# M-Powered Basics Guide

## Version 6.8 for M-Powered Systems on Windows or Macintosh

**digidesign**

# Introduction

Welcome to the *M-Powered Basics Guide*. This guide is designed to give new users specific methods for accomplishing common tasks with Digidesign-qualified M-Audio interfaces and Pro Tools M-Powered software.

Once you are familiar with basic M-Powered operation, we recommend that you read the "Working With Pro Tools" tutorial in the *Getting Started with Pro Tools M-Powered 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 all the latest product news, user stories, and hundreds of tips and ideas.

## M-Powered Basics Requirements

Before proceeding, make sure you have:

• Connected the Digidesign-qualified M-Audio interface to your computer, as described in your M-Audio documentation.

  – and –

• Installed Pro Tools M-Powered software and the pre-authorized iLok, as described in the appropriate Windows or Macintosh installation chapter of the *Getting Started with Pro Tools M-Powered Guide*.

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 your M-Audio interface. Sound from your M-Audio interface cannot be played through your computer's speakers or your computer's sound output.

## Connecting Headphones

Depending on which M-Audio interface you have, there will be one or more headphone jacks on the front or back of your interface. These can be either a 1/4-inch jack or a 1/8-inch mini plug jack.



1/4-inch Headphone jack

*Headphone jacks on the front of a FireWire 1814*



1/4-inch Headphone jack

*Headphone jack on the back of an Ozonic*

**To connect headphones:**

• Connect headphones with a 1/4-inch stereo connector (or an adapter) to interfaces that have a 1/4-inch Headphone jack.

– or –

• Connect headphones with a 1/8-inch stereo mini connector (or an adapter) to interfaces that have a 1/8-inch Headphone jack.

*Some M-Audio interfaces include a front panel Headphone control to adjust the volume level of the Headphone jacks.*
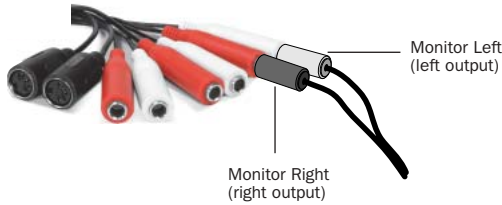
## Connecting a Sound System

Depending on which M-Audio interface you have, the outputs will be 1/4-inch or RCA plugs, and the 1/4-inch connections can be balanced, TRS style connectors, or unbalanced. 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 the first output, and right channel (often the red plug) to the second output.
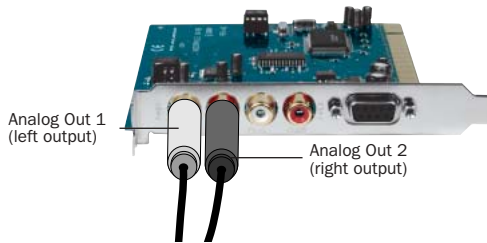
*Home stereo systems often use RCA connectors. You can use an adaptor or a special cable to convert from the TRS or TS connectors (used on some M-Audio interfaces) to the RCA connectors on your home stereo.*

Output 1
(left output)

Output 2
(right output)

*1/4-inch stereo outputs on a FireWire 1814*



Monitor Left
(left output)

Monitor Right
(right output)

*1/4-inch stereo (monitor) outputs on an Audiophile 192*



Analog Out 1
(left output)

Analog Out 2
(right output)

*RCA stereo outputs on an Audiophile 2496*

The first and second outputs play the audio that is routed to analog outputs 1 and 2 within Pro Tools.

# Connecting Audio Inputs

Depending on which M-Audio interface you have, the inputs will be 1/4-inch, RCA, or a 1/4-inch and XLR combination plug for microphones *and* for instruments that usually have a lower level (such as guitars).

For information about connecting specific audio sources, see "Attaching a Microphone to Your M-Audio Interface" on page 4, and "Connecting Instruments to an M-Audio Interface" on page 6.

For stereo inputs, use the first input for the left input, and the second input for the right input. For additional stereo inputs, use subsequent input pairs, if available.

# Connecting a Microphone

## Attaching a Microphone to Your M-Audio Interface

There can be several ways to use an M-Audio interface with a microphone, depending on the type of microphone and cables that you use, and the type of M-Audio interface.

