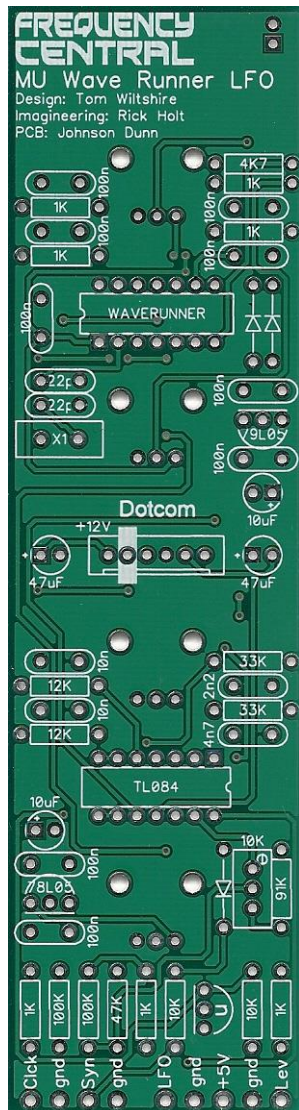


FREQUENCY CENTRAL

Build documentation for:

MU WAVE RUNNER LFO

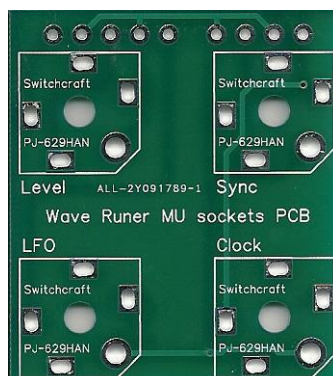
Powered by Electric Druid code exclusive to Frequency Central



Wave Runner is a multi-waveform sync-able LFO based on the Electric Druid TAPLFO2D family of code, but with some significant additions and improvements. The TAPLFO2D-FC PIC is not compatible with similar modules, and was developed specifically for the Wave Runner.

Main PCB Assembly

1. Place and solder all resistors and diodes
2. Place and solder 20MHz crystal
3. Place and solder both IC sockets
4. Place and solder both 22pF capacitors
5. Place and solder all non electrolytic capacitors
6. Place and solder BC547, 78L05 and 79L05
7. Place and solder power header
8. Place and solder 10K trimmer
9. Place and solder all electrolytic capacitors
10. Flip the PCB over and solder all four pots on the other side.



Sockets PCB assembly

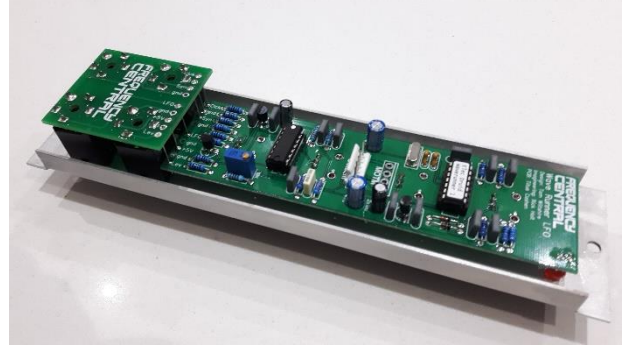
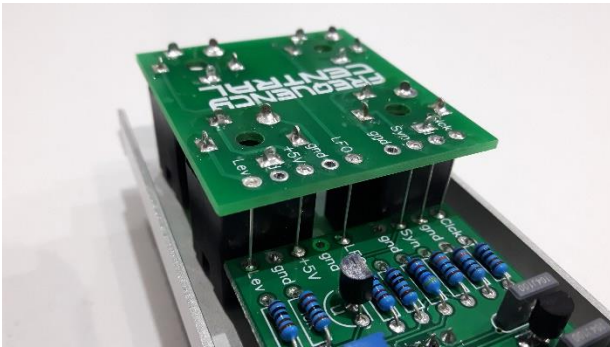
Place all sockets on the PCB, then place the panel over them. This will assure that the sockets are correctly positioned. Flip the whole lot over and solder the sockets into place.

Bill of Materials

1K x 7	22pF x 2	WAVE RUNNER PIC x 1	B100K x 4
4K7 x 1	2.2nF x 1	TL084 x 1	
10K x 2	4.7nF x 1	BC547 x 1	¼" Socket x 4
12K x 2	10nF x 2	78L05 x 1	
33K x 2	100nF x 9	79L05 x 1	10K trimmer
47K x 1	10uF x 2	20 MHz crystal x 1	
91K x 1	47uF x 2	5mm LED	Power Header: MTA100 - 6pin
100K x 2			
All resistors ¼ watt metal film			Knobs x 4

Final Assembly

1. Place LED onto the PCB – do not solder yet
2. Mount PCB onto panel and tighten nuts
3. Ensure LED pokes through the hole on the panel, solder into place
4. Mount sockets PCB to panel and tighten sockets
5. Using cut off resistor legs, connect the two PCBs (see photo)



Calibration

The 10K trimmer is for Level CV zero offset. Correct set calibration ensures that the output from the LFO socket is spot-on at 0V when the Level CV input sees 0V. This is particularly important when using Wave Runner as a pitch vibrato source into a VCO with a mod wheel controlling LFO depth via the Level CV.

1. Hook up the LFO output to a DMM
2. Ground the Level CV input
3. Adjust the trimmer until your DMM reads exactly 0V

RDH 04/01/19

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