

OWNER'S MANUAL

**LOPTROTTER**  
**AUDIO ENGINEERING**

**EMPEROR**  
**L I M I T E R**

LIMITER

# EMPEROR

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## *Table Of Contents*

1. Introduction
2. Installation
3. Signal Path
4. Controls - Front Panel
5. Getting Started

## *Introduction*

Thank you for choosing Looptrotter EMPEROR LIMITER. This two channel single band limiter is in fact a three-in-one device. The compressor, limiter or saturator depending on how you use it - has been designed to add colour and liveliness to your audio tracks, individual instruments, whole sections (subgroups/submixes) or it can be your „Magic Box“ on mixing bus. Thanks to separate WET and DRY knobs, it is up to you whether you add a little bit of EMPEROR's „touch“ to your audio, or run your signals 100% through it's processing path.

Please be aware that this is not a colourless, transparent limiter. EMPEROR uniquely enhances apparent loudness, warmth and presence, depending on how much DRIVE you use to feed the Processor.

Nevertheless, EMPEROR LIMITER is a precise device, in terms of control and operation. All buttons and knobs control digital potentiometers and switches, while Processor's signal path remains 100% analog. So you get the best from both worlds - digital control over analog processing - and no longer worry about servicing worn out analog knobs and switches.

The digital potentiometer's resolution is up to 1%, and the LINK button allows you to maintain the same exact settings for both channels. When the LINK button is on, only left channel section is active and it controls both channels.

# EMPEROR

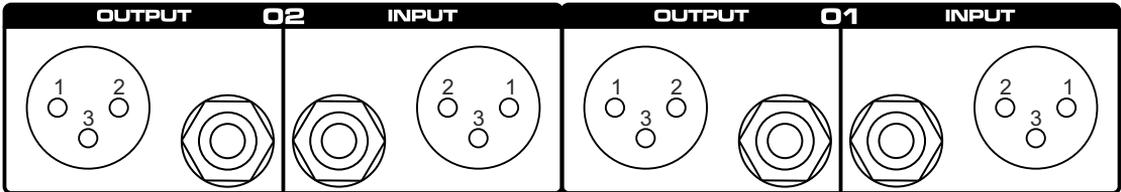
## Installation

Looptrotter EMPEROR LIMITER is factory set to the correct mains voltage for your country. Please check the voltage setting on the rear panel.

With the power button switched off, connect the IEC mains cable to a 50/60 Hz AC source of the voltage typical for your country.

You can use either XLR or TRS balanced input/output slots. Connect the signals to the 3 pin XLR or TRS slots on the rear panel:

XLR:	TRS:
PIN 1: ground	Tip : Hot(+)
PIN 2: positive	Ring : Cold(-)
PIN 3: negative	Sleeve : GND



## Signal Path

The input signal goes to the input amplifier, next it is split into the DRY (unprocessed) path and the WET (Processing) path. The Processor Path is fed by DRIVE potentiometer, which directs the signal into the Limiter Circuit. As the signal achieves Limiter's threshold, the analog Voltage Controlled Resistor - Attenuator starts to work. The more DRIVE it gets, the stronger processing will occur.

The Processor's sidechain has two EQ swithes:

