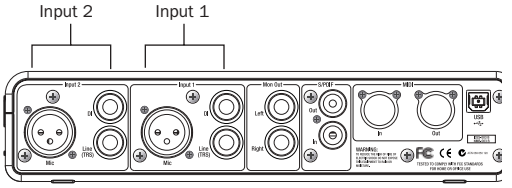



***Stereo output from the Mbox 2 (back panel)***

Mon Outs Left and Right play the audio that is routed to analog outputs 1 and 2 within Pro Tools.

## Connecting Audio Inputs

Mbox 2 inputs (sources) support microphones, guitars, keyboards, and other types of instruments. Mbox 2 has two audio input sections, labeled Input 1 and Input 2. For stereo inputs, use Input 1 for the left input, and Input 2 for the right input.




*Inputs on back of Mbox 2*

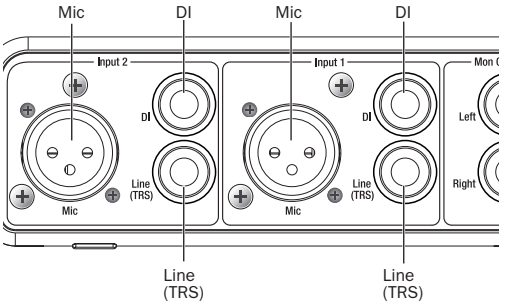
The two input sections are located so that the hardware inputs line up directly behind their corresponding input controls on the front panel. This makes it easier to locate channel input connections from the front.

Each Input section has three analog input jacks:

**Mic** For XLR microphone cables.

**Line (TRS)** For 1/4-inch Tip-Ring-Sleeve cables from keyboards, mixers, microphones, and other line sources.

**DI** For 1/4-inch Tip-Sleeve cables from guitar, bass, microphones, or similar sources.




*Analog input connectors*

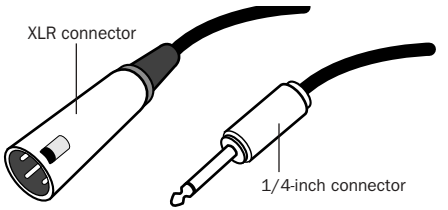
For information about connecting specific audio sources, see "Attaching a Microphone to the Mbox 2" on page 4, and "Connecting Instruments to the Mbox 2" on page 6.

# Connecting a Microphone

## Attaching a Microphone to the Mbox 2

There are several ways to use Mbox 2 with a microphone, depending on the type of microphone and cables that you use.

Some microphone cables use an XLR connector to attach a microphone to an input (such as those on the Mbox 2); other microphones use a 1/4-inch connector. If you have a choice, use an XLR connector to connect the microphone to the Mbox 2 to yield better results.




*XLR and 1/4-inch connectors*

## Phantom Power

Some microphones require power to operate. This power, called *phantom power*, is supplied either by a battery in the microphone, or through an audio interface (such as Mbox 2) that can supply power through the microphone cable.

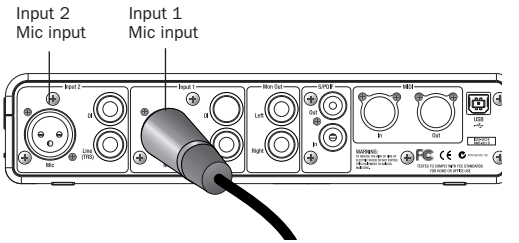
Most *condenser* microphones (such as an AKG C3000) require phantom power to operate. *Dynamic* microphones (such as a Shure SM57) do not require phantom power to operate, but are not harmed by it.

⚠ *Although phantom power can be used safely with most microphones, it is possible to damage some ribbon microphones with it. Always turn off phantom power and wait at least ten seconds before connecting a ribbon microphone.*

The Mbox 2 can only supply power through a microphone cable with XLR connectors. If you are not sure about the phantom power requirements for your microphone, consult your microphone's documentation or contact the manufacturer.

