METRIC HALO



Character User's Guide

Character Users Guide

Metric Halo

Revision: v1.0.5

Publication date Mon Jun 24 12:11:12 EDT 2013
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Part I. Installation

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1. System Requirements

- *Pro Tools™ (Macintosh)*: Pro Tools 10 or higher running on a Macintosh computer. This software supports Native and AAX DSP operation.
- *Pro Tools™ (Windows)*: Pro Tools 10 or higher running on a Windows computer. This software supports Native and AAX DSP operation.
- *Native*: Any Macintosh DAW that supports Audio Unit plug-ins.

- An iLok copy protection key and account. Please note that one Production Bundle license authorizes the software on any platform.

2. Installation

Screenshots to illustrate the installation process are from the Production Bundle, but the process is the same for individual plug-ins.

Macintosh

Please note – The following graphics show installation on an OS 10.7 system; the process may be slightly different in other versions of the OS, but the basic concepts are the same. Small details such as file sizes shown may vary with subsequent releases.

- Double-click the “MH Character.pkg” application



Figure 2.1: MH Character.pkg

- The installer dialog will appear:



Figure 2.2: Opening Dialog

Click “Continue”…

- Now you will see the Metric Halo License Agreement:



Figure 2.3: License Agreement

After you have read it, click “Continue”…

- Next click “Agree” to accept the License Agreement:

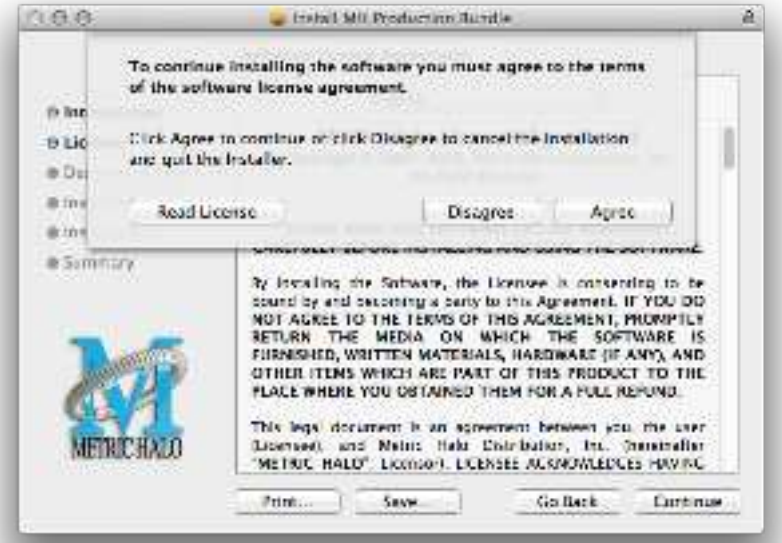


Figure 2.4: Accepting the License Agreement

- Now select the disk you would like the software to be installed to:



Figure 2.5: Selecting the Installation Disk

We recommend installing for all users unless you have a specific reason not to. Select the drive and click “Continue”…

- Next, you have the option to select the location on the disk you would like the software to be installed to:



Figure 2.6: Selecting the Installation Location

We recommend that you use the standard installation location unless you have a specific reason not to. The standard locations are:

- Plug-ins – (drivename)/Library/Application Support/Avid/Audio/Plug-Ins/MH Plug-Ins
- Presets – (drivename)/Library/Application Support/Digidesign/Plug-In Settings

Click “Install”…

- You must now enter the name and password you use to log in to your computer, to give the Installer permission to write the software:



Figure 2.7: Giving the Installer Permission

Enter your credentials and click “Install Software”…

- Once the installer has finished, you'll see this dialog:

