DIGIDESIGN
Pro Tools®

What's New

Version 4.2 for all Pro Tools systems

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Chapter 1: What's New in Pro Tools 4.2

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What's New in Pro Tools 4.2

Welcome to Pro Tools 4.2, which introduces support for ProControl—Digidesign's new world-class hardware control surface, and adds other new features that will dramatically increase the mixing capabilities of your Pro Tools system. This new version provides more options for the display and playback of your sessions, streamlines the management of regions, and makes it easier to back up your work. In addition, you can now export files directly from Pro Tools to RealAudio format for distribution over the World Wide Web. This guide provides you with full operational details on the more than 40 additions and changes in Pro Tools 4.2

For more detailed information on these new features, please refer to the following chapters.

Mixing Enhancements

Support for ProControl

(Refer to the ProControl User's Guide for details)

Pro Tools 4.2 supports Digidesign's ProControl ™, a dedicated hardware control surface for TDM-equipped Pro Tools systems. ProControl connects to a Pro Tools system via Ethernet, and provides access to all Pro Tools recording, mixing, editing, signal routing, Plug-In control, and automation features.

Stereo Sends and Individual Sends View

Stereo Sends With Pro Tools 4.2, you can now create stereo sends on TDM-equipped Pro Tools systems. Along with send level and mute parameters, stereo send pan controls are fully automatable.

Sends View The individual sends view in the Mix and Edit windows displays all controls for a single send in the sends area, allowing control of all parameters for that send on all tracks directly from the Mix or Edit window. You also have the option of displaying gain meters for individual sends.

New Automation Features

Automation Trimming Pro Tools 4.2 now allows you to record trim values for Track Volume and Send Level automation in real time. You can apply changes to existing automation data by enabling trim mode and moving faders during playback. You can also capture trim values as automation "snapshots," and apply them to selected automation using the Trim Automation command.

Copying Automation Data Pro Tools 4.2 adds the capacity to quickly copy automation values to all or part of a session by clicking a single button during playback. In addition, on TDM-equipped Pro Tools systems, you can now copy track volume, pan, and mute settings and automation data to the corresponding controls for a Send in one easy step.

Smoothing of Automation Data When you perform automation moves with a continuous control, Pro Tools records the moves as a series of very small steps, resulting in a "staircase" pattern with many breakpoints. Pro Tools 4.2 gives you the option to automatically resolve this data into a smooth ramp from one automation breakpoint to the next, resulting in a more accurate representation of actual automation moves.

Switchable Pre/Post Fader Metering

On Pro Tools III and Pro Tools 24 systems, you can now set the level meters to globally indicate pre-fader or post-fader playback levels. The addition of pre-fader metering allows you to monitor disk track levels independent of fader position.

Operational Enhancements

Automatic Fades on Region Boundaries

On Pro Tools 24 systems only, you can choose to apply automatic fade-ins/fade-outs to all regions that open boundaries (namely, boundaries that do not touch or overlap other regions). These non-destructive fades are performed in real time during playback. This feature is especially useful in post-production applications.

Consolidation of Session Files

Pro Tools 4.2 allows you to automatically copy a session and all of its associated audio files, movie files, and Plug-In settings files to a single destination (such as a backup or alternative drive) using the Save Session Copy In command.

Support for RealAudio File Format

Pro Tools 4.2 provides the option of exporting or bouncing to RealAudio, RealNetworks' format for streaming audio over the Internet. You have the choice of several encoding algorithms, allowing you to adjust resolution and file size to fit your needs.

MIDI Machine Control

Pro Tools 4.2 adds the capability to transmit location information and transport controls from Pro Tools to external devices (such as the Alesis ADAT) via MIDI Machine Control.

New Transport Features

Fast Forward/Rewind You have the option of setting Pro Tools to play audio during fast forward/rewind so you can scan tracks in a session, or to continuously rewind/fast forward without audio. With audio turned off, you can also fast forward/rewind by discrete increments according to your current time scale display.

Pause You can ensure instantaneous playback or recording of even very large sessions by using Pause mode. When you Option-click the Play button in the Transport, Pro Tools primes for playback. Press Play again to immediately begin playback (or recording).

Memory Location Recall during Playback With Pro Tools 4.2, you can recall memory locations during playback, and the session will continue to play back from the recalled location without interruption.

Display Features

Playback and Pre/Post-Roll Markers In Pro Tools 4.2, selections in the Edit Window are indicated by blue start and end arrows in the time scale ruler at the top of the window. If any track in the session is record enabled, these playback markers turn red. In addition, pre- and post-roll positions for the selection are indicated in the time scale ruler by small flags, which appear green when pre and/or post roll is enabled.

Whole-file Regions Displayed in Bold Type To show clearly which regions are whole files (as opposed to those regions referencing part of a file), all whole file region names are now displayed in bold type in the Audio Regions List.

Option to Hide Automatically Created Regions Pro Tools allows you to hide regions that are automatically created by the system during editing. When you do this, only whole-file and user-created regions will appear in the Regions List.

Pro Tools monitors the number auto-created regions in your session. If this number exceeds a certain level, Pro Tools gives you the option of deleting unused regions to help streamline system performance.

Region Name Display in Playlist You can turn on/off display of region names in the playlist area by selecting/deselecting the Display Name in Regions option in the Display menu. This is useful when region name obscures the waveform in the region.

Zoomer Tool Behavior In Pro Tools 4.2, the Zoomer changes only the horizontal scale of the selected area in the Edit window. To zoom in on both the horizontal and vertical scales, hold the Option key while dragging with the Zoomer tool.

Playback Engine Settings Saved with Each Session

Pro Tools now remembers the Playback Engine you use with each session. If when you launch a session your current Playback Engine setting is different from that last used in the session, Pro Tools gives you the option of restoring the original Playback Engine. This feature is helpful if you open sessions on different systems or if you frequently use different Playback Engines.

Pro Tools 4.2 Features and Updates

Stereo Sends

With Pro Tools 4.2 and later, sends can be either mono or stereo. When you click the Sends button on a track, you can choose from a list of mono or stereo outputs or busses. Send level, send mute and send pan (for stereo sends) parameters are fully automatable. See the *Automating Sends* section later in this chapter for more information.

NOTE: Only Pro Tools 24 and Pro Tools III systems support stereo sends. However, when using Pro Tools 4.2 or higher software, stereo send information is retained even if a session containing such information is opened and saved on a non-TDM Pro Tools system.

Displaying Send Controls

It is now possible to display all the parameters of a single send in the sends area of the Mix and Edit Windows, allowing full access to all controls of that send on all tracks. When you display the controls for an individual send, you also have the option of displaying send gain meters.

To display the controls for an individual send across all tracks:

1. If Sends are not currently visible on your tracks, choose Mix Window Shows from the Display menu and select Sends View.

2. Choose Sends View Shows from the Display menu and select an individual send. The controls for that send will be shown on all tracks.
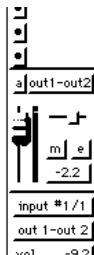
Sends view showing controls for an individual stereo send

To display/hide send gain meters when viewing individual sends:

1. Choose Preferences from the Setups menu and click Display to show the Display window.

2. Select/deselect Show Meters in Sends View and click OK.

Send gain meters show peak values and indicate clipping that occurs while the meter is displayed (if a send clips before its meter is displayed, this will not be shown). To clear a send meter's clip indicator, click the indicator.

NOTE: If you are using a computer with a slower CPU, hiding send gain meters will improve screen redraw times.

Keyboard Shortcuts

• To change the send display from Assignments View to an Individual Send View, Command-click a Send button in a track to display its controls.

• To change the send display from an Individual Send View to Assignments view or to another send, Command-click the Send Selector button in a track and choose the desired view from the pop-up menu.
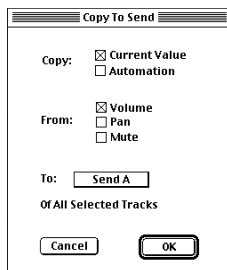
Copying Track Control Settings to Sends

There may be cases where you want a track's send settings to mirror the settings in the track itself. You can quickly copy a track's volume fader, pan slider or mute button position to the corresponding controls for a send on that track, using the Copy to Send command.

In addition, you can copy the entire automation playlist for the selected control to the corresponding playlist for the send. (This feature is not available on the Pro Tools Project system as it does not support Send automation.) For more information on automation, refer to *Automating Sends* later in this chapter.

To copy a track's current control settings to a send on that track:

1. Select the tracks you wish to edit by clicking on the track names to highlight them.

2. Choose Copy to Send from the Edit menu.

The Copy to Send dialog

3. In the dialog that appears, select Current Value to copy the current position of the track controls.

4. Choose the controls you wish to copy.

5. Choose which send(s) to copy the settings to.

6. Click OK. The appropriate send data will be updated on all selected tracks.

This command is undoable by choosing Undo from the Edit menu.

Automation Features

Pro Tools features dynamic automation of track volume, pans, and mutes. On TDM-equipped Pro Tools, systems, you can also automate Send levels, pans, and mutes, as well as Plug-In parameters.

Setting the Automation Buffer Size

Pro Tools allows you to specify the size of the memory buffer used to record automation. To do this, choose Preferences from the Setups menu and click Automation. Enter a value between 200 and 3000 K for this option (the default value for a new session is 200 K.) If you are working on a large session or recording a large number of automation moves, you may wish to increase this value.

Trimming Automation

If you have already recorded automation, you can use the new trimming capability of Pro Tools to modify these parameters. Automation can be trimmed in three ways:

• Track volume and send levels can be trimmed in real time by trim-enabling the track and moving the appropriate faders during playback. When a track is trim-enabled, you are not recording absolute fader positions, but relative changes in the existing automation.

