



ANALOG MASTERING EQUALIZER



554 Biquad

Stereo Analog Mastering Equalizer

OPERATOR'S MANUAL

Version 1.0 · 2026-10-08



Armon

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PLEASE READ ALL INSTRUCTIONS, PAY SPECIAL HEED TO SAFETY WARNINGS.

Welcome to the 554 Biquad

Thank you for choosing Armon. The 554 takes its inspiration from the analog console equalizers of the 1970s, with euphony as its goal.

We built it for the engineers who make the final decisions on a record, and we hope it earns a permanent place in your signal chain.



Alfredo Rubio





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About this Manual

This manual covers the user operation of the Armon 554 Biquad stereo analog mastering equalizer.

Most sections are useful to all users, and it is recommended that the manual be read thoroughly before installation. Experienced engineers may get up and running quickly, but if you are new to biquad equalizers with selectable curves, it is recommended that you read the entire manual at least once and keep it handy during mastering sessions.

Manual revision history

Version	Date (YYYY-MM-DD)	Notes
1.0	2026-10-08	First edition



Important Safety Instructions

1. Please read these instructions.
2. Keep this information in a safe place.
3. Do not use this device near water.
4. Clean only with a dry cloth.
5. Do not block any ventilation openings.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices that produce heat.
7. Do not defeat the safety purpose of the polarized or grounding type AC plug.
8. Protect the power cord from being walked on or pinched, particularly at plugs and at the point where it exits the device.
9. Use only attachments and accessories specified by the manufacturer.
10. Unplug this device during lightning storms or when unused for long periods of time.
11. Refer all service, including replacement of the internal operational amplifiers, to qualified personnel.
12. Use only the external linear power supply provided with the unit (554 PSU) and its original connecting cable.

ATTENTION: Exposure to extremely high noise levels may cause permanent hearing loss or damage. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise (this may include music) for a period of time. Be safe.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



01 Overview

A stereo analog mastering equalizer built on biquad filters, with a hand-wound transformer output and a Mid/Side switch.

3 × 2

BANDS PER CHANNEL,
TWO CHANNELS

±10 dB

STEPPED GAIN
RANGE

−110 dB

NOISE FLOOR, RMS
A-WEIGHTED

+32 dBu

MAXIMUM
OUTPUT LEVEL

1.1 The Concept

The 554 starts from the design of the analog console equalizers of the 1970s, with euphony as its goal. It is a stereo equalizer with biquad topology, to which a Mid/Side function has been added, together with a choice of electronic balancing or a hand-wound output transformer.

Every important control is visible and direct. Choose the band, choose the curve, set frequency and gain, then listen. In use, the 554 changes the character of the music without changing the mix.



FIG. 1 The 554 Biquad front panel. Left/Mid channel on the left, Right/Side on the right, and the central switch section between them.

1.2 Biquad Filtering and Discrete Circuitry

The bands of the 554 are based on biquad filters. Combined with sweepable frequencies and stepped gain, this makes small decisions precise and repeatable, which is essential in mastering. The input signal is balanced electronically.

Each channel uses two discrete operational amplifiers. They can be replaced by other types such as the 990 or Red Dot, which allows the voicing of the unit to be changed. This work must be carried out by qualified personnel.

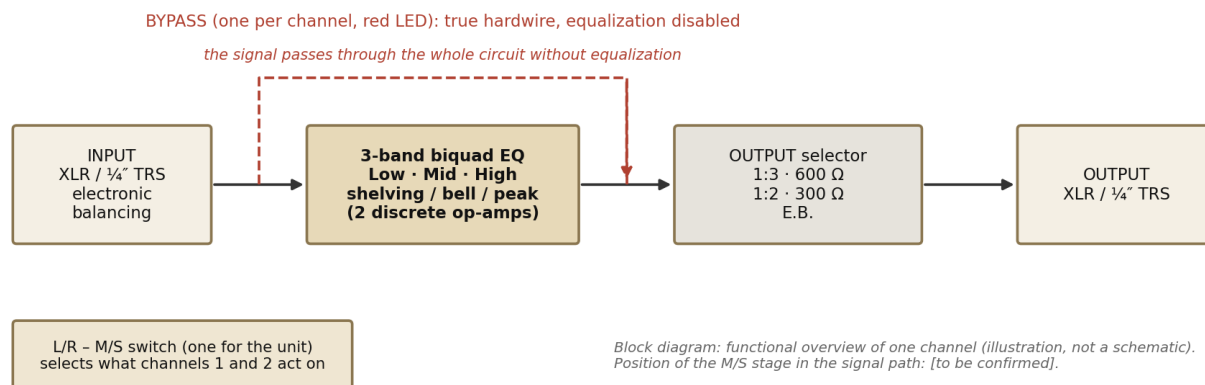


FIG. 2 Functional signal flow of one channel (illustration).

