

Craig Anderton Tremolo Instructions

Version 2015July21

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This is a great sounding, yet simple to build tremolo. It is a versatile tremolo with triangle or square wave tremolo sounds and it has a level control. It has some really cool sounds and is a very clear solid tremolo sound, as you can hear in the audio demo on the project page.

Use the project documents provided, starting with the General Build Instructions. The PCB includes a charge pump IC so that you can get bipolar power supply for the circuit from a single 9v battery or 9v DC power supply. The tremolo is produced by a fluctuating LED/LDR unit. The original specification was for a CLM600. These have been obsolete for sometime, but can still be purchased from some sources. We found that a VTL5C1 works just as well as a CLM600 and are a bit easier to find. Another possibility is to construct a DIY optical unit using a bright LED and a LDR unit put together inside shrink tube or other DIY construction as you see fit.

There was clock noise (audible ticking sound) in the output signal of the unit we built. This can be eliminated by solder tacking a 10uF capacitor between lug 3 of the "Speed" control and any nearby ground point. If you look at the photo below you can see a 10uF cap soldered between the Speed control and the ground lug on the output jack.

We thought the volume level was a bit low, so we replaced R6 value of 4k7 with a 15k resistor and that brings the volume level up to a better level to work with.

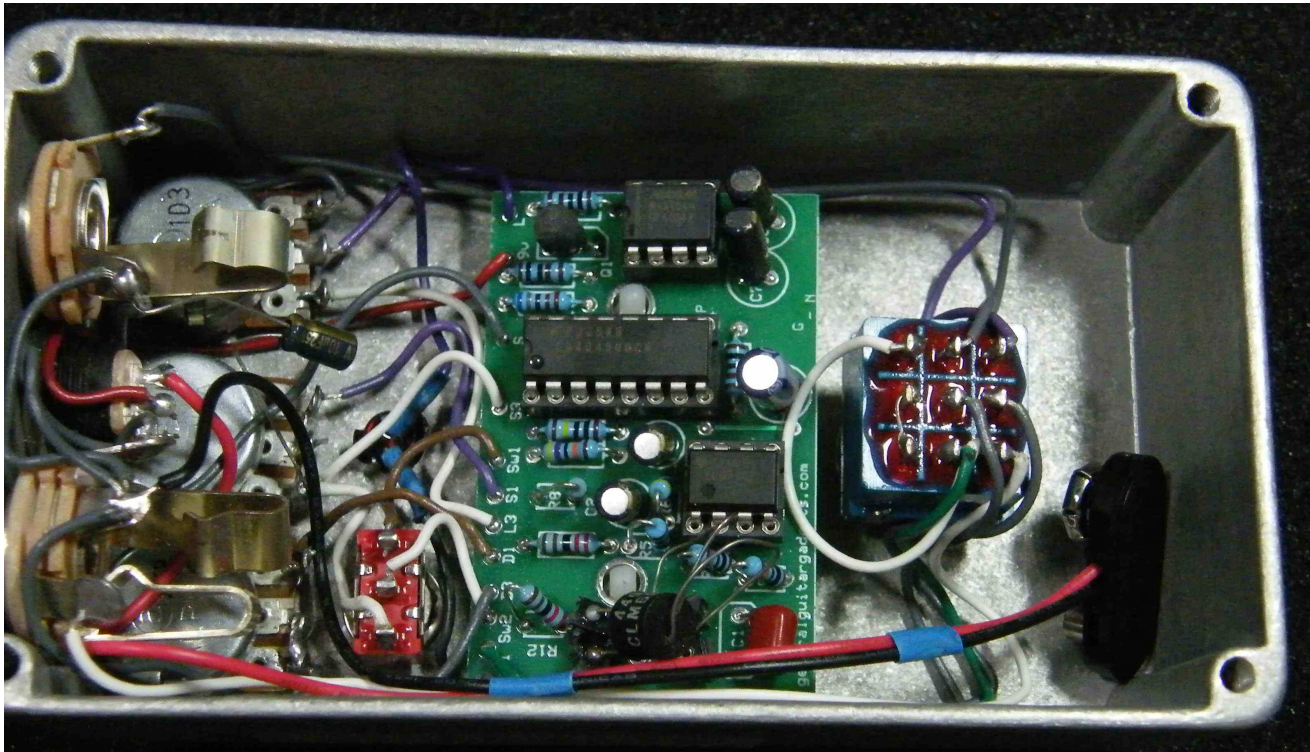
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Here's an inside view of the unit we built to give you some general ideas if needed.





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Here is a chart of voltages taken at the IC pins. Use these voltages as a guideline. You may not get the exact readings listed, but they should be somewhere near these values.

Component	Location	Voltage
9 volt power supply		9.4v
IC1	Pin 1	0.01v
	Pin 2	0.01v
	Pin 3	0v
	Pin 4	-9.1v
	Pin 5	0v
	Pin 6	0v
	Pin 7	0v
	Pin 8	9.3v
IC2	Pin 1	5.5v
	Pin 2	Varies with Speed control
	Pin 3	Varies with Speed control
	Pin 4	Varies with Speed control
	Pin 5	Varies with Speed control
	Pin 6	Varies with Speed control
	Pin 7	2.6v
	Pin 8	0v
	Pin 9	5.5v
	Pin 10	0v
	Pin 11	5.5v
	Pin 12	0v
	Pin 13	0v
	Pin 14	5.5v



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	Pin 15	0v
	Pin 16	0v
IC3	Pin 1	9.3v
	Pin 2	4.6v
	Pin 3	0v
	Pin 4	-4.6v
	Pin 5	-9.1v
	Pin 6	4.7v
	Pin 7	7.0v
	Pin 8	9.3v