MDW® Hi-Res Parametric EQ
Plug-In Guide

Version 5

Contents

Chapter 1: Introduction

The Massenburg DesignWorks® (MDW) Hi-Res Parametric EQ plug-in version 5 is a mono and multi-mono AAX plug-in (DSP and Native) that defines the state-of-the-art in digital equalization. With its unprecedented clarity, unmatched smoothness, and exceptional high-frequency response, the MDW® Hi-Res Parametric EQ is designed for superior sonic definition.

MDW Hi-Res Parametric EQ operates in double-precision 64-bit floating-point processing to take advantage of the maximum capability of your Pro Tools® system. Also, when working at 44.1 kHz and 48 kHz sampling rates, MDW EQ upsamples to 88.2 kHz or 96 kHz respectively to do all EQ processing, resulting in unprecedented high-frequency smoothness. This plug-in emulates the constant shape reciprocal filter curves of Massenburg's legendary GML 8200 equalizer—the industry-standard reference. The MDW EQ plug-in offers a choice of either three or five bands of equalization with support for an ultra-wide frequency range from 10 Hz to 41 kHz.

This guide provides information on installing and using the MDW EQ plug-in in Pro Tools sessions. For general information on using plug-ins with Pro Tools, see the *Pro Tools Reference Guide*.

MDW EQ Plug-In Features

Continuing the tradition of unrelenting attention to quality, MDW EQ provides features and benefits for those who want the best.

Features

- High-resolution 96 kHz sample-rate processing for audio recorded at 48 and 96 kHz, and 192 kHz sample-rate processing for 192 kHz audio

- Wide frequency selection, from 10 Hz to 41 kHz, with variable Q and a choice of three- or five-band EQ

- Double-precision 64-bit processing for unprecedented clarity

- Emulates GML 8200 constant shape reciprocal filter curves—the industry-standard reference

- IsoPeak® functionality quickly solos a target frequency quickly and precisely

- A/B snapshots for quick and easy settings comparisons

- AAX plug-in format with support for HDX and native hardware

System Requirements and Compatibility

To use the MDW EQ plug-in, you need the following:

• An iLok USB Smart Key (iLok 2 required)

• An iLok.com account for managing iLok licenses

• iLok License Manager

• A qualified Pro Tools system (Pro Tools version 10.3.6, or 11.1 or higher)

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

For complete system requirements and a list of qualified computers, operating systems, hard drives, and third-party devices, visit:

www.avid.com/compatibility

Registering Plug-Ins

Your plug-in purchase is automatically registered when you activate your iLok license (see "Authorizing Plug-Ins" on page 5).

Registered users are eligible to receive software update and upgrade notices.

For information on technical support, visit www.avid.com.

Working with Plug-Ins

Besides the information provided in this guide, see the *Pro Tools Reference Guide* for general information on working with plug-ins, including:

• Inserting plug-ins on tracks

• Using clip indicators

• Navigating the Plug-In window

• Adjusting plug-in controls

• Automating plug-ins

• Using plug-in presets

Conventions Used in This Guide

Pro Tools 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	Click with the right mouse button

The names of Commands, Options, and Settings that appear on-screen are in a different font.

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 and other Pro Tools guides.*

About www.avid.com

The Avid website (www.avid.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.

Product Registration Register your purchase online.

Support and Downloads Contact Avid Customer Success (technical support); download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Knowledge Base or join the worldwide Pro Tools community on the 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 Avid 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 Avid or sign up for a Pro Tools demo.

Chapter 2: Installation and Authorization

Installing Plug-Ins for Pro Tools

Installers for your plug-ins can be downloaded from the Avid Store (http://shop.avid.com) or can be found on the plug-in installer disc (included with boxed versions of plug-ins).

An installer may also be available on the Pro Tools installer disc or on a software bundle installer disc.

To install a plug-in:

1 Download the installer for your computer platform from www.avid.com. After downloading, make sure the installer is uncompressed (.dmg on Mac or .ZIP on Windows).

2 Locate and double-click the plug-in installer application.

3 Follow the on-screen instructions to complete the installation.

4 When installation is complete, click Finish (Windows) or Quit (Mac).

When you launch Pro Tools, you are prompted to authorize your new plug-in.

Authorizing Plug-Ins

Software is authorized using the iLok USB Smart Key (iLok), manufactured by PACE Anti-Piracy.

iLok USB Smart Key

An iLok can hold hundreds of licenses for all of your iLok-enabled software. Once a license for a given piece of software is placed on an iLok, you can use the iLok to authorize that software on any computer.