1.3 Shelving, Bell and Peak Curves

In the 554 you select a curve for each band: shelving, bell or peak. The curves are designed from the curves of the Sontec MES-432c and the Maselec MEA-2, and they can be customized on request.

The Low and High bands offer all three curves. The Mid band offers bell and peak. The bandwidth control (slope) of each curve is:

Band	Shelving	Bell	Peak
LOW	Yes	5 dB/octave	11 dB/octave
MID	—	4 dB/octave	9 dB/octave
HIGH	Yes	4 dB/octave	9 dB/octave

The shelving selection can also be used as a high-pass or low-pass type filter, for example to eliminate rumble outside the frequency range of the desired sound.

1.4 Frequency and Gain Ranges

Each channel provides three bands with sweepable frequency. The ranges overlap, which gives flexibility in the transition areas.

Band	Frequency range
LOW	30 Hz – 580 Hz
MID	310 Hz – 6.1 kHz
HIGH	1 kHz – 17 kHz

Gain is set in steps, as boost or cut: 0 / ± 0.5 / ± 1 / ± 1.5 / ± 2 / ± 2.5 / ± 3 / ± 4 / ± 5 / ± 6 / ± 8 / ± 10 dB.

1.5 Output: Transformer or Electronic Balancing

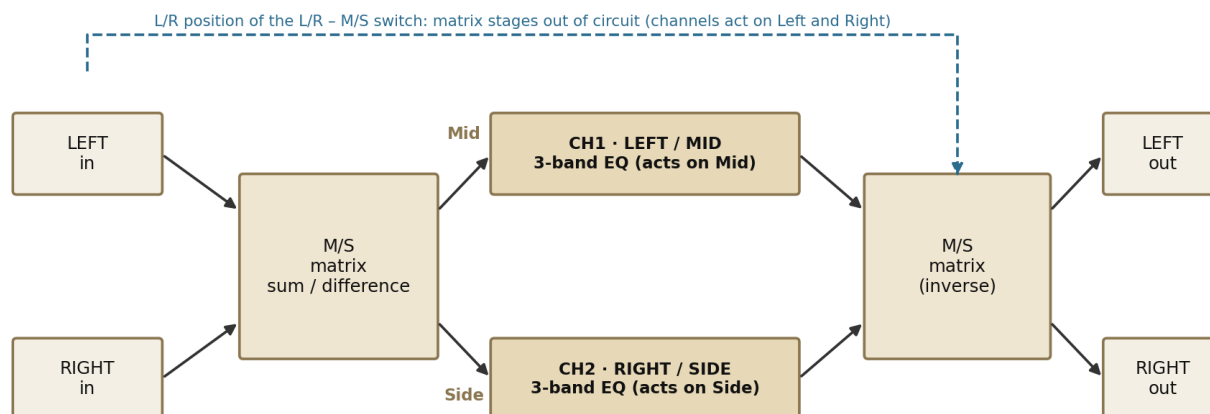
Each channel has a three-position output selector:

- **1:3 · 600 Ω .** Hand-wound output transformer, 1:3 turns ratio, 600 Ω output impedance.
- **1:2 · 300 Ω .** The second turns ratio of the winding: 1:2, 300 Ω .
- **E.B. (electronic balancing).** The output is balanced by circuitry instead of by the transformer.

The two turns ratios give different output impedances and a different measure of harmonic enrichment, so you can voice the output to suit the material. Choose E.B. when you want the equalization without the transformer in the signal path.

1.6 Mid/Side Operation

A single switch changes what the two channels control. In **L/R** (stereo) the left channel controls act on the left signal and the right channel controls act on the right signal. In **M/S** the Left/Mid channel acts on the Mid (the content shared by both channels, the center of the mix) and the Right/Side channel acts on the Side (what differs between them, the stereo width).



*M position: Left/Mid acts on the Mid (content shared by both channels) and Right/Side acts on the Side (what differs between them).
Generic functional principle (illustration, not a schematic).*

FIG. 3 Block diagram of the Mid/Side section (generic principle). [Confirm the actual matrix implementation and its position relative to the EQ and output stages.]

1.7 External Linear Power Supply and Low Noise

The power supply is of the linear type and external to the unit. The noise floor is -110 dB RMS, A-weighted, 20 Hz - 20 kHz. The maximum output level is $+32$ dBu.

