# Getting Started with Digi ToolBox XP

## Version 5.1 for Macintosh and Windows 98/Me

**digidesign**®

A division of **Avid**

# contents

## chapter 1

# Digi ToolBox XP Introduction

## About Digi ToolBox XP

Thank you for purchasing Digi ToolBox XP, a cross-platform solution for music, sound design, and multimedia production. The Digi ToolBox XP package includes the following:

- Installer CD-ROM containing Pro Tools LE recording software, RTAS (Real-Time AudioSuite) plug-ins, and online PDF guides
- *Digi ToolBox XP Getting Started Guide*, documents installation, configuration, and basic tutorials for Digi ToolBox XP
- Audiomedia III PCI card with high-quality audio connections
- 3 stereo, one meter, audio cables (RCA-RCA), for connecting to audio and S/PDIF devices
- Digidesign Registration card

## Pro Tools LE Capabilities

The Pro Tools LE software provides the following capabilities:

- Record and play up to 24 mono digital audio tracks (depending on your computer's capabilities)
- Record and play up to 128 MIDI tracks
- Use non-linear, random-access editing and mix automation
- Process audio with up to 5 RTAS plug-ins per track, limited only by your computer's capabilities
- Use up to 5 inserts and 5 sends per track
- Route up to 32 busses
- Work with 16-bit or 24-bit sessions

⚠ *Pro Tools LE uses your computer's CPU to mix and process audio tracks (host processing). Computers with faster clock speeds yield higher track counts and more plug-in processing.*

## Audiomedia III Capabilities

The Audiomedia III card provides the following high-quality inputs and outputs for recording and playing digital audio:

- 2 analog audio inputs, RCA (unbalanced) connectors, –10 dBV
- 2 analog audio outputs, RCA (unbalanced) connectors, –10 dBV
- S/PDIF digital input and output, RCA connectors

# System Requirements

Digi ToolBox XP can be used on a Power Macintosh or Intel computer.

**To use Pro Tools LE on a Macintosh, you need:**

- A Digidesign-qualified Power Macintosh (G4 recommended)
- Mac OS 9.0 or 9.1
- At least 128 MB RAM (192 recommended)
- CD-ROM drive for software install
- QuickTime 4.0 or later (included with Pro Tools LE)
- OMS 2.3.8 or later (included with Pro Tools LE)

**To use Pro Tools LE on Windows, you need:**

- A Digidesign-qualified Intel computer (PIII recommended)
- Windows Millennium Edition or Windows 98, Second Edition
- At least 256 MB RAM
- CD-ROM drive for software install

## 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, and third-party devices, refer to the latest compatibility information on the Digidesign Web site:

www.digidesign.com/compato/

## Digidesign Registration

Make sure to complete and return the registration card included with Digi ToolBox XP. Registered users are entitled to one year of free technical support, and will receive periodic software updates and upgrade notices.

## About the Guides

This Quick Start Guide will get you started using Digi ToolBox XP to record, edit, and mix multiple audio and MIDI tracks. For additional information, see the following online guides:

• *Pro Tools Reference Guide*, documents in detail Pro Tools LE software

• *DigiRack Plug-Ins Guide*, documents how to use the RTAS and AudioSuite plug-ins included with Pro Tools LE

• *MIDI Control Surfaces Guide*, documents how to use MIDI control surfaces such as the Mackie HUI with Pro Tools LE

• *Keyboard Shortcuts* (Macintosh and Windows), lists keyboard shortcuts for Pro Tools LE

PDF versions of these guides are installed automatically with Pro Tools LE, and can be easily accessed from the Help menu in Pro Tools LE. To read the guides online, or print them, you must install Acrobat Reader (included on the Pro Tools LE Installer CD).

### Conventions Used in This Guide

Digidesign guides use the following conventions to indicate menu choices and key commands:

| Convention | Action |
|---|---|
| File > Save Session | Choose Save Session from the File menu |
| Control+N | While pressing the Control key, press the N key |
| Option-click | While pressing the Option key, click the mouse button |
| Right-click (Windows) | Click with the right mouse button |

The following symbols are used to highlight important information:

💡 *User Tips are helpful hints for getting the most from your system.*

⚠️ *Important Notices include information that could affect your data or the performance of your system.*

📄 *Cross References point to related sections in other Digidesign guides.*

## Choose and Select

The words "choose" and "select" are often interchangeable in conversational english. In this guide, however, there is a distinction between the two terms.

**Select** When the guide instructs you to *select* something, it stays selected. This is the case with dialog box options and menu items that enable or disable an option.

**Choose** When the guide instructs you to *choose* something, a one-time action is performed. This is the case with most menu commands; they perform their chosen action only once.

## chapter 2

# Macintosh Configuration

## Installing the Digi ToolBox XP Hardware

Before installing the Pro Tools LE software, first install the Audiomedia III card.

**To install the Audiomedia III card in your Macintosh:**

**1** Turn off your computer. Leave it plugged in so that it is grounded.

**2** Open the computer case. If necessary, refer to the manufacturer's instructions for details.

**3** Remove the rear slot cover and screw of any available PCI expansion slot.
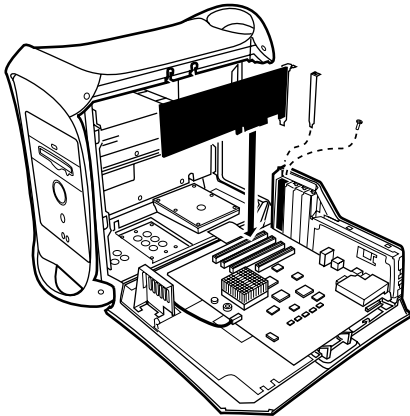


*PCI card installation for Macintosh Blue & White G3*

**4** Before handling the Audiomedia III card, discharge any static electricity by touching the outer casing of the power supply.

**5** Remove the Audiomedia III card from its anti-static bag.

**6** Hold the card gently by the top edges, and line up its PCI connector with the PCI slot inside the computer.

**7** When the connector and slot are aligned, press the card into the slot using firm, even pressure. The card should click into place. Secure the card with the previously removed screw. Make sure the card's audio connectors are accessible through the rear slot of the computer.



Audiomedia III card

Available PCI slot
in your computer
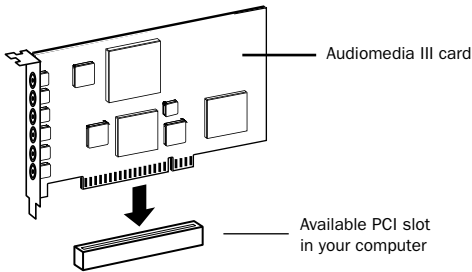
*PCI card installation*

**8** Close the computer case and turn on the computer.

# Installing the Pro Tools LE Software

## Apple System Software Settings

To ensure optimum performance with the Pro Tools LE software, configure the Apple System software with the following settings.

**To configure the Apple System software:**

**1** In the Memory Control Panel do the following:

• Set Virtual Memory to Off.

• Set the Ram Disk to Off.

• Set the Disk Cache to a Custom Setting of 512K.

**2** In the Energy Saver Control Panel, set the "inactive" time to Never.

**3** In the Appearance Control Panel do the following:

• Click the Fonts tab and set the Large System Font to Chicago. In addition, deselect "Smooth all fonts on screen."

• Click the Sound tab and select None from the Sound Track pop-up menu.

**4** Set the number of colors to thousands in the Monitors & Sound Control Panel. If you are using a Power Macintosh 9600, set the number of colors to 256.

**5** In the Extensions Manager Control Panel do the following:
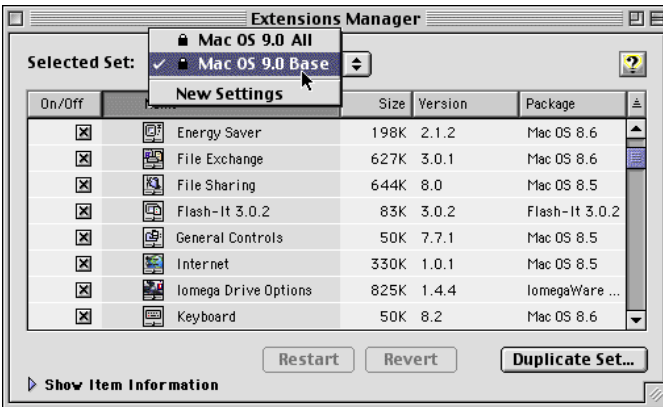


*Extensions Manager Control Panel*

• Choose Mac OS 9.0 Base (or Mac OS 9.1 Base) from the Selected Set pop-up menu.

• Click Restart to restart your computer.

## Pro Tools LE Installation

After the Apple System software settings are configured, install Pro Tools LE.

**To install Pro Tools LE on your Macintosh:**

**1** Insert the Pro Tools LE Installer CD in your CD-ROM drive. Locate and double-click "Install Pro Tools LE."



Install Pro Tools LE

**2** At the Install window, select the install option for Pro Tools LE, and set the Install Location to your Startup hard drive. Click Install.

**3** Follow the on-screen installation instructions.

**4** When installation is complete, click Quit (not Restart) and install the demo sessions (see "Installing the Demo Session" on page 8) and OMS (see "Installing and Configuring OMS" on page 8).

### Installing the Demo Session

The Digi ToolBox XP system includes two demo sessions, *Pro Tools SoundCheck ToolBox*, which you can use to verify that your system is working, and *Be There Toolbox*, a more full-featured demo that you can use to test system playback, and to learn some features of Pro Tools LE using the tutorial information in Chapter 5, "Working with the Demo Session."

⚠ *Before installing the demo sessions to your audio drive, make sure the drive is configured as described in "Hard Drive Requirements" on page 12.*

**To install the demo sessions:**

**1** Insert the Pro Tools LE Installer CD in your CD-ROM drive. Locate and double-click "Install PT LE Demo Session."

**2** At the Install Screen, make sure the install options for "Be There Session" and "SoundCheck Session" are selected.

**3** Set the Install Location to your audio drive and click Install.

**4** When installation is complete, click Quit.

## Installing and Configuring OMS

**(Macintosh Only)**

To use Pro Tools on the Macintosh you must first install and configure the Open Music System (OMS). OMS, which is included on the Pro Tools Installer CD, has the following capabilities:

- Keeps track of which MIDI devices you are using, how they are connected, and which patches they are using

- Enables MIDI hardware to communicate with your music applications

- Provides timing services and inter-application communication

OMS stores a description of your MIDI studio in *Studio Setup* documents, which are edited in the *OMS Setup* application. Once OMS is configured, your music applications know which MIDI devices you are using by referencing the current Studio Setup document.

The following sections provide basic instructions for installing and configuring OMS. For more detailed information, refer to the online *OMS Guide* installed with Pro Tools.

# Installing OMS

The OMS Installer is located on your Pro Tools Installer CD-ROM.

**To install OMS:**

**1** Insert the Pro Tools Installer CD in your CD-ROM drive.

**2** Open the "OMS Installer" folder and double-click the OMS installer.

**3** At the Install window, select the Easy Install option, and set the Install Location to your Startup hard drive. Click Install.

**4** Follow the on-screen installation instructions.

**5** When the installation is complete, restart your Macintosh.

# Configuring a New Studio Setup

## (First-Time OMS Users Only)

Before configuring OMS, make sure your MIDI interface is connected according to the manufacturer's instructions and turned on.

**To configure a New Studio Setup in OMS:**

**1** Launch the OMS Setup application. If OMS has not yet been configured, you'll be prompted to configure a New Studio Setup. Click OK.