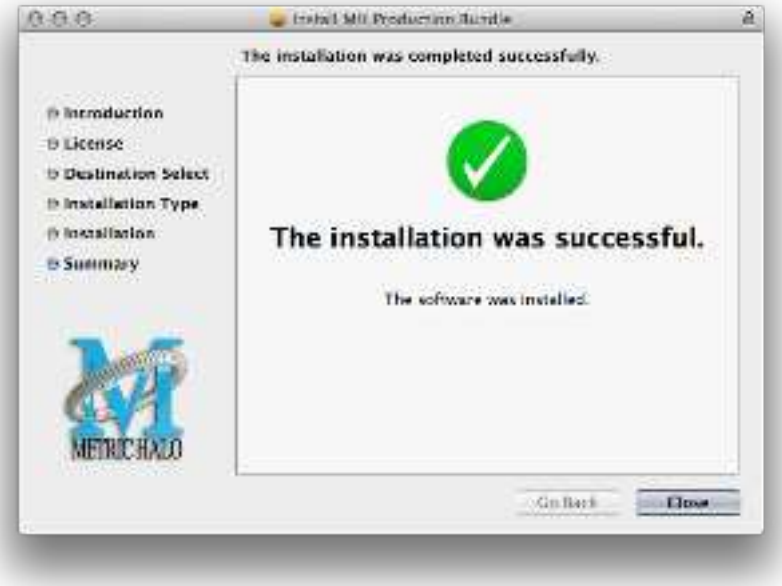


Figure 2.8: Installation Complete

If you do *not* see the “Installation Successful” message, contact MH Support.

- The final step is to go to http://www.ilok.com/ and install the software license to your iLok key.

That’s it! Enjoy using Character!

Windows

There are two versions of each Windows installer:

- Installers that end in *.msi* are intended for 32 bit versions of Windows, and install the 32 bit version of the plug-in(s).
- Installers that end in *_x64.msi* are intended for 64 bit versions of Windows, and install the 32 bit *and* 64 bit versions of the plug-in(s). This allows you to run Pro Tools 10 or 11 on a 64 bit machine.

These installation instructions refer to the 32 bit installer, but the process is the same for 64 bit installations.

Please note – The following graphics show installation on an Windows 7 system; the process may be slightly different in other versions of the OS, but the basic concepts are the same. Small details such as file sizes shown may vary with subsequent releases.

- Double-click the "MHCharacterInstaller.msi" application



Figure 2.9: MH Character Installer msi

- The installer dialog will appear:



Figure 2.10: Opening Dialog

After you have read the Metric Halo License Agreement, click the "I accept the terms of the License Agreement" checkbox and click "Install"

- Windows will ask for permission to write the files:



Figure 2.11: Permission to Write Files

Click “Yes” to begin the installation.

- Once the files have been written you will see the completion dialog:



Figure 2.12: Installation Complete

Click “Finish” to close the installer.

If you do *not* see the “Installation Successful” message, contact MH Support.

- The final step is to go to http://www.ilok.com/ and install the software license to your iLok key.

That’s it! Enjoy using the Metric Halo Production Bundle!

Update Notification

Character will automatically check to see if there's a newer version available (if your computer is connected to the internet). If so, the version number in the UI will turn into an update notice. Click on the notice and a browser window will open to our download page, where you may download the newest installer.

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3. Introduction

Character is a modeling plug-in for digital audio workstations. We measured a number of our customers' favorite analog signal processors to determine what they did to the audio signal being run through them. By measuring the harmonic distortion fingerprint of each device, we have been able to recreate their unique properties in Character.



Figure 3.1: Character's User Interface

By combining circuit modeling with variable gain, Character is capable of shaping your sound with subtle or over-the-top results.

4. Operation

The Character user interface uses a few different control elements to control its processing. These elements are:

Character Model Menu



Figure 4.1: Character Model Menu

This pop-up menu selects Character's model. There are over 20 models available, which are detailed in the Processing chapter.

Tooltip Control



Figure 4.2: Tooltip Control

This button toggles the tooltip display. When enabled, tooltips wil be shown when the mouse hovers over a control. When the tooltip display is disabled, you may still see tooltips by holding down the ? key and hovering over a control.

Control Knob



Figure 4.3: Control Knob

Control Knobs are used to control the Drive and Output Gain parameters. You can change the value of each knob in a number of different ways. Click and drag the knob to change the value continuously. Dragging up or to the right will increase the value, while dragging down or to the left will decrease the value. If you hold down the Mac ⌘ (Command) key or Windows Control key when you click, you will be able to adjust the value with finer precision. If you hold the Mac ⌥ (Option) key or Windows Alt key when you click, the knob will reset to its default value. You may also double-click a knob to reset it.

