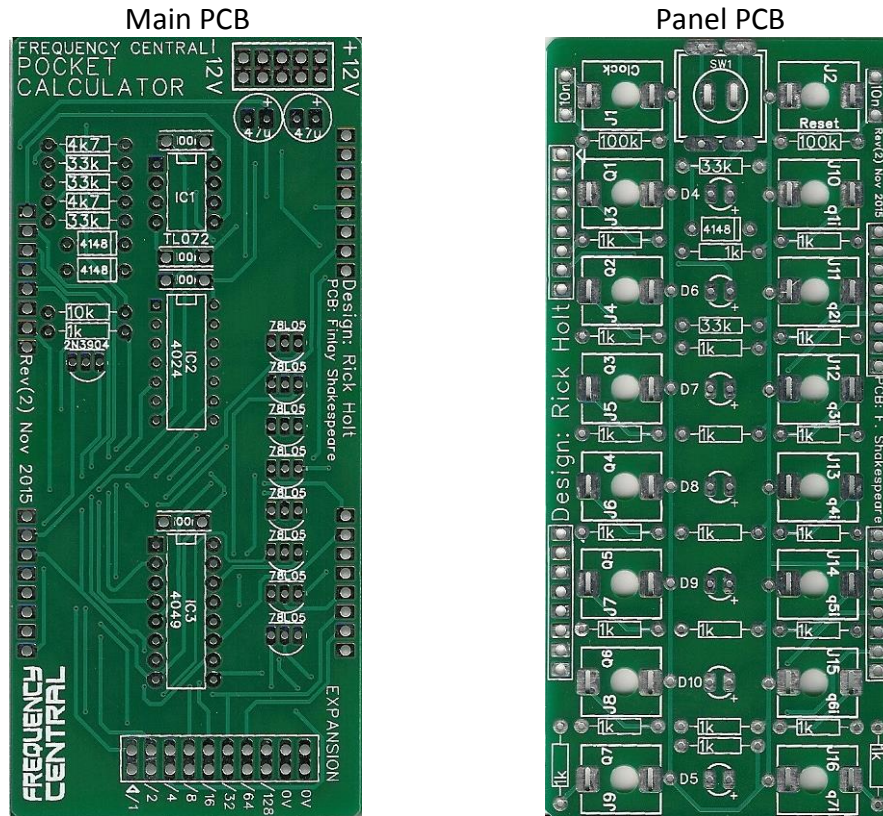


FREQUENCY CENTRAL

Build documentation for:

POCKET CALCULATOR REV(2)