⚠ *An iLok USB Smart Key is not supplied with plug-ins or software options. You can use the iLok included with certain Pro Tools systems or purchase one separately.*

Authorizing Downloaded Software

If you downloaded software from the Avid Store (http://shop.avid.com), you authorize it using the iLok License Manager application.

📖 *For more information, visit the iLok website (www.iLok.com).*

Removing Plug-Ins

If you need to remove a plug-in from your
Pro Tools system, follow the instructions below
for your computer platform.

Mac OS X

To remove a plug-in:

1 Locate and open the Plug-Ins folder on your
  Startup drive (Library/Application Support
  /Avid/Audio/Plug-Ins).

2 Do one of the following:

• Drag the plug-in to the Trash and empty the
  Trash.

• Drag the plug-in to the Plug-Ins (Unused) folder.

Windows

To remove a plug-in:

1 Choose Start > Control Panel.

2 Click Programs and Features.

3 Select the plug-in from the list of installed
  applications.

4 Click Uninstall.

5 Follow the on-screen instructions to remove the
  plug-in.

Chapter 3: Using MDW EQ

The MDW EQ 5-Band Plug-In Window

Plug-In Controls   EQ Band 1   EQ Band 2   EQ Band 3   EQ Band 4   EQ Band 5

Input attenuator

Phase Reverse switch

Snapshot A/B selector

Copy Snapshot A->B (or B->A)

Filter Type selector

Band Number and IsoPeak selector

Frequency selector

Filter Q selector

Band Background (IsoPeak® and Copy/Paste features)

Boost Cut

EQ Band IN/OUT (On/Off)

Spectrum display (Click to Change Scale)
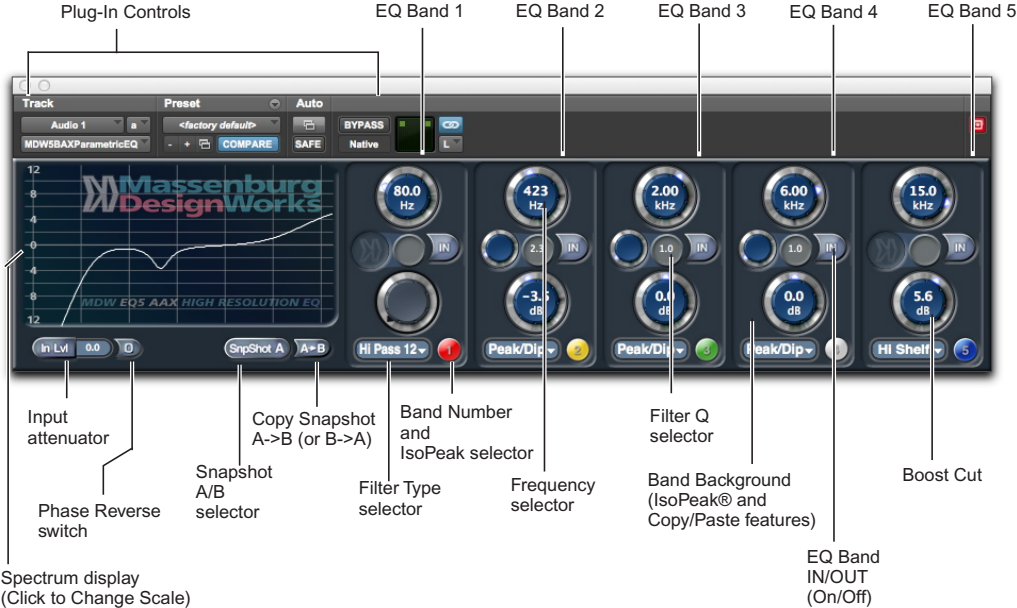
The Massenburg DesignWorks 5-Band High Resolution Equalizer has five independent filter bands connected in series. EQ Bands 1–4 can be individually set to one of seven filter types:

- Peak/dip
- High-frequency shelf
- Low-frequency shelf
- High-pass 6 (6 dB/octave slope)
- Low-pass 6 (6 dB/octave slope)
- High-pass 12 (12 dB/octave slope)
- Low-pass 12 (12 dB/octave slope)

Filter Band 5 can be individually set to one of eleven filter types:

- Peak/dip
- High-frequency shelf
- Low-frequency shelf
- High-pass 6 (6 dB/octave slope)
- Low-pass 6 (6 dB/octave slope)
- High-pass 12 (12 dB/octave slope)
- Low-pass 12 (12 dB/octave slope)
- High-pass 18 (18 dB/octave slope)
- Low-pass 18 (18 dB/octave slope)
- High-pass 24 (24 dB/octave slope)
- Low-pass 24 (24 dB/octave slope)

A scalable display shows the overall EQ frequency response curve. All filter parameters can be independently automated.