**To use a microphone that has an XLR connector:**

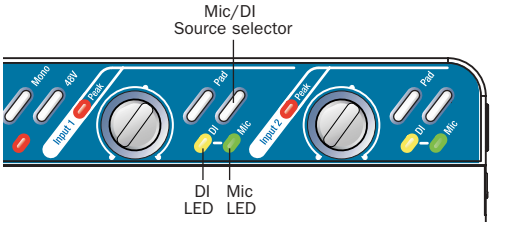
**1** Plug your microphone cable into one of the Mic inputs on the back of Mbox 2.




*XLR connector plugged into Input 1*

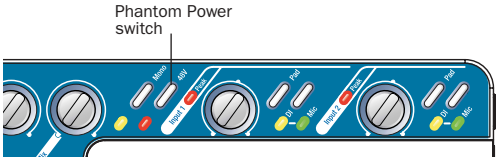
**2** Make sure nothing is plugged in to the Line (TRS) jack, otherwise Mbox 2 will use audio from the Line (TRS) input and not the Mic input.

**3** Set the Source to Mic (microphone) by pressing the Mic/DI Source selector on the front of Mbox 2 until the Mic LED is lit.



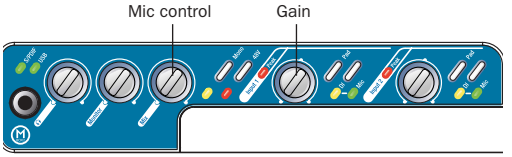

*Input 1 Source selector and LEDs*

**4** If your microphone requires phantom power, make sure the microphone is connected, then press the Phantom Power switch on the front of the Mbox 2 (labeled 48V). This switch sends 48V to *both* mic inputs. The 48V LED on the front of the Mbox 2 will light when phantom power is being supplied.




***Phantom Power switch***

**5** On the front of the Mbox 2, turn the Mix control fully left to Input.

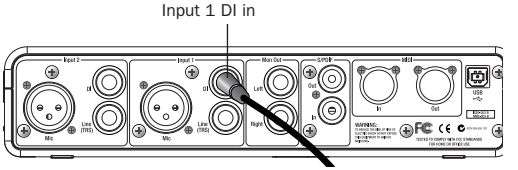



***Phantom Power switch***

**6** On the front of the Mbox 2, carefully turn the Gain control to the right to increase the input level of your microphone signal.

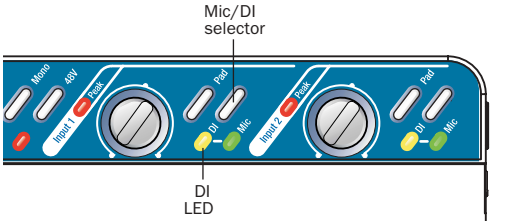
**To use a microphone that has a 1/4-inch TS (Tip-Sleeve) connector:**

**1** On the back of the Mbox 2, plug the 1/4-inch connector from your microphone into one of the DI inputs.



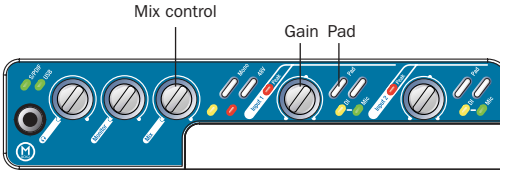

***Connecting a microphone to the Input 1 DI connector***

**2** On the front of the Mbox 2, set the source to DI by pressing the input channel Source selector until the DI LED is lit.




***Input 1 selector switch and DI LED***

**3** On the front of the Mbox 2, turn the Mix control fully left to Input.




***Input 1 Gain and Pad controls, and the Mix control***

**4** On the front of the Mbox 2, carefully turn the Gain control to the right to increase the input level of your microphone signal.

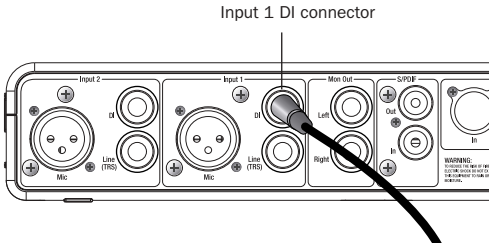
**5** If the incoming signal is too loud, press the Pad switch to engage the 20 dB pad.