**2** Select whether your MIDI interface is connected to the Modem or Printer port. If using a USB or PCI-based MIDI interface, leave both ports unchecked. Click Search.
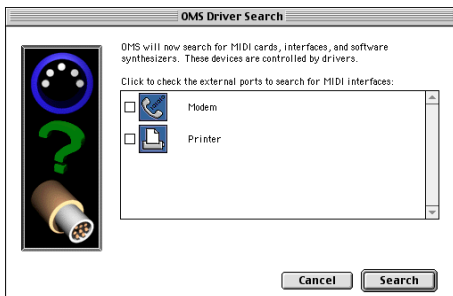


*Ports for OMS Driver Search*

OMS searches for and displays any detected MIDI interfaces, MIDI cards, and OMS drivers. If your interface is not detected, click Troubleshoot. Once your interface *is* detected, you are prompted to search for MIDI instruments connected to your interface.

**3** Click OK to search for MIDI devices connected to your MIDI interface. To be detected, the device must be turned on with both of its MIDI ports connected to your MIDI interface.
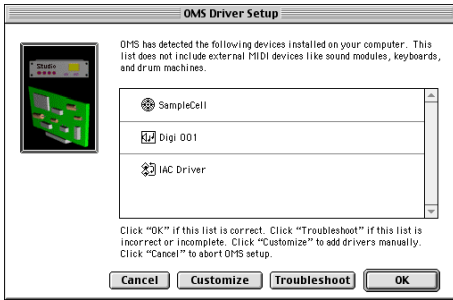


*OMS Driver Setup*

OMS searches for and displays any detected MIDI devices. Some older instruments, as well as some newer ones, may not be recognized by the OMS auto-detection routines.



*Undefined OMS device*

Devices not recognized by OMS appear with a red question mark and are named based on the interface or port to which they are connected. These devices can be defined as necessary within the OMS Setup application (see "Defining MIDI Devices in OMS" on page 11).

**4** Click OK to save your Studio Setup document.

### Defining MIDI Devices in OMS

**To define a MIDI device in OMS Setup:**

**1** Double-click the device's icon in the Studio Setup window.

**2** In the MIDI Device Info dialog, select the Manufacturer and Model for the device from the pop-up menus. If the device is not listed, leave the Model set to "other" and enter a name for the device.
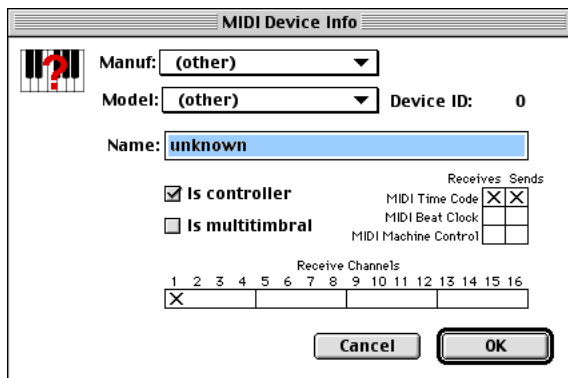


*MIDI Device Info*

**3** Select the Receiving Channel for the device. If receiving multiple channels, select the option for "Is Multitimbral."

**4** If you will record from the device in Pro Tools, select the option for "Is Controller." If the device will be a source or destination for MIDI Time Code, Beat Clock, or MIDI Machine Control, select the appropriate option.

**5** Click Ok.

### Disabling Serial DMA in OMS

Pro Tools requires that you deselect the "Use Apple Serial DMA Driver When Available" option in OMS Setup. If you do not disable this option, problems will occur with MIDI and synchronization functions within Pro Tools.

**To disable Serial DMA in OMS:**

**1** Double-click the OMS Setup application.

**2** Choose Edit > Preferences.

**3** Deselect "Use Apple Serial DMA Driver When Available" and click OK.

**4** Quit OMS Setup.

# Hard Drive Requirements

For audio recording and storage on the Macintosh, Pro Tools LE requires one or more qualified ATA/IDE or SCSI drives with the following properties:

• Formatted with HFS or HFS+ file system

• Data transfer rates of 3 MB per second or faster

• Drive spin speed of 7,200 RPM or faster

• Average seek time of 10.0 milliseconds or faster

> 📋 *For the latest compatibility information on hard drives and SCSI host bus adapters, visit the Digidesign Web site (www.digidesign.com/compato/).*

### Using System Drives for Audio

Although Pro Tools will let you record to your system drive, this is generally not recommended. Performance for recording and playback on system hard drives is worse than on non-system drives, resulting in lower track counts and fewer plug-ins.

You should record to system drives only when absolutely necessary—if your computer system has just one hard drive, or if your other hard drives are completely out of space.

### SCSI Hard Drives

SCSI hard drives offer several advantages over ATA/IDE drives. First, SCSI drives can be external and therefore provide portable audio storage that is easily moved between systems. Second, SCSI drives offer slightly better performance when recording to large numbers of tracks; attempting to record to a large number of audio tracks with an ATA/IDE drive will result in a short delay before recording begins. For the latest compatibility information on SCSI controller cards visit *www.digidesign.com*.

### Initialize and Defragmenting Drives

It's recommended that you start with a newly initialized audio drive. You should also periodically *defragment* your audio drive to ensure continued system performance.

If you are using a SCSI hard drive, you can use the *ExpressPro-Tools* software from ATTO (included on the Pro Tools LE Installer CD) to initialize the drive. If you are using an ATA/IDE hard drive, use the *Drive Setup* utility included with the Apple System software.

### Hard Drive Storage Space

Mono audio tracks recorded with 16-bit resolution at 44.1 kHz (CD-quality) require approximately 5 MB of hard disk space per minute. The same tracks recorded with 24-bit resolution require about 7.5 MB per minute. The following table lists the required drive space for certain track numbers and track lengths. In deciding the required hard drive space for your needs, plan accordingly.

*Required hard drive space for audio tracks*

| Number of tracks and length | 16-bit at 44.1 kHz | 16-bit at 48 kHz | 24-bit at 44.1 kHz | 24-bit at 48 kHz |
|---|---|---|---|---|
| 1 mono track, 1 minute | 5 MB | 5.5 MB | 7.5 MB | 8.2 MB |
| 1 stereo track (or two mono tracks), 5 minutes | 50 MB | 55 MB | 75 MB | 83 MB |
| 1 stereo track (or two mono tracks), 60 minutes | 600 MB | 662 MB | 900 MB | 991 MB |
| 24 mono tracks, 5 minutes | 600 MB | 662 MB | 900 MB | 991 MB |
| 24 mono tracks, 60 minutes | 7 GB | 7.8 GB | 10.5 GB | 11.6 GB |

# Launching Pro Tools LE the First Time

### Serial Number Entry

When launching Pro Tools LE the first time, you are prompted to enter a serial number.



*Serial number entry for Pro Tools*

The serial number is located on the inside cover of this guide. Enter it in the dialog when prompted, making sure to observe any spaces and capitalization, then click Validate.

# chapter 3

# Windows Configuration

## Windows System Settings Modifications

Before installing any hardware or software, first configure the following Control Panel settings in Windows. These settings are required to ensure optimum performance for Pro Tools LE on Windows.

**Disable Auto Insert Notification for CD-ROM and removable media drives:**

**1** From the desktop, right-click My Computer and choose Properties.

**2** In the System Control Panel, click the Device Manager tab.

**3** Locate and double-click the device for your CD-ROM. In the CD-ROM Properties dialog, click the Settings tab.

**4** Deselect the option for Auto Insert Notification and click OK.

**5** Repeat for any removable media devices, such as CD-R, CD-RW, Jaz, and Zip drives.

**6** Close the System Control Panel.

**Enable DMA for any IDE hard drives:**

**1** From the desktop, right-click My Computer and choose Properties.

**2** In the System Control Panel, click the Device Manager tab.

**3** Locate and double-click the device for your IDE hard drive. In the Disk Drive Properties dialog, click the Settings tab.

**4** Select the DMA option and click OK.

**5** Repeat for any additional IDE drives.

**6** Close the System Control Panel.

### Other Software and Hardware Affecting System Performance

Pro Tools LE can also be affected by other software and hardware drivers installed on your computer. For best possible performance, it is recommended that you:

• Avoid running other Windows programs at the same time as Pro Tools LE.

• Turn off any software utilities that run in the background, such as calendars and virus protection.

• Disable Windows System sounds. In the Sound Control Panel, set the Sound Scheme to No Sounds.

• If your video display card supports it, enable Bus Mastering in the manufacturer's Control Panel.

• Disable any networking cards.

## Installing the Digi ToolBox XP Hardware

Before installing the Pro Tools LE software, first install the Audiomedia III card.

**To install the Audiomedia III card in your Intel computer:**

**1** Turn off your computer. Leave it plugged in so that it is grounded.

**2** Open the computer case. If necessary, refer to the manufacturer's instructions for details.

**3** Remove the rear slot cover and screw of any available PCI expansion slot.

**4** Before handling the Audiomedia III card, discharge any static electricity by touching the outer casing of the power supply.

**5** Remove the Audiomedia III card from its anti-static bag.

**6** Hold the card gently by the top edges, and line up its PCI connector with the PCI slot inside the computer.
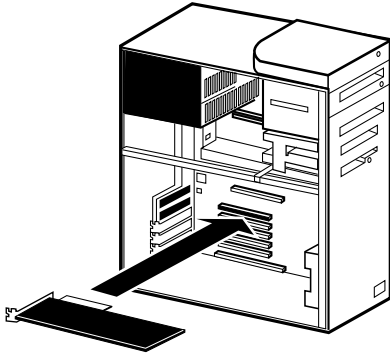


*PCI card installation for an Intel computer*

**7** When the connector and slot are aligned, press the card into the slot using firm, even pressure. The card should click into place. Secure the card with the previously removed screw. Make sure the card's audio connectors are accessible through the rear slot of the computer.



Audiomedia III card

Available PCI slot
in your computer
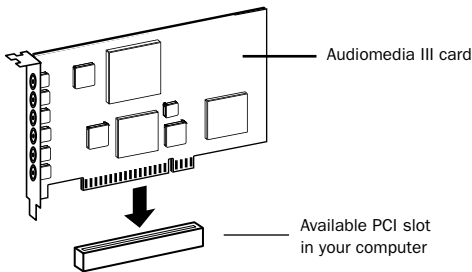
*PCI card installation*

**8** Replace the computer case and turn on the computer.

# Installing the Windows Wave Drivers

Once you've installed the Audiomedia III card and have turned on your computer, the Add New Hardware Wizard will prompt you to install the necessary Windows drivers.

**To install the WIndows wave drivers:**

**1** When the Add New Hardware Wizard appears, click Next.



*Add New Hardware Wizard, Windows*

**2** When Windows asks what you want to do, select the option for "Display a list of all the drivers in a specific location" and click Next.

**3** From the list of device types, select "Sound, video & game controllers," then click Next.

**4** Insert the Pro Tools LE CD and click Have Disk.

**5** Click Browse. Navigate to and select the WaveDriver98 folder on the Pro Tools LE CD, then click OK.

**6** Click OK to close the Install from Disk dialog.

**7** In the Select Device dialog, choose the Digidesign Audiomedia III as your device and click OK.

**8** Click Next to install the necessary driver components.

⚠ *If you are prompted that "DigiProx: Cannot run with this version of XXXXX.dll," follow the instructions in this dialog.*

**9** Once Windows has finished installing the software for your new hardware device, click Finish.

**10** When the installation is complete, restart your computer.

## Updating Older Wave Drivers

If you are already a Pro Tools user and are installing a new version of the Pro Tools LE software, the Pro Tools LE Installer will automatically update your existing wave drivers.

# Installing the Pro Tools LE Software

After installing the Digi ToolBox XP hardware and its wave drivers, install Pro Tools LE.

**To install Pro Tools LE on Windows:**

**1** Insert the Pro Tools LE Installer CD in your CD-ROM drive. A window opens displaying the CD-ROM contents.

**2** Open the Pro Tools LE Installer folder and double-click the Setup program.



**3** When the installer opens, click Next to proceed.

**4** Choose from the following three install options:

• Typical, recommended for first-time users

• Compact, installs the minimum components necessary to run Pro Tools LE

• Custom, lets you select which components are installed (for advanced users)

**5** Click Next to install the selected option. Files are installed to the Digidesign folder inside the Program Files folder.

