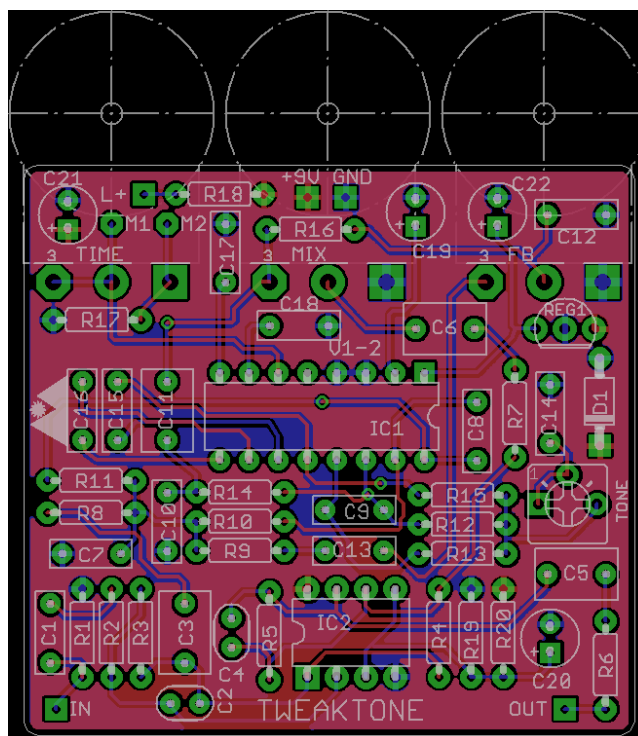


TweakTone Delay (V1-2)

*Circuit and Layout:
FRW / EffDub Design*

The TweakTone Delay is a PT2399-based digital delay with highly filtered repeats and the possibility of very long delay times (and minimal delay line noise). There is also a tone control trimmer to adjust the high-pass cutoff frequency on the repeats. The stock values yield a max delay time of approximately 550ms - 600ms. With a minor modification (see page 2), max delay time can be extended to almost 900ms.

A full-size schematic and layout image are included in the zip file with this document.



Stock Values

R1	1M
R2	150K
R3	330K
R4	22K
R5	10K
R6	1K
R7	22K
R8	22K
R9	10K
R10	10K
R11	10K
R12	22K
R13	10K
R14	1K
R15	10K
R16	1K
R17	2K2
R18	4K7
R19	10K
R20	10K

C1	22nF (box)
C2	100pF (disc)
C3	1μF (box)
C4	100pF (disc)
C5	1μF (box)
C6	1μF (box)
C7	10nF (box)
C8	2.2nF (box)
C9	2.2nF (box)
C10	10nF (box)
C11	1μF (box)
C12	47nF (box)
C13	22nF (box)
C14	100nF (box)
C15	100nF (box)
C16	100nF (box)
C17	100nF (box)
C18	100nF (box)
C19	47μF (electro)
C20	47μF (electro)
C21	100μF (electro)
C22	100μF (electro)

D1	1N4001
REG	78L05
IC1	PT2399
IC2	TL072
FEEDBACK	B50K
MIX	B50K
TIME	B50K
TONE	10K (trimmer)

Tweaks and Modifications

“Love You Long Time” - Extend the max delay time

This is a very easy modification. Change the Time pot to A100K and then add a 270K resistor in parallel with Time. You can add the resistor either to the pot pads on the board, or you can use the pads marked “M1” and “M2” (see below for more info on these). Adding the 270K resistor brings the Time pot’s total resistance value down to about 75K, which is about the limit of what this circuit can handle without getting noisy and producing synth-like repeats (more resistance = more delay time). If you don’t have 270K on hand, try 220K, but be aware that this will give you less max delay time. Or you could put multiple resistors in series to get close to 270K.

Adding Modulation

The pads marked “M1” and “M2” are there to make adding off-board modulation neater and easier. The intent is to use an LFO that drives the classic LED/LDR combo to offer variable resistance as the output. The LDR’s leads should, in some fashion, connect to the M1/M2 pads; via a wire run from the LFO daughter board is probably the best way to handle it. Alternatively, the LDR can be connected directly to pads 1 and 3 of the Time pot. That’s where M1/M2 are routed, so either one works.

There is no polarity involved, so it does not matter which lead goes where from the LDR to the delay PCB.

Even Darker Repeats

If the dark and murky tone of the stock circuit does not satisfy your black heart, try increasing the value of C7 to taste.

Commercial Use

The TweakTone Delay PCB is provided for any and all uses. This includes commercial resale in any form (kits, finished pedals, etc). The layout artwork remains the intellectual property of EffDub Design.

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.