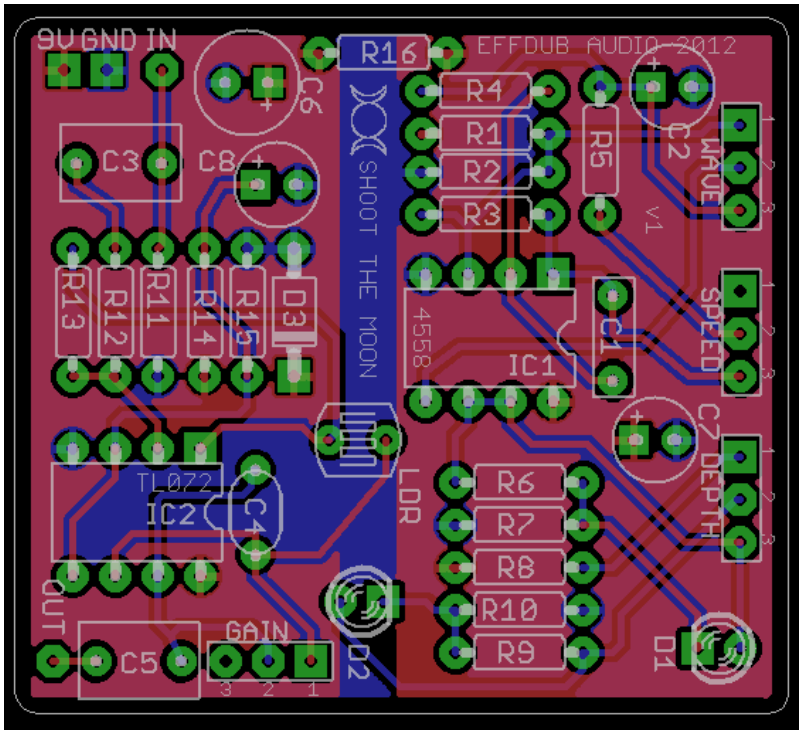
Shoot The Moon Tremolo

Circuit and layout by:
FRW / EffDub Design – 2012-2019

This optical tremolo is based on the excellent Tremulus Lune circuit by 4MS/CommonSound. The audio path is very similar, but the LFO has been simplified to three controls: Speed, Depth, and Shape (wave shape). The power supply section has also been overhauled to provide better electrical isolation between the LFO and the audio portions of the circuit, and both sections are physically isolated as well. The result is a dead-quiet tremolo that goes from triangle wave to almost square wave (that is, smooth to choppy). There is also a Gain control so that the output of the circuit can be set for unity gain; or it could be used as a boost, if desired.



R1	220K	C1	10n (box)	V1 - Speed	B100K
R2	220K	C2	10µ (electro)	V2 - Wave	B500K
R3	220K	C3	1µ (box)	V3 - Depth	B1K
R4	220K	C4	330p (disc)	V4 - Gain	B10K
R5	2K2	C5	1µ (box)		
R6	1K	C6	100µ (electro)		
R7	1K	C7	47µ (electro)		
R8	470R	C8	47µ (electro)		
R9	1K	D1	LED		
R10	1K	D2	LED (3MM)		
R11	1M	D3	1N4001		
R12	220K	LDR	<5K – >1M		
R13	220K				
R14	100K				
R15	100K				
R16	100R				

See notes on next page >

Parts Notes

• D1 is a visual indicator of LFO speed and shape. It is to be mounted outside the enclosure. You can use any size LED for this.

• D2 is an LED that drives the LDR. To fit the board most easily, 3mm is the best size.

• The LDR should have the following specs: Light = less than 5K / Dark = greater than 1M. You can get these parts at a variety of sources, including Radio Shack, Tayda Electronics (KE-10720), and Smallbear (2506A).

• As an alternative to using D2 and LDR, a sealed optocoupler can be used. Because of the limited space on the PCB, I recommend Silonex NSL-32SR2 or NSL-32SR2. Smallbear has these (part numbers 2515A and 2515B, respectively). NSL-28 would also work.

• The value range on the LDR is not super-critical, so just use what you can find. You will get tremolo regardless, but you will find that some LDRs will provide more "chop" on the extreme settings.

• It is not necessary to cover the LED/LDR with shrink tubing. It doesn't hurt, but it is not required. When the pedal lid is screwed on and the jacks are plugged in, it's very dark inside. ☺

Commercial Use

The Shoot the Moon PCB is provided for any and all uses. This includes commercial resale in any form (kits, finished pedals, etc). The layout and schematic artwork remain the intellectual property of EffDub Design / Forrest Whitesides.

If you would like to have custom PCBs made with your brand and product name on the silkscreen, please contact me at effdub@gmail.com.