FREQUENCY CENTRAL

Build documentation for:

CRYPTOGRAF

Cryptograf features 4 address inputs, 1, 2, 4 and 8, each of which has an associated input socket as well as a 3 position state switch which allows each address input to be held high, respond to input signals, or held low.

Each input has two status LEDs. The red LED displays the signal present at the input socket, while the green LED displays the status of the address input.

The combination of signals present at the input sockets, together with the positions of the state switches allows Cryptograf to have 16 different output states, numbered from 0 through to 15.
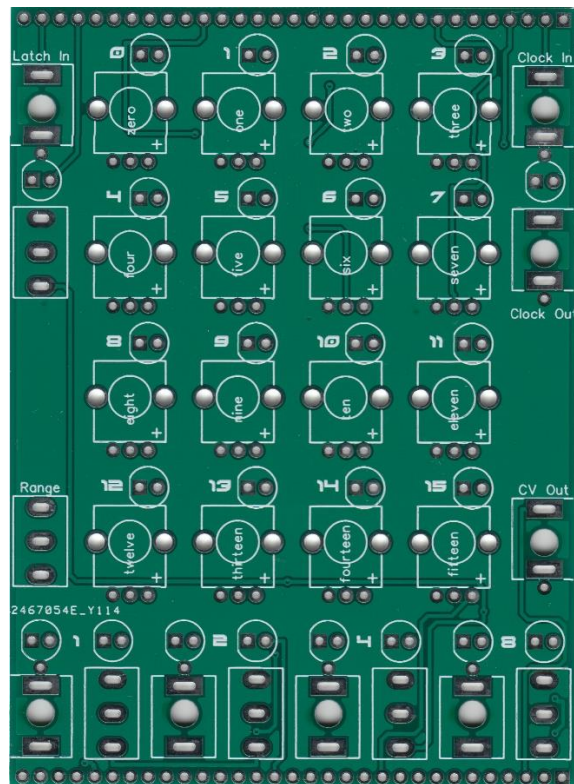
The output state of Cryptograf can be ascertained by observing which of the 4 address inputs are high.

For more details, please refer to the Cryptograf User Guide
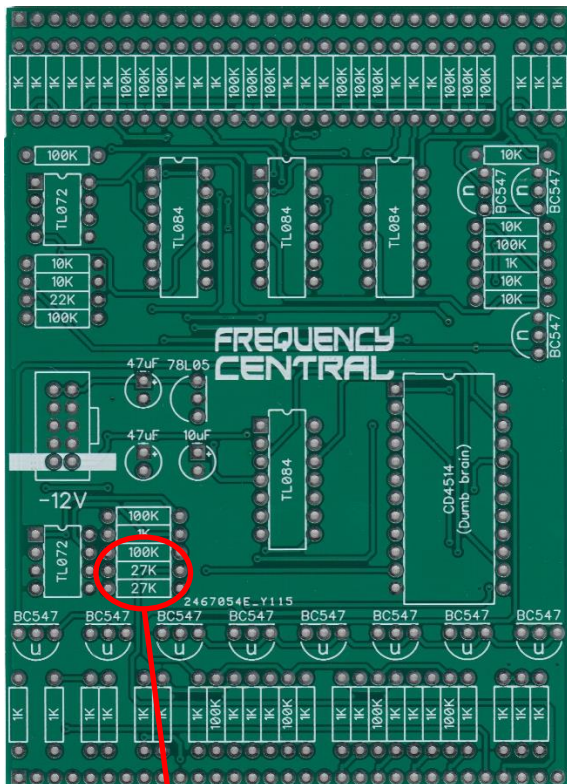
| **Main PCB** | **Pots 'n' sockets PCB** |

From December 2019 these three values have been replaced with 120K, 47K, 47K. If you have an older PCB with 100K, 27K, 27K, we recommend that you replace these values with 120K, 47K, 47K.

Bill of Materials

|			
1K x 40 10K x 6 22K x 1 47K x 2 (in place of 27K on older version) 100K x 20 120K x 1 (in place of 27K on older version) All resistors ¼ watt metal film.	10uF x 1 47uF x 2	CD4514* TL084 x 4 TL072 x 2 BC547 x 11 78L05 x 1 3mm red LED x 20 3mm green LED x 6 24 pin IC socket x 1 14 pin IC socket x 4 8 pin IC socket x 2	B100K x 16 (or these)* * 3.5mm socket x 8 SPDT on/on x 2 SPDT on/off/on x 4 Male header x 2 (cut to size) Female header 2 (cut to size) Power header x 1
* PCB has option for either PDIP or SOIC CD4514 from December 2019 ** I prefer the Song Huei tall trimmers because they have a longer shaft and a white notch.			