## Connecting Instruments to the Mbox 2

Mbox 2 provides two input types (DI and Line) that correspond to the different signal strengths output by different types of instruments. Instruments such as electric guitar or electric bass usually have a lower level of output than line level instruments and electronic audio sources such as mixers, samplers, keyboards, turntables, and synthesizers.

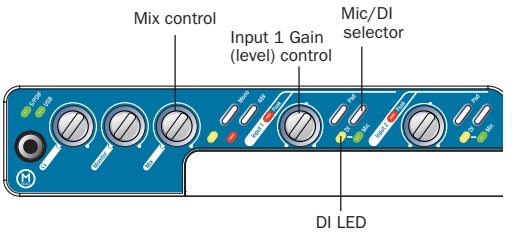
### To use a guitar with Mbox 2:

**1** On the back of your Mbox 2, plug your guitar cable into one of the DI inputs.




*Guitar cable plugged into the Input 1 DI input*

**2** On the front of the Mbox 2, set the Source to DI by pressing the Mic/DI switch until the DI LED is lit.




*Source selector and Gain control for Input 1*

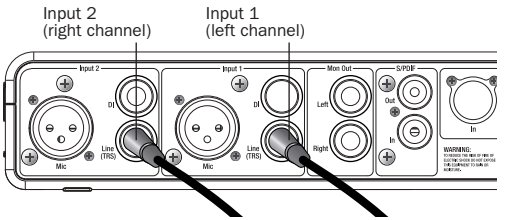
**3** On the front of the Mbox 2, turn the Mix control fully left to Input.

**4** On the front of the Mbox 2, carefully turn the Gain control to the right to increase the input level of your guitar.

*When you record a guitar (or any mono instrument that uses only one source input), you will hear the sound in only one side of the stereo field. Pushing the "mono" button on the front of the Mbox 2 brings the sound from one side of the stereo field to both sides. The Mono switch does not affect the audio being recorded. It only affects how you hear your input to the Mbox 2.*

### To use a keyboard or mixer with Mbox 2:

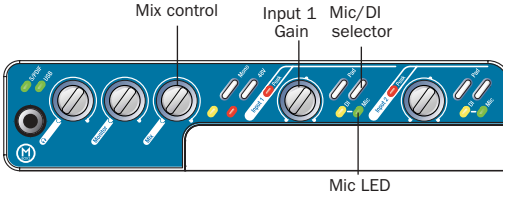
**1** Plug your keyboard, mixer, or other audio source into either the Input 1 or Input 2 Line (TRS) inputs on your Mbox 2. If your source is stereo (such as a stereo keyboard or the stereo output from a mixer), connect the left channel (often the white plug) to Input 1, and right channel (often the red plug) to Input 2.




*Mbox 2 configuration for stereo input*

**2** On the front of the Mbox 2, set the source to Mic by pressing the Source selector until the Mic LED is lit.

**3** On the front of the Mbox 2, turn the Mix control fully left to Input.




***Source selector and Gain control for Input 1***

**4** Set your instrument's volume to its optimal level. For example, the optimal level for most keyboards is between 80% and 100% of maximum volume.

**5** On the front of the Mbox 2, carefully turn the Gain control to the right to increase the input level of your keyboard.

# Recording a Pro Tools Session

Recording with Pro Tools and the Mbox 2 involves creating a Pro Tools session, preparing an audio track for recording, and recording.

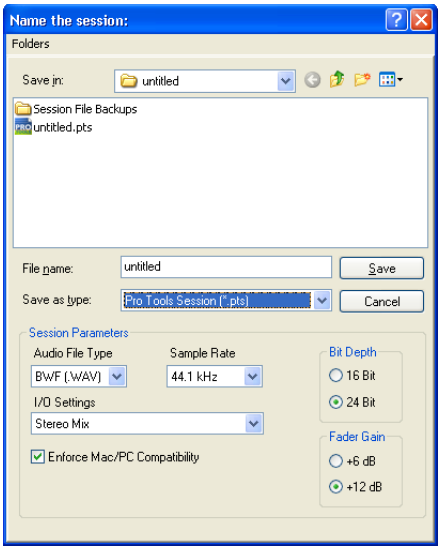
### To create a session in Pro Tools:

**1** Verify the connections between the Mbox 2 and your instrument or microphone.

**2** Launch Pro Tools.

**3** Choose File > New Session.

**4** Set Session Parameters in the New Session dialog as needed, or leave them at their default settings. (For details on New Session settings, see the *Getting Started with Mbox 2 Guide*.)




