



If you are reading this, most probably, you are about to build Erica Synths DIY DELAY module. The module is 45mm deep, skiff friendly, has solid mechanical construction and doesn't require wiring.

Erica Synths DIY Delay is hi-fi delay module with unique functionality typically found on advanced factory-produced units. We developed a custom DSP MCU board (comes pre-soldered and preprogrammed) and delay algorithms for syncable up to 800ms delays. Selectable Tape and Digital delay, BPM Sync, Tap Sync makes the module ideal for nuanced sound design. Furthermore Hold (freezes the sound up to 800ms), Add (adds several layers of sound on top) and Reverse (reverses sound in the hold buffer) functions allow to create crazy sonic artefacts.

The DIY Delay kit comes in three versions:

- 1) Set of 2 PCBs + MCU board,
- Set of 2 PCBs + MCU board + mechanical parts (PCB connectors and spacer)+ panel,
- 3) Full kit.

FEATURES:

- Tape Delay and Digital Delay algorithms
- Up to 800ms delay time
- Syncable (clock and tap) delay time
- Delay time divisions and multiplications
- Freeze, Add and Reverse
- Manually and CV controlled delay time, feedback and dry/wet mix

SPECIFICATIONS:

- Max Delay time
- Sampling frequency
- Audio output amplitude 10Vptp
- CV amplitude (full span)
- Panel width
- Module depth
- Power consumption

-5V - +5V 14HP 45mm 97mA @+12V, 33mA@-12V

48khz 24bit

800ms



The big knob sets delay time from 0 CCW to 800ms CW. When in Sync mode (clock applied to SYNC input or you used TAP SYNC button), knob becomes delay time multiplier of divider. Please note that at low sync rates divider gets disabled, as the max delay time is 800ms.

Select the delay mode – Tape or Digital (no pitch shifting)

3 Adjust input level to avoid clipping

1

2

15

Adjust feedback level! In full CW setting the module will go to self oscillation

Adjust Dry/Wet setting manually! This is full analogue circuit, and you also can control Dry/Wet via CV

Use Tap Sync button to synchronize the delay time to the BPM. To exit sync mode push and hold the button for 2"

Push the Hold button to record an incoming signal in the module memory buffer. Record time depends on TIME setting, and it will start to loop the recorded buffer. To exit looping mode, push the HOLD button again. The LED will lit, when the hold mode is active

8 When in Hold mode, you can push the ADD button to add more loops to the hold buffer

9 Hit the REVERSE button to reverse delayed signal. It also reverses all loops in the hold buffer

10 Patch audio signal here



12 This is delay time CV input

13 This is the Dry/Wet CV input that controls analogue crossfader

This is the Feedback CV input

This is the output of the module. We believe, you'll enjoy results!



Solder ceramic capacitors!

+12

ASSEMBLY

Take precautions with regard to electrostatic discharge (ESD) safety. Handling components should be done in electrostatically safe environment. Use personal and workplace grounding. Any discharge (even a minor one) from body to a component may permanently damage it.

Our PCBs have silkscreened both component values and designators, but as resistors are mounted vertically, we highly recommend you to print out files with component placement before you start assembly of the module. And, please, at least take a look on this manual!

Some components are marked as NU (not used) – leave those unpopulated! Some components are market as OPTION (those are for optional modifications) – leave those unpopulated for now.

1

Solder horizontally placed resistors, diodes and ferrite beads! Pay attention on orientation of diodes! Also, solder IC sockets!



3

Solder vertically placed resistors! Here it's critically important to follow part placement as resistor density is quite high.



Solder electrolytic capacitors, transistors, voltage reference, resettable fuses and an optocoupler! Pay attention on correct orientation of the components!

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Negative lug of the

electrolytic





GUIDE TO ASSEMBLY OF ERICA SYNTHS DELAY MODULE

5

Turn the PCB around and solder potentiometers, jacks, switch, pushbuttons and trimpots! Make sure pushbuttons are strictly vertical – use the front panel as a template!



6

This is the MCU Board! It's developed for this specific module and comes assembled, pre-programmed and tested.





7

Install female headers on the MCU board!

8

Insert the MCU board in the relevant place on the main PCB and solder female connectors on the main PCB!







9

Remove the MCU board and solder PSU connector as shown on the picture below! Install ICs – pay close attention on the orientation of the ICs! When it's done, insert the MCU board in its place.



11

Install the front panel and fix it with few nuts. Place LEDs in the relevant holes and solder them! Now, remove the front panel and let's perform a calibration!



10

Insert LEDs in relevant places! The anode (longer pin) should go into the square pad on the PCB! **Do not solder LEDs yet!**



12

Connect the module to the PSU and connect some sound source (snare drum or other sound with sharp VCA envelope will work the best)! Tweak knobs and make sure the module works! Push the HOLD button and check, if delayed sound starts to loop.

Now, let's calibrate the Dry/Wet crossfader! Remove audio from the input, set IN LVL potentiometer all way CCW.

Set Dry/Wet knob all way CCW (Dry). Connect the voltmeter in DC measurement setting to the TP18 and adjust R107 until you get 0V on TP18. Set Dry/Wet knob all way CW (Wet). Connect the voltmeter to the TP19 and adjust R108 until you get 0V on TP19.

Calibration complete!





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Install the front panel, fix it with potentiometer, jack and switch nuts! Install the potentiometer knobs! Congratulations! You have completed one of most advanced DIY Delay units in eurorack! Enjoy!