Some microphone cables use an XLR connector to attach a microphone to an input; other microphones use a 1/4-inch connector. If you have a choice, use an XLR connector to connect the microphone to your M-Audio interface to yield better results.
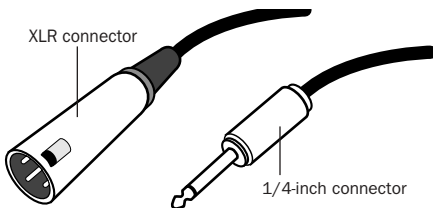


*XLR and 1/4-inch connectors*

## 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 some M-Audio interfaces) that can supply power through the microphone cable.

⚠ *M-Audio interfaces that support phantom power can only provide phantom power when their "wall wart" power supply is used to power the interface. Check your M-Audio interface guide for details*

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.*

M-Audio interfaces 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 (or Mic/Inst) inputs on your M-Audio interface.



Mic/Inst 1

*XLR connector plugged into Mic/Inst input on a FireWire 1814*

Mic input

*XLR connector plugged into Mic input on an Ozonic*

**2** If your M-Audio interface has a Mic/Line switch, press it to its out position.



Mic/Line selector

*Mic/Line selector on the front of a FireWire 1814*

**3** If your microphone requires phantom power, make sure the microphone is connected, then press the Phantom Power switch on your M-Audio interface. This switch sends 48V to *each* mic input. The Phantom Power LED on your M-Audio interface will light when phantom power is being supplied.



Phantom Power switch

*Phantom Power switch on a FireWire 1814*

**4** If your M-Audio interface has a Signal Gain control, carefully turn the control for the input to the right to increase the input level of your microphone signal.

**To use a microphone that has a 1/4-inch connector:**

**1** Plug the 1/4-inch connector from your microphone into one of the Mic (or Mic/Inst) 1/4-inch inputs on your M-Audio interface.



*1/4-inch connector plugged into Mic/Inst input on a FireWire 1814*

**2** If your M-Audio interface has a Mic/Line selector, press it to its out position.



Mic/Line selector

*Mic/Line selector on the front of a FireWire 1814*

**3** If your M-Audio interface has a Signal Gain control, carefully turn the control for the input to the right to increase the input level of your microphone signal.



Signal Gain Control

*Signal Gain control on a FireWire 1814*

## Connecting Instruments to an M-Audio Interface

Instruments such as electric guitar or electric bass usually have a lower level of output than instruments and electronic audio sources such as mixers, samplers, keyboards, turntables, and synthesizers.

**To use a guitar with your M-Audio interface:**

**1** Plug your guitar cable into one of the inputs on your M-Audio interface.

On M-Audio interfaces that have separate inputs for lower level sources (such as guitars) and line level sources (such as keyboards), use the inputs that support your source.



Mic/Inst 1

*Guitar cable plugged into Mic/Inst input on a FireWire 1814*



Input 2

*Guitar cable plugged into Input 2 on an Ozonic*

**2** If your M-Audio interface has a Mic/Line selector, press it to its out position.

Mic/Line selector



*Mic/Line selector on the front of a FireWire 1814*

**3** If your M-Audio interface has a Signal Gain control, carefully turn the control for the input to the right to increase the input level of your microphone signal.

**To use a keyboard or mixer with your M-Audio interface:**

**1** Plug your keyboard, mixer, or other audio source into one of the inputs on your M-Audio interface.

On M-Audio interfaces that have separate inputs for lower level sources (such as guitars) and line level sources (such as keyboards), use the inputs that support your source.

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 the first input, and right channel (often the red plug) to the second input.



*FireWire 1814 configuration for stereo input*
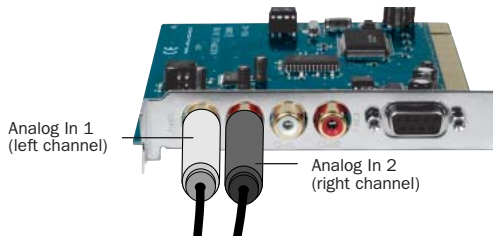


*Audiophile 2496 configuration for stereo input*

**2** If your M-Audio interface has a Mic/Line selector, press it to its In position.



*Mic/Line selector on the front of a FireWire 1814*

**3** 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.

**4** If your M-Audio interface has a Signal Gain control, carefully turn the control for the input to the right to increase the input level of your microphone signal.

