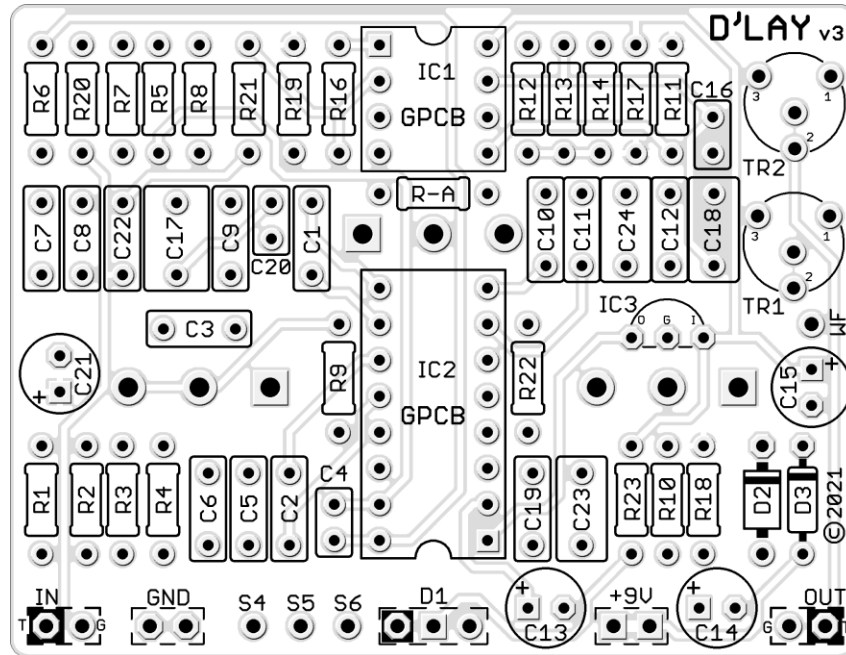


D'lay v3 2021

Based on the Rebote Delay. Many months and trials went into perfecting this to be the best PT2399 based DIY delay available. This is an Advanced Build so this is not suggested for beginners. We also carry the D'lay Tap Tempo board available separately in our SHOP. Tap Tempo is absolutely not a requirement for the D'lay board.



Dimensions: 2.35" x 1.81"

Part	Value	Part	Value	Part	Value	Part	Value
*R-A	8k2	R17	12k	C9	100n	TR1	5k
R1	12k	R18	12k	C10	100n	TR2	100k
R2	12k	R19	220k	C11	100n		
R3	12k	R20	1M	C12	100n		
R4	22k	R21	510k	C13	47u	LEVEL	B100k
R5	47k	*R22	120k	C14	100u	REPEATS	C50k
R6	12k	R23	1k8	C15	47u	TIME	B100k
R7	12k			C16	51p		
R8	12k	C1	82n	C17	470n		
R9	1k	C2	100n	C18	220n	D1	Status LED
R10	2k7	C3	1n	C19	10n	D2	1n4001
R11	1k	C4	560p	C20	33p	D3	1n5817
R12	22k	C5	10n	C21	47u		
R13	68k	C6	10n	C22	100n	IC1	TL072
*R14	22k	C7	10n	C23	220n	IC2	PT2399
R16	510k	C8	27n	C24	220n	IC3	L78L05

