



eMO/D5

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

The eMo-D5 plugin is an advanced yet easy-to-use dynamics multiprocessor that delivers the power of five plugins in one interface. It gives you maximum versatility for shaping the dynamics of any signal, with zero latency and very low CPU consumption.

eMo-D5 processors:

1. **Gate** with dedicated HP/LP filters and an external sidechain option
2. **Compressor** with a parallel compression feature, dedicated high-pass/low-pass filters and an external sidechain option
3. C-weighted **Leveler** with adjustable range
4. Comprehensive **DeEsser** with pre/post-compressor routing and 3 filter types
5. Smooth, sharp-attack **Limiter** with zero latency

To help you easily control and monitor the total dynamic change added by the different processors, eMo-D5 employs clever parallel detection and adds a combined gain reduction meter for the Leveler, Compressor and Limiter.

The eMo-D5 plugin was made with live engineers in mind. This is reflected in the plugin's zero latency and low CPU performance. While these qualities are especially important in live situations, they are also significant and useful in studio applications.

eMo-D5 is built for touch. All controls are large and touchscreen-friendly, and the workflow is adapted for smooth, convenient work on touchscreen interfaces.

1.3 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.

The eMo-D5 plugin includes the following components:

- eMo-D5 Mono
- eMo-D5 Stereo



CHAPTER 2: QUICK START GUIDE

Use the WaveSystem toolbar at the top of the plugin to save and load presets, compare settings, undo and redo steps, and resize the plugin.

As with all Waves plugins, factory presets are a good place to start. Click the Presets button on the WaveSystem toolbar, and choose the preset closest to the source audio you are working with. Tweak it from there.

Alternatively, you can start from scratch. To get going, turn on the desired dynamic section and play with the threshold knob to achieve the desired effect.

You can always reset all plugin controls by loading the eMo-D5 Full Reset preset, using the Presets button.

To learn more, click the icon at the upper-right corner of the window and open the WaveSystem Guide.

CHAPTER 3: INTERFACE AND CONTROLS

3.1 Interface



- 1 WaveSystem Toolbar
- 2 Gate
- 3 Compressor
- 4 Leveler
- 5 DeEsser
- 6 Limiter
- 7 Output
- 8 Filter Graph
- 9 Input/Output Graph
- 10 Combined Gain Reduction Meter

3.2 Gate Section

Controls



GATE: Turns on or bypasses the Gate section.

Range: On, Off

Default: Off

GATE/EXP: Toggles between Gate and Expander modes.

Gate mode provides sharper results, basically muting all audio below the Threshold level.

Expander mode provides more natural results, never muting the audio. The Gate is never completely closed, providing “softer” gating.

Additional Gate controls allow natural results even in Gate mode.

Range: GATE, EXP

Default: GATE

OPEN THRESHOLD: Sets the Gate Open level.

Range: -Inf to 0 db

Default: -Inf

CLOSE: Allows independent adjustment for the Gate Close level.

Range: -48 to 0 db

Default: 0 db

FLOOR: Adjusts the level of maximum gain reduction.

Range: -Inf to 0 db

Default: -Inf

ATTACK: Determines how quickly the Gate opens.

Range: 0.1 to 100 ms

Default: 1 ms

HOLD: Sets how long the Gate will stay open even if the signal falls below Threshold.

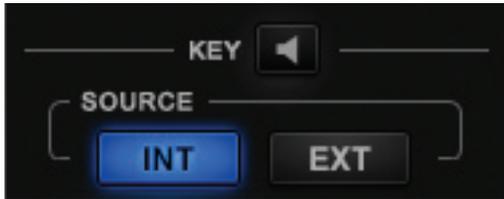
Range: 0 to 10000 ms

Default: 0 ms

RELEASE: Sets how fast the Gate closes (fades out) after the signal falls below Threshold.

Range: 1 to 1000 ms

Default: 100 ms



KEY: Lets you choose, filter and audition the sidechain source.

The Key feature adds additional precision in controlling dynamics.

The Key acts as a trigger that activates the dynamic process.

It can be Internal (INT) – triggered by its own signal, or External (EXT) – triggered by another audio channel through sidechain routing, in which case the external signal is routed independently as a sidechain input to the Gate.

