Maag EQ4 MS

Plugin Manual

maag AUDIO BRAINWORX UNIVERSAL AUDIO UAD-2 POWERED PLUG-INS

Developed by Brainworx Audio in partnership with Maag Audio and distributed by Universal Audio.

Table of Contents

1. Welcome to Maag EQ4 MS 1
2. Key features 2
3. Maag EQ4 MS overview 3
4. Equalizer 4
5. EQ options 5
6. Non-linear response 6
7. Plugin-only section 7
8. Top toolbar 8
9. Credits 9

1. Welcome to Maag EQ4 MS

The Maag EQ4 MS is our latest take on Cliff Maag's filter designs including the impressive Air Band® in a two channel configuration. It offers much more options than ever before. The Brainworx team has worked carefully to add unique options from the Maag product line to the EQ4 MS achieving accurate stereo and m/s processing without losing the mojo of its predecessors.

The plugin allows you to pick from six Air Band® frequencies as in the EQ4M studio hardware. The sweepable Air Band® has already set a standard for shiny and open hi-end in both, the analog and digital domain. You can hear the Air Band® on countless top hits mixed by David Reitzas, Dylan Dresdow, Dave Pensado, and many others.

In addition to the hardware functions, we have added useful features such as optional bandwith and center-frequencies from EQ2 to change the tonal responsive behavior. Maag EQ4 MS combines the features with Brainworx' patented Tolerance Modeling Technology as well as Mono-Maker and more useful options.

Thank you for choosing Maag EQ4 MS. We hope you enjoy it!

2. Key features

The following list gives you an overview of Maag EQ4 MS's key features:

- Modeled exactly after the original Maag Audio design, schematics and hardware in very close cooperation with Maag Audio.
- Brainworx's TMT inside: Tolerance Modeling Technology (US Patent No. 10,725,727) simulates 20 channel-to-channel variances in electronic components for the most realistic analog sound in digital recreation of analog characteristics.
- Air Band®
- Interacting EQ-bands
- High and low pass filters in each channel
- Additional bandwidth and center frequencies for all bell filters
- Mono-Maker and Stereo Width
- Stereo and m/s processing
- Mono and multitrack support
- Variable THD
- Soft clipper
- Auto output gain
- I/O, correlation and balance-metering
- Parameter Link

3. Maag EQ4 MS overview

Maag EQ4 MS is based on the Maag EQ4M and offers high flexibility with additional settings in the *EQ-Options* and *Plugin-Only Section*.

Maag EQ4 MS consists of the following areas and main controls:

1. **Top toolbar**: Additional global controls relevant to the plugin's processing. For more information, refer to *Top toolbar*.
2. **Equalizer**: 6 band EQ with Air Band®. For more information, refer to *Equalizer*.
3. **EQ options**: Optional frequencies, slopes, filters and a soft limiter increase accuracy. For more information, refer to *EQ options*
4. **Plugin-only section**: Our established tools including TMT, stereo tools and level settings. For more information, refer to *Plugin-only section*

4. Equalizer

Maag EQ4 MS provides unparalleled transparency and top end presence while maintaining the true natural sound behind the signal or mix. EQ adjustments are obtained with minimal phase shift and the Air Band® interacts with the other bands (during the 'summing' process). The EQ4's band-passes all interact with each other as well – turning the EQ or Air Band® gain up, also brings up the overall gain. You can compensate this with the input/output gains.

Only one channel of this section is shown and consists of the following controls:

1. **Input Gain**: Adjusts the input level of the plugin.
2. **Indicator LEDs**:
   - **Peak** indicates a signal at 0 dBFS and above.
   - **Signal** indicates present signal above -54 dBFS.
3. **Sub to Mid Gains**: Boost/Cut the band pass filters between +15 and -4.5 dB resulting in interacting values when changing frequency or bandwidth settings of the related filter or any parameter of the other bands. To compensate for overall boost, simply turn down each of the band pass gains equal amounts to reduce overall amplification.
4. **2.5 kHz Gain**: Boosts/Cuts the high shelving filter between +20 and -5 dB. The mentioned interaction between the bands and their configuration should be taken into account.
5. **Air Band®**: Blend some shiny highs into your original signal and hear how almost any signal will open up and benefit from this band.
   a. **Gain**: Boosts the very high frequency range between 0 and +20 dB. To reduce harsh high ranged frequencies, the **2.5 kHz** shelving filter can be applied to attenuate while still being able to regain frequencies above. The 0 to 10 scale is proportional to the other band gain scales and helps lower the output level by reducing all band gains by the same amount.
   b. **In**: Enables/Disables the Air Band® for comparison.
   c. **kHz [Frequency]**: Select from six Air Band® frequencies between 2.5 to 40 kHz. The highest frequency settings are responsible for the unique air-boost of the Maag EQ-series and their lack of harshness.
6. **Engage [Channel]**: Dis-/Engages the hardware channel, acts like a true hardwired bypass found in analog equipment.

Clicking the Mäag Audio logo will open a splash screen containing team credits and default settings.

5. EQ options

Additional frequencies, slopes, cut-filters and soft-clipping that achieve a wide variety of tonality can be found here.

Only one channel of this section is shown and consists of the following controls:

1. **[Alternative Frequency]**: Selects higher center frequency of the bell (band pass) filter.
2. **[Alternative Bandwidth]**: Selects between wide and tight bandwidth of the related band pass filter.

> ⓘ The Maag EQs' parallel design leads to non-linear response curves when changing a band's frequency or bandwidth without any applied gain change.