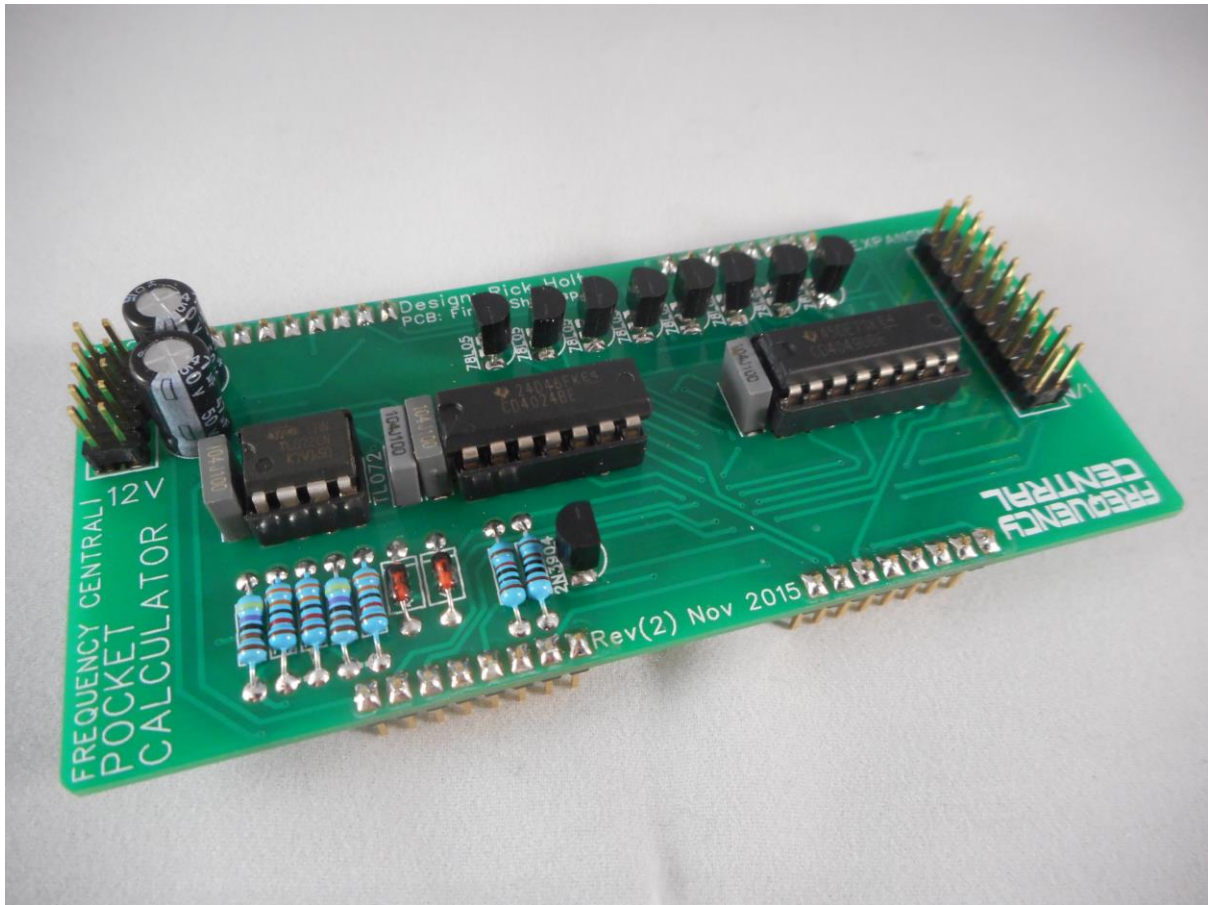
Bill of Materials

1K x 20 4K7 x 2 10K x 1 33K x 5 100K x 2 All resistors are ¼ watt metal film	10nF x 2 100nF x 4 47uF x 2	CD4024 x 1 CD4049 x 1 TL072 x 1 2n3904 x 1 * 1n4148 x 3 78L05 x 8 ** 3mm green LED x 7	Power header Male header strip Female header strip Kobiconn sockets x 16 Momentary switch***: Tactile or Push button
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* or [BC547](#), but rotate by 180° for different pinout.

** yes 8 x 78L05. One is used as a 5V regulator, the other seven are used as output buffers.

*** you can use either type of switch, pads are provided for both. I prefer the Tactile type.

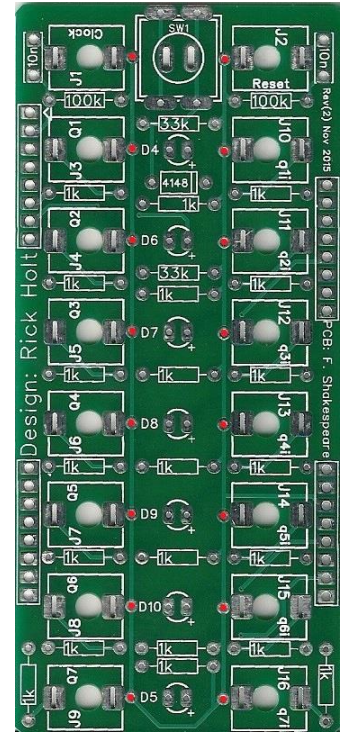
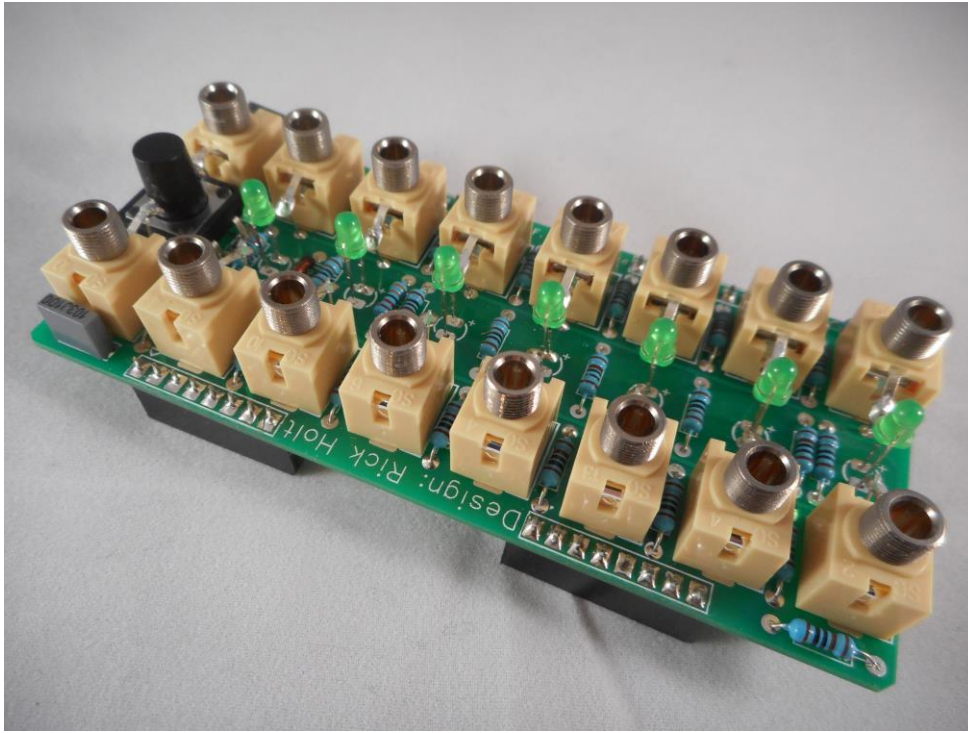


