

Pro Tools

Addendum

Version 5.3.1 for HD Systems on Macintosh

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chapter 1

Introduction

This addendum is a supplement to the Pro Tools TDM 5.3 guides for Macintosh. It documents the new and changed features in Pro Tools TDM 5.3.1 for Pro Tools|HD systems.

- ◆ If you are new to Pro Tools|HD, or are configuring a new system, begin by following the hardware and software installation instructions in the *Getting Started with HD Guide*. Then return to this addendum to learn about new features.
- ◆ If you are upgrading an HD system to Pro Tools 5.3.1, install the upgrade and use this addendum to learn about new and changed features (see “Installing Pro Tools 5.3.1” on page 2).

New Features

Pro Tools TDM 5.3.1 includes the following new or enhanced features. Descriptions of these features begin in Chapter 2, “What’s New in Pro Tools 5.3.1.”

Support for Avid Inter-operability (Interop)

- AVoption, AVoption|XL, and FilmFrame 2.0 support
- DigiTranslator 2.0 support
- Avid Unity™ MediaNet support
- PostConform support with SYNC I/O
- 4% pull up pull down

SYNC I/O Features

- Loop Sync support
- Auto ID of SYNC I/O
- Reduced jitter options with LTC
- Automatic PAL/NTSC Switch

Support for New Hardware

- PRE remote-controlled microphone preamplifier support
- 192 Digital I/O support

Additional Features

- DigiStudio support
- Multi-DSP 48-bit Mixer
- Meters on QuickPunch Record-Enabled Tracks
- Firewire Port Playback of QuickTime DV
- Overviews stored with exported files
- Supports Broadcast WAV (.BWF)
- New DigiRack plug-ins

5.3.1 System Requirements

Pro Tools 5.3.1 for Macintosh requires:

- ◆ A Digidesign-qualified Power Macintosh running OS 9.1, 9.2, 9.2.1, or 9.2.2.
- ◆ A minimum of 256 MB of RAM (Pro Tools application “Preferred” memory allocation set to 134 MB).
- Additional RAM may be required for:
 - High edit density, a high volume of automation data, a large number of plug-ins, or options such as DigiTranslator and AVoption|XL (384 MB recommended).
 - Sessions larger than the default track size. Default session sizes are 64 tracks at 44.1/48 kHz, 32 tracks at 88.2/96 kHz, and 12 tracks at 176/192 kHz. (384 MB minimum, 512 MB recommended. Pro Tools application “Preferred” memory allocation set to 225 MB.)
 - Virtual memory is not supported.



A serial number (authorization code) from your current version of Pro Tools is required to upgrade to Pro Tools 5.3.1. If you do not have a serial number, or are currently running 5.2.1 or lower, contact Digidesign Customer Service for upgrade information.

Compatibility Information

Digidesign can only assure compatibility and provide support for devices it has tested and approved. For a list of Digidesign-qualified computers, SCSI accelerator cards, hard drives, diskette drives, and serial port adapters, refer to the latest compatibility information on the Digidesign Web site at:

www.digidesign.com

Installing Pro Tools 5.3.1

To install Pro Tools 5.3.1, insert the Pro Tools Installer CD ROM and double-click the installer icon. Follow the on-screen instructions to install the software components most suitable for your system.

For complete instructions on CPU configuration and software installation for Pro Tools|HD systems, see the *Getting Started with HD Guide*.

Launching Pro Tools the First Time


Validate Pro Tools Software

When launching Pro Tools the first time, you are prompted to enter an authorization code to validate your software.

To validate Pro Tools software:

- 1 Double-click the Pro Tools application in the Pro Tools folder inside the Digidesign folder.
- 2 Enter the authorization code in the dialog when prompted, making sure to observe any spaces, then click Validate.

Your authorization code is located on the inside, front cover of your *Getting Started with HD Guide*.

 You must have a Pro Tools 5.3 or higher authorization code to authorize Pro Tools 5.3.1.

chapter 2

What's New in Pro Tools 5.3.1

This chapter describes the new and changed features in Pro Tools 5.3.1 for Macintosh, listed below.

Support for Avid Inter-operability (Interop)

- AVoption, AVoption|XL, and FilmFrame 2.0 support
- DigiTranslator 2.0 support
- Avid Unity™ MediaNet support
- PostConform support with SYNC I/O
- 4% pull up pull down

SYNC I/O Features

- Loop Sync support
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Support for New Hardware

- PRE remote-controlled microphone preamplifier support
- 192 Digital I/O support

Additional Features

- DigiStudio support
- Multi-DSP 48-bit Mixer
- Meters on QuickPunch Record-Enabled Tracks
- Firewire Port Playback of QuickTime DV
- Overviews stored with exported files
- Supports Broadcast WAV (.BWF)
- New DigiRack plug-ins

For hardware installation instructions for Pro Tools|HD, see the *Getting Started with HD* guide.

Avid Inter-operability Support

AVoption and AVoption|XL, DigiTranslator, and Avid Unity™ MediaNet and MediaManager

Pro Tools 5.3.1 provides integrated support of AVoption and AVoption|XL, DigiTranslator 2.0, and MediaNet shared storage solutions. These features simplify workflow between Pro Tools and other OMFI (Open Media Framework Interchange) applications, and support all Pro Tools|HD hardware.

For complete information on installing or using the DigiTranslator option and MediaManager, see the *DigiTranslator Integrated Option Guide*.

Compatibility and Avid MediaManager

Pro Tools 5.3.1 supports MediaManager 3.0, and MediaNet 3.0 (earlier versions are not supported with Pro Tools 5.3.1). See the MediaNet 3.0 Release notes for more information.

Sample Rate Compatibility

Avid MediaManager supports files of any sample rate, but Avid workstations do not. To ensure compatibility with Avid workstations, Pro Tools provides the Enforce Avid Compatibility setting, which limits session sample rates to 44.1 and 48 kHz. In order to work at higher sample rates in Pro Tools and MediaManager, be sure the Enforce Avid Compatibility setting is not enabled.

Settings for Best Avid Unity Performance

For best performance when using Unity, do the following:

- 1 Launch Pro Tools.
- 2 Choose Setups > Playback Engine.
- 3 Set the Number of Voices to 16 Voices (1 DSP).

AVoption and AVoption|XL


Pro Tools 5.3.1 supports AVoption, AVoption|XL and FilmFrame on Pro Tools|HD systems.

24P Avid Video Playback Capability

AVoption|XL now plays back 24P format video files imported from Avid editing systems. 24P files may be played and edited, just like video clips in other formats, but they cannot be recorded directly to the Pro Tools Timeline.

To play back 24P format video files, you will need:

- ◆ AVoption|XL
- ◆ Pro Tools 5.3.1 software
- ◆ FilmFrame

 *For more information about 4% pull rates and the Digidesign SYNC I/O, see the SYNC I/O Guide or SYNC I/O Addendum.*

FilmFrame

(AVoption and AVoption|XL Only)

FilmFrame enables AVoption|XL to play back 24P (progressive scan) video clips. FilmFrame also enables AVoption to play back 24 fps interlaced video clips.

When using FilmFrame, all clips in the Movie track should be 24 fps. This is because the first frame in the Movie Track sets the video engine to the appropriate speed. If the first clip is 24 fps, the entire Movie track will play at 24 fps.

PAL and NTSC Video Format Switching

PAL and NTSC format controls have been redesigned and improved:

- ◆ The PAL/NTSC Video Format selector has been moved from the I/O controls of the video track to the SYNC I/O control panel of the Session Setup window. This selector lets you manually choose either PAL or NTSC format.
- ◆ In addition, Pro Tools will set itself to PAL or NTSC format based on the format of the first video clip in the Timeline, if one exists. For example, if the Video Format selector is set to PAL, and an NTSC Avid video clip is imported to the Timeline, Pro Tools will switch to NTSC. The SYNC I/O follows the Pro Tools Video Format setting. The presence of a video clip in the Timeline overrides (and greys out) the Video Format selector.
- ◆ The SYNC I/O video format setting now matches the Pro Tools setting of PAL or NTSC.

Audio Layback to Video

Although you cannot output 24 fps video to a video recorder with Pro Tools, you can “Punch Down” by adding audio that has been posted to a 24P video clip in Pro Tools to videotape that was created on another video system.

For information about options with the Digidesign SYNC I/O, see the *SYNC I/O Guide*.

Synchronizing with 24 fps Video Tapes

You can play in sync with a video transport playing at 24 fps. To do so, set the session rate to 24 fps, and slave Pro Tools to the video transport. Or, if you have the MachineControl option, you can select the appropriate profile to control the video transport.

Synchronizing with 29.97 fps (NTSC) Video Tapes

To play in sync with a 29.97 fps video created from a 24 fps source:

- 1 Slave Pro Tools to the VTR. (For more information on slaving Pro Tools to the VTR, see the *SYNC I/O Guide*.)
- 2 Change the session frame rate to 29.97.
- 3 Select -0.1% Audio Rate Pull Down in the Session Setup window.

