WAVES
MetaFilter
USER GUIDE

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CHAPTER 1 – INTRODUCTION

1.1 Welcome

Thank you for choosing Waves! In order to get the most out of your Waves processor, please take the time to read through this manual.

In conjunction, we also suggest that you become familiar with www.wavesupport.net. There you will find an extensive **Answer Base**, the latest **Tech Specs**, detailed **Installation** guides, new **Software Updates**, and current information on **Authorization** and **Registration**.

By signing up at www.wavesupport.net, you will receive personalized information on your registered products, reminders when updates are available, and information on your authorization status.

1.2 Product Overview

Waves MetaFilter is an extremely flexible filter plug-in, designed to be used as a creative effect. MetaFilter provides many types of filters, with the capability to modulate multiple parameters using multiple modulation sources. The modulation sources include a dedicated modulation sequencer, a low frequency oscillator, and an envelope follower. These modulation sources can be used to control the filter cutoff frequency (in LP, HP, BP and BR modes), the filter rate (in Comb mode), the amplifier gain (in Amp mode), the filter resonance (in LP, HP, BP and BR modes), the filter feedback (in Comb mode) and the rate of a dedicated delay effect.

1.3   Concepts and Terminology

MetaFilter is powered by Virtual Voltage™, which interconnects the various generators, transformation filters, envelopes and modulators. Therefore, it uses the same terminology used by its hardware forefathers: VCF (Voltage Controlled Filter), LFO (Low Frequency Oscillator) and so on…

Whether in the studio or live on stage, many musicians like to control effect parameters in real time for enhanced creativity and expression. In addition to the basic automation features of plugin hosting technologies like VST, MetaFilter also supports MIDI Learn. Assigning a MetaFilter control to a knob on your MIDI controller is as easy as right click > Learn, knob turn, done!

1.4   Components

MetaFilter has three components:
- MetaFilter Stereo
- MetaFilter Mono
- MetaFilter Mono to Stereo

CHAPTER 2 – QUICK START GUIDE

1. Open MetaFilter on a track playing audio in your DAW of choice.
2. Select a preset from MetaFilter's factory presets.
3. Listen as the audio morphs and changes!

Use the next/previous preset arrow controls on the toolbar to scroll through presets.

CHAPTER 3 – INTERFACE AND CONTROLS

3.1 Interface

The MetaFilter interface is arranged into nine sections grouped according to function.

3.2 Controls

Filter Type

MetaFilter offers five distinct filter types:

LoPASS – A low pass type filter cuts the frequencies above the cut-off point.

HiPASS – A high pass type filter cuts the frequencies below the cut-off point.

BandPASS – A band pass type filter cuts the frequencies both above and below the cut-off point.

BandRJCT – A band reject type filter cuts the frequencies at and around the cut-off point.

COMB – A comb filter uses a very fast delay line to alter the harmonic content of the signal.

AMP – An amplifier is used to either cut or boost the level of the incoming signal.

Global Parameters

Spread – Determines the cut-off offset amount between the left and right channels.
Values: -50% to +50% - Default: 0%.

Smooth – Reduces the abruptness of changes caused by the various modulators.
Values: 0% to 100% - Default: 0%.

Drive – Used to overdrive the filter input.
Values: 0% to 100% - Default: 0%.

Crush – Reduces the sample rate of the signal coming out of the filter.
Values: 0 to 100 - Default: 0.

Filter Controls

FREQ / DELAY / GAIN – The function of these controls depends on the selected filter type.

FREQ – Controls the filter cut-off point when LoPASS, HiPASS, BandPASS or BandRJCT are selected.
Values: 30 Hz to 18 kHz - Default: 18 kHz.

DELAY – Controls the delay time when COMB is selected.
Values: 11 ms to 28 ms.

GAIN – Controls the amplitude when AMP (dB) is selected.
Values: -80 to 0 dB - Default: 0 dB.

KBD – When enabled, incoming MIDI note messages are used to offset the selected FREQ/DELAY/GAIN control.
Parameters: On, Off - Default: Off.