• All automation parameters can be trimmed manually using the Trim tool in Pro Tools Edit window, even during playback.

• You can also use trim values as snapshots and apply the *relative* changes using the Trim Automation command in the Edit menu. See the section entitled *Snapshot Automation and Trimming of Automation Data*, later in this chapter.

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Keyboard Shortcuts

- Command-Control-clicking the on-screen control for any automation-enabled parameter displays that parameter's automation playlist in the corresponding track.

Automating Sends

(TDM-equipped Pro Tools systems only)

Pro Tools allows dynamic automation of send level, send mute, and in the case of stereo sends, send pans. This feature makes it easy to control effects levels and stereo placement during mixdown with precision.

Send pans can be automated using the same procedure for automating other Send parameters. Refer to your *Pro Tools Reference Guide* for details on automating Send parameters.

Copying Track Automation to Sends

There may be cases where you want a track's send automation to mirror the automation in the track itself. You can copy a track's control settings to the corresponding controls for a send on that track. In addition, you can copy the entire automation playlist for the selected control to the corresponding playlist for the send, using the Copy to Send command.

To copy a track's automation to a send on that track:

1. Select the tracks you wish to edit by clicking on the track names to highlight them.

2. Choose Copy to Send from the Edit menu.
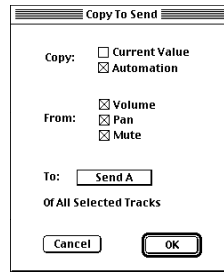
The Copy to Send dialog

3. In the dialog that appears, select what you wish to copy. Select Automation to copy the entire automation playlist for the corresponding controls. (Note that it is also possible to select both the Current Value and the Automation options.)

4. Choose the controls you wish to copy.

5. Choose which send(s) to copy the automation to.

6. Click OK. The appropriate send data will be updated on all selected tracks.

This command is undoable by choosing Undo from the Edit menu.

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When overwriting existing automation, Pro Tools presents a confirmation dialog. To suppress this warning, press the Option key while executing the command.

Snapshot Automation and Trimming of Automation Data

Pro Tools allows you to use trim values as snapshots and apply the *relative* changes (or "delta values") to the selected automation by using the Trim Automation command in the Edit menu. This works in much the same way as the Write Automation, except that it writes delta values instead of absolute values to automation data.

***To create a snapshot of relative changes in auto-
mation data:***

1. In the Edit window, click the Track Display Format button to select the desired automation type on the desired track(s).

2. In the Automation Enable window, make sure the desired automation type is record-enabled.

3. Select the area of the track you wish to modify. All Pro Tools controls and automated plug-in parameters "snap" to the state of the automation at the beginning of the selection.

4. Move the controls for the parameter (volume, pan, mute and so on) up or down by the desired amount.

5. From the Edit menu, choose Trim Automation.

6. If you wish to write the current delta values to only the automation parameter currently displayed in the corresponding track in the Edit window, choose To Current Parameter.

7. If you wish to write the current delta values for all automation parameters enabled in the Automation Enable window, choose To All Enabled Parameters. This will be reflected in the automation playlist for each of these parameters.

For more information on creating Snapshot Automation, refer to your *Pro Tools Reference Guide*.

Thinning Automation

Pro Tools records a maximum density of automation data during an automation pass, in the form of breakpoints. Since Pro Tools creates volume ramps between one or more points, it may not need all of the captured points to create a sonically-accurate representation of the automation moves that you have made. Each breakpoint takes up space in memory allocated for automation, so thinning data can allow you to maximize efficiency and CPU performance.

Pro Tools provides two different ways to thin automation data and remove unneeded breakpoints: the Smooth and Thin Data After Pass option, and the Thin Automation command.

Using the "Smooth and Thin Data After Pass" Option

When this option is enabled in the Automation page of the Preferences dialog, Pro Tools automatically thins the automation breakpoint data after each automation recording pass. (After a lengthy pass, or on slower computers, this process may take a few moments.) You have four choices for the amount of thinning performed: Little, Some, More, and Most (with the default value being "Some"). If you choose None, Pro Tools will record the maximum possible number of breakpoints. However, you can still perform thinning with the Thin Automation command in the Edit menu.

In the default settings for new sessions, the Smooth and Thin Data After Pass option is enabled, with the "Some" setting selected.

Using the Thin Automation Command

The Thin Automation command allows you to selectively thin areas in a track where automation data is too dense. Be careful not to "over-thin" data or it may no longer accurately reflect your automation moves. You may wish to audition this command on a selection, by listening to your performance while undoing and redoing, before you apply it permanently.

Editing Automation

Pro Tools provides several ways to edit automation data for any track in your session. Automation data for all parameters can be graphically edited, as well as cut, copied, and pasted using the tools and techniques you have learned for editing audio and MIDI data. In addition, track volume and send level automation can now be edited in real time (or "trimmed") by putting a track in trim mode, enabling automation recording, and mov-

ing faders for the appropriate parameters during playback. You can now quickly write current automation values from any insertion point forward (or backward) to the end (or beginning) of a selection or track, as well as to an entire selection or track, with the click of a single button during playback.

Rules for Editing and Trimming Automation Data

The following rules determine which breakpoints are affected when manually trimming automation data:

- If you click within a selection, only the existing breakpoints that are within the selection are trimmed.

- If you click between two breakpoints that have the same value, those two breakpoints are trimmed.

- By default, when you edit or trim breakpoints, new "anchor" breakpoints are created before and after the affected area. If you don't want these anchor breakpoints to be created, hold down the Option key.

- By default, Edit Groups will affect editing or trimming breakpoints. Thus, when you perform these operations, both the automation playlist you edit directly and all other similar automation playlists on all tracks that are in the same active edit groups are affected. This grouped behavior can be suppressed by holding down the Control key. The exception to this rule is pan data. When you edit or trim pan breakpoints, by default edit groups will not be obeyed. If you want grouped pan behavior, hold down the Control key. (In other words, pan works the opposite to the way all other controls work.)

- When you trim data, the first value displayed in each track corresponds to the maximum absolute value of all breakpoints that will be affected. When you trim volume or send levels, a second value will be shown. This second value is the relative value that will be applied to all affected breakpoints. To trim breakpoints by small amounts, hold down the Command key.

- When you edit breakpoints on multiple tracks at once, volume and send level breakpoints are moved relatively, while all other controls are moved absolutely.

- Although Pro Tools has a single automation mode (auto off, auto read, auto touch, auto latch or auto write) for each track, the controls associated with that track are not necessarily in the same track automation mode.

- If automation is globally suspended, all controls behave as if they were in auto off mode regardless of the track's current automation mode.

- If an automation parameter is disabled (by Command-clicking on its name in the track data display format field), that parameter behaves as if it were in auto off mode regardless of the track's current automation mode.

- If an automation parameter is globally record-disabled in the Automation Enables window, that parameter will behave as if it is in auto read mode when the track is in a "recordable" automation mode (that is, auto touch, auto latch, or auto write mode).

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Keyboard Shortcuts

- Command-Control-clicking the on-screen control for any automation-enabled parameter displays that parameter's automation playlist in the corresponding track.

Erasing Automation

The quickest and easiest way to erase automation for a track or a selection is to display the track's automation data in the Edit window, then highlight the desired area with the Selector and press the Delete key.

Erasing data in this manner is different from using the Cut command, which will result in the creation of "anchor" breakpoints at the boundaries of the remain-

ing data. For details, see the next section, *Cutting, Copying and Pasting Automation*.

To erase automation data:

1. Click the track's Data Format Display button to display the automation type (for example, Volume) you wish to erase.

2. With the Selector, highlight the automation data you wish to erase. If you wish to erase all automation of the selected type in the track, click the Selector in the track and choose the Select All command (or triple-click).

3. Press the Delete key. Pro Tools removes all automation breakpoints from the selected area.

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Control-Delete deletes all playback-enabled automation within the selection. This means all parameters that have been automated on the track will be deleted—unless you have disabled automation recording/playback for an automation parameter by using the Automation Enable window, or by Command-clicking its name in the Track Display Format selector on the track(s).
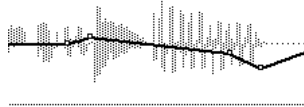
Cutting, Copying, and Pasting Automation

When you make a selection in an automation playlist and then cut or copy and paste the data into a new location, Pro Tools adds "anchor" breakpoints to the beginning and end points of the pasted data. This is done to preserve the true slope (in the case of continuous controls, such as faders or pans) or state (in the case of switched controls, such as mutes) of the automation data both inside and outside the selection.

Note that cutting automation data (by selecting a range of breakpoints from an automation playlist and selecting the Cut command) is different from deleting it (by selecting a range of breakpoints and pressing the Delete key on your keyboard), and will yield different results.
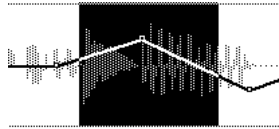
Selecting automation data

After cutting automation data
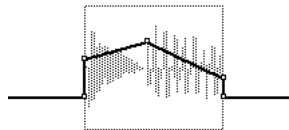
After pasting automation data in another location

In addition, note that when you are in *waveform view* and cut audio data from a track also containing automation data, breakpoints are automatically created at the boundaries of the remaining automation data.

In the case where an automation playlist contains no data (when there is a single breakpoint a the very beginning of the track), if you cut or copy and paste the data from such a track, no new breakpoints are created.

In cases where regions overlap and an overlapping region is removed, any overlapped automation breakpoints are lost. You should keep this in mind when using Slip mode to manipulate waveform regions containing automation data.

The same general rules that apply to cutting, copying, and pasting audio and MIDI data apply to automation data as well. Keep the following rules in mind:

• If you are viewing an audio disk track as a waveform (not as automation data) and copy a section of the waveform, any automation associated with the waveform will be copied as well.

