Waves API 550

User Manual
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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

The Waves API 550 consists of the API 550A, a 3-Band parametric equalizer with 5 fixed cutoff points per band and the API 550B, a 4-Band parametric equalizer with 7 fixed cutoff points per band.

Modeled on the late 1960’s legend, the API 550A EQ delivers a sound that has been a hallmark of high end studios for decades. It provides reciprocal equalization at 15 points in 5 steps of boost divided into three overlapping ranges. The high and low frequency ranges are individually selectable as either peaking or shelving, and a band-pass filter can be inserted independently of all other settings.

Featuring four overlapped EQ bands, the API 550B features 7 switchable filter frequencies spanning up to 5 octaves per band. “Proportional Q” automatically widens the filter bandwidth at lower settings and narrows it at higher settings. It even lets you undo previous processing, affect or even reverse tonal modifications. With its vast range of tonal possibilities, the API 550B is an exceptionally versatile EQ.
1.3 Components

WaveShell technology enables us to split Waves processors into smaller plug-ins, which we call components. Having a choice of components for a particular processor gives you the flexibility to choose the configuration best suited to your material.

The API 550 has four component processors:

- **API 550A Stereo** – A 3-Band stereo equalizer
- **API 550A Mono** – A 3-Band mono equalizer
- **API 550B Stereo** – A 4-Band stereo equalizer
- **API 550B Mono** – A 4-Band mono equalizer
Chapter 2 – Quickstart Guide

Approach the Waves API 550 as you would any conventional EQ. Since the API 550 features “Proportional Q,” which intuitively widens the filter bandwidth at lower settings and narrows it at higher settings, feel free to push the API 550 harder than you normally would other equalizers. The API 550 will deliver smooth, natural, and musical sound even at the most extreme settings.
Chapter 3 – Controls and Interface

- Waves system haz.
- Output meter, Scale in dB.
- Output clip led
- Phase/Polarity Flip switch
- Turns On/Off Noise and harmonics.
- Output gain, +/- 18db
- Trim Trims the output to nominal gain (+/-4.1db)
- Band Pass 50Hz-15kHz In/Out
- Low Band filter type selector
- Hi Band filter type selector

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3.1 EQ Section

API 550A Controls

Low Band Gain
  Range
  -12dB to +12dB (2-3dB steps)
  Default
  0dB

Low Band Frequency
  Filter types
  Shelf, Bell
  Default
  Shelf
  Cutoff points
  50Hz, 100Hz, 200Hz, 300Hz, 400Hz
  Default
  50Hz

Mid Band Gain
  Range
  -12dB to +12dB (2-3dB steps)
  Default
  0dB
Mid Band Frequency

Range
.4kHz, .8kHz, 1.5kHz, 3kHz, 5kHz
Default
1.5kHz
Filter types
Bell

High Band Gain

Range
-12dB to +12dB (2-3dB steps)
Default
0dB

High Band Frequency

Range
5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz
Default
7kHz

Bandpass Filter
Applies a 50Hz-15kHz bandpass filter to the entire signal

Low Shelf/Bell Selector

Range
Shelf or Bell
Default
Shelf

High Shelf/Bell Selector

Range
Shelf or Bell
Default
Shelf
API 550B Controls

Low Band Gain
  Range
  -12dB to +12dB (2-3dB steps)
  Default
  0dB

Low Band Frequency
  Range
  30Hz, 40Hz, 50Hz, 100Hz, 200Hz, 300Hz, 400Hz
  Default
  50Hz
  Filter types
  Shelf, Bell
  Cutoff points
  30Hz, 40Hz, 50Hz, 100Hz, 200Hz, 300Hz, 400Hz

Low Mid Band Gain
  Range
  -12dB to +12dB (2-3dB steps)
  Default
  0dB

Low Mid Band Frequency
  Range
  75Hz, 150Hz, 180Hz, 240Hz, 500Hz, 700Hz, 1kHz
  Default
  500Hz
  Filter types
  Bell
  Cutoff points
  75Hz, 150Hz, 180Hz, 240Hz, 500Hz, 700Hz, 1kHz

High Mid Band Gain
  Range
  -12dB to +12dB (2-3dB steps)
  Default
  0dB
High Mid Band Frequency
  Range
  0.8kHz, 1.5kHz, 3kHz, 5kHz, 8kHz, 10kHz, 12.5kHz
  Default
  5kHz
  Filter types
  Bell
  Cutoff points
  0.8kHz, 1.5kHz, 3kHz, 5kHz, 8kHz, 10kHz, 12.5kHz

High Band Gain
  Range
  -12dB to 12dB (2-3dB steps)
  Default
  Off

High Band Frequency
  Range
  2.5kHz, 5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz, 20kHz
  Default
  10kHz
  Filter types
  Shelf, Bell
  Cutoff points
  2.5kHz, 5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz, 20kHz

Low Shelf/Bell Selector
  Range
  Shelf or Bell
  Default
  Shelf

High Shelf/Bell Selector
  Range
  Shelf or Bell
  Default
  Shelf

In
  Turns the EQ On/Off but leaves the Analog modeling.
  Range
  On/Off
  Default
  On
3.2 Output Section

The Output section, which is identical on both the API 550A and API 550B, consists of controls for Polarity (Phase Inversion) Analog Modeling, Output Level, and Trim.

