



Supa-Trem2®

((TRUE-STEREO))
TREMOLO / AUTOPANNER



Model # CS-ST2 v2

The original mono Supa-Trem 1 was an extremely successful pedal for me ever since it came out in 1998. The key to its great sound is due to the use of an Analog Devices brand JFET operational amplifier at its heart. Another ingredient to its success is my use of proprietary Optocouplers that I designed, and that are made exclusively for Fulltone. These Optocouplers have the optimal resistance range as well as the fastest rise and fall times available, allowing for rich tremolo performance at all speeds...not just the slower speeds.

Back in 2012 I started wondering what would happen if I took two completely separate Analog Tremolo circuits and joined them together! Not the fake-stereo used in all other Tremolo, Chorus, Phase, or Flanger pedals which merely inverts the signal at the output and sends it to another output! In designing that, the original Supa-Trem2 was born...it had two identical separate circuits in TRUE-STEREO, with two INs and two OUTs! It also had a beautiful sound when in Bypass thanks to those same JFET amps. The ST2 was the ideal device to place at the end of your chain, allowing you to run cables of extreme lengths without tone-loss. It is the ideal device to split a pair of amps with. The only caveat to the early ST2 was its size..they were LARGE.

But I fixed that, and now we have the **ST-2 V2**, which is everything the first ST2 is but less than half the size! It also improves with even better optocouplers, the new "Super Chop" Square Wave mode, and an external Tap-Tempo jack in case you want to put in in your studio or touring Rack.

Features:

100% analog audio paths, with a proprietary Digital Oscillator and Tap Tempo with speeds so slow that it takes 6+ seconds to pan between the outputs, or super-fast speeds in excess of 200bpm...

Discrete JFET on each input! The very first thing your guitar hits...and I love the way these JFETs feel and sound, especially on 18 volts.

True Half-Speed/Double-Speed function by holding down on the Tap Tempo switch for 3/4 of a second.

Phase Correlation Knob: a Fulltone exclusive allowing you to throw the outputs ANY degree IN or OUT of Phase with each other. You've never heard it and it's GREAT, with a hint of "naturally occurring" Harmonic Phase-shift as your guitar pans between the amps with knob set full OUT of phase. Or enjoy one massive throbbing Tremolo with no panning when knob set full IN-phase! Or then there's 12 o'clock, which is hard to describe. Look, even if you're not a huge tremolo fan, the ST2 is the most tuneful, and slowest AUTO-PANNER ever made so it is the ideal device for the foundation of a great stereo rig.

Instrument Volume Knob with 15db of available Boost... turn down the Mix control and this pulls double-duty as one of the finest Clean boosts ever.

3-way Waveform switch:

- (1) SINE WAVE for your everyday natural Tremolo sounds.
- (2) Super-Chop SQUARE WAVE: for brutally abrupt and choppy at any speed even with hi-gain amps.
- (3) WARBLE: my favorite, and not on any other tremolo pedal. I analyzed vintage univibe waveforms as well as vintage Leslie rotating speakers and got a waveform so organic and rollicking that you will not want to stray too far from this setting.

There's nothing that approaches the Fulltone ST2 v2, may it become a part of your sound for years to come!

Regards,

CS-ST2 v2
Manual Version 1.0



Supa-Trem2[®]

MODEL CS-ST2 V2



ON/OFF footswitch: (see #1 on above diagrams) When pedal is ON, the LED (#4) will be lit. The ST2v2 has Hi-Resolution JFET buffered-bypass which will still drive long cable lengths, even when turned OFF. I recommend placing the ST2 late (or last) in your chain of pedals. The VOLUME knob will not be active when the pedal is turned OFF, but you will still see the speed LED's (#6) flashing to the RATE you have chosen. This allows you to set up your desired Tempo when the pedal is turned off.

VOLUME knob: (#3) Controls the Level when the pedal is turned ON, only. **CLEAN BOOST TRICK:** Turn the MIX knob full counter clockwise (CCW) and you can use the ST2 as a clean boost pedal, getting as much as 15dB boost when pedal is turned on, depending on where you set the VOLUME knob.

RATE knob: (#7) This knob controls the RATE (speed) of the modulation along with the TAP TEMPO footswitch. Any changes made using the RATE knob will cancel the rate chosen by the TAP TEMPO switch. Consequently, any changes made using the TAP TEMPO switch will cancel the rate chosen by the RATE knob.

RATE LEDs: (#6) These LEDs flash with the chosen tempo whether the pedal is ON or OFF. This allows syncing the pedal's tempo to the song's tempo while the pedal is ON or OFF, a crucial feature for live performing. These LED's will flash either opposite each other or in unison, depending on where the PHASE CORRELATION knob (#8) is set.

PHASE CORRELATION knob: (#8) Changes to the settings of this knob are only audible when you are running the in stereo. This proprietary feature allows any degree of relative phase between the two tremolo circuits in the ST2. With this knob turned full CCW, the LEDs will flash in unison showing that the ST2's outputs are "in phase." Your amps will both modulate in unison with no panning effect between them. If you turn this knob full CW the LEDs will flash opposite each other, making the outputs "out of phase," and you will experience 3D-like True-Stereo imaging and autopanning. The real magic happens when you choose a setting somewhere in-between CW and CCW, this feature does not exist on any other stereo device in the world and can make for awesome live and recorded performances!

