



# tremolo



user manual

# Introduction

The Empress Tremolo is an original design built from the ground up to include innovative features without sacrificing tone. The audio signal path is analog, but the tremolo effect is controlled digitally via opto technology.

We've included features never before seen on a tremolo, including tap tempo and rhythm features, that expand upon the basic effect increasing its functionality and ease of use.

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

[www.empresseffects.com](http://www.empresseffects.com)

Enjoy,

Steve Bragg

## Quickstart



Plug your guitar into the jack on the right side. Plug your amplifier into the jack on the left side. Set the mode switch to “tap tempo” and set the waveform switch to “tube”. Set depth to half, rate to 1:2, rhythm to 1 (all the way counterclockwise), and gain to one half. Now tap the tempo you would like using the tap stomp switch.

There’s your standard tremolo.

**Normal Mode:** The rate of the tremolo is controlled by the rate knob.

**Tap Tempo Mode:** The rate of the tremolo is set by tapping on the tap stompswitch twice. The ratio of foot taps to tremolo pulses is set by the rate/ratio knob. The tremolo averages the last 4 intervals tapped, so to get the most accurate tap tempo, tap the tap stompswitch 5 times.

**Two Speed Mode:** There are two separate tremolo rates that can be chosen from. Both rates are settable. The rate is set by the rate knob. Switching between tremolo rates is achieved by hitting the tap stompswitch.

**Depth:** The amount of tremolo effect applied to signal

**Rate/Ratio:** When in normal or two speed mode, this is the rate or speed of the tremolo effect. When in tap tempo mode, this sets the ratio of foot taps to tremolo pulses. For example, at a 1:2 ratio, the tremolo will do eighth notes when you tap quarter notes.

**Tap Stompswitch:** Used to set the rate of the tremolo effect when in tap tempo mode. When in two speed mode it's used to switch between speeds



Controls a

Power: + - tip 2.1mm jack

tap tempo | normal | two speed mode

9V

1:2

1:1

1:4

depth

rate | ratio (tap tempo)

trem

emp

hand

tap

## at a Glance

— 9V DC negative  
k. 30mA or greater



**Waveform Switch:** Three positions. The middle position is an asymmetrical waveform modeled after a sweet sounding vintage tube amp tremolo. The right position is a square waveform for your dance-type music. The left position is a triangle waveform that gives a “pulsey” sound.

**Gain:** The Empress Tremolo can deliver up to 6dB of gain. Set to a little less than one half for unity.

**Rhythm:** Here is a diagram of the eight rhythms with “0” being accented:

- 1) 0000 (normal tremolo)
- 2) 0x0x
- 3) 0xx0xx
- 4) 0xxx0xxx
- 5) 0xx0xx0x
- 6) 0x0x00x0x0 (this one is in 5/4)
- 7) 0xx0xx0x0x0x
- 8) 0xx0xx0xxx0x0xxx

**Bypass Stompswitch:** When the LED is shining, the tremolo effect is applied to the signal. When off, the tremolo is being bypassed (true bypass).

## Tap Tempo Mode

In tap tempo mode, use the tap stomp switch to enter a speed for the tremolo. The tremolo will change to the new speed after 2 taps and will average the speed of your last 4 taps. Use the ratio knob to multiply the tapped tempo by 1, 2 or 4.

## Two Speed Mode

In two speed mode, the tap stomp switch is used to toggle between 2 preset speeds.

**To set the speeds:** use the rate knob to set the first speed. Then press the tap stomp switch and use the rate knob to set the second speed. Once the two speeds are set, use the tap stomp switch to toggle between the two speeds. When the tap stomp switch is pressed, the tremolo will ramp from one speed to the next, much like a Leslie cabinet would when switching between fast and slow.

## Normal Mode


In normal mode, use the rate knob to set the speed of the tremolo. The tap stomp switch is not used.

## Rhythms

There are 8 rhythms available on the tremolo. Each rhythm consists of a series of accented and unaccented beats. Here are the 8 settings with '0' being accented and 'x' being unaccented.

- 1) **0000** (normal tremolo)
- 2) **0x0x**
- 3) **0xx0xx**
- 4) **0xxx0xxx**
- 5) **0xx0xx0x**
- 6) **0x0x00x0x0** (this one is in 5/4)
- 7) **0xx0xx0x0x0x**
- 8) **0xx0xx0xxx0x0xxx**

## Specifications

Input Impedance:	475k $\Omega$
Output Impedance:	250 $\Omega$
Frequency Response (-3dB):	6Hz – 30kHz
Distortion:	0.025%
Noise:	-104dB
Input Voltage:	9VDC – 12VDC 
Required Current:	30mA
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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