Range: INT, EXT

Default: INT

In addition, the Key signal (whether INT or EXT) can be filtered using HP/LP filters.



HPF Range: 16 to 18000 Hz

Default: 60 Hz

LPF Range: 16 to 18000 Hz

Default: 15000 Hz



To link HPF and LPF, hit the Filter Link

Filter Link Range: On, Off

Default: Off



To audition Key signals, hit the Preview. The auditioned audio will be affected by Filters state, but unaffected dynamically.

Range: On, Off

Default: Off

Meters and Indicators

Gate state LEDs

Green = Open, Yellow = Hold, Red = Close

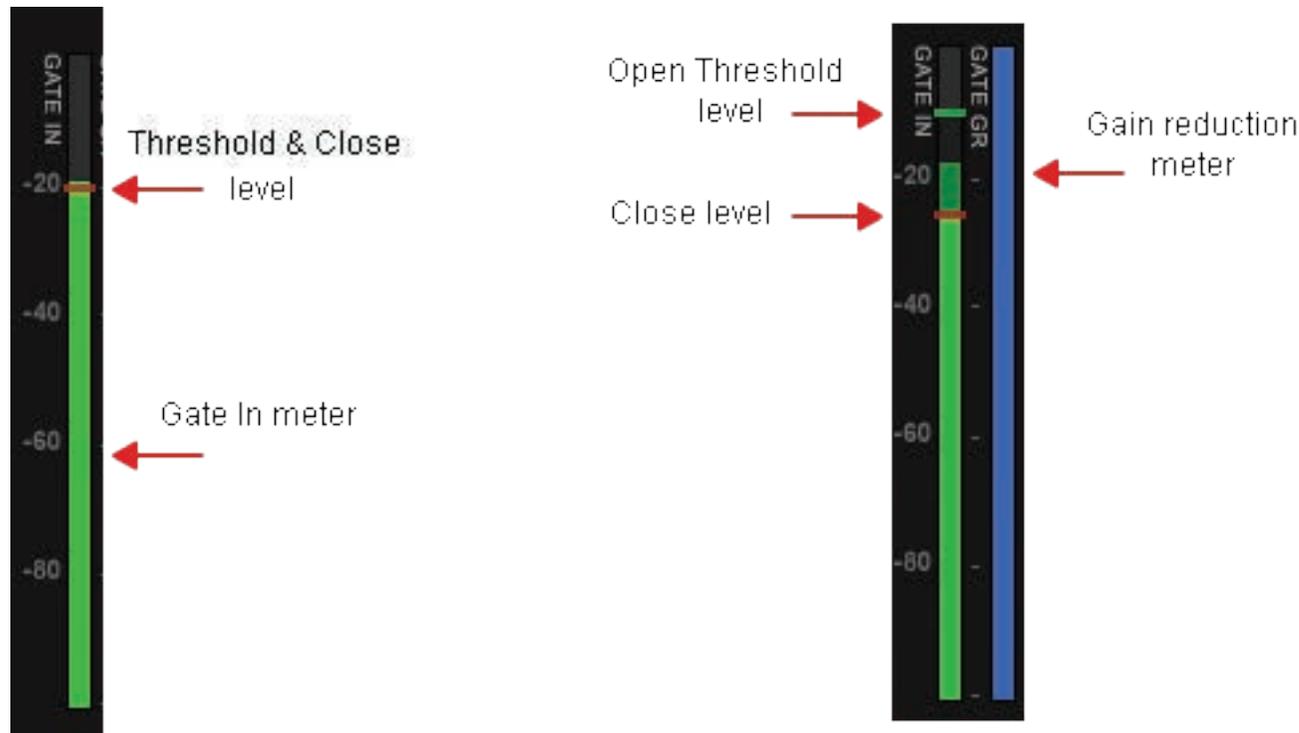


GATE IN meter

Shows input level. When Key is in EXT, the meter will show the input level of the external sidechain. A single red marker on the Gate In meter indicates the Gate Threshold and Close levels. You can set the Gate Close level independently of Gate Threshold, in which case the Close marker will stay red, while the Threshold marker will become green.