RES / FDBCK - The function of these controls depends on the selected filter type.

RES – Controls the resonance of the filter when LoPASS, HiPASS, BandPASS or BandRJCT are selected.
Values: 0% to 100% - Default: 0%.

FDBCK – Controls the delay feedback amount when COMB is selected.
Values: 0% to 100% - Default: 0%.

SLOPE – Determines whether the LoPASS, HiPASS, BandPASS and BandRJCT filter types use 2 (12 dB/Oct) or 4 pole (24 dB/Oct) slope.
Values 12 or 24 – Default: 12

LFO, SEQUENCE, FOLLOW – See the 'Modulation Amounts' section.

Mixer

MIX – Controls the balance between the "dry" unprocessed source signal and the "wet" processed signal.
Values: 100% dry to 100% wet - Default: 100% wet.

INPUT – Controls the level of the signal coming into MetaFilter.
Values: -40 to +10 dB - Default: 0 dB.

OUTPUT – Controls the level of the signal coming out of MetaFilter.
Values: -40 to +10 dB - Default: 0 dB.

LFO

LFO – The Low Frequency Oscillator is the first of three modulation sources that can be used to affect the various parameters in MetaFilter.

RATE – Controls the speed of the LFO.
Values: 0.1 Hz to 100 kHz when SYNC is off, 4/1 to 1/32 – Default: 1/16 when SYNC is on.

SYNC – Chooses whether the LFO runs freely or is synchronized to the host clock.
Parameters: On, Off – Default: On.

SINE / TRIANGLE / SAW / SQUARE / RANDOM – Selects the LFO waveform.
Parameters: Sine, Triangle, Pulse, Saw, Random – default: Sine.

Sequencer

The Sequencer is the second modulation source that can be used to affect the various parameters in MetaFilter.

RATE – Controls the speed of the sequencer.
Values: 0.1 Hz to 500 kHz when SYNC is off, 1/1 to 1/32 – Default: 1/32 when SYNC is on.

SYNC – Chooses whether the sequencer runs freely or is synchronized to the host clock.
Parameters: On, Off – Default: On.

SWING – Controls the swing/shuffle amount of the sequence.
Values: 0% to 75% - Default: 0%.

LAST – Determines the last step in the sequencer before looping back to step 1.
Values: 1 to 16 - Default: 16

DRAG/DRAW – Changes the behaviour of the slider controls between dragging and drawing.
Values: Drag, Draw – Default: Drag

Steps 1 to 16 – Each step slider determines the positive or negative modulation amount generated by that step.
Values: -100% to + 100% - Default: 0%.

Delay

A delay effect is integrated into Metafile's signal path.

TIME – Controls the delay time.
Values: 50 ms to 1000 ms when SYNC is off, 1/32 to 1/1 – Default: 1/8 when SYNC is on.

RIGHT – Controls the delay time offset of the right channel relative to the left channel.
Parameters: 100%, 150%, 200% - Default: 100%.

SYNC – Chooses whether the delay time is free or is synchronized to the host clock.
Parameters: On, Off – Default: On.

FEEDBACK – Controls the number of delay taps.
Values: 0 to 100 – Default: 0.

DRY/WET – Controls the balance of the dry and delay signal.
Values: 100% dry to 100% wet – Default: 100% dry

ANALOG – When enabled, changes the behaviour of the delay to way that analog delay units function, thus allowing smooth transitions when delay TIME is modulated.
Parameters: Analog, Digital – default: digital.

ROUTE – Determines whether the delay is placed prior to the filter in the audio signal chain, or in a feedback loop through the filter.
Parameters: 0 (pre VCF), 1 (feedback loop) Default: 0

LFO, SEQUENCE, FOLLOW – See the 'Modulation Amounts' section.

Follow

Input/SC - Determines whether the envelope follower is modulated by the incoming audio signal or by the side-chain input.

Graphic Window

The Graphic Window provides a visual representation of effect MetaFilter applies to the audio signal. The display can be interactively used to simultaneously control the FEQ/RES or **DELAY/FDBK** settings.