**Pol (Polarity)**
Shifts the phase by 180 degrees.
- **Range**: 0deg-180deg
- **Default**: 0deg

**Analog**
Turns the Analog modeling on and off.
- **Range**: On/Off
- **Default**: Off
**Output**
Controls the output level.

- **Range**
  -18dB to +18dB (in 0.1dB steps)
- **Default**
  0dB

**Trim**
Displays the maximum peak level of the output signal and its distance from nominal gain (-0.1dBfs).

- **Range**
  -inf to 0dB
- **Default**
  -inf

**Meters**

The API 550 meters display output level in dBFS. The LED located between the two meters lights up when output signal is clipping.

### 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.
### Appendix A – 550A Controls

<table>
<thead>
<tr>
<th>Control</th>
<th>Range</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>0dB</td>
</tr>
<tr>
<td>Low Band Frequency</td>
<td>50Hz, 100Hz, 200Hz, 300Hz, 400Hz</td>
<td>50Hz</td>
</tr>
<tr>
<td>Mid Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>0dB</td>
</tr>
<tr>
<td>Mid Band Frequency</td>
<td>.4kHz, .8kHz, 1.5kHz, 3kHz, 5kHz</td>
<td>1.5kHz</td>
</tr>
<tr>
<td>High Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>0dB</td>
</tr>
<tr>
<td>High Band Frequency</td>
<td>5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz</td>
<td>7kHz</td>
</tr>
<tr>
<td>Filter</td>
<td>Bandpass 50Hz-15kHz</td>
<td>Off</td>
</tr>
<tr>
<td>Low shelf/bell selector</td>
<td>Shelf or Bell</td>
<td>Shelf</td>
</tr>
<tr>
<td>High shelf/bell selector</td>
<td>Shelf or Bell</td>
<td>Shelf</td>
</tr>
<tr>
<td>Output</td>
<td>-18dB to 18dB</td>
<td>0dB</td>
</tr>
<tr>
<td>Trim</td>
<td>-inf to 0dB</td>
<td>-inf</td>
</tr>
<tr>
<td>Analog</td>
<td>On/Off</td>
<td>Off</td>
</tr>
<tr>
<td>Phase</td>
<td>0deg- 180deg</td>
<td>0deg</td>
</tr>
</tbody>
</table>

### Appendix B – 550B Controls

<table>
<thead>
<tr>
<th>Control</th>
<th>Range</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>0dB</td>
</tr>
<tr>
<td>Low Band Frequency</td>
<td>30Hz, 40Hz, 50Hz, 100Hz, 200Hz, 300Hz, 400Hz</td>
<td>50Hz</td>
</tr>
<tr>
<td>Low Mid Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>0dB</td>
</tr>
<tr>
<td>Low Mid Band Frequency</td>
<td>75Hz, 150Hz, 180Hz, 240Hz, 500Hz, 700Hz, 1kHz</td>
<td>500Hz</td>
</tr>
<tr>
<td>High Mid Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>0dB</td>
</tr>
<tr>
<td>High Mid Band Frequency</td>
<td>0.8kHz, 1.5kHz, 3kHz, 5kHz, 8kHz, 10kHz, 12.5kHz</td>
<td>5kHz</td>
</tr>
<tr>
<td>High Band Gain</td>
<td>-12dB to 12dB (2-3dB’s steps)</td>
<td>Off</td>
</tr>
<tr>
<td>High Band Frequency</td>
<td>2.5kHz, 5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz, 20kHz</td>
<td>10kHz</td>
</tr>
<tr>
<td>Low shelf/bell selector</td>
<td>Shelf or Bell</td>
<td>Shelf</td>
</tr>
<tr>
<td>High shelf/bell selector</td>
<td>Shelf or Bell</td>
<td>Shelf</td>
</tr>
<tr>
<td>Output</td>
<td>-18dB to 18dB</td>
<td>0dB</td>
</tr>
<tr>
<td>Trim</td>
<td>-inf to 0dB</td>
<td>-inf</td>
</tr>
<tr>
<td>Analog</td>
<td>On/Off</td>
<td>Off</td>
</tr>
<tr>
<td>Phase</td>
<td>0deg- 180deg</td>
<td>0deg</td>
</tr>
</tbody>
</table>