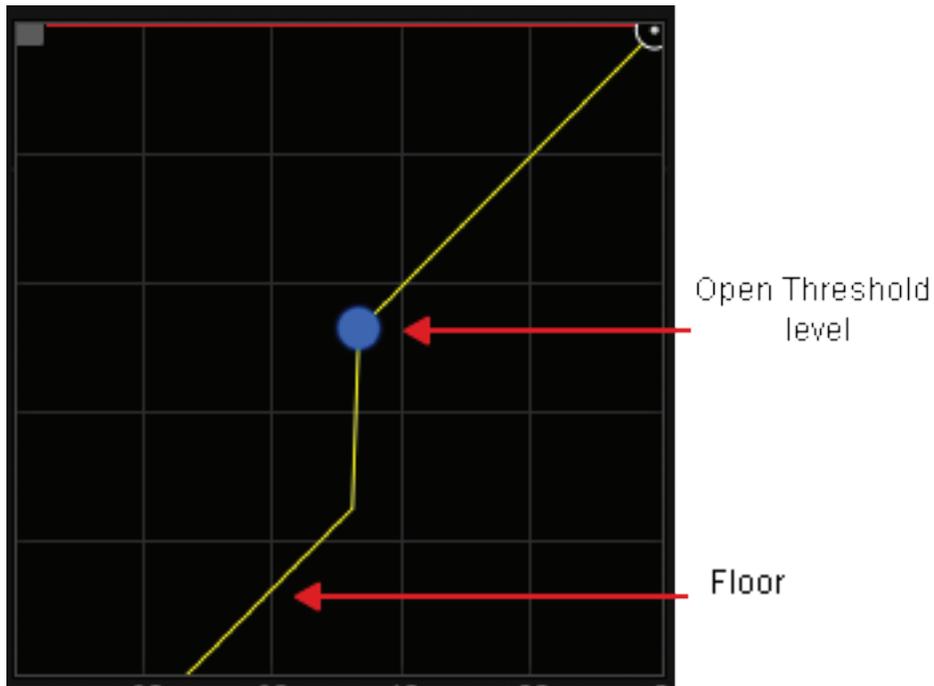
GATE GR Meter

Shows the amount of attenuation introduced by the Gate section. This attenuation is not reflected in the Combined Gain Reduction Meter.

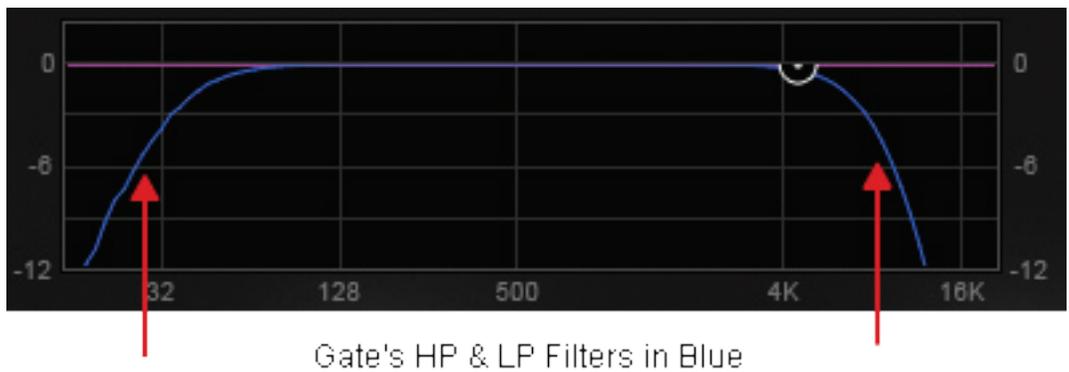


Input/Output Graph

Indicates Gates Range and Open Threshold levels.
 The Open Threshold level can be adjusted by dragging the blue dot.



Gate Key Filters: shown in the Filter Graph as blue curves.



Gate's HP & LP Filters in Blue

3.3 Compressor Section

Controls



COMP: Turns on or bypasses the Compressor section.

Range: On, Off

Default: Off

KNEE: Sets how aggressively the Compressor reacts to the signal.

Range: SOFT, NORMAL, HARD

Default: NORMAL

THRESHOLD: Sets the Compressor's engagement

level. Range: -48 to 0 db

Default: 0 db

RATIO: Determines how hard the signal is

compressed. Range: 1 to 20

Default: 3

ATTACK: Determines how quickly the Compressor reacts to a signal.