1. Low freq attenuator and
2. High freq boost.

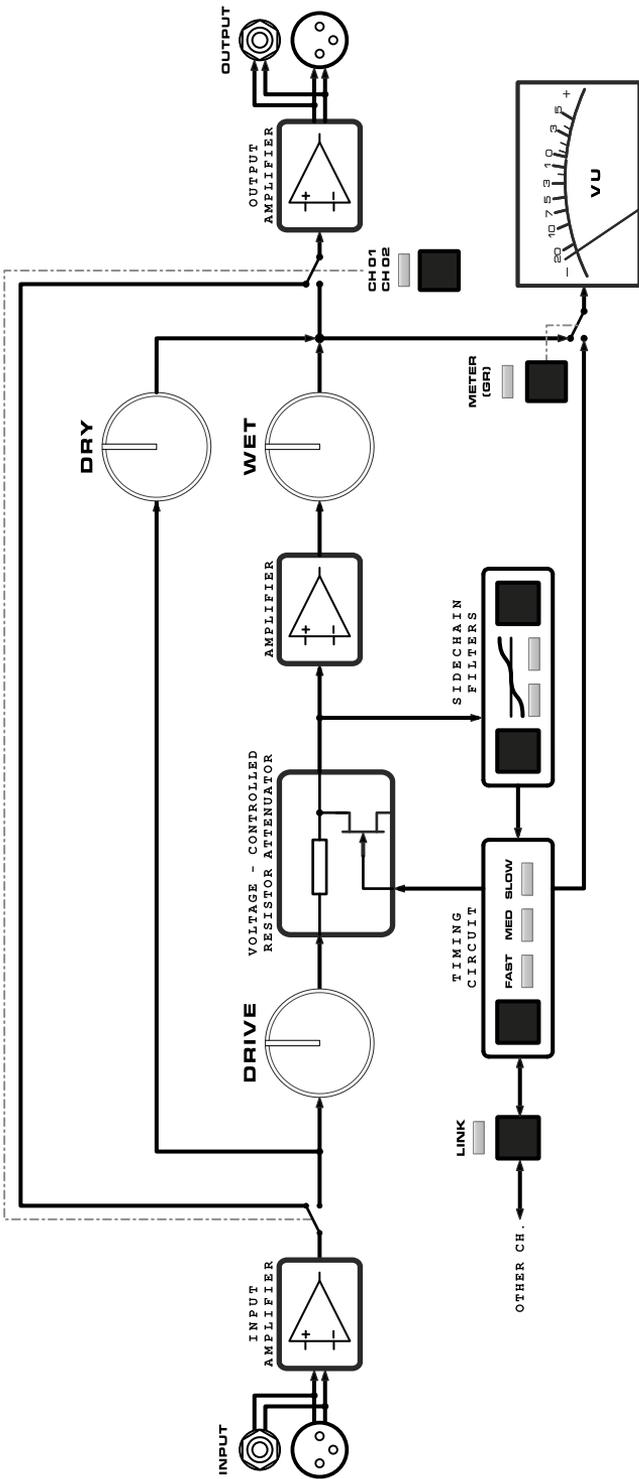
1. Low frequency shelf attenuator dips low frequencies from the sidechain signal, so the EMPEROR can act more transparently and naturally on bass and signals with lots of low frequency information (eg. kick drums, bass guitars, drum loops etc.) With this option set to ON, processor's behaviour would be less affected by low frequencies, allowing you to give your signal more processing and preserve low frequencies energy and dynamics.

2. High freq boost gives additional amount of high frequencies to the sidechain signal, allowing EMPEROR to become high frequency sensitive. This means that you can apply more processing to unwanted hiss on vocal tracks (and achieve a de-esser - like result) or attenuate harshness on overhead microphones.

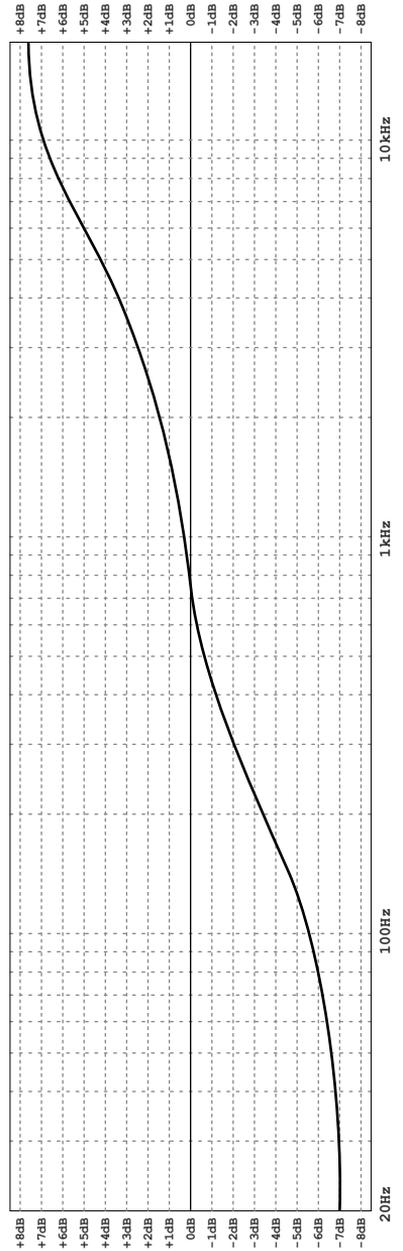
TIMING CIRCUIT: EMPEROR LIMITER has three timing circuit settings: FAST, MED and SLOW.

These settings change both attack and release time of the Processor. Slower attack/release times will save the transients on signal's attack and smooth the transition that occurs when the signal dips below the threshold. It is especially useful for material with frequent peaks. Fast attack/release time makes EMPEROR LIMITER behave more like limiter but with extreme DRIVE setting it will lead to signal saturation and audible harmonic distortion.

After processing, wet signal is amplified and goes into WET levelling section. This section is controlled by WET potentiometer. At the same time, dry signal goes into DRY levelling section, where you can set how much dry signal you want to combine with wet signal. In the end, mixed signal goes to the output.