**6** When installation is complete, restart your computer.

## Installing the Demo Session

The Digi ToolBox XP system includes two demo sessions, *Pro Tools SoundCheck ToolBox.pt5*, which you can use to verify that your system is working, and *Be There ToolBox.pt5*, a more full-featured demo that you can use to test system playback, and to learn some features of Pro Tools LE using the tutorial information in Chapter 5, "Working with the Demo Session."

⚠ *Before installing the demo sessions to your audio drive, make sure the drive is configured as described in "Hard Drive Requirements" on page 21.*

**To install the demo sessions:**

**1** Insert the Pro Tools LE Installer CD in your CD-ROM drive. A window opens displaying the CD-ROM contents.

**2** Open the Pro Tools Demo Installer folder and double-click the Setup program.

**3** When the installer opens, click Browse to set the destination folder to your audio drive, then click Next.

**4** Select the install components for the SoundCheck Session and Be There Session.

**5** Click Next to install the demo sessions.

## Removing the Pro Tools LE Software

If for some reason you need to remove the Pro Tools LE software, you can do so from the Add/Remove Program Control Panel. You can also, if desired, remove the Audiomedia III wave driver from the System Control Panel.

**To remove Pro Tools LE from your system:**

**1** Choose Start > Settings > Control Panel.

**2** Double-click Add/Remove Programs.

**3** From the list of programs, select Pro Tools LE and click Add/Remove.

**4** If the UnInstall Shield prompts you to remove shared files, click Yes to All.

**5** Select Digidesign System Files from the list of programs and click Add/Remove.

**6** Close the Add/Remove Programs Control Panel.

**7** Restart your computer.

**To remove the Audiomedia III wave driver:**

**1** From the desktop, right-click My Computer and choose Properties.

**2** In the System Control Panel, click the Device Manager tab.

**3** Locate and select the Audiomedia III device, then click Remove.

**4** When prompted, confirm you want to remove the device.

**5** Close the System Control Panel.

**6** Using Windows Explorer, locate and delete the following file:

Windows\Inf\Other\DigidesignDALWDM.inf

**7** Restart Windows.

# Hard Drive Requirements

**(Windows)**

For audio recording and storage on the Windows, Pro Tools LE requires one or more qualified ATA/IDE or SCSI drives with the following properties:

- Formatted with FAT16 or FAT32 file system (FAT32 recommended)

- Data transfer rates of 3 MB per second or faster

- Drive spin speed of 7,200 RPM or faster

- Average seek time of 10.0 milliseconds or faster

📄 *For the latest compatibility information on hard drives and SCSI host bus adapters, visit the Digidesign Web site (www.digidesign.com/compato/).*

## Using System Drives for Audio

Although Pro Tools will let you record to your system drive, this is generally not recommended. Performance for recording and playback on system hard drives is worse than on non-system drives, resulting in lower track counts and fewer plug-ins.

You should record to system drives only when absolutely necessary—if your computer system has just one hard drive, or if your other hard drives are completely out of space.

## SCSI Hard Drives

SCSI hard drives offer several advantages over ATA/IDE drives. First, SCSI drives can be external and therefore provide portable audio storage that is easily moved between systems. Second, SCSI drives offer slightly better performance when recording to large numbers of tracks; attempting to record to a large number of audio tracks with an ATA/IDE drive will result in a short delay before recording begins.

## Formatting and Defragmenting Drives

It's recommended that you start with a newly formatted audio drive; and for optimum performance, the drive should be formatted with the FAT32 file system. You should also periodically *defragment* your audio drive to ensure continued system performance.

💡 *You can convert hard drives formatted with FAT16 to FAT32 with the Drive Converter utility included with Windows.*

**To format an audio drive:**

1 From the desktop, double-click My Computer.

2 Right-click the hard drive you will use for audio and choose Format.

3 Set the Format Type to Full and click Start.

4 Follow the on-screen instructions. When formatting is complete, close the Format window.

**To defragment an audio drive:**

1 From the desktop, double-click My Computer.

2 Right-click your audio hard drive and choose Properties.

3 Click the Tools tab.

4 Click Defragment Now and follow the on-screen instructions.

5 When defragmenting is complete, close the Properties Control Panel.

## Hard Drive Storage Space

Mono audio tracks recorded with 16-bit resolution at 44.1 kHz (CD-quality) require approximately 5 MB of hard disk space per minute. The same tracks recorded with 24-bit resolution require about 7.5 MB per minute. The following table lists the required drive space for certain track numbers and track lengths. In deciding the required hard drive space for your needs, plan accordingly.

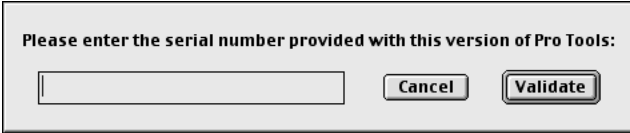*Required hard drive space for audio tracks*

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# Launching Pro Tools LE the First Time

**Serial Number Entry**

When launching Pro Tools LE the first time, you are prompted to enter a serial number.



*Serial number entry for Pro Tools*

The serial number is located on the inside cover of this guide. Enter it in the dialog when prompted, making sure to observe any spaces and capitalization, then click Validate.

# Connecting Your Studio

This chapter explains how to connect the Audiomedia III card to a mixer, amplification system, digital recorders, and other studio devices.

## Inputs and Outputs for Audiomedia III

The Audiomedia III card provides the following connectors:

### S/PDIF Inputs and Outputs

The S/PDIF digital audio input and output jacks are standard RCA connectors. They are the right pair of connectors on the rear of the card. The yellow jack is for digital audio input and the black jack is for digital audio output.

### Analog Audio Inputs

The analog audio inputs are standard –10 dBV unbalanced RCA connectors. They are the middle pair of connectors on the rear of the card. The white jack is for left-channel input and the red jack is for right-channel input.

If your mixer accepts only 1/4″ phone cables for audio connections, use RCA- to-1/4″ adapters, available at most audio dealers.

### Analog Audio Outputs

The analog audio outputs are standard –10 dBV unbalanced RCA connectors. The analog outputs have a fixed headroom at 14 dB below 0 dB (digital full code). They are the left pair of connectors on the rear of the card. The white jack is for left-channel output and the red jack is for right-channel output.
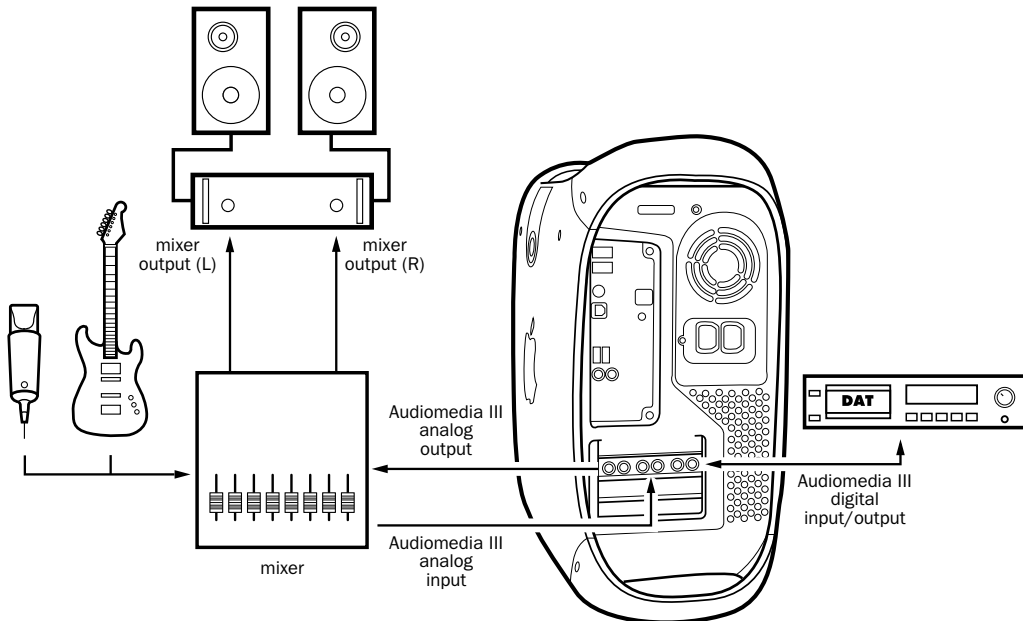
If your mixer accepts only 1/4″ phone cables for audio connections, use RCA- to-1/4″ adapters, available at most audio dealers.

# Making Studio Connections

You can use the Audiomedia III with a variety of audio setups, including:

- a mixer, power amplifier, and speakers
- a mixer and a pair of amplified, self-powered speakers
- a stereo receiver and speakers



*Figure 1. Typical Audiomedia III studio setup*

Your setup will differ depending on which of these audio configurations you use. Figure 1 shows a typical home studio setup consisting of a mixer, power amplifier, and speakers.

## Connecting to Analog Devices

Analog audio signals are output by microphones, synths, mixers, and instruments with magnetic pickups. Of these sources, microphones and magnetic pickup instruments output the quietest signals, and generally require pre-amplification. Keyboards, preamps, and mixers output "line level" audio, which varies with each device between the –10 and +4 standards.

The audio inputs on the Audiomedia III are set to accept –10 signals, and the card also outputs –10 signals. This means that for some analog audio sources, you must use a preamp or mixer to amplify audio to the proper levels. The Audiomedia III has two analog RCA inputs and two analog RCA outputs.

💡 *2-channel (stereo) RCA cables are included with Digi ToolBox XP. If your device requires that you use 1/4" cables, use a two-channel (stereo) RCA-to-1/4" adapter cable, available at most home audio retailers or music stores.*

**To make audio connections to the Audiomedia card:**

**1** Turn down the volume on your audio playback system.

**2** Connect the Audiomedia III card's analog audio outputs to your device's inputs.

**3** Connect the Audiomedia III card's analog audio inputs to your device's outputs.

## Boosting the Output Gain

If the output of the Audiomedia III is too low, you can boost the Output Gain by 6 dB.

**To boost the Output Gain for the Audiomedia III:**

**1** Launch Pro Tools LE and choose Setups > Hardware.

**2** Click Other Options select the option for 6 dB Boost. Click Done.

**3** Click OK to close the Hardware Setup dialog.
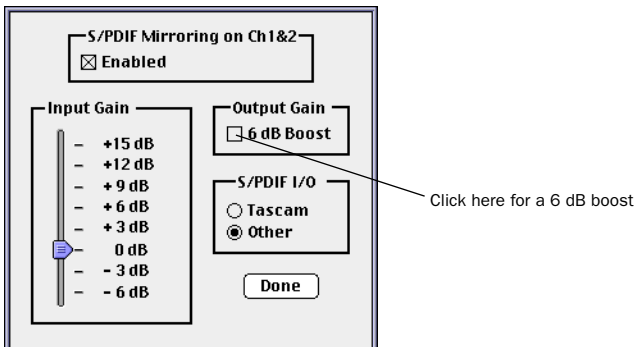


*Setting the 6 dB boost in the Hardware Setup > Other Options dialog*

## Connecting to Digital Devices

Digi ToolBox XP provides digital inputs and outputs for S/PDIF format digital audio. S/PDIF audio signals are used by DAT recorders, digital mixers, and some effects processors. S/PDIF audio signals are transferred entirely in the digital domain with no signal loss.

**To connect to a S/PDIF device:**

**1** Connect the S/PDIF output of your device to the S/PDIF IN connector on the Audiomedia III card. Use one connector on an included 2-channel RCA cable for this connection.

**2** If the device will be receiving S/PDIF signals from the Audiomedia III card, connect the S/PDIF input of your device to the S/PDIF OUT connector on the Audiomedia III card. Use the other connector on the cable used in the previous step.