MDW EQ 3-Band Plug-In Window

Plug-In Controls   EQ Band 1   EQ Band 2   EQ Band 3

EQ Band IN/OUT (On/Off)

Boost/Cut

Input attenuator

Copy Snapshot A->B (or B->A)

Filter Q selector

Snapshot A/B selector

Band Number and IsoPeak selector

Band Background (IsoPeak® and Copy/Paste features)

Phase Reverse switch

Filter Type selector

Spectrum display (Click to Change Scale)

Frequency selector
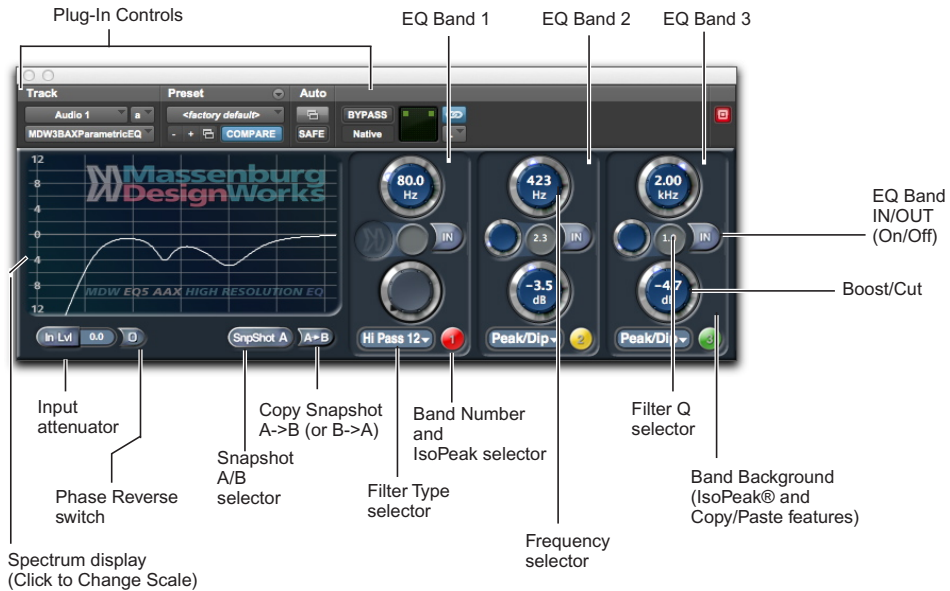
The Massenburg DesignWorks 3-Band High Resolution Equalizer has three independent filter bands connected in series. EQ bands 1 and 2 can be individually set to one of seven filter types:

- Peak/dip
- High-frequency shelf
- Low-frequency shelf
- High-pass 6 (6 dB/octave slope)
- Low-pass 6 (6 dB/octave slope)
- High-pass 12 (12 dB/octave slope)
- Low-pass 12 (12 dB/octave slope)

Filter Band 3 can be individually set to one of eleven filter types:

- Peak/dip
- High-frequency shelf
- Low-frequency shelf
- High-pass 6 (6 dB/octave slope)
- Low-pass 6 (6 dB/octave slope)
- High-pass 12 (12 dB/octave slope)
- Low-pass 12 (12 dB/octave slope)
- High-pass 18 (18 dB/octave slope)
- Low-pass 18 (18 dB/octave slope)
- High-pass 24 (24 dB/octave slope)
- Low-pass 24 (24 dB/octave slope)

A scalable display shows the overall EQ frequency response curve. All filter parameters can be independently automated.

MDW EQ Controls

These controls let you adjust the parameters of an MDW EQ plug-in inserted on a track.

Spectrum Display Scale

Click anywhere within the spectrum display to view the Spectrum Display Scale pop-up menu and choose the desired vertical scale of the display. The available choices are ±6, ±12 or ±24 dB. Selecting a ±6 dB scale is useful for viewing more subtle equalizer adjustments. Changing the scale of the display has no effect on the equalizer's audio output.

In Level (Input Level)

The In Level adjusts the audio input to the plug-in from –24 dB to +6 dB. Drag or double-click and enter numerical data to adjust this control. It is often useful to lower the operating level at this point when you want to decrease the level to the next device or process.

