

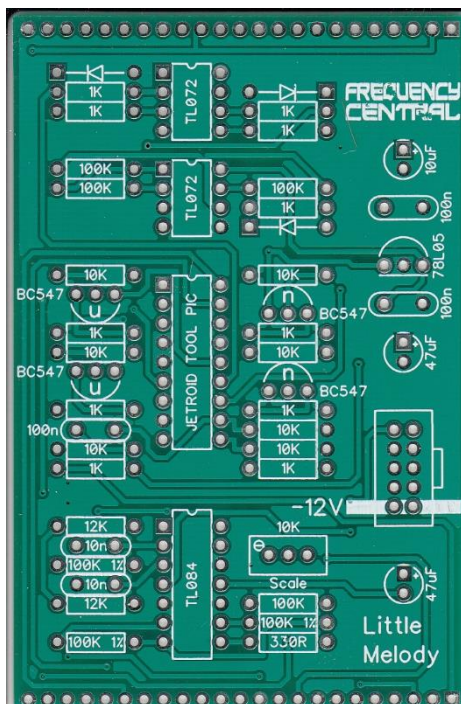
FREQUENCY CENTRAL

