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 new Waves plugin, please take a moment to read this user guide.

To install software and manage your licenses, you need to have a free Waves account. Sign up at www.waves.com. With a Waves account you can keep track of your products, renew your Waves Update Plan, participate in bonus programs, and keep up to date with important information.

We suggest that you become familiar with the Waves Support pages: www.waves.com/support. There are technical articles about installation, troubleshooting, specifications, and more. Plus, you'll find company contact information and Waves Support news.

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.

**SINE / TRIANGLE / SAW / SQUARE / RANDOM** – Selects the LFO waveform.

**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.

**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.

**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.

**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%.

3.3 WaveSystem Toolbar

Use the bar at the top of the plugin to save and load presets, compare settings, undo and redo steps, and resize the plugin. To learn more, click the icon at the upper-right corner of the window and open the WaveSystem Guide.