

Doepfer A-142-4 Quad Decay Expander DIY

PRELIMINARY INFO

This DIY adds eight toggle switches onto a separate 4HP panel which enables you to switch between self-oscillating or trigger mode and/or time delay ranges of 2ms/2sec or 20ms/20sec. Shorting jumper pairs JP2/JP8, JP5/JP7, JP4/JP9 or JP3/JP6 (which are already installed on the PCB) will change individual Quad Decay sub-units into a self-oscillating "Loop Mode". Adding four additional jumper pairs onto the PCB and four new 4.7 μ F capacitors (CA, CB, CC and CD) to toggle switches at Points JPA+ through JPD+ will increase the time range by a factor of 10 for individual sub-units. Points JPA+ through JPD+ will connect to locations on the PCB where the positive (+) legs of the original factory installed 470nF capacitors were previously located. Points JPA- through JPD- will connect to locations on the PCB where the ground (-) legs of the original factory installed 470nF capacitors were previously located (see **Figure 1**)

C2, C4, C6 and C8 = 470nF Multi Layer Ceramic Capacitors (MLCC)
These four capacitors are the original factory installed capacitors. They are removed from the PCB and reattached to toggle switches in tandem with new 4.7 μ F capacitors

CA, CB, CC and CD = New 4.7 μ F MLCC (TDK P/N: FG28X5R1E475KRT00)
These new capacitors are attached to toggle switches in tandem with the original 470nF capacitors

SW1 - SW8 = SPDT Mini ON/ON Toggle Switch (Tayda SKU#: A-4567)

Female Jumper Wire = Tayda SKU#: A-2374 (Note: 40 in a strand)

Jumper Pin Header = Tayda SKU#: A-198 (Note: 20 pairs/block)

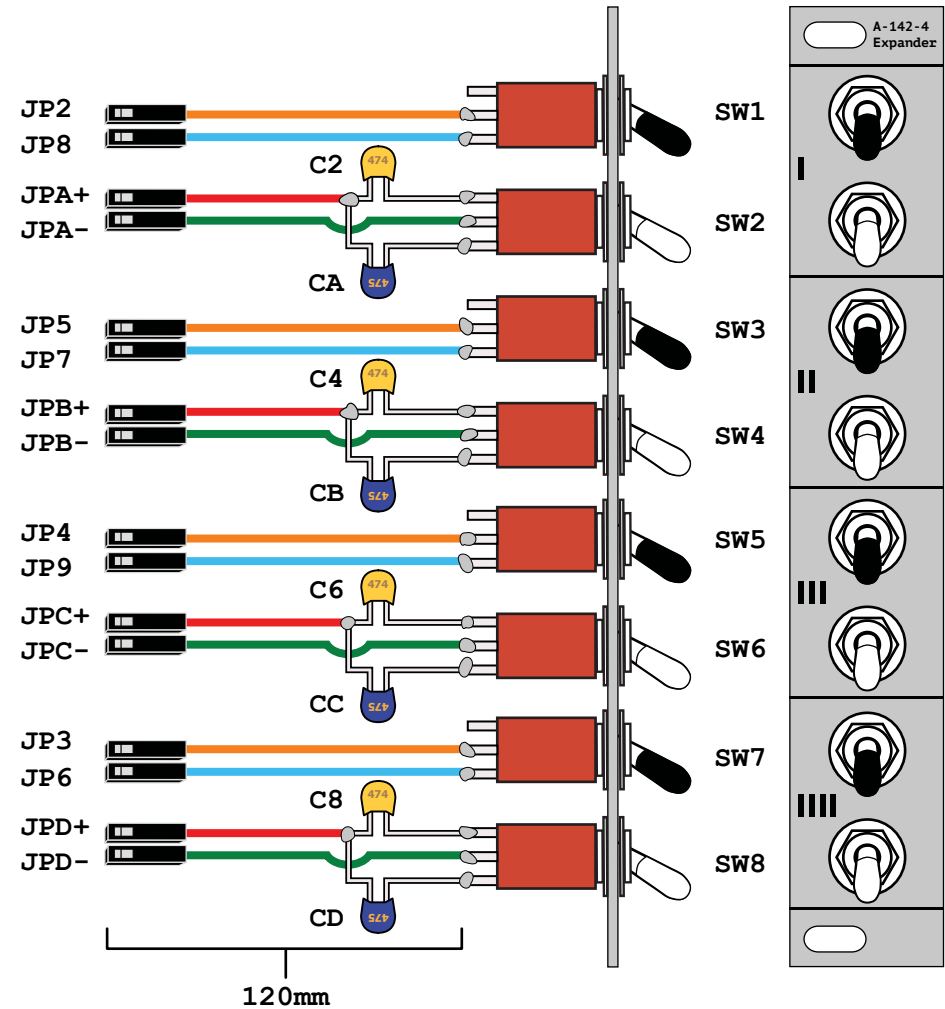
Black Toggle Cap = Tayda SKU#: A-1735

White Toggle Cap = SKU#: A-1736

Red Toggle Cap = SKU#: A-1721 (Not shown)