1.8 Bypass

Each channel has a true hardwire bypass with an indicator. With the bypass engaged (red LED) the signal passes through the whole circuit without equalization: the gains and attenuations of all the bands are disabled. With the bypass released (blue LED) the equalization you have set is active. This lets you compare the processed and unprocessed signal without changing anything else in the signal path.

02 Front Panel Controls

The front panel is organized in three zones: the left channel (**Left / Mid**), the central switch section, and the right channel (**Right / Side**). Both channels have an identical set of controls.

2.1 Central Section

Between the two channels sits a small group of switches that defines how the 554 behaves: how the signal leaves, whether the equalization is active, and whether you work in stereo or Mid/Side.

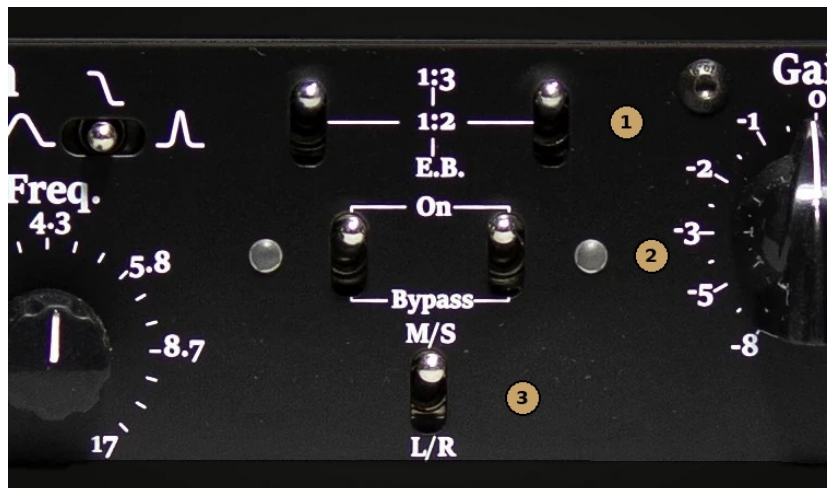


FIG. 4 Central section: (1) output selectors, (2) bypass switches, (3) L/R - M/S switch.

2.1.1 Output selectors (1)

Each channel has its own output selector with three positions: **1:3** (600 Ω transformer), **1:2** (300 Ω transformer) and **E.B.** (electronic balancing). See section 1.5.

2.1.2 Bypass switches (2)

One switch and one indicator for each channel.

- **On (blue LED).** The equalization is active. The gain, frequency and curve you have set act on the signal.
- **Bypass (red LED).** True hardwire bypass: the equalization does not work. The signal passes through the whole circuit without equalization, and the gains and attenuations of the bands are disabled.

2.1.3 L/R - M/S switch (3)

L/R: conventional stereo operation. **M/S:** Left/Mid acts on the Mid and Right/Side acts on the Side. Typical uses: open the top end on the Sides without brightening the center; shape the low end of the Mid without changing the width.

2.2 Channel Controls

The 554 can be used as two separate mono equalizers, in stereo, or in Mid/Side. Each channel offers three bands, **Low**, **Mid** and **High**, and each band has the same three controls, shown here on the Low band of the Left/Mid channel:



FIG. 5 Controls of one band (Low, Left/Mid): (1) Gain, (2) curve selector, (3) Freq.

2.2.1 Gain (1)

The large knob sets the boost or cut of the band. The center position, 0, means no change; values to the right boost and values to the left cut. Steps: 0 / ± 0.5 / ± 1 / ± 1.5 / ± 2 / ± 2.5 / ± 3 / ± 4 / ± 5 / ± 6 / ± 8 / ± 10 dB.

2.2.2 Curve selector (2)

A small toggle switch above the Freq. knob selects the curve. The symbol next to each position shows the curve: bell, peak and, on the Low and High bands, shelving. The Mid band has two positions (bell and peak). See section 1.3.

2.2.3 Freq. (3)

Sweeps the center (or corner) frequency of the band. The scale is marked in kHz:

Band	Marked positions (kHz)
LOW	.03 · .04 · .08 · .15 · .23 · .31 · .58
MID	.31 · .39 · .73 · 1.3 · 2 · 3 · 6.1
HIGH	1 · 1.3 · 2.5 · 4.3 · 5.8 · 8.7 · 17

Frequency control durability: The sweepable frequency control uses a high-quality potentiometer rated for 100,000 cycles.