Main PCB assembly

1. Solder all resistors
2. Solder all IC sockets
3. Solder the 78L05 and all BC547 – watch the polarity!
4. Solder the box power header. Make sure the notch lines up with the screenprint legend. If in doubt, have a look at a power cable, and make sure when inserted into the header the red stripe lines up with the -12V screenprint.
5. Solder all electrolytic capacitors
6. Cut male headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
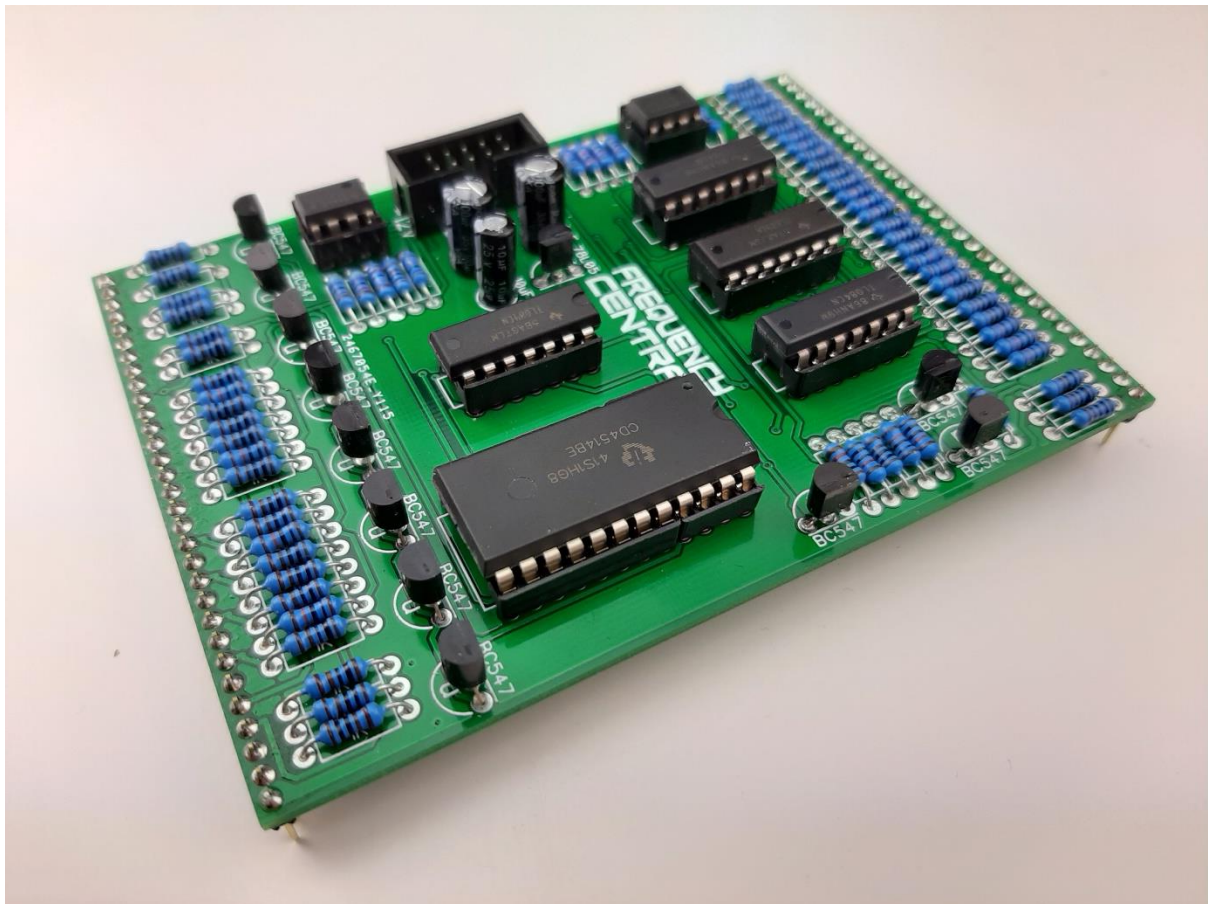
Pots 'n' sockets PCB