Click on the number (readout) of the knob to display a text entry field that allows you to type in a number directly. The pop-up will remain active until you dismiss it by clicking somewhere else or hitting the return, enter, tab, Mac ⌘. (Command + .), Windows Alt key or ESC keys. Hit return or enter to confirm the value and dismiss the pop-up. Hit the tab key to confirm the value and display an entry field for the next control. ⇧–tab (Shift + tab) will display the entry field for the previous control). Hit the Mac ⌘. (Command + .), Windows Control. (Control + .) or ESC (Escape) to dismiss the pop-up and cancel the change.

Output Meter

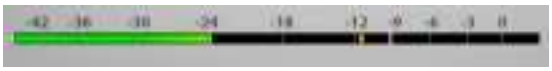


Figure 4.4: Output Meter

For the main output stage of Character we have provided meters driven with SpectraFoo metering technology. These meters show, in addition to the peak metering provided for the input stages, RMS level and VU level. The peak level is represented by the floating colored bar, the RMS level by the solid colored bar and the VU level by the overlaid gray bar. Both the Peak and RMS level are represented with fast PPM ballistics. The VU meter shows IEEE standard 300 ms RMS average level. When Character is on a mono insert there will be a single meter. When Character is running in stereo mode the top meter shows the left channel output level and the bottom meter shows the right channel output level. The output section clip lights activate if there is an over in the output stage or in any of the processing section input stages. It is reset by clicking on the meter; Mac ⌥ (Option)–click or Windows Alt-click to reset the clip lights on all the meters.

A Note About Clipping Indicators:
The clip lights do not mean that the plug-in is clipping; it means that the audio level in the DSP is currently over 0 dBFS. If you do not lower the signal level you run a chance of actually clipping the input of another processor or D/A convertor.

5. Processing

A Detailed Description

In this chapter we discuss what each parameter does and how the controls work. While Character has a fixed number of model types, there are an infinite number of combinations in conjunction with the Drive control.

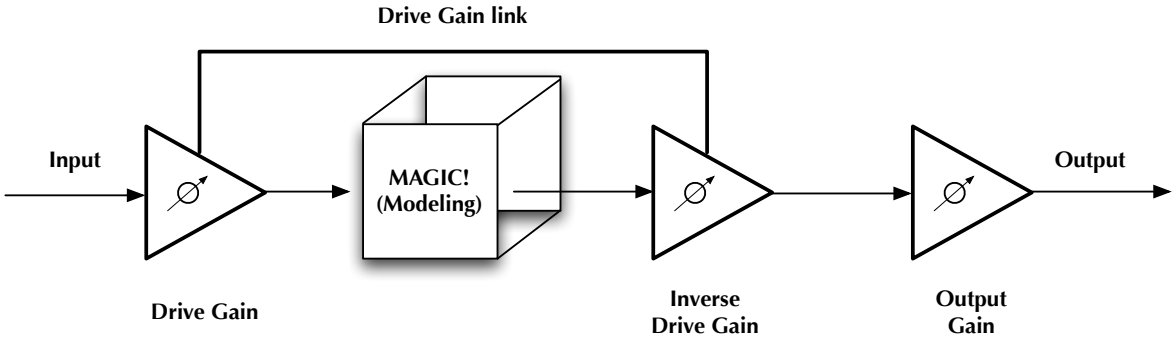


Figure 5.1: Character Block Diagram

The block diagram above illustrates the overall structure of the processing system provided by Character. This diagram does not indicate the metering blocks.

Now lets examine the various processing blocks indicated in the diagram.

Drive

The Drive control applies ±24 dB of gain to the signal before it goes to the modeling section. This allows you attenuate the signal for a subtle effect, or boost to get a more dramatic effect.

As gain is changed before the modeling stage, the inverse gain is applied after. For example, if you set the Drive control to +6 dB, the gain is boosted 6 dB before the model and cut by 6 dB after. This allows you to "push" the modeling section with no increase in output level. You may also hit the model with less signal by setting the Drive control to a negative value without loss of overall volume.

You may still experience in increase in signal level when using positive Drive gain with some models; you can use the Output Gain control to correct this.

Please note that the Drive parameter may have a greater range than you need for a given model.