*New Session dialog*

**5** Select where you want to save your session.

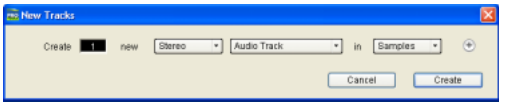
**6** Type a name for your session.

**7** Click Save. Pro Tools creates a new session.

### To prepare an audio track for recording:

**1** Create a new track to record on by choosing File > New Track.

**2** Specify 1 Mono Audio Track in Samples, if your source is mono, or 1 Stereo Audio Track in Samples, if your source is stereo.

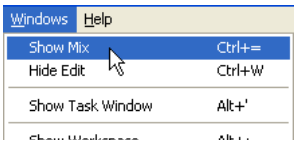



*Creating a new stereo audio track*

**3** Click Create.

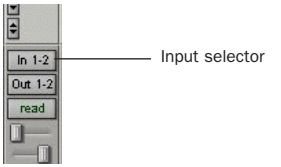
*A mono instrument uses one input on the Mbox 2, and a stereo instrument uses two. Creating a stereo track in Pro Tools will not make a mono instrument into a stereo instrument. If a mono instrument is recorded on a stereo track, one of the sides of the stereo track will show no signal.*

**4** Make certain the Mix window is open by choosing Windows > Show Mix.



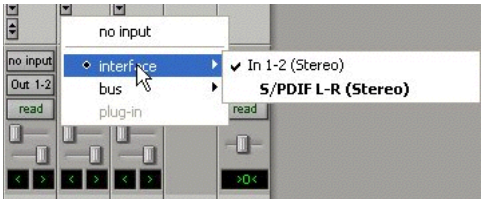

*Showing the Mix widow*

**5** In the Mix window, click the Input selector on the new track.




*Choosing an input in the Mix window*

**6** From the pop-up menu, select the interface input you want to record. For example, select In 1 if your audio source is mono and plugged into an Input 1 jack on the back of the Mbox 2. Select In 1–2 on any stereo audio track when your audio source is stereo.




*Routing an input to a stereo track*

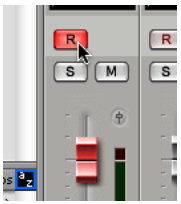
**7** Use the Gain controls on Mbox 2 to maximize the signal going into Pro Tools while avoiding clipping.

> ⚠ *Clipping occurs when you feed a signal to an audio device that is louder than the circuitry can accept. To avoid clipping, adjust the Gain control to a level where the Peak LEDs on the front of the Mbox 2 do not light or flicker.*

**8** On the front of the Mbox 2, turn the Mix control fully left to Input (to hear only the input signal). Or, to hear an equal mix of playback and input signals, turn the Mix control to the center. See "Controlling Delay (Latency) During Monitoring" on page 16 for more information on using the Mix control during recording.

### To record an audio track:

**1** Click the Record Enable button for the track.




*Record enabling a track in the Mix window*

**2** Choose Windows > Show Transport to display the Transport window. Click Return To Zero to cue to the beginning of the session.

*Transport window*

**3** Click Record in the Transport window to arm Pro Tools for recording. The Record button will flash red to indicate that Pro Tools is ready to record.

**4** When you are ready to start recording, click Play or press the Spacebar.

**5** Record your performance.

**6** Click Stop in the Transport window or press the Spacebar when you are finished recording.

### To play back a recorded track:

**1** If the track's Record Enable button is lit, click on it to take it out of Record mode.

**2** On the front of the Mbox 2, turn the Mix control fully right to Playback (to hear only playback signal). To hear an equal mix of playback and input signals, turn the Mix control to center. See "Controlling Delay (Latency) During Monitoring" on page 16 for more information on using the Mix control during recording.

