



## 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.

Enjoy,

A handwritten signature in black ink, appearing to read 'Jason Fee', with a stylized flourish at the end.

- Jason Fee

## 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 ( 1kHz –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 instruments 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 (  $\wedge$  ):** 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 (  $\bigwedge$  ):** 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 (  $\frown$  ):** 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 (  $\wedge$  ) will affect a wide range of frequencies around the selected frequency.  $q \approx 1$  affects about 1.5 octaves


Medium q (  $\cap$  ) will affect some frequencies around the selected frequency. This is a good place to start for general tone shaping.  $q \approx 2.5$  affects about 2/3 octave

Narrow q (  $\Lambda$  ) will only affect a very narrow range of frequencies around the selected frequency.  $q \approx 4$  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.

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

**Power:** + -  - 9V  
tip 2.1mm jack. 85mA



## at a Glance

9V - 18V DC negative  
mA 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.

**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 and buffered bypass available. see advanced configuration).

## 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!

## Advanced Configuration

**Entering the advanced configuration:** Unplug the power from the ParaEq. Plug the power back in while holding down both the tap and bypass stomp switches. The LEDs should flash momentarily to confirm that you are in the advanced configuration.

**Modifying the advanced configuration:** To toggle between true bypass and buffered bypass use the bypass stomp. The bypass led will display which mode you are in:


LED off = true bypass(default), LED on = buffered bypass.

To toggle between normal bypass mode and independent bypass mode use the boost stomp switch. With independent mode you can apply boost without having the equalization engaged.

Boost LED off = normal (default), Boost LED on = independent

**Exiting the advanced configuration:** Hold down both the tap and bypass stomp switches. The bypass LEDs will blink momentarily to confirm the ParaEq has exited the advanced configuration.

## Specifications

Input Impedance:	1M $\Omega$
Output Impedance:	510 $\Omega$
Frequency Response (-3dB):	5Hz – 40kHz
Distortion:	0.0063%
Noise:	-107dB
Input Voltage:	9VDC-18VDC 
Required Current:	85mA
Power Input Connector:	2.1mm Barrel Connector
Height (enclosure only):	1.5"
Height (including controls):	2"
Length:	3.5"
Width:	4.5"
Weight:	1lbs

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