⚠ *Audio pull-down is required when you are posting to a 29.97 fps video clip made from a 24 fps source. This is because the 24 fps source is also “pulled down” by the telecine process which produces the 29.97 fps tape.*

24P Clips and Pull Down When the SYNC I/O is set to pull down, be sure to also set your video pull-down to “0.1%” using the Video Rate Pull Up and Down menu in the Session Setup window. This way, when laying back audio to an NTSC video tape running at 29.97 fps, the Pro Tools video display and the output of the video deck will remain in sync.

Playing in Sync with 25 fps (PAL) Video Tapes

4% video pull up allows Pro Tools to play in sync with 25 fps PAL tape. This lets you synchronize for laying back a 24P session directly to a 25 fps (PAL) tape.

Converting Sessions from 24 FPS to 29.97 FPS

When changing a session frame rate from 24 to 29.97 fps, you must enable a -0.1% audio pull down to remain in sync with a telecined video tape.

Conversely, when you change a session frame rate from 29.97 to 24 fps, you must enable 0.1% audio pull up to remain in sync with a 24 fps video clip. If the session was already edited at 29.97 fps with a -0.1% audio pull down enabled, then it is enough to simply change the audio pull up setting to None when changing the session frame rate to 24.


4% Pull Up and Pull Down

Pro Tools 5.3.1 with SYNC I/O supports 4% pull up and pull down, with support for an additional 0.1% up or down. Separate rates can be set for session audio and video (when video has been imported or captured into the session).

When referring to 4% pull up and pull down, the precise percentages used in pull ups is 4.167%. See “Audio Rates and Pull Up/Down Options” on page 11.

SYNC I/O and 4% Pull Factors

While the SYNC I/O is not required in order to use the extended pull up and down options provided in Pro Tools, the SYNC I/O is the only device that can be controlled from within Pro Tools, and that can recall and restore pull factors automatically when a session opens. Other synchronization peripherals must be configured manually.

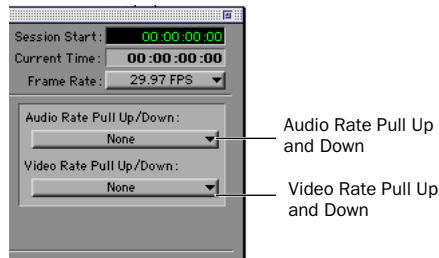
 *Pull up and down settings do not affect SYNC I/O generated time code.*

To enable extended pull up and pull down:

- 1 Choose the Operation tab from Setup > Preferences.
- 2 Deselect Limit Pull Ups to NTSC/PAL Film Standards.

Choosing a Pull Up/Down Rate

The Pro Tools Pull Up and Pull Down controls are located in the Session Setup window.




Pull Up/Down menus in the Session Setup window

Audio Rate Pull Up/Down Controls audio sample rate. See “Audio Sample Rate Pull Up and Down” on page 10.

Video Rate Pull Up/Down Controls video rate. See “Video Rate Pull Up and Down” on page 12.

The choices available in these menus are determined by the session frame rate. Combinations can be applied by choosing from both menus.

 *4% pull factors are not available in 176.4 and 192 kHz sessions.*

Enabling Extended Pull Up and Down Options

New Preference and Session Setup Controls

With Pro Tools 5.1.3, the Preference “Limit Pull Ups to NTSC Film Standards” was introduced. This setting filtered the list of available Pull Up rates in the Session Setup window to NTSC standard rates.

This preference setting has been renamed as Limit Pull Ups to NTSC/PAL Film Standards, and is enabled by default. See “When Limit Pull Ups is Enabled” on page 10 for a list of available rates at the default, enabled setting.

When this preference is not enabled, the Audio Rate Pull Up and Down menu offers all possible combinations of pull ups and pull downs for the audio sample rate, regardless of the session frame rate.

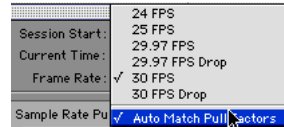
In addition, if there is a QuickTime video clip in the timeline, turning this preference off enables the video rate to be pulled up or down by 0.1%, regardless of the session frame rate. Though not an approved workflow, earlier versions of Pro Tools also enabled pull down of QuickTime video clips when audio was pulled down, so this option is included in Pro Tools 5.3.1 to maintain compatibility with earlier sessions.

The choice of available pulls for Avid video clips is unaffected by the setting of the Limit Pull Ups to NTSC/PAL Film Standards preference.

This preference setting is stored with the session.

Auto Match Pull Factors

Auto Match Pull Factors is available from the session Frame Rate menu in the Session Setup window (directly below the Current Time Code counter). When Auto Match Pull Factors is enabled, Pro Tools adjusts audio and video playback rates as needed to match any changes to the current session Frame Rate.



Frame Rate menu with Auto Match Pull Factors

Auto Match Pull is applied relative to the current pull up setting. While enabled, if the session frame rate is changed in such a way that the video would have to be pulled by an unsupported amount, the video remains unaffected. The Audio Rate Pull Up/Down and Video Rate Pull Up/Down menus become unavailable (greyed out) when Auto Match Pull Factors is enabled.

This setting is latching, is not enabled by default, and its state is stored with the session. In addition, Auto Match Pull Factors is not affected by the current setting of the Limit Pull Ups to NTSC/PAL Film Standards preference.

Example of Auto Match Pull Factors

Auto Match Pull Factors links audio and video pull factors when changing session frame rate.

For example, assume a Pro Tools session is set to a frame rate of 25 fps, the audio and video are both playing with no pull ups, and Auto Match Pull Factors is enabled.

If you then change the session Frame Rate to 24 fps, both the Audio and Video Rate Pull settings would change by -4.0% (the appropriate pull setting required by the change in frame rate).

Auto Match-enabled pull factors are applied to any existing Audio Rate Pull Up/Down or Video Rate Pull Up/Down settings. For example, if audio was already being pulled -0.1% when you changed the session Frame Rate from 29.97 to 24 fps, then the Audio Rate Pull Up/Down menu would switch to “none.”

Audio Sample Rate Pull Up and Down

The Audio Rate Pull Up/Down menu applies pull up or down factors to session audio record and playback. Choices are determined by the Limit Pull Up to NTSC/PAL Film Standards preference. See “Enabling Extended Pull Up and Down Options” on page 9.

When Limit Pull Ups is Enabled

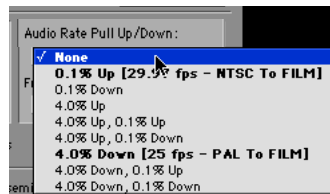
When Limit Pull Ups to NTSC/PAL Film Standards is enabled, the following choices are available depending on the current session rate.

NTSC/PAL Choices for Pull Up and Pull Down


Session Frame Rate	Audio Rate Pull Up/ Down
24	None +0.1% (Source=23.98/29.97) -4% (Source=25fps)
25 FPS	None +4% (Source=23.98/29.97) +4% (Source=24/30fps)
29.97/29.97d	None -0.1% (Source=24/30fps) -4% (Source=25fps)
30/30d	None +0.1% (Source=23.98/29.97) -4% (Source=25fps)

When Limit Pull Ups is Not Enabled

When Limit Pull Ups to NTSC/PAL Film Standards is not enabled, all pull rates are available, regardless of session frame rate.



Audio Rate Pull menu when Limit Pull Ups is not enabled

 See also “Auto Match Pull Factors” on page 9.

Audio Rates and Pull Up/Down Options

The following table lists the actual sample rates of each pull up and pull down option and combination (rounded to the nearest whole Hz):

Table 1. Sample Rates at Pull Up and Pull Down Settings

Pull Up/Down	Sample Rate					
	44100	48000	88200	96000	176400	192000
+4.1667% and +0.1%	45983	50050	91967	100100	n/a	n/a
+4.1667%	45938	50000	91875	100000	n/a	n/a
+4.1667% and -0.1%	45892	49950	91783	99900	n/a	n/a
+0.1%	44144	48048	88288	96096	176576	192192
-0.1%	44056	47952	88112	95904	176224	191808
-4.0% and +0.1%	42378	46126	84757	92252	n/a	n/a
-4.0%	42336	46080	84672	92160	n/a	n/a
-4.0% and -0.1%	42294	46034	84587	92068	n/a	n/a

Video Rate Pull Up and Down

This menu lets you change the frame rate of video playback independently from the audio pull-ups (if any). It is located below the Audio Rate Pull Up/Down menu in the Session Setup window.



Video Rate Pull Up/Down menu in Session Setup

See also “Auto Match Pull Factors” on page 9.

The choices available in the Video Rate Pull Up/Down menu depend on the file format of the video clip, as well as its frame rate. The following table shows the pull ups available for Avid video clips, both interlaced and Progressive Scan.

Video Frame Rates and Pull Options

Format and Video Frame Rate	Available Video Pull Rate	To synchronize with
Avid Video		
24 fps	None	
	-0.1%	29.97 NTSC videotape
	+4.167%	25 fps PAL videotape
25 fps	None	
	-4.0%	24 fps
	+4.167%	29.97 NTSC videotape
29.97	None	

Video pull rates are saved with the session.

Pull Ups and QuickTime

No pull ups are available for Quicktime video clips unless you turn off the preference Limit Pull Ups to NTSC/PAL Film Standards, located in the Operations pane of the Preferences dialog. Turning this preference off allows the video rate to be pulled up or down by 0.1%, regardless of the session frame rate. Though not an approved workflow, earlier versions of Pro Tools also enabled pull down of QuickTime video clips when audio was pulled down, so this option is included in Pro Tools 5.3.1 to maintain compatibility with earlier sessions.