**3** Click Play in the Transport window or press the Spacebar to start playback.

**4** Click Stop in the Transport window or press the Spacebar to stop playback.

# Importing Audio from a CD

**To import audio from a compact disc:**

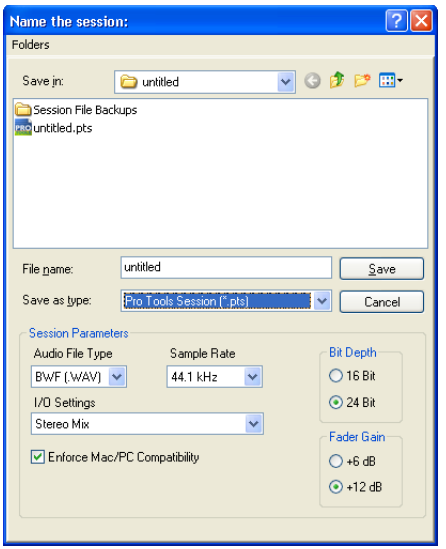
**1** Put the source CD into your computer's CD drive.

**2** Use a third party software program of your choice to extract audio from the CD.

**3** Launch Pro Tools.

**4** Choose File > New Session.

**5** Set Session Parameters in the New Session dialog as needed, or leave at their default settings. (For details, see the *Getting Started with Mbox 2 Guide*.)

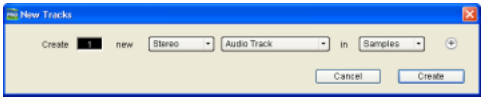



*New Session dialog*

**6** Select where you want to save your session.

**7** Type a name for your session and click Save. Pro Tools creates a new session.

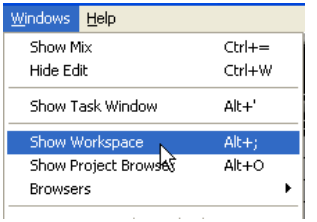
**8** In the session, create a new track by choosing File > New Track.




*Creating a new stereo audio track*

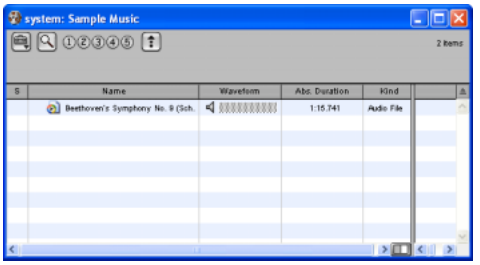
**9** In the New Track dialog, specify 1 Stereo Audio Track in Samples, and click Create.

**10** Open the Workspace Browser by choosing Windows > Show Workspace. The Workspace Browser is a window where you can find, audition, and manage your audio files.



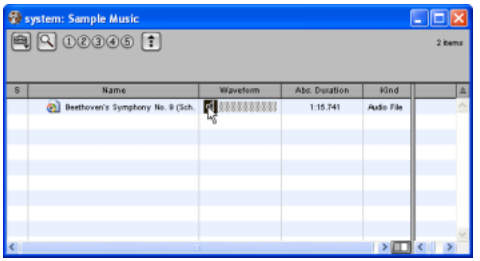

*Opening the Workspace Browser*

**11** In the Workspace Browser, navigate to the location where you saved the audio you extracted from your CD in step 2.