Lower the input level when you want to decrease the level to the next device or process.

Phase Reverse Switch

Click the Phase Reverse button to reverse the absolute phase of the audio. If the EQ is linked to other channels, it will invert the phase of those as well—maintaining the phase relationship between them, but reversing their relationship to the audio in the rest of the session.

Snapshot A/B Select

The A & B snapshot feature allows you to compare two snapshot settings. Toggle between the two snapshots settings by pressing the A/B Snapshot Button.

Copy Snapshot A->B (Copy Snapshot B->A)

While Snapshot A is selected you may duplicate all settings to Snapshot B.

Filter Bands

Bands provide precise filtering of the audio signal in series. Filter type for each band is individually selectable.

Frequency Selector

This Selector sets the frequency of the selected filter band. Frequency range is from 10 Hz to 41 kHz.

Filter Q Selector

The Q Selector sets the Q of the Peak/Dip filter of the selected filter band.

Cut/Boost

This feature provides up to ±24 dB of frequency cut or boost.

Filter Type Selector

This Selector provides a choice of high-pass (6 or 12 dB/oct), low-pass (6 or 12 dB/oct), high-shelf, low-shelf, peak/dip, or bypass operation. For the MDW 5-Band EQ, Band #5 and for the MDW 3-Band EQ, Band #3, each offers additional filter choices which include high-pass 18 and high-pass 24 (18 or 24 dB/oct), and low-pass 18 and low-pass 24 (18 or 24 dB/oct).

Filter In/Out

The In/Out button allows you to switch a filter band on or off.

IsoPeak

IsoPeak® provides a function in Peak/Dip filter mode whereby this band is soloed, and a sharp peak is temporarily set. Click on the colored band number button to initiate IsoPeak for that band. Click and hold on the background area of the band to reveal a pop-up menu allowing you to adjust the IsoPeak Q value.

Band Pop-up Menu

Click and hold on the background area of each band to reveal a pop-up menu allowing you to adjust the IsoPeak Q value as well as the option to copy and paste individual band settings.

Adjusting MDW EQ Controls

The best way to use MDW EQ is to insert it on a track and adjust its controls during playback to hear the changes in real time.

You can adjust MDW EQ knob controls by dragging or by double-clicking and then typing a value into the knob's text display.

Adjusting Controls with a Mouse

When using a mouse, MDW EQ knob controls are adjusted by dragging horizontally or vertically. Values increase as you drag upward or to the right. Values decrease as you drag downward or to the left.

To adjust a control with a mouse:

1 Begin audio playback so that you can hear parameter changes in real time.

2 From the Filter Type selector pop-up menu on the desired band, select the filter type.

3 Drag the knob horizontally or vertically to adjust the parameters for the effect you want.

Dragging a knob horizontally

Dragging a knob vertically

Keyboard Shortcuts

- For finer adjustments, Command-drag the control.
- To return a control to its default value, Option-click the control.

Adjusting Controls with a Keyboard

Knob controls display their current value. You can edit this value by double-clicking and entering a value with your computer keyboard. If multiple plug-in windows are open, click the Target button on the plug-in whose controls you want to adjust.

When lit (red), the Target button indicates its window is targeted. When unlit (gray) the Target button indicates its window is not targeted.

To adjust a control with a computer keyboard:

1 Double-click the numerical text you want to edit.

Displaying a control manually (after double-clicking)

2 Type the desired value. For negative values, type a minus sign in front of the number.

🔆 *In fields that support values in kilohertz, type "k" after a number value to multiply the value by 1000. For example, type "1.2k" to enter a frequency of 1200 Hz.*

3 Press Enter or Return to enter the value and leave keyboard editing mode.

Copying and Pasting Band Settings within a Plug-In

To copy band settings:

■ Click in the background of the band whose settings you want to copy and choose Copy Band Settings.
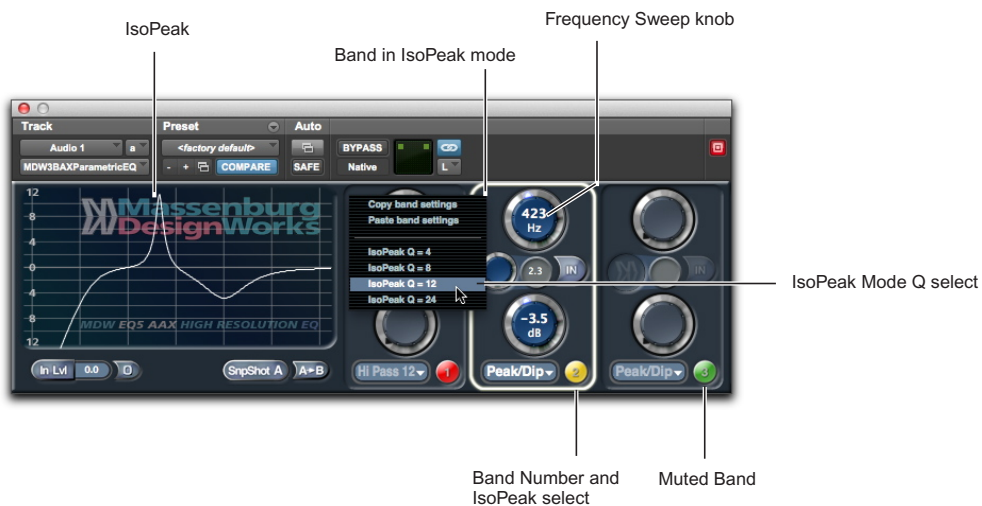

Copying band parameters

To paste band settings:

■ Click in the background of the band where you want to paste the settings and choose Paste Band Settings.

Pasting band parameters

Using IsoPeak Mode

IsoPeak

Band in IsoPeak mode

Frequency Sweep knob

IsoPeak Mode Q select

Band Number and IsoPeak select

Muted Band

To use IsoPeak mode:

1 Choose a band on which to use IsoPeak by clicking the band number. You'll hear only that band selected for IsoPeak and only the absolute peak that the band generates (which will sound very narrow). The spectrum display shows that peak being monitored.

2 The Q of this peak can be selected from the band's pop-up menu (click in the background of the band until a pop up menu appears). The default value is a Q of 8.

3 "Sweep" the frequency, listening to the effect of the peak boost to find the artifact or area of interest.

4 Click the band button to exit the IsoPeak mode and return to normal operation. If you intend to remove a frequency, you'll now have to adjust the Q and the Boost/Cut, but your Frequency value will be that which you found sweeping in IsoPeak.

Appendix A: AAX DSP Plug-in Requirements with HDX Hardware

The number of AAX DSP plug-ins you can use at one time depends on how much DSP power is available in your system. Since Avid HDX hardware provides dedicated DSP for plug-ins, plug-in performance is not limited by CPU processing power.

The DSP tables on the following pages show the theoretical number of instances of each plug-in that can be powered by a single DSP chip on Avid HDX cards.

⚠ *DSP tables show the theoretical maximum performance when no other plug-ins or system tasks (such as I/O) are sharing available DSP resources. You will typically use more than one type of plug-in simultaneously. The data in these tables are provided as guidelines to help you gauge the relative efficiency of different plug-ins on your system. They are not guaranteed performance counts that you should expect to see in typical real-world sessions and usage.*

Using Multi-Mono Plug-Ins on Greater-Than-Stereo Tracks

Plug-ins used in multi-mono format on greater-than-stereo tracks require one mono instance per channel of the multi-channel audio format. For example, a multi-mono plug-in used on a 5.1 format track requires six mono instances since there are six audio channels in the 5.1 format.

MDW 5-Band EQ DSP Requirements with HDX Hardware

MDW 5-Band EQ operates in mono and multi-mono (for stereo and multichannel usage) formats at samples rates up to 192kHz, and has the following instance counts for systems with Avid HDX hardware.

Maximum instances of MDW EQ plug-in per DSP chip for an Avid HDX card at different sample rates

MDW EQ	44.1/48 kHz	88.2/96 kHz	176.4/192 kHz
Mono	8	9	4
Stereo	4	4	2

MDW 3-Band EQ DSP Requirements with HDX Hardware

MDW 3-Band EQ operates in mono and multi-mono (for stereo and multichannel usage) formats at samples rates up to 192kHz, and has the following instance counts for systems with Avid HDX hardware.

Maximum instances of MDW EQ plug-in per DSP chip for an Avid HDX card at different sample rates

MDW EQ	44.1/48 kHz	88.2/96 kHz	176.4/192 kHz
Mono	10	13	6
Stereo	5	6	3

Monitoring DSP Usage

The System Usage window (Windows > Show System Usage) shows approximately how much DSP is available in your system and how it is being used in the current Pro Tools session.

📖 *For more information about DSP usage and allocation, see the Pro Tools Reference Guide.*