1. Solder all of the toggle switches. Please note that there are 2 **on/on** switches and 4 **on/off/on** switches, the lower 4 switches are all **on/off/on** type. The back of the PCB is your friend here, as it states clearly either **on/on** or **on/off/on** for each switch.
2. Place all sockets on the PCB, making sure the ground tabs line up with the PCB's ground pads – be careful because there are two different orientations - then place the panel over them. This will assure that the sockets are correctly positioned. Flip the whole lot over and solder the sockets into place. Use cut off resistor legs to connect the sockets' ground tabs line up with the PCB's ground pads.
3. Place and solder all 16 poteniometers.
4. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
5. Put all 26 LEDs through their pads. Present the panel to the PCB, flip the whole lot over, make sure the LEDs stick though the holes in the panel, solder in place.
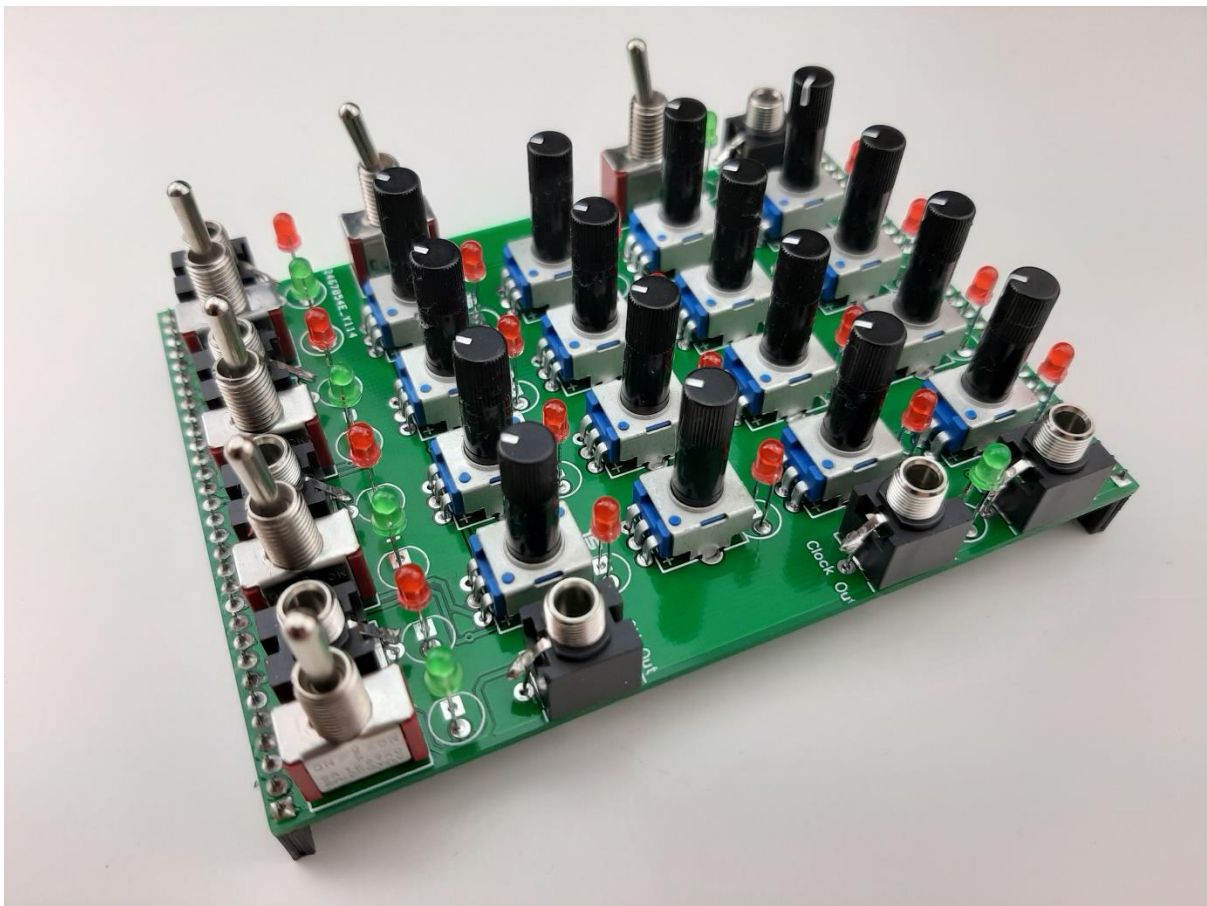
All done! Go play! Expect confusion!

RDH 26/11/19

http://www.frequencycentral.co.uk/