Range: 0.5 to 300 ms

Default: 7 ms

RELEASE: Determines how fast the Compressor reduces processing after the signal falls below the Threshold. When in MANUAL mode, the release time is fixed at the Release Value, in this example, 220 ms.

When Release mode is set to AUTO, the release time will be centered at the chosen value, but the actual release time will adapt according on the signal. Sometimes the release time will be shorter, sometimes longer, but the center point will be the set value.

Release modes: AUTO, MANUAL

Default: MANUAL

Release time range: 1 to 3000 ms

Default: 220 ms

KEY: Lets you choose, filter and preview DeEsser and Compressor routing or external sidechain source.



The Key feature adds additional precision in controlling dynamics. The Key acts as a trigger that activates the dynamic process. The Key can be internal – triggered by its own signal, or External – triggered by another audio channel through sidechain routing to the Compressor.

The Compressor has two internal routing options:

- INT: Compressor triggered by its own signal; DeEsser routed post-Compressor
- DeES: DeEsser routed pre-Compressor

Range: INT, DeES, EXT

Default: INT



In addition, the Key signal (whether internal or external) can be filtered using HP/LP filters.

HPF Range: 16 to 18000 Hz

Default: 60 Hz

LPF Range: 16 to 18000 Hz

Default: 15000 Hz



To link HPF and LPF, hit the Filter Link.

Filter Link Range: On, Off

Default: Off



To audition the Key signals, hit the Preview. The auditioned audio will be affected by Filters state, but unaffected dynamically.

Range: On, Off

Default: Off



COMP MIX (located in the OUTPUT section): Allows parallel compression by mixing the compressed and the uncompressed audio.

Range: 0 (= uncompressed audio) to 100 (= compressed audio)

Default: 100

Meters and Indicators

COMP IN Meter:

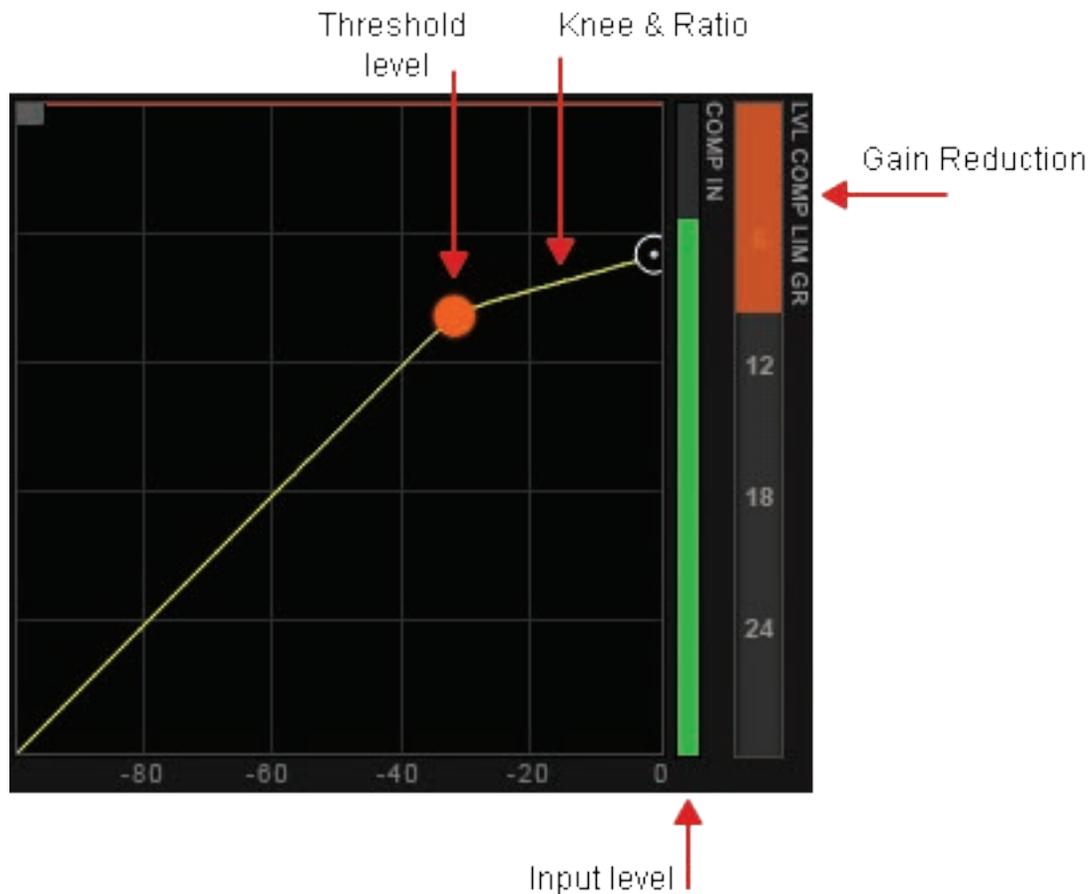
Shows the input level. When Key is in EXT, the meter will show the input level of the External Key.