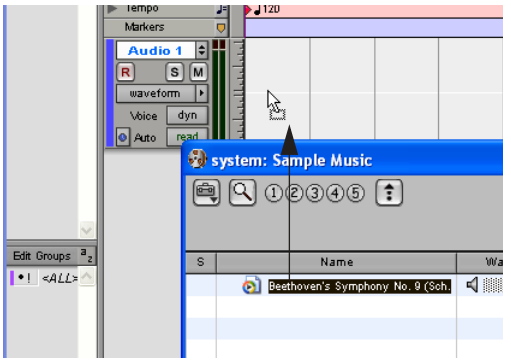

*Browsing in the Workspace Browser*

**12** Click and hold on the speaker icon in the waveform window to audition the audio file.




*Auditioning an audio file in the Workspace Browser*

**13** Drag the audio file from the Workspace Browser to the audio track you created in your session.




*Dragging the audio file from the Workspace Browser to an audio track*

**To play back the new track:**

**1** In the Transport window, click Return To Zero to cue the beginning of the track.

**2** On the front of the Mbox 2, turn the Mix control fully right to Playback.

**3** Click Play in the Transport window to begin playback. The CD track you extracted should begin playing back.

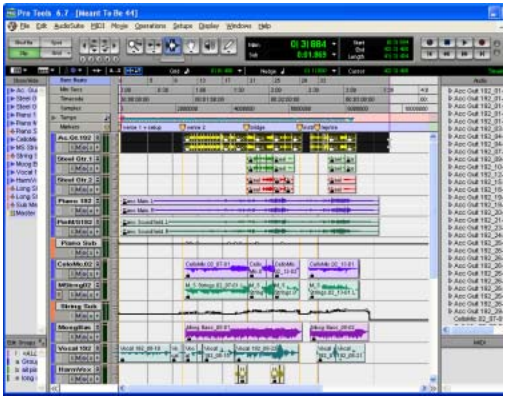
# Creating an Audio CD from a Pro Tools Session

Pro Tools does not create audio CDs directly, but you can create stereo audio files from your Pro Tools sessions that can be used by most common CD burning programs.

Use the Pro Tools Bounce to Disk feature to combine all your audible tracks into a single "master" audio file. After the new audio file has been bounced to disk, you can burn it to a CD.

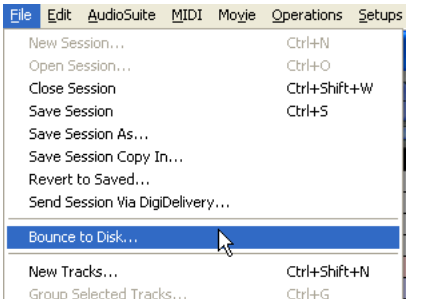
## Bouncing Audio to Disk:

**1** After you have finished recording and mixing a session in Pro Tools, highlight the length of the session in the timeline ruler (or on a track), plus an additional amount of time to avoid cutting off any reverb tails that might continue past the end of the region.



*Audio session highlighted and ready to bounce*

**2** Choose File > Bounce to Disk.




*Choosing Bounce to Disk from the file menu*

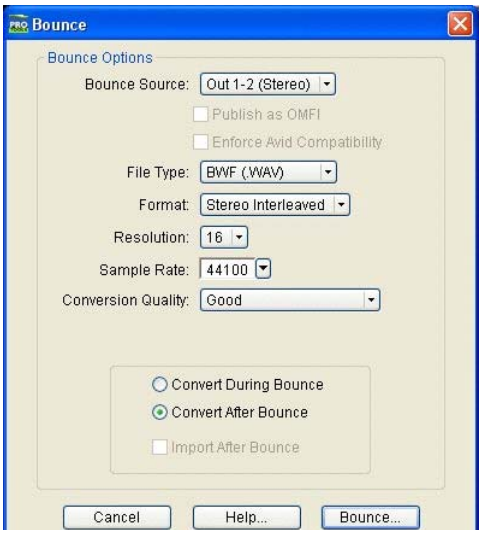
**3** In the Bounce Options dialog, choose Analog Outputs 1–2 as the Bounce Source.

**4** Choose BWF (.WAV) for the File Type.

**5** Choose Stereo Interleaved for the Format.

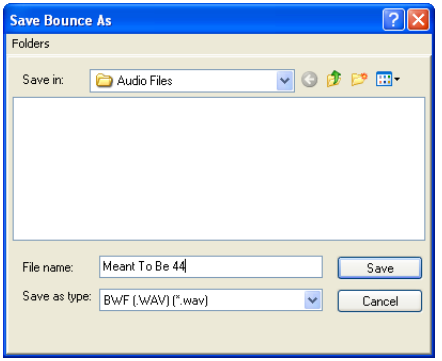
**6** Choose 16 for the Resolution and 44100 for the Sample Rate.