No Video Recording with Pull Ups

Video may not be recorded to the timeline if a video pull up is selected. If the video track is record enabled while video pull ups are enabled, or if you attempt to set a video pull up rate while the video track is record enabled, Pro Tools will post a dialog and disallow video recording. To proceed with digitization, reset the Video Rate Pull Up menu to None.

What is Pulled Up or Down?

The following sections describe how related Pro Tools features are affected by pull up and down rates.

Time Code Ruler

Video pull up and down does *not* affect the Time Code Ruler. Be sure to set the session Frame Rate to the correct frame rate for your project. For example, if working with 24 fps video and you pull the video up by 4%, switch the session Frame Rate to 25 fps to keep the Time Code Ruler aligned. Similarly, if working with 24 fps video that is pulled down by 0.1%, switch the frame rate of the session to 29.97.

When working with 25 fps Avid media and the video is set to pull down by 4%, set the session Frame Rate to 24 fps.

Plug-Ins

For proper operation at larger (4%) pull rates, plug-ins must utilize sample clock instead of an absolute time clock. All Digidesign plug-ins are based on sample clock.

Higher Sample Rates and Pull Factors

4% audio pull rates are not available in 176.4 and 192 kHz sample rates sessions.

PostConform Support

The PostConform option, available separately, is now supported on Pro Tools|HD systems. All PostConform features are available for auto conform of EDLs and creation of 48 kHz (or lower) sessions.

SYNC I/O Support in PostConform

Machines connected to the 9-pin ports on the SYNC I/O can be controlled by PostConform. PostConform auto-detects the presence of the SYNC I/O at launch, and automatically config-

ures itself when recognized. These features require that the SYNC I/O is connected to your DigiSerial Port, and configured as described in the *SYNC I/O Guide* or *SYNC I/O Addendum*.

Running Pro Tools 5.3.1 and PostConform

Because Pro Tools and PostConform both utilize DAE, they cannot be run simultaneously. If you attempt to launch one while the other is running, a dialog will appear informing you of the conflict.

Sample Rates

When PostConform launches, if the Pro Tools|HD audio interface is set to an unsupported sample rate, PostConform will prompt you to reset the peripheral, or cancel. If you reset, sample rate will adjust as follows:

- If at 96 or 192 kHz, reset to 48 kHz.
- If at 88.2 or 176.4 kHz, reset to 44.1 kHz.

Time Stamps Beyond 12 Hours when Re-Linking

With PostConform 2.0.1, all time stamps are displayed in the Re-Link Sources dialog, even if they are later than 12:00:00:00. (Previously, time code time stamps were only displayed if under 12 hours.)

SYNC I/O

Pro Tools 5.3.1 includes several new and improved features available with the Digidesign SYNC I/O synchronization peripheral. The following features are available when using a SYNC I/O with Pro Tools|HD. Complete information can be found in the *SYNC I/O Addendum for Pro Tools 5.3.1* and the *SYNC I/O Guide*.

Loop Sync Loop Sync is now supported on the SYNC I/O with Pro Tools|HD systems. This allows the SYNC I/O to be Loop Master and provide master clock to the rest of your HD peripherals.

Auto ID of SYNC I/O When SYNC I/O is connected to the DigiSerial port, Pro Tools automatically detects and identifies itself for SYNC I/O. As part of the automatic identification, Pro Tools checks the firmware in your SYNC I/O and informs you if it needs to be updated.

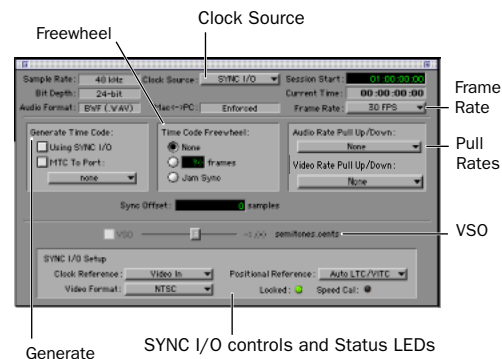
Reduced Jitter for LTC The LTC In can now be adjusted to any of five different settings to reduce the effects of jitter. These options are available from the Pro Tools Clock Reference > LTC sub-menu.

PAL/NTSC Setting and Video SYNC I/O automatically matches the current session video format, which is set in either of the following ways:

- Manually from the Video Format selector in the Session Setup window
 - or –
- Automatically based on the first frame of an imported video clip

Configuring Sessions for SYNC I/O in Session Setup

When connected to the DigiSerial Port, the SYNC I/O is automatically recognized and configured in Peripherals > Synchronization. This enables the SYNC I/O controls in the Session Setup window.



Session Setup window, SYNC I/O controls

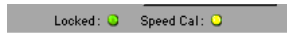
When connected through Loop Sync, the SYNC I/O and any of your HD-series audio interfaces can be designated the Clock Source. The current Clock Source determines your choices for clock reference.

To configure the SYNC I/O for your sessions:

- 1 Choose SYNC I/O from the Clock Source menu.
- 2 Choose a SYNC I/O clock reference from the Clock Reference menu.
- 3 Choose a positional reference source from the Positional Reference menu.
- 4 Set Frame Rate, Video Format, VSO, Generate, and other SYNC I/O parameters as needed.

SYNC Indicator Lights


Two status lights have been added to the bottom of the SYNC I/O area in the Session Setup Window. These lights exactly reproduce their counterparts on the SYNC I/O front panel, letting you monitor the lock status even when the SYNC I/O is located in a machine room.



SYNC I/O status LEDs

Locked When lit, this green LED indicates that the incoming resolve signal is present and that the SYNC I/O is locking to it correctly. When off, the Locked LED indicates that no resolve signal is present.

Speed Cal When lit, this yellow LED indicates whether the resulting sample rate is at the expected (target) rate or not. If lit solid then the output frequency is within 200 ppm (0.02%) of the selected sample rate. If the output frequency is higher than expected, then Speed Cal will blink quickly; if the output frequency is lower then it will blink slowly. The Speed Cal LED is meant to be used as an indicator of the accuracy of the incoming clock reference. For example, if the session is set to 30 fps with LTC as the clock reference but you're actually receiving 29.97 LTC, the Speed Cal LED will blink slowly.

 For more information on all SYNC I/O features, see the SYNC I/O Addendum for Pro Tools 5.3.1, or the SYNC I/O Guide.

Support for New Hardware

Pro Tools 5.3.1 supports the latest new peripherals for Pro Tools|HD systems.


PRE Remote Controlled Microphone Preamp

PRE is Digidesign's multi-purpose microphone preamplifier for Pro Tools systems. PRE is designed especially for Pro Tools systems, but it can also be utilized as a stand-alone microphone preamplifier. When used with Pro Tools TDM 5.3.1 on Macintosh, most PRE features can be controlled from within the Pro Tools application. PRE can also be remotely controlled by other MIDI devices through standard MIDI controller data. With or without remote control, PRE can be configured manually using its front panel switches and displays.

Features

- Eight high-performance, discrete matched transistor hybrid microphone preamplification circuits; 0 dB to +66 dB in 3 dB steps.
- Full remote control via Pro Tools TDM 5.3.1 (Macintosh) software and Digidesign control surfaces (such as Control|24 and ProControl), allowing for the highest fidelity by keeping preamplification of low-level signals close to the source.
- Analog outputs (DB-25 connector) for easy connection to Pro Tools audio interfaces or any other recording or mixing medium.
- MIDI In, Out, and Thru ports for remote operation

- Each PRE channel features:
 - Support for Mic (XLR), line level inputs (1/4") and direct instrument (1/4")
 - Selectable impedance settings for Mic input
 - +48V power for condenser microphones
 - Insert points (Send and Return), for easy integration of outboard gear (such as compressors or EQs)
 - Input gain –18 dB pad
 - Phase reversal
 - 75 Hz High-Pass Filter
- Up to nine PREs are supported through software or 72 channels of remote controlled mic-pre channels
- All features are available in Stand-alone mode, making PRE ideal for any recording application.

 See the PRE Guide for more information.


192 Digital I/O

The 192 Digital I/O is a new all-digital audio interface for Pro Tools|HD systems.

Features

- 16 channels of 24-bit-supported AES/EBU I/O (eight channels of which support sample rates of up to 192 kHz)
- Real-Time Sample Rate Conversion on input of AES/EBU, TDIF, and ADAT optical
- 16-channels of TDIF I/O (up to 48 kHz)
- 16-channels of ADAT I/O (up to 48 kHz)
- 2 additional channels of AES/EBU or S/PDIF I/O (up to 96 kHz)
- 8 additional channels of ADAT optical, or 2-channels of optical S/PDIF
- Word Clock I/O

- Loop Sync I/O
- Expansion and Legacy Ports
- 16-channels of 4-segment metering, plus Status indicators

 Capabilities vary with sample rate. For more information, see the 192 Digital I/O Guide.