LVL COMP LIM GR Meter:

Combined gain reduction meter for the Leveler, Compressor and Limiter. The amount of gain reduction introduced by the Compressor is shown in orange.

Input/Output Graph:

Indicates the Compressor's Threshold level, Knee and Ratio. Threshold level can be adjusted by dragging the orange dot.



Filter Graph:

Shows the Compressor's Key filters in orange.



Comp's HP & LP Filters in Orange

3.4 Leveler Section

A leveler is used to maintain constant levels over long segments of audio. Essentially, a leveler is a compressor set to very long attack and release times. A leveler can also be viewed as an RMS compressor. The leveler smoothly and transparently gain-rides any signal that exceeds its threshold, bringing it back down as close as possible to the desired target level (the threshold).

Controls



LVL: Turns on or bypasses the Leveler section.

Range: On, Off

Default: Off

THRESHOLD: Sets both the threshold above which leveling is applied and the target to which the audio signal is leveled.

Range: -48 to 0 db

Default: 0 db

RANGE: Sets the range of the Leveler's processing.

Range: 0 to 48 db

Default: 6 db

Meters and Indicators

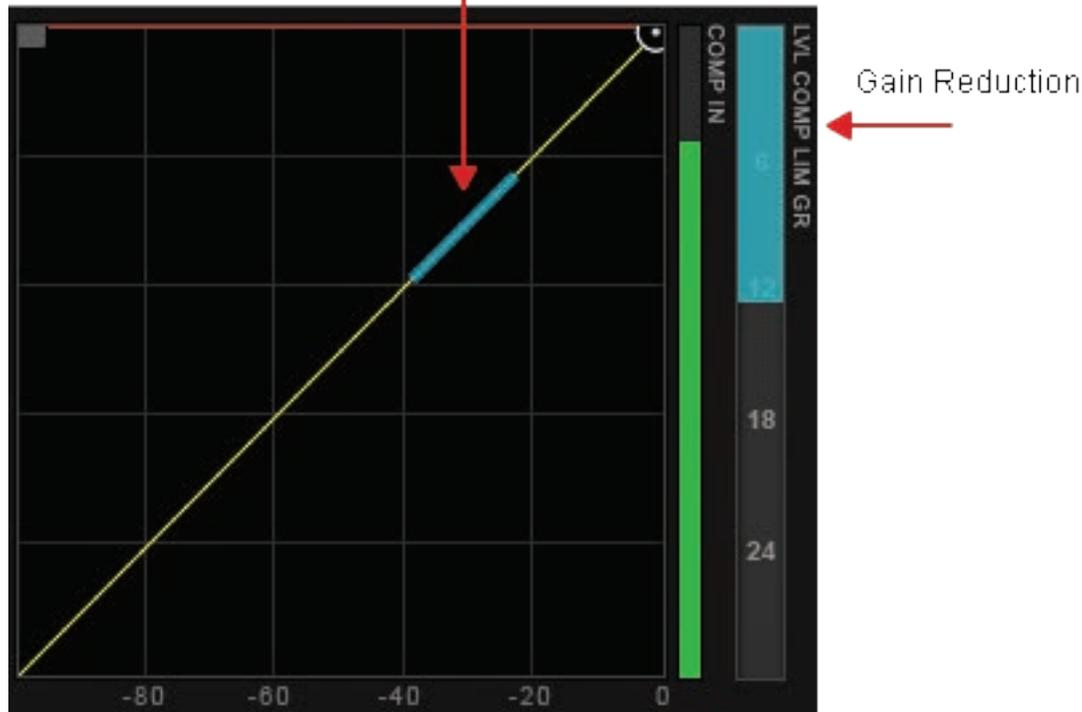
Input/Output Graph:

Shows the Leveler's range and threshold/target levels. Leveler shown as a light blue line.