**7** Choose "Convert after Bounce," and click Bounce.




*Bounce options for creating CD burnable tracks*

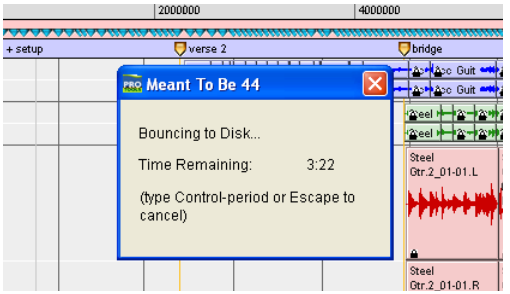
**8** In the Bounce dialog, give the bounce tracks a name and choose where they should be saved.




*Save Bounce Dialog*

**9** Click Save.

Pro Tools will begin bouncing to disk. Pro Tools bounces are done in real time, so you hear audio playback of your mix during the bounce process (though you cannot adjust it).




*Bouncing to Disk dialog*

## Burning a CD

After the bounce is completed, you will have an audio file that is ready for burning onto a CD. Quit Pro Tools and launch any common third-party CD burning application to burn your bounced mix to CD.

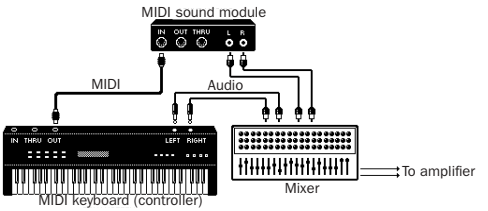
*Make certain that you configure your CD burning application to create an audio CD rather than a data CD.*

# Mbox 2 and MIDI

## What is MIDI?

MIDI (Musical Instrument Digital Interface) is not audio, and has no sound. MIDI is a way for musical devices to communicate. MIDI is data that can trigger a MIDI device (such as a keyboard or software synthesizer).

In order to create or play a MIDI recording, you must have a MIDI keyboard or sound module (real or virtual) connected to the computer through the MIDI ports on Mbox 2 or some other MIDI interface. Audio from your MIDI instrument can be sent to an external mixer or monitored through the Mbox 2.




*Signal paths for MIDI instruments*

For more information on monitoring through the Mbox 2, see "Monitoring MIDI Instruments Without a Mixer" on page 15.

### To configure a MIDI track for recording:

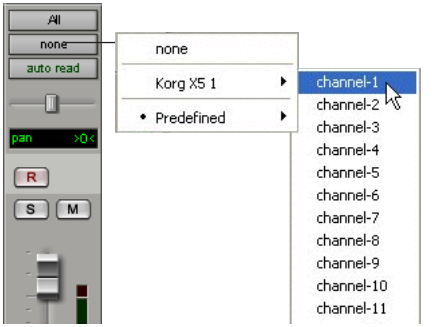
**1** Make sure to connect your MIDI device to Mbox 2. Connect a standard 5-pin MIDI cable from the MIDI Out of your device to the MIDI In port on the back of Mbox 2; using another MIDI cable, connect the MIDI In of your device to the MIDI Out port on the back of Mbox 2.

**2** On Macintosh systems, choose MIDI > Input Devices and make sure your input device is selected in the MIDI Input Enable window.

**3** Choose File > New Track and specify 1 MIDI Track, then click Create.

**4** In the Mix window, click the track's MIDI Input selector and assign the device and channel that will be recorded, or leave it set to All.

**5** In the Mix window, click on the track's MIDI Output selector and choose the destination (assignment) for that MIDI track by choosing a MIDI port, a channel, or a device from the pop-up menu (choices vary depending on the operating system and Pro Tools version).




*MIDI Output selector*

*If your connected MIDI device does not appear, check that you have configured your computer and its MIDI settings. For more information, see the appropriate chapters in your Getting Started with Mbox 2 Guide.*

**6** In the Mix Window, record-enable the MIDI track.

**7** Make sure MIDI > MIDI Thru is selected, then play some notes on your MIDI controller. The track's meters move. Remember, MIDI is not audio, and the meters are not registering sound, but MIDI activity.