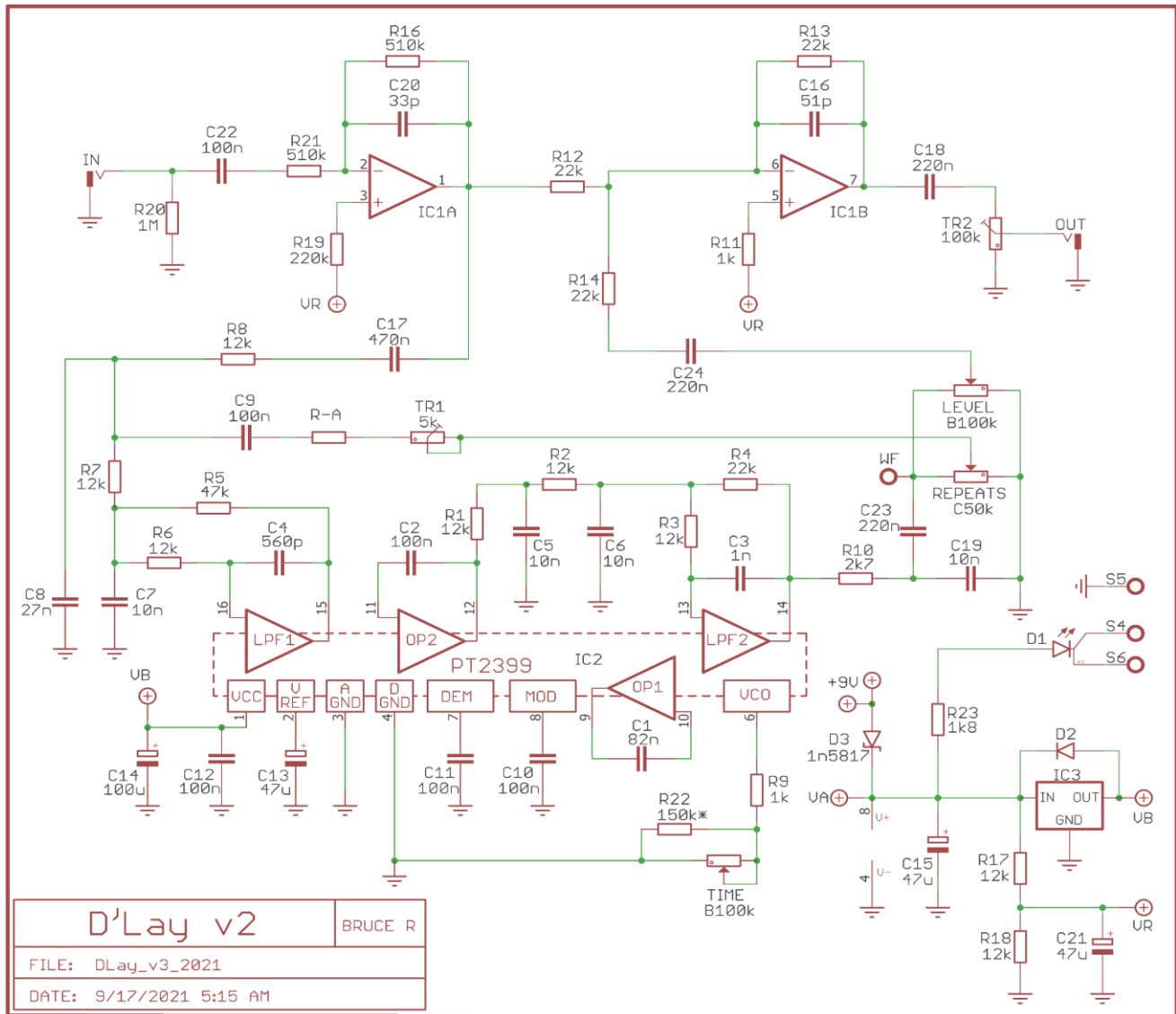
STATUS LED

*D1 is a Status LED that can be either a Bi-Color Common Anode or a Standard On/Off LED. (See Tip Sheet)

New in this GuitarPCB 2021 version release:

- Added 1N5817 circuit protection diode.
- On-board potentiometers.
- Changed IC3 to the smaller L78L05 voltage regulator
- Larger off-board wiring pads.