Character Model

Each Model represents a digital "copy" of an analog device; some models are made from measuring a device with different combinations of settings. The most effective way to utilize Character is to listen to how each model affects your sound rather than relying on the name alone.

- None: No modeling is applied.
- Transformer: Applies the harmonic distortion signature of a transformer-coupled input.
- Valve: A tube-based EQ input stage.
- FET: Model of a solid state (transistor) front end.
- Soft Sat: Tube-based EQ with saturation.
- Boutique Tube: Hand-made tube mic pre.
- American Transformer 1: A variation of the "Transformer" model.
- American Transformer 2: Second variation of the "Transformer" model.
- California Tube Mic: American designed tube mic pre.

- California Tube Line: American designed tube line input.
- Modern Tube DI: Mastering quality tube DI.
- Modern Tube EQ: Mastering quality EQ.
- Modern Tube Soft Sat: Mastering quality EQ with saturation.
- Modern Tube LG: A tube mic pre with a low gain setting.
- Modern Tube MG: A tube mic pre with a medium gain setting.
- Modern Tube HG: A tube mic pre with a high gain setting.
- Modern Tube Sym: Mastering quality EQ
- Modern Tube Soft Sat: Mastering quality tube mic pre with saturation.
- Classic British Mic Pre: A favorite large console mic pre.
- American Solid State: FET mastering EQ.
- California Vocal Box: Transformer coupled tube vocal processor.
- California Vocal Box Drive: Transformer coupled tube vocal processor with increased gain.
- British Mic Pre Clone: A popular clone of a favorite British mic pre.

The “soft sat” variations are particularly good at providing the “analog glue” that many engineers want for their final mixes. The “sat” stands for “saturation”, such as you would get with analog tape. The “soft” part of the name indicates that the level is *lower* after processing. You may want to use the Output Gain to make up the lost gain.

While most of the models can be applied to every channel, overuse of the saturation models can lead to undesired effects.

Output Gain

The Output Gain applies ±24 dB of gain to the signal after it has been through the modeling stage. This can be used to increase the final output level after using a soft saturation model or otherwise gain-stage the signal for the next processor.

Using Character in Your Projects

There are several ways to use Character:

- Inserted on a single channel: This lets you add a little “flavor” to a channel by itself or as a pre-processor for another plug-in. By automating the Drive and Output Gain controls you can use Character as a creative effect.
- Inserted on all channels: Create a virtual mixing console, or use different models for different groups of inputs; mic pres for vocals, DIs for bass, tubes for drums…
- Inserted on the master bus: Put a Soft Sat model on the master 2 bus for the analog “glue” to finish off your mix.
- All of the above!

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6. Pro Tools (Mac/Win)

Your Pro Tools software provides a standard interface for controlling various aspects of AAX plug-ins. While you should refer to your Pro Tools documentation for a complete description, we will summarize the most important points here.

If you wish to use a plug-in on multiple channels in your mix, you should Mac ⌥ (Option) or Windows Alt insert the plug-in on the desired channels and ensure that the plug-in is inserted on the same insert point on every channel (e.g. ensure that the plug-in is on insert "a" for every channel). This will allow you to take advantage of a number of time saving features provided by Pro Tools.

Plug-in Window

The illustration below shows the standard Pro Tools plug-in window.



Figure 6.1: Pro Tools Plug-in Window

If you have inserted your plug-in(s) as we suggested above you can click on the channel name pop-up in the upper left hand corner of the window (labeled "Audio 1" above) to switch from channel to channel.

The next pop-up in the window (labeled "b" above) allows you to switch to another insert on the same channel. You would use this to switch to another plug-in on the same channel.

The bypass button allows you to bypass the effects of the plug-in.

The Pro Tools editor/librarian button (the small, downward pointing triangle) provides access to a pop-up menu that allow you to manage presets and libraries of settings for the plug-in. Use this menu to save libraries or open groups of libraries. See your Pro Tools documentation for more information.

The preset library pop-up menu (labeled "factory default" above) shows the active preset name (in italics if the current settings do not match the library). Click this pop-up to select from the available presets.

The "Compare" button indicates when the controls have changed for the current preset settings. Click this button to toggle between your current settings and the preset settings.



