

# **MachineControl™**

## **Addendum for**

### **Pro Tools Version 4.3**

#### **Digidesign Inc.**

3401-A Hillview Avenue  
Palo Alto, CA 94304  
tel: 650-842-7900  
fax: 650-842-7999

#### **Technical Support (USA)**

650-842-6699  
650-856-4275

#### **Product Information**

650-842-6602  
800-333-2137

#### **Fax on Demand**

1-888-USE-DIGI (873-3444)

#### **World Wide Web**

[www.digidesign.com](http://www.digidesign.com)

#### **Digidesign FTP Site**

[ftp.digidesign.com](ftp://ftp.digidesign.com)

**digidesign**

**A Division of Autodesk**

# Pro Tools Team

## Pro Tools Software

- Application: Dave Conry, Eamonn Fay, Paul Greyson, Sandeep Gupta, Mark Jeffery, Mike Rockwell, Pete Wilcox
- DAE: Toby Dunn, Joe Fontana, Kenn LeGault, Fritz Mueller, Bob Nagy, Peter Richert, Chris Roberts, Joe Saracino, Doug Tissier
- DSP Plug-Ins: Paul Neyrinck, Frederick Umminger

## Pro Tools Hardware:

- Hardware Engineering: Scott Bittle, Gary Isobe, Jim Jasmin, Ken Lee, Andra Mitchell, Kent Shephard
- Design: Joe Javier, Rene Pulido, Doug Tornio
- Purchasing: Cathy Heerema, Tanya Krupsky
- Manufacturing Engineering: Pierre Chan, Tom Hua, Sam LaMacchia, Rick Nunes, Kerwin Yuen
- Doc Control: Ed Rios

## Engineering Test Services

William Bembo, Kim Brown, Mark Camp, Thomas Dimuzio, Andrew Fleig, Costa Gavrilov, Jim Gross, Robert Jasman, Kenneth Platt, Steve Rosenthal, Glenn Schoonmaker, George Schweizer, Larry Thrasher, Kevin Turner, Tim van den Berg, Tim Walters, Jon Weber, Akil Wemusa, Seth Worden, Andrew Yarborough

## Program Management

Jan Biles, Mike Cummings, Charles Weidmann

## Product Management

Wendy Abowd, Robert Campbell, Andy Cook, Dave Lebolt, Colin Weir, Doug Wood

## Sustaining Engineering

Sal D'Amato, Bobby Lombardi, Chris Now, Demetri Patukas, Jim Terry, Dimitri Vandellos

## Manufacturing

Linda Chan, Vicky Fontes, Brandon Frederick, Terry Lean, Donna Mathis, Des Medeiros, Vicky Moreno, Lupe Portugal, Dennis Prater, John Spangler, Jenny Wan, and the entire 980 crew

## Design

Van Chuchom, Suzanne Ricca

## Marketing Communications

Nick Benz, Martin Berneburg, Kristine Day, Heidi Elgaard, Chris Gill, Brian Hageman, Sirpa King, Mark Kirchner, Karen Moreland, Karen Robb, Alison Smith, Paul Smith, Brad Vosburg, Jean Williams, Kelly Williamson

## Developer Relations

Ed Gray, Jake Thorne

## Technical Publications

Tom Dambly, Mike Freitas, Mark Wilcox

## Customer Support

Michael Abowd, Brian Carter, Beto Carvalho, Jon Connolly, Mike Cuddy, Ian Duncan, Bradley Doran, Frank Finelli, Cristian Flores, Pascal Florck, Guiseppa Frison, Jeff Gedert, Adrian Haselhuber, Arndt Hufenbach, Tae Kang, Sue Kasper, Michael Kutulas, Alberto La Valle, Bob Langlie, Scot Larsen, Bill Latham, Jennifer MacKnight, Mari Matsuo, Kevin Miller, Tammi Miller, Bryan Myers, Simon Price, Tony Puig, Florian Reiterer, Jake Schaefer, Noah Thorp, Sander van der Reijken, Jeffro™, Siebo

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# Addendum for MachineControl Users

## Remote Track Arming via MachineControl

Pro Tools 4.3 (and later) software provides the ability to arm audio or video tracks remotely when using Digidesign's MachineControl™ option for Pro Tools.