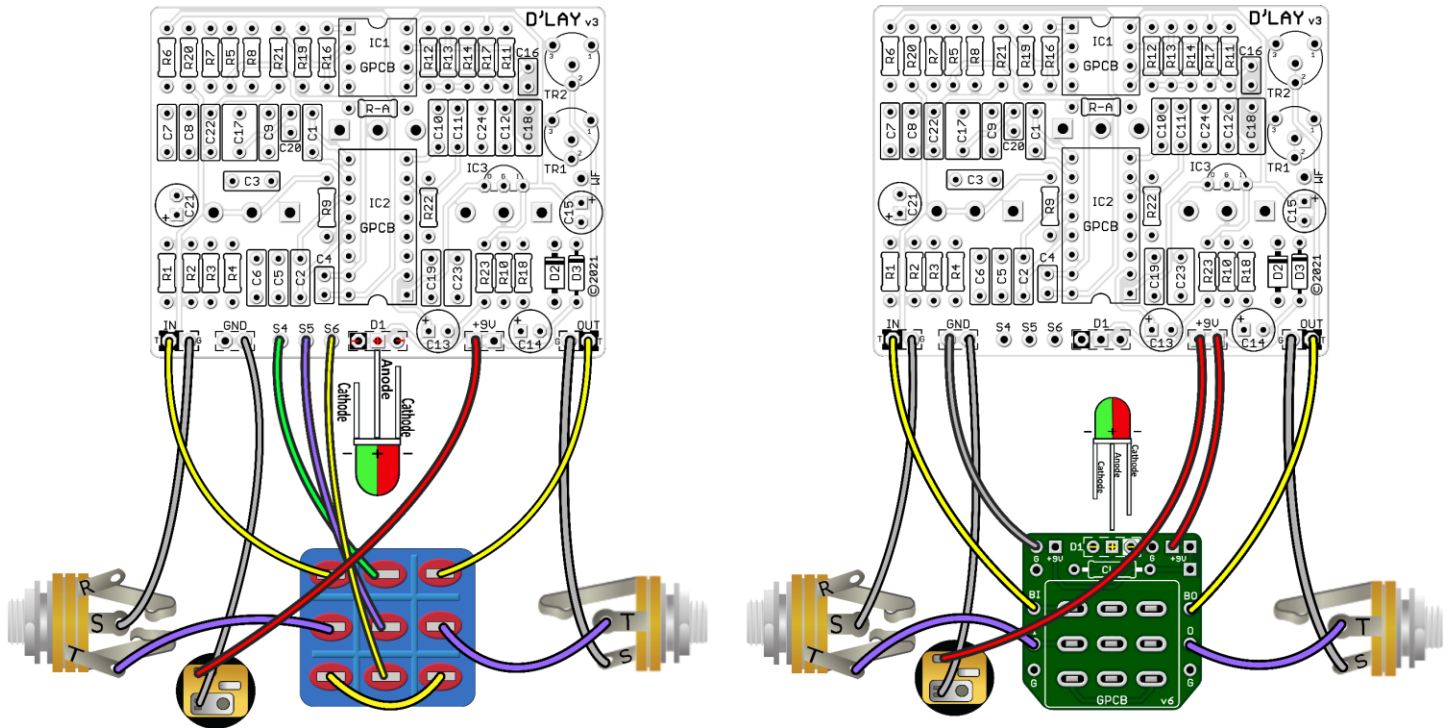
Added extra +9v and Ground pads for “Combo Builds” allowing easy wiring options and connectivity.



Disclosure:

- If purchasing a Tap Tempo board, you must verify availability of the required pre-programmed chipset sold by a separate site known as ToneGod. Be sure you purchase a chipset before ordering a Tap Tempo board.
- Modification components are not available from Kit Distributors. You must DIY any available Mods.

Standard Wiring Diagram:



Build Notes:

- **R-A** resistor and **TR1** (combined) determine the sensitivity of the Repeats pot. You may or may not wish to have the Repeats knob to provide infinite repeats at full rotation, but the trimmer, TR1 can be set to be “just to the point of infinite repeats”. You may also increase or decrease the R-A fixed resistor (the range should be 5k to 10k) to allow your trimmer to give you the desired repeats if the tolerance of your potentiometer is off. Another Mod would be to use a Roto-Tone board in lieu of R-A. Now you can have four switchable options.
- **R14** resistor and **TR2** (combined) allow you to fine tune the overall volume balance.
- The “**WF**” pad is for the “**Warmoth Fanatic**” Warp modification, which allows you to install a “normally open” SPST momentary stomp switch that engages temporary infinite repeats as long as it is depressed. To implement this mod, you will connect one lug of the switch to the “WF” pad, and solder the other lug to pin 1 of TR1
- **R22** resistor adjusts the maximum amount of delay time. The PT2399 delay chip was designed to deliver a maximum of 340ms of delay time. Many DIY’ers try to increase this time, which can introduce additional noise or even motor-boating. If you use an 82k resistor in R22, you will get between 350-400ms of delay time when the delay pot is turned all the way up. We have tried this value at 150K with some success depending on the PT2399 chip itself. Our best compromise is 120K. If you increase this value (increase resistance), the chip will attempt to deliver longer repeat times, but the fidelity of the repeats decreases and noise increases. Likewise, if you decrease the value of R22, the quality of the repeats increases, and noise decreases.