- Pasting waveform data will also paste any accompanying automation data.

- Since Auxiliary Input tracks do not contain audio data, the volume display format view is considered the "master" view. This means that when you copy from an Aux Input track in volume view, all automation data associated with that track will be copied.

- If copied data contains a type of automation not currently on the target track (in other words, if the automation playlist is empty for that parameter), Pro Tools will prompt you before allowing you to paste the data.

- Automation data for Plug-Ins or sends that do not exist on the target track will be ignored when pasted.

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About Multiple Edit Playlists

If you are using multiple Edit Playlists to assemble "comp tracks" or different versions of your work, keep in mind that the limitation of a single automation playlist can cause unexpected results if you copy and paste information containing differing automation playlist data from other tracks. Since each Edit Playlist on a track shares the same automation data, you can unintentionally disturb or destroy automation moves that belong to playlists on other tracks when assembling your edits. If you are using multiple Edit Playlists, you can avoid these problems by performing your editing and assembly before applying automation to your track.

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At times you may wish to disable a specific plug-in parameter for recording or playback. Pro Tools allows you to do this by selecting that parameter in the Track Display Format selector, then Command-clicking its name.

Special Paste Mode for Automation Data

Normally, when you paste data in Pro Tools, automation is pasted into a destination automation playlist of the exact same type (for example, left pan data is pasted to the left pan playlist, send 1 level data is pasted to the send 1 level playlist, and so on). However, there are times when you may wish to paste from one data type to another (for example, pasting send 1 level into send 2 level, or pasting track mute into send mute). To facilitate this, Pro Tools has a special automation data paste mode. To access this special paste mode, simply hold down the Control key when using the Paste command.

For this special paste mode to function, the following must be true:

- Every track selected for pasting must be currently displayed as automation data (that is, not as main "waveform" data).

Please be aware that you cannot paste discrete automation (such as mute automation) into a continuous automation playlist (such as volume automation) and vice-versa.

Real-Time Trimming of Track and Send Levels

Pro Tools allows you to trim track volume and send level automation in real time. You can apply changes to existing automation data for these parameters by putting a track in trim mode, enabling automation recording, and moving faders for the appropriate levels during playback.

When editing automation in trim mode, fader moves write *relative* rather than *absolute* values, meaning that the existing automation data is trimmed by the amount of increase or decrease (or the *delta* value) indicated by the faders. When trimming, a track's level indicator or send level indicator shows the delta values (for example, "vol Δ+1 dB") being written rather than the absolute level value (for example, "vol -40 dB").

Enabling Trim Mode

To enable Trim mode, click the Automation Mode selector and select Trim from the pop-up menu. When trim

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mode is enabled for a track, its volume and send level faders turn yellow, and its automation mode button is outlined in yellow. This outline flashes to indicate that the track is trim-enabled, and appears solid whenever trimming is occurring on the track's volume or send levels.

Trim mode works in conjunction with the standard automation modes (auto off, auto read, auto touch, auto latch, auto write) to affect how delta values are written to existing automation data. Non-trimmable controls behave in the same manner as in the standard automation modes, with the exception of Trim/Write mode, where they operate as if in Touch mode. (See the explanation of "Trim/Write" mode, below.)

Trim/Auto Off This mode turns off automation and trimming for a track. All automation moves are ignored during playback.

Trim/Auto Read In this mode, volume and send faders will follow the previously recorded automation. When one of the faders is touched, the trim moves (delta values) are played back, but are not recorded into the automation data. This allows you audition trim moves without affecting existing automation.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) behave as if they are in regular Read mode—no automation data is recorded.

Trim/Auto Touch When playback begins, volume and send faders will follow the previously recorded automation. When one of the faders is touched, real-time trimming begins. Any fader moves after trimming begins will write delta values (increase or decrease existing automation data) accordingly. When the fader is released, trimming stops and the fader returns to a zero delta value, then continues to follow the previously recorded automation. The rate of the fader's return to a zero delta value is determined by the AutoMatch Time specified in the Preferences dialog's Automation page.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) behave as if they are in regular Touch mode—they follow the previously written automation until touched, at which time their absolute positions are recorded until the control is released or until playback stops.

Trim/Auto Latch When playback begins, volume and send faders will follow the previously recorded automation. When one of the faders is touched, real-time trimming begins. Any fader moves after trimming begins will increase or decrease existing automation data accordingly. Trimming of the touched control continues until playback stops.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) behave as if they are in regular Latch mode—they follow the previously written automation until touched, at which time their absolute positions are recorded until playback is stopped.

Trim/Auto Write When you enter this mode, the volume and send level faders are disengaged from displaying the existing automation data, and automatically positioned at 0 dB, where no trimming will occur (in other words, they start with a delta value of zero). From this reference point, you can then set the initial delta values before initiating playback. In this mode, as soon as playback begins, delta values are applied to the existing automation data. Trimming continues until playback stops.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) are not in Write mode, but behave as if they are in *regular Touch mode* (no recording takes place unless a control is touched). This is to prevent the controls from overwriting all of their automation data on every trim pass.

Undo/Redo Automation Trimming

When recording or trimming track volume and send automation in real time, it is possible to undo or redo

the preceding automation pass by choosing Undo/Redo from the Edit menu.

NOTE: In Automation Trim mode, tracks will not automatically change from Trim/Write mode to Trim/Touch mode after an automation pass, even if the Write Switches to Touch After Pass option is enabled.

To trim track volume or send levels in real time:

1. In the Automation Enable window, make sure that the desired automation type (volume or send level) is record-enabled.

2. Click the Automation Mode selector on the track you wish to automate and select Trim from the pop-up menu to enable Trim mode. The track level and send level faders will turn yellow.

3. Click the Automation Mode selector on the track again and select the desired automation mode (auto touch, auto latch, or auto write) for your trimming operations.

4. Click Play or press the Spacebar to begin automation recording. Move the volume or send level faders as desired. When you have finished, click Stop or press the Spacebar again.

5. Click Return to Zero and then Play on the Transport to listen to the effects of your trimming.

6. When you are finished, make sure to save your session by choosing the Save Session command in the File menu.

Follow the same procedure to trim track volume or send level automation on other tracks.

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Keyboard Shortcuts

• Option-clicking on a channel's Automation Mode selector sets all channels in the session to that mode.

• Holding down Option-Shift and selecting a mode from a channel's Automation Mode pop-up sets all currently selected channels to that mode.

• If a channel is a member of a group, (and the Automation Preference for group switching of mute or solo is enabled), Control-clicking on the channel's Automation Mode selector sets automation mode switching, mute or solo status only for the selected channel, leaving other group members undisturbed. This allows you to avoid repeatedly enabling or disabling groups.

Writing Automation Data to Start, End or All of a Selection or Track

Pro Tools allows you to quickly write current automation values from any insertion point forward (or backward) to the end (or beginning) of a selection or track, or to an entire selection or track during an automation pass. In the case of track volume and send levels, it is also possible to write trim delta values in the same manner.
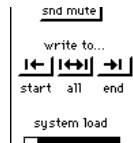
The Write to Start/All/End buttons in the Automation Enable window

This command does not operate when the Pro Tools transport is stopped, and only affects those automation parameters that are currently record-enabled, and currently recording automation data. For an automation parameter to be recording automation data, the associated track must be in one of the following automation record modes and meet the following conditions:

Latch mode Automation parameter must be changed ("touched") during the automation record pass to be recording.

Touch mode Automation parameter must be changed ("touched") to be recording.

Write mode All automation parameters on that track will be in record mode, and will be affected.

This command can be undone by choosing Undo from the Edit menu.

To write current automation values to the beginning or end of a track/selection:

1. In the Automation Enable window, make sure that the desired automation type is record-enabled.

2. Click in a track at the desired point in a track to establish an insertion point.

OR

Drag with the Selector to select a portion of the track.

3. Click Play or press the Spacebar to begin playback.

4. When you reach a point in the track/selection that contains the desired automation data, click the Write to Start or Write to End button in the Automation Enable window. The current value of all of the record-enabled automation at that point will be written from that point to the beginning or end of the track/selection. All previously existing data for those parameters will be overwritten.

To write current automation values to an entire track or selection:

1. In the Automation Enable window, make sure that the desired automation type is record-enabled.

2. Click in a track at the desired point in a track to establish an insertion point.

OR

Drag with the Selector to select a portion of the track.

3. Click Play or press the Spacebar to begin playback.

4. When you reach a point in the track/selection that contains the desired automation data, click the

Write to All button in the Automation Enable window. The current value of all of the record-enabled automation at that point will be written to the entire track/selection. All previously existing data for those parameters will be overwritten.

To write current trim delta values (for track volume or send level) to the beginning/end/all of a track or selection:

1. In the Automation Enable window, make sure that the desired automation type (volume or send level) is record-enabled.

2. Click the Automation Mode selector on the track and select Trim from the pop-up menu to enable Trim mode. The track level and send level faders will turn yellow.

3. Click in a track at the desired point in a track to establish an insertion point.

OR

Drag with the Selector to select a portion of the track.

4. Click Play or press the Spacebar to begin playback.

5. When you reach a point in the track/selection that contains the desired trim setting (or "delta value"), click the Write to Start, Write to All, or Write to End button in the Automation Enable window. The relative changes to the track volume and send levels at that point are written to the corresponding area of the track/selection.

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Keyboard Shortcuts

• Pressing Control and the Return to Zero button on the Transport executes the Write to Start command.

• Pressing Control and the Go to End button on the Transport executes the Write to End command.

- Pressing Control-Shift-Return or Control-Shift and the Go to End button on the Transport executes the Write to All command.