FIG. 6 Mid and High bands of the Right/Side channel. Note the two-position curve selector of the Mid band and the three-position selector of the High band.

03 Rear Panel Connections

Each channel has an input and an output in both XLR and TRS, and the unit is powered by an external linear supply.



FIG. 7 Rear panel, seen from behind (Right/Side on the left, Left/Mid on the right): (1) PSU, (2) IN, (3) OUT.

3.1 Balanced INPUT and OUTPUT Connections

Each channel is equipped with a balanced, line-level input and output, each with two connectors in parallel:

- **IN (2):** female 3-pin XLR and ¼" TRS jack. The input is balanced electronically. Input impedance: 48 kΩ.
- **OUT (3):** male 3-pin XLR and ¼" TRS jack. With the transformer selected, the output impedance is 600 Ω (1:3) or 300 Ω (1:2).
- **Maximum input level:** +22.5 dBu.
- **Maximum output level:** +32 dBu.

XLR pin assignment: pin 1 = ground, pin 2 = +, pin 3 = –.

3.2 Power

The 554 is powered by an **external linear power supply** (554 PSU), connected to the **PSU** connector (1), a 4-pin connector at the left end of the rear panel (seen from behind).

- Power requirement: 26 W.
- Power supply input voltage: 230 V or 110 V.
- Fuse: glass fuse, 0.25 A to 0.5 A (250 V).

Always connect the power supply to a grounded mains outlet.

04 Typical Applications

The following suggestions are starting points. Always trust what you hear.

- **Choosing the output.** We suggest electronic balancing (E.B.) when the equalization is mainly attenuating, and the transformers (1:3 or 1:2) when you want to add gain and give character to the equalization.
- **General tonal balance.** A shelving curve in the Low or High band with a few dB gives a gentle tilt of the tonal balance.
- **Pinpoint correction.** A peak curve in the Mid band to attenuate a specific resonance.
- **Stereo image.** In M/S, a small boost in the High band on Side adds openness without brightening the center, while a slight cut in the Low band on Side focuses the bass in the center.
- **A/B comparison.** Switch between On and Bypass, using the same passage and the same starting point, to judge the real effect of each setting.
- **Voicing.** Try the same setting with 1:3, 1:2 and E.B. when adding gain, and choose the output that gives the music the character it needs.



A Appendix

A1 Technical Specifications

Parameter	Value
Format	1U rack mount
Channels	2 (Left/Mid · Right/Side)
Bands per channel	3 (Low, Mid, High), sweepable
Curves	Low and High: shelving, bell, peak · Mid: bell, peak
Bandwidth control (slope)	Low: bell 5 dB/oct, peak 11 dB/oct · Mid: bell 4, peak 9 · High: bell 4, peak 9
Frequency range	Low 30 Hz – 580 Hz · Mid 310 Hz – 6.1 kHz · High 1 kHz – 17 kHz
Gain / attenuation	0 / ± 0.5 , 1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 dB
Frequency response	± 0.5 dB, 20 Hz – 20 kHz
Noise floor	–110 dB RMS, A-weighted, 20 Hz – 20 kHz
Maximum input level	+22.5 dBu
Maximum output level	+32 dBu
Output transformer (hand wound)	1:3 / 600 Ω · 1:2 / 300 Ω · E.B. (electronic balancing)
Input balancing	Electronic
Active stages	2 discrete operational amplifiers per channel (replaceable)
Connectors	IN: XLR female + ¼" TRS · OUT: XLR male + ¼" TRS · PSU: 4-pin
Operating modes	L/R (stereo) · M/S
Bypass	True hardwire, one per channel · red LED: bypass (EQ off) · blue LED: EQ active
Power	External linear supply (554 PSU), 230 V or 110 V
Input impedance	48 k Ω
Power requirement	26 W

Frequency control life High-quality potentiometer · 100,000 cycles



ARTIST _____

ENGINEER _____

DATE _____

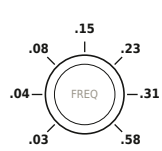
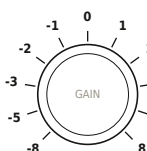
STUDIO _____

CHAN #

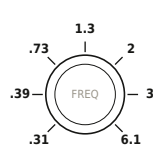
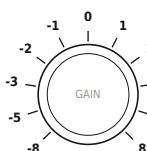
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CHANNEL 1 · LEFT / MID

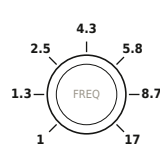
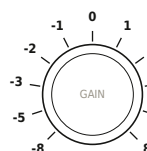
LOW