WF Runaway MOD

“**WF**” pad is for the “**Warmoth Fanatic**” Warp modification. This requires installation of a momentary SPST stomp switch that will produce infinite repeats as long as it is depressed. To implement this mod, you will connect one lug of the switch to the “**WF**” pad, and solder the other lug to pin 1 of TR1. When depressed, the switch bypasses the resistance of TR1 and allows the repeats to run away. **Caution this can get loud.**

R22—The PT2399 delay chip was not really designed to deliver 700ms of delay time, which is what it will be set to do when R22 is at 150k. As you increase the delay time that this chip can deliver, the lower the fidelity of the repeats or create distortion. The results will vary from chip to chip as well. We do not expect that everyone will be able to squeeze 700ms of delay time out of every PT2399 chip. If your repeats sound very low-fi, try decreasing **R22** to ~82k, which will deliver higher quality, but less maximum delay time.

R12 and R14 explained, courtesy of Tonmann:

The level pot should be controlling the level of the wet signal while TR2 controls the level of the output (wet + dry) signal. Alternatively, IC1B is configured as a mixer or summing amplifier. It adds, or sums, an amount of the dry signal via R12 to the wet signal via R14.

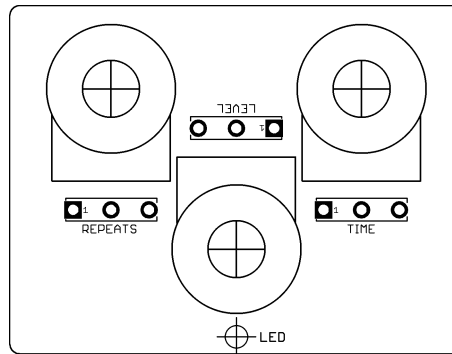
The gain of the dry signal at IC1B is set by the ratio of R13 to R12, with a nominal value for both resistors at 22kΩ the dry signal gain is 1. To **increase** the gain for the dry signal the value of R12 is made **smaller**, to **decrease** the gain for the dry signal the value of R12 is made **larger**.

Likewise, the gain of the wet signal at IC1B is set by the ratio of R13 to R14, with a nominal value for both resistors at 22kΩ the wet signal gain is 1. To **increase** the gain for the wet signal the value of R14 is made **smaller**, to **decrease** the gain for the wet signal the value of R14 is made **larger**.

While the gains for the wet and dry signals can be set independently via R14 and R12 respectively, the overall gain can be set by R13. If you leave both R14 and R12 at their nominal values of 22kΩ you can **increase** the gain for both by making R13 **larger** or **decrease** the gain for both by making R13 **smaller**.

Armed with the above knowledge you should be able to adjust the level of the wet signal by changing the value of R14.

Drill Template:



Drill Tips: Measure your components before selecting a drill bit. We recommend drilling the pot holes, mounting the pots in the enclosure, and then soldering the pots to the board. This approach should resolve the issue of the pots not fitting through the holes after soldering. We also recommend you make the holes for the pots a little larger than the threads in case you decide to remove the board and put it back in during the build, to avoid problems. Use this guide at your own risk. Make sure page scaling is turned off when you print this PDF, or the image above may be smaller than expected. Verify everything before drilling.

Obviously if you use our 3PDT wiring board for your LED, do not drill the LED hole as shown in the template above.

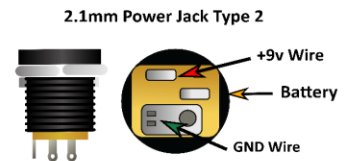
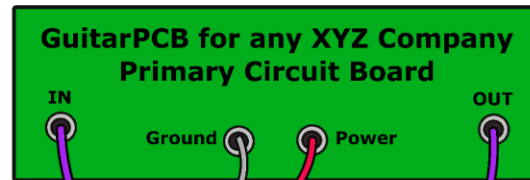
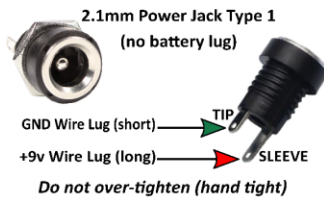
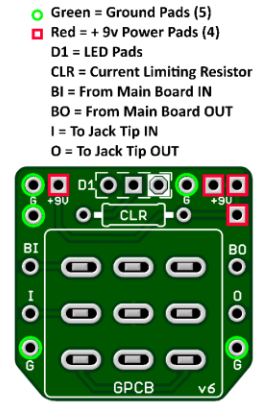
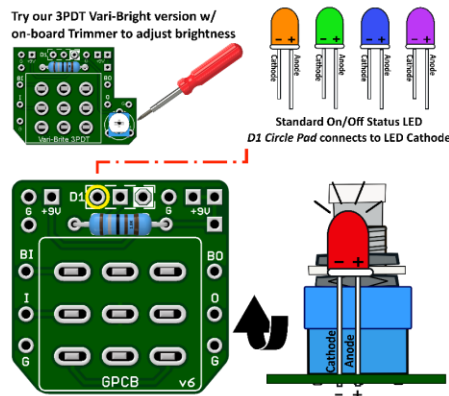
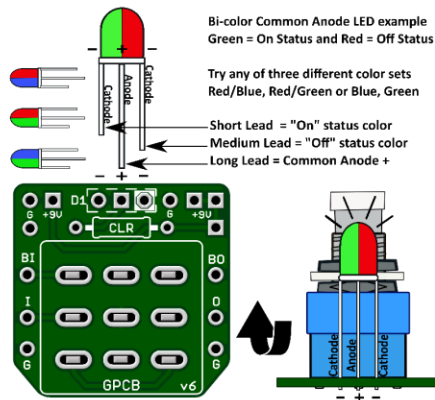
[Soldering Tutorial on Youtube](#)

Need a kit? Check out our authorized worldwide distributors:

- **USA** – Check out [PedalPartsAndKits](#) for all your GuitarPCB kit needs in the USA.
- **Europe** – [Das Musikding](#) Order either boards or kits direct from Europe.
- [PedalPartsAustralia](#) - Order either boards or kits direct from Australia

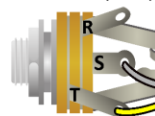


GuitarPCB Tip Sheet

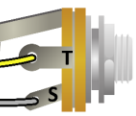


T = Tip
R = Ring
S = Sleeve

Stereo Jack (T-R-S)

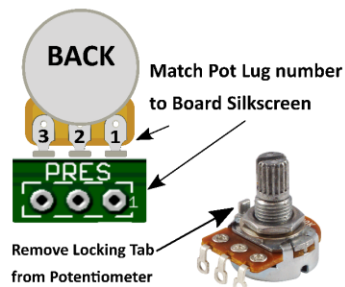


Mono Jack (T-S)

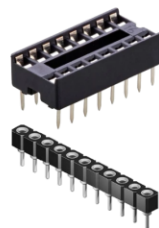


T = Tip
S = Sleeve

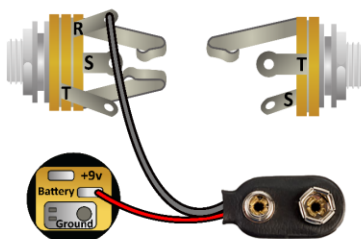
Multiple +9v and Ground Pads are convenient hookup points for additional circuits within the same enclosure. This also allows for diverse wiring schemes to suit individual needs.



Sockets make troubleshooting easier



Main Board IN/OUT Pads



Input/Output Jack Wiring

T = Tip | R = Ring | S = Sleeve

A Stereo Jack is only needed if using a Battery. Otherwise use a Mono Jack
Battery Strap RED wire is connected to Power Jack
Battery Strap Black wire is connected to RING (stereo jack)
If wiring an LED to our 3PDT Wiring Board then S4, S5 & S6 are not needed



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