PRE™

Warning

This product contains chemicals, including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. *Wash hands after handling*.

Communications & Safety Regulation Information

Compliance Statement
The model PRE complies with the following standards regulating interference and EMC:
- FCC Part 15 Class A
- EN55103 – 1, environment E4
- EN55103 – 2, environment E4
- AS/NZS 3548 Class A
- CISPR 22 Class A

Radio and Television Interference
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

Communications Statement
This equipment has been tested to comply with the limits for a Class A digital device. Changes or modifications to this product not authorized by Digidesign, Inc., could void the Certification and negate your authority to operate the product. This product was tested for CISPR compliance under conditions that included the use of peripheral devices and shielded cables and connectors between system components. Digidesign recommends the use of shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices.

Safety Statement
This equipment has been tested to comply with USA and Canadian safety certification in accordance with the specification of UL Standards : UL6500 and Canadian CAN E60065. Digidesign Inc., has been authorized to apply the appropriate UL & CUL mark on its compliant equipment.

Warning!

Important Safety Instructions
When using electric or electronic equipment, basic precautions should always be followed, including the following:
- Read all instructions before using this equipment.
- To avoid the risk of shock, keep this equipment away from rain water, and other moisture. Do not use this equipment if it is wet.
- The equipment should only be connected to the correct rating power supply as indicated on the product.
- Do not attempt to service the equipment. There are no user-serviceable parts inside. Please refer all servicing to authorized Digidesign personnel.
- Any attempt to service the equipment will expose you to a risk of electric shock, and will void the manufacturer's warranty.
- The product should be connected only to the correct power supply as indicated on the product.
- Do not block any ventilation openings. Install in accordance with the manufacture's instructions.
- Do not install near any heat sources such as radiators, heat registers,stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other, A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Clean only with dry cloth.

This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.

contents

chapter 1

Introduction to PRE

Welcome to the Digidesign PRE™ multi-purpose microphone preamplifier for Pro Tools® systems.

PRE is designed especially for Pro Tools systems, but it can also be utilized as a stand-alone microphone preamplifier. When used with Pro Tools, most PRE features can be controlled from within the Pro Tools application. (In Pro Tools, PREs are referred to as Mic Preamps). With or without remote control, PRE can be configured manually using its front panel switches and displays.

PRE can also be remotely-controlled by other MIDI devices through standard MIDI controller data. See Appendix C, "MIDI Controller Numbers."

PRE Features

- Eight high-performance, discrete matched transistor hybrid microphone preamplification circuits.

- Remote control with qualified Pro Tools TDM systems and Digidesign control surfaces (such as D-Control, D-Command, Command|8, Control|24, and ProControl).

- Maximum fidelity of PRE output signals, by keeping preamplification of low-level signals close to the source.

- Analog outputs utilize industry-standard DB-25 connectors for easy connection to Pro Tools audio interfaces or any other recording or mixing medium.

- Each channel features:
  - Support for microphone (XLR), line level inputs (1/4˝), or direct instrument (1/4˝)
  - Selectable impedance settings for Mic input
  - Input gain variable from 0 dB to +69 dB, in approximately 3 dB steps, with an optional –18 dB pad
  - +48V power for condenser microphones
  - Balanced Insert points (Send and Return), for easy integration of outboard gear (such as compressors or EQs)
  - Phase invert
  - 85 Hz High-Pass Filter

- Up to nine PREs are supported through software for up to 72 channels of remote-controlled Mic Preamp channels.

- All features are available in Stand-alone mode, making PRE ideal for any recording application.

What's Included

- PRE
- AC power cable
- *PRE Guide*
- Digidesign Registration Information Card

System Requirements

When used as a stand-alone microphone preamplifier, PRE is ready to use.

For remote control within Pro Tools, PRE requires:

- Digidesign-qualified Pro Tools system:
  - Pro Tools|HD® system, running Pro Tools 6.0 or higher on Mac OS X
  - Pro Tools|HD system, running Pro Tools 5.3.3 or higher on Windows
  - Pro Tools|HD system, Pro Tools|24 MIX system, or Pro Tools|24 system, running Pro Tools TDM 5.3.1 or higher on Macintosh OS 9.x
- Digidesign-qualified Macintosh or Windows computer
- 17″ or larger color monitor; 1024x768 resolution
- Digidesign-qualified MIDI interface

Mic Preamps in Pro Tools can optionally be remote-controlled by Digidesign control surfaces (such as D-Control, D-Command, Command|8, Control|24, and ProControl).

For complete system requirements, visit the Digidesign Web site (www.digidesign.com).

Compatibility Information

Digidesign can only assure compatibility and provide support for hardware and software it has tested and approved.

For a list of Digidesign-qualified computers, operating systems, hard drives, and third-party devices, refer to the Digidesign Web site (www.digidesign.com).

Digidesign Registration

Review the enclosed Digidesign Registration Information Card and follow the instructions on it to quickly register your purchase online. Registering your purchase is the only way you can be eligible to receive complimentary technical support and future upgrade offers. It is one of the most important steps you can take as a new user.

About This Guide

This guide provides a basic overview of PRE features and functionality, plus complete installation instructions for using PRE as a stand-alone microphone preamplifier, adding PRE to an existing Pro Tools system, or controlling it by other means.

For more detailed Pro Tools system installation instructions, or if you are connecting and configuring a Pro Tools system for the first time, see the *Getting Started Guide*.

For additional information about using Pro Tools, see the *Pro Tools Reference Guide*.

Conventions Used in This Guide

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

Convention	Action
File > Save	Choose Save from the File menu
Control+N	Hold down the Control key and press the N key
Control-click	Hold down the Control key and click the mouse button
Right-click (Windows)	Click with the right mouse button

The following symbols are used to highlight important information:

User Tips are helpful hints for getting the most from your Pro Tools system.

Important Notices include information that could affect your Pro Tools session data or the performance of your Pro Tools system.

Shortcuts show you useful keyboard or mouse shortcuts.

Cross References point to related sections in this guide or other Pro Tools Guides.

About www.digidesign.com

The Digidesign Web site (www.digidesign.com) is your best online source for information to help you get the most out of your Pro Tools system. The following are just a few of the services and features available.

Registration Register your purchase on-line. See the enclosed registration form for instructions.

Support Contact Digidesign Technical Support or Customer Service; download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Answerbase or join the worldwide Pro Tools community on the Digidesign User Conference.

Training and Education Study on your own using courses available online or find out how you can learn in a classroom setting at a certified Pro Tools training center.

Products and Developers Learn about Digidesign products; download demo software or learn about our Development Partners and their plug-ins, applications, and hardware.

News and Events Get the latest news from Digidesign or sign up for a Pro Tools demo.

To learn more about these and other resources available from Digidesign, visit the Digidesign Web site (www.digidesign.com).

chapter 2

PRE Hardware Overview and Stand-Alone Operation

This chapter describes the PRE front and back panels, and includes instructions for using its switches, indicators, and connectors for Stand-alone mode operation. To use PRE in Remote mode (remote control of PRE by Pro Tools or a dedicated control surface), see Chapter 3, "Remote Operation."

PRE Front Panel

PRE has the following front panel switches, indicators, and connectors:
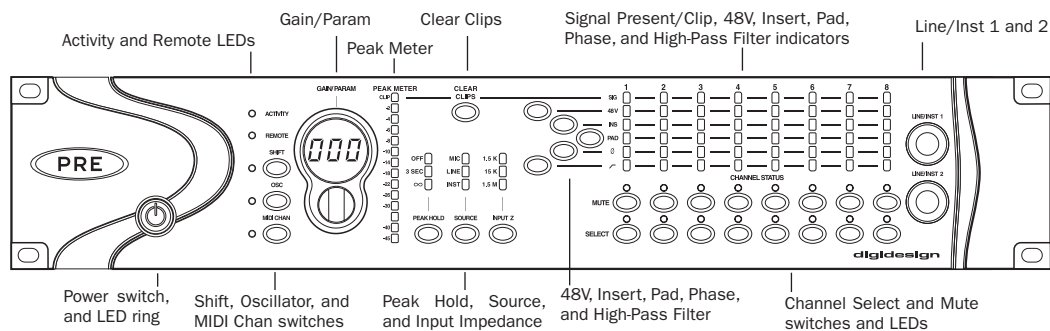
PRE front panel

Power Switch and LED Ring

This switch turns PRE on and off. When lit (green), the LED ring around the power switch indicates that the unit is switched on.

By default, PRE powers up in Stand-alone mode. In this mode, controls can be adjusted from the front panel or remotely. The Remote "Lock-Out" LED is unlit (signifying Remote Lock-Out mode is inactive).

At power up, PRE units will default to the last settings they had at power down, with the exception of Remote Lock-Out mode.

Activity LED

When lit (green), this LED indicates MIDI data is being received by PRE.

Remote "Lock-Out" LED

When lit (green), this LED indicates PRE is in Remote Lock-Out mode. In this mode, PRE is connected to a remote controller (such as Pro Tools or a dedicated device), and the front panel controls are locked out.

PRE is placed in Remote Lock-Out mode after configuring PRE for remote control, by selecting Remote Lock-Out Mode in the Pro Tools Peripherals dialog (Mic Preamps tab).

PRE can be taken out of Remote Lock-Out mode by unchecking the Remote Lock-Out Mode box in the Pro Tools Peripherals dialog, or by powering PRE off, and then back on.

For more information on locking and unlocking PRE front panel controls, see Chapter 3, "Remote Operation."

Shift Switch and LED

This switch (along with channel Select switches) is used in Stand-alone mode when grouping channels in order to control multiple channels simultaneously.When lit (green), this LED indicates the Shift switch is active.

OSC (Oscillator) Switch and LED

This switch enables the internal oscillator, which can be used for calibrating the inputs of audio interfaces (such as Digidesign's 192 I/O). When lit, the OSC LED indicates the oscillator is on.

The oscillator generates a fixed tone of approximately 1k Hz at +4 dBu (= 1.228 Vrms).

⚠ *Calibration can change with temperature. The output is nominally +4 dBu, but may vary up to ± 0.3 dB depending upon the ambient temperature inside of PRE. Allow the unit to heat up and thus stabilize the oscillator output before using the output for calibration purposes.*

The PRE oscillator signal can be routed through the OSC output on the back of the unit or through individual channels on the DB-25 connector.