TDIF Clock Options for the 192 Digital I/O and 192 I/O

Connecting DA-88 and Compatible Decks to the 192 Digital I/O or 192 I/O

Pro Tools|HD peripherals support DA-88 and TDIF-1 word clock standards. T.

Word Clock (TDIF) This option is available from the Ext Clock Output selector, in the Hardware Setup dialog. When selected, this setting changes the Word Clock output from the current HD audio interface to conform to TDIF-1 word clock standards.

To transfer information to a Tascam DA-88 across TDIF:

- 1 Install a 75-ohm BNC shunt terminator on the Word Sync Input of the DA-88. (The DA-88 will not lock to the Word Clock output of the 192 Digital I/O or 192 I/O without a terminator in place.)
- 2 Connect the Ext. Clock output cable from the 192 Digital I/O or 192 I/O to the Word Sync Input of the DA-88.
- 3 Set the Tascam DA-88 clock mode for Word Clock.
- 4 In Pro Tools, choose Setups > Hardware Setup.

5 Follow the Hardware Setup configuration steps in the *192 Digital I/O* or *192 I/O Guide* to set up your audio interface.


6 From the Ext. Clock Output selector, select Word Clock (TDIF).

7 Complete the installation instructions in the *192 Digital I/O* or *192 I/O Guide*.

DigiStudio Support

Pro Tools 5.3.1 gives you access to DigiStudio™, to collaborate in online Pro Tools sessions over the Internet.

Everything you need to use DigiStudio is included in your Pro Tools Installer. Changes to DigiStudio include support for Pro Tools|HD systems and higher sample rate sessions in the Receive Session dialog.

 See the *DigiStudio Guide* for more information.

Sample Rate Compatibility Requirements to Join and Receive Sessions

Pro Tools|HD lets DigiStudio projects include sessions at sample rates of 44.1, 48, 88.2, 96, 176.4, or 192 kHz. Other DigiStudio users (on Pro Tools|24 MIX and LE systems) can only connect to or receive 44.1 and 48 kHz sessions.

Local and online sessions must have the same sample rate, bit depth, and file type. If the desired session sample rate is not supported on your system, or if any of these attributes do not match, Pro Tools will display a dialog informing you that there is a settings mismatch.

Pro Tools AVoption and AVoption|XL Users

You will have the full capabilities of your video system while using Pro Tools 5.3.1 online with DigiStudio, including 24P support.

Multi-DSP 48-bit Mixer

Pro Tools 5.3.1 includes four new “multi-DSP” high-resolution mixers.

- Stereo Mixer
- Stereo Dithered Mixer
- Surround Mixer
- Surround Dithered Mixer

These mixers utilize multiple TDM paths to maintain a true 48-bit signal path at all times, regardless of the complexity of your mix. This is particularly beneficial for maintaining headroom when mixing load is shared between DSPs on Pro Tools|HD systems.

The following tables show the largest mixers that can fit on a single HD DSP chip:

Stereo Mixer

Sample Rate	Largest Mixer per Chip
44.1/48 kHz	68x2
88.2/96 kHz	44x2
176.4/192 kHz	16x2

Stereo Dithered Mixer

Sample Rate	Largest Mixer per Chip
44.1/48 kHz	56x2
88.2/96 kHz	34x2
176.4/192 kHz	14x2

Surround Mixer (5.1 output)

Sample Rate	Largest Mixer per Chip
44.1/48 kHz	22x6
88.2/96 kHz	12x6
176.4/192 kHz	4x6

Surround Dithered Mixer (5.1 output)

Sample Rate	Largest Mixer per Chip
44.1/48 kHz	19x6
88.2/96 kHz	10x6
176.4/192 kHz	1x6

The following tables list the maximum numbers of Pro Tools tracks or inputs that can be mixed to a single pair of outputs, no matter how many DSPs or timeslots are available.

Stereo Mixers, maximum limits

Sample Rate	Mixer Capacity
44.1/48kHz	512x2
88.2/96kHz	484x2
176.4/192kHz	64x2

5.1 Surround Mixers, maximum limits

Sample Rate	Mixer Capacity
44.1/48kHz	512x6
88.2/96kHz	256x2
176.4/192kHz	32x6

⚠ *It is possible to reach these mixer limits even if the System Usage Window indicates that you still have mixer DSP and/or TDM II timeslots available.*

Meters and QuickPunch Record Enabled Tracks

When a track is QuickPunch record-enabled, on-screen meters now reflect the level of the audio playing from disk. At punch-in, the meter switches to display the input signal level, and switches back to meter the disk audio on punch out. (In earlier versions of Pro Tools, meters were inactive on QuickPunch record-enabled tracks until punch in.)

Firewire Playback of QuickTime DV Movies

With the addition of an external DV transcoder (decoder), you can play QuickTime DV Movies out through your computer's Firewire port. These can include QuickTime movies exported from Avid Xpress DV.

At the time of this writing, Pro Tools supports the Canopus ADVC-100. This card supports both NTSC and PAL rates, and can record audio simultaneously with video.

For the latest compatibility information on Firewire transcoders, see the Digidesign Web site. For specific information about the Canopus Transcoder, check the Canopus Web site (<http://www.canopuscorp.com>).

QuickTime DV performance may vary, depending on the specifics of your system and projects.


Supported QuickTime Movies

Referenced and Consolidated Media Exported QuickTime DV movies can be either complete Quicktime files (where media is copied into a Quicktime file) or Quicktime reference files (where just a small composition is in the Quicktime file which references the original DV files).

Codec Requirements When exporting from Avid Xpress DV, always use the Apple DV codec. Do not enable "Use Avid Codec" in the export dialog. If an Avid-codec DV movie is imported into Pro Tools, you will not be able to play it.

DV Stream Movies At the time of this writing, Pro Tools does not support audio from a DV Stream file. DV Stream files contain the entire data stream that's been transferred or recorded over the FireWire cable from a camera. In this

type of file, the audio and video data are stored in an interleaved fashion, as opposed to a QuickTime file where audio and video are stored separately.

 See also "Exporting QuickTime DV from Avid" on page 20.

To Play DV Movies through the FireWire Port:

- 1 Import a QuickTime DV movie into a Pro Tools session by choosing Movie > Import Movie.
- 2 Choose Movie > Play DV Movie Out Firewire Port.

When this item is enabled, Pro Tools will play DV movies (NTSC or PAL) out the FireWire port to an external DV decoder. This can improve system performance by removing the need for the movie to be software decompressed by the CPU and displayed on the computer screen.

If the desktop Movie Window is open when video is playing out the FireWire port, it will display the text "DV Movie Is Playing Out FireWire Port."


Delay Between Video & Audio

There can be a considerable delay between video and audio when using this feature.

To compensate:

- 1 Choose Movie > Set Movie Sync Offset.

2 Enter a value appropriate to align the audio with video.

 *At the time of this writing, Digidesign has qualified the Canopus ADVC-100 Transcoder. The required offset for this particular device is 22 quarter frames.*


Generally, you will need to set this parameter once for each type of DV decoder used.

Exporting QuickTime DV from Avid

The following instructions list export settings for Avid XPressDV. These settings are required to create QuickTime DV movies that can be played back in Pro Tools through the Firewire port.

To export a QuickTime DV reference movie for Pro Tools, Firewire playback, set the following:

- 1 Enable the following export options:
 - Flatten video tracks
 - Fill in spaces with black
 - Render all video effects
- 2 Make sure Use Avid Codec is not enabled.

 *These export settings can be saved in Avid XPressDV3.0 as a default, simplifying future media exchange. Refer to your Avid XPress documentation for more information on export settings and defaults.*

Calculate Overviews for Exported Files

Pro Tools calculates waveform overviews and stores them as part of the file, in all audio files created by bouncing to disk or exporting (OMFI or not).

However, If you Convert During Bounce, Pro Tools will not calculate and store overviews because this CPU-intensive procedure may slow the bounce function.

WAV Now BWF

Pro Tools can read and play any standard WAV (WAV) format files. However, it saves files exclusively in the Broadcast WAV or BWF (.WAV) format. These files store their time stamps in a consistent way that makes them ideal for interchange operations.

Plug-Ins

192 kHz Compatibility

The following plug-ins are now tested and approved for use in 192 and 176.4 kHz sessions:

- Focusrite d2
- Focusrite d3
- Digidesign DeEsser
- Digidesign Reverb One (RTAS only)
- Digidesign DPP-1
- Digidesign Signal Generator
- Digidesign Surround Scope
- Digidesign Direct Connect
- Digidesign Sound Replacer

In addition, Digidesign's D-Verb plug-in is now included with other DigiRack plug-ins.

New DigiRack Plug-Ins

Pro Tools 5.3.1 adds D-Verb to the included set of DigiRack Plug-Ins.

For instructions on using plug-ins in sessions, adjusting and automating parameters, and installing plug-in software, see the *DigiRack Plug-Ins Guide*.