# Recording a Pro Tools Session

Recording with Pro Tools M-Powered 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 your M-Audio interface 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 Pro Tools M-Powered Guide*.)
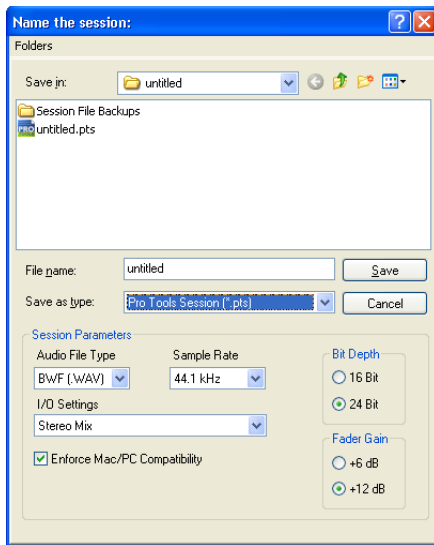


*New Session dialog*

**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.
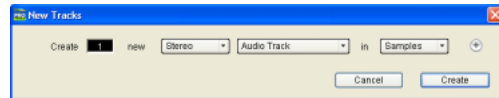


*Creating a new stereo audio track*

**3** Click Create.

💡 *A mono instrument uses one input on an M-Audio interface, 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.
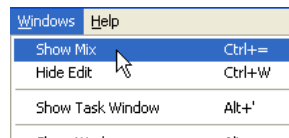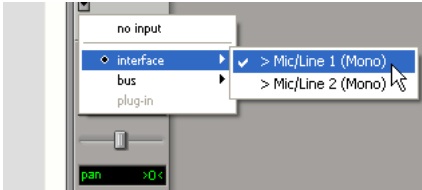


*Showing the Mix widow*

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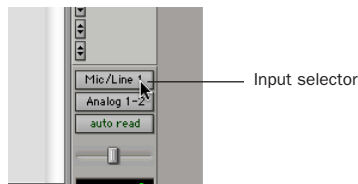


*Choosing an input in the Mix window*

**6** From the pop-up menu, select the interface input you want to record. For example, select Mic/Line 1 if your audio source is plugged into the first input of your M-Audio interface.



*Routing an input to a mono track*

**7** Use the Signal Gain controls on your M-Audio interface (if any) 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 Signal Gain control (if any). If the M-Audio interface has front panel Clip LEDS, adjust the gain to a level where the Peak LEDs flicker occasionally.*
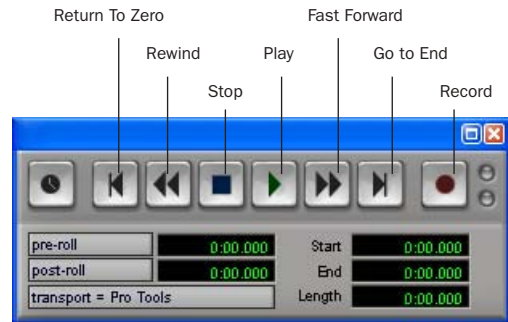
### To record an audio track:

**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 (or press Enter) 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** Click Play in the Transport window or press the Spacebar to start playback.

**3** 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 Pro Tools M-Powered Guide*.)
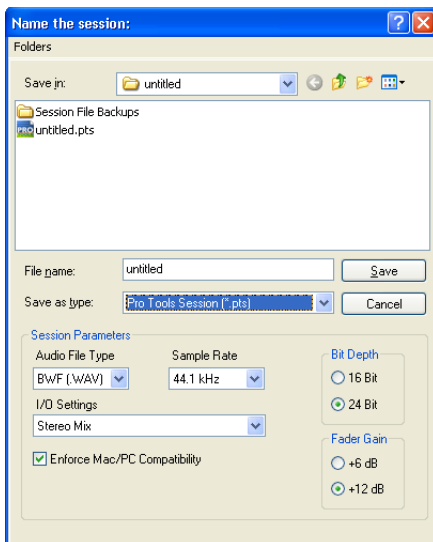


