



ParaEq



user manual

Introduction

The Empress ParaEq is designed to be a tool for sweetening the tone of any instrument. We've noticed that the EQ sections of many instrument amplifiers offer a very limited range of control. We've designed the Empress ParaEq to give musicians a powerful, musical, high quality EQ in a conveniently small package. The signal path of the ParaEq is comprised of the highest quality components chosen for their transparency, powerful tone shaping capabilities, and low operating noise. With the Empress ParaEq, your instrument will still sound like your instrument, only better.

To help you get the most out of this product, we've put some brief instructional videos on our website:

www.empresseffects.com

Enjoy,

Steve Bragg

Sample Applications

General Sweetening: Say you really like the tone of your guitar but find it could be a little brighter with a more high end detail. With the ParaEq, adding a small boost in the range of 3 kHz to 5 kHz with a wide Q will add a bit more detail, while still retaining the sound of your instrument. In a similar manner, adding a wide Q boost to the low frequency range will warm up your instrument's sound.

Tone Correction: Say you've set your amp up in a venue and find that the acoustics of the stage are making it sound too boomy. By cutting some of the frequencies in the low mids (200Hz – 600Hz) with a medium width Q, you can minimize the negative effects of the room acoustics on your sound.

If you find your guitar isn't cutting through the rest of the band, you can boost the upper mid frequency range (1 Hz –4 kHz) instead of simply turning up the volume of your amplifier, which could lead to you just drowning out the rest of the band.

Feedback Zapping: With a DI'ed acoustic instrument, playing live at stage volumes can sometimes be a nightmare. Feedback through monitors can quickly ruin a great performance. By using the ParaEq's mid and hi frequency bands and narrow width Q settings you'll be able to cut the frequencies causing the feedback while retaining much of your instrument's sonic signature. The narrow width Q setting ensures the range of frequencies being reduced is very small preventing your instrument from sounding dull or muddy.

Distortion Enhancement: Having the ParaEq before your amplifier lets you use it to shape your distortion sounds in radical ways. For example, if you want the treble of your signal to distort a little more you can boost the high frequency band before it reaches your amplifier. This lets you add a little sonic slicing capability to your sound without muddying up your bottom end. The boost control on the ParaEq is a great way to push an already cooking tube amplifier into musical overdrive.

Q Controls

The Q is a measurement of how much the EQ band affects a range of frequencies.


Tight or Narrow Q (Λ): This setting is best for attacking problems. For example, if you have an acoustic instrument feeding back, a tight Q will allow you to cut the offending frequency without affecting the frequencies around it.


Medium Q (∩): This setting is great for general tone shaping. Most equalizers in instrument amplifiers are medium Q. Try using this setting to cut frequencies in the 300Hz-400Hz range if your amp is sounding a little muddy, or boosting in the 1 kHz-5 kHz range if your guitar is a little dark.


Wide Q (∪): Wide Q settings are best when you want a really transparent change to the signal. For example, boosting at around 100Hz can add a bit of warmth, and a little boost in the 3k range can add detail and definition, all while retaining the original tone.

Controls a

low q, mid q, hi q: the q switches determine the range of frequencies affected by the equalizer on each band.


Wide q () will affect a wide range of frequencies around the selected frequency. q = 0.5 affects about 2 octaves

Medium q () will affect some frequencies around the selected frequency. This is a good place to start for general tone shaping. q = 1.5 affects about 2/3 octave

Narrow q () will only affect a very narrow range of frequencies around the selected frequency. q = 3 affects about 1/3 octave

There is a q control for each of the three frequency bands available on the ParaEq w/Boost.

lf, mf, hf: selects the center frequency around which you'd like to boost or cut for each band.

Power: +  -
tip 2.1 mm jack. /



Boost Stompswitch: Toggles on/off the boost section of the unit. When the LED is shining, the boost is applied to the signal.

at a Glance

9V DC negative
75mA or greater



Input Pad: lowers the level at the input of the pedal. Start with this switch at 0 dB (no reduction in input level) to maximize the signal-to-noise ratio of the unit. If you hear distortion when using the pedal try lowering the input signal level by moving the input pad switch to the -6 dB or -12 dB setting.