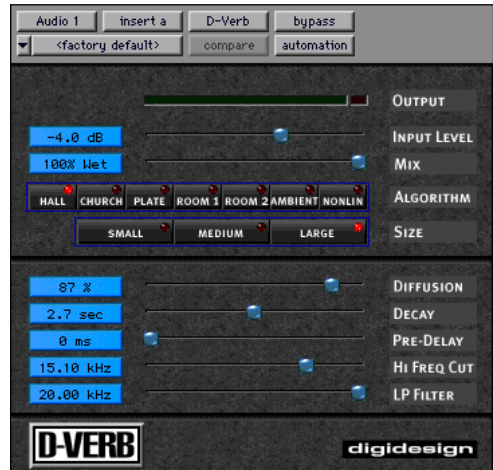
D-Verb

D-Verb is a studio-quality reverb provided in TDM, RTAS, and AudioSuite formats.

A *System performance may vary with D-Verb at high sample rates due to the intense requirements of 176.4 and 192 kHz processing. D-Verb RTAS, for example, will exceed the resources of your CPU when working with 176.4 and 192 kHz files.*

D-Verb Parameters

D-Verb has the following parameters and controls:



D-Verb plug-in

Output Meter

The Output meter indicates the output level of the processed signal. For the stereo version of D-Verb, it represents the summed stereo output. It is important to note that this meter indicates the output level of the signal—not the input level. If this meter clips, it is possible that the signal clipped on input before it reached D-Verb. Monitor your send or insert signal levels closely to help prevent this from happening.

Clip Indicator

The Clip Indicator shows whether or not clipping has occurred. It is a clip-hold indicator. If clipping occurs at any time during audio playback, the clip light will remain on. To clear the clip indicator, click it. With longer reverb times there is a greater likelihood of clipping occurring as the feedback element of the reverb builds up and approaches a high output level.

Input Level

The Input Level slider adjusts the input volume of the reverb to prevent the possibility of clipping and/or increase the level of the processed signal.

Mix (Wet/Dry)

The Mix (Wet/Dry) slider adjusts the balance between the dry signal and the effected signal, giving you control over the depth of the effect. This parameter is adjustable from 100% to 0%.

Algorithm

This control selects one of seven reverb algorithms: *Hall*, *Church*, *Plate*, *Room 1*, *Room 2*, *Ambience*, or *Nonlinear*. Selecting an algorithm changes the preset provided for it. Switching the *Size* parameter changes characteristics of the algorithm that are not altered by adjusting the decay time and other user-adjustable parameters. Each of the seven algorithms has a distinctly different character:

Hall A good general purpose concert hall with a natural character. It is useful over a large range of size and decay times and with a wide range of program material. Setting Decay to its maximum value will produce infinite reverberation.

Church A dense, diffuse space simulating a church or cathedral with a long decay time, high diffusion, and some pre-delay.

Plate Simulates the acoustic character of a metal plate-based reverb. This type of reverb typically has high initial diffusion and a relatively bright sound, making it particularly good for certain percussive signals and vocal processing. Plate reverb has the general effect of thickening the initial sound itself.

Room 1 A medium-sized, natural, rich-sounding room that can be effectively varied in size between very small and large, with good results.

Room 2 A smaller, brighter reverberant characteristic than Room 1, with a useful adjustment range that extends to “very small.”

Ambient A transparent response that is useful for adding a sense of space without adding a lot of depth or density. Extreme settings can create interesting results.

Nonlinear Produces a reverberation with a natural buildup and an abrupt cutoff similar to a gate. This unnatural decay characteristic is particularly useful on percussion, since it can add an aggressive characteristic to sounds with strong attacks.

Size

The *Size* control, in conjunction with the *Algorithm* parameter, allows you to adjust the overall size of the reverberant space. There are three sizes: *Small*, *Medium*, and *Large*. The character of the reverberation changes with each of these settings (as does the relative value of the *Decay* parameter). The *Size* buttons can be used to vary the range of a reverb from large to small. Generally, you should select an algorithm first, and then choose the size that approximates the size of the acoustic space that you are trying to create.

Diffusion

Diffusion sets the degree to which initial echo density increases over time. High settings result in high initial buildup of echo density. Low settings cause low initial buildup. This control interacts with the *Size* and *Decay* parameters to affect the overall reverb density. High settings of diffusion can be used to enhance percussion. Use low or moderate settings for clearer and more natural-sounding vocals and mixes.

Decay

Decay controls the rate at which the reverb decays after the original direct signal stops. The value of the decay parameter is affected by the *Size* and *Algorithm* parameters. This parameter can be set to infinity on most algorithms for infinite reverb times.

Pre-Delay

Determines the amount of time that elapses between the original audio event and the onset of reverberation. Under natural conditions, the amount of Pre-Delay depends on the size and construction of the acoustic space, and the relative position of the sound source and the listener. Pre-Delay attempts to duplicate this phenomenon and is used to create a sense of distance and volume within an acoustic space. Long Pre-Delay settings place the reverberant field *behind* rather than on top of the original audio signal.

Hi Frequency Cut

Hi Frequency Cut controls the decay characteristic of the high frequency components of the reverb. It acts in conjunction with the Low-Pass Filter control to create the overall high frequency contour of the reverb. When set relatively low, high frequencies decay more quickly than low frequencies, simulating the effect of air absorption in a hall. The maximum value of this parameter is Off (which effectively means bypass).

Low-Pass Filter

Low-Pass Filter controls the overall high frequency content of the reverb by allowing you to set the frequency above which a 6 dB per octave filter attenuates the processed signal. The maximum value of this parameter is Off (which effectively means bypass).

What's New in Pro Tools 5.3

This chapter is an overview of some of the new features introduced in Pro Tools 5.3 for Macintosh. This version of Pro Tools software is designed specifically for use with Digidesign's Pro Tools|HD systems, audio interfaces, and synchronization peripherals.

For more details on each feature, refer to the *Pro Tools Reference Guide*. Features can be located by name in its index and table of contents.

Support for Pro Tools|HD Hardware

Pro Tools 5.3 adds support for Digidesign's new Pro Tools|HD cards and interfaces, which feature high definition audio with higher sampling rates, increased track count, more DSP, and enhanced TDM II mixing capabilities.

Pro Tools|HD hardware comes in three configurations:

Pro Tools|HD 1 Includes a single HD Core card.

Pro Tools|HD 2 Includes an HD Core card, an HD Process card, and a TDM FlexCable for connecting the HD Core to the HD Process card.

Pro Tools|HD 3 Includes an HD Core card, two HD Process cards, and two TDM FlexCables.

The HD Core Card

The HD Core card provides up to 96 tracks of direct-to-disk recording and playback, and 32 channels of I/O to your Pro Tools HD-series system, as well as DSP power for processing and mixing. The HD Core card supports up to 24-bit and up to 192 kHz sessions.

The HD Process Card

The HD Process card provides DSP power for mixing, processing, and DSP software such as the DigiRack plug-ins included with Pro Tools. It also provides a DigiLink port for connecting up to 32 channels of I/O. The HD Process card supports up to 24-bit and up to 192 kHz sessions.

High Definition Audio

Pro Tools 5.3 supports high definition, 24-bit audio with sample rates up to 192 kHz when used with a 192 I/O audio interface or up to 96 kHz when used with a 96 I/O audio interface. Supported sample rates include 44.1, 48, 88.2, 96, 176.4, and 192 kHz.

▲ *With Pro Tools 5.3, the default audio file format has changed from Sound Designer II to WAV. In addition, Sound Designer II format audio files are not supported at session sample rates above 48 kHz.*

Increased Voice and Track Count

Pro Tools 5.3 provides up to 96 simultaneous voices of audio at 44.1 or 48 kHz from a single HD Core card, with a maximum of 112 voiceable tracks (previously known as virtual voicing).

Pro Tools|HD 2 and Pro Tools|HD 3 systems provide up to:

- 128 tracks at 44.1 or 48 kHz
- 64 tracks at 88.2 or 96 kHz
- 24 tracks at 176.4 or 192 kHz

New TDM II Mixing Architecture

Pro Tools 5.3 supports TDM II, a new mixing architecture designed for Pro Tools|HD hardware. At a minimum, TDM II provides twice as many time slots (512 at 44.1/48 kHz) as Pro Tools|24 and Pro Tools|24 MIX systems, and hence a greater potential number of connections for routing, processing and mixing audio signals within Pro Tools. This allows for extremely large mixing configurations, which are particularly useful in surround mixing projects.

Support for 192 I/O and 96 I/O

Pro Tools 5.3 adds support for Digidesign's new high-resolution 192 I/O and 96 I/O audio interfaces.

192 I/O

The 192 I/O provides 16 simultaneous channels of high-resolution, 24-bit audio input and output at sample rates of up to 192 kHz, and has an I/O expansion bay for adding more analog inputs, analog outputs, or digital I/O.

192 I/O Features

- 16 discrete channels of input and output, with 4-segment LED Meters to monitor input and output on each channel. Input and Output channels can include:
 - Eight channels of 24-bit D/A and A/D converters for superior analog input and output at sampling rates of 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, and 192 kHz
 - Eight channels of 24-bit-supported AES/EBU I/O, up to four channels of which support sampling rates of up to 192 kHz
 - Sixteen channels of Optical I/O, through two pairs of Lightpipe (ADAT) connectors; one pair of optical ports can be switched to two channels of optical S/PDIF I/O
 - Two additional channels of AES/EBU or S/PDIF (up to 96 kHz)
- Real-time sample rate conversion on inputs of eight channels of either AES/EBU, Optical, or TDIF
- Word Clock input and output for synchronizing 192 I/O with external Word Clock or 256x (Slave Clock) devices
- Simultaneous use of up to eight 192 I/O units is supported, for a maximum of 96 channels of I/O at 96 kHz
- Legacy Port for Digidesign MIX-series audio interfaces

96 I/O

The 96 I/O provides 16 simultaneous channels of high-resolution, 24-bit audio input and output at sample rates of up to 96 kHz.

