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BRAINWORX Amek Mastering Compressor Instruction Manual

AMEK Mastering Compressor
Plugin Manual

Contents

About AMEK Mastering Compressor

Like the original high-end hardware that inspired it, Amek's Mastering Compressor takes advantage of multiple True RMS detectors. This allows it to respond intelligently to changes in signal energy in the same naturally logarithmic way as the human ear, for stunningly transparent dynamic control.

Instead of employing conventional attack and release controls, the Amek Mastering Compressor offers an even more flexible way of dialing in the perfect compressor timing. Using 3 distinct detector circuits slow, fast and peak – you can choose exactly how much compression you want for each aspect of the signal, to strike the perfect blend. It's almost like having three complimentary compressors in one.

This mastering grade tool offers not just a unique take on using compression, but a better way of visualizing it, too. The new, Brainworxdesigned detector graph shows you exactly which of the three detector circuits is controlling the compressor's response at any given time. Meanwhile, the distinctive output meter (borrowed from the original hardware), shows you how much output, compression and net signal change are occurring, all in one glance.

With the ratio control in its "Soft" setting, the Mastering Compressor has a gentle, program-dependent ratio reminiscent of the best tube compressors, but with much more transparency. In the rest of its settings, it takes on a harder knee for snappier, more assertive compression that still sounds remarkably smooth and clean. Controls like "Release Hysteresis" and "Timing" allow for exacting refinement of the compressor's envelope.

Although the original hardware was widely coveted for its rich and transparent performance in mastering and mix bus applications, it's also a favorite on all sorts of single instrument sources, including vocals, bass, acoustic guitar and more. The plugin includes a dedicated mono version designed specifically for these uses.

Made even more powerful with plugin-only features
As always, the engineers at Brainworx have added new digital-only features that would be impossible in the analog domain. In addition to regular favorites like the Mono Maker, Stereo Width, Auto Listen, Headroom and TMT controls, the AMEK Mastering Compressor adds the visual detector graph, a powerful 3-band sidechain filter, and a totally new feature called VCA CLIP, which models the soft-clipping behavior of the original analog VCA at high signal levels.

Channel section

1. Channel IN

   This is a per-channel bypass.

2. Ext. SC

   External sidechain switch that allows the user to route an external signal to the sidechain input of the

compressor. Enables the classic kick drum ducking on the bass guitar trick and numerous other creative uses.

3. Threshold

The threshold control behaves differently for Hard knee and Soft knee ratio operation modes.

In Hard knee mode, it behaves like a gain stage pushing into a static threshold. This will sound familiar to the operation of the classic 1176-style compressors, where the amount of gain reduction is dialled in with input gain and later compensated for with the output control. The beauty of this design is that when a target output level is set, pushing the material more or less into the threshold will not result in a lot of change in output level but rather in a change of overall dynamic range, which is very similar to the "auto gain" functionality!

In Soft knee mode (ratio fully CCW), the threshold actually lowers the level where the soft knee curve departs from the 1:1 characteristic, resulting in more compression at lower levels. Because of this difference, the range of the output control is much greater in the positive direction, providing enough gain compensation to allow for unity-gain settings even at large amounts of gain reduction in Soft knee mode.

General Controls

1. **Timing**

The Timing control decides the length of the RMS detectors' averaging window, effectively changing both the attack and the release times of both Slow and Fast RMS detectors. This might seem constraining at first, as it basically replaces two attack and two release knobs, but it works remarkably well! In combination with the Fast, Peak and Release Hysteresis controls it allows for a wide range of tailored and musical timing responses. Clockwise rotation means faster attack and release times.

2. **Release Hysteresis**

This mode of operation wires the Fast RMS detector into the Slow one, down to the threshold set by the Release Hysteresis control.

Consequently, the attack and release times are that of the Fast detector above the setting and that of the Slow detector below it. It's another flavour of a dual attack/release timing, usually found under the "Auto" setting on various other classic compressors.

3. **Fast**

Because the Slow detector doesn't have a level control of its own, the mixture of the three RMS detectors' influences is controlled with the Fast and Peak parameters. The Fast control controls the level of the Fast RMS detector, pushing it higher with Clockwise rotation so it eventually overtakes the Slow detector and takes priority in guiding the overall gain reduction.

4. Peak

Just like the Fast control, the Peak control pushes the Peak detectors level higher so it eventually takes priority in guiding the gain reduction.

The difference to the Fast RMS detector is the instantaneous attack and a much longer, static release time.

Headroom
Applies gain or attenuation before the processing and an inverse factor after it. This is useful to quickly try more or less gain reduction without changing any settings or to adjust a factory preset to your own material with just one control.
Ratio
In the fully counter-clockwise position, the Ratio is switched to the Soft knee mode. In this case, the ratio gets progressively higher for higher input signals in a smooth, exponential fashion. In most cases, with moderate threshold settings, the ratio will float at around 3:1 and occasionally jump to something like 6:1 on peaks. With the Threshold knob in the last third of its range and a healthy input signal, the ratio can be pushed well over 10:1 at

high gain reduction levels.

