

WAVES: ABBEY ROAD RS56 USER GUIDE

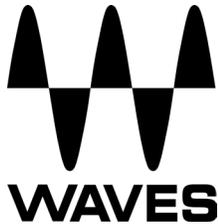


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Chapter 1 – Introduction

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

A passive equalizer with powerful sound-shaping capabilities, the RS56 Universal Tone Control was originally introduced in the early 1950s and used in Abbey Road Studios to prepare recordings for the record-lathe, as part of the process we now know as “mastering.” Later, Abbey Road’s pop engineers began using the RS56 for studio recordings because of its abilities to dramatically manipulate sound – unlike the basic treble and bass EQs found on the mixing consoles of the time. This earned it the nickname “The Curve Bender.”

Waves and Abbey Road Studios have faithfully recreated the unique magic of the RS56, using advanced circuit modeling techniques based on the original schematics. Like its hardware predecessor, the Waves: Abbey Road RS56 passive EQ plugin features three bands with four selectable center frequencies for each and six different filter types, plus independent or linked control over the left and right channels. The result is an extraordinary equalizer that is as effective today as it was when it was created over half a century ago.

1.3 About the RS56

The RS56 is a passive EQ, meaning no amplification of any kind is used to create its filters. In fact, it can't even be plugged into a power socket. Passive EQs use high value capacitors and inductors to

achieve the desired filtering. This lack of amplification means passive equalizers can only attenuate the signal, not boost it. Therefore, boost-like frequency-shaping is achieved by attenuating the entire signal except the specified frequency. For example, to achieve a 6 dB “boost” at 1 kHz, a passive EQ attenuates the entire signal by 6 dB apart from 1 kHz. The entire input signal is attenuated by the sum total amount of possible boost; in the case of the RS56 hardware, with three bands that can boost up to 10 dB each, the overall signal attenuation is 30 dB. In most cases, make-up gain is applied post-processing to bring the signal back up; at Abbey Road Studios, make-up gain was applied using V72 amplifiers, as found in the REDD.17 and REDD.37 consoles.

Created in the early 1950s by EMI engineer Mike Batchelor, the monophonic Universal Tone Control Type RS56 was the most flexible equalizer of its time, and an influence on EQ designs for years to come. Later, the stereo RS56-S was introduced, which offered independent linkable controls for left and right channels. The RS56 is one of those rare, mythical pieces of equipment that only the most hardcore gear aficionados even know about. The original RS56 featured three bands (Bass, Treble and Top) with four selectable center frequencies for each and six different filter types, providing +/- 10 dB of cut/boost in 2 dB increments; the Waves: Abbey Road RS56 plugin offers +/- 20 dB of cut/boost, in 0.1 dB increments. The RS56 is an extremely musical-sounding EQ; the center frequencies of its Bass and Treble bands are exactly one octave apart and, in the Top range, half an octave apart.

The RS56 was used in Abbey Road Studios from 1951-1970 to put the finishing touches on recordings prior to disc-cutting. However, due to the RS56’s ability to dramatically transform the sound of input source material (as well as EMI’s dedication to “True Fidelity”), its studio use was initially restricted to fixing externally-recorded materials; the RS56 was deemed unnecessary for recordings made at Abbey Road. However, as time went on and experimentation in the recording studio became more acceptable, the Beatles’ engineers were the first to be granted permission to use the RS56 for recording and mixing.

1.4 Components

WaveShell technology enables us to split Waves processors into smaller plugins, 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. RS56 includes the following components:

- RS56 Mono
- RS56 Stereo

Chapter 2 – Interface and Controls

2.1 Interface



1. Bass Band
2. Treble Band
3. Top Band
4. Output (not visible when collapsed)
5. EQ Graph (not visible when collapsed)

2.2 Controls

- In stereo components, all EQ controls can be set independently for the left and right channels.
- The RS56 utilizes six different types of filters:
 - Low End – A low shelf filter
 - Blunt – A very wide bell filter
 - Med Blunt – A moderately wide bell filter
 - Med Sharp – A moderately narrow bell filter
 - Sharp – A very narrow bell filter
 - High End – A high shelf filter
- The original unit offers filter ranges of +/- 10 dB in 2 dB increments. To accommodate today's processing standards, Waves has extended the ranges to +/-20 dB (continuous), while maintaining the exact characteristics of the original filters.

Bass Decibels sets the amount of low frequency boost or cut.

Range: +/- 20 dB in 0.1 dB increments

Bass Width sets the shape of the filter.

Range: Low End, Blunt, Med Blunt, Med Sharp, Sharp, High End

Bass Frequency sets the low frequency cutoff point.

Range: 32 Hz, 64 Hz, 128 Hz, 256 Hz

Bass On/Off deactivates low frequency processing.

Range: On, Off

Treble Decibels sets the amount of midrange frequency boost or cut.

Range: +/- 20 dB in 0.1 dB increments

Treble Width sets the shape of the filter.

Range: Low End, Blunt, Med Blunt, Med Sharp, Sharp, High End

Treble Frequency sets the midrange frequency cutoff point.

Range: 512 Hz, 1024 Hz, 2048 Hz, 4096 Hz

Treble On/Off deactivates midrange frequency processing.

Range: On, Off

Top Decibels sets the amount of high frequency boost or cut.

Range: +/- 20 dB in 0.1 dB increments

Top Width sets the shape of the filter.

Range: Low End, Blunt, Med Blunt, Med Sharp, Sharp, High End

Top Frequency sets the high frequency cutoff point.

Range: 5800 Hz, 8192 Hz, 11600 Hz, 16400 Hz

Top On/Off deactivates high frequency processing.

Range: On, Off

Output Level

- In Stereo and Duo modes, controls the left and right channel levels. This gain stage is at the output of the plugin.
- In MS mode, the left knob controls the Mid channel and the right knob controls the Sides channel level. This gain stage is directly after the MS matrix encoding.

Range: -24 dB – +12 dB

Phase inverts the phase of the signal.

Range: In, Out

Monitor controls the source of the monitor output. (*Stereo component only*)

- Stereo (ST) and Duo modes:
 - L (left side only)
 - Mono (stereo signal summed to mono)
 - Stereo
 - R (right side only)
- MS mode:
 - Mid (left plus right)
 - Mono (stereo signal summed to mono)

- Stereo
- Sides (left minus right)

EQ Mode selects stereo processing mode. (*Stereo component only*)

- **Stereo** relatively links the channels and applies the same processing to both.
- **Duo** unlinks the channels and offers the option of applying different processing to each.
- **MS** applies an MS encoding matrix on the input to the plugin. The signal enters the EQ for separate processing to Mid and Side information, which is subsequently decoded back to stereo on the output.

Graph Range sets the range of the EQ graph.

Range: 15 (+/- 15 dB), 30 (+/- 30 dB)

VU Meters display output VU readings.

Range: -20 – +3 dB

VU Level Calibration sets the dBFS level which appears as 0 VU.

Range: -24 – -8 dBFS

2.3 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.