- Invoking the Write to Start/End/All commands normally presents a confirmation dialog; to suppress this dialog, press the Option key while executing the command.

Setting the Automation Buffer Size

Pro Tools allows you to specify the size of the memory buffer used to record automation. To do this, choose Preferences from the Setups menu and click Automation. Enter a value between 200 and 3000 K for this option (the default value for a new session is 200 K.) If you are working on a large session or recording a large number of automation moves, you may wish to increase this value.

Setting Pre-Fader or Post-Fader Metering

On Pro Tools III and Pro Tools 24 systems, you can globally set level meters to indicate pre-or post-fader levels by selecting/deselecting Pre-Fader Metering from the Options menu. When set to pre-fader, the level meters show disk track levels independent of fader position. With post-fader metering, the level meters respond to fader position.

Creating Automatic Fades at Region Boundaries

(Pro Tools 24 Systems Only)

In addition to crossfades between regions, on Pro Tools 24 systems, you can also use an automatic fade-in/out option, which applies fade-ins/outs in real time to all free-standing region boundaries in your session during playback.

Setting Automatic Fade Ins/Outs

On Pro Tools 24 systems, you can choose to have Pro Tools automatically apply fade-ins/outs to all region boundaries in the session that do not touch or overlap other regions. These non-destructive fade-ins/outs are performed in real time during playback, but do not appear as standard fades in the Edit window.

NOTE: Since Auto Fade-Ins/Outs are performed during playback, they will be applied when you are bouncing tracks to disk. However, they will not be applied when you use the AudioSuite Duplicate Plug-In.

This automatic fade option also has an effect on virtual track switching in a session. Whenever a lower-priority virtual track "pops thru" a gap in a higher-priority track on the same voice, a fade-in and fade-out are applied to the transitions.

This feature is especially useful in post-production situations like dialogue tracking. For example, you could assign both a dialogue track and a "room tone" track with matching background to the same voice. You could then set the Auto-Fade option to a moderate length (4 ms or so), so that whenever a gap occurred in the dialog, playback would switch smoothly to and from the background track without clicks or pops.

To set the length of automatic fade ins/outs:

1. Choose Preferences from the Setups menu, and click Operation.

2. Enter a value between 0 and 10 ms for the Auto Region Fade In/Out Length. A zero value means that no auto-fading will occur.

3. Click Done. The Auto Fade value is saved with the session, and will be automatically applied to all free-standing regions boundaries until you change it.

NOTE: Automatic Fade settings are not saved as Pro Tools Preferences. When you create a new session or open a session created with an earlier version of Pro Tools, the default value for this setting will be zero.

Auditioning Takes with the Pop-up Takes List

Every audio file/region resulting from an auto punch or loop record pass will have the same start time (or *Original Time Stamp*). Pro Tools gives you a pop-up list of regions with the same start time, from which you can easily select and audition the takes from a particular pass.

To select a take from the pop-up Takes List:

1. Command-click with the Selector at the precise beginning of a loop record or punch-in location, or in a selected region. A pop-up will appear containing a list of regions that share the same start time.

2. Choose a region from the pop-up Takes List. It will appear in the target track at the cursor location.

In addition to having the same start time, regions that appear in the Takes List are also restricted according to following options in the Edit page of the Preferences dialog:

Take Region Names that Match Track Names

Shows only those regions that share the same root name with the track/playlist name, for example, the pop-up Takes List for the track named "Gtr.L" would show the regions "Gtr.L-01" and "Gtr.L-02-01" but not "Guit.L-01." (This option is selected by default.)

Take Region Lengths that Match
Shows only those regions that match the length of the *current selection* (even if it is not an entire region). If there is no selection, all takes with the same start time will be displayed. (This option is selected by default.)

Separate Region Operates On All Related Takes If you are editing a region that is one of a number of related takes with the same start time (created with loop recording, for example), the Separate Region command will affect all of those takes if this option is selected in the Editing Page of the Preferences dialog.

NOTE: If the "Separate Region Operates On All Related Takes" option is enabled, check to sure that the "Take Region Names That Match Track Names" and the "Take Region Lengths that Match" options are also selected. If they are not, all regions in the session that have the same start time stamp will be affected.

Changing the Start Time of Regions

If you wish, you can change the *User Time Stamp* of other regions (using the Time Stamp Selected command in the Audio or MIDI Regions List pop-up menu) so that they correspond to a specific point in the session and appear in the pop-up with other takes.

Hiding and Removing Unwanted Regions

In the course of editing a session, the Regions List can fill up very quickly with regions—ones you've created purposely and those that are automatically created by cutting, pasting, and separating other regions. Pro Tools allows you to hide or remove regions in your session to save you the trouble of scrolling through unnecessarily long Regions Lists.

Hiding Auto-Created Regions

Pro Tools allows you to hide regions that are automatically created by the system during editing. To do this, deselect Display Auto Created Regions in the Display Menu. With this option deselected, only user-created regions will appear in the Regions List.

User created regions include:

- Whole-file regions
- Regions created during recording
- Imported regions
- Renamed regions
- Regions created as a result of AudioSuite processing
- New regions created with Capture Region and Separate Region commands
- Regions created by trimming whole-file regions

When hiding auto-created regions is enabled, Pro Tools will warn you if the number of auto-created regions exceeds a certain threshold, and give you the option of deleting them. If you choose to delete them, Pro Tools will then delete all hidden auto-created regions at the same time. This prevents a large build-up of auto-created regions, which can affect system performance.

To ensure that you keep a particular auto-created region, you can turn it into a user-defined region by double-clicking it in the Regions List and entering a name. (You will need to temporarily display auto-created regions to do this.) The region will then become user-defined and appear in the Regions List, even if you enter the same name as the auto-created region.

Removing Unwanted Regions

Pro Tools gives you the option of finding and removing unused regions from your session.

To find unused audio regions in a session:

Choose Select Unused from the Audio Regions List pop-up menu, and choose one of the following from the submenu:

- *Regions* (selects all unused regions in the session)

- *Regions except Whole Files* (selects all regions except those that represent entire audio files)

All regions that have not been placed in a track in the current session will be highlighted in the Audio Regions List.

To find all unused MIDI regions in a session:

Choose Select Unused MIDI from the MIDI Regions List menu. All regions that have not been placed in a track in the current session will be highlighted in the MIDI Regions List.

To remove unused regions from a session:

1. After you have selected unused regions, choose Clear Selected from the Audio Regions List pop-up menu.

If any of the unused regions is a whole-file region, you will be presented with the option of removing the region's definition from the current session, or permanently deleting the audio file from your hard disk.
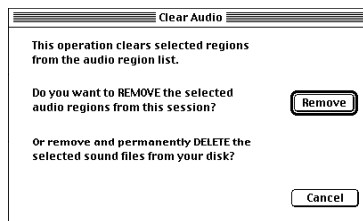
The Clear Selected dialog

2. Click Remove to unload the region from the session or Delete to permanently delete the file from your hard disk.

The Clear Selected command cannot be undone and should be used with care.

When you clear multiple regions, Pro Tools will present a warning dialog before it removes each region. If you wish to bypass repeated warning dialogs, there are two different shortcuts to do this:

- Hold down the Option key while choosing Delete in the Clear Selected dialog. This will delete selected audio files from disk without any further warnings, even if they are currently used in on-screen playlists.

- Hold down the Option key when you click the OK button in the first dialog that appears. Pro Tools will

then delete all audio files which you had selected and which are not used in a track without warning.

Either of these techniques can be very useful if you want to delete a large number of unused audio files, and do not wish to go through a series of dialog boxes. Use this "power delete mode" with care, since deletion of these files can not be undone.

Saving and Consolidating Sessions

To speed up the process of saving Pro Tools sessions, you can reduce your computer's Disk Cache Size. (This is especially useful for speeding up saves during playback).

To reduce the size of your computer's disk cache:

Open the Memory Control panel, and in the Disk Cache section, reduce the cache size by clicking the Down arrow or entering a new value. A value of 96K works well for most Pro Tools sessions.

Consolidating sessions

Pro Tools now makes it easier to back up your sessions or move them to another system, by allowing you to automatically copy a session and its associated files to a different hard disk location. This is accomplished with the following new options available in the Save Session Copy In command:

Copy Audio Files & Session Plug-In Settings Folder When this option is selected, all audio files and the session's Plug-In Settings Folder are copied to the new location. The references to these audio files and Plug-In settings in the session are redirected to point to the copied files.

Copy Root Plug-In Settings Folder When this option is selected, the contents of the root-level Plug-In Settings Folder are copied into a folder named *Place in*

Root Settings Folder, indicating that these files will need to be moved to the root level Plug-In settings folder on the destination machine before you can use them. The references to these settings files in the session are *not* redirected to point to the copied files.

Copy Movie File When this option is selected, a session's movie file is copied to the new location, and the references in the session to the movie are redirected to point to the copied movie file. (Remember that you will need to copy the movie to a separate Movie drive when you next want to use it in a session.)

Unlike the Save Session As command, Save Session Copy In does not close the original session, so subsequent edits are made to the original session. The consolidated copy can serve as a backup, giving you the option of reverting to the earlier version.

This command provides the option of saving the current session in Pro Tools 3.2 format for compatibility with older systems. Be aware that by saving in 3.2 format you will lose any Plug-In automation, as well as mix and edit groups, and other data (such as stereo send information and memory location attributes) from the original session, since these are not supported by Pro Tools 3.2.

NOTE: The Save Session Copy In command can also be used to save a copy of the currently selected session document under a different name, or at a different bit-depth (such as saving a 16-bit version of a 24-bit session).