LVL COMP LIM GR Meter:

Combined gain reduction meter for the Leveler, the Compressor and the Limiter. The amount of gain reduction introduced by the Leveler is shown in light blue.

Range and Threshold level



3.5 DeEsser Section

Controls



DeESSER: Turns on or bypasses the DeEsser section.

Range: On, Off

Default: Off

THRESHOLD: Sets the DeEsser's engagement level.

The DeEsser's threshold uses adaptive sensing to provide more natural results.

Range: -48 to 0 db

Default: 0 db

TYPE: Sets the band type – high-pass or band-pass filter.

Range: Shelf  Bell  Notch 

Default: Shelf

FREQ: Sets the roll-off start point for a high-pass filter or the center frequency for the band-pass filter.

Range: 16 to 21357 Hz

Default: 4490 Hz

RANGE: Sets the amplitude of the DeEsser's processing.

Range: -12 to 0 db

Default: -6 db

PREVIEW: Lets you audition the DeEsser's filter.

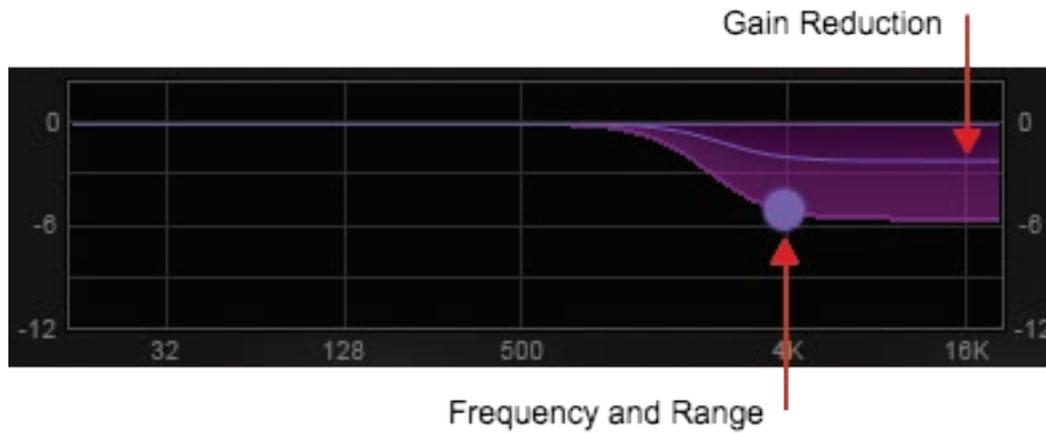
Range: On, Off

Default: Off

Meters and Indicators

Filter Graph:

Shows the DeEsser's type, frequency, range and DS gain reduction in purple. Frequency and range can be adjusted by dragging the purple dot.



Note: The DeEsser's attenuation is not reflected in the Combined Gain Reduction Meter.

3.6 Limiter Section

Controls



LIM: Turns on or bypasses the Limiter section.

Range: On, Off

Default: Off

THRESHOLD: Sets engage level for Limiter.

Range: -48 to 0 db

Default: 0 db

RELEASE: Sets how fast the Limiter reduces the processing after the signal falls below the Threshold. This function utilizes adaptive technology, which means that release time adjusts automatically to the Release range value.