*New Session dialog*

**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.
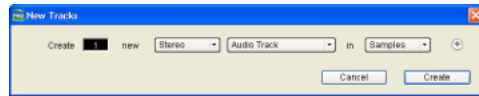


*Creating a new stereo audio track*

**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.
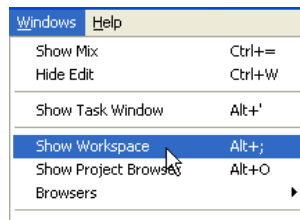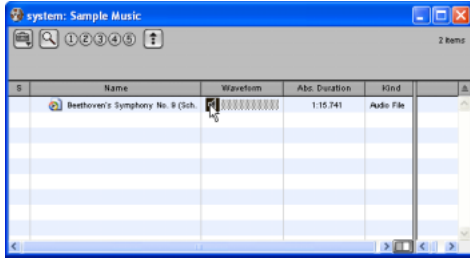


*Opening the Workspace Browser*

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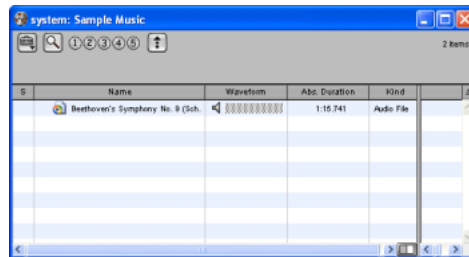


*Browsing in the Workspace Browser*

**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.
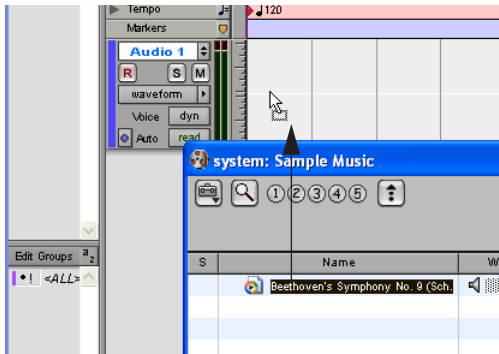


*Dragging the audio file from the Workspace Browser to an audio track*

**To play back the new track:**

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

**2** 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

### To bounce 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.
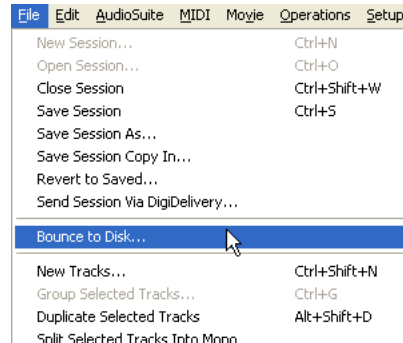


*Choosing Bounce to Disk from the file menu*

**3** In the Bounce Options dialog, choose Analog Outputs 1–2 as the Bounce Source.
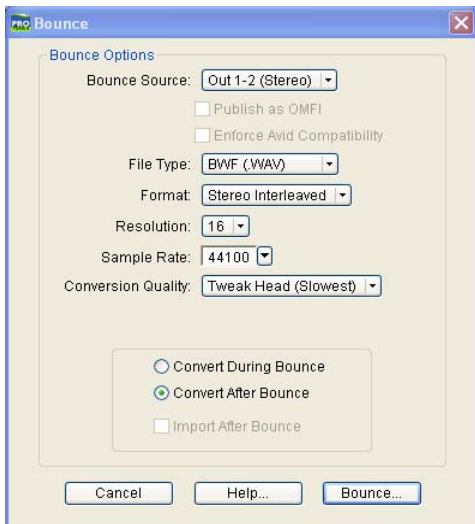
**4** Choose BWF (.WAV) for the File Type.

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

**6** Choose 16 for the Resolution and 44100 for the Sample Rate.
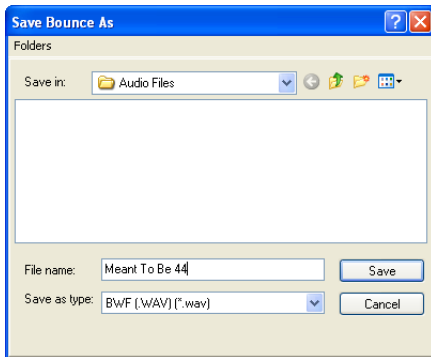
**7** Set the Conversion Quality.