⚠️ *The next step is only required if your device requires Pro Tools LE to sync to it. (In most cases, it is more desirable for a device to sync to Pro Tools LE.) This might be the case if you are recording from a S/PDIF device. Read your device's documentation for more information.*

**3** If receiving sync from the S/PDIF device, set the Sync Mode in Pro Tools LE. Choose Setups > Playback Engine and select S/PDIF from the Sync Mode pop-up.

Hardware Setup dialog



select the Sync Mode here
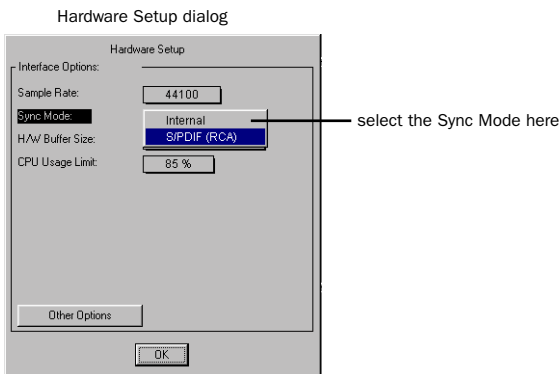
### Tascam DA30 DAT Recorders

If connecting to a Tascam DA30 DAT recorder, you'll need to set the S/PDIF I/O format in Pro Tools LE.

**To set the S/PDIF I/O format in Pro Tools LE:**

**1** Launch Pro Tools LE and choose Setups > Hardware.

**2** Click Other Options and set the S/PDIF I/O to DA30. Click Done.

**3** Click OK to close the Hardware Setup dialog.

## S/PDIF Mirroring

Pro Tools LE uses S/PDIF mirroring to automatically "mirror" the audio that is sent to outputs 1 and 2 on the S/PDIF outputs. This is useful if you are monitoring a mix using your audio outputs, and also recording the same source to an external S/PDIF device.

However, you can disable this S/PDIF mirroring. You might do this if you wanted to use the S/PDIF outs to send a separate signal to an external digital effects unit, or if you wanted to send only certain outputs to the digital device. If you disable S/PDIF mirroring you are able to select the S/PDIF outputs separately, and route tracks or sends to them.

If you change the S/PDIF mirroring status, you must reconfigure the I/O Setup to reflect this change. See "Configuring the I/O Setup" on page 29.

**To enable or disable S/PDIF mirroring:**

**1** Launch Pro Tools LE and choose Setups > Playback Engine.

**2** Click Other Options.

**3** Select or deselect the option "Enable S/PDIF Mirroring."

⚠ *S/PDIF mirroring can only be enabled or disabled in the Playback Engine dialog.*

## Configuring the I/O Setup

If you make a change to the number or type of inputs and outputs you are using (for example, if you turn S/PDIF mirroring on or off), you must reconfigure the I/O Setup in Pro Pro Tools LE. This helps you keep track of which inputs and outputs are available, and what they are named.

**To reconfigure the I/O Setup:**

**1** Choose Setups > I/O Setup.

**2** Select Input, and click Default.

**3** Select Output, and click Default.

**4** Click OK when you are done.

# MIDI Connections

Using a MIDI interface, MIDI keyboard controller, and MIDI instruments allows you to take full advantage of the MIDI features of Pro Tools LE. These include recording and editing MIDI tracks, synchronizing to MIDI Time Code or MIDI Beat Clock (this requires an appropriate MIDI interface) and using a MIDI control surface.

**To connect a MIDI device to a Digi ToolBox XP system:**

**1** Connect the MIDI interface to your computer according to the MIDI interface's documentation.

On older (pre-Blue & White G3) Power Macintosh computers, connect the MIDI interface to the modem port. MIDI timing data output through the modem port is more accurate than the printer port.

**2** Install any MIDI driver software required by the MIDI interface. (Once you have installed your MIDI Interface hardware and software, confirm that it is working properly using the procedure given in the interface's documentation.)

**3** Using standard 5-pin MIDI cables, connect the MIDI Out of your MIDI device or controller to the MIDI In of your MIDI interface.

**4** Connect the MIDI In of your MIDI device or controller to the MIDI Out of your MIDI interface.

**5** Connect the audio outputs of your MIDI device to the audio inputs of the Audiomedia III card (or to an external mixer if you are using one).

*For information on configuring OMS (Open Music System), which is required by Pro Tools LE on the Macintosh, see "Installing and Configuring OMS" on page 8.*

*For information on configuring a MIDI control surface for use with Pro Tools LE, see the online MIDI Control Surfaces Guide.*

# chapter 5

# Working with the Demo Session

## Playing the Demo Session

In this section, you will open and play back the demo session. You can also use the included tutorial to learn some of the mixing and editing features of Pro Tools LE.

### What's a Session?

A session is simply a Pro Tools LE document that contains all of your mixing, editing, and MIDI "instructions" for a song. Session files are covered in detail in the *Pro Tools Reference Guide*.

### Using an Older Macintosh?

Pro Tools LE uses your computer's processor for audio tasks. This processing can be very intensive for older computers, such as pre-G3 Power Macintoshes. If you have an older computer, the following steps will help you get better performance from Pro Tools LE.

**To set up Pro Tools LE for a slower, pre-G3 Macintosh:**

**1** Launch Pro Tools LE by opening the Digidesign folder, then the Pro Tools folder, and double-clicking Pro Tools LE.

**2** Set the Hardware Buffer Size. Choose Setups > Hardware, then set the H/W Buffer Size to 1024 samples, using the pop-up.

**3** Set the maximum CPU usage limit, by setting the CPU Usage Limit in the Hardware Setup dialog to 85%, using the pop-up. Click OK.
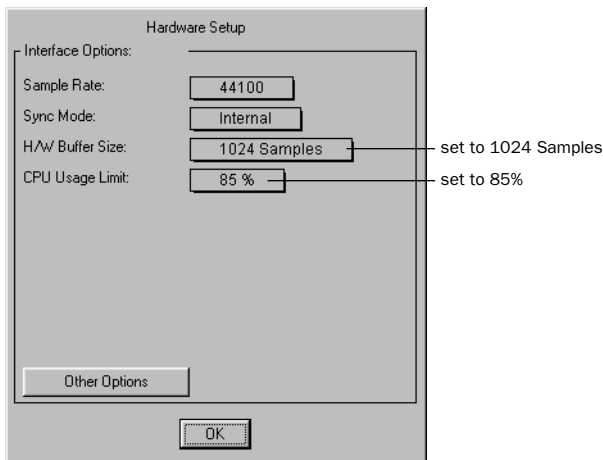


*Hardware Setup dialog, showing settings for slower Macintosh computers*

## Using a Slow Windows PC?

Pro Tools LE uses your computer's processor for audio tasks. Although most supported Windows machines will have plenty of horsepower to run Pro Tools LE, you may experience performance problems with slower computers. If you have an older computer, the following steps will help you get better performance from Pro Tools LE.

**1** Launch Pro Tools LE by choosing Start > Programs > Digidesign > Pro Tools > Pro Tools LE.
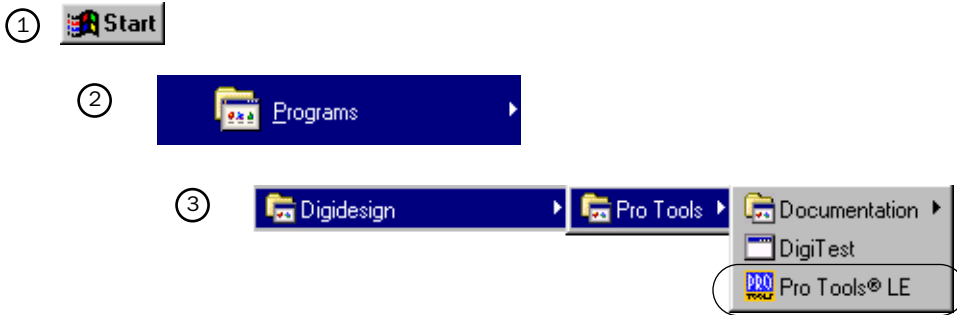


*Launching Pro Tools LE in Windows*

**2** Set the maximum Hardware Buffer Size. Choose Setups > Hardware, then set the H/W Buffer Size to between 512 and 1024 samples, using the pop-up.



Set buffer size in this range for slower Windows PCs
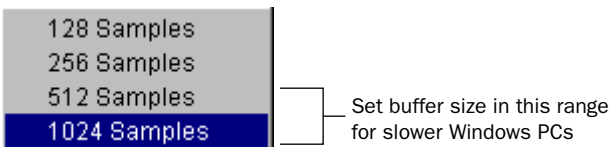
*Buffer settings for slower Windows PCs*

**3** Set the maximum CPU usage limit, by setting the CPU Usage Limit in the Hardware Setup dialog to 85%, using the pop-up.

## How the Demo Session is Structured

The Pro Tools LE demo session actually contains two different mixes of the song "Be There." The first mix shows off the cool features and great sound quality of Pro Tools LE. The second mix guides you along with the tutorial information included in this guide. Go to "Mixing the Demo Session Tutorial" on page 36 when you're ready to start this tutorial.
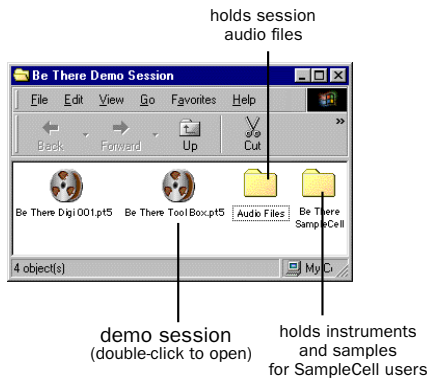
## Play the Demo Session

**To play the demo session:**

**1** Locate the demo session on the audio drive that you chose when you installed it. On the audio drive, open the folder *Pro Tools LE Demo Sessions*. Then open the folder *"Be There" Demo Session* (Macintosh) or *Be There Demo Session* (Windows).

**2** Double-click the session file, *Be There ToolBox* (Macintosh) or *Be There ToolBox.pt5* (Windows) to open the session (if Pro Tools LE is not running, this will automatically launch it).
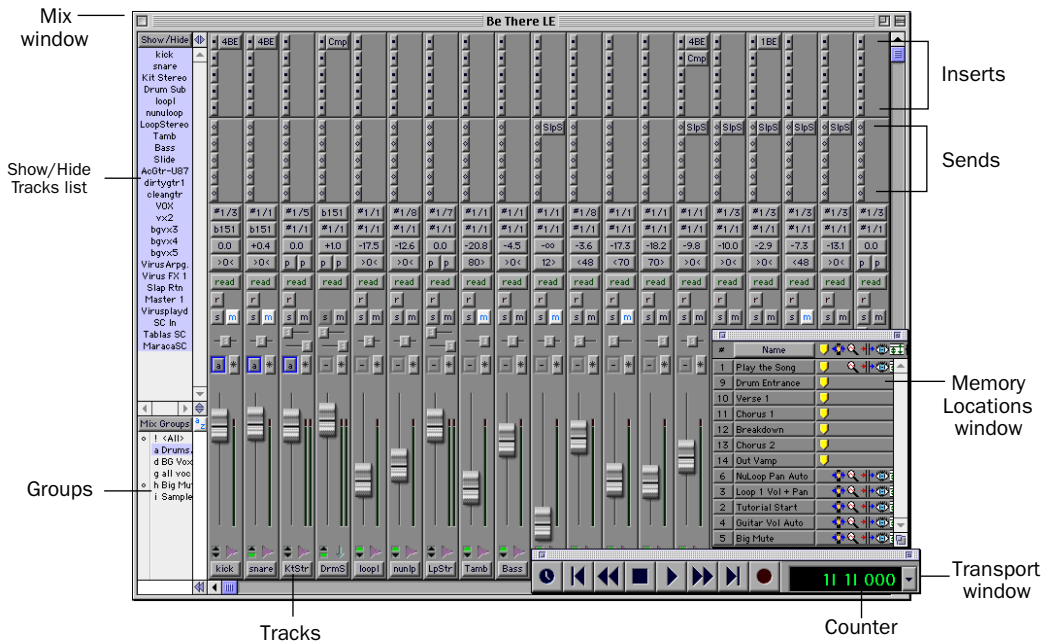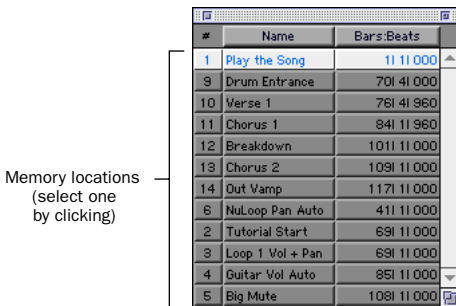
Macintosh
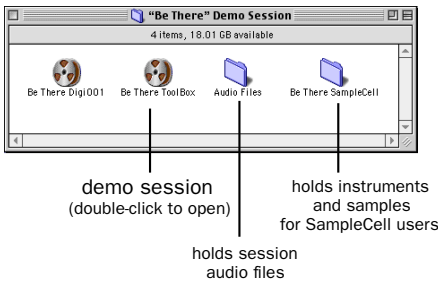
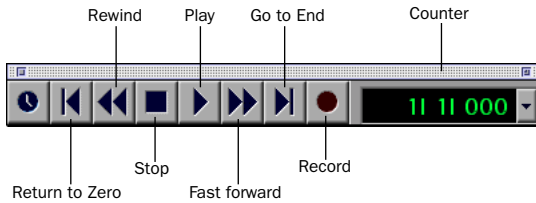Windows

