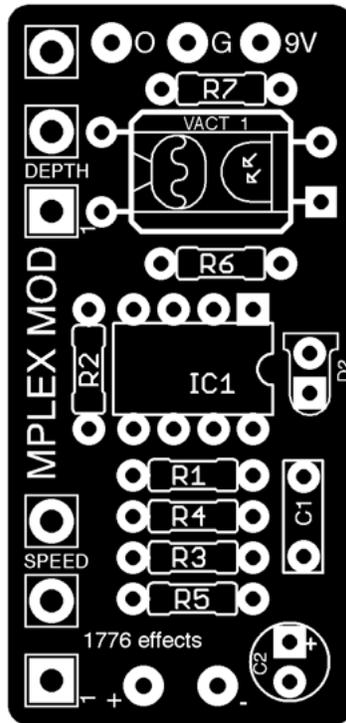


MODULATION PCB

A 1776 Effects “add on”



The Modulation PCB is a fantastic addition to the Multiplex Echo Machine. It adds a very organic modulation that can go from subtle to vibrato like.

The circuit design is not new in the DIY FX world, but tuned to “play nice” with the Multiplex.

It can also be used with other PT2399 delay projects making it a versatile little board.

MODULATION PARTS LIST

Resistors		Capacitors		Diodes	
R1	100k	C1	10n	D2	LED
R2	100k	C2	10uF	<i>For Modulation Indicator</i>	
R3	100k	IC		Potentiometers	
R4	47k	IC1	TL072	DEPTH	1 MB
R5	2M2	Misc		SPEED	100kB
R6	1k	VACTROL	VTL5C3		
R7	180k				

PARTS NOTES :

- For optimum modulation success a VTL5C3 or equivalent is HIGHLY suggested. I also like the Macron MI1210CLF-R that Small Bear Electronic sells. Make sure it is the F version.
- If you construct your own vactrol with an LDR and LED, I suggest using a LDR that is 10 to 20K On, 10 Meg Off and a diffused LED.
- All resistors are standard 1/4 watt.
- Caps - Electrolytic's should be 5 mm Dia. x 11 mm or smaller
- D2 is for the modulation rate/status indicator LED
- Potentiometers are standard length 16mm PCB mount, but solder lugs can be used.
- Enclosure size
 - It is possible to fit the multiplex and modulation board into a 1590BB "horizontally" The board mounted pots are the same spacing as the Multiplex PCB
- You can socket R7 to fine tune your modulation taste or if you rolled your own vactrol and need some minor adjustments.

WIRING

You can use either of the top or bottom 9v (+) and GND (-) pads, whatever is most convenient. To connect the modulation board to the Multiplex, wire the O (out) pad to lug 3 of the delay 2 pot on your Multiplex build. If you want to be able to turn off the mod connect a SPST or SPDT switch between the O (out) and Delay pot. You could also use an On/Off/On switch, connecting the O (out) to the center lug of the switch and connect one outer lug to Delay1 and the other outer lug to Delay2. This will turn off the modulation in the center position, or send it to either delay 1 or delay 2.

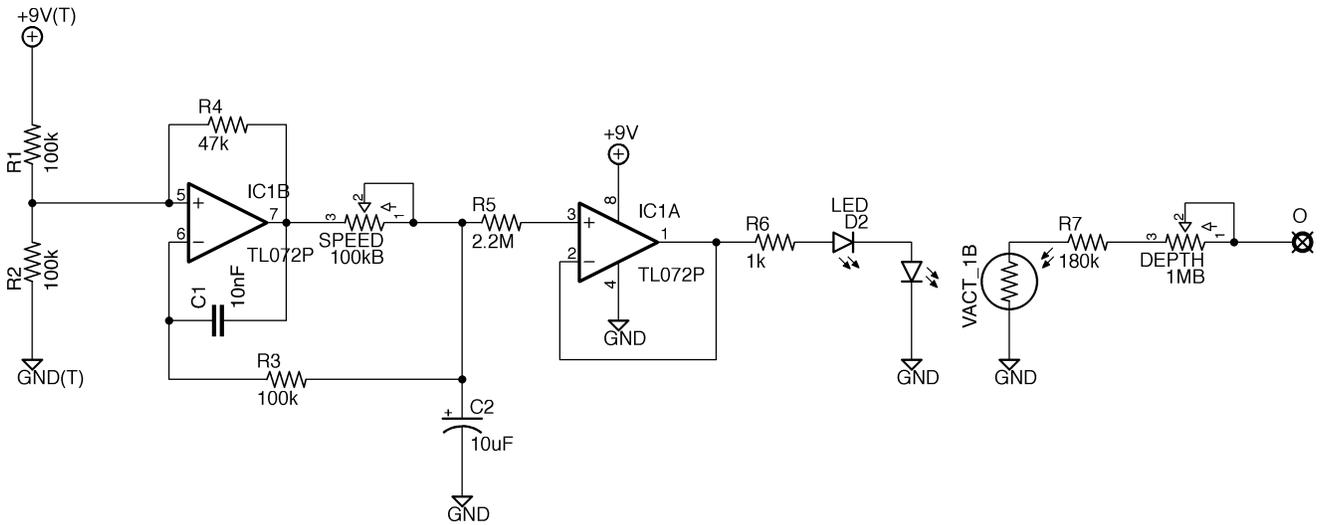
If only wiring one delay pot you should choose delay pot 2.

Note: D2 is a visual indicator of the modulation rate/status, it is not an on/off indicator for the effect. It can be PCB mounted. Use the drill guide for proper enclosure drilling.

USAGE/SELLING

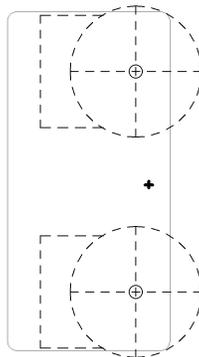
The Modulation PCB can be used for commercial pedal building. You may not however, offer PCBs as part of a “kit” or redistribute the PCB’s for sale as a commercial endeavor. All PCB artwork is property of 1776 effects.

SCHEMATIC



DRILL GUIDE

Print at 100% scale for drilling! Dry fit the PCB template inside to make sure you have clearance and then place the template on top of the enclosure to center-punch the hole locations.



PCB size .86 in. x 1.81 in. (22mm x 46mm)