In Hard knee mode, the ratio above the knee is decided by the Ratio control, ranging from almost imperceptible 1.1:1 to brick-wall "∞:1". The Ratio control will, because of the particular circuit topology, interact slightly with the Threshold control, providing additional help to keep the output level constant even when changing the Ratio setting!

Output

This is the usual compression make-up gain control, but with a range that complements the operation in both Soft and Hard knee modes.

1. Master Input Level

   A simple level trim right at the input of the signal chain. Works on all channels simultaneously and equally.

2. Master Output Level

   A simple level trim right at the output of the signal chain. Works on all channels simultaneously and equally.

3. Mono Maker

   This tool is a critical component to several Brainworx processors, and it is an invaluable tool when mastering or tightening up a mix. Sweepable from 20Hz to 2kHz, this parameter folds the processed sound to mono at and below the frequency set. The most common setting is between 50-200 Hz, which ensures minimal loss of width while improving translation for lossy codecs and vinyl cutting.

4. Stereo Width

   Make your mix wider than it originally was by increasing the Stereo Width without losing the center of your recordings! You will not lose bass drum power or vocals by making your mix wider this way… and it will not sound different played back in mono at all. If you notice your Correlation Meter (e.g. bx_meter) showing less than 90°, dial up the Mono Maker a bit to tighten up the low-end until acceptable levels are shown.

5. Mid/Side

   Enables or disables the stereo-to-mid/side encoding at the start of the signal chain and decoding at the end of it. The labels on the GUI will change to reflect that mode of operation and designate the left channel as „M" and the right channel as „S".

6. Parameter Link

   When switched on, this feature links the channel parameters of both channels to allow for easier and faster work on stereo material.

VCA Clip

Sets the signal scaling factor around the processing that models the soft-clipping behaviour of the VCA at high signal levels. The setting represents the hard clipping threshold in dBFS, but the harmonics will already start to appear a few dB lower because of some inherent soft knee transition. Use the indicator LED as a guide for finding a sweet spot when the peaks are slightly rounded but not hard-clipped. Aim for a setting where the LED flashes mostly green and yellow on peaks, with only an occasional red on highest peaks. This will provide some additional punch and presence to the transients without making them sound dull.

TMT Mode

Sets the TMT channel mode. The Analog mode more closely resembles a real-world unit, while the Digital mode allows for perfect stereo matching in both frequency response and dynamics timing constants.

TMT Channel

This parameter lets you choose from the variety of subtle variations resulting from modeling electrical component tolerances.

TMT Random Ch.

This button chooses a random TMT channel, or a consecutive pair of them if in Analog mode.

Sidechain Link Amount

This is an extension to the regular on/off sidechain link. Instead of offering only linked and unlinked modes, this dial lets the user choose the in-between settings as well, where the highest level channel influences the others

just to a certain degree.

Nice for wide stereo, mid/ side, or multi-channel operation. 6 Sidechain Link Mode Another extension to the original hardware feature set that lets you choose between peak (maximum of all channels) or average (average of all channels) sidechain linking. At 100% link amount, the compressor will compress both channels as much as the highest gain reduction of both channels in MAX mode and as much as the average gain reduction between the two channels in AVG mode. The latter can prevent loud peaks on only one channel to disproportionally affect the overall compression.

Sidechain filter and monitor section

1. **SC Filter IN**

   Turns the sidechain filters on or off.

2. **SC HPF**

   A progressive-Q, second-order high pass filter in the sidechain. Turn fully CCW to turn it off completely or use to diminish the influence olow frequencies on the overall gain reduction.

3. **SC Low Gain**

   Gain control for the low band of the sidechain EQ filter.

4. **SC Low Type**

   Switches between the peak and shelf shapes of the low band.

5. **SC Low Frequency**

   Center frequency control for the low band. Use it to tune the side chain EQ boost or cut to specific elements in the source signal, for example the snare fundamental or a resonant bass note.

6. **SC High Gain**

   Gain control for the high band of the sidechain EQ filter.

7. **SC Low Type**

   Switches between the peak and shelf shapes of the high band.

8. **SC High Frequency**

   Center frequency control for the high band. Use cases include changing the influence of the lead vocal on the overall compression when tuned between 2-4kHz or de- easing by triggering compression at high frequency peaks when tuned to 7-10kHz. The latter works even better in MS mode when applied only on the mid channel!

Meter List

1. Ambience

   The Ambience control, inspired by the one found on the Amek 9099 console, sends the difference of the compressed material to the output, so the user can, for example, hear the timing constants more clearly or adjust the threshold to catch just certain elements.

2. Auto Listen

   Enables the automatic routing of the sidechain signal to the output every time a user grabs one of the sidechain EQ controls. Good for quick adjustments without additional clicks into the Latch SC Listen mode.

3. Latch Listen

   Permanently sends the sidechain signal to the output of the plugin. Good for finding the initial settings of the sidechain EQ.

