COMPRESSOR
MKII

USER MANUAL

empress
effects

Introduction

When we released our original Compressor back in 2011, it quickly became a favourite among guitar and bass players alike who were searching for something more than the typical oversimplified controls found on most compressor pedals. Now, based on our users' valuable feedback, we've taken everything great about our original Compressor and made it even better.

On top of the full range of features and controls normally only seen in high end studio equipment, such as input and gain reduction metering, independent attack and release controls, a mix knob for parallel compression, and an external sidechain insert, we've now added a 'tilt' tone eq control, and a selectable sidechain high pass filter built into the Compressor's detection circuit. Oh, and the whole package is now half the size. Who doesn't love a small package?!

We hope the Compressor MKII becomes a favourite of yours as well, and sincerely thank you for choosing Empress Effects.

- Steve Bragg

Quickstart

Added Control: Here's a good starting point for adding consistency and sustain to your playing while retaining dynamics. Adjust the input level so the gain reduction meter shows 8dB of gain reduction when playing your loudest.

Chicken Pickin': This one provides a nice compressed country sound. Adjust the input for 10dB of gain reduction when playing your loudest.

Transparent Compression: This will give you nice dynamic control to level out your playing. The 2:1 ratio is very transparent. It won't really sound compressed as much as just sweeter overall.
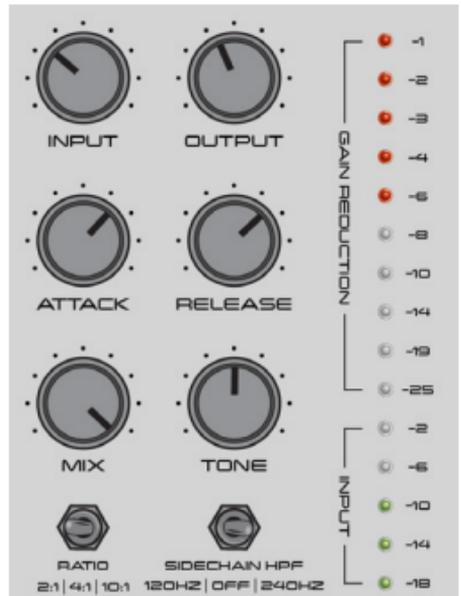
Limiter: This setting will eat up your pick attacks and create a smoother sound. You'll also get lots of sustain out of this.

The Basics of Compression

Compression can add consistency and sustain to your playing or it can be used to add note definition and other effects. It essentially narrows the difference between high and low audio levels by reducing the gain of any signal over the threshold.
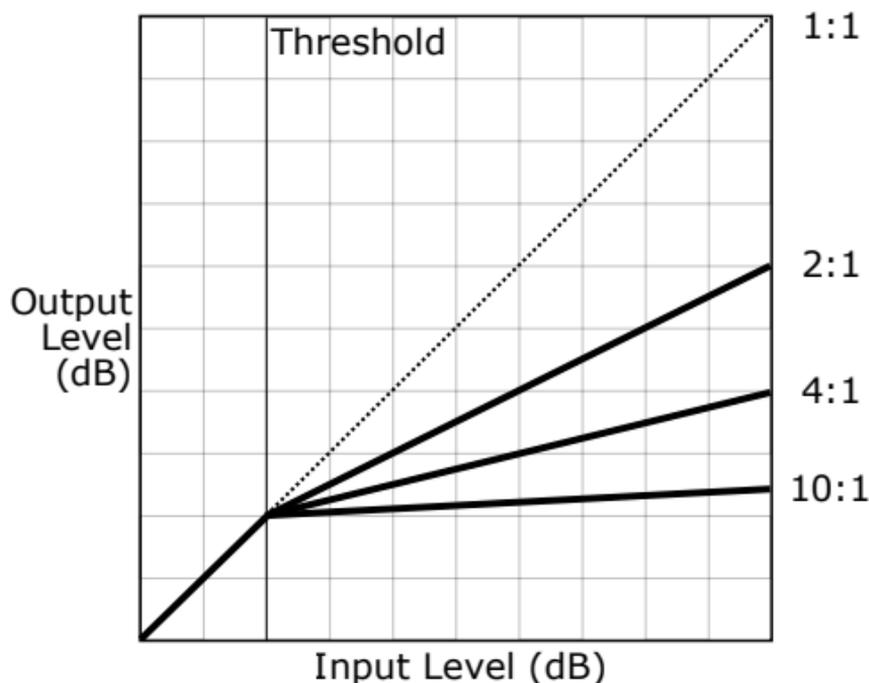
The **ratio** determines how much gain reduction will be applied to the signal once it crosses above the threshold. At a 4:1 ratio, for every 4dB of input signal above the threshold, there will be 1dB of output signal. A 10:1 ratio would output 1dB for every 10dB of input signal, etc.