"Be There" opens, and appears like this:



*Be There demo session, showing the Mix, Memory Locations, and Transport windows*

**3** Click the first Memory Location, "Play the Song," in the Memory Locations window. This Memory Location locates the beginning of the song. If the Memory Locations window is not showing, choose Windows > Show Memory Locations to show it.



*Memory Locations window*

**4** Click Play in the Transport window. If the Transport window is not showing, choose Windows > Show Transport to show it.



*Transport window*

**5** You should hear the song playing back. Click Stop to stop playback.

---

# Mixing the Demo Session Tutorial

Now it's time to start mixing audio in Pro Tools LE. But first, a common question answered for you:
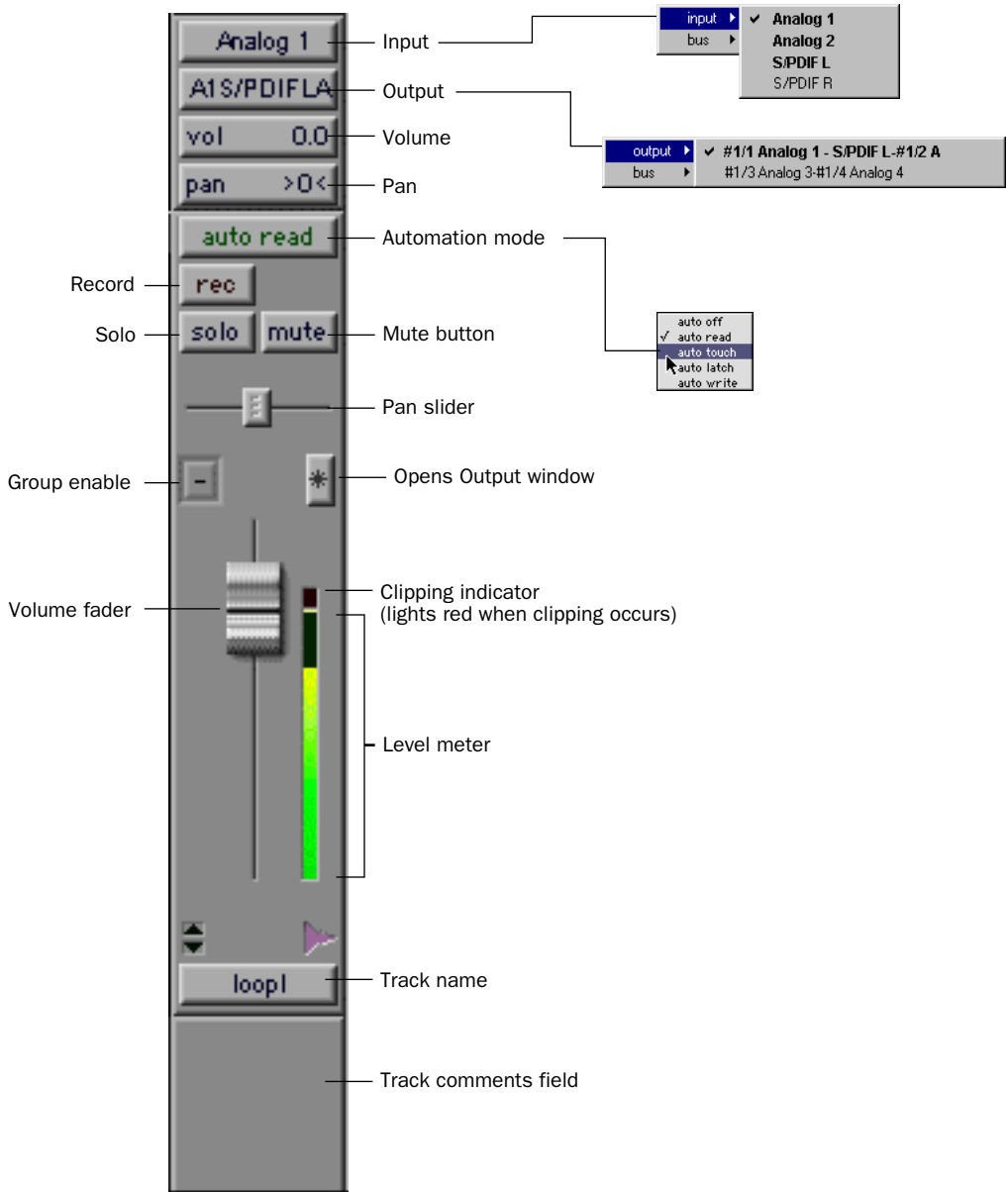
## Can I ruin my recording?

When you edit and mix audio in a session, you don't actually change the underlying audio files. So even with many different sessions based on the same audio files, with different mixes and arrangements, your audio files remain physically unchanged, safe within the session's Audio Files folder. You don't lose your valuable recordings when you change your mix or save a different session, and you can freely try arrangements and ideas.

## The Pro Tools LE Workspace

Pro Tools LE provides two main windows for visual display of your tracks—the Mix window and the Edit window. We'll start working with the Mix window, and later we'll work in the Edit window.

The Mix window looks and operates like a hardware mixer with automation. Each track is represented as a *channel strip*. Channel strips have controls for volume, panning, automation, inserts and sends, recording, and more.

Input — Analog 1

input ▸ ✓ **Analog 1**
bus ▸ **Analog 2**
**S/PDIF L**
S/PDIF R

Output — A1 S/PDIFLA

output ▸ ✓ **#1/1 Analog 1 - S/PDIF L-#1/2 A**
bus ▸ #1/3 Analog 3-#1/4 Analog 4

Volume — vol 0.0

Pan — pan >0<

Automation mode — auto read

Record — rec

Solo — solo

Mute button — mute

auto off
✓ auto read
auto touch
auto latch
auto write

Pan slider

Group enable

Opens Output window

Volume fader

Clipping indicator
(lights red when clipping occurs)

Level meter

Track name — loop1

Track comments field

*Channel strip in the Mix window and associated pop-ups*

**To view the Mix window:**

■  Select Windows > Show Mix.

The demo session is set up with the Narrow Mix Window enabled. This allows you to view more tracks in the Mix window by making the channel strips narrower.

**To make a normal-width Mix window narrow, or a narrow Mix window normal-width:**

■  Select or deselect Display > Narrow Mix Window.

## All Right, Let's Mix!

Now that you've been introduced to some elements of the Mix window, it's time to dive in and start mixing the demo session.
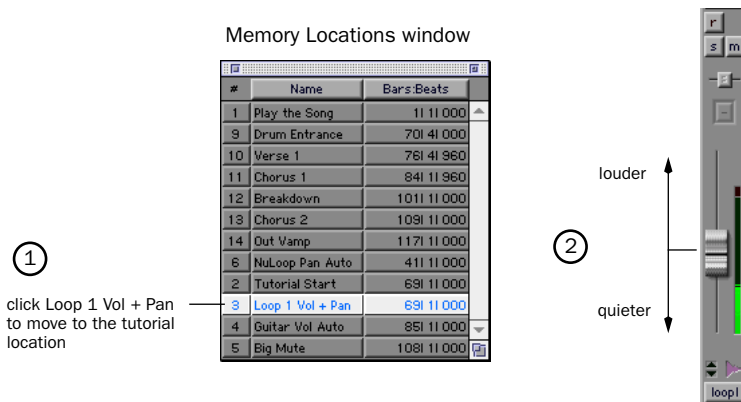
### Adjusting the Volume of a Track

First, adjust the volume of the track called "loop1." Start by clicking the Memory Location "Loop 1 Vol + Pan" in the Memory Locations window. This window, shown in the illustration that follows, is used to navigate to specific locations in a session.

Play the session and view the Mix window, then adjust the volume of the track labeled "loop1" up and down, and listen to the difference in the mix. The volume is indicated on the track's Volume indicator.

**To adjust the volume of a track:**

**1** Locate the proper tutorial spot by clicking "Loop 1 Vol + Pan" in the Memory Locations window. Now only the channel strip labeled "loop1" and the Master Fader channel strip are showing.

**2** Click the Volume fader on the "loop1" channel strip and move it up or down to increase or decrease volume.

Memory Locations window



| # | Name | Bars:Beats |
|---|------|-----------|
| 1 | Play the Song | 1| 1| 000 |
| 9 | Drum Entrance | 70| 4| 000 |
| 10 | Verse 1 | 76| 4| 960 |
| 11 | Chorus 1 | 84| 1| 960 |
| 12 | Breakdown | 101| 1| 000 |
| 13 | Chorus 2 | 109| 1| 000 |
| 14 | Out Vamp | 117| 1| 000 |
| 6 | NuLoop Pan Auto | 41| 1| 000 |
| 2 | Tutorial Start | 69| 1| 000 |
| 3 | Loop 1 Vol + Pan | 69| 1| 000 |
| 4 | Guitar Vol Auto | 85| 1| 000 |
| 5 | Big Mute | 108| 1| 000 |

① click Loop 1 Vol + Pan to move to the tutorial location
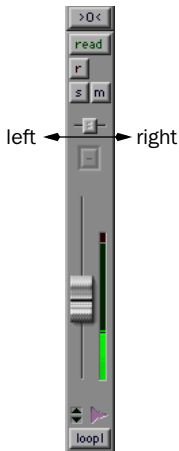
② louder / quieter

loop1

## Panning Tracks

Now try panning the same track. To pan a track, you click the Pan slider and drag it to the left or right, to move the audio in the corresponding direction in the stereo field.

**To adjust panning of a track:**

■ Click the Pan slider and drag it to the left or right to pan the track left or right in the mix.



## Mix Automation

Automation is a way to control the movements of faders, sliders, and other controls of the Pro Tools LE mixer, and to have the controls remember the moves you've made when you play back the session. You can think of automation like a person with a lot of hands and a perfect memory "riding" the controls during a mix.

### Writing Your Own Automation

Let's write some automation for the guitars. Click the Memory Location "Guitar Vol Auto," and click Play in the Transport window. In preparation for your work here, some tracks are muted so you can easily hear how the guitars mix with the bass and drums. First, try mixing the guitar volumes like you mixed the volume for "loop1," and notice how each volume fader moves back to its original position after you let it go.