To save a session in a different location:

**1.** Choose Save Session Copy In from the File menu.
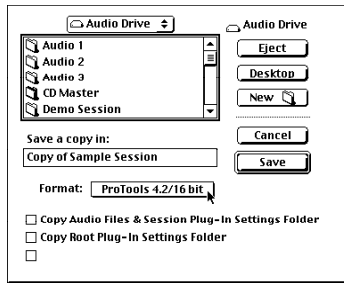
The Save Session Copy In dialog

2. Select a destination for the file and name the session. Remember that for Pro Tools III and Pro Tools Project systems, sessions and their associated audio files must be saved to a drive connected to the Disk I/O SCSI chain or to the Pro Tools Project card.

3. Choose the format and bit depth for the session copy by selecting it from the Format pop-up.

4. If you wish to copy a session along with all of its associated files, select from the available options at the bottom of this dialog.

5. Click Save to save the session in the new location.

Setting Bounce Parameters

When you use the Bounce to Disk command, you can set several parameters that will affect the bounced audio.
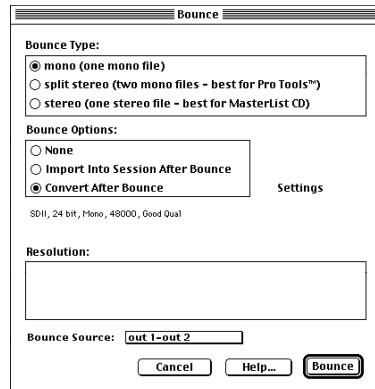
The Bounce dialog

Convert After Bounce

When enabled, this new option automatically performs a file type and sample rate/bit resolution conversion to the newly created bounce file(s) according to the setting you have chosen in the Settings dialog. To access this dialog, click the Settings button. The parameters in this dialog are covered later in this section.

Now, when you use Convert After Bounce on TDM-equipped systems, the bounce resolution radio buttons in the Bounce dialog are grayed out, and Pro Tools automatically uses the highest resolution supported by the chosen Playback Engine for conversion processing (for example, the intermediate bounce file of a 16-bit session on a Pro Tools 24 system will be a 24-bit file). By using the highest resolution for the intermediate bounce file, this ensures the final converted file will be of the highest quality possible.

Choosing Bounce Output Options

When bouncing tracks, you can choose a number of options for audio file conversion.
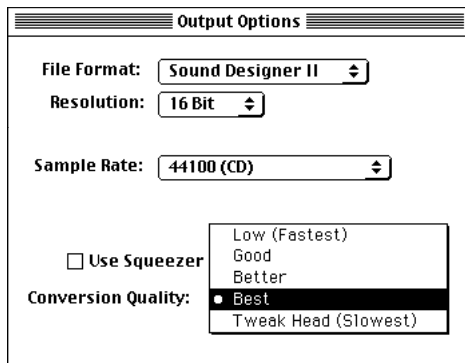
Bounce Output Options

If you enable Convert After Bounce in the Bounce Dialog, you can then click Settings to set the following Pro Tools output options:

File Format

Sound Designer II This is the Pro Tools native audio file format. Select this to use the bounced audio with Pro Tools or any other Digidesign application.

AIFF (Audio Interchange File Format) This format is supported by many Macintosh software applications. This format is best if you plan to use bounced audio in other Macintosh applications that do not support the Sound Designer II format.

While Pro Tools allows you to import files in AIFF format without any conversion (if the files are the same bit depth and sample rate as the target session), it does not store overview data for AIFF files when you save the session. Each time you open a session containing an AIFF file, Pro Tools will redraw the overview for each AIFF file.

WAV (Windows Audio File Format) This format is supported by many Windows software applications and some Macintosh applications. Pro Tools does not directly support this type of file in its sessions. If you wish to use a WAV file within Pro Tools, you will first have to convert and import it using the Convert and Import Audio command. The WAV format is best if you plan to use bounced audio in an application that supports or requires WAV format files.

SND resource (Apple sound resource) This file type is supported by some Macintosh software applications and also by the Macintosh System Software itself. Pro Tools does not directly support this type of file in its sessions. If you wish to use an SND file within Pro Tools, you will first have to import it using the Convert and Import Audio command. The SND format is best if you plan to use your audio with other Macintosh applications that do not support the Sound Designer II or AIFF formats. If you wish to save a bounced file as a System alert sound or "System beep," save it in this format and then, in the Finder, drag it into the System File itself.

QuickTime This is Apple's audio file format for QuickTime-based multimedia. Pro Tools does not directly support this type of file in its sessions. If you wish to use a QuickTime audio file within Pro Tools, you will first have to convert and import it using the Convert and Import Audio, or Import Audio from Other Movie command. The QuickTime format is best if you plan to use your audio in multimedia applications that support QuickTime, such as Adobe Premiere™ or Macromedia Director™.

RealAudio This is RealNetworks' format for streaming audio over the Internet. When you choose this option, you have the choice of several RealAudio encoding algorithms, each of which defines appropriate resolution and sample rates automatically (the sample rate and resolution controls are consequently grayed out). While the higher bit-rate encoding algorithms provide better sound quality, they also have higher bandwidth requirements when downloading from your server.

When you select a RealAudio encoder, you can enter Title, Author and Copyright information in the corresponding text boxes. This information will be displayed in the RealPlayer window when your sound file is being played.

If you want to allow RealPlayer users to begin playback before download of the file is complete (this is useful for user with low-bandwidth connections), select Allow Partial Download Before Play. If you want to allow users to save your sound file to disk when downloading, select Allow Save to Disk. Finally, if you want users to be able to download the ".rm" clip to their Audible Player, select Allow Download to Mobile Player."

NOTE: RealPlayer software, required to play RealAudio encoded files, is available free from RealAudio's website at www.realaudio.com.

Resolution

This parameter allows you to select between three different resolutions for the bounced file (this option is only available when you are using a TDM-equipped Pro Tools system).

Sample Rate

48000 This is the standard sample rate for consumer-level DAT decks.

44100 This is the standard sample rate for compact discs and pro-level DAT decks. It is also used for high-fidelity audio destined for playback on newer Macintosh computers with 16-bit audio playback capability and IBM-compatible PCs.

22050 and 11025 These two sample rates are commonly used for lower-fidelity audio destined for playback on newer Macintosh computers with 16-bit audio playback capability and IBM-compatible PCs.

22254 and 11127 These two sample rates are commonly used for lower-fidelity audio destined specifically for playback on older Macintosh computers not equipped with 16-bit audio playback capability.

Custom This allows you to choose a sample rate other than the choices above.

If you choose a sample rate that differs from the original sample rate of the session, Pro Tools must perform sample rate conversion on the bounced file(s). The quality of sample rate conversion performed is chosen with the Conversion Quality pop-up (covered later in this section).

Use Squeezer

This option uses a proprietary DSP algorithm specifically designed for performing 8-bit conversion. It greatly optimizes the dynamics of the audio by preprocessing it using compression, limiting, and gating before conversion to 8-bit resolution. This results in much greater apparent loudness in the signal, improved intelligibility, and above all, avoids problems that can typically make converted low-level signals sound "grungy." If you are converting 16-bit audio to 8-bit resolution, we recommend that you use this option for optimal results.

Conversion Quality

The option allows you to select the quality of sample rate conversion that Pro Tools performs on the audio file. The higher the quality of sample rate conversion that you choose, the longer Pro Tools will take to convert the file after the bounce has taken place. There are five possible settings, ranging from "Low" to "Tweak-head." Be aware that even the Low setting provides results that are considerably better than the Macintosh's built-in sample rate conversion. For most applications, the Better setting will yield very good results.

Because the Best and Tweak-head settings take significantly longer than the others, we recommend that you use it only in cases where the highest fidelity is absolutely essential and you have a considerable amount of time to devote to this process. (The Tweak-head setting can take as long as several hours to process a sound file of moderate length.) Please also be aware that sample rate conversion is optimized for Power Macintoshes. Non-Power Macintoshes can take an extremely long time to perform this function, especially at higher-quality settings.

Variable Bit Depth available in AudioSuite Dither

Previously, when the Use Default Dither option was enabled in the Processing window of the Preferences dialog, any AudioSuite Plug-In which used the Digidesign Dither Plug-In would dither to 16-bit, no matter what the Session's bit depth happened to be. This caused unnecessary degradation in the resulting audio for the scenarios where a higher bit depth was supported, such as on a Pro Tools 24 system which supports 24-bit audio, or for audio that is output at a higher resolution.

In Pro Tools 4.2, users can now define the resolution of any dithering that occurs with AudioSuite processing to be 16-, 18-, 20-, or 24-bit. The user should select the resolution to match that of the session being used.

Enabling MIDI Machine Control in Pro Tools

Pro Tools 4.2 adds the capability to transmit location information and transport controls from Pro Tools to external devices (such as the Alesis ADAT) via MIDI Machine Control.

MMC Personality Merged into Pro Tools

The MMC personality that was used in earlier versions of Pro Tools has now been integrated directly into the Pro Tools application. Consequently, the separate MMC personality file which was previously installed into the Pro Tools Controllers folder is no longer needed and is removed by the Pro Tools 4.2 Installer.

Controlling External Devices using MMC

Pro Tools now allows you to control external devices by transmitting location and transport control information via MIDI Machine Control. Any device which supports

MMC (such as an Alesis ADAT or Tascam D-88) can be controlled directly from within Pro Tools, with either the device or Pro Tools acting as clock master.

Pro Tools uses OMS to facilitate MIDI Machine Control. In order to use MMC with Pro Tools you must configure your MMC device as an OMS device and enable MMC as an attribute of the device in OMS. By using the OMS IAC bus, you can also make a MIDI sequencer act as location master. Refer to the documentation for OMS and your MMC-compatible devices for details.

Pro Tools does not support remote track arming of MMC-controlled external devices. You will need to manually arm tracks for recording directly on the external device.