MachineControl is an optional Pro Tools DAE Extension that allows Pro Tools to remotely control 9-pin and V-LAN devices.

To facilitate remote track arming, the new item Show Machine Track Arming Window has been added to the Pro Tools Display menu on MachineControl-equipped systems.

### Before you begin:

Make sure you have correctly installed your new Pro Tools software, as well as the MachineControl DAE Extension (refer to your MachineControl User's Guide for installation instructions).

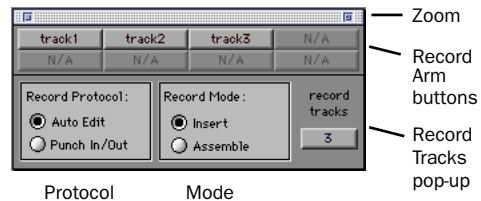
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\* Your Machine Control 9-pin cable can be connected to the Digiserial Port, but only in the absence of a Universal Slave Driver. It is recommended that machine control connections be made to one of your CPUs serial ports.

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**To display the Machine Track Arming Window:**

1 Choose Display > Show Machine Track Arming Window. (If your setup includes a Digidesign ProControl™, simply press the STATUS switch.



*The Machine Track Arming Window*

## Zoom Box

A zoom box is located in the upper right-hand corner of the Machine Track Arming window. In “small view” only the track enable buttons appear. In “large view” all the other controls of the window are visible (i.e., Record Protocol and Record Mode buttons, etc.). Once you've configured these other controls for your setup, you may find it convenient to leave the Track Arming window in small view, giving you access to just the record enable buttons and conserving display space on your computer monitor.

## Configuring Track Arming

Pro Tools provides automatic, direct support for track configuration of most common video decks. (For a complete listing of these machines, see Appendix 1 at the back of this document.) Assuming your deck is supported in this way, MachineControl™ will be able to identify and display your machine's particular track layout (for example, Audio1, Audio2, timecode, or whatever particular arrangement of tracks is utilized by your machine).

Even if your machine is not directly supported, the Track Arming window provides features which allow you to designate the number of record tracks, arm the tracks, set the Record Protocol and configure the Record Mode for the machine.

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\* Please note that not all machines support independent arming of their audio tracks locally or remotely, or require a separate utility menu selection on the target deck. On these types of machines, Pro Tools' remote track arming cannot overcome these limitations.

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## Identifying your Machine

When you select a port for machine control in Pro Tools Peripherals > Machine Control window, the software polls the serial port to see what kind of machine is connected. (This process is referred to as "auto detection.")

If the software receives the identity of a machine it recognizes, it loads the corresponding track layout and automatically enters the name of that machine (or machine family) into the Track Arming window.

If the software encounters a machine which sends back an identity it doesn't recognize, the generic personality is loaded. In this case, "generic" appears in the Track Arming window. Luckily, MachineControl recognizes most all common video machines.

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▲ One word of caution about "generic": While it will almost always be possible to arm tracks using the "generic" track layout, it may act unpredictably. For example, arming audio track 1 in software may result in track 3 being armed on the target machine, arming the address track might result in audio channel 2 being armed, etc. Always double check how "generic" behaves when driving your particular target machine.

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If you disconnect the target machine or connect the serial cable to a different machine, a dialog box will appear explaining that communication between Pro Tools and the machine has stopped, and asking if Pro Tools should attempt to re-establish communication. If you select OK, MachineControl attempts to contact whatever machine is connected to the serial cable (i.e. it "re-polls" and attempts to auto-detect in case you've switched machines).

## Requesting additional machine profiles for Track Arming

If you would like Digidesign to facilitate auto-detection of a specific machine's track layout in an upcoming release, email us the manufacturer and machine model at [postprod@digidesign.com](mailto:postprod@digidesign.com)

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▲ If using a “generic” device, be sure to double-check record behavior using non-essential tapes before attempting to use MachineControl’s remote track arming modes.

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### **Configuring the Number of Tracks**

Use the Record Tracks pop-up to specify the number of record tracks for the target deck under control. The maximum number of supported record tracks is 8.

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▲ If you specify more record tracks than the machine possesses, they will be ignored. Pro Tools has no way of knowing how many record tracks there are other than the Record Tracks popup.

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After the number of record tracks is specified in the Record Tracks popup, the record-arming track buttons are active.