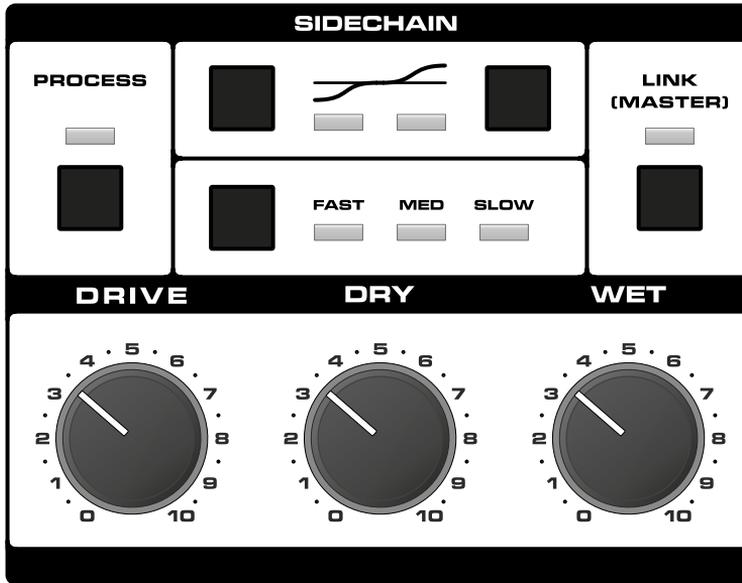


## SIDECHAIN FILTERS



# EMPEROR

## Controls - Front Panel



**PROCESS** turns signal processing on and off.

**SIDECHAIN** the Sidechain buttons shape the signal that controls the Limiter.

With **Low Shelf** engaged, it dips low frequencies allowing the device to process bass instruments such as kick drum or bass guitar without distorting and overpumping low frequencies of the input signal.

**High Shelf** button boosts high frequencies of the sidechain signal and makes EMPEROR to act like an analog de-esser or a very fast compressor for bright dynamic instruments.

**TIMING CIRCUIT** - Below you will find EMPEROR's Timing Circuit button. Cycle through to switch between three factory attack/release settings:

**FAST:** sets Processor's attack and release times to the fastest settings, making it behave like a limiter. With this setting on, it is more likely to get rich, dense saturation of the input signal.

**MED:** makes EMPEROR to act like a fast compressor.

**SLOW:** this setting makes the processor behave more like an analog compressor rather than limiter.

The **LINK** button puts the Processor in stereo operating mode, to preserve exact same settings for both left and right channels. When the LINK button is on, only left section of the EMPEROR's controllers is active.

**METER** switches the indicator modes. When the LED is lit the indicator is in gain reduction mode. When the LED is not lit the indicator shows the output signal level. 0db on the indicator equals +4dbU on the device's output.

# EMPEROR

**DRIVE** - this knob controls signal level that goes to the Processor. Increasing the input will result in more processing (depending on the settings of the other parameters). The available range is 0 - 10. The knob is also the primary saturation controller. At lower settings, apparent loudness is not as dramatic but processing still occurs, producing a richer sound with minimal reduction of dynamic range. As DRIVE is increased, the sound becomes more saturated with "sonically pleasing" distortion and perceived loudness.

**DRY** - sets the amount of an unprocessed signal fed to EMPEROR's output. The range is 0 - 10.

**WET** - sets the amount of processed signal that goes to device's output. The range is 0 - 10. These two knobs determine the balance between the original and the processed signal.

## *Getting Started*

As a starting point for general enhancement, set EMPEROR's DRIVE knob to 5 with Low Shelf engaged and FAST release time. Set DRY knob at 10 and WET at 4. These settings offer good results under most conditions, producing more presence with a warmer sound and enhanced detail (especially with lower frequencies), while retaining the apparent dynamic range of the original signal.

The most natural warmth and tube-style distortion can be obtained with DRIVE at 6, with MED release time, and both EQ shelves disengaged. Set DRY at 10 and WET at 6.

More overdrive may be obtained by setting DRIVE at 8 and with FAST release time, also often with Low Shelf on. Set DRY controller at 10 and start to increase WET output level until you achieve desired amount of distortion.

For optimum results make sure the source signal is not clipped before it arrives at the EMPEROR's input.

Set WET at 10 and DRY at 0 in order to hear the full affect of the EMPEROR's process. Increase DRY when blending in the original signal is desired.

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# EMPEROR

Artist:.....

Track:.....

Instrument:.....

Sesion:.....

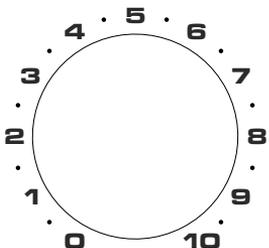
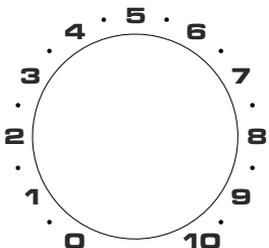
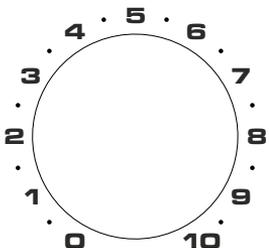
Date:.....

Notes:.....

**SIDECHAIN**

<b>PROCESS</b> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>LINK (MASTER)</b> <input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <b>FAST</b> <input type="checkbox"/> <b>MED</b> <input type="checkbox"/> <b>SLOW</b>	

**DRIVE**                      **DRY**                      **WET**

		
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