Controls at

input: sets the level entering the compressor circuit. Higher levels result in more compression.

attack: controls how quickly the compressor will reduce the gain when an incoming signal exceeds the threshold. Attack time increases as you turn the knob clockwise.
Range: 50μs - 50ms

mix: controls the level between the dry signal and the wet (compressed) signal. All the way clockwise is 100% wet signal and all the way counterclockwise is 100% dry signal. Blending in the dry signal brings back the dynamics that can be lost during compression. This technique of parallel compression allows for added sustain without losing the life associated with an uncompressed signal.

ratio: determines how aggressive the gain reduction is.

2:1 - good for gentle gain control. Very transparent.

4:1 - a great general purpose setting. Still transparent but offers a large range of compression.

10:1 - heavy compression. Close to limiting.

t a Glance

output: sets the output level. This will not affect the amount of compression. Can be used to make up gain lost in compression or as a boost for soloing.

release: controls how quickly the compressor returns to its initial level. Release time increases as you turn the knob clockwise. **Range:** 50ms - 1s

tone: a 'tilt' style tone control centered at 500Hz. Turning clockwise will boost treble and cut bass. Conversely, turning counter-clockwise will cut treble and boost bass.
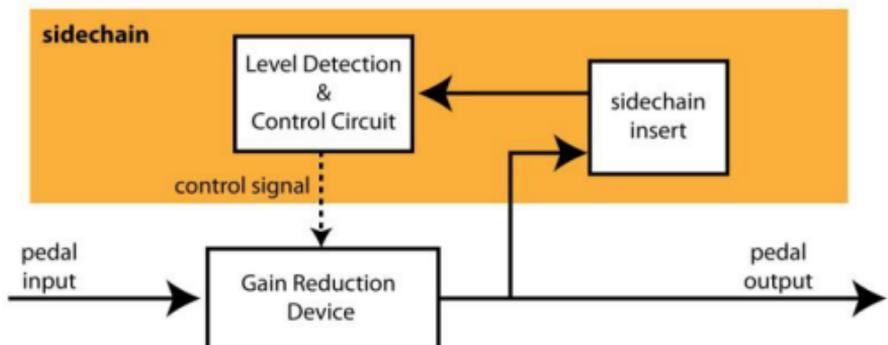
sidechain hpf: a high pass filter that cuts low frequencies going to the gain reduction control circuit. Helps to avoid excess compression, especially on bass.

bypass stompswitch: when the LED is shining, the compressor effect is applied to the signal. When off, the compressor is being bypassed (true bypass).

Attack controls how quickly the gain reduction will begin after a signal has crossed over the threshold. **Release** controls how long it takes for the Compressor's gain to return to its initial level after the signal drops below the threshold.

Sidechain

The **sidechain** is the Compressor's level detection circuitry. Based on the signal sent to it, it will determine how much gain reduction is applied. Typically that signal is a copy of the input signal, taken from some point in the audio path. In our case it's taken after the gain reduction has occurred, which is known as 'feedback' style compression. It can be very useful to alter the sidechain signal in order to tailor how the compressor reacts.

Sidechain High Pass Filter

The **sidechain hpf** (high pass filter) switch can be engaged to avoid triggering the compression with high energy notes in the lowest octave, which helps avoid over-compressing and keeps the low frequencies sounding full while still controlling errant high notes that pop out.

Sidechain connector jack

The **sidechain connector jack** on the back of the pedal allows you to alter the sidechain signal by inserting an external device, such as an EQ. You can also have an external audio source trigger the compression by sending audio in through the ring of the sidechain jack.

The sidechain connector accepts a 1/8" TRS plug: Tip = send, Ring = return, Sleeve = ground.

Parallel Compression

The **mix** knob on the Compressor MKII allows for parallel compression. Parallel compression is achieved by blending a compressed audio

signal with the uncompressed version of itself. It opens up a ton of possibilities. A great use of parallel compression is to really squash the compressed signal (so it sounds way too over compressed), then use the mix knob to blend in some of the uncompressed signal. The result is very natural sounding, but feels a lot more exciting, with more sustain and retaining a good attack. Try experimenting with it!

Setting the bypass state on startup

To change whether the Compressor starts up in the engaged or bypassed state, hold down the stompswitch while powering on the Compressor. The first red gain reduction led will flash to let you know you are in the advanced configuration mode. Press the stompswitch to toggle between states:

gain reduction led 1 = bypassed at startup

gain reduction led 2 = engaged at startup

When finished, press and hold the stompswitch for 2 seconds to confirm and save your selection, and exit advanced configuration.

Specifications

Input Impedance:	1MΩ
Output Impedance:	2.2kΩ
Frequency Response (-3dB):	20Hz - 20kHz
Distortion:	<0.1%
Noise:	-101dB
Headroom:	+15dBu
Input Voltage:	9VDC
Required Current:	100mA
Power Input Connector:	2.1mm Barrel Connector
Height (enclosure only):	1.5"
Height (including controls):	2.5"
Length:	4.8"
Width:	2.6"
Weight:	1lbs

Powering the Compressor MKII

Go to www.empresseffects.com/power for a full list of compatible power supplies.

Please note: The Empress Compressor MKII requires at least 100mA of current to function properly. Any power supply rated at 9V DC, supplying negative tip polarity and at least 100mA of current should work.

Legal Stuff