The Record Arm buttons will be named with the appropriate machine-specific track name(s). These buttons’ display similarly to Pro Tools’ track record-ready buttons (i.e., their text appears in red when armed).

### **Choosing a Record Protocol**

The following two choices are available for configuring the recording protocol to be utilized by the target deck:

#### **Auto Edit**

This mode, though not supported on some decks, is a highly accurate (and the safest) way to ensure that the target deck will record only within the boundaries of an on-screen selection. (If your deck does not

support Auto Edit, use Punch In/Punch Out, explained below.) In this mode, the record start/end times are downloaded to the target deck (along with any pre- or post-roll), and the deck is responsible for performing the insert punch in/out at the specified times (be sure to read the section *Selection Rules for Recording with the Machine* later in this section for more details on this).

Because this protocol removes the vagaries of CPU timing from the remote recording process, Auto Edit is frame-accurate, making it the most accurate choice from a timing stand-point. It is also the “safest” mode to use. For example, if your computer were to crash during an auto-edit pass, the machine would still know when to punch out and therefore wouldn’t accidentally erase later audio. (In Punch In/Out mode, on the other hand, the deck would continue recording until you manually stop it. This is because the crashed computer would not be able to send the punch out command that the machine would be waiting for in Punch In/Out mode.)

If your deck does not support Auto Edit, use Punch/In, Punch/Out (explained below).

#### **Punch In/Out**

This mode uses Pro Tools to control the process of punch in/out. Instead of downloading the punch points (as in Auto Edit), Pro Tools actually “performs” them during the record pass. Because the CPU may be busy with many other tasks, timing with Punch In/Punch Out mode cannot guarantee frame-accuracy (it will almost always be within  $\pm 2$  to 3 frames ).

## Choosing a Record Mode

The Remote Track Arming window provides two choices for Record Mode:

### Insert

This mode is used to perform insert editing (i.e., punching in individual tracks) where one or more audio tracks is replaced by new material and the video material is *retained*.

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\* Note: As a safety precaution, Pro Tools does not support arming of video for insert editing.

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### Assemble

This mode is used to replace all of the material on the target deck's tape at once. Assemble mode should be used with caution and only when your goal is to:

- Begin recording program onto a completely blank tape (unformatted) – or –
- Append program to the remainder of a tape which already has program you wish to keep

Assemble mode is not appropriate for audio laybacks to video masters, for example.

The danger with Assemble mode arises from the fact that all tracks on the target deck are armed for recording - including the video track, time code track and control track. When performing an Assemble edit, all material on all tracks after the edit in point will be replaced. Because a break in control track will result at the edit out point, all program after an Assemble edit may be unusable.

To avoid accidentally recording over program material you had intended to keep, make sure to experiment with Assemble and Insert modes on a dispensable tape and to familiarize yourself with the edit capabilities of your target deck(s).

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▲ Remember, Assemble mode replaces all the elements on the target tape deck - audio, video and time code. Use with caution.

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### Rules for On-Screen Selections during Remote Track Arming/Recording

The Record Protocol buttons allow you to choose between the two different record protocol choices described above (Auto Edit and Punch In/Punch Out). Regardless of which choice is used, however, Pro Tools will follow these rules for record selection:

- ◆ If there is an on-screen selection, recording will take place over the period of the selection and punch out at the end of the selection.
- ◆ If pre/post roll is enabled, recording takes place only in the selection area, not during pre/post roll.
- ◆ If there is no selection (i.e., only a start location) recording will continue until it is manually stopped (i.e., “record to end of time”).
- ◆ Avoid selections that cross the “midnight” line (i.e., a selection which starts at 23:59:00:00 and ends at 00:00:15:00). Like most decks, Pro Tools will not wrap around this time location.



## Using Remote Track Arming

The first step in utilizing Remote Track Arming is to configure the parameters of the Track Arming window for your deck.

### To configure Track Arming:

- 1 Make sure your machine is properly connected and configured to slave to Pro Tools as described in your MachineControl and Pro Tools User's Guides.
- 2 Open the Track Arming Window. If the entire window is not visible, click the zoom box.
- 3 If not already selected, choose your deck from the ID pop-up, then designate the number of record tracks using the Record Tracks popup.
- 4 Select a Record Protocol (Auto Edit or Punch In/Out).
- 5 Select a Record Mode (Insert or Assemble).