Boost: controls the output level. It is a clean boost, perfect for providing gain before an effects chain to minimize noise or to overdrive the input of a tube amp. The available boost ranges from 0 dB to +30 dB and is toggled on/off with the boost stomp switch.

note: there will be no boost when the ParaEq is bypassed

Gain: determines the amount of boost or cut applied to frequency band. At the 12:00 setting there is no boost or cut applied. The range of boost or cut available for each frequency band is -15 dB to +15 dB.

Bypass Stomp switch: When the LED is shining, the ParaEq effect is applied to the signal. When off, the ParaEq is being bypassed (true bypass).

Frequency Region Descriptions

Here's a rundown of different frequencies that should be helpful when using the ParaEq to achieve a specific end result.

Electric Guitar

80Hz – 150Hz: Boosting can add a subtle warmth and bigness to the sound. Cutting can bring down any rumble you're experiencing.

150Hz – 400Hz: Cutting in this region can remove a bit of mud, and boosting will bring out the warmth.

400Hz – 800Hz: Cutting in this region can make the sound more pristine. Boosting will add an aggressive edge to the sound.

800Hz – 2kHz: Boosting in this region will bring out the twang in your sound. Cutting will create a rounder, less aggressive tone.

Above 3kHz: Boosting in this region can add brightness and sheen. Cutting in this region can minimize noise and reduce harshness.

Bass Guitar

30Hz – 80Hz: The sub-bass region. Be careful when boosting in this range; your speakers might not be happy if you boost too much.

80Hz – 150Hz: The bass region. Boost and cut in this region to change the amount of bass in your sound.

150Hz – 500Hz: If your bass sounds too muddy, try cutting in this region. If it needs a little warmth, try boosting in this region.

500Hz – 900Hz: Boosting in this region can add mid-range growl to your tone. Cutting in this region can make things clean and pristine.

900Hz – 3kHz: Boosting in this region can bring out attack. Cutting in this region can help create a rounder tone.

Above 3kHz: Cutting can bring down the noise without much effect on the signal. Boosting can add a sense of air and space.

DI'd Acoustic Guitar

35Hz – 100Hz: Cutting in this region can help reduce rumble.

100Hz – 200Hz: This range is primarily responsible for the boominess of your acoustic guitar. Cutting or boosting here can help with low end projection.

400Hz – 500Hz: Boosting in this range can bring out warmth. Cutting in this range can help remove mud in your sound.

500Hz – 4kHz: This broad slice of the sonic spectrum is where most of your acoustic signal lives. Boosting here will make your guitar sound more aggressive, while cutting will help mellow it out.

4kHz – 8kHz: The brightness of your acoustic lives in this region. If your instrument sounds like you're hearing it through a wall, boost in this range. Cutting in this range will remove harshness.

5kHz and Above: Boosting in this range will bring out air in your sound, and cutting will reduce noise. Beware of feedback though!


Adjustable Power Supply Feature

The operating voltage of the Empress ParaEq is adjustable via an internal DIP switch. You can access this switch by removing the back plate. The ParaEq is initially setup to run from a 9V negative tip supply, such as the popular Boss PSA-120. However, the unit will accept voltages between 9V and 24V DC, provided the power supply is negative tip. For maximum headroom, use a supply that operates in the 18V-24V range, and is rated for a current of at least 130mA.

Here are the DIP settings for the various voltages:

Voltage	Dip 1	Dip 2	Dip 3
9V – 11V	ON	Off	Off
12V – 17V	Off	ON	Off
18V – 24V	Off	Off	ON

Specifications

Input Impedance:	500k Ω
Output Impedance:	510 Ω
Frequency Response (-3dB):	20Hz – 20kHz
Distortion:	0.09%
Noise:	-104dB
Input Voltage:	9VDC-24VDC + 
Required Current:	75mA (9V - 11V)
	95mA (12V – 17V)
	130mA (18V – 24V)
Power Input Connector:	2.1mm Barrel Connector
Height (enclosure only):	1.5"
Height (including controls):	2"
Length:	3.5"
Width:	4.5"
Weight:	1lbs

www.empresseffects.com