To route the signal to the OSC output:

■ Press the OSC switch on the front of the unit.

To route the signal through an individual channel output on the DB-25 connector:

1 Disconnect any cable inserted into the channel's Send jack.

2 Enable the Insert for that channel via the front panel (see "Insert Switch and LEDs" on page 9) or through software.

3 Press the OSC switch on the front of the unit.

The oscillator signal can only be activated via the front panel. However, routing the oscillator signal through the DB-25 connector can be controlled remotely or by the front panel.

⚠ *Oscillator routing through a channel output is done after the channel's metering point, and therefore does not display in the PRE meters.*

MIDI Chan (Channel) Switch and LED

This switch activates MIDI Channel selection mode. When lit, the MIDI Chan LED indicates PRE is in MIDI Channel mode, and the PRE's MIDI channel can be changed with the Gain/Param control.

Gain/Param Display

This three-character, seven-segment LED displays the input gain for the currently selected PRE channel, or the PRE's MIDI channel.

This display can also show the current firmware version of PRE.

To display the firmware version of PRE in the Gain/Param display:

1 Press Shift once, then release it.

2 Press OSC.

Gain/Param Control

The Gain/Param control can be used to add gain to the input signal on one or more of the PRE's eight channels, or to set the PRE's MIDI channel. Changes made with the Gain/Param control appear in the Gain/Param display.

The gain range for each input (Mic, Line, and Instrument) is 0 dB to +69 dB, adjustable in increments of approximately 3 dB (see Table 2 on page 44).

Peak Meter

These fourteen-segment LEDs indicate input signal level for any channel that currently has its Select button enabled. If multiple channels have their Select button enabled, only the left-most channel will be represented in the Peak Meter display.

The meter is referenced from the clip point of the amplifier (for example, –22 dB is 22 dB below the clip point of the amplifier).

Clear Clips Switch

This switch clears Clip indicators on the Peak meter and Signal indicators.

Peak Hold Switch and LEDs

This switch sets the clip hold action of the SIG meters atop each of the 8 channels. Clips are also indicated by a red Clip LED on the Peak Meter. The amount of time the clip stays lit is determined by the Peak Hold value, as follows:

Off When lit, the Peak Hold function is off. Clip LEDs will light during clipping, then clear shortly after clipping stops. This is the default Peak Hold value, on power up.

3 sec When lit, Clip LEDs are displayed for three seconds, then automatically clear, as long as no additional peaks occur.

∞ (Infinity Symbol) When lit, Clip LEDs will stay lit until the Clear Clips switch is pressed.

To change Peak Hold (time constant) performance:

■ Press Peak Hold once to change to the next setting, or multiple times to toggle through the three settings. Peak hold is a global command which sets clip persistence for all channels.

Source Switch and LEDs

This switch sets the active input source for individual PRE channels to Mic, Line, or Inst (instrument). The three Source LEDs indicate the active input.

Input Impedance (Represented as Z)

The Input Z switch sets the input impedance for a PRE channel to 1.5 kΩ, 15 kΩ, or 1.5 MΩ.

The three Input Z LEDs indicate the current setting:

1.5K Typically used for microphone inputs, this is the default setting when Source is set for Mic.

15K Typically used for line level inputs, this is the default setting when Source is set for Line.

1.5M Typically used for instrument inputs, this is the default setting when Source is set for Inst.

To change input impedance:

■ If the input Source is Mic, press Input Z once to change to the next setting, or multiple times to toggle through the three settings.

   – or –

■ If the input Source is Line, press Input Z to change to 1.5K or 15K.

   – or –

■ If the input Source is Inst (instrument), the Input Z cannot be changed from its default 1.5M setting.

Channel Status Section

Each PRE channel provides switched control for 48V (phantom power), phase reverse, input padding, access to a unity gain insert send/return, and a high-pass filter. In addition, all eight channels have individual Mute switches and signal status LEDs.

Signal Present/Clip (SIG) LEDs

These LEDs indicate the status of a channel's input signal. Green indicates signal is present (–45 dB) and red indicates clipping. When there is no signal present or the signal is below –45 dB, the LED is off.

When clipping occurs, the LED will remain lit (or clear) depending on the Peak Hold setting. Clips can also be manually cleared with the Clear Clip switch.

48V Switch and LEDs

This switch applies 48V phantom power to Mic Inputs. When lit (red), these LEDs indicate which channels have 48V enabled.

Mic Inputs can provide 48V phantom power for microphones that require it to operate. If Source is set to Line or Inst, phantom power automatically disengages to avoid sending 48V back to the line level device through the XLR cable and eliminates unnecessary power draw when not in use for powering microphones.

Dynamic microphones (like a Shure SM57) do not require 48V to operate, but are not harmed by it. Most *condenser* microphones (like an AKG C414) *do* require 48V to operate. If you are not sure about the 48V requirements for your microphone, contact the manufacturer, or read your microphone's documentation.

⚠ *Although 48V can be used safely with most microphones, ribbon microphones can be damaged by it. Always turn off 48V, and wait for the red 48V indicator light to go completely off and any signal to dissipate before connecting or disconnecting a ribbon microphone.*

⚠ *Condenser microphones requiring 48V should not be "hot-plugged" into a PRE Mic Input where 48V is active before plugging the microphone in. This could potentially cause damage to PRE, as well as to un-muted monitoring systems, due to a loud "click" or "pop."*

Insert Switch and LEDs

This switch enables insert points on individual channels. When lit (yellow), Insert LEDs indicate which channels have their insert point enabled.

PRE's back panel has eight pairs of send and return jacks for inserting external processors (such as compressors or EQs) in the audio path. Insert send levels are post output trim.

Pad Switch and LEDs

This switch applies an input pad to individual channels to reduce input sensitivity by –18 dB. When lit (green), Pad LEDs indicate which channels have Pad enabled.

Phase Switch and LEDs

This switch applies phase reversal to individual channels. When lit (green), Phase LEDs indicate which channels have phase reverse enabled.

High-Pass Filter Switch and LEDs

This switch applies a high-pass filter to individual channels. When lit (green), HPF LEDs indicate which channels have the high-pass filter enabled.

Each PRE channel includes a high-pass filter with a center frequency of 85 Hz and a roll-off of –18 dB/octave. Use the high-pass filter to remove microphone proximity effects, hum, rumble, wind, and other low frequency sounds.

Channel Mute Switches and LEDs

Each PRE channel has a dedicated Mute switch to mute input signal. The respective Mute LED lights when muting is enabled.

Channel Select Switches and LEDs

These switches are used to "focus" one or more channels for editing. When lit (green), the Channel Select LED indicates that the channel can be edited.

To select multiple channels for editing, first press the Shift key on the left-hand side of the unit, then press the Select buttons for corresponding channels. If you wish to return to single channel selection, disengage the Shift key, then press the Select button for the individual channel you wish to change.

The following channel controls can be edited:
- 48V Phantom Power; see "48V Switch and LEDs" on page 9.
- Phase Reverse; see "Phase Switch and LEDs" on page 9.
- Pad; see "Pad Switch and LEDs" on page 9.
- Insert; see "Insert Switch and LEDs" on page 9.
- High-Pass Filter; see "High-Pass Filter Switch and LEDs" on page 9.
- Mic/Line/Instrument Source Switching; see "Source Switch and LEDs" on page 8.
- Input Gain; see "Gain/Param and Input Gain" on page 15.

When PRE is powered off, channel select states are stored in memory and are subsequently restored at power up.
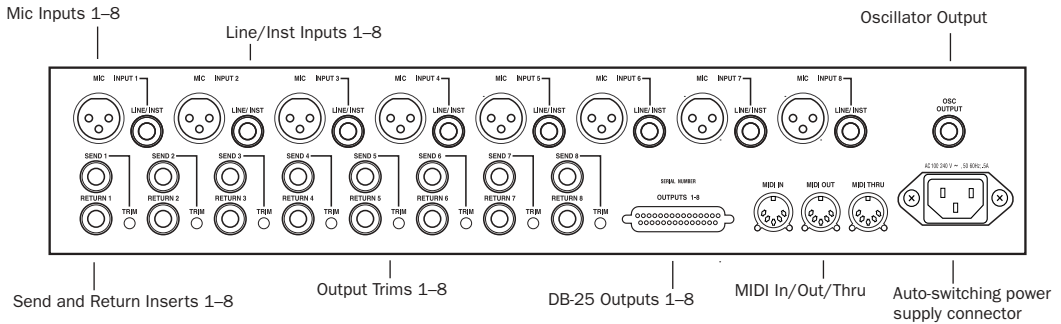
Line/Inst 1 and 2

The front panel includes two 1/4˝ balanced/unbalanced TRS jacks, with Tip wired hot (or "+"), Ring cold ("–"), and Sleeve ground. These jacks mirror Line/Inst Inputs 1 and 2 on the back panel. Connecting to the front panel Line/Inst input will break a connection made to the respective back panel Line/Inst input.

Use these jacks for convenient access to high impedance instrument inputs.

PRE Back Panel

PRE has the following back panel connectors:

Mic Inputs 1–8 ... *Line/Inst Inputs 1–8* ... *Oscillator Output*

Send and Return Inserts 1–8 ... *Output Trims 1–8* ... *DB-25 Outputs 1–8* ... *MIDI In/Out/Thru* ... *Auto-switching power supply connector*

PRE back panel

Mic Inputs 1–8

These are balanced XLR jacks, with Pin 1 wired ground, Pin 2 wired hot (or "+"), and Pin 3 wired cold (or "–").

Use these jacks for microphone connections or line level devices that support balanced XLR connectors.

Line/Inst (Line Level/Instrument) Inputs 1–8

These are balanced 1/4˝ TRS jacks, with Tip wired hot (or "+"), Ring cold ("–"), and Sleeve ground.

Unbalanced connections are supported with the use of standard 1/4˝ mono phone plugs. If using line inputs with balanced line level devices, be sure to use balanced to balanced cables to maximize performance.

DB-25 Outputs 1–8

This is a balanced DB-25 connector for line outputs 1–8. For pinouts, see Appendix B, "Pinout Diagram for the DB-25 Connector."