Modulation Amounts

Around the 'FREQ / DELAY / GAIN', 'RES', and 'TIME' knobs in MetaFilter, are three sliders labelled: LFO, SEQUENCE and FOLLOW.
These sliders control the amount by which the LFO, the Sequencer, and the Envelope Follower offset the surrounded knob.
The sliders are bi-directional and can offset the knob by either positive or negative amounts.
Values: -100% to 100% - Default: 0%.

CHAPTER 4 – THE WAVESYSTEM

4.1 The WaveSystem Toolbar

All Waves plugins feature the WaveSystem toolbar which takes care of most administrative functions you will encounter while working with your Waves software. The features of the WaveSystem toolbar are the same on practically all Waves plugins, so familiarity with its features will be helpful whichever plugin you are using.

Toolbar Functions

ᙡ	Opens the plugin About box
Undo	Undoes the last 32 actions
Redo	Redoes the last 32 undone actions
Setup A/B	Toggles between two presets, useful for comparison of parameter settings.
Load Filter	A MetaFilter-exclusive toolbar which lets you specify whether certain preset characteristics should be loaded. See the next section for details.
L/R Arrows	Move to the previous or next preset
Copy A→B	Copies the current settings to the second preset register
Load	Recalls presets from file
Save	Saves presets in the Waves file formats
HD	Enables/disables high definition audio mode
?	Opens the PDF manual for the plugin you are using

4.2 Preset Handling

Preset Types

Factory Presets are permanent presets in the Load menu. Factory presets cannot be overwritten or deleted. When applicable, different component plugins may have different factory presets.

User Presets are your favorite settings of the plugin saved as a preset in the Load menu, under 'User Presets'. User Presets can be overwritten and deleted.

Setup Files may contain more than one preset. For example, a single file can contain all the presets for a session. When you open a Setup File, all its setups become part of your Load pop-up menu for fast access. This can be particularly useful with multiple instances of a plugin in a single session. By saving all the settings you create into a single Setup File, they can all be quickly available for every instance of that plugin.

Loading Presets and Setups

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Load
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Click on the Load button to see the Load pop-up menu. The menu is divided into four sections. If a section is not currently available it will not appear in the Load pop-up menu.

Open Preset File… Select to open any setup or preset file, whether from the Library or your own creations.
'Filename.xps': Displays any currently loaded Setup File and its presets.
Factory Presets: Displays the default Factory Presets.
User Presets: Displays any loaded User Presets.

Load with Preset – MIDI and SEQ.

☑ MIDI ☑ SEQ

The Load with Preset filter is a MetaFilter-exclusive custom toolbar special which lets you choose whether or not to load certain preset characteristics such as MIDI assignments, and sequencer settings. When checked, these parameters are loaded. Here are some practical examples:

MIDI – Let's say you have assigned a MIDI controller knob to MetaFilter's VCF cutoff. Loading the next preset will reset this parameter; you will then have to redo the MIDI Learn routine to attach the knob to the control. However, if you uncheck the MIDI checkbox, the next preset will be loaded, but the current MIDI assignment will remain in place.

SEQ – Let's say you have a bass line arpeggio that you like, and you want to test the pattern using a different sound. Uncheck the Arp/Seq checkbox, and the preset will be loaded without any associated Arp/Seq settings, leaving the pattern as is.

Saving Presets and Setups

Save

Click on the Save button to see the Save pop-up menu. Four options are available. If an option is not currently available it will be grayed out and inaccessible.

| **Save to New File…** | Select this to start a new Setup file. There are two prompts - first for the setup filename, then for the preset name. You must provide a name for both the setup file and the preset. Click OK (ENTER) to complete the save. It is a good idea to create a |

	folder in which to save several setup files for a project.
Save 'File Name' – "Preset Name"	Overwrites the settings of the loaded preset (whether a User Preset or a preset from a Setup File) with the current settings. If a Setup File is currently loaded, the name of the Setup File is displayed followed by the name of the preset itself. If a User Preset is loaded, its name is displayed.
Save to 'File Name' As…	Saves the current settings as a new preset into the Setup file that is open (if one is not open, the option is grayed out). You will be prompted to give the preset a name.
Put into Preset Menu As…	Save the current settings into a User Preset that will always be in your Load menu (until deleted). You will be prompted to give this preset a name. User Presets are stored in the plugin's preference file.