*To monitor your MIDI instrument's analog outputs in Pro Tools, refer to "Monitoring MIDI Instruments Without a Mixer" on page 15.*

*You can also monitor your MIDI instrument's analog outputs by using an external mixer.*

**To record a MIDI track:**

**1** Verify that the MIDI track you want to record to is record-enabled and receiving MIDI.

**2** In the Transport window, click Return To Zero to start recording from the beginning of the session. You can also record according to a selection or from the cursor location in the Edit window.

**3** Click Record in the Transport window.

**4** Click Play in the Transport window or press the Spacebar to begin recording.

**5** Play your MIDI instrument.

**6** When you have finished recording, click Stop in the Transport window, or press the Spacebar. The newly recorded MIDI data appears as a MIDI region on the track in the Edit window, as well as in the MIDI Regions List.

**To play back a recorded MIDI track:**

**1** Click the Record Enable button to take the MIDI track out of Record mode.

**2** In the Transport window, click Return To Zero to play back from the beginning of the track.

**3** Click Play in the Transport window to begin playback. The recorded MIDI data plays back through the track's assigned instrument and channel.

### Monitoring MIDI Instruments Without a Mixer

To monitor your MIDI instrument's analog output in Pro Tools, you can use an Auxiliary Input track. Auxiliary Inputs function as inputs for both internally bussed signals and external audio sources.

**To configure an Auxiliary Input for MIDI monitoring:**

**1** Connect the MIDI instrument's audio output to the appropriate Line(TRS) inputs on your Mbox 2.

**2** Choose File > New Track and specify 1 mono or stereo Auxiliary Input, then click Create.

**3** Click the Input selector of the Auxiliary Input channel and choose the input to which your MIDI instrument is connected to the Mbox 2.

**4** Adjust the level of the Auxiliary Input with its volume fader. Now you will hear the audio output of your MIDI device in Pro Tools.

# Controlling Delay (Latency) During Monitoring

Mbox 2 and Pro Tools LE use your computer for all audio processing, playback, and recording. This causes a small amount of audio delay, or latency.

Latency is most obvious when monitoring during recording. You may hear this as a slight delay between when you produce the sound and when you hear the sound through the speakers or headphones.

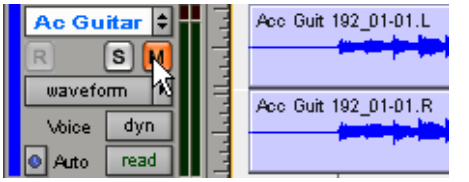
Mbox 2 gives you the ability to monitor your analog input signals while recording, without hearing any latency. This zero-latency analog monitoring is controlled by the Mbox 2 front panel Mix control, which you can use to blend and adjust the ratio between the Mbox 2 analog input and Pro Tools playback.

**To use zero latency monitoring while recording:**

**1** Launch Pro Tools and set up a session. See "Recording a Pro Tools Session" on page 8.

**2** Do one of the following:

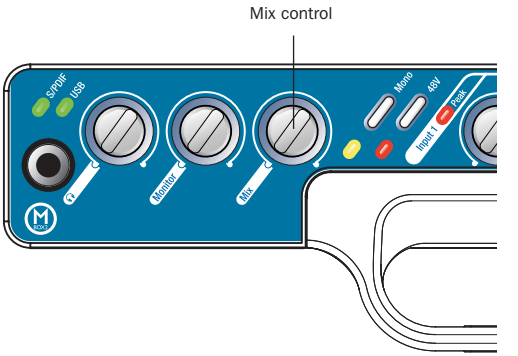
- Mute the track you are recording on. This prevents you from hearing the delayed signal coming back from Pro Tools through the Mbox 2.




*Muting a track*

– or –

- Use the Mix control on the front of the Mbox 2 to blend the playback tracks with the analog tracks that you are recording.




*Mix control on Mbox 2 front panel*

*The Mix control has no effect when you are using S/PDIF digital inputs.*