Main PCB

Populate the Main PCB as shown on the silkscreen, starting with the lowest profile components, so:

- Resistors
- IC sockets
- Non-electrolytic capacitors, transistor, voltage regulators
- Power header and expansion header
- Electrolytic capacitors

Finally, cut 4 male header strips to the correct lengths and solder to the PCB so that the long legs stick out of the rear of the PCB.



Panel PCB

Populate the Panel PCB as shown on the silkscreen in this order:

- Resistors and diode
- Capacitors
- Switch*: the four pads are sized so that the switch sits on them rather than going through them. Solder from the component side rather than flipping it over to solder. This ensures the switch fits snug to the PCB, and that it's head protrudes through the panel by the correct amount.

*but only if you use the [Tactile](#) switch option. If you use the [Push Button](#) type, solder it after the sockets and LEDs.

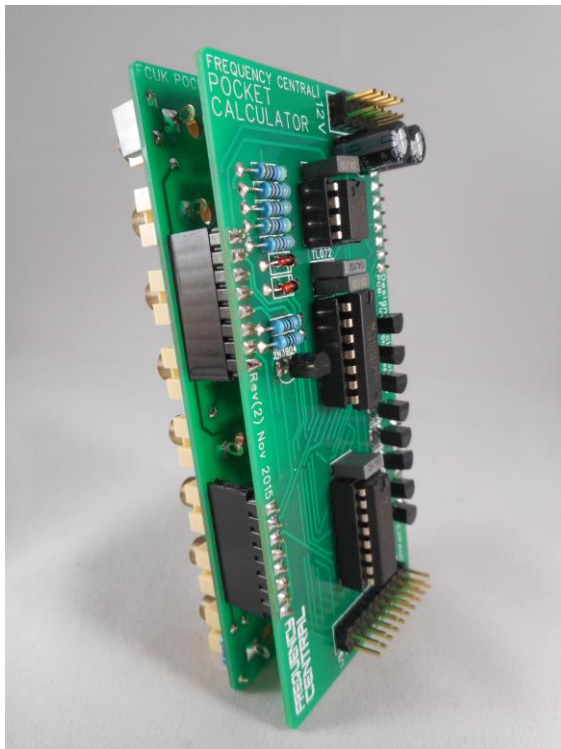
Now, place the 16 sockets onto the PCB with their ground lugs pointing towards where the LEDs will eventually go. **Don't solder them in place yet!** Now set the sockets to the panel using the nuts, making sure they all sit right. Place the assembly face down and solder the sockets in place. Everything should line up nicely now!

Take the whole thing apart, ie remove the nuts/washers and take the panel away from the panel PCB. Now solder solid core (cut off resistor legs) between the sockets' ground tabs and the adjacent ground pads on the PCB (shown as red dots on the image above). There is one ground pad per sockets. Be particularly careful around the two sockets next to the tactile switch, ensuring that the lugs don't foul the smooth movement of the switch.

Cut 4 female header strips to the correct lengths and solder to the PCB so that the black parts stick out of the rear of the PCB.

Push the 7 LEDs through their holes, remembering that the long legs go through the holes marked '+'. **Don't solder them in place yet!** Mount the panel PCB onto the panel, tighten up all the nuts – it's worth checking that the LEDs will fit smoothly through the holes before doing this, as some can be a little tight – if needed a scalpel can be used to shave the holes slightly wider. Place the assembly face down, push the LEDs into position and solder in place.

Plug the Main PCB into the Panel PCB...you're done!



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