Range: 0.1 to 1000 ms

Default: 100 ms

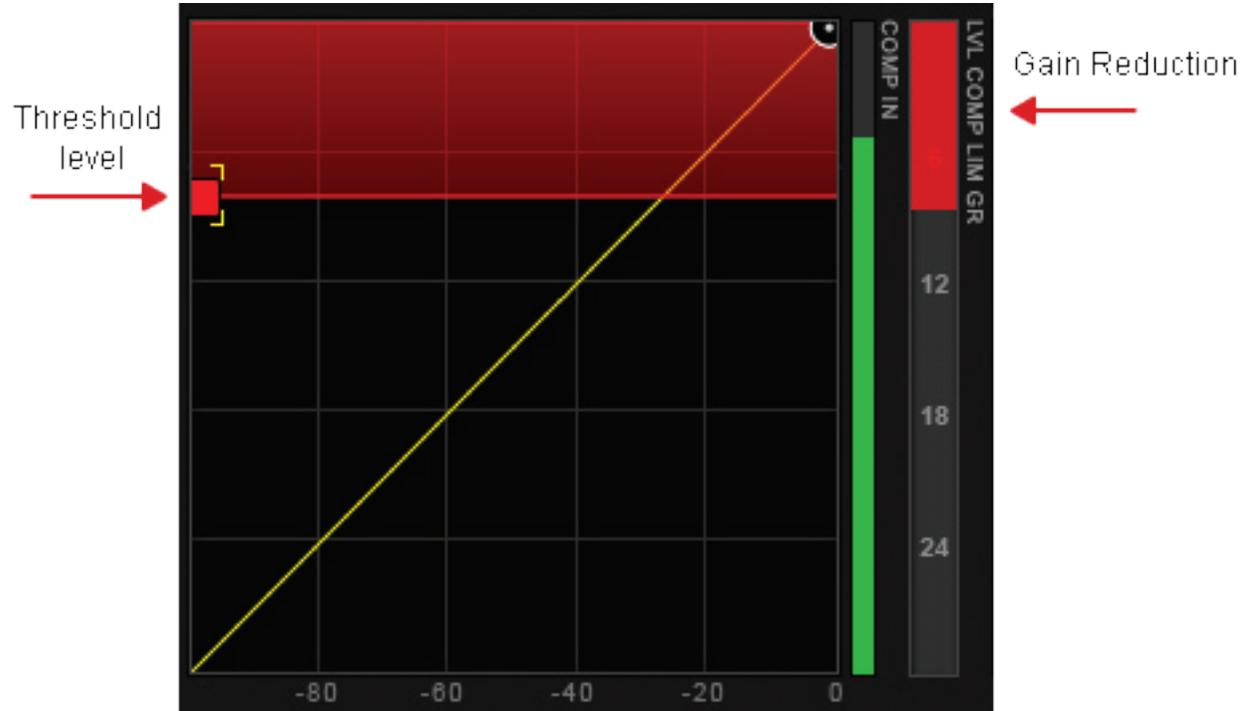
Meters and Indicators

Input/Output Graph:

Shows the Limiter's Threshold level. Limiter shown as a horizontal red line.

LVL COMP LIM GR Meter:

The Limiter's gain reduction meter. Shows the amount of attenuation introduced by the Limiter in red.



3.7 Other Meters and Controls

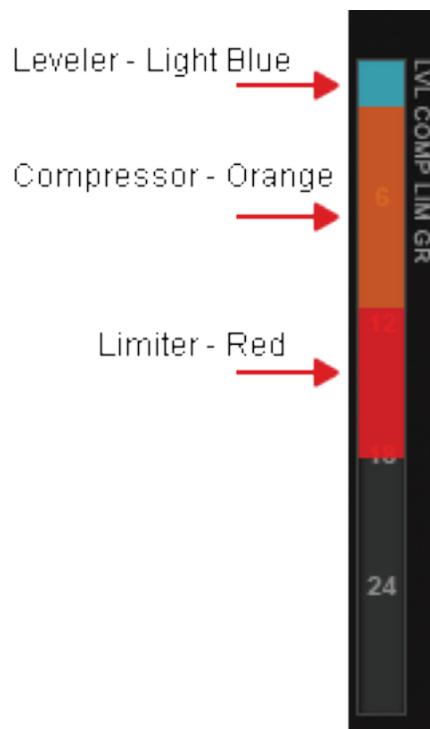
Makeup Gain



The Makeup Gain control is used to compensate for the gain reduction introduced by the multiple dynamic tools. Make sure you don't clip the Output meter when boosting Makeup Gain.

Range: -18 to 18 db

Default: 0 db



Combined Gain Reduction Meter

The Combined Gain Reduction Meter shows in one unified view the gain reduction introduced by the Leveler, the Compressor, and the Limiter.

This meter does not reflect the gain reduction introduced by the DeEsser and the Gate.



Output Meter

The Output meter shows the final output level produced by eMo-D5. You see a single meter for the Mono component, two meters (Left and Right) for the Stereo component.

The Output meter features the Peak Led as well.

3.8 eMo-D5 Block Diagram