Starting with the track "cleangtr," set the Automation mode to Auto Write, then move the volume fader during playback to write volume automation. To hear the automation, switch back to Auto Read mode. Then do the same thing for the track "dirty1."

**To write automation:**

**1** Click "Guitar Vol Auto" in the Memory Locations window to go to the tutorial location.

**2** On the track "cleangtr," click the Automation mode button and choose Auto Write for the Automation mode.

**3** Click Play in the Transport window. Automation begins writing for the track you have selected. Move the Volume fader to write changes to the automation.

**4** When you have finished writing automation, click Stop.

Memory Locations window

select Auto Write for the Automation mode

②

③

mix the volume during playback, and your automation is written to the session

①

click Guitar Vol Auto to move to the tutorial location
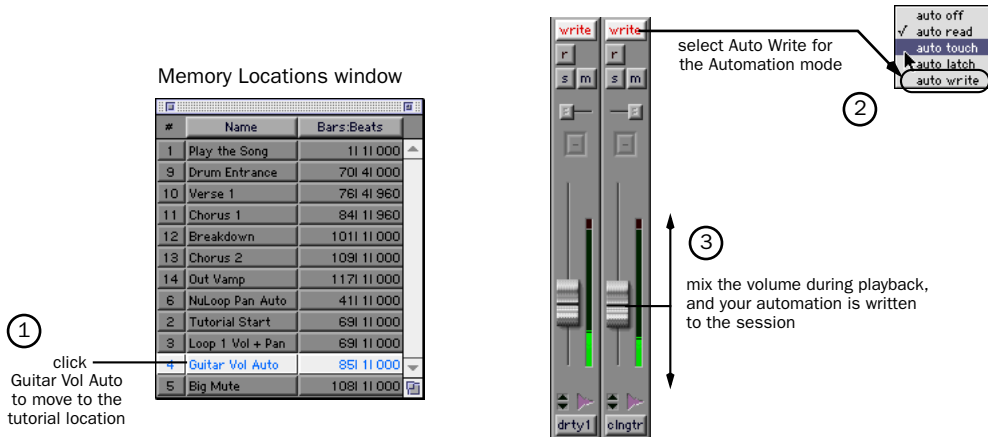
**To play back automation:**

**1** Set the Automation mode on the "cleangtr" track back to Auto Read. Now your automation will be read as the track is played back.

**2** Play the song. Your automation is played back as the song plays. The Volume fader in the Mix window also moves as the song plays back, displaying your automation.

Now write volume automation for the distorted guitar track "dirty1," using the same steps.

## Mixing in the Edit Window

The Edit window can be used for many editing tasks, and it also lets you "draw" very precise Mix automation. First, we'll use the Edit window to expand on the automation we wrote in the Mix window by drawing a precise fade-out on the Master Fader at the end of the song.

## Drawing Automation in the Edit Window

In the Edit window, you can view different data for a track, including a representation of the actual waveform, and volume, mute, and pan automation. In this example, we'll view the Master Fader, which controls the volume of the overall mix, and fade out the end of the song to silence.

**To draw a volume fade in the Edit window:**

**1** First, click the Memory Location "Out Vamp." Then switch to the Edit window by choosing Windows > Show Edit.

**2** Next, make the track height larger for the Master Fader track by clicking the Track Height Selector and choosing Medium. (See the bottom of the following illustration.) This will make it easier for you to draw the fade.
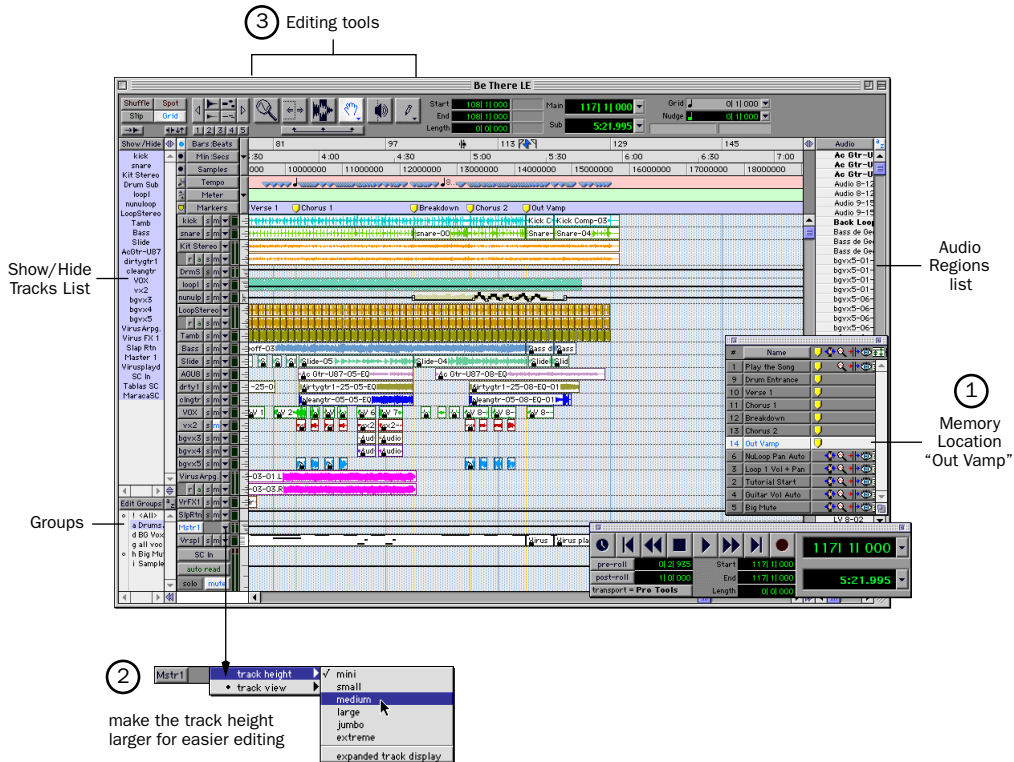


*Edit Window showing the Memory Location "Out Vamp"*

**3** Using the Grabber tool, click on the volume line at the point you want to start fading out. A small point appears on the volume line. If you make a mistake and want to delete a point on the volume line, Option-click (Macintosh) or Alt-click (Windows) the point.

**4** Click again with the Grabber at the point where you want the fade-out to end (reach silence), then drag the second small point down to the bottom of the track.

the Grabber tool

finished volume fade on the Master Fader

starts fading
out here

fade ends
here (silence)
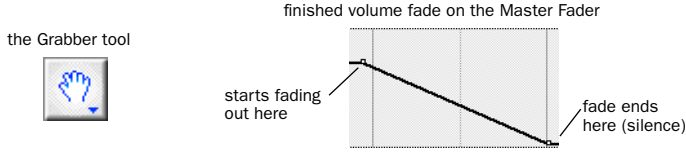
**5** You can easily adjust the start and end points of the fade by clicking on one of the points you have made and dragging it to the left or right.
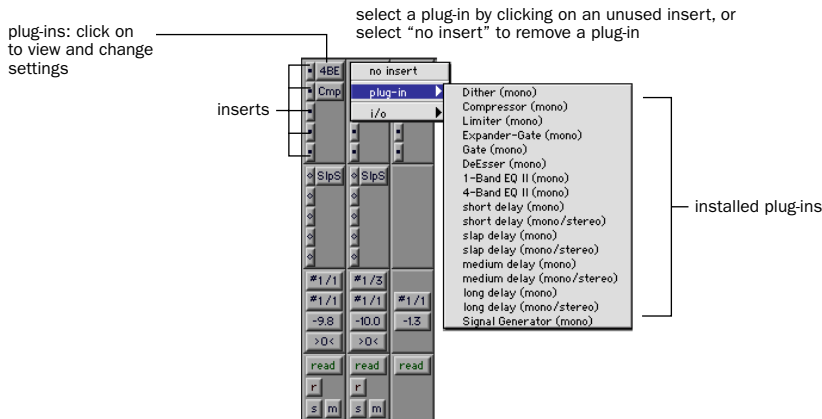
# Plug-Ins

Pro Tools LE provides a collection of Real Time AudioSuite (RTAS) plug-ins that can be used to process audio tracks. RTAS plug-ins are provided for common effects such as equalization, compression, and delay.

## Using Plug-Ins

Plug-ins are placed on tracks using any of the five *inserts* available on each channel strip. The insert, as the name implies, inserts the plug-in effect into the audio path.

In the Mix window, you can add a plug-in by clicking an insert on a track, and choosing a plug-in from the pop-up menu. You can do this during playback or when playback is stopped. Note that you can add several different instances of a plug-in in the same session, depending on your CPU's power. For example, the demo session uses the 4-band EQ plug-in 3 times. Once you add a plug-in to an insert, you can open it to view and adjust settings by clicking on the plug-in name next to the insert.

plug-ins: click on
to view and change
settings

select a plug-in by clicking on an unused insert, or
select "no insert" to remove a plug-in

inserts

| no insert |
| plug-in |
| i/o |

Dither (mono)
Compressor (mono)
Limiter (mono)
Expander-Gate (mono)
Gate (mono)
DeEsser (mono)
1-Band EQ II (mono)
4-Band EQ II (mono)
short delay (mono)
short delay (mono/stereo)
slap delay (mono)
slap delay (mono/stereo)
medium delay (mono)
medium delay (mono/stereo)
long delay (mono)
long delay (mono/stereo)
Signal Generator (mono)

installed plug-ins

# Try it!

Several plug-ins are already activated in the demo session "Be There." We'll try adjusting the EQ plug-in on the track called "VOX." First, you'll have to find a good location to hear the vocals. We'll start at the first verse. But since the "VOX" track isn't showing, we'll have to show it first by clicking it in the Show/Hide Tracks list on the left of the Mix window.
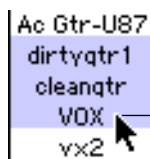
**To change plug-in settings:**

**1** Show the Mix window by choosing Windows > Show Mix. Click the Memory Location "Verse 1."

**2** To show the vocal track, click "VOX" in the Show/Hide Tracks List.



**3** View the plug-in by clicking on the plug-in name next to the insert.

**4** Click Play in the Transport window, and adjust the plug-in settings, listening to the change in the audio. Feel free to tweak at will!

**5** When you have finished, close the plug-in by clicking the Close box.
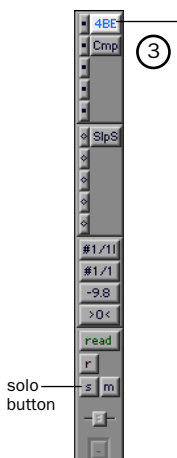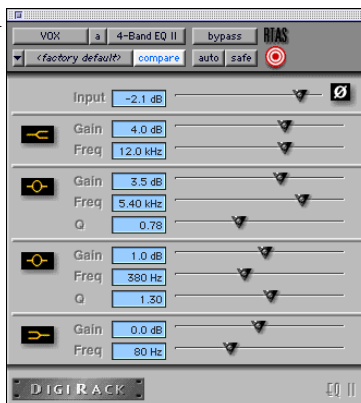
## Soloing

You may find it easier to adjust a plug-in while listening only to that track. This is called *soloing* a track.

### To solo a track:

**1** Click the Solo button on the channel strip. Play the song.

**2** Click the Solo button again when you are done, to hear the entire mix again.

🔆 *You can solo more than one channel, by clicking the Solo buttons for multiple channels.*

# Cool Mix Tricks: The Big Mute

Now that you've started mixing with Pro Tools LE, here's a really cool thing you can do. We call this The Big Mute, and it's one of those tricks you hear often in popular songs of any genre. The Big Mute is basically an automated mute across a bunch of tracks used to highlight a small section of the song. We'll write this mixing move as mute automation across all those tracks using an automation group that's already set up.