This connector can also output a fixed oscillator signal on each channel. For more information, see "OSC (Oscillator) Switch and LED" on page 6.

Send and Return Inserts 1–8

These are balanced 1/4˝ TRS Send and 1/4˝ TRS Return jacks, with Tip wired hot (or "+"), Ring cold ("–"), and Sleeve ground. Insert send levels are post output trim.

Use these jacks for inserting external devices such as compressors or equalizers in the audio path before recording to disk. Sends can also be used as line outputs; in this case, all front panel controls will affect the signal, except Mute.

Return channels 1–8 can be bypassed from the front panel, or through remote control.

Output Trims 1–8

The output trims are used to individually calibrate each channel's output and send level.

The output trims are factory-calibrated so that the clip point of the PRE output amplifier matches the factory-set clip point of the 192 I/O analog input. The PRE's output level is –6 dBu below its maximum output of +28 dBu (+22 dBu). If you do not intend to use a 192 I/O, you should wind the trims all the way up (clockwise) to allow for maximum signal output (+28 dBu) and maximum performance.

⚠ *The Send jacks and the DB-25 connector both use the output trims for adjustment. Calibrating a DB-25 output will affect the Send output level as well.*

MIDI In/Out/Thru Connectors

The MIDI connectors on PRE accept standard 5-pin MIDI cables.

The MIDI In connector accepts MIDI input for remote control of PRE (for example, from the MIDI out of a MIDI interface in a Pro Tools system).

The MIDI Out connector sends MIDI data out of the PRE to the MIDI input of a Pro Tools system, or another PRE. To daisy-chain multiple PREs, connect the MIDI Out of one PRE to the MIDI In of the next PRE, and so on. You will also need to set each unit to a unique MIDI channel number (refer to "MIDI Connections" on page 18).

The MIDI Thru connector is not used for Pro Tools remote control.

Oscillator (OSC) Output

This is a balanced 1/4″ TRS jack that outputs a fixed oscillator signal (+4 dBu reference signal at approximately 1 kHz) for calibrating the inputs of gear not connected through the DB-25 output. For more information, see "OSC (Oscillator) Switch and LED" on page 6.

Calibration can change with temperature. The output is nominally +4 dBu, but may vary up to ± 0.3 dB depending upon the ambient temperature inside of PRE. Allow the unit to heat up and thus stabilize the oscillator output before using the output for calibration purposes.

AC Power

This connector accepts a standard AC power cable (included). PRE is auto power-selecting (100V to 240V) and will automatically work with a standard modular cable to connect to AC power receptacles in any country.

Power Up Defaults

When you first power on PRE, it has the following settings.

Power Up Defaults

Function	Status
Operation Mode	Stand-alone (Remote "Lock-Out" LED off)
Peak Hold	Off
OSC	Off
Shift	Off

User Settings Stored in Memory

When PRE is powered down, it remembers its last settings. When the unit is powered back on, the last settings will be intact.

Using PRE in Stand-Alone Mode

PRE can be used without Pro Tools as a stand-alone microphone preamplifier. PRE stand-alone operation requires power and audio connections.

Powering Up PRE

To use PRE as a stand-alone microphone preamplifier:

1 Connect AC power to PRE.

2 Power on PRE.

At power up, PRE units will default to the last settings they had at power down.

Making Signal Connections to PRE

Depending on how you plan to use PRE, the way you connect it to your studio will vary.

While you can use PRE with a variety of audio setups, all you really need is a line input device (such as a mixer or an A/D converter) to monitor PRE outputs.

Connecting Audio Sources

⚠ *To prevent damage to PRE or your monitoring system, mute your monitoring system or set levels to their minimums, before making audio connections. This will prevent against sudden spikes and surges, as well as possible acoustical feedback if a microphone is connected and left "open."*

To connect a microphone:

1 Press the Channel Select switch for the Mic Input you will be using.

2 Change the input source to Mic, by pressing Source one or more times.

3 Make sure the gain is turned down, especially if the monitors are up.

4 Verify 48V phantom power is disabled. Press 48V, so that the 48V LED is off.

⚠ *Although 48V can be used safely with most microphones, some ribbon microphones can be destroyed by it. You should always turn off 48V, and wait for the red light to go completely off, before connecting or disconnecting a ribbon microphone.*

5 Plug a microphone directly into the Mic Input on the back of PRE. These inputs accept XLR connectors.

6 If your microphone requires phantom power, press 48V.

7 Turn the Gain/Param control to raise the gain. Use the Peak Meter to determine the proper level.

If the output trim has been calibrated to the input trim of your 192 I/O, the pre-fader meter in Pro Tools should accurately reflect the Peak Meter of the PRE, thereby, allowing you to use the on-screen meters to set your levels.

8 Repeat these steps for additional microphone connections.

To connect line level and instrument level sources:

1 Press the Channel Select switch for the Line/Inst Input you will be using.

2 Change the input source to Line or Inst (as required), by pressing Source one or more times.

3 Plug a line level source (such as a synth, output from your mixer, or a microphone or guitar that has been amplified by an outboard preamp) or a DI (direct instrument) source into a Line/Inst Input on the front or back of PRE. These inputs accept balanced/unbalanced TRS connectors.

☞ *If using line inputs with balanced line level devices, be sure to use balanced to balanced cables to maximize performance.*

4 Repeat these steps for additional connections.

Using External Devices

PRE can make dedicated connections to external analog devices (such as compressors and equalizers) before committing the signal to disk in Pro Tools. You can send and return signals to these devices, using PRE's back panel Send and Return jacks.

To connect an external analog device to your system:

1 Connect the Send jack of one PRE channel to an input of the external signal processor.

2 Connect the output of the external signal processor to the Return jack of the same PRE channel.

3 Press the Channel Select switch for the Send/Return channel you will be using.

4 Press Insert.

Repeat these steps for additional connections.

⚠ *Both the Send and Return jacks are balanced 1/4˝ jacks, with Tip wired hot (or "+"), Ring cold ("–"), and Sleeve ground. Insert send levels are post output trim.*

Calibrating PRE and Other Devices

Before you use PRE, you may want to calibrate its output level (as well as the input and output levels of other devices) to the level of your mixing console.

The output trims are factory-calibrated so that the clip point of the PRE output amplifier matches the factory-set clip point of the 192 I/O analog input. The PRE's output level is –6 dBu below its maximum output of +28 dBu (+22 dBu). If you do not intend to use a 192 I/O, you should wind the trims all the way up (clockwise) to allow for maximum signal output (+28 dBu) and maximum performance.

Editing Channel Controls

Most PRE parameters can be changed with front panel channel control switches; for a description of each switch, see "PRE Front Panel" on page 5. Input Gain is changed with the Gain/Param control (see "Adjusting Input Gain" on page 15).

PRE channel controls can be applied to one or more channels at a time.

To select one channel:

• Press the Select switch of the desired channel. Selecting one channel deselects the previously selected channel or channels.

To select multiple channels:

1 Press Shift.

2 Press the Select switch of any channels you want to edit.

💡 *To select all channels with one quick stroke, drag your finger across all the Select switches.*

When more than one channel is selected, metering, control states, and Gain/Param settings, will reflect the activity of the left-most channel of the group.

Edits made to any member of the group will now be made to all members, simultaneously. See "Mixed State Operating Mode While Editing Multiple Channels" on page 15.

To change a setting with a channel control switch:

1 Select one or more channels to edit, as described directly above.

2 Press a channel control switch to change its current setting. For example, if the 48V LED is off, pressing 48V will enable 48V phantom power on all the selected channels. (48V can only be enabled when input source is set for Mic input. It is disabled as a choice when input source is set for line or DI input.)

To exit group mode:

■ Press Shift to disengage, then press the Select button of the individual channel you wish to edit.

Mixed State Operating Mode While Editing Multiple Channels

A mixed state operating mode exists when you are editing multiple channels simultaneously, and some of the channels have different settings.

Channel Control Switches

When channels are grouped, switch modifications made to one channel of the group are automatically applied to all other channels of the group.

Gain/Param and Input Gain

If an offset exists between grouped channels, the offset will be maintained while moving the Gain/Param control until you hit +69 dB gain or 0, at which point the grouped channels will mirror each other.

⚠ *Gain offsets are retained when moved as a group in Stand-alone mode, but this is currently not true in Pro Tools Remote mode.*

Adjusting Input Gain

To set input gain on a channel:

1 If the Gain/Param display currently shows a MIDI channel, press MIDI. The display should now show an input gain level.

2 Press the Select 1 switch (for example, for Mic Input 1).

3 If the Source Mic LED is not lit, press Source one or more times until the Mic LED is lit (so that the Mic Input is active).

4 Rotate the Gain/Param control to change the input gain level.

Muting Channels

To mute a channel:

■ Press Mute on each channel you want to mute. To mute additional channels, press their respective Mute switches. Meters remain active, and Channel Status controls can still be changed.

☀ *To mute all channels with one quick stroke, drag your finger across all the Mute switches.*

To unmute a channel:

■ Press Mute again.

chapter 3

Remote Operation

Installation of PRE remote control in Pro Tools includes:

- Making audio and MIDI connections to PRE. (See "Connecting PRE to a Pro Tools System" on page 18.)

- Configuring MIDI. (See "Configuring OMS for PRE" on page 21.)

- Configuring Pro Tools. (See "Configuring Pro Tools Software for PRE" on page 22.) This includes:

    - Declaring PRE in the Peripherals dialog.

    - Mapping PRE outputs to an audio interface's inputs in the I/O Setup dialog.

Once PRE is configured in Pro Tools, Mic Preamp controls can be displayed in Pro Tools Mix and Edit windows, and you can do one of the following:

- Remote control PRE from the Mix or Edit window.

- Use PRE front panel controls to adjust Mic Preamp controls in Pro Tools.

    – or –

- Use a a control surface (such as D-Control, D-Command, Command|8, ProControl, or Control|24) to adjust Mic Preamp controls. For specific controls, see "Mic Preamp Remote Control with Digidesign Control Surfaces" on page 31.