☐ SHELF ☐ BELL ☐ PEAK

MID

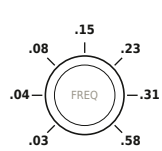
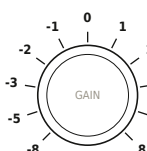
☐ BELL ☐ PEAK

HIGH

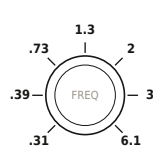
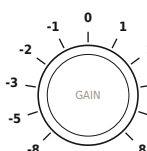
☐ SHELF ☐ BELL ☐ PEAK

CHANNEL 2 · RIGHT / SIDE

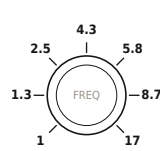
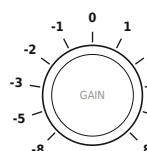
LOW

☐ SHELF ☐ BELL ☐ PEAK

MID

☐ BELL ☐ PEAK

HIGH

☐ SHELF ☐ BELL ☐ PEAKOUTPUT 1 ☐ 1:3 ☐ 1:2 ☐ E.B.OUTPUT 2 ☐ 1:3 ☐ 1:2 ☐ E.B.BYPASS 1 ☐ ON ☐ BYP2 ☐ ON ☐ BYPM/S ☐ L/R ☐ M/S

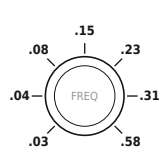
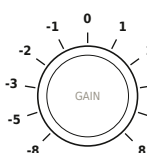
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CHAN #

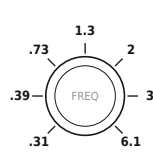
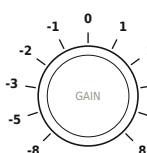
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CHANNEL 1 · LEFT / MID

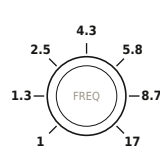
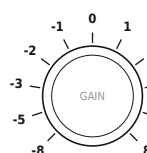
LOW

☐ SHELF ☐ BELL ☐ PEAK

MID

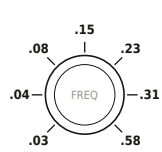
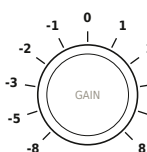
☐ BELL ☐ PEAK

HIGH

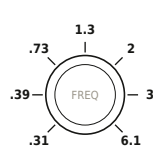
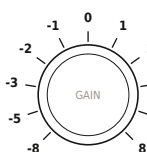
☐ SHELF ☐ BELL ☐ PEAK

CHANNEL 2 · RIGHT / SIDE

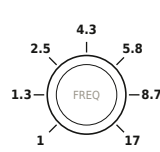
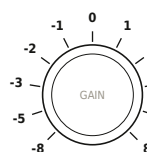
LOW

☐ SHELF ☐ BELL ☐ PEAK

MID

☐ BELL ☐ PEAK

HIGH

☐ SHELF ☐ BELL ☐ PEAKOUTPUT 1 ☐ 1:3 ☐ 1:2 ☐ E.B.OUTPUT 2 ☐ 1:3 ☐ 1:2 ☐ E.B.BYPASS 1 ☐ ON ☐ BYP2 ☐ ON ☐ BYPM/S ☐ L/R ☐ M/S

NOTES



A3 Housekeeping

Here is a great place to write down the serial number of your 554 and your purchase date, just in case you need that information someday in the future.

Armon 554 Biquad serial number: _____

Purchase date: ____ / ____ / ____

A4 Limited Warranty and Service Information

Armon warrants this product against defects in materials and workmanship for **five (5) years** from the date of purchase, under normal use. In summary:

- **Coverage.** Within the warranty period Armon will repair or replace, at its option, any unit or part found to be defective.
- **Who is covered.** The original purchaser. Proof of purchase (invoice or receipt) and the serial number may be required.
- **Exclusions.** Damage caused by misuse, accident, liquids, transport or incorrect installation; use of a power supply other than the 554 PSU; repairs or modifications made by unauthorized persons; and normal wear.
- **How to claim.** Contact Armon at info@armonaudio.com before sending the unit, with a description of the problem and the serial number. Ship the unit in its original packaging. Shipping to Armon is at the owner's expense.
- **Limitation.** To the extent permitted by law, Armon is not liable for incidental or consequential damages. This warranty does not affect the statutory rights of consumers under applicable law.

For questions regarding operation, interfacing or service of your Armon product, please contact your dealer or Armon at armonaudio.com.



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