3. **[HPF/LPF] In**: Dis-/Engages the high/low pass filter.
4. **[HPF/LPF] Slope**: Changes the filter's slope from 6 db/oct to 12 dB/oct. Set to 12 dB/oct by default.
5. **HPF/LPF [Frequency]**: Cutoff frequencies of the high and low pass filters.
6. **Soft Clip**: Dialing clockwise, the threshold of the soft clipper decreases while addition of harmonic saturation increases. The red LED signals the amount of soft clipping. Deactivated by default (set fully counter clockwise / off-position).

6. Non-linear response

Maag EQs are known for their unique design which is based on a parallel structure with an almost linear response from unity band gains. Based on this very special design, changing a band's center frequency or slope will lead to a non-linear response even at ±0dB unity gain across all bands. It is sometimes helpful to select a non-linear response by selecting bandwidth and frequency settings before applying band related amplification.

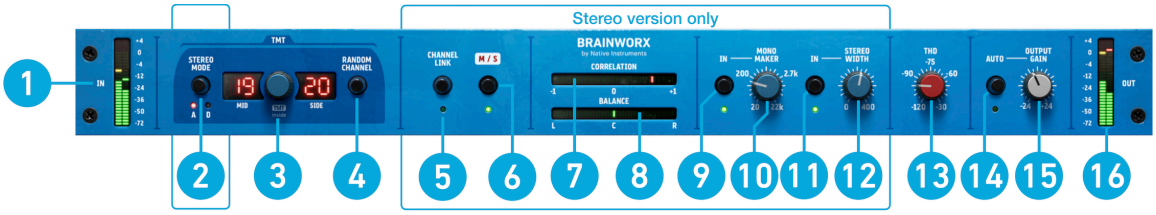
We have prepared presets offering linear response settings which are named "All Qs Wide" or "All Frequencies Up" to access some modded EQ4-versions.

The performed analysis below displays the "All Q's Wide" setting, and a typical overlap with the resulting boost by changing just one frequency (Lo-Mid) in its options:

7. Plugin-only section

Increase the functionality of the hardware equalizer with additional Brainworx tools.

This section consists of the following controls:

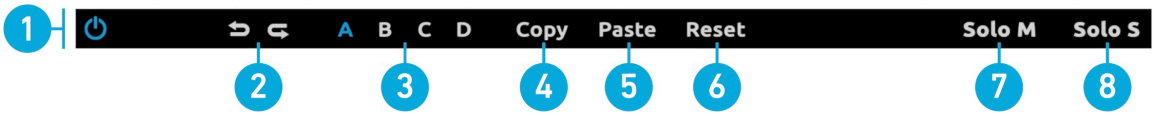


1. **Input [Meter]**: Shows the level of the incoming audio between -72 to +4 dBfs and is tapped behind the m/s-matrix to read out incoming mid and side levels when working in m/s-mode.
2. **[TMT] Stereo Mode***: Toggles between using the same TMT channel for both units (D=digital) and using two adjacent, differing TMT channels (A=analog).
3. **TMT [Channel]**: Switches between 20 different analog channels. In a Stereo instance, two adjacent Channel numbers will be displayed. Each channel has its own, different character.
4. **[TMT] Random Channel**: Whenever a TMT-featured plugin on a channel gets inserted, it will start with the default setup, which is channel 1 in a flat setting. You can randomize a channel by clicking the Random Channel button. The plugin instance you click on will switch to any unused channel number in that session randomly, until you reach 20 channels.
5. **Channel Link***: Switches linking of parameters in a stereo instance on or off. When off, the plugin operates in an independent two-channel (dual-mono) configuration. When switching on Channel Link, differences between pairs of parameters are preserved until the controls are adjusted.
6. **M/S [processing]***: Toggles between dual mono and mid/side processing. When M/S is set active, the left channel processes the mid/sum-signal, the right channel processes the side/difference-signal of the passing audio. Channel labels dynamically switch to their configured state.
7. **Correlation [Meter]***: Displays the correlation / stereo-compatibility of the processed audio.
8. **Balance [Meter]***: Displays the center-weighting of the stereo-signal.
9. **[Mono Maker] In***: Dis-/Engages the **Mono Maker**.
10. **Mono Maker [frequency]***: Sweepable from 20 Hz to 22 kHz, this parameter folds the processed sound to mono below the selected frequency.
11. **[Stereo Width] In***: Dis-/Engages the **Stereo Width**.
12. **Stereo Width***: Increase or decrease the stereo width of the processed signal.
13. **THD**: Adds colorful saturation and density. The default setting is -100.9 dB. Use higher settings (up to -30 dB) for almost screaming distortion or dial off the THD below -120 dB for a clean result.
14. **Auto [Output Gain]**: When activated, a performed analysis compares RMS levels of input and output signal over a 3 sec. timespan to set the **Output Gain** to a position matching the processed signal to the input loudness. This leads to more accurate comparisons when bypassing the EQ.
15. **Output Gain**: Adjusts the output level of the plugin.
16. **Output [Meter]**: Shows the level of the processed audio from -72 to +4 dBfs.

** This is a pure stereo parameter and is only available in the stereo version of the plugin.*

8. Top toolbar

Additional global controls related to plugin settings and processing are available in the top toolbar.



1. **Power**: Bypasses the processor when disengaged.
2. ↩ ↪: Undo and redo changes made to controls up to 32 steps.
3. **Bank A B C D**: Each preset allows you to switch between four banks (A, B, C, D) of controls.
4. **Copy**: Copy the active settings to memory.
5. **Paste**: Paste the copied settings to the active bank.
6. **Reset**: Reset the current bank.
7. **Solo M**: Isolates to audit the mid (sum) signal being processed by the plugin.
8. **Solo S**: Isolates to audit the side (difference) signal processed by the plugin.

9. Credits

Concept: Cliff Maag Sr.

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