PRE Remote Control in Pro Tools

The following PRE front panel controls can be remote-controlled in Pro Tools:

- Input Gain
- Input Source
- Selecting one or more channels for editing
- Input Impedance (Input Z)
- 48V
- Insert
- Pad
- Phase Invert
- High-Pass Filter

The following PRE front panel controls are not supported by remote control.

- Oscillator on/off
- MIDI channel assignment
- Changing the Peak Hold setting of front panel Clip LEDs
- Clearing of Clips on the front panel
- Muting individual PRE outputs

Connecting PRE to a Pro Tools System

Audio Connections

PRE must be physically connected to a Digidesign audio interface (such as a 192 I/O) in your Pro Tools system.

To connect your PRE to your Pro Tools system:

■ Connect PRE outputs to analog inputs on your Digidesign audio interface (for example, to connect PRE to a 192 I/O, use a DB-25 cable to connect the PRE outputs to the Analog Inputs on the 192 I/O). For installations with multiple PREs, repeat the above step.

☀ *For each PRE output, note the respective audio interface input channels, as these will be the physical inputs you map PRE outputs to in Pro Tools. For example, PRE outputs 1–8 attached to a standard 192 I/O map to analog inputs 1–8; however, PRE outputs 1–8 attached to the second A/D card on a 192 I/O represent analog inputs 9–16.*

MIDI Connections

The following are basic instructions for connecting your PRE to a MIDI interface (such as Digidesign's MIDI I/O) for remote control.

Before you connect PRE MIDI Ins and Outs, connect and configure your MIDI interface according to the manufacturer's instructions, if you have not done so already.

To connect a PRE to the MIDI interface:

1 Connect a MIDI cable between the MIDI Out port on your PRE and the MIDI In port on your MIDI interface.

2 Connect a MIDI cable between the MIDI In port on your PRE and the MIDI Out port on your MIDI interface.

3 For additional PREs, daisy-chain them by connecting the MIDI Out port on the first PRE to the MIDI In port of the second PRE, and so on. For multiple PRE MIDI cabling considerations, see "Installations with Multiple PREs" on page 18.

Setting PRE MIDI Channel

To set global receive/transmit MIDI channel:

1 If you haven't done so already, connect AC power to PRE.

2 Power on PRE.

3 On the PRE front panel, press MIDI Chan. The LED should be lit; if not, press and release again.

The Gain/Param display will display the current MIDI channel (1–16).

4 Turn the Gain/Param control clockwise to increment MIDI channel numbers, or counterclockwise to decrement channel numbers. The MIDI channel will be set once you stop moving the control; you do not need to press an Enter key to set the channel.

5 To exit MIDI Channel mode, press MIDI Chan again.

6 Repeat the above steps for additional PREs.

Installations with Multiple PREs

To control multiple PREs via a single MIDI port, set each unit to a unique MIDI channel number. Keep in mind that if PRE units are set to the same MIDI channel on a single MIDI port, their controls will operate in a "linked" fashion—changing a setting on one unit will change the setting on all units.

With a multi-port MIDI interface, every unit must be daisy-chained from a single port on your MIDI interface. Connect the MIDI Out port of the MIDI interface to the MIDI In port of the first PRE, then connect the MIDI Out port of the first PRE to the MIDI In port of the second PRE, and so on. Make sure to connect the MIDI Out port of the last PRE to the MIDI In port of the MIDI interface.

With multiple PREs, it is easier to keep track of each unit in Pro Tools by setting MIDI channels in ascending order, in relation to the physical position of the PREs (for example, in the order they are stacked in a rack).

Powering Up Pro Tools System

In order for Pro Tools to communicate properly with audio interfaces and other peripherals, it is important that you start up and shut down your system in the following order:

Power up your system in this order:

1 Turn on your Pro Tools hard drives. Wait approximately ten seconds for them to spin up to speed.

2 Turn on PRE.

3 Turn on synchronization or other MIDI peripherals or interfaces.

4 Turn on your Pro Tools audio interfaces.

5 Turn on your computer.

6 Turn on your speakers or other monitor system last.

Power down your system in this order:

1 Turn off your speakers or other monitor system.

2 Quit Pro Tools.

3 Shut down the computer.

4 Power off your audio interfaces.

5 Turn off PRE

6 Turn off any synchronization, MIDI, or other peripherals or interfaces.

7 Turn off your drives.

Configuring MIDI Studio Setup for PRE

(Pro Tools 6.7 Systems or Higher on Windows XP Only)

Before using a PRE with Pro Tools 6.7 or higher on Windows, you can configure the MIDI Studio Setup (MSS) in Pro Tools.

The following are basic instructions for configuring PRE in MSS. For more information on MSS, see your *Getting Started Guide*.

To define PRE with MIDI Studio Setup:

1 In Pro Tools, choose Setup > MIDI > MIDI Studio. The MIDI Studio Setup window opens.

2 Click Create.

3 In the Instrument Name field, type PRE, and press enter.

If you do not enter an instrument name, the Instrument Name field will automatically inherit information from the Manufacturer and Model pop-up menu.

4 Select Digidesign and PRE from the corresponding pop-up menus.

5 From the Input pop-up menu, choose the input port on your MIDI interface that is connected to the MIDI Out of the PRE.

6 From the Output pop-up menu, choose the output port on your MIDI interface that is connected to the MIDI In of the PRE.

7 Enable the appropriate MIDI channels (1–16) for the Send Channels and Receive Channels options (These determine which channels send and receive MIDI.)

8 Pro Tools supports the use of up to nine PREs at the same time. If you use multiple PREs, make sure that none of the PREs are assigned to the same MIDI channel, and that all PREs are daisy-chained together (as noted in "MIDI Connections" on page 18).

9 Continue with "Configuring Pro Tools Software for PRE" on page 22.

Configuring AMS for PRE

(Pro Tools 6.0 Systems or Higher on Macintosh Only)

Before using a PRE with Pro Tools 6.0 on Macintosh, you must first configure it using the Audio MIDI Setup utility (in Application/Utilities).

The following are basic instructions for configuring PRE in the Apple Audio MIDI Setup application (AMS).

To configure your PRE with AMS:

1 Launch the Apple Audio MIDI Setup (Applications/Utilities).

– or –

In Pro Tools, choose Setup > MIDI > Studio Setup.

2 Select the MIDI Devices tab.

3 Double-click on your PRE icon.

– or –

If there is no icon for your PRE, choose MIDI Devices > Add New External Device; then, do the following:

- Double-click the New External Device icon.
- Select Digidesign, as the manufacturer for your PRE.
- Select PRE as the device name.

4 Click More Properties.

5 Click the Basic (or Properties) tab.
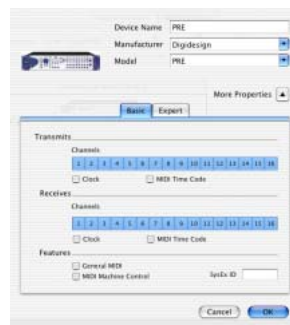
MIDI Device Info Dialog

6 Enable the appropriate Channels for the Receives and Transmits options.

7 Click OK.

8 Connect the PRE icon to the correct port on the MIDI interface icon:

- Click the arrow for the output port of the PRE and drag a connection or "cable" to the input arrow of the corresponding port of the MIDI interface.

- Click the arrow for the input port of the PRE and drag a cable to the output arrow of the corresponding port of the MIDI interface.
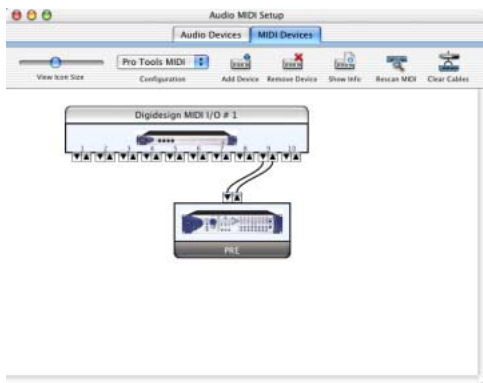
Connecting the PRE to the correct port or MIDI interface in the AMS Setup window

9 Pro Tools supports the use of up to nine PREs at the same time. If you use multiple PREs, make sure that none of the PREs are assigned to the same MIDI channel, and that all PREs are daisy-chained together (as noted in "MIDI Connections" on page 18).

10 Continue with "Configuring Pro Tools Software for PRE" on page 22.

Configuring OMS for PRE

(Pro Tools 5.3.x Systems on Macintosh Only)

Before using a PRE with Pro Tools 5.3.x on Macintosh OS 9.x, you must first configure it as an OMS device.

The following are basic instructions for configuring your PRE in OMS. If you are installing OMS for the first time, refer to your *Getting Started Guide*. If you are not familiar with OMS, OMS devices, or how to configure OMS Setup, refer to the OMS documentation included on the Pro Tools Installer disc.

To configure your PRE in OMS:

1 Launch OMS Setup from the Finder or from within Pro Tools (choose Setups > OMS Setups).

2 If you are configuring PRE *and* a MIDI interface, choose File > New Studio Setup. If you are configuring only PRE, continue to the next step.

3 Click on your MIDI interface, then choose Studio > New Device. The MIDI Device Info dialog opens.

4 In the MIDI Device Info dialog, enter a name for the device (for example, PRE 1).
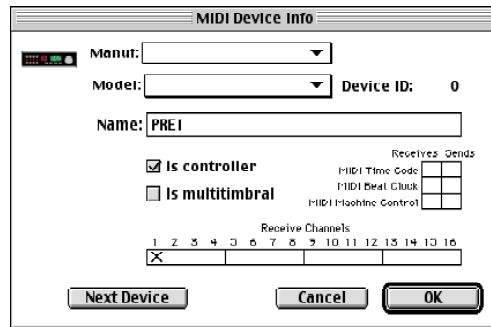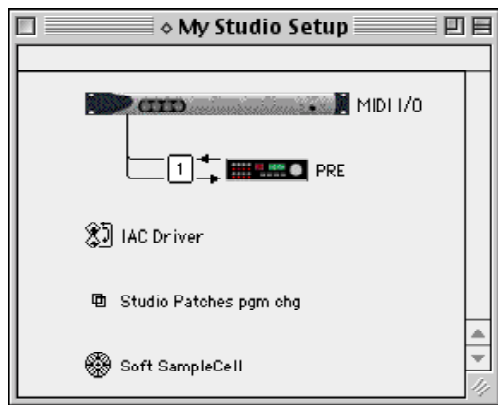

MIDI Device Info Dialog

5 Make sure the Is Controller option is selected.

6 Make sure the Receives and Sends boxes for MIDI Time Code, MIDI Beat Clock, and MIDI Machine Control are deselected.

7 Under Receive Channels, select the channel for sending and receiving data from PRE.

This should be the same channel number previously set on the PRE front panel.