Once the above parameters are configured, you can change the window to "small view" so that you can leave it open without taking up unnecessary monitor real estate (the track arm buttons remain visible in small view).

### To perform a layback:

- 1 In Pro Tools, select the audio to layback, or place the playback cursor at the desired start point.
- 2 In the Remote Track Arming Window, arm the appropriate tracks.
- 3 Select Transport = Machine in Pro Tools' Transport window.
- 4 Press the Transport's Record button to arm recording.

- 5 Press Play, or press the Space bar. Your machine will cue to the selection start minus all relevant pre-roll, then begin to play back. Pro Tools will then sync to the deck, and the target deck will record as determined by your settings for Record Protocol and Record Mode. If you did not create an on-screen selection, be aware that deck recording will continue until you manually stop playback (or until it reaches 23:59:59:xx).

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## When to use the DigiSerial Port

Pro Tools 24 Mix and Pro Tools 24 Audio Cards feature a DigiSerial Port. Though this port is identical in appearance to the serial ports on your CPU, it is designed to only be used by either

- 1 a Digidesign Universal Slave Driver's proprietary serial connection

– or –

- 2 a serial-to-9-pin cable in combination with the MachineControl™ option for Pro Tools. This should only be connected to the DigiSerial Port when there is no Universal Slave Driver present in the system.

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▲ The DigiSerial Port should NOT be used for connecting MIDI Interfaces.

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If you are using a Universal Slave Driver, it should always be connected to the DigiSerial Port.

If you are using MachineControl without a Universal Slave Driver, then the DigiSerial Port should be used for MachineControl.

## **Rules for using the DigiSerial Port in Expanded Pro Tools systems**

Only one DigiSerial Port is ever active at once in any Pro Tools system, whether it is a core or expanded system. This will always be the DigiSerial Port on the bus master card of your system (i.e., the disk engine or primary Audio Card). Here are some example setups to further explain how this works:

- If your system includes one or more Pro Tools 24 audio cards, connect your USD (or MachineControl cable, if no USD) to the DigiSerial Port on the first Pro Tools Mix or d24 card (i.e, the bus master card).
- If you have a combination of Pro Tools 24 Mix and Pro Tools d24 cards, use the DigiSerial Port on the first Pro Tools 24 Mix card.
- If you have more than one d24 card, and only d24 cards, use the DigiSerial Port on the first d24 card in your system.
- If you are using a USD, MachineControl and a Mackie HUI or other MIDI device, connect the USD to the DigiSerial Port, the MachineControl cable to one CPU serial port, and connect the HUI to the other serial port via a MIDI Interface.

## **Configuring Pro Tools for the DigiSerial Port**

To properly configure Pro Tools and your USD or MachineControl connections when using the DigiSerial Port, simply choose “DigiSerial Port” in the appropriate popup menus in the Peripherals dialog windows. This choice will appear right alongside the Modem and Printer port options.

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## Machine Profiles

The following is a list of many of the machines (and machine families) whose track configuration will be auto-detected by Pro Tools:

- AG-DS555
- AJ-D350
- ASC Virtual Recorder
- BVH-2000
- BVH-2000 PS
- BVH-2180
- BVH-2500
- BVH-2500 PS
- BVH-2700
- BVH-2800
- BVH-2830
- BVH-3000
- BVH-3000 PS
- BVH-3100
- BVH-3100 PS
- BVU-800
- BVU-900
- BVU-920
- BVU-950
- BVW-10
- BVW-11
- BVW-15
- BVW-35
- BVW-40
- BVW-60
- BVW-65
- BVW-70
- BVW-75
- BVW-75P
- BVW-95
- BVW-96

- DVR-10
- DVR-18
- DVR-20
- DVR-1000
- DVR-2100
- DVRC-10
- DVW-500
- Fostex D-10
- Otari R-DAT (DTR-90, etc.)
- PCM-7000 series
- PVW-2800
- SVO-9600
- Tascam DA-88
- Tascam DA-98
- UVW-1800
- VO-9800
- VO-9850

### **Requesting additional machine profiles for Track Arming**

If you would like Digidesign to facilitate auto-detection of a specific machine's track layout in an upcoming release, send us the manufacturer and machine model via email at [postprod@digidesign.com](mailto:postprod@digidesign.com)