The external devices supported by Pro Tools implement "open loop" communication only. Because of this, while Pro Tools is the transport master, any direct operation of the receiving device's transport will not be communicated back to Pro Tools.
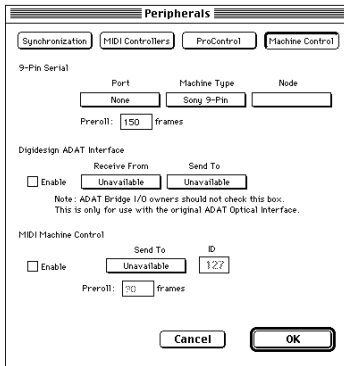
To enable MIDI Machine Control:

1. Choose Peripherals from the Setups menu, and click Synchronization.
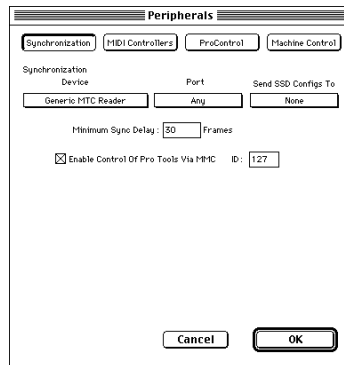
2. Select your synchronization peripheral (such as a USD, SSD or MIDI Interface) from the Synchronization Device pop-up menu.

3. Select the appropriate port for synchronization information (refer to your *Pro Tools System Installation Guide* for more information on configuring synchronization devices and assigning ports in OMS).

4. Click Machine Control to open this page of the Peripherals dialog.

5. In the MIDI Machine Control section, click the Enable checkbox to enable MMC in Pro Tools.

6. Select your external device from the Send To popup. The list of available devices is determined by the OMS devices declared in your OMS Studio Setup.

The OMS port on which this information will be transmitted is set in the "ID" field. MMC commands contain an ID number to identify which machine should respond to the MMC command. There are 128 MMC ID numbers, from 0-127. ID #127 (the Pro Tools default setting) is a special "broadcast to all" of the 128 MMC IDs. With this setting, any device on the specified OMS port will respond to MMC commands.

7. Set a preroll time for your MMC device by entering a value in the MMC preroll text box. (Refer to the "Setting Minimum Sync Delay" section later in this chapter.) Pre-roll is needed to provide Pro Tools with sufficient time to lock to the incoming time-

code. This value will vary depending on the external device. If the preroll time is insufficient, Pro Tools may not be ready to lock until after the current timecode position has been passed.

8. Click OK. Pro Tools will now be able to control the selected device's transport, as well as initiate recording (provided that the device has already been manually track-armed).

Operating the Pro Tools Transport with MMC

To control external devices from the Pro Tools Transport:

• Select either Pro Tools or MMC from the Transport pop up in the Pro Tools Transport window. The selected item will act as Transport Master.

When the Transport Master is set to Pro Tools, the playback position is governed by the on-screen cursor in Pro Tools.

When the Transport Master is set to MMC, the playback position is governed by the external device play position.
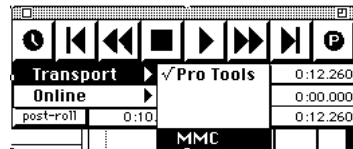
Choosing a Transport Master

Machine Transport Settings

When using MIDI Machine Control, you can set the following options for machine transport behavior in the Operation page of the Preferences dialog:

Machine Chases Memory Location When this option is enabled, navigating to a specific location in a session with a Memory Location will cause a connected transport to chase to that location.

Machine Follows Selection/Scrub With this option enabled, navigating to a specific location in a session by moving the selection point or by scrubbing a track will cause a connected transport to chase to that location.

Setting Minimum Sync Delay

Previous versions of Pro Tools automatically minimized synchronization lock up time, or "lock up delay," by using the last lock up occurrence as a starting point for setting the lock up delay. The default setting was 2 seconds and the minimum delay was 1 second. This automatic setting sometimes resulted in variable lockup times or missed lockups.

With Pro Tools 4.2 and later, lock up delay is set by entering a value for Minimum Sync Delay within the Synchronization window of the Peripherals dialog. The minimum delay is 15 frames. This allows you to find the shortest possible lock-up time for your equipment and set it to operate consistently at that level.

Configuring Minimum Sync Delay for External MMC Devices Locked to House Sync

When controlling a house-synced device from Pro Tools via MMC, the device will first lock to the MMC location and then align the color framing. Within house sync code are 4 frames for ensuring color frame lock. If the minimum synchronization set up time is less than the time required to achieve both location and color frame lock, playback will begin before the device has aligned the color frames. In this scenario, users should set the synchronization set up time to be more than the time required for color frame lock. (Note that this is not a problem with the Universal Slave Driver, which will drop out of lock until the color frame is locked.)

Display and Transport Changes

The Zoomer

To use the Zoomer, click the Zoomer button and drag the cursor over a portion of the Edit window that you wish to view. When you release the mouse, the display zooms to your selection on the horizontal (time) axis of the Edit window. To zoom on both the vertical and horizontal axes, hold the Option key while dragging.

Keyboard Shortcuts

• Zoom both the vertical and time axes: Option-drag Zoomer

Transport Functions
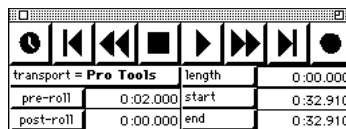
Pause

When you click the Transport controls, Pro Tools requires time to begin playback or recording. To avoid this delay, you can put Pro Tools into Pause mode by holding the Option key and clicking the Play button. When in Pause mode, the Stop button is lit and the Play button flashes. Click Play (or press the Spacebar) to instantaneously begin playback or recording. Click Stop to take Pro Tools out of pause mode.

This feature is useful in situations where instantaneous playback is needed (such as in broadcast applications) or in certain online scenarios, such as when locking to

timecode during recording or playback. With the pause feature, you can avoid situations where missed lock-ups may occur because the pre-roll time is too short for Pro Tools to get ready to play back or record.

Rewind/Fast Forward Settings

If the Audio During Fast Forward/Rewind option is selected in the Operation page of the Preferences Dialog, you will hear scanned audio (as on a CD player).

If the Audio During Fast Forward/Rewind option is not selected, you can continuously rewind/fast forward by holding down the appropriate transport button. You can also rewind/fast forward by discrete increments by repeatedly clicking the appropriate button. The size of these increments depends on which Display mode is currently selected:

• Bars and Beats: moves to start of previous/next bar

• Min/Sec: moves back/forward in one-second steps

• Timecode: moves back/forward in one-second steps (while adjusting for current timecode format)

• Feet.Frames: moves back/forward in one-foot steps

• Samples: moves back/forward in one-second steps

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Keyboard Shortcuts

• Control-Spacebar puts Pro Tools in Pause mode.

Memory Location Recall during Playback

With Pro Tools 4.2, you can recall memory locations during playback, and the session will continue to play back from the recalled location without interruption.

Playback and Pre/Post-roll Markers

In Pro Tools 4.2, selections in the Edit Window are indicated by blue start and end arrows in the time scale ruler at the top of the window. If any track in the session is record-enabled, these playback markers turn red.

In addition, pre- and post-roll positions for the selection are indicated in the time scale ruler by small flags, which appear green when pre and/or post roll is enabled.

Displaying Region Names in the Audio Regions List

In addition to the unique name that you give a region when you create it, you can choose to display additional aspects of a region name in the Regions List, including the full directory Pathname of the region's location. Pro Tools defaults to displaying only the region portion of a region's name. Whole-file regions (as opposed to sub-regions that reference part of a file) are displayed in bold. To show the full pathname of all regions in the Regions List, select Show Full Pathnames in the Audio Regions List pop-up menu.

Displaying Region Names in the Playlist Area

Under some conditions, region names in the playlist area may obscure the audio waveform. You can turn on/off display of region names in the playlist area by selecting/deselecting the Display Name in Regions option in the Display menu.

Pro Tools now remembers the last Playback Engine in use at the time it exits. This Playback Engineer (if still available) will be automatically restored upon the next launch. Note, the user is still free to hold the "n" key down during launch if they wish to reselect a different Playback Engine during launch.

Managing Playback Engine Settings

Pro Tools now remembers the Playback Engine you use with each session. If when you launch a session your current Playback Engine setting is different from that last used in the session, Pro Tools gives you the option of restoring the original Playback Engine. This feature is helpful if you open sessions on different systems or if you frequently use different Playback Engines.

If the last saved Playback Engine is not available on the current configuration, Pro Tools will notify you and give you the option of opening the session under the current Playback Engine.

In addition, the Playback Engine dialog will now display only those Playback Engines that are compatible with the current session (e.g. only 24 bit Playback Engines if 24 bit session).

Peripherals Dialog Changes

In Pro Tools 4.2, the Peripherals dialog has been reorganized.

Machine Control

In the new dialog, the Machine Control page contains configuration options for Machine Control, the original Digidesign ADAT Interface, and MIDI Machine Control (described above).

MachineControl™ is a separate package available from Digidesign that allows you to operate external devices from Pro Tools via Sony 9-pin or V-LAN protocols. The operation of the Machine Control options remains unchanged from the previous version of Pro Tools.

If you are using the original Digidesign ADAT Interface (the eight-channel interface with built-in machine con-

trol circuitry), you can enable communication with this device by checking the Enable checkbox in this section of the dialog. This option should *not* be used with Digidesign's newer 16-channel ADAT Bridge I/O.

MIDI Controllers

The MIDI Controllers section of the old Peripherals dialog now forms its own page. There has been no change to the functionality of these parameters.