🔆 *To understand this trick better, you can refer to the information on Mix Automation and the information on Groups in the Pro Tools Reference Guide. We're not going to give away all the tricks in this Quick Start Guide—we just want you to have an idea of what's possible with Pro Tools LE.*

### To automate The Big Mute:

**1** Go to the tutorial location by clicking "Big Mute" in the Memory Locations window.

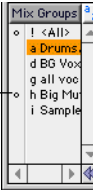**2** Enable the Big Mute group by clicking in the column just left of "Big Mute" in the Groups list.



| # | Name | Bars:Beats |
|---|------|-----------|
| 1 | Play the Song | 1l 1l 000 |
| 9 | Drum Entrance | 70l 4l 000 |
| 10 | Verse 1 | 77l 1l 000 |
| 11 | Chorus 1 | 84l 2l 000 |
| 12 | Breakdown | 101l 1l 000 |
| 13 | Chorus 2 | 109l 1l 000 |
| 14 | Out Vamp | 117l 1l 000 |
| 6 | NuLoop Pan Auto | 41l 1l 000 |
| 2 | Tutorial Start | 69l 1l 000 |
| 3 | Loop 1 Vol + Pan | 69l 1l 000 |
| 4 | Guitar Vol Auto | 85l 1l 000 |
| 5 | Big Mute | 108l 1l 000 |

① click "Big Mute" Memory Location

② click "Big Mute" group to enable

Mix Groups
! <All>
a Drums
d BG Vox
g all voc
h Big Mu
i Sample

**3** Set the Automation mode to Auto Write on the slap return track, called "SlpRt," by clicking the Automation mode button and selecting Auto Write from the pop-up. This will enable you to automate the muting of the slap return track, which puts a delay on the lead vocal.

**4** Click Play in the Transport window, and click Mute on the track to begin writing mute automation.

**5** Click Mute again to stop writing Mute Automation before the lead vocal begins the second part of the chorus (before the lyric "*but when she comes around*").

**6** Click Stop in the Transport window to stop writing automation.

💡 *The Automation mode automatically switches to "Auto Touch" after you stop playback. This Automation mode, which is used to "touch up" your recorded automation, is described in the Pro Tools Reference Guide.*



set Automation mode to Auto Write

mute during playback to write Mute Automation
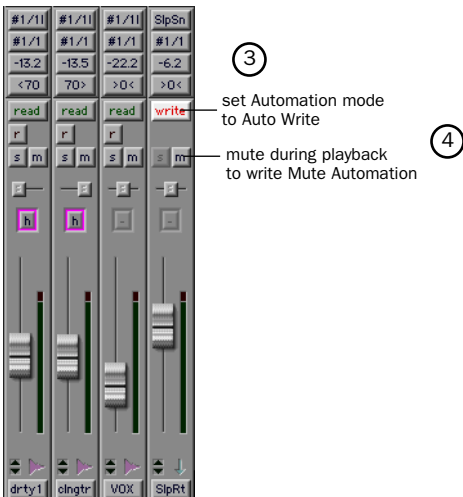
**7** Set the "SlpRt" track back to Auto Read, click Play in the Transport, and listen to the results. You should hear the chorus playing back without the delay on the vocals. Click Stop when you are done listening.

**8** Set the Automation mode for the Big Mute group to Auto Write by clicking the Automation mode button on any of the tracks in the group (for example, cleangtr) and selecting Auto Write from the pop-up. Note how all of the tracks in the group go into Auto Write mode.

**9** Play the session, and click the Mute button on any of the Auto Write enabled tracks in the Big Mute group (for example, "clngtr") to start writing mute automation to all tracks in the group. Try to click the Mute button at the beginning of measure 109 ("*she says when she* [mute] *comes around*") for greater impact.

**10** Click the Mute button on the same track again to stop writing mute automation. Try to click the button around the beginning of measure 113 ("*but when she* [un-mute] *comes around*").



8 enable Auto Write Automation mode

9 click Mute on a track in the Group during playback to start writing Mute Automation
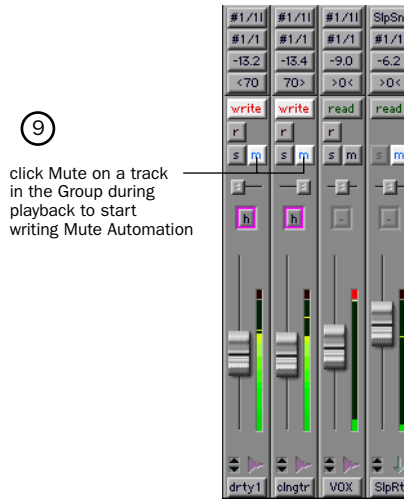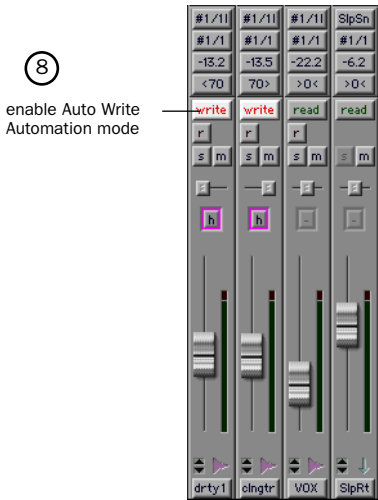
**11** Set the Big Mute group back to Auto Read mode, then click Play in the Transport window to hear the Big Mute.

Don't worry if you didn't get the mute just right the first time. You can choose Edit > Undo to erase the mute and try it again.

## MIDI

This optional section is for MIDI users. In this section, you'll connect a MIDI device to your MIDI interface, then we'll try to coax some meaningful sounds out of the MIDI tracks in the demo session.

MIDI configuration takes place in OMS (Open Music System) on the Macintosh, and in Windows Multimedia setup.

### Macintosh

When you installed your MIDI interface, a driver was placed in your OMS folder. To use this driver, you need to connect your device, then configure your OMS Studio Setup. See "Installing and Configuring OMS" on page 8 for more information.

### Windows

When you installed your MIDI interface, a MIDI driver was installed. To use this driver, you need to connect your device, then configure your Windows Multimedia Setup. See "Installing the Windows Wave Drivers" on page 18 for more information.

### MIDI Offset

When you monitor a MIDI device through your Audiomedia III audio inputs by record enabling tracks, you will hear an audio delay equivalent to the number of samples specified in your Hardware Buffer settings (see "Monitoring Latency and Recording" on page 56). This audio delay is called latency. You can counteract this latency by triggering your MIDI data early, using a feature called MIDI Offset. Refer to the *Pro Tools Reference Guide* for more details.

### Connecting and Configuring a MIDI Device

**To connect a MIDI device:**

**1** Using standard 5-pin MIDI cables, connect the MIDI In port on your MIDI interface to the MIDI Out connector on your device, and connect the MIDI Out port on your MIDI interface to the MIDI In port on your device.

**2** Connect the audio output or outputs of your device.

• You can connect the audio output of the device to the Audiomedia III by connecting analog outputs to the analog inputs on the back of the Audiomedia III card, or you can connect a S/PDIF digital device to the digital inputs on the Audiomedia III card.
If you are monitoring your device through the audio inputs on the Audiomedia III card, you will have to route the inputs to a track and record enable that track to hear output (for instructions, see Chapter 6, "Recording").

• You can also monitor your device with a separate mixer that accepts analog or digital input, then route the output into the Audiomedia III audio inputs when you are ready to record the audio. Read your mixer's documentation for more information.
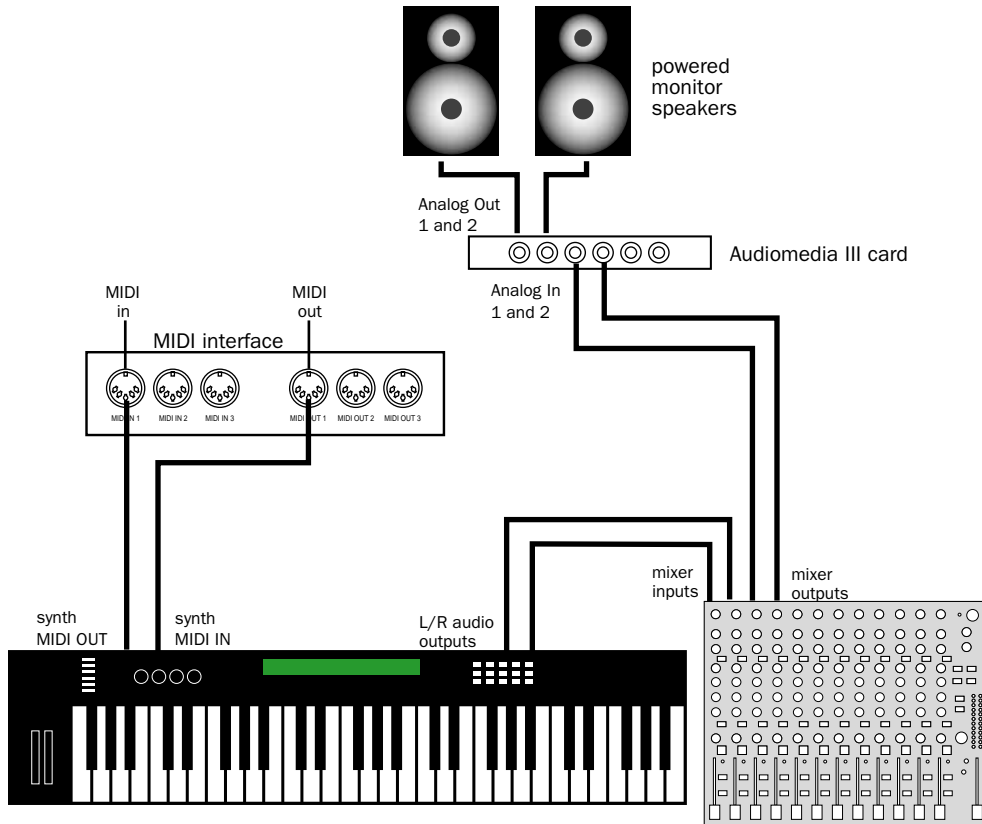


*A basic MIDI setup using an external hardware mixer*

## Using a MIDI Device with the Demo Session

To get an idea of how to assign a MIDI instrument to a track in Pro Tools LE, let's assign an instrument to a MIDI track that's already in the Demo session. We'll find and show the track "Virusplayed," then assign a MIDI device to it. Then we'll play back, and you can find suitable programs on your synth or other device to reproduce the MIDI track.

**To assign a MIDI device to play back the track "Virusplayed":**

**1** Click the Memory Location "Tutorial Start" to go to the beginning of the tutorial.

**2** Use the menu at the top of the Show/Hide Tracks List to Hide All Tracks. Then select only "Virusplayed" to be displayed, by clicking the track name.
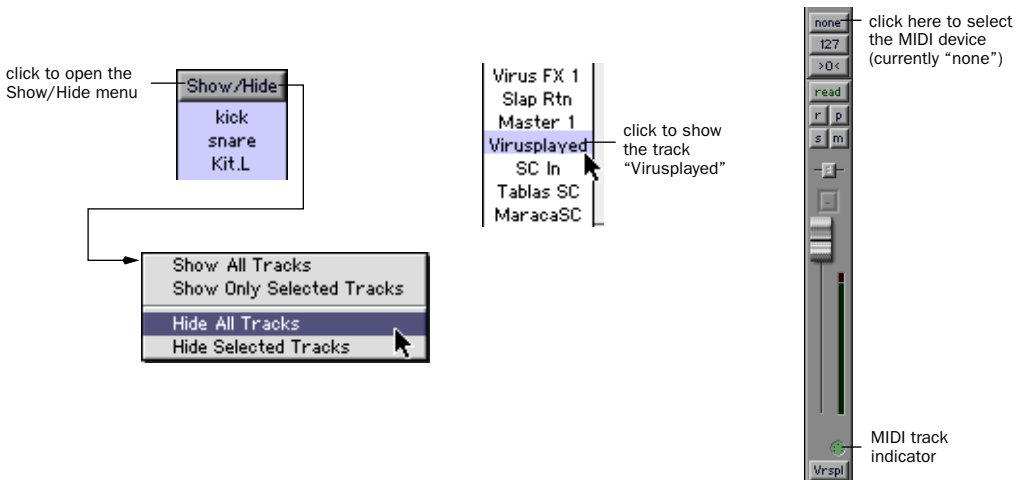


**3** Click on the MIDI Device/Channel Selector for the track and assign a device and channel from the pop-up menu.
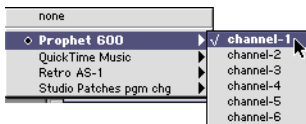


**4** Click Play in the Transport window to hear your MIDI device playing back the MIDI synth line recorded on the "Virusplayed" track.