WAVEFORM toggle switch: (#9) There are three selectable waveforms on the ST2. **SINE** is for your everyday natural Tremolo sounds. **SQUARE** is for complete ON/OFF Super-Chop Square Wave at any speed even with hi-gain amps. **WARBLE** is not on ANY other tremolo pedal and is my favorite. I analyzed vintage univibe waveforms as well as vintage Leslie rotating speakers and got a waveform so organic and rollicking that you may not want to stray too far from this setting.

TAP TEMPO footswitch: (#2): There are 2 ways to set the tempo on your ST2. First way is by rotating the RATE knob (#7) to desired speed and the second (using your foot) with the Tap Tempo switch. The easiest way to use this is to simply tap 2 beats of the desired cadence on the footswitch, you only need 2 taps to set the RATE.

DOUBLE / HALF SPEED tap feature: You can double or halve the speed by holding down on the Tap Tempo footswitch for 3/4 of a second. You will stay in perfect tempo with the music as this is an extremely precise division of time.

MONO RIGHT (R) INPUT JACK: (#10) Connect a (shielded 1/4" mono) cable from your guitar into this jack. The unique design of the ST2 allows for True-Stereo output even when going in to this pedal mono.

LEFT (L) INPUT JACK: (#11) Connect a (shielded 1/4" mono) cable into this jack only if you are placing the ST2 after another effect that has stereo outs. Because the ST2v2 has two completely separate Tremolo circuits inside, you will retain the True-stereo nature of your signal-chain whether the pedal is ON or OFF.

MONO RIGHT (R) OUTPUT JACK: (#13) Use this jack for mono operation, plug a (shielded 1/4" mono) cable from this going on to the input of subsequent effects or to your amplifier.

MONO LEFT (L) OUTPUT JACK: (#14) Connect a (shielded 1/4" mono) cable into this jack if you are going in to another effect that has stereo inputs or if you are running stereo into amplifiers.

Warning! Running multiple amps can be dangerous or even fatal if you are not knowledgeable on how to properly ground all of the equipment involved, especially if there is a Microphone/PA system that you will be using at the same time! Although I cannot recommend the use of a "ground-lift" adapter, using a 3 to 2 plug adapter (on only one of the amplifiers and sometimes even the pedalboard) is something that is done by many people, who find that it can alleviate ground confusion & buzzing issues. Please research the internet and including youtube.com before trying a stereo setup to make sure you are aware of the various techniques for successfully implementing a safe stereo amp setup.

EXTERNAL TAP TEMPO JACK (#15) Use this jack to externally select the tempo via any 2-conductor 1/4" Mono cable, any length is fine. It must be hooked up to a SPST momentary non-latching switch.

DC Power Port: (#12) You may run this device on a high-quality regulated 9 -18VDC power supply that offers at least 100mA of current. The center-pin is configured to the industry-standard 2.1mm x 5.5mm barrel plug, "Negative to Center" configuration. This pedal includes our Noise-Free IPS-9 (only when sold in US and Canada.) We also recommend buying our IPS-18 for double headroom!

INTERNAL TRIMMERS: (#16) These trimmers adjust the current going to the Optocoupler. The lower the resistance is set (Turn Clockwise) the more intense the quiet part of the cycle becomes, thus making the tremolo more intense sounding. These trimmers are set carefully by us to match the differences between each Optos, because no two are identical. There is no need for you to adjust these, as we already set them for maximum available intensity. If you turn these down you will notice that the Square-Wave setting gets much less intense and the Tremolo will --not sound as natural.

WARRANTY: Fulltone products carry a Limited 5 year Warranty to the original owner with proof of purchase that the product was bought from an Authorized Fulltone Dealer, and if it was registered with us around the time of purchase via our registration portal at www.fulltone.com. The Warranty covers failure due to manufacturing errors only and is void if any mod or repair is performed by anyone other than Fulltone and/or if we deem that any operator-caused abuse or damage has occurred, for example; the use of an incorrect power supply, a dropped pedal, water damage, etc. Customer is always responsible for all shipping costs both to and from Fulltone. Do not attempt to call, instead, all repair issues are handled via contacting us through the "Repair Inquiries" portal at www.fulltone.com. You will be required to troubleshoot the problem and to upload a video clearly showing the problem you are experiencing. After we have deemed that a repair is necessary, we will email you an Acrobat PDF copy of our Return Authorization Form (RA Form) and print it out, fill out all information, and include it with the device you are sending. Fulltone Musical Products Inc. is not responsible for any loss, injuries, or damages related to the use of our products. Use at your own risk.

SPECIFICATIONS:

Input Impedance = 1 megaohm

Output Impedance = 2K ohms

Current Draw @ 9-18 VDC = 100 mA average

Power Jack = Center Negative

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