8 Click OK.

Connecting the PRE to the correct port or MIDI interface in the OMS Setup window

9 In the OMS Setup window, a number will be displayed to the left of the arrows connecting the PRE icon to the MIDI interface icon. This number indicates the port number that the device is connected to on the MIDI interface. Verify that the correct port number is displayed; if not, click the port number, type the correct number, and press Return.

💡 *You can change the PRE icon to match the visual look of your PRE by clicking the icon and choosing the Device Icon command in the Studio menu.*

10 Save the changes to your current Studio Setup document.

11 Up to nine PREs can be configured in OMS, you can configure only the first PRE that is directly connected to your MIDI interface, or you can configure every PRE in OMS as follows:

- To daisy-chain your PREs in OMS: In the OMS Setup window, drag the second PRE onto the first PRE, the third PRE onto the second PRE, and so on. (Arrows between the PRE and the MIDI interface signify a connection has been made.)
- Configure MIDI Device Info for each PRE, as described above. Make sure that none of the PREs are assigned to the same MIDI channel.

12 When finished configuring PREs in OMS, choose Edit > OMS MIDI Setup.

13 Select Run MIDI in Background, and click OK.

14 Choose Edit > Preferences and deselect "Use Apple SerialDMA driver when available," then click OK.

15 Quit OMS and select Save.

**16** Continue with "Configuring Pro Tools Software for PRE" on page 22.

Configuring Pro Tools Software for PRE

Once PRE has been configured in MSS, AMS, or OMS, it can be declared in the Pro Tools Peripherals dialog and mapped in the I/O Setup dialog, in order to establish communication between Pro Tools and PRE.

Before you configure Pro Tools, make sure you have already installed the most recent version of Pro Tools software from your Pro Tools Installer disc or the Digidesign Web site. For more information, see "System Requirements" on page 2.

Declaring PRE in Pro Tools

Each PRE must be declared in the Pro Tools Peripherals dialog.
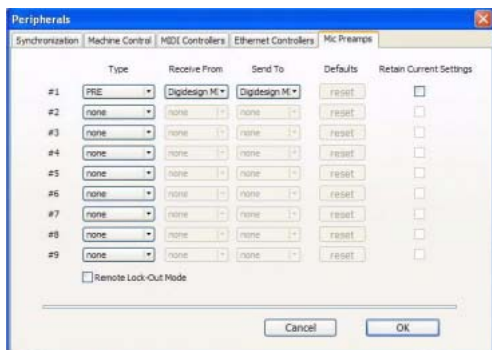
Peripherals dialog, Mic Preamps page

To declare PRE in Pro Tools:

1 Start up your system beginning with hard drives, then PRE, then MIDI and other studio equipment, and then the computer. Turn on your speakers or other monitor system last.

2 Launch Pro Tools.

3 Choose Setup > Peripherals and click on Mic Preamps.

4 Choose PRE from the Type pop-up menu.

5 From the Receive From menu, choose the PRE's source port (this will be the MIDI device you configured in AMS or OMS) and MIDI channel to receive data. It is important to choose the right MIDI channel if using multiple PREs, as the software will not know how the PREs are connected to your system except by MIDI channel assignments.

6 From the Send To pop-up menu, choose a destination port (this will be the same device as you chose above), and a MIDI channel to transmit data. Again, be sure you choose the right MIDI channel in multiple PRE configurations.

7 Click OK.

☼ *Open and create a session, then make sure PRE is enabled as an input device in Pro Tools. For more information on recording MIDI and enabling input devices, refer to the Pro Tools Reference Guide.*

Declaring Multiple PREs

You can configure additional PREs (for a total of nine) by repeating the above steps. Make sure that none of the PREs are assigned to the same MIDI channel (if daisy-chained) or port (if connected to separate ports on your MIDI interface) in the Pro Tools Peripherals dialog or in OMS Setup (unless you want them linked).

☼ *The Option key can be used to simultaneously apply changes to a selected Mic Preamp and all Mic Preamps below it. Press and hold the Option key while making changes.*

When changing Mic Preamp sources and destinations with the Option key, updates are applied sequentially (for example, changing the Receive From destination in the second row to PRE #2-2, will update the destination in the third row to PRE #3-2, and so on).

Additional Options in the Peripherals Dialog

The following options can be set while you are declaring PRE in Pro Tools, but are also useful during sessions to lock out front panel controls or to globally change PRE settings.

Reset Press Reset to return PRE parameters to their defaults. Resetting takes place immediately; you do not need to press OK to reset parameters.

Retain Current Settings Check this box to retain PRE channel settings when an existing session with different settings is loaded. New sessions will automatically retain the current settings.

The front panel settings that Pro Tools can remotely control are stored with the session, whereas the number of PREs declared, their lockout and retain current settings states, as well as the online/offline status and output assignments are stored in the global preferences file.

💡 *When Retain Current settings is not selected, PRE settings will be overridden whenever you open a session that has PRE settings, even if no tracks exist in the session.*

To ensure you retain your current settings, check the Retain Current Settings box, before you open a session.

Remote Lock-Out Mode Select Remote Lock-Out Mode to place PRE in Remote Lock-Out mode, where front panel controls can no longer be used to control PRE. Lock-Out mode will be enabled upon clicking OK in Peripherals dialog. Remote Lock-Out mode can be disabled by unchecking the Remote Lock-Out Mode box in the Pro Tools Peripherals dialog, or by powering the PRE off, and then back on.

Mapping PRE Outputs to Audio Interface Inputs in Pro Tools

Individual PRE outputs must be manually mapped to audio interface inputs before their audio and remote controls will be available within Pro Tools.

After mapping PRE channels to Pro Tools analog input paths, whenever you associate a track with an input path (created in I/O Setup) which is also a physical input that the PRE channel was mapped to, the PRE controls (identified as Mic

Preamps) appear on top of the channel strip, giving you audio and control. Make sure that Display > Mix Windows Shows > Mic Preamps View is selected.

For each declared PRE, the I/O Setup PRE page includes the PRE path name, and provides tools to map PRE output channels to an audio interface.
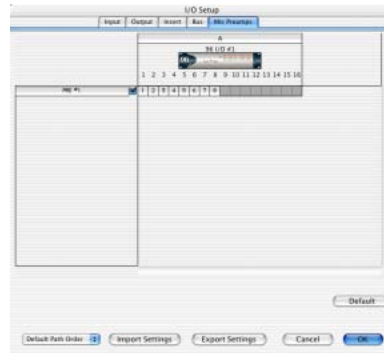
PRE path in I/O Setup

Paths can be:

- Renamed, for easier identification after changing or renaming audio interfaces. See "Naming Paths (Optional)" on page 26.

- Remapped to different input destinations (audio interface analog). See "Remapping Channels" on page 25.

- De-activated (or re-activated) to manage unavailable or unnecessary I/O resources. See "Active and Inactive Paths" on page 26.

PRE paths cannot be deleted. Additionally, their I/O Setup configuration cannot be exported or imported.

If you have multiple PRE units in I/O setups, the order in which the PRE paths appear corresponds to the order in which they were assigned in the Mic Preamps tab of the Peripherals dialog

Channel Mapping

Existing PRE paths must be mapped to specific audio interface inputs in the Grid in order for audio and remote control to be available in Pro Tools.

To map channels:

1 Choose Setup > I/O.

2 Choose the Mic Preamps tab.

3 In the row for the selected path—the highlighted PRE name—click in the Grid column under the desired audio interface and channel. The PRE's first output channel will appear in this column (as the number 1), while the remaining seven channels fill to the right.

Mapping channels

For example, clicking in the path row under the audio interface's input channel 1 will map PRE output channels 1–8 to the audio interface's input channel 1 and next seven inputs. (PRE channels will wrap around to the left if not enough open inputs are available to the right.) Make sure that PRE outputs are mapped to the correct audio interface inputs (as physically connected).

4 Click OK, when done.

Remapping Channels

You can move the individual PRE assignments to different audio interface input channels.

To remap channels in a path:

■ Drag the PRE channel to the new location in the Grid.

– or –

■ Command-click the PRE channel in the Grid to open the PRE Output Channel pop-up menu, then select an output channel. If you select a channel that is already in use, the old and new assignments will swap Grid positions.

Command-clicking a white box in the Grid, then selecting an output channel, updates the Grid with the new mapping. If the channel was already in use, the old assignment will be removed.

To remap multiple channels in a path:

■ Shift-click multiple channels, then drag the channels to the new locations in the Grid.

– or –

■ Marquis-select multiple channels, then drag them in the Grid.

Channel Shuffling

If the destination channel is already occupied, moving a signal from right to left results in a shuffle of other signals after the new destination channel. If the destination channel is already occupied, moving a signal from left to right shuffles any and all signals after the new destination channel and leaves the previous channel empty.

Additional Options in the I/O Setup Dialog

Naming Paths (Optional)

You can name PRE paths with custom names.

To name a path:

1 Choose Setup > I/O.

2 Click the Mic Preamps tab.

3 Double-click the PRE path name and enter a name for the path. Press Tab to move to the next path (if any), or press Enter to set the new path name.

4 Click OK to close the I/O Setup dialog. If there are any identically named paths, you will be instructed to correct them before the I/O Setup dialog will close.

Resetting Paths (with the Default Button)

The Default button in the I/O Setup dialog allows you to:

• Reset selected path names to PRE #1, PRE #2, and so on, corresponding to the order that PREs appear in the Peripherals dialog.

• Create default mappings for all eight channels on all the currently selected PREs.

To reset path names:

1 Select a PRE path, by clicking on its name.

  – or –

Select multiple PRE paths by Shift-clicking the desired path names.

2 Click Default.

Active and Inactive Paths

Paths can be globally configured for Active or Inactive status in the I/O Setup Dialog. When PRE paths are inactive, they do not appear in the Mix or Edit windows.