💡 *For the best quality, choose Tweak-Head (Slowest).*

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



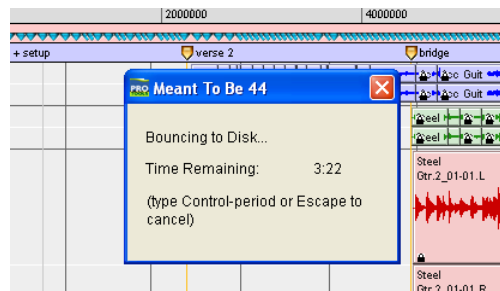*Bounce options for creating CD burnable tracks*

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



*Save Bounce As dialog*

**10** 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.*

# M-Powered 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 a MIDI interface. Audio from your MIDI instrument can be sent to an external mixer or monitored through your M-Audio interface.

📖 *Some M-Audio interfaces (such as Ozonic) are also a MIDI keyboard with MIDI ports.*

*Other M-Audio interfaces (such as Audiophile 192) include MIDI ports.*

*Refer to your M-Audio interface guide for details.*
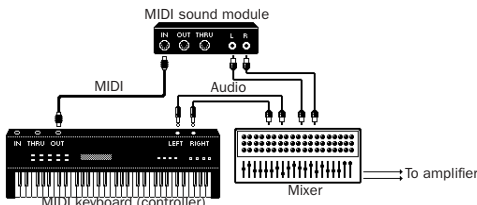


*Signal paths for MIDI instruments*

For more information on monitoring through your M-Audio interface, see "Monitoring MIDI Instruments Without a Mixer" on page 15.

**To configure a MIDI track for recording:**

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

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

**3** In the Mix window, click the track's MIDI Input Selector and assign the device and channel that will be recorded.
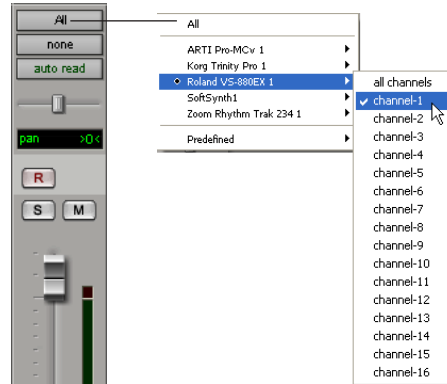


*MIDI Input Selector*

**4** 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 interface port, a channel, or a device from the pop-up menu (choices vary depending on the operating system and Pro Tools version).
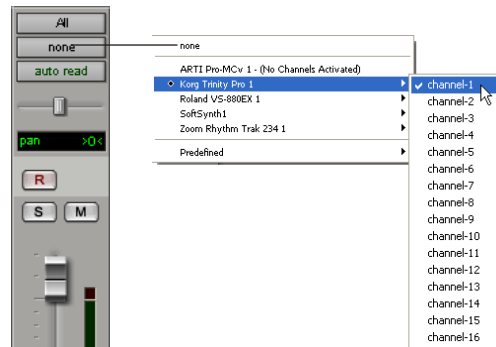


*MIDI Output Selector*

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

**6** 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. 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 inputs on your M-Audio interface.

**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 M-Audio interface.

**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

Because Pro Tools M-Powered uses your computer for all audio processing, playback, and recording, there is a small amount of audio delay, or latency, in the system.

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.

This amount of latency is related to the H/W Buffer Size—the larger the buffer size the larger the latency.

You can reduce the amount of monitoring latency for Pro Tools systems by reducing the H/W Buffer Size. However, even at the smallest buffer size, there is still some latency. In addition, reducing the buffer size limits the number of simultaneous audio tracks you can record without encountering performance errors, and reduces the number of plug-ins you can use.

While there may be times when you want a larger buffer size, for the sake of higher track counts with more plug-ins, you will generally want a smaller buffer size when recording audio that is monitored through your Pro Tools system.

If you are monitoring the recording source with an external mixer, before it is routed to Pro Tools, you will not hear any latency.

📓 *Some M-Audio interfaces provide additional hardware monitoring options. Refer to your M-Audio interface guide for details.*

**To set the Hardware Buffer Size:**

**1** Choose Setups > Playback Engine.

**2** Choose the number of samples from the H/W Buffer Size pop-up menu.

**3** Click OK.

⚠ *Computers with slower CPUs may not be able to use the 128 buffer size without encountering performance errors.*