ProControl

The ProControl page has been added to the Peripherals dialog. This dialog contains the configuration parameters for adding ProControl to a Pro Tools system. (Refer to the *ProControl User's Guide* for details).

New Keyboard Shortcuts in Peripherals Dialog

From within the Peripherals dialog, the following keyboard shortcuts provide quick navigation between the various pages:

Go to Synchronization window— ⌘-1

Go to MIDI Controllers window— ⌘-2

Go to ProControl window— ⌘-3

Go to Machine Control window— ⌘- 4

Exporting Interleaved Stereo Files from Mono Files

You can batch export audio to interleaved stereo files from selected tracks (or regions) by doing the following:

1. Select the tracks or regions you wish to export.

2. Click the Audio Region List to display the Audio Region List pop-up menu.

3. Choose "Export Selected As Files"

4. Under the Channels pop-up, choose "Stereo from .L/.R" and click OK.

The audio from any selected regions having the same name plus the suffixes ".L" and ".R" will be exported as a single stereo interleaved file.

Compacting Audio Files

To help you get the most out of your disk storage, the Compact Selected command allows you to compact sound files by removing unused areas in order to conserve disk space. The Compact Selected command does this by examining a selected source audio file and rewriting it to disk, irretrievably deleting any data which has not been defined as a region.

The Compact Selected command has been streamlined to present only one confirmation dialog, after which it will carry out the entire process. Because it permanently deletes audio data, this command should be used only after you have completely finished your editing session and are sure that you have no further use for the unused audio data.

If you have auto-created regions hidden in your session, Pro Tools gives you the option of deleting any that are unused. If you choose to delete them, all unused auto-created regions will be deleted at the same time.

To ensure that you keep a particular auto-created region, you can turn it into a user-defined region by double-clicking it in the Regions List and entering a name. (You will need to temporarily display auto-created regions to do this.)

The Compact Selected command allows you to "pad" the regions of the compacted file by a user-selectable amount. You may want to do this because Pro Tools requires extra audio data before and after an audio region in order to create crossfades. So, if your region has one or more crossfades, you should estimate how

long your crossfades are and enter an appropriate amount of padding (in milliseconds) to account for this.

⚠️

The Compact Selected command is destructive and cannot be undone! It will permanently alter your original audio files. There is no way to recover data deleted with this command.

To compact an audio file:

1. In the Audio Regions List, click on the region (or shift-click on multiple regions) that you wish to compact.

2. Choose Compact Selected from the Region List menu.

3. Enter the amount of padding in milliseconds that you wish to leave around each region in the file.

4. Click Compact to compact the file or Cancel to cancel the command.

When the Compact operation has been completed, your session is automatically saved.

Virtual Track Counts

WIth Pro Tools 4.2, all Pro Tools systems can open sessions containing up to 128 virtual tracks. This allows sessions created on systems with a larger voice capacity to be opened on smaller systems. Any tracks beyond the voice limit of that particular system will then be automatically set to *Voice Off*.

Apple HFS Plus Disk Format Not Supported

Apple's new Mac OS 8.1 introduced support for Apple's new volume format, HFS Plus (also known as Mac OS Extended).

Pro Tools 4.2 does not support HFS Plus. HFS Plus formatted volumes will not be recognized or appear in the Disk Allocation's pop up of available volumes for audio recording. However, HFS Plus volumes will be available in the "Save Session Copy In" and "Save Session As" dialogs. If the user selects an HFS Plus volume, an error dialog will now be posted, informing users that the drive is not a valid Pro Tools session volume.

Channel Delay Display

In the Mix window, you can Command-click the Track Level Indicator to toggle between Level (which appears on the display as "vol"), Headroom ("pk") and Channel Delay ("dly") indications.

Digidesign TDM Plug-Ins automatically display their delay values in this channel delay indicator. Delay values are shown in samples. (To find out if third-party Plug-Ins support this feature, contact their developers directly.)

Using SCSI Accelerator Cards with Pro Tools 24 Systems and G3 Macintosh Computers

SCSI Accelerators and 3-slot Macintosh Computers

Pro Tools supports the use of SCSI accelerator cards with 3-slot G3 Macintosh computers. Pro Tools does not support the use of SCSI accelerators with *earlier* (pre-G3 model) 3-slot Power Macintosh computers.

SCSI Accelerators and Maximum Track Count

In order to achieve maximum track count, the G3 Power Macintosh requires a SCSI accelerator for both core (up to 32 tracks of 24-bit audio) and expanded (up to 64 tracks of 24-bit audio) Pro Tools 24 systems.

888/24 I/O Headroom Values and Meter Levels

The headroom value for the 888/24 should be listed as 18 dB. The reference level for the factory calibration of the 888/24 I/O audio level meters is therefore -18 dB, which corresponds to the 888/24 I/O nominal operating level of +4 dBu.

Keyboard Shortcuts for Solo Safe Function

The Keyboard shortcuts for the Solo Safe function in Pro Tools are as follows:

- Option-clicking a Solo button solos/unsolos all tracks in a session.
- Option-Shift-clicking a Solo button solos/unsolos all currently selected tracks in the session.
- Control-clicking a Solo button on a member of an active group solos only that track.
- Command-clicking a Solo button solo safes/unsolo safes the track.
- Command-Option-clicking a Solo button solo safes/unsolo safes all tracks in the session.
- Command-Option-Shift-clicking a Solo button solo safes/unsolo safes all currently selected tracks in the session.

New Keyboard Shortcuts

Record and Playback

Open New Track Dialog = Command -Shift- N

Cycle up/down through New Track options = Command up arrow/down arrow

Pause (pre-prime deck for instant playback & record) = Control - spacebar
OR
Option - Transport Play button

Edit Selection Definition and Navigation

Go to and select next region = Control-tab

Go to and select last region = Control-Option-tab

Extend selection to include next region = Shift-Control-tab

Extend selection to include last region = Shift-Control-Option tab

Automation

Special Paste of automation data between different controls = Control - Command - V

Write automation to end of session/selection = Control - click Transport End button

Write automation to start of session/selection = Control - click Transport RTZ button

Write automation from start to end of session/selection = Control - click Shift End/RTZ button

Copy to send = Command - Option - H

Display Automation Playlist of automation-enabled control = Command - Control - click on control

Scroll to & display track in default view in Edit window = Command - Control - click on track (Track default views are: disk = waveform; MIDI = notes; aux/master = volume) t

Scroll to & select track in Mix/Edit window = Control - click on track name in Mix, Edit, Insert or Sends window, or in Show/Hide List

Zoom

Zoom vertical and horizontal axes = hold down Option key while using Zoomer

Mixing

Toggle Send Display between Assignment and Individual mode = Command - click on Send Assignment pop up

Peripherals Dialog

Go to Synchronization window = Command - 1

Go to MIDI Controllers window = Command - 2

Go to ProControl window = Command - 3

Go to Machine Control window = Command - 4

Preferences Dialog

Go to Display window = Command - 1

Go to Operation window = Command - 2

Go to Editing window = Command - 3

Go to Automation window = Command - 4

Go to Processing window = Command - 5

Fades

Cycle up/down through Out Shape parameter options = Control - up arrow/down arrow

Cycle up/down through In Shape parameter options = Option - up arrow/down arrow

Cycle up/down through Link parameter options = Up/down arrow

Cycle up/down through preset Out Shape options = Control - left arrow/right arrow

Cycle up/down through preset In Shape options = Option - left arrow/right arrow

Miscellaneous

Bypass multiple warning dialogs = Option key + click OK/Yes

Other Changes

Quantize MIDI = Command - Option - Y

MIDI Controllers Updates

Information for All Controllers

Global Modifier Keys

All modifier keys (SHIFT/ADD, OPTION/ALL etc.) act in a global fashion, meaning the modifier can be held down on either the controller or the computer keyboard. For example, to quit you can hold the "Command" switch (⌘-CTL on ProControl, ⌘-ALT/FINE on HUI) and press Q on the Apple keyboard. Similarly, you can use the keyboard's modifier keys in conjunction with controller switches (mute/solo, rec-rdy, etc.) for all/all selected operations.

Plug-In Editing Indication

When any supported hardware controller is used to edit Plug-In settings, the name of the track on which the target plug-in resides is outlined in red. This red outline makes it easy to determine which track contains the plug-in that the controller's plug-in controls are currently editing.

Transport Fast Forward/Rewind Settings

A new Audio During Fast Forward/Rewind option is available in the Operation page of the Preferences Dialog. When this option is selected, you will hear scanned audio (as on a CD player).

If the Audio During Fast Forward/Rewind option is not selected, you can continuously rewind/fast forward by holding down the appropriate transport button. You can also rewind/fast forward incrementally by repeatedly clicking the appropriate button. The size of these increments depends on which Display mode is currently selected:

- Bars and Beats: moves to start of previous/next bar
- Min/Sec: moves back/forward in one-second steps
- Timecode: moves back/forward in one-second steps (while adjusting for current timecode format)
- Feet.Frames: moves back/forward in one-foot steps
- Samples: moves back/forward in one-second steps

Scrolling the Edit and Mix Windows from a Controller

To scroll the Edit or Mix window:

- Hold down the Command key, then press an arrow key on any hardware controller. The arrow keys will then scroll the Edit or Mix window (whichever is frontmost) one page in the direction specified by the arrow.

To scroll to session start or end:

- Hold down both the Command and Option keys, then press either the left or right arrow key. Command- Option-Left arrow scrolls to session start, while Command-Option-Right arrow will scroll to session end.

Newly organized Peripherals dialog

In Pro Tools 4.2, the Peripherals dialog has been reorganized slightly, and will not match the one shown in the 4.1 MIDI Controllers Guide. However, the instructions for configuring Pro Tools for your MIDI Controller have not changed. To change settings for your controller, choose Peripherals from the Setups menu, click MIDI Controllers and follow the applicable instructions in the Pro Tools 4.1 MIDI Controllers Guide.