Please note: Special characters (such as: !, @, #, %, ^, etc.) are not supported in preset names.

Deleting Presets

You may delete User Presets and presets within a Setup File. Factory Presets and Setup Library files cannot be deleted or overwritten.

1. Hold the Command (Mac)/Control (PC) key down.
2. Click-and-hold the Load button to see the pop-up menu.
3. While still holding the Command/Control key, select the preset or setup to delete.
4. A confirmation box will appear, allowing you to cancel or 'OK' the deletion.

A/B Comparison and Copying

A/B

The Setup A/Setup B button may be clicked to compare two settings. If you load a preset in the Setup B position, this will not affect the preset loaded into the Setup A position, and vice-versa.

If you want to slightly modify the settings in Setup A, you can copy them to Setup B by clicking on the Copy to B button, then alter Setup A and compare with the original Setup B.

The name of the current setup will be shown in the title bar (on platforms which support it), and will switch as you change from Setup A to Setup B.

Note: an asterisk will be added to the preset name when a change is made to the preset.

4.3 Interface Controls

Controls can be in one of three states:

- **Not Selected** where the control is not the target of any user entry
- **Selected** where the control is the target of mouse control entry only
- **Selected and Active** where the control is the target for both mouse and keyboard entry

Toggle Buttons

Toggle buttons display the state of a control, and allow switching between two or more states. **Single-click** to change the control's state. Some toggle buttons have a text display which updates with the current setting, and others (bypass, solo, or monitoring toggles) illuminate when the control is active.

Some plugins have **link buttons** between a pair of toggle buttons, allowing click-and-drag adjustment while retaining the offset between the controls.

Value Window Buttons

Value windows display the value of a control and allow **click-and-drag** adjustment, or **direct control via the keyboard**.

- **Using the mouse**, click-and-drag on the value window to adjust. Some value windows support left/right, some up/down (as you hover over a button, arrows will appear to let you know which direction of movement that button supports). You may also use your mouse-wheel to adjust parameter values.
- **Using the arrow keys**, click once with mouse to select the button, and then use up/down – left/right (depending on the direction supported by that button) to move in the smallest incremental steps across the button's range (holding down the arrow keys will move faster through the range).
- **Using key entry**, double click on the button to open the value window, and directly enter the value from your keyboard. If you enter an out of range number, the button stays selected but remains at the current setting (system beeps? If system sounds are on?)

Some plugins have **link buttons** between a pair of value windows, allowing click-and-drag adjustment while retaining the offset between the controls.

Sliders

Click or scroll the mouse-wheel on the slider itself or anywhere within the sliders track. The numerical value of the slider settings is displayed in a hover window above the slider path.

Hover Box

Hovering boxes will appear and display the control value when hovering with the mouse over the control.

Multiple Control Selection

One of the most powerful features of the WaveSystem is the ability to select and adjust multiple controls simultaneously. Using the mouse, drag-select the desired group of buttons or graphic controls by clicking and holding at a point outside the controls, and forming a rectangle that includes the controls you wish to adjust. Alternatively, press and hold Shift while clicking the mouse on any control you wish to link. This method is useful when you want to select two or more controls that are not adjacent to one another.

TAB Functions

TAB moves the 'selected' status to the next control, with shift-TAB moving in the reverse direction.

Additionally, the Mac has an option-TAB function for 'down' movement and shift-option-TAB for 'up' movement where applicable.

If you have several Value Window Buttons selected, TAB functions will take you through the selected controls only.

Hitting Esc or Return will return the 'focus' to the DAW application.

4.4 Waves Preferences (Pro Tools only)

When launching Pro Tools, hold Shift to view the Waves plugin Preferences window. The following options are available:

- Don't use AudioSuite plugins
- Don't use RTAS plugins
- Rescan all plugins
- HUI control surface support (low resolution)
- Enable single-click text entry