Figure 6.2: Compare Button

Clicking the "Automation" button causes Pro Tools to display the plug-in automation configuration dialog box:

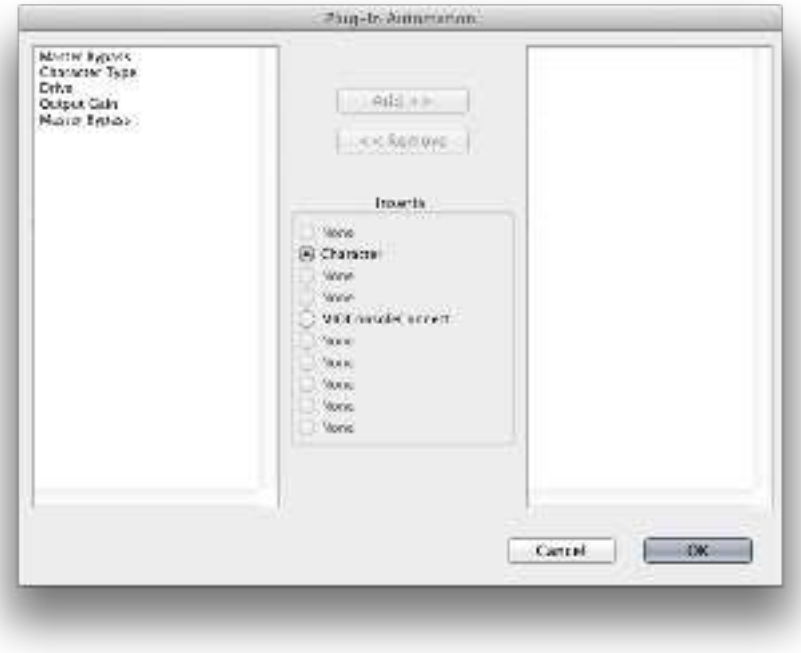


Figure 6.3: Automation Window, Showing Character's Parameters

This dialog box allows you to enable any or all of the processing parameters for automation. When a parameter is enabled for automation you will be able to record and play-back automated parameter changes directly from your Pro Tools session. If the channel that the plug-in is inserted on has automation enabled Character will highlight the controls associated with the automated parameters:

- Off: No color
- Read: Green
- Touch, Latch, Write: Red
- Controlled via control surface: Blue

Key Commands

The following key commands are used to when clicking on controls:

Table 6.1. Pro Tools Key Commands

Command	Mac Key Sequence	Windows Key Sequence
Display Automation Dialog	⌥⌘ (Option + Command)–click	Alt + Control–click
Show Automation Breakpoint	^⌘ (Control + Command)–click	Control + Windows–click
Set Parameter to Default Value	⌥ (Option)–click or double–click	Alt-click or double-click

7. AU Hosts (Mac)

The Production Bundle is compatible with any Core Audio compatible host. Support for features like sidechains differ between hosts; please check your host's documentation for more info. As an example, we'll look at using the Production Bundle in Logic.

Logic

Logic provides a standard interface for controlling various aspects of AU plug-ins. While you should refer to your Logic documentation for a complete description, we will summarize the most important points here.

If you wish to use a plug-in on multiple channels in your mix, you should click and drag the selection marquee over the desired channels in the Mixer, and insert the plug-in on any one of them; this will insert the plug-in at the same insert point on every channel.

Plug-in Window

The illustration below shows the standard Logic plug-in window.

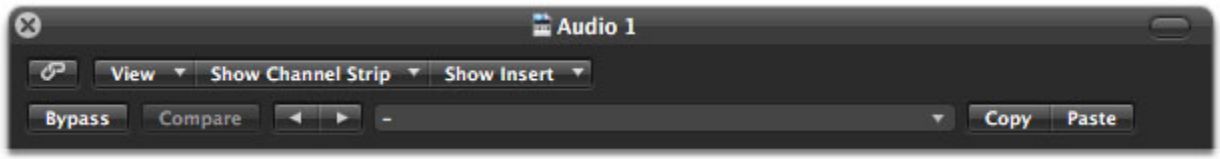


Figure 7.1: Logic's Plug-in Window

If you have inserted the plug-in as we suggested above you can click on the “Show Channel Strip” pop-up to switch between instances of the plug-in on different channels.

The “Show Insert” pop-up allows you to switch to another insert on the same channel. You would use this to switch to another plug-in on the same channel.