Editing Sends/Plug-Ins with the JL Cooper CS-10

On the JL Cooper CS-10 controller, the send and pan controls are in a center section and not on a per-track basis. As a result, on the CS-10 we have the notion of the "focused" track. The focused track is the one that the send and pan controls will affect. This focused track is always within the currently selected bank.

In Pro Tools 4.2, when using the CS-10 only, the focused track is now outlined in green. In the event a track is both the focus of send/pan editing and the target of Plug-In editing, the focus takes precedence and the outline will be green.

HUI-Related Functions in Pro Tools 4.2

New Tapering Scheme for Faders

In earlier versions of Pro Tools, the tapering scheme for HUI faders had audible "steps" in level at the bottom of the fader travel (starting at -60 dB, the gain would drop by 8.4 dB per MIDI value on the HUI).

In Pro Tools 4.2, this taper scheme has been changed to so that in the -60 dB to -70 dB range , resolution is 0.8 dB per MIDI value, and in the -70 dB to -100 dB range resolution is 2.5 dB per MIDI value. This will result in much smoother fade outs to silence at low-level.

Modifier Switch Indication

When you hold down keyboard modifiers (such as the Command or Option keys) on the Apple keyboard, the corresponding modifier switch LED on HUI will light.

Fader FLIP mode

Normally, the HUI channel faders control volume while the rotary data encoders are used for pan, send level and send pan settings.

Pro Tools now supports Flip mode, which remaps Send Level to the touch-sensitive, high-resolution channel faders, Send Pan to the data encoders, and Send Mute to the channel mute switches.

To enter FLIP mode:

Press the SHIFT switch (SHIFT is located just above the SELECT/ASSIGN display in the upper left section of the fader section). The scribble strip will display "FLIP" and the SHIFT switch will flash.

For the currently selected SEND (A-E), send levels are mapped to the faders, Send pan controls to the rotary encoders and Send mutes to the channel MUTE switches. The names of the current sends are displayed in the scribble strips.

Send Pan in Flip mode

With stereo sends, the PAN switch lights solid when controlling left pan and flashes when controlling right send pan. To change which send pan is being controlled, press the PAN switch.

Send Pre/Post in Flip mode

While in Flip mode, the V-SEL switch controls Send pre/post operation (regardless of the current state of the master MUTE/PREPOST switch).

Rotary Knob Settings

Many of the rotary encoders on the HUI can operate in *fixed* or *velocity-sensitive* modes. In *fixed* mode, a single complete turn of the knob goes through the entire range of values, independent of how quickly you turn it. When moving rotary encoders in fixed mode, you can hold ⌘-ALT/FINE for finer control of setting values. In

velocity-sensitive mode, the speed at which you sweep through encoded values depends on how quickly you turn the knob.

The rotary encoders on the HUI Channel Strips (which are used for adjusting Send levels and Pan controls) operate in fixed mode only.

The rotary encoders in the DSP EDIT/ASSIGN section can behave in a fixed or velocity-sensitive manner (the default setting is *velocity sensitive*).

• To toggle the rotary encoder mode, press the F5 switch. The mode you choose is stored and recalled when you next launch Pro Tools.

DSP Parameter Value Display

When in parameters view, holding the Option key while changing a DSP parameter value via the encoder causes the value to be temporarily displayed as a full 9 character value including units in the DSP scribble.

Fine-Adjust mode

To fine-adjust send level, pan or DSP rotary knobs (when they are in fixed mode), hold down ⌘-ALT/FINE while turning the encoder knob.

Sends Display and Stereo Sends

HUI will automatically update its SENDS view following the on-screen Sends view, and vice-versa. If the current send is a stereo send, the scribble text for that send will flash.

TRIM Automation Mode Features

Toggling On/Off

To toggle the TRIM mode on/off for a particular track, selection of tracks or group, hold down the track's AUTO switch and hit the master TRIM switch (you can also do the reverse, i.e. (channel) AUTO-(master) TRIM.

Displaying Trim delta vs. absolute

To display trim delta instead of the absolute value while adjusting Volume or Send Level TRIM automation, hold down ⌘-ALT/FINE.

Current Trim Mode Display

When displaying any of the TRIM automation modes in the scribble strips, the mode name is prefixed with the letter T. For example, TRIM/Touch mode = TTch, TRIM/Latch = TLtch, etc.

When a track is trim-enabled, its AUTO LED color displays the automation recording state in the following manner:

• During TRIM recording, the LED lights solid orange.

• When in TRIM Read mode, the LED will flash green and orange.

• When in any recordable auto mode (i.e. Trim Write, Trim Latch, or Trim Touch), the LED will flash red and orange.

Enabling Automation: Channel and Send Pan

Both Channel and Send Pan respond simultaneously to the Automation Pan Enable switch/state. Enabling pan automation from HUI will turn both channel and send pan on if both are currently disabled. If one or both automation parameters are disabled, pressing AUTO/ENABLE PAN switch will enable both. If both are on, pressing AUTO/ENABLE PAN will turn them both off.

Write to Start, End or All command

Pro Tools allows you to quickly write current automation values from any insertion point forward (or backward) to the end (or beginning) of a selection or track, or to an entire selection or track during an automation pass. In the case of track volume and send levels, it is also possible to write trim delta values in the same manner.

Automation can only be written/recorded while Pro Tools is in play or half-speed play/record. You cannot write automation while Pro Tools is stopped or while Fast Forwarding or Rewinding.

- Pressing CTRL/CLUTCH-RTZ executes the Write to Start command.
- Pressing CTRL/CLUTCH-END executes the Write to End command.
- Pressing Control-Shift-RTZ or Control-Shift-END executes the Write to All command.
- Invoking the Write to Start/End/All commands normally presents a confirmation dialog; to suppress this warning, press the Option key while executing the command.

Extending Region Selections

Pro Tools 4.2 adds several new key commands for changing or extending region selections in the Edit window. When the HUI arrow keys are in region navigation mode:

- Control-Left Arrow will select the previous region.
- Control-Right Arrow will select the next region.
- Control-Shift-Left Arrow will extend the selection to include the previous region.
- Control-Shift-Right Arrow will extend the selection to include the next region.

Using HUI with An OMS Sequencer

If you plan to use HUI with an OMS-compatible sequencer, please note the following: Because HUI is defined as a device in your OMS studio setup, sequencers such as StudioVision will treat HUI as an instrument. This is problematic because HUI continually sends out an active sensing-type message which will be recorded by the sequencer.

To work around this behavior, simply disable HUI as an input device in the sequencer's Options or Preference

dialogs. In StudioVision, for example, select the Enable Input Devices command from the Setups menu, and disable (uncheck) HUI. Refer to the your sequencing software documentation for details.

I/O and SampleCell Labels with HUI

When you are using the standard label names created by Pro Tools for your Audio Interface(s), SampleCell II cards, or HUI with your Pro Tools system, please be aware of the following:

Because HUI's scribble strip displays a maximum of 4 characters, it must abbreviate names for inputs and outputs. This can sometimes make them difficult to recognize.

To remedy this, simply use the Pro Tools I/O Labels dialog to change the name of your inputs and outputs to 4 character names that better convey their identity. For example, you might wish to change a default I/O label from "SCell#1/1" to "SC1A" or a similar 4-character name. The I/O label that you use here will be mirrored in HUI's display.

If you wish to use these names at all times, simply save them as your default labels using the Save As Default button in the Pro Tools I/O Labels dialog. This will store your personal labels in the Pro Tools Preferences file, and your custom labels will be used in all new Pro Tools sessions that you create.

HUI VFD Brightness

The HUI's VFD display brightness is adjustable in four levels. To toggle the display between these four brightness levels, press and hold OPT/ALL and then press INSERT/PARAM.

Please note that when HUI goes off-line, it automatically resets the VFD display to its lowest level in order to prolong the screen's phosphor life. When HUI is brought back online, it recalls the last brightness setting since

the setting is stored and recalled via nonvolatile memory.

HUI Keyboard Shortcuts

Many of the keyboard shortcuts in the HUI Controller Guide are listed as using the ALT/FINE key as part of a key combination. In many cases, the correct key should actually be SHIFT/ADD.

For example, to clear/enable Solos on all selected channel strips, the shortcut is listed incorrectly as OPTION/ALL switch + ALT/FINE + SOLO switch. The correct combination of keys is in fact OPTION/ALL + SHIFT/ADD + SOLO switch.

Please use the SHIFT/ADD combination in place of the ALT/FINE key whenever it appears in relation to a "operate on all selected channel strips" command key combination.

Switched Controls and Automation with Controllers

Pro Tools treats switched controls such as mutes and send mutes as touch sensitive controls. In other words, Pro Tools knows that you are holding down a switch. As long as you hold it down, Pro Tools will erase any underlying automation data associated with the switched control. This allows you to perform changes on mute automation passes. It can also save you the trouble of using the Pro Tools Edit window to change the mute automation data graphically.

As an example, imagine that you are creating fader mutes, and have recorded a mix pass on a track with several mute and unmute automation moves. After performing the pass, you may decide that you wish to erase the moves that you have made after a certain point. To do this, simply place the track into Auto Touch or Auto Latch mode, begin playback of your session, press the switch at the appropriate time (which will place it into the opposite state), and hold it down while playing over the area you wish to change. Until you press stop,

Pro Tools will overwrite the present mute data on the track with the current state of the switch.

On the Mackie HUI, this behavior also applies to Plug-In switched controls (in the DSP Edit/Assign section of HUI). Any of these four switches will work in the way described above. That is, you can overwrite your present moves by holding down the switch to make the change.