Making a Mic Preamp inactive can be useful if the PRE will be disconnected from the MIDI port or powered off during a session. You can also make Mic Preamps inactive so that they do not appear in the Mix and Edit windows.

Display of Active and Inactive Status

Unhighlighted (Italics) Indicates the path is inactive.

Highlighted (Non-Italics) Indicates the path is active. This is the default state.

To de-activate or activate a path:

1 Choose Setup > I/O.

2 Click the Mic Preamps tab.

3 For the desired (or, undesired) path, set the Active/Inactive control to the appropriate choice.

Default Path Order, Import Settings, Export Settings

These options do not directly affect PRE settings, but do change settings on other peripherals in your Pro Tools system. For information, refer to the *Pro Tools Reference Guide*.

☼ *PRE settings can be imported into a session using the Import Session Data dialog. When enabled, the PRE settings from the selected session will be imported into the current session.*

Mic Preamps in Pro Tools Edit and Mix Windows

After you create a new track and set the track input to an analog input that the PRE output channel is mapped to (done previously in I/O Setup > Mic Preamps), the PRE controls (identified as Mic Preamps) appear on top of the track channel strip. If you do not see these controls, choose Display > Mix Windows Shows > Mic Preamps View.

To create a track with a Mic Preamp

1 Choose New Track, and create a mono or stereo audio or Auxiliary Input track.

2 Select an input path from the track Input Selector. Make sure you choose an input that a PRE output was mapped to in I/O Setup.

If the Mic Preamps view doesn't appear at the top of the channel strip, you may need to set the Mix or Edit window to show PRE controls (see "Viewing Mic Preamps in Pro Tools" on page 28).

Mic Preamp Paths

When audio tracks or Auxiliary Inputs are created, their mono, stereo, or multichannel format is defined. This original format determines the Mic Preamp behavior. Mono tracks control a single channel, stereo tracks control two channels, and multichannel tracks control multiple channels.

Using multi-channel input paths:

Pro Tools allows you to create multichannel input paths in the Inputs tab of I/O Setups. When these multichannel inputs use a physical input which has been mapped to a PRE output, please be aware that their controls will become automatically ganged together instantly when a multichannel track input assignment is made. This is useful for stereo-pair miking situations where you may want both microphones to behave in a similar manner—both move Gain together, enabling a parameter (such as 48V) will enable both channels simultaneously, and so on. But if you are using advanced miking patterns, such as M/S pairing, you will not want the microphones to be ganged together. In this example, you would have 48V enabled on the condensor mic, while the dynamic mic would not. Furthermore, it is unlikely that they would have the same gain setting. If you need to use multi-microphone configurations and do not want the parameters to be linked, please use individual mono inputs and mono paths.

Viewing Mic Preamps in Pro Tools

Source and Impedance switch — Mic Preamp Window switch
Phase
HPF
Pad
Insert
48V — Gain
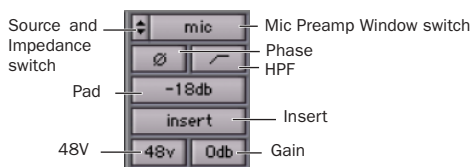
Mic Preamps View, Mix window

Both the Mix and Edit windows can be configured to show or hide PRE controls.

To show or hide Mic Preamps in the Mix and Edit windows:

■ In Pro Tools 7.0 or higher, choose View > Mix Window or View > Edit Window, or click the View Selector in the Edit window or Mix window, and choose one of the following:

• Select Mic Preamps View to show all Mic Preamp controls, or deselect to hide.

• Select All to display the Pro Tools input/output controls, Mic Preamps, inserts, sends, and comments.

• Select None to hide Pro Tools input/output controls, Mic Preamps, inserts, sends, and comments.

– or –

In Pro Tools 6.9 or earlier, choose Display > Mix Window Shows, or Edit Window Shows, or click the View Selector in the Edit window, and choose one of the following:

• Select Mic Preamps View to show all Mic Preamp controls, or deselect to hide.

• Select All to display the Pro Tools input/output controls, Mic Preamps, inserts, sends, and comments.

• Select None to hide Pro Tools input/output controls, Mic Preamps, inserts, sends, and comments.

Mic Preamp Controls

The Mic Preamps view provides all the essential controls for a PRE channel in the Mix and Edit windows views, as follows.

Source Switch and Input Impedance Pop-Up Menu

Clicking the up/down arrows in the Mic Preamp window accesses two sets of controls. The top half of this pop-up menu sets the input source for the PRE channel to Mic, Line, or DI (instrument). The bottom half of this pop-up menu sets the input impedance for a PRE channel to 1.5 kΩ, 15 kΩ, or 1.5 MΩ.

For more information see "Input Impedance (Represented as Z)" on page 8 and "Source Switch and LEDs" on page 8.

Mic Preamp Window Switch

Clicking the Mic Preamp Window switch (labeled mic, inst, or DI) opens a Mic Preamp window, an alternative to Mix and Edit window views. See "Mic Preamp Windows" on page 29.

Phase Switch

This switch applies phase reversal to individual channels.

High-Pass Filter Switch

This switch applies a high-pass filter to individual channels.

Each PRE channel includes a high-pass filter with a center frequency of 85 Hz and a roll-off of –18 dB/octave. Use the high-pass filter to remove microphone proximity effects, hum, rumble, wind, and other low frequency sounds.

Pad Switch and LED

This switch applies an input pad to individual channels to reduce input sensitivity by 18 dB.

Insert Switch

This switch enables insert points on individual channels. PRE's back panel has eight pairs of Send and Return jacks for inserting external processors (such as compressors or EQs) in the audio path. Inserts are post the output trims.

If you do not have your signal routed through an external effects unit, enabling the Insert will effectively mute your signal.

Gain Pop-Up and Mini Fader

The Gain pop-up features a mini fader to adjust gain to the input signal on the PRE. The gain range for each input (Mic, Line, and Instrument) is 0 dB to +69 dB, adjustable in increments of approximately 3 dB.

48V/Off Pop-Up Menu

This pop-up menu applies 48V phantom power to Mic inputs or turns it off. For more information, see "48V Switch and LEDs" on page 9.

Mic Preamp Windows

Mic Preamp windows provide all the essential PRE controls, plus a gain fader and access to the channel strip Input Selector, as an alternative to Mix and Edit window views. See Figure for an example of a Mic Preamp window.

To open a Mic Preamp window:

■ Click the Mic Preamp Window switch (labeled mic, line, or DI).

Opening and Managing Mic Preamp Windows

Multiple Mic Preamp windows can be displayed simultaneously.

To view a different Mic Preamp window:

■ Click the Mic Preamp Windows switch (labeled mic, line, or DI).

If another Mic Preamp window was already open with a highlighted Target icon (red, unlit), the newly selected Mic Preamp window will open in its place.

Opening Multiple Mic Preamp Windows

Multiple Mic Preamp windows can be displayed simultaneously using either of the following methods.

To open additional Mic Preamp windows:

■ Shift-click the Mic Preamp Window switch in other Mic Preamps.

To set a window to remain open:

■ Make sure the Target is deselected (gray, unlit).

Arrange multiple windows as needed. For additional information, refer to the *Pro Tools Reference Guide*.

Mic Preamp Window Controls

Mic Preamp windows provide standard selectors for PRE controls and other controls in the top area of the window.
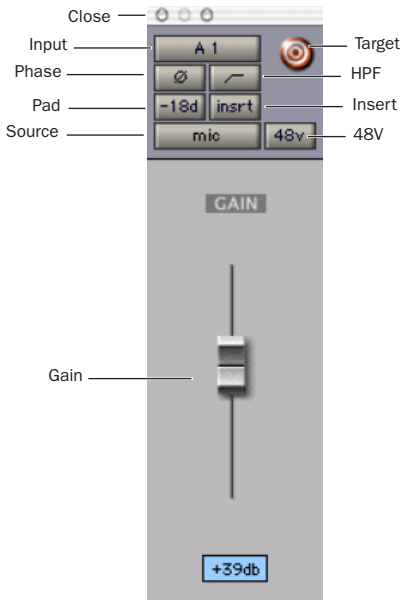
Mic Preamp window standard controls

Standard Controls

Refer to "Mic Preamp Controls" on page 28 for a description of Mic Preamp view controls that are mirrored in the Mic Preamp window. The following controls are not available in Mic Preamps view:

Close Closes the window.

Input Selector Allows you to change which channel you wish to assign this track. Changing the Mic Preamp channel will also change the input of the track.

Target Defines whether a Mic Preamp window is targeted to close when another Mic Preamp window is chosen. See "Using the Target" on page 30.

Gain Level Fader and Dialog Mic Preamp gain can be changed by clicking on the fader and moving the mouse, or by typing a valid gain value in the dialog and clicking Enter.

The only valid gains that can be entered correspond to the gain values in Table 2 on page 44. Typing in different values will snap you to the closest value (for example, typing in 10 will snap you to +9 dB).

Using the Target

When lit, the next window opened of the same type dynamically replaces the current display (unless it is opened as an additional window using the Shift modifier). When unlit, the current window anchors to its current contents and location on-screen. Opening additional windows does not affect anchored windows.

To set an open Mic Preamp window as the Target window:

■ Click to enable the Target (it is red when enabled, gray when disabled).

Changing Settings on One Mic Preamp Channel

To change a setting on one channel:

1 Click the Mic Preamp parameter that you want to change. If you do not see these controls, in Pro Tools 7.0 or higher, choose View > Mix Windows > Mic Preamps, or in Pro Tools 6.9 or earlier, choose Display > Mix Windows Shows > Mic Preamps View.

2 Choose a control switch and change the current setting. For example, if the 48V LED is off, selecting 48V will enable 48V phantom power on all the selected channels. (48V can only be enabled when input source is set for Mic input. It is disabled as a choice when input source is set for line or DI input.)