4. Input Meter

   Input Meter before all processing

5. Output Meter

Output Meter after all processing

6. Input Clip Indicators

   Turns on if the input signal is >0dBFS per channel, stays on if there have been overshoots before. A click on the meter will reset the indicator.

7. Output Clip Indicators

   Turns on if the output signal is >0dBFS per channel, stays on if there

   have been overshoots before. A click resets all clipping indicators.

Level Control Meter
The main Level Control Meter shows the complete gain change of the signal going through the processor. It takes into account both the static gains from the threshold control in Hard knee mode and the Output make-up gain and the dynamic gain reduction. This makes it much easier to find the unity-gain operating point, where the meter hovers around the 0dB mark.

Ratio indicator LED
Only active in Soft knee mode; the green LED lights up right after the departure from the 1:1 characteristic, the yellow at ~4:1 ratio and the red at ~20:1 ratio.

Detector Activity LEDs
The three LEDs next to the Fast and Peak controls and the three illuminated words next to the Detector Activity Monitor display light up according to the currently highest detector above the threshold.

THD indicator LED
The green LED lights up at ~3dB before clipping, the yellow at ~1.5dB and red at hard clipping.

Detector Activity Monitor
The Detector Activity Monitor plots the outputs of the three RMS detectors to help visualize their timing and their relative levels, set by the Fast and Peak controls. It also features the threshold level indicator to help with finding the appropriate Threshold setting.

Top Toolbar

1. Undo / Redo

   You can undo and redo changes you made to the controls of the AMEK Mastering Compressor plugin at any time. The Undo / Redo will work for as many as 32 steps. This makes experimenting and tweaking knobs easy. If you don´t like what you did… just undo it.

2. Settings (A/B/C/D)

   The Plugin offers four internal settings (A/B/C/D) which will be stored with every preset. So, one preset can contain up to four settings. You may use similar settings with more or less compression in one setup / preset. Now, the SETTINGS can be automated in your DAW! This way it´s possible to use different sounds for your lead vocals or drums in various sections of the song. Automate the A/B/C/D settings, and you can still tweak knobs of the individual settings without overriding multiple parameters in your DAW, which would be time-consuming.

3. Copy / Paste

   To set up variations of similar sounds you don´t have to dial in the settings several times. Let´s say you like your setting A and want to use the same sound, just with less compression, as setting B.

   • Simply press Copy while you are in setting A.

   • Switch to setting B by pressing 'B' in the settings section.

   • Press PASTE, now setting B is identical to setting A.

   • Reduce the compression on the B setting.

   Now you can switch between A & B and decide which one sounds best or automate different settings for various sections of your session.

4. Speed

Controls the speed of the Detectors Activity Monitor display.

5. M/S Monitoring (for Stereo Channels only)

Solo M: Solos the Mid (Sum) signal being processed by the plugin.

Solo S: Solos the Side (Difference) signal processed by the plugin.

System Requirements & FAQ (Links)

1. Icon

The icon closes and opens the bottom panel containing the Brainworx´s plugin only features.

2. CVD Accessible

This is an alternative color scheme for users with Color Vision Deficiency (commonly known as "color blindness"). Unlike the Standard color mode, it incorporates a single and universal set of colors intended to be discerned more easily among users with common color vision deficiency types (such as Deuteranomaly or Protanomaly) but also less common types (such as Deuteranopia or Tritanopia).

For latest System Requirements & Supported Platforms
https://www.plugin-alliance.com/en/systemrequirements.html
Particular details for your product
https://www.plugin-alliance.com/en/products.html
Installation, Activation, Authorisation and FAQ´s
https://www.plugin-alliance.com/en/support.html

Bottom Toolbar

1. PA Logo

Clicking the Plugin Alliance logo takes you to the Plugin Alliance website via your web browser, that´s if your computer is online.

2. Key (Icon)

Clicking on the key icon brings up the activation dialog, allowing you to manually reauthorize a device in the event of a license upgrade or addition. You can also use this feature to activate additional computers or USB ash drives.

3. ? (Icon)

Clicking the ? icon opens up a context menu that links to the product manual PDF, as well as other helpful links, e.g. to check for product updates online. You must have a PDF reader installed on your computer to be able to read the manual.

Modifier Keys

Tested with Logic Pro X, Protools, Cubase and
Presonus Studio One Mac/Win.

AU	
Fine Control	Shift
Jump between Default / Last Setting	Option
Output Link	Command
VST / VST3	
Fine Control	Shift
Jump between Default / Last Setting	Command (Mac), Ctrl (Win)
Output Link	Option (Mac) / Alt (Win)
AAX	
Fine Control	Command (Mac), Ctrl (Win)
Jump between Default / Last Setting	Option (Mac), Alt (Win)
Output Link	Shift

Documents / Resources

BRAINWORX Amek Mastering Compressor [pdf] Instruction Manual
Amek Mastering Compressor, Mastering Compressor, Compressor

References

- 🌐 **All Plugins & Products - Plugin Alliance**
- 🌐 **System Requirements - Plugin Alliance**