This DIY is a little time consuming but the big payoff is the overall build is quite easy, inexpensive and it will add a LOT more versatility to your A-142-4 module. The total cost of all the parts for my build was less than \$12 (USD) and I also had several female jumper wires and jumper blocks left over for other projects

If you don't want to use the new 4.7 μ F MLCC capacitors because you already have some 4.7 μ F electrolytic or tantalum capacitors in your parts inventory, it is possible to use those. Just pay close attention to their polarity. The positive legs of the original capacitors are marked with a white triangle on the PCB (see **Figure 2**)



(Figure 1)

BUILDING IT

Cut sixteen female jumper wires (Tayda SKU#: A-2374) and make each one 120mm long. Refer to **Figure 1** and solder them onto the mini toggle switches like so:

Eight - The center pin of all switches **SW1** through **SW8** (**JP2**, **JPA-**, **JP5**, **JPB-**, **JP4**, **JPC-**, **JP3**, **JPD-**)

Four - The lower pin of switches **SW1**, **SW3**, **SW5** & **SW7** (**JP8**, **JP7**, **JP9**, **JP6**)

Four - Where the two capacitors are joined together on switches **SW2**, **SW4**, **SW6** & **SW8** (**JPA+**, **JPB+**, **JPC+**, **JPD+**)

Carefully unsolder capacitors **C2**, **C4**, **C6** & **C8** from the Quad Decay PCB and remove any excess solder from the holes

Solder one leg of capacitor **C2** onto the top pin of toggle switch **SW2**. Solder one leg of capacitor **CA** onto the bottom pin of toggle switch **SW2**. Solder the open legs of capacitors **C2** and **CA** to join them together. Solder a female jumper wire onto this same joint (see **Figure 2**). Solder a 2-pin jumper block (Tayda SKU#: A-198) onto the Quad Decay PCB as shown in **Figure 2**. This is where the original capacitor C2 was originally located

Repeat this same wiring sequence for switches **SW4**, **SW6** & **SW8**

Use a blank 4HP panel (or larger) and drill holes for the eight mini toggle switches then mount the switches in place

Now the easy part!

Simply attach the female jumper wires onto the corresponding jumper pins on the PCB as follows by referencing the wires shown in **Figure 1**

SW1 = **JP2** / **JP8**

SW3 = **JP5** / **JP7**

SW5 = **JP4** / **JP9**

SW7 = **JP3** / **JP6**

SW2 = **JPA+** / **JPA-** (This is where capacitor C2 was originally located)

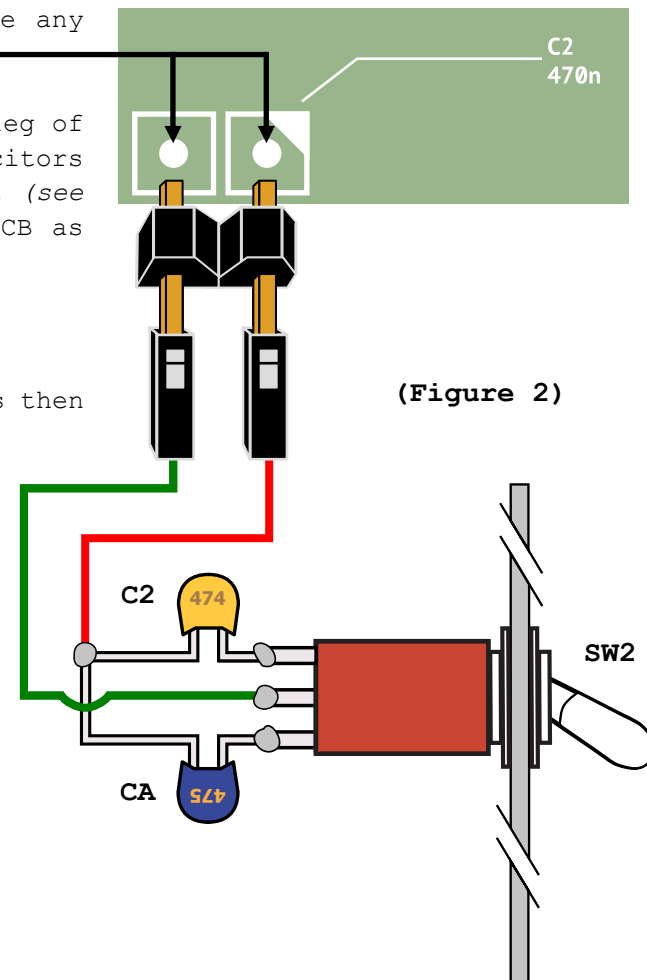
SW4 = **JPB+** / **JPB-** (This is where capacitor C4 was originally located)

SW6 = **JPC+** / **JPC-** (This is where capacitor C6 was originally located)