96 I/O Features

- 16 discrete channels of input and output, with 4-segment LED Meters on each channel. Input and Output channels can include:
 - Eight channels of 24-bit D/A and A/D converters for superior analog input and output at sampling rates of 44.1 kHz, 48 kHz, 88.2 kHz, and 96 kHz.
 - S/PDIF, AES/EBU, and Optical (ADAT) digital inputs and outputs.
- Word Clock input and output for synchronizing 96 I/O with external Word Clock or 256x (Slave Clock) devices.
- Simultaneous use of up to six 96 I/O units is supported, for a maximum of 96 channels of I/O at 48 kHz.
- Legacy port for Digidesign MIX-series audio interfaces.
- Interface with digital mixing consoles and other peripherals equipped with ADAT Lightpipe connections (using the ADAT Optical standard at up to 24-bit resolution).

Optional Legacy I/O Audio Interfaces

For additional input and output channels, older Digidesign audio interfaces (referred to as “Legacy” I/Os) can be connected to the 192 I/O or 96 I/O. Legacy interfaces can only be used with 44.1 or 48 kHz sessions. Additionally, Legacy interfaces are not automatically sensed in the Hardware Setup dialog and must be manually identified.

Legacy interfaces include:

- 888|24 I/O
- 882|20 I/O
- 1622 I/O
- Digidesign 24-bit ADAT Bridge I/O and original ADAT Bridge I/O

Support for SYNC I/O

Pro Tools 5.3 adds support for Digidesign’s new SYNC I/O, a multi-purpose synchronization peripheral that provides most all of the functions and connections needed to achieve synchronization to a variety of devices.

SYNC I/O lets you synchronize Pro Tools to LTC, VITC, and Bi-Phase/Tach, or internal for positional reference (time code), and supports all major clock references.

SYNC I/O offers extremely fast lockup, near sample-accurate synchronization, and an exceptionally low-jitter clock. These features provide professional performance and maximum audio fidelity under a wide range of synchronization conditions.

Support for DigiLink Connections

New DigiLink proprietary I/O interconnect cables make the vital connection between HD Core or HD Process cards and HD I/Os. These cables support 32 channels of I/O per card and up to 96 total channels of I/O between multiple HD I/Os.

Software Enhancements

Pro Tools 5.3 features a variety of software enhancements for configuring Pro Tools|HD hardware and managing sessions.

Hardware Setup

A new Hardware Setup dialog provides comprehensive controls for configuring all connected audio interfaces and peripherals, as well as global settings such as the Clock Source for the peripherals connected to the system.

Connected 192 I/O and 96 I/O audio interfaces, and the cards to which they are attached, are automatically sensed and identified by Pro Tools 5.3 software, eliminating the need to manually define these connections.

⚠ *When replacing a 192 I/O audio interface with a 192 I/O that has a different configuration of option cards, the default settings are restored.*

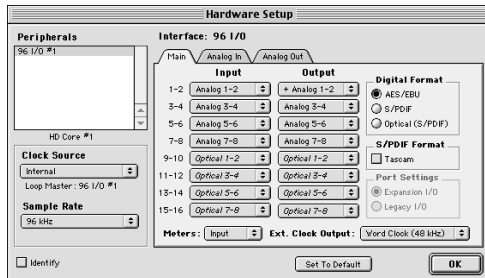
Legacy audio interfaces (such as the 888|24 I/O and 882|20 I/O) are not automatically sensed and must be manually identified within this dialog. Additionally, if HD I/Os are changed, the Legacy I/O must be re-identified in Hardware Setup.

⚠ *Legacy interfaces cannot be used in sessions with sample rates above 48 kHz.*

The Main page of the Hardware Setup dialog is used to define what physical ports are routed to Pro Tools input and output ports. Each connected 192 I/O and 96 I/O has its own Main page that allows you to define the format, on a pair-by-pair basis, of the 16 channels of I/O that are usable by Pro Tools

The Main page also provides controls for system Sample Rate, Sync settings, and defining whether Expansion Port or Legacy Port peripherals are active.

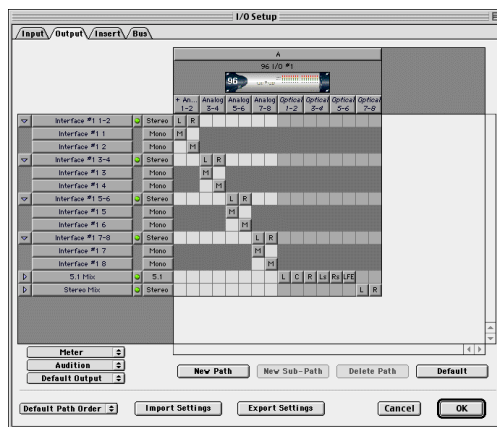
Additional pages configure other parameters on each I/O, such as setting operating levels. For more information, refer to the *Getting Started with HD Guide* and the guide for your specific interface.



Hardware Setup dialog

I/O Setup

The I/O Setup dialog supports the new Pro Tools|HD hardware and provides comprehensive controls for configuring the signal paths of all connected interfaces.

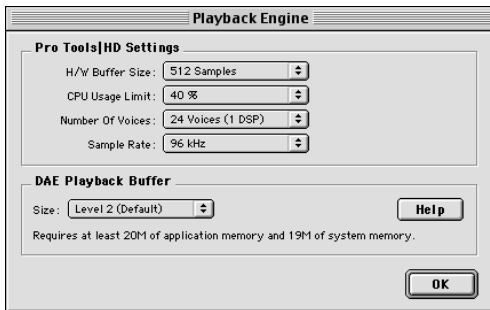


I/O Setup dialog

Playback Engine

The Playback Engine dialog has been streamlined. It can now be opened without requiring that the current session be closed. In addition, the Playback Engine dialog now has controls for setting the DAE Playback Buffer Size, a control previously found in the DAE application.

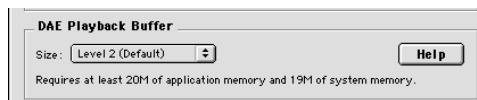
A new Number of Voices pop-up menu allows you to choose the number of voices in a session and the number of DSP chips used to provide those voices (and thus the number of voices per DSP) and the number of DSP chips assigned as Playback Engine chips. Depending on the current session sample rate, and the number of HD Core and Process cards in your system, you will have different choices available. Changing the number of voices or session sample rate affects DSP usage and your system performance. Up to four DSP chips can be used as Playback Engine chips.



Playback Engine dialog

DAE Integrated Into Pro Tools Software

Previously a separate application, DAE is now part of the Pro Tools software and DAE Buffer Size can be set using the Playback Engine dialog.



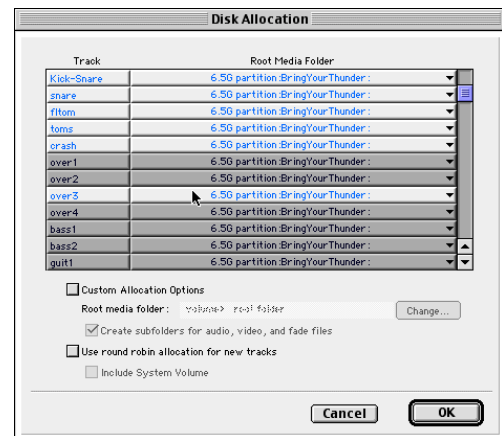
DAE Playback Buffer in Playback Engine dialog

In addition, directly changing DAE's memory allocation (to accommodate additional plugins) is no longer possible. Instead, allocate more memory to the Pro Tools application.

Disk Allocation Dialog Shortcuts

Two new key shortcuts make it easier to allocate a specific destination hard drive to multiple tracks simultaneously:

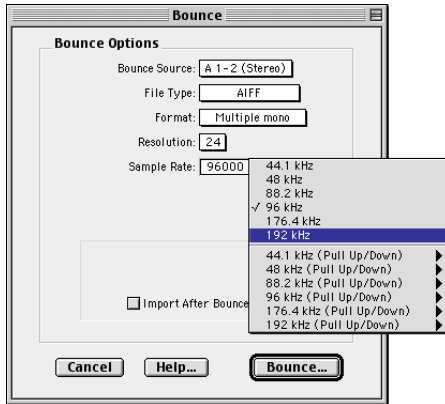
- To make a continuous selection, Shift-click a track name (in the Track column) to extend the selection to include already-selected tracks and all tracks in between.
- To make a discontinuous selection, Command-click (Macintosh) or Control-click (Windows) a track name in the Track column to extend the selection to include already-selected tracks without including tracks in between.



Disk Allocation dialog

Bounce to Disk

Bounce to Disk now supports bouncing at high definition sample rates. Supported destination sample rates include 44.1, 48, 88.2, 96, 176.4, and 192 kHz. Pull Up/Pull Down variants for all supported standard sample rates are also provided.