Much more is possible with MIDI and Pro Tools LE. See the *Pro Tools Reference Guide* for more information.

# Recording

This section explains how to record audio and MIDI tracks using Pro Tools LE.

## Routing Audio to a Track

**To route audio to a track:**

**1** Connect your audio sources. See "Making Studio Connections" on page 26 for more information.

**2** Create the tracks you want to record on by choosing File > New Track.

**3** In the Edit or Mix window, find the I/O panel. You can show this panel if it is not visible by selecting Display > Edit Window Shows > I/O for the Edit Window, or Display > Mix Window Shows > I/O for the Mix Window.

**4** Click the Input button.

**5** From the pop-up menu, select the input you are using. For example, specify Analog 1 if your audio source is plugged into analog input 1, or specify S/PDIF L if you are using the Left S/PDIF input.
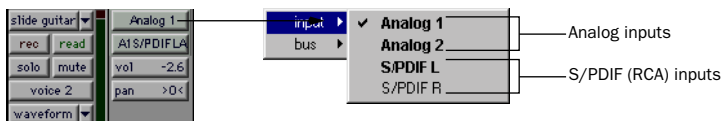


*Routing an input to a track*

# Setting Input Levels

The key to setting input levels is to get a signal as "loud" as possible without creating digital clipping. Signals that get close to the top of the meter in Pro Tools LE use more of the full bit range (the 16 or 24 bits that make up each audio sample). The more you maximize this bit range, the better your sound quality. And, by keeping your levels healthy, you'll get the least possible noise and best distortion performance.

But watch out for digital clipping. Clipping occurs when you feed a signal to an audio device that is louder than the circuitry can accept. The result is distortion. Digital clipping is harsh, and usually not something you want to hear at all, so watch those meters!
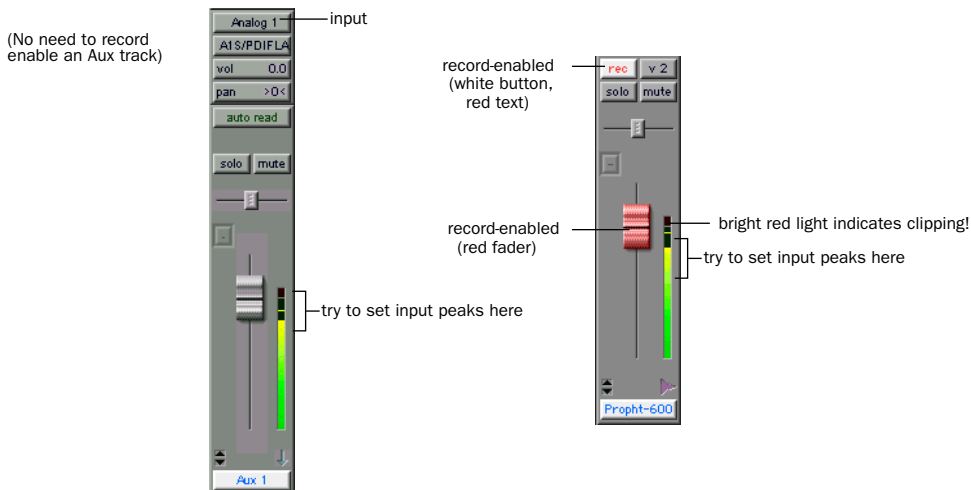


*Setting recording input levels (Aux track on left, Disk track on right)*

**To set recording levels:**

**1** Record enable a track that has an analog or digital input routed to it by clicking the Record button.

**2** Play the audio source at the recording volume.

**3** Note where the instrument output signal registers on the on-screen meters in Pro Tools LE. Good levels are in the yellow range of the Pro Tools LE track meters. If the levels hit the red, they are clipping, and you should lower the input gain.

**4** If the meters are not clipping, and they are not in the yellow range, open the Other Options dialog (Setups > Hardware > Other Options) and increase the input gain by raising the volume slider. Click Done and play the audio source again. Repeat until you have a strong signal without clipping.

**5** Repeat this until you are able to achieve maximum signal level without clipping.
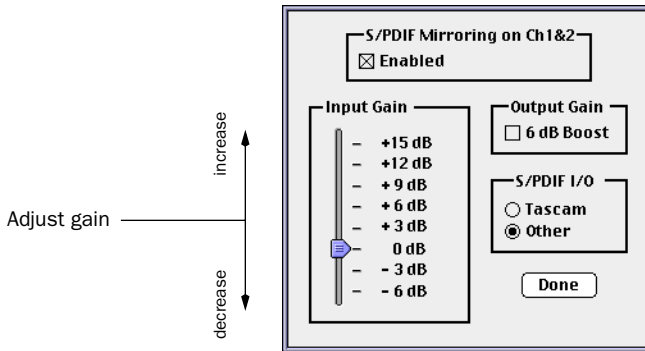


*Other Options dialog*

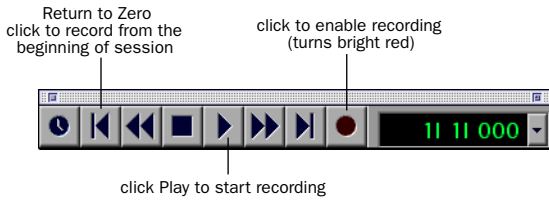*NOTE: Gain cannot be adjusted for digital inputs, unless you can adjust it at the source.*

## Recording an Audio Track

**To record an audio track:**

**1** Record enable the desired track and assign an input to it. Set the input levels appropriately.

**2** Display the Transport window (Windows > Show Transport) and click Return to Zero to ensure that you are starting 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 to enable recording.

**4** Click Play or press the Spacebar to record on all record-enabled tracks.

**5** Start playing your instrument.

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

Return to Zero
click to record from the
beginning of session

click to enable recording
(turns bright red)



click Play to start recording

*Recording from the beginning of a session*

① click the Selector tool



red arrow indicates
that recording will
occur at the cursor

③ record enable a track
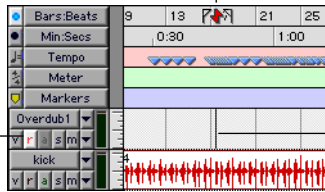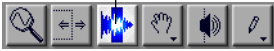
② place the cursor where
you want to start recording

④ click to enable recording
(turns bright red)



⑤ click Play to start recording

*Recording from the cursor location in the Edit window*

① click the Selector tool

these arrows marking your selection
turn red, indicating that recording
will occur in the selection

③ record enable a track

② make a selection of the
length you want to record

④ click to enable recording
(turns bright red)

⑤ click Play to start recording

*Recording the length of a selection in the Edit window*

**To play back a recorded track:**

**1** Disable recording on the track by clicking the Record button for the track again. The button should no longer be highlighted.

**2** Click Play in the Transport window or press the Spacebar to play the track.

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

## Monitoring Latency and Recording

Because Pro Tools LE uses the host processor in your computer for audio processing, playback, and recording, there is a small amount of audio delay, or latency, when monitoring audio through the system. You can set the latency shorter when you are recording and monitoring through the Audiomedia III, and longer when you are trying to achieve higher track counts with more plug-ins.

*How Hardware Buffer settings affect audio monitoring latency*

| Sample rate | Buffer setting (samples) | Latency (ms) | Use this setting for: |
|---|---|---|---|
| 44.1 kHz | 128 | 2.9 | recording drums and other timing-critical instruments |
| | 256 | 5.8 | recording vocals and instruments with slower attacks |
| | 512 | 11.6 | mixing with 24 tracks |
| | 1024 | 23.2 | final mixdown or many plug-ins |
| | 2048 | 46.4 | final mixdown or many plug-ins |
| | 4096 | 92.8 | final mixdown or many plug-ins |
| | 8192 | 185.5 | final mixdown or many plug-ins |
| 48 kHz | 128 | 2.7 | recording drums and other timing-critical instruments |
| | 256 | 5.3 | recording vocals and instruments with slower attacks |
| | 512 | 10.7 | mixing with 24 tracks |
| | 1024 | 21.3 | final mixdown or many plug-ins |
| | 2048 | 42.7 | final mixdown or many plug-ins |
| | 4096 | 85.3 | final mixdown or many plug-ins |
| | 8192 | 170.7 | final mixdown or many plug-ins |

Set latency in the Hardware Setup dialog box. Latency is controlled by the H/W Buffer Size setting, and is displayed in samples. The recommended setting for listening back to audio is 512–1024 samples. For recording, the recommended setting is 128–256 samples.

⚠ *If you have a SampleCell II Plus card, a buffer size of 128 should not be used when running the SampleCell Editor at the same time as Pro Tools LE. Use a larger buffer setting to avoid performance errors.*

**To set the Hardware Buffer Size for record or playback:**

**1** Choose Setups > Hardware.

**2** Choose the number of samples from the H/W Buffer Size pop-up, then click OK.

### Low Latency Monitoring

Pro Tools LE Includes a feature called Low Latency Monitoring. This feature allows you to use a built-in mixer on the Audiomedia III card to record and monitor the audio inputs with extremely low latency. This mode can be very desirable for time-critical overdubs.

**To enable Low Latency Monitoring:**

■ Select Operations > Low Latency Monitoring.

Tracks use Low Latency Monitoring when they are record-enabled, assigned to an actual audio input (not a bus), and assigned to outputs 1 or 2.

When Low Latency Monitoring is enabled, any plug-ins and sends assigned to record-enabled tracks (routed to Outputs 1–2) are automatically bypassed, and must remain bypassed. Also, these tracks will not register on meters for Master Faders.

## Recording MIDI

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

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

**2** In the Mix window, click on the track's MIDI Device/Channel Selector and assign a device and channel from the pop-up menu.
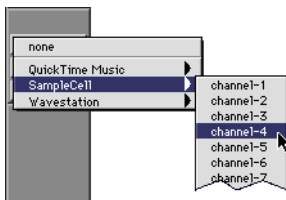


*MIDI Device/Channel Selector*

**3** If you want, you can assign a default program change to the track. In the Mix window, click on the Program button (Prog) and make the necessary selections for program and bank select, then click Done. Default program changes are sent when playing a track.

**4** In the Mix Window, click the MIDI track's Record button to record enable the track.

**To record into the new MIDI track:**

**1** Choose MIDI >Input Devices and make sure the MIDI device is selected.

**2** Make sure MIDI > MIDI Thru is selected, then play some notes on your MIDI controller. The MIDI instrument assigned to the track should sound, and the track's meters should register MIDI activity.

**3** In the Transport window, click Return to Zero so the start and end times are cleared. This ensures that you'll start recording from the beginning of the track.

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

• If using Wait for Note, the Play, Record, and Wait for Note buttons flash. Recording begins when the first MIDI event is received.

• If using Countoff, click Play. The Record and Play buttons flash during the Countoff—after which, recording begins.

**5** When you have finished recording, click Stop in the Transport window. The newly recorded MIDI data appears as a MIDI region in the Edit window, and in the MIDI Regions List.

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

**1** Click the Record Enable button on the MIDI track to take it out of record-ready mode.

**2** In the Transport window, click Return to Zero.

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

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