When the Link button (the button with the chain icon) is on, a single plug-in window is used to display all plug-ins. Turn this off if you would like to have multiple plug-in windows open at once.

The View button is used to toggle between the generic AU user interface for the plug-in and the standard view provided by Metric Halo.

The Bypass button allows you to bypass the effects of the plug-in. The effects of all the processing sections within the plug-in are removed from the audio chain when the plug-in is bypassed.

The Compare button allows you to toggle between the current settings and the settings as they were before the last paramenter change. By using the Compare button you may “A/B” changes in settings.

The left/right arrows move backward and forward between presets.

The Logic preset menu (the pop-up menu with the small downward pointing triangle next to the left/right arrows) allows you to manage presets and libraries of settings for the plug-ins. Use this menu to save libraries or open groups of libraries. See your Logic documentation for more information.

The Copy and Paste buttons allow you to copy settings from one instance of a plug-in and paste them into the same plug-in on other channels without creating a preset.

The sidechain input pop-up menu allows you to select from any mono input or bus in your system and feed it to the internal sidechain bus within plug-ins that have sidechain support. You then use the sidechain routing buttons within the plug-in UI to assign the sidechain bus to the dynamics detectors. This menu is only present when a sidechain-enabled plug-in is viewed.

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A. Key Commands

There are several key commands used as modifiers combined with mouse actions:

Table A.1. Tooltip Control

Command	Mac Key Sequence	Windows Key Sequence
Show tooltips	Hold ? down	Hold ? down

Table A.2. Control Knob Modifiers

Command	Mac Key Sequence	Windows Key Sequence
Fine control	⌘ (Command)-click and drag	Control-click and drag
Reset to default value	⌥ (Option)-click or double-click	Alt-click or double-click

Table A.3. Numeric Field Modifiers

Command	Mac Key Sequence	Windows Key Sequence
Confirm & dismiss numeric pop-up	return, enter	return, enter
Confirm & move to next entry	tab	tab
Confirm & move to previous entry	⇧–tab (Shift + tab)	⇧–tab (Shift + tab)
Dismiss numeric pop-up & cancel change	⌘. (Command + .), ESC	Control. (Control + .), ESC

Table A.4. Meters

Command	Mac Key Sequence	Windows Key Sequence
Reset Clip	⌥ (Option)–click the meter	Alt-click the meter

Table A.5. EQ Transfer Functions

Command	Mac Key Sequence	Windows Key Sequence
Toggle band enable	⌘ (Command)–click or double-click frequency dot	Control-click or double-click frequency dot
Adjust bandwidth (click then drag)	⌥ (Option)–click frequency dot	Alt-click frequency dot
Change filter type	⌘⌥ (Command + Option)–click frequency dot	Control+Alt-click frequency dot
Access EQ TF settings	^ (Control) or right-click graph	Right-click graph

Table A.6. Pro Tools Key Commands

Command	Mac Key Sequence	Windows Key Sequence
Display Automation Dialog	⌥⌘ (Option + Command)–click	Alt + Control–click
Show Automation Breakpoint	^⌘ (Control + Command)–click	Control + Windows–click
Set Parameter to Default Value	⌥ (Option)–click or double–click	Alt-click or double-click

B. Service and Support

Metric Halo takes great pride in the reputation for customer service and support that we have built. If you have any problems, questions, or suggestions please get in touch with us at:

- http://mhsecure.com/support
- support@mhsecure.com
- (727) 725-9555

Please keep us informed about your successes and projects. We love to hear from you!

C. Changelog

Please note that this changelog incorporates changes for all plug-ins across all supported formats.