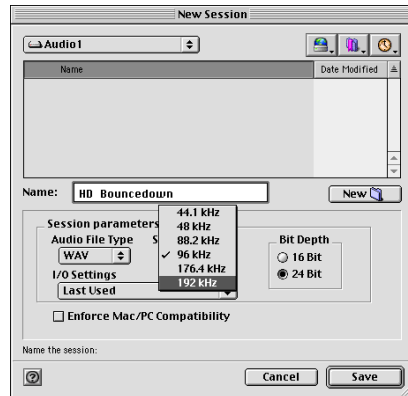


Bounce to Disk dialog

New Session

The New Session dialog now supports Pro Tools|HD's high definition sample rates. Supported sample rates include 44.1, 48, 88.2, 96, 176.4, and 192 kHz. The session sample rate is defined in the New Session dialog when a session is first created.

⚠ *With Pro Tools 5.3, the default audio file format has changed from Sound Designer II to WAV. In addition, Sound Designer II format audio files are not supported at session sample rates above 48 kHz.*



New Session dialog

Save Session Copy In

The Save Session Copy In dialog allows saving a copy of the current session in the following formats:

- Latest (Pro Tools 5.1 or later)
- Pro Tools 5 Session
- Pro Tools 4, 16-Bit Session
- Pro Tools 4, 24-Bit Session
- Pro Tools 3.2 Session

Choose Latest if you are working with Pro Tools software version 5.1 or higher.

⚠ *When a Pro Tools 5.3 session is saved to an earlier version, multichannel tracks and multi-mono plug-ins are lost. To preserve these, separate the tracks and plug-ins to individual mono tracks before saving a copy of the session.*

Opening 5.3.1 Sessions Using Earlier Versions of Pro Tools

If you want to use an earlier version of Pro Tools to open a 5.3 session containing audio files with sample rates above 48 kHz, choose the “Save Session Copy In” command and resave the session and its audio files to either a 44.1 or 48 kHz sample rate.

Plug-In and Processing Features

Pro Tools 5.3 adds several new plug-in and DSP-processing related enhancements.

New DigiRack Plug-Ins

Pro Tools 5.3 for Macintosh includes new DigiRack Plug-Ins with the following enhancements:

- A new Mod Delay II plug-in with Tempo, Meter, and note-based entry of delay time
- An RTAS version of POW-r Dither
- TDM and RTAS versions of Digidesign’s D-Verb plug-in
- Three separate TimeAdjuster plug-ins (Short, Medium, Long) for a wider variety of sample delay times

All DigiRack Plug-Ins support up to 192 kHz session sample rates.

Mod Delay II Plug-In

Mod Delay II for Pro Tools 5.3 adds controls for Tempo, Meter, Duration, and Groove.

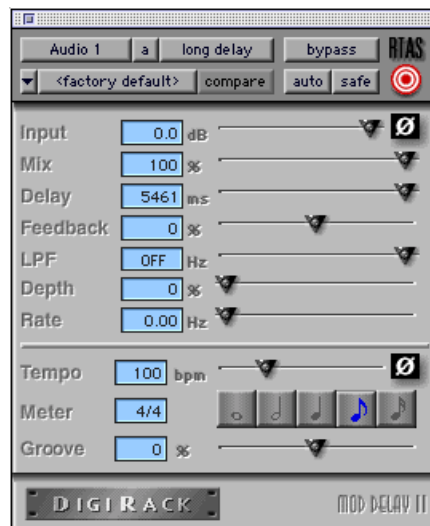
Tempo Sets the desired tempo in beats per minute (bpm).

Meter Allows you to enter simple or compound time signatures.

Duration Allows you to specify a delay according to a note value (whole, half, quarter, eighth, or sixteenth note).

Groove Provides fine adjustment of the delay in percentages of a 1:4 subdivision of the beat.

This new version of Mod Delay II is provided in TDM, RTAS, and AudioSuite formats.



Mod Delay II plug-in

TimeAdjuster Plug-In

TimeAdjuster for Pro Tools 5.3 provides a choice of three plug-ins:

Short Provides a maximum delay of 256 samples at all sample rates.

Medium Provides a maximum delay of 2048 samples at all sample rates.

Long Provides a maximum delay of 8192 samples at all sample rates.

New HTDM Plug-In Format

Pro Tools 5.3 supports Digidesign's new HTDM (host TDM processing) plug-in format.

HTDM plug-ins combine the flexibility of TDM plug-ins with the power of RTAS plug-ins by using the processing power of your host computer, while allowing plug-in insertion on all track types, including disk tracks, auxiliary inputs, and master faders. This allows you to use a greater number of plug-ins in a session without restricting their usage on specific track types.

chapter 4

Corrections to the 5.3 Guides

This chapter lists corrections to the Pro Tools 5.3 guides, and also documents some items not covered in those guides.

Pro Tools 5.3 Reference Guide

PN 932709360-00 REV A 1/02

Hardware Setup

On pages 40–42 of the *5.3 Reference Guide*, the steps for configuring audio interfaces in Hardware Setup do not include important information for making changes to existing setups.

Correction:

Connected 192 I/O and 96 I/O audio interfaces, and the cards to which they are attached, are automatically sensed and identified by Pro Tools 5.3 software, eliminating the need to manually define these connections. However, when replacing a 192 I/O audio interface with a 192 I/O that has a different configuration of option cards, the default settings are restored.

Legacy audio interfaces (such as the 888|24 I/O and 882|20 I/O) are not automatically sensed and must be manually identified within this dialog. Additionally, if HD I/Os are changed, the Legacy I/O must be re-identified in Hardware Setup.

Routing a Pro Tools Output Pair to Multiple Audio Interface Output Ports

On pages 42 and 64 of the *5.3 Reference Guide*, the fifth step for selecting multiple output ports for a Pro Tools output channel pair incorrectly states: “Control+Shift an additional output destination.”

Correction:

The fifth step for selecting multiple output ports for a Pro Tools output channel pair should say: “Control-click (Macintosh) or Start-click (Windows) an additional output destination.”

In addition, you must hold down the modifier key (Control on Macintosh, or Start on Windows) before clicking on the Output menu.

Latch Record Enable Buttons

On page 52 of the *5.3 Reference Guide*, the Latch Record Enable Buttons section fails to specify the track type when it states that: “When deselected, prevents multiple tracks from being record enabled: Record-enabling a track takes any other track out of record-enabled mode.”

Correction:

The Latch Record Enable buttons are for audio tracks only.

Latch Record Mode

On page 119 of the *5.3 Reference Guide*, the Latch Record Mode section fails to specify the track type when it states that “you can record enable additional tracks.”

Correction:

Latch Record Mode is for audio tracks only.

Allocating Audio Drives

On page 124 of the *5.3 Reference Guide*, the second step for allocating audio drives in your system incorrectly says to assign a hard drive for each track by “clicking in the Record Location column.”

Correction:

The second step for allocating audio drives in your system should say: “In the Disk Allocation dialog, to assign a hard drive for each track, click in the Root Media Folder column and select a hard drive (or folder) for the track.”

Recording to MIDI Tracks

On pages 154–155 of the *5.3 Reference Guide*, the second step for recording one or more MIDI tracks incorrectly states: “Record enable any MIDI tracks to which you want to record by clicking their Record Enable buttons.”

Correction:

The second step for recording one or more MIDI tracks should say: “Record enable the MIDI track to which you want to record by clicking on its Record Enable button. To record enable multiple MIDI tracks, Shift-click the Record Enable buttons on each track.”

Striping from Silence Regions

On page 257 of the *5.3 Reference Guide*, Minimum Strip Duration incorrectly states that the range of the Minimum Strip Duration parameter is 0–10,000 ms.

Correction:

The range of the Minimum Strip Duration parameter is 0–4,000 ms.

MIDI Track Offset

On page 313 of the *5.3 Reference Guide*, the second paragraph of the second step for configuring a MIDI track offset incorrectly states that the value displayed in the Msec Offset column is updated “when a new value is entered in the SMPTE Offset column.”

Correction:

The second step for configuring a MIDI track offset should say that the value displayed in the Msec Offset column is updated “when a new value is entered in the Sample Offset column.”

External Clock Sources

Page 475 of the *5.3 Reference Guide* incorrectly states that the base rate for external clock source “equals 44.1 kHz for 88.2 and 174.4 kHz.”

Correction:

The base rate for external clock source “equals 44.1 kHz for 88.2 and 176.4 kHz.”

Spotting Movie to Sync Point

On page 505 of the 5.3 *Reference Guide*, the fourth step for spotting the movie to a sync point incorrectly says to “Set the Grid Value to Feet.Frames.”

Also on page 505, steps 8 and 9 incorrectly refer to the “Move Region To dialog.”

Correction:

The fourth step for spotting the movie to a sync point should say “Set the Grid Value to Time Code.”

Steps 8 and 9 should refer to the “Spot dialog,” not the Move Region To dialog.

Enhancing Performance by Clearing the Undo Queue

Clearing the Undo Queue

Page 180 of the *Reference Guide* describes Multiple Undo. While this section correctly lists actions which clear the Undo queue, the following tip for improved system performance was omitted.

