

WAMOD #10 – dual LFO

The dual LFO has two oscillators on board; these are based on the standard schmitt trigger/integrator design and give a square wave and triangle wave from each. The frequency ranges from 0.02 Hz (about 45 seconds per cycle) to 830 Hz; this can be changed by replacing the 1uF capacitors with larger values for slower rates or smaller values for faster. The triangle wave is 6V, ranging between -3V and +3V. The square wave is 10V, ranging from -5V to +5V.

There is also a Difference Rectifier circuit on the PCB which takes the triangle waves and supplies a signal that is the difference between them. This voltage is then delivered to the appropriate positive or negative outputs, basically a nice complex signal.

Building –

- Install IC sockets and power pins
- Install resistors and 2 diodes; keep the wire clippings to use later.
- Install capacitors and transistor
- Cut the little lips off the pots, so they will sit flat behind the panel. Be careful the little chunk of metal doesn't fly off into your eye or anybody else's, they can travel quite far.
- Attach the pots to the PCB (on the back). Do not solder them yet.
- Attach the jacks to the panel, be sure they are oriented correctly, so all 3 holes line up.....double check!
- Place the LEDs on the PCB, just poke them thru the PCB and bend the legs slightly so they do not fall out (do not solder). Make sure the flat edge on the LED lines up with the marking on the PCB.
- Attach the PCB to the panel, make sure all the tabs for the jacks go thru their proper holes, push the LEDs into place and screw the nuts onto the pots (not tight, you will have to undo them soon).
- Check everything is nicely lined up
- If all good, solder on the pots, jacks and LEDs. Work slowly, let components cool down.
- Remove the PCB from the panel and solder the resistor leads (you kept from step2) to the ground tabs of the jacks and the corresponding holes on the PCB.
- Put it all back together, install the TL074 and TL072, test with a multimeter to make sure there is no short circuit between +12V/-12V/gnd
- Plug it in and see what happens....

10R (2)		100k (8)	
220R (2)		330k (2)	
1k (6)		4M7(2)	
2k (2)		RL (2) choose to suit LED	
2k2 (2)		diodes (2)	
22k (1)		Other components loose in bag – 8 pin socket, 14 pin socket, TL072, TL074, 10µF capacitors (2), 1µF/105 capacitors (2), 100nF/104 capacitors (3), BC547 transistor, LEDs (2), jacks (6), 100k pots (4), 10 pin power connector.	
56k (1)			

NONLINEAR CIRCUITS	
dual LFO	
Rev 1.0	Page # or name
5/03/2015	
andreuwf	