Changing Settings on Multiple PREs (or PRE Channels)

When working with multiple Mic Preamp channels of one or more PRE units in Pro Tools, you must do all selection of Mic Preamp channels from Pro Tools. Pro Tools has no way of knowing multiple selections on the front panel. For example, when channels 1–4 are selected from the PRE front panel, modifying parameters on channel 1 in Pro Tools will affect channel 1 only. However, it is possible to change settings on multiple PRE channels in Pro Tools, as follows:

To modify controls on multiple PRE channels:

1 Hold down the Shift key and select the tracks you want to edit by pressing the track name.

2 Modify PRE parameters on any selected track while pressing Shift+Option.

Edits made to any member of the group will now be made to all members, simultaneously. See "Mixed State Operating Mode While Editing Multiple Channels" on page 31.

To modify controls on all existing channels:

■ Modify PRE parameters on any track while pressing Option.

Mixed State Operating Mode While Editing Multiple Channels

A mixed state operating mode exists when you are editing multiple channels simultaneously, and some of the channels have different settings.

Mic Preamp Remote Control with Digidesign Control Surfaces

Pro Tools systems configured with PRE remote control and a Digidesign control surface can use the control surface to control one or more Mic Preamps in Pro Tools.

For detailed information on using the Digidesign D-Control with Pro Tools and PRE, see the *D-Control Guide*.

For detailed information on using the Digidesign D-Command with Pro Tools and PRE, see the *D-Command Guide*.

For detailed information on using the Digidesign Command|8 with Pro Tools and PRE, see the *Command|8 Guide*.

The following sections explain how to use Pro-Control and Control|24 with Pro Tools and PRE, and assumes you have a basic understanding of Digidesign control surfaces. Refer to your control surface guide for basic control surface installation and operation information.

ProControl

ProControl provides two modes of Mic Preamp remote control: Channel-Wide Gain Control and Individual Channel.

Channel-Wide Gain Control Mode

In this mode, if any of the tracks being controlled by ProControl have a PRE associated with their input path, then the input gain for that PRE channel will be displayed in the encoder row and can be adjusted with the rotary data encoders. PRE channels will take up as many faders as needed for each PRE channel used in the session.

For each channel with a Mic Preamp, the LED ring around the encoder displays an approximation of the current input gain value. The 8-character display above each encoder shows the PRE unit number and channel number (for example, #1-1 = PRE unit #1, channel #1) followed by gain in dB. If the Mic Preamp channel has 48V enabled, a dot appears to the right of the label (for example, #1/1•).

The F3 switch, located at the top left of the Fader section, enables this mode (or returns ProControl to its previous operation mode).

💡 *In older Pro Tools versions, the F3 F-Key switch toggled between "Fixed" and "Velocity sensitive" modes for the DSP Edit/Assign encoders. With Pro Tools TDM 5.3.3 and higher on Windows or Pro Tools TDM 5.3.1 and higher on Macintosh, this toggling operation is now accomplished by pressing ALT+ALL+F3 (Windows) or OPT+ALL+F3 (Macintosh).*

To set input gain for one Mic Preamp channel:

1 Press F3 to enable Channel-Wide Gain Control mode.

2 Rotate an encoder until the desired gain level is displayed.

To set input gain for multiple Mic Preamp channels simultaneously:

1 Press F3 to enable Channel-Wide Gain Control mode.

2 Press and hold SHIFT while pressing multiple SELECT buttons (to group multiple channels).

3 Press and hold OPTION+SHIFT while rotating an encoder in the group, until the desired gain level is displayed.

To exit Global mode:

■ Press F3 again.

Individual Channel Mode

This mode dedicates the ProControl's DSP Edit/Assign section on the main unit for control of all parameters of a single PRE channel in Pro Tools. Multiple preamps can be adjusted if the tracks have lit SELECT buttons in conjunction with SHIFT and OPTION held while moving parameters.

The F2 switch, located at the top left of the Fader section, toggles between control of Mic Preamp channels and insert focus for the main unit's DSP Edit/Assign section.

💡 *In older Pro Tools versions, the F2 F-Key switch was used to display which Pro Tools channel strips had active plug-ins assigned to them. With Pro Tools TDM 5.3.3 and higher on Windows or Pro Tools TDM 5.3.1 and higher on Macintosh, this operation is now accomplished by pressing OPT(ALT)ALL+F2.*

When Individual Channel mode is active, the F2 LED flashes, and the DSP Edit/Assign section displays the current Mic Preamp status on its eight rows of LEDs, as follows:

- If the channel with focus has a Mic Preamp, the DSP Edit/Assign LED display updates with PRE parameter names and values (see the table, below).
- If the channel with focus does not a have a Mic Preamp, the LED display updates with the following message: "No Mic Pre Assigned To This Channel."
- If no channel is focused, the first channel in the currently viewed bank of faders is automatically given focus, and the DSP Edit/Assign section display updates with PRE parameter names and values (see the table, below).

💡 *Channel focus is determined by a lit INS/SEND button on a track.*

Mic Preamp Parameters in the DSP Edit/Assign Section

The Mic Preamp name is displayed in the CHANNEL/GROUP display of the DSP Edit/Assign section; the default Mic Preamp name is PRE #1. Channel parameters and values are displayed in the DSP Edit/Assign LED displays, as follows:

PRE Parameters in the DSP Edit/Assign LED Displays

Scribble Strip	Parameter Names and Values (in DSP Edit/Assign LED Displays)		DSP Edit/Assign Control
1	MGn (Mic Gain), LGn (Line Gain), or IGn (Inst Gain)	0–69	Encoder
2	Src	Mic, Line, or DI	Encoder
3	Ø (Phase Invert)	On/Off	IN/OUT
4	48v	On/Off	IN/OUT
5	HPF	In/Out	IN/OUT
6	Ins (Insert)	In/Out	IN/OUT
7	–18	In/Out	IN/OUT
8	Imp (Input Impedance)	1.5K, 15K, or 1.5M	Encoder

To change a Mic Preamp parameter:

1 Press F2 to enable the DSP Edit/Assign section for Mic Preamp control.

2 Press a channel INS/SEND switch. The Mic Preamp name is displayed in the CHANNEL/GROUP display. Channel focus is indicated in Pro Tools by a red outline around the track name.

3 To change input gain, line source or imped-ance, rotate the respective data encoder to scroll through the available choices.

– or –

To change parameters with two states (On/Off or In/Out), press the respective IN/OUT switch.

4 To switch to another channel for additional Mic Preamp editing, press the corresponding track INS/SEND switch.

💡 *To simultaneously change settings in multi-ple PRE channels, first press and hold SHIFT/ADD while selecting channels using the Select button on each track (or Shift-click track names in Pro Tools), then press and hold SHIFT+OPT while making adjust-ments.*

To change settings in all channels, press and hold OPT while making adjustments.

To exit Individual Channel mode:

1 Press F2 again, or do any one of the following:
- Press any channel EQ IN/EDIT or DYN IN/EDIT switches. These switches are lo-cated along the top of the Fader section.
- Double-press any channel INS/SEND switch.
- Press either the INSERTS/PARAM or SENDS switch (in the DSP EDIT/ASSIGN section).
- Press the Master Faders switch.

If you simply press F2 again to leave Mic Preamp mode, ProControl reverts to its previous state.

Resetting Defaults

Mic Preamp defaults can be reset from ProCon-trol (while in Individual Channel mode), as fol-lows:

To reset a channel's input gain (to 0):

1 Press F2 to enable the DSP Edit/Assign section for Mic Preamp control.

2 Press a channel INS/SEND switch to focus a channel. This should be a channel with a Mic Preamp.

3 Press DEFAULT+BYPASS IN/OUT for the pa-rameter you wish to reset to defaults.(DEFAULT is located in the upper left-hand corner of Pro-Control, BYPASS is located next to each param-eter in the DSP Edit/Assign area.

To reset all the parameters on a channel to their defaults:

1 Press F2 to enable the DSP Edit/Assign section for Mic Preamp control.

2 Press a channel INS/SEND switch to focus a channel.

3 Press DEFAULT+MASTER BYPASS. (DEFAULT is located in the upper left-hand corner of Pro-Control, MASTER BYPASS is located to the right of the CHANNEL GROUP display.)

Control|24

Control|24 provides two modes of Mic Preamp remote control: Channel-Wide Gain Control and Individual Channel Control.

Channel-Wide Gain Control Mode

This mode dedicates the Control|24's Data Encoders for changing gain level on any Mic Preamp in Pro Tools that has been mapped to a physical input which is assigned to an input path that one of the tracks in the session is using.

For each channel with a Mic Preamp, the LED ring around the encoder displays an approximation of the current input gain value. The 4-character display above each encoder shows the Mic Preamp number (based on their order in the peripherals dialog), or level, in dB. This display can be toggled with the SHOW VALUES button. Values are also shown when the encoder is adjusted.

The REMOTE MIC PRE button enables this mode (or returns Control|24 to its previous operation mode). When enabled, the REMOTE MIC PRE LED is lit, and the Channel Bar Display updates with the following message: "MIC PRE."

To set input gain using Channel-Wide Gain Control mode:

1 Press REMOTE MIC PRE.

2 Rotate an encoder until the desired gain level is displayed. (To view a level before adjustment, press SHOW VALUES.)

To exit Global mode:

▪ Press REMOTE MIC PRE.

Individual Channel Mode

This mode dedicates the Control|24's Data Encoders 1–8 for control of all parameters of Mic Preamps in Pro Tools that have been mapped to a physical input which is assigned to an input path that one of the tracks in the session is using.

For the current Mic Preamp channel, the 4-character displays above encoder scribble strips 1–8 show the Mic Preamp parameter or value. The display can be toggled with the SHOW VALUES button. Values are also shown when the encoder is adjusted.

When Individual Channel mode is active, Data Encoder scribble strips 1–8 display Mic Preamp status, as follows:

- If the channel with focus has a Mic Preamp, the display updates with PRE parameter names or values (see the table, below).

- If the channel with focus does not a have a Mic Preamp, the LED display updates with the following message: "No Mic Pre Assigned To This Channel."