Correction

Clearing the Undo queue can speed up system response by reducing the load on your CPU memory caused by maintaining multiple levels of Undo.

Getting Started with HD Guide

PN 932709429-00 REV A 1/02

Windows System Requirements

On page 4 of the *Getting Started with HD Guide*, the system requirements for Windows says: “Windows XP Home Edition, or Windows 2000 Professional Edition with Service Pack 2 or higher.”

Correction:

Pro Tools|HD 5.3.1 does not support Windows 2000. The system requirements for Windows should say “Windows XP Home Edition or Professional Edition.”



If you are changing operating systems, Digidesign recommends a clean install of Windows on a newly formatted drive or partition rather than upgrading the operating system.

Windows Hard Drive Requirements

On page 5 of the *Getting Started with HD Guide*, the tip for hard drive requirements for Windows says: “Drives formatted as FAT32 are recommended for quicker disk priming time when starting a Pro Tools record operation.”

Correction:

Windows XP cannot format hard drives as FAT32. The tip for hard drive requirements for Windows should be ignored.

SampleCell II Cards with Pro Tools|HD Systems

On page 11 of the *Getting Started with Pro Tools|HD Guide*, SampleCell II hardware support is stated incorrectly.

Correction:


■ Although Digidesign does recommend using Soft SampleCell with HD systems, you can use SampleCell II cards with certain limitations and requirements. For more information, please see the Pro Tools|HD Compatibility Documents on the Digidesign Web site (www.digidesign.com).

Connecting Digidesign Legacy I/O

On pages 15 and 35 of the *Getting Started with HD Guide*, an important recommendation is missing after the steps for connecting Digidesign Legacy I/Os (such as 888|24 I/O or 882|20 I/O).

Correction:

The following tip should come after step 2 for connecting Digidesign Legacy I/Os:

 *In order to ensure the proper functioning of Legacy audio interfaces (such as the 888|24 I/O and 882|20 I/O), it is recommend that you launch Pro Tools and declare the Legacy audio interfaces in the Hardware Setup dialog prior to powering on your Legacy audio interfaces. Then quit Pro Tools, shut down your computer, power on your audio interfaces and turn on your computer.*

Routing a Pro Tools Output Pair to Multiple Audio Interface Output Ports

On pages 27 and 50 of the *Getting Started with HD Guide*, the fifth step for selecting multiple output ports for a Pro Tools output channel pair incorrectly states: “Control+Shift an additional output destination.”

Correction:

The fifth step for selecting multiple output ports for a Pro Tools output channel pair should say: “Control-click (Macintosh) or Start-click (Windows) an additional output destination.”

In addition, you must hold down the modifier key (Control on Macintosh, or Start on Windows) before clicking on the Output menu.

Install any remaining HD Process cards in the remaining consecutive PCI slots (32-bit).

192 Digital I/O Guide

PN 910610233-00 REV A 01/02

Loop Master LED

On page 3 of the *192 Digital I/O Guide*, the section titled Loop Master LED incorrectly states that, “Loop Master will always be lit with a single interface.”

Corrections:

The section titled Loop Master LED should say that, “Loop Master will always be lit with a single 192 Digital I/O, unless a SYNC I/O is connected.”

192 I/O Guide

PN 932709286-00 REV A 01/02

192 I/O Features

On page 1 of the *192 I/O Guide*, the 192 I/O incorrectly states that the 192 I/O supports “ten channels of 24-bit-supported AES/EBU I/O, eight channels of which support sampling rates of up to 192 kHz,” and “two 24-bit-capable S/PDIF I/O supporting sample rates of up to 96 kHz.”

Corrections:

The 192 I/O supports “eight channels of AES/EBU I/O (four channels at 192 kHz),” and “two additional channels of AES/EBU or S/PDIF (up to 96 kHz).”

Loop Master LED

On page 3 of the *192 I/O Guide*, the section titled Loop Master LED incorrectly states that, “Loop Master will always be lit with a single interface.”

Corrections:

The section titled Loop Master LED should say that, “Loop Master will always be lit with a single 192 I/O, unless a SYNC I/O is connected.”

Output Trims

On page 6 of the *192 I/O Guide*, the second paragraph of the section titled Output Trims incorrectly states that you can, “match two different headroom values for either input connector.”

Corrections:

The second paragraph of the section titled Output Trims should say that you can, “match two different headroom values for either output connector.”

96 I/O Guide

PN 932709282-00 REV A 01/02

Loop Master LED

On page 3 of the *96 I/O Guide*, the section titled Loop Master LED incorrectly states that, “Loop Master will always be lit with a single interface, regardless of synchronization mode.”

Corrections:

The section titled Loop Master LED should say that, “Loop Master will always be lit with a single 96 I/O, unless a SYNC I/O is connected.”

DigiStudio

PN 932910029-00 1/02

On page 25 of the *DigiStudio Guide*, step 4 for posting mixdowns for others is incorrect.

Correction:

You can only post or e-mail mixes that you created. You cannot post or e-mail someone else’s mixdown, or a public mixdown.



As an alternative, record your mix to two new audio tracks (or a stereo audio track) and post these as regular shared tracks.

SYNC I/O Guide

PN 910609328-00 1/02

VSO Range

On page 35 of the *SYNC I/O Guide*, the table listing effective sample rate ranges for VSO (Variable Speed Override) contains incorrect minimum and maximum VSO rates.

Correction:

Effective VSO rates

Sample Rate (kHz)	Rate Type	Min (kHz)	Max (kHz)
44.1	1x	40000	50500
48			
88.2	2x	80000	101000
96			
176.4	4x	160000	202000
192			

Generating Time Code and Pull Rate Settings

On page 41 of the *SYNC I/O Guide*, the Generating and Regenerating Time Code section omitted information regarding Pull Up and Pull Down settings.

Correction:

Time code generated by the SYNC I/O does not follow session Pull Up and Pull Down settings.

LTC Servo Gain

On page 54 of the *SYNC I/O Guide*, the default setting and the number of available options are incorrect.

Corrections:

- ◆ The default LTC Servo Gain setting is 0000 (not -001) when accessing Servo Gain through the front panel controls. In Pro Tools, the default setting is listed as “LTC (0).”
- ◆ There are five Servo Gain settings.

Control|24 Guide

PN 932709088-00 3/01

Headphone Jack and Controls

On page 37 of the *Control|24 Guide*, the section titled Headphone Jack and Controls incorrectly states that, “the jack is located on the lower-left of the Control Room Monitor section.”

Correction:

The section titled Headphone Jack and Controls should say that, “the jack is located on the lower-right of the Control Room Monitor section.”

Contrast Mode Pages

On page 143 of the *Control|24 Guide*, the sections titled Prefs Pages and Contrast Mode Page are incorrect.

Correction:

The sections for Prefs Pages and Contrast Mode Page should be ignored because these pages are not available on the Control|24.

Expanded Systems Guide

PN 932109431-00 REV A 1/02

System Requirements for Expanded Systems

On Page 1 of the *Expanded Systems Guide*, in the section titled Pro Tools with and Expansion Chassis, the paragraph on 13-slot chassis support omitted a requirement.

Correction

This paragraph omitted the following requirement:

A *Macintosh OS 9.2.2 is required for systems with more than five Pro Tools|HD cards.*

Supported Chassis

Some illustrations show examples of Pro Tools|HD systems being installed in certain expansion chassis. This does not guarantee that those chassis have been qualified for Pro Tools|HD systems. Always check for the latest compatibility information at:

www.digidesign.com

Configuring the SBS 7-Slot Expansion Chassis

On page 18 of the *Expanded Systems Guide*, the first step for installing the chassis controller card incorrectly includes SBS models DD22-1 and 2101-00-2, which are not supported with Pro Tools|HD.

Correction:

SBS models DD22-1 and 2101-00-2 are not supported with Pro Tools|HD; only the SBS 7-slot chassis model DD007-R is supported with Pro Tools|HD. The first paragraph of step one for installing the chassis controller card should be ignored.

Example 3, SBS 7-Slot

On page 19 of the *Expanded Systems Guide*, Example 3, SBS 7-Slot, lists the slot order for Pro Tools|HD cards in the SBS 7-slot chassis, models DD22-1 and 2101-00-2. SBS models DD22-1 and 2101-00-2 are not supported with Pro Tools|HD.

Correction:

Example 3, SBS 7-Slot, should list the slot order for the SBS 7-slot chassis, model DD007-R.

Chassis cards with multiple audio interfaces:

Slot	Card
Slot 1	HD Core (Interface #1 and #2)
Slot 2	HD Process (interface #3 and #4)
Slot 3	HD Process (interface #5 and #6)
Slot 4	HD Process (Interface #7 and #8)
Slot 5	HD Process
Slot 6	HD Process
Slot 7	HD Process


AVoption|XL Guide

PN 932708445-00

SCSI and Firewire Drive Mapping

In the chapter Recording and Adding to the Movie Track, the AVoption Guide omitted the following warning about target drives.

Correction:

 *Do not unmount Firewire drives while Pro Tools and AVoption|XL are recording video, even if the video is not being recorded to the Firewire drive. If you unmount any device while recording, Pro Tools will not be able to rectify its mapping when recording is finished.*

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