1.0.5:

- Fix alignment issue with some UI elements in ChannelStrip
- [AU] Fix issue in some hosts where parameter updates may be lost
- Fix for potential crash on deinstantiation in Multiband Plugins
- [AU] Fix for crash in some hosts (specifically FCPX) due to initialization on a thread
- [AU] Fix meter reset for MultibandCompressor
- [AU] Fix meter reset for MultibandExpander
- [AU] Fix potential crash in HaloVerb
- [AU] Fix meter reset for Character
- Fix meter allocation for MultibandExpander
- Fix analysis buffer allocation for MultibandExpander
- Fix analysis buffer allocation for MultibandCompressor
- Fix analysis buffer allocation for De-Esser
- [AAX] Add support for PT11 and 64-bit build
- [AAX-Win] Implement full optimization for host code (decreases CPU usage)
- [AAX-Win] Implement 64-bit Installers
- Sign Binaries for PT 10.3.x / PT 11
- Fix auto-suffixing of parameter readouts to deal with negative numbers
- [TransientControl] Fix (extend) range of the sustain parameter
- Fix locking for threaded plotter of crossover functions to avoid potential race condition and crash
- [Mac] Fix problem with signing 32-bit binaries (led to corrupted PT 10.3.x plugins)
- Fix Gain Reduction meters for PT reported meters (so that PT11 and control surfaces render them properly)

1.0.4:

- Fixed potential problem with licensing code when plugin scanner opens and closes plugin very quickly
- Moved drawing of HaloVerb impulse response onto background thread for responsiveness
- Moved drawing of Multiband dynamic EQ response onto background thread for responsiveness
- Added caching for background image of plugin window to reduce CPU used for drawing static image
- Fixed incorrect interpretation of wet/dry parameter when computing HaloVerb impulse response display
- Optimized computing HaloVerb impulse response display
- Optimized redraw of EQ response curve
- Fixed problem with incorrectly showing that preset was changed (when it wasn't) via Compare button
- Deferred redraw of UI until host sends parameter changed message -- fixes PT UI pauses when changing certain parameters
- Fixed problem with parameter notification that caused recording of automation for ChannelStrip to not function
- Added work-around to fix problems with multi-parameter touch automation recording in Logic (works-around Logic bug)

1.0.3:

- Soft Interpolation of band Bypass in ChannelStrip EQ
- Fix slight transparency on some controls
- Fixed problem with tool-tip tracking
- Fixed problem with phantom mouse clicks after dragging beyond UI boundary
- Fixed problem with silent output from CS2/CS3 on some hosts with disconnected sidechain input
- Fixed problem with compressor gain state on instantiation
- ChannelStrip: removed recall of Bypass from preset state (to match standard PT behavior)
- Add support for Mac OS 10.5
- Add support to cancel text entry with ⌘. (Command + .) [Control. (Control + .) on Win]
- Fixed interpolation to support bit-clean bypass
- Fixed noise problem with LF high-pass filters
- Fix problem with tooltips appearing even if window is covered by another window or is hidden
- Added a preference to control auto-enable of bands to the Transfer Function popup menu in Channel-Strip 3
- Fixed interpolation in ChannelStrip:
  - Stereo EQ bands
  - Compressor/Limiter threshold
  - Stereo Gate
- Fixed interpolation in Multiband Dynamics:
  - Compressor/Limiter threshold
- Knee control in ChannelStrip 3 is hidden when not in "MIO" character mode
- Added version number reporting and update notification
- Initial release for Windows AAX
- Initial release for Macintosh AU
- Initial release of ChannelStrip 3 for GarageBand

1.0.2:

- Fixed issue with grunge when DSP is filled with MH Precision De-esser
- Further optimized CS3, Precision De-esser, and MH MultibandDynamics, leading to an increase in instance counts
- Fixed bit-cleanliness on bypassed CS3 blocks -- so now CS3 with phase invert nulls with unprocessed audio

1.0.1:

- Substantial optimization of the processing code, especially for HDX
- Accurate Cycle Counts for HDX
- Enhanced control surface page table layouts
- Fix for some corner case bugs that apparently can cause a DSP crash on heavily loaded systems
- Additional interpolation of various parameters in the plugins to provide glitch free parameter changes
- Fixed a conflict between CoreGraphics and DAE that can lead to DAE errors (DSP + Native), CPU Spiking or CPU overloads (Native)
- Fixed a filter stability issue for high session sample rates
- Fixed an issue where the average trace in the analyzer view can get stuck
- Reduce the size on disk and in memory of the plugins
- Fixed some missing control surface metering support and clip detection
- Fixed some small graphic anomalies
- Fix for detector for classic compressor in CS3 when Side-Chain filter is enabled

- Signed installer for Mountain Lion compatibility

1.0: Initial release for Macintosh AAX