Mic Preamp Parameters in the Data Encoder LED Displays

The track name is displayed in the Channel Bar display. Channel parameters and values are displayed in the Data Encoder LED displays, as follows:

PRE Parameters in the Data Encoder LED Displays

Scribble Strip	Parameter Names and Values (in Data Encoder LED Displays)		Data Encoder Control
1	GAIN	0–69	Encoder
2	SRCE (Input Source)	Mic, Line, or DI	Encoder
3	Ø (Phase Invert)	On/Off	Button
4	48v	On/Off	Button
5	HPF	In/Out	Button
6	INS (Insert)	In/Out	Button
7	–18	In/Out	Button
8	Imp (Input Impedance)	1.5K, 15K, or 1.5M	Encoder

To change a Mic Preamp parameter:

1 Press a channel PAN/SEND or INSERTS button to focus a track. The track name is displayed in the Channel Bar display. Channel focus is indicated in Pro Tools by a red outline around the track name.

2 Press REMOTE MIC PRE.

3 To change input gain, line source or impedance, rotate the respective data encoder to scroll through the available choices.

– or –

To change parameters with two states (On/Off or In/Out), press the respective IN/OUT switch

4 To switch to another channel for additional Mic Preamp editing, press the corresponding channel PAN/SEND or INSERTS switch, then REMOTE MIC PRE.

💡 *To change settings in multiple PRE channels, first press the desired Channel Select buttons (or Shift-click track names in Pro Tools), then press and hold SHIFT+OPT(ALT)ALL while making adjustments.*

To change settings in all channels, press and hold OPT(ALT)ALL while making adjustments.

To exit Individual Channel mode:

1 Press the flashing REMOTE MIC PRE again, or do any one of the following:
- Press EXC/CANCEL button.
- Press any PAN/SEND or INSERT button.
- Press the MASTER FADERS switch.

Resetting Defaults

Mic Preamp defaults can be reset from Control|24 (while in Individual Channel mode), as follows:

To reset all the parameters on a channel to their defaults:

1 Press a channel PAN/SEND or INSERTS button to focus a channel.

2 Press REMOTE MIC PRE.

3 Press DEFAULT+MASTER BYPASS.

appendix a

Specifications

Gain Range 0 dB to +69 dB, in approximately 3 dB steps. With Pad enabled, –18 to +51 dB.

Input Impedance (Input Z): 1.5k ohm (low impedance); 15k ohm (mid impedance); 1.5M ohm (high impedance)

Frequency Response: ±0.1 dB; 20 Hz to 20 kHz, @ +48 dB gain

Total Harmonic Distortion + Noise <0.0005% @ 1 kHz, 0 dB gain @ 20 dB signal; <0.001% (20 Hz to 20 kHz), 0 dB gain @ 0 dB signal

Equivalent Input Noise –128 dB @ 66 dB gain (20 Hz to 20 kHz unweighted) 150 ohm

Phase Response <2.5 degrees (20 Hz to 20 kHz)

Dynamic Range 124 dB @ 0 dB gain (20 Hz to 20 kHz unweighted)

Maximum Input Level +47 dBu Pad In, @ 1 kHz, <0.1% THD

Maximum Output Level +29 dBu balanced, @ 1 kHz, <0.1% THD

Common Mode Rejection Ratio <–75 dB @ 1 kHz, 140 mVcm, +6 dB gain

Crosstalk <<90 dB, 20 Hz to 20 kHz

Phantom Power 48V ±1V

High-Pass Filter –3 dB @ 85 Hz 18 dB/octave

appendix b

Pinout Diagram for the DB-25 Connector

DB-25 Connector
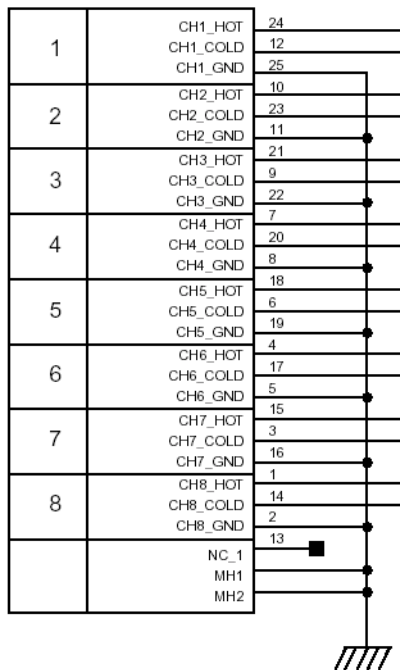
Figure 1. DB-25 Connector pinouts

appendix c

MIDI Controller Numbers

If you do not have a Digidesign Control Surface, you can use a third-party MIDI control surface to control PRE in Pro Tools.

The following information assumes you have a familiarity with MIDI protocol.

For more information on reprogramming your control surface, refer to its documentation, or contact the manufacturer.

PRE MIDI Data

These messages are all of the form:

BXh cc vv

In this case, X means zero-based MIDI channel (1–16), cc means controller number, and vv means value.

💡 *X indicates the PRE's MIDI channel minus one (for example, for PRE MIDI channel 1, X = 0).*

All values are in hexadecimal format and may need to be converted to decimal for some MIDI devices.

Table 1. PRE MIDI Implementation

cc	Name	PRE Channel	vv
0Eh	Reset to Default	N/A	N/A
00h	Input Source	1	00h=mic, 01h=line, 02h=inst
01h	Input Impedance	1	00h=1.5k, 01h=15k, 02h=1.5M
02h	Pad	1	00h=out, 7Fh=in
03h	Insert	1	00h=out, 7Fh=in
04h	48V	1	00h=off, 7Fh=on
05h	Phase	1	00h=off, 7Fh=on
06h	High-Pass Filter	1	00h=out, 7Fh=in
07h	Mute	1	00h=off, 7Fh=on
09h	Input Gain	1	See Table 2
10h	Input Source	2	00h=mic, 01h=line, 02h=inst

Table 1. PRE MIDI Implementation

cc	Name	PRE Channel	vv
11h	Input Impedance	2	00h=1.5k, 01h=15k, 02h=1.5M
12h	Pad	2	00h=out, 7Fh=in
13h	Insert	2	00h=out, 7Fh=in
14h	48V	2	00h=off, 7Fh=on
15h	Phase	2	00h=off, 7Fh=on
16h	High-Pass Filter	2	00h=out, 7Fh=in
17h	Mute	2	00h=off, 7Fh=on
19h	Input Gain	2	See Table 2
20h	Input Source	3	00h=mic, 01h=line, 02h=inst
21h	Input Impedance	3	00h=1.5k, 01h=15k, 02h=1.5M
22h	Pad	3	00h=out, 7Fh=in
23h	Insert	3	00h=out, 7Fh=in
24h	48V	3	00h=off, 7Fh=on
25h	Phase	3	00h=off, 7Fh=on
26h	High-Pass Filter	3	00h=out, 7Fh=in
27h	Mute	3	00h=off, 7Fh=on
29h	Input Gain	3	See Table 2
30h	Input Source	4	00h=mic, 01h=line, 02h=inst

Table 1. PRE MIDI Implementation

cc	Name	PRE Channel	vv
31h	Input Impedance	4	00h=1.5k, 01h=15k, 02h=1.5M
32h	Pad	4	00h=out, 7Fh=in
33h	Insert	4	00h=out, 7Fh=in
34h	48V	4	00h=off, 7Fh=on
35h	Phase	4	00h=off, 7Fh=on
36h	High-Pass Filter	4	00h=out, 7Fh=in
37h	Mute	4	00h=off, 7Fh=on
39h	Input Gain	4	See Table 2
40h	Input Source	5	00h=mic, 01h=line, 02h=inst
41h	Input Impedance	5	00h=1.5k, 01h=15k, 02h=1.5M
42h	Pad	5	00h=out, 7Fh=in
43h	Insert	5	00h=out, 7Fh=in
44h	48V	5	00h=off, 7Fh=on
45h	Phase	5	00h=off, 7Fh=on
46h	High-Pass Filter	5	00h=out, 7Fh=in
47h	Mute	5	00h=off, 7Fh=on
49h	Input Gain	5	See Table 2
50h	Input Source	6	00h=mic, 01h=line, 02h=inst

Table 1. PRE MIDI Implementation

cc	Name	PRE Channel	vv
51h	Input Impedance	6	00h=1.5k, 01h=15k, 02h=1.5M
52h	Pad	6	00h=out, 7Fh=in
53h	Insert	6	00h=out, 7Fh=in
54h	48V	6	00h=off, 7Fh=on
55h	Phase	6	00h=off, 7Fh=on
56h	High-Pass Filter	6	00h=out, 7Fh=in
57h	Mute	6	00h=off, 7Fh=on
59h	Input Gain	6	See Table 2
60h	Input Source	7	00h=mic, 01h=line, 02h=inst
61h	Input Impedance	7	00h=1.5k, 01h=15k, 02h=1.5M
62h	Pad	7	00h=out, 7Fh=in
63h	Insert	7	00h=ofut 7Fh=in
64h	48V	7	00h=off, 7Fh=on
65h	Phase	7	00h=off, 7Fh=on
66h	High-Pass Filter	7	00h=out, 7Fh=in
67h	Mute	7	00h=off, 7Fh=on
69h	Input Gain	7	See Table 2
70h	Input Source	8	00h=mic, 01h=line, 02h=inst

Table 1. PRE MIDI Implementation

cc	Name	PRE Channel	vv
71h	Input Impedance	8	00h=1.5k, 01h=15k, 02h=1.5M
72h	Pad	8	00h=out, 7Fh=in
73h	Insert	8	00h=out, 7Fh=in
74h	48V	8	00h=off, 7Fh=on
75h	Phase	8	00h=off, 7Fh=on
76h	High-Pass Filter	8	00h=out, 7Fh=in
77h	Mute	8	00h=off, 7Fh=on
79h	Input Gain	8	See Table 2

⚠ *Note that for certain switches, such as the Mute switches, each "on" message toggles the state of the switch on or off.*

PRE Gain Step Table

Table 2. PRE Gain Steps

Step	vv	Level dB
1	00h	0
2	01h	3
3	02h	6
4	03h	9
5	04h	12
6	05h	15
7	06h	18
8	07h	21
9	08h	24
10	09h	27
11	0Ah	30
12	0Bh	33
13	0Ch	36
14	0Dh	39
15	0Eh	42
16	0Fh	45
17	10	48
18	11	51
19	12	54
20	13	57
21	14	60
22	15	63

Table 2. PRE Gain Steps

Step	vv	Level dB
23	16	66
24	17	69

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