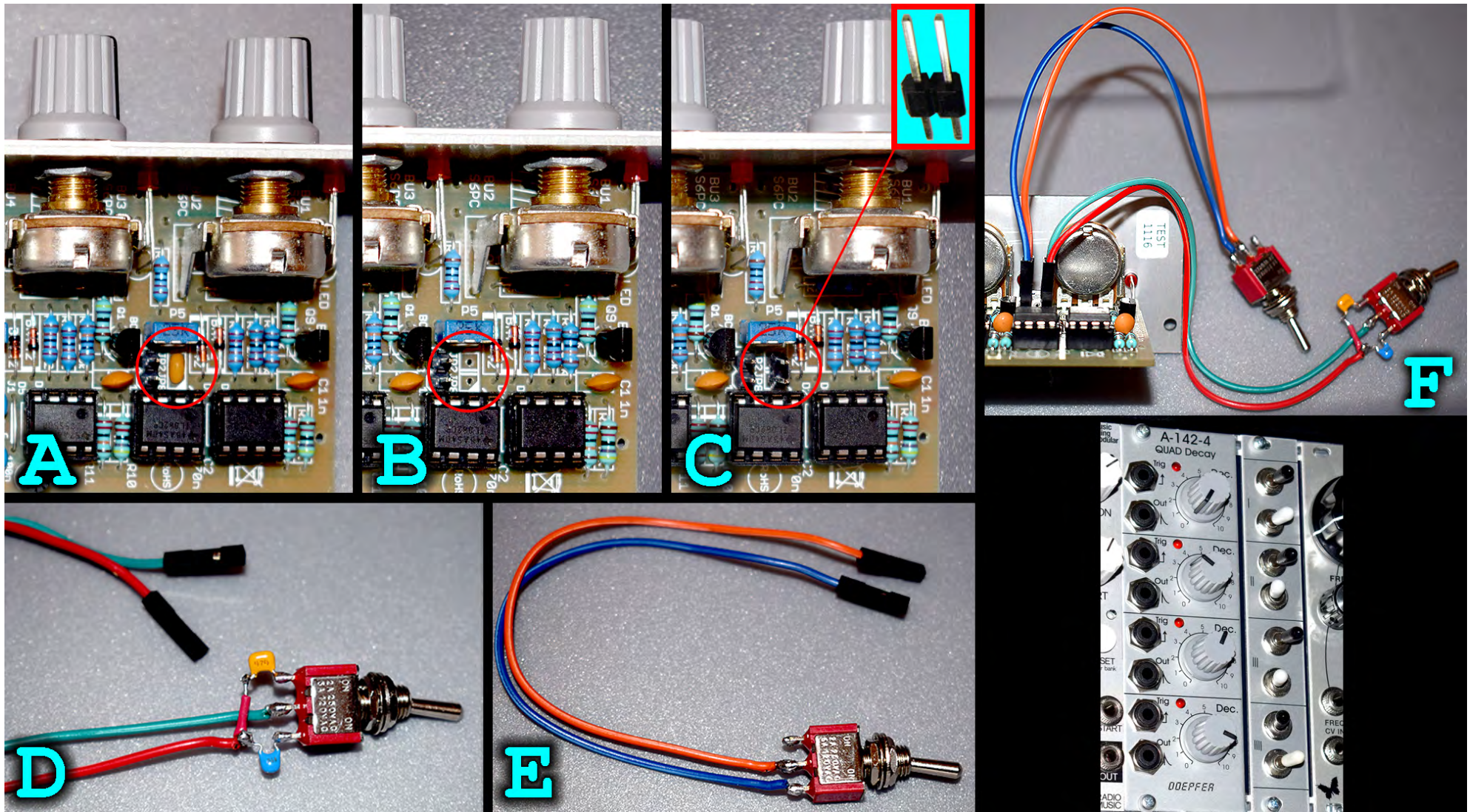
SW8 = **JPD+** / **JPD-** (This is where capacitor C8 was originally located)

MAKING IT WORK

Flipping the **SW1** switch will turn "Loop Mode" ON for Quad Decay sub-unit #1. Flipping the **SW2** switch will increase the envelope time range by a factor of 10x for Quad Decay sub-unit #1. Flipping the **SW3** switch will turn "Loop Mode" ON for Quad Decay sub-unit #2. Flipping the **SW4** switch will increase the envelope time range by a factor of 10x for Quad Decay sub-unit #2 and so on...



(Figure 2)



- A) Original factory installed 470nF capacitor at location C2 on PCB
Capacitor C2 is for sub-unit #1 C4 is for sub-unit #2 C6 is for sub-unit #3 C8 is for sub-unit #4
- B) Empty holes on the PCB after capacitor C2 has been removed
- C) New jumper pins installed where capacitor C2 was previously located. The new jumper pins are Tayda SKU#: A-198
- D) Mini ON/ON toggle switch **SW2** wired with the original 470nF capacitor on the top, new 4.7µF MLCC capacitor on the bottom and female jumper wires. The **SW2** switch wiring is identical to switches **SW4**, **SW6**, and **SW8**
- E) Mini ON/ON toggle switch **SW1** wired with female jumper wires. **SW1** wiring is identical to switches **SW3**, **SW5** and **SW7**
- F) **SW1** (Right) and **SW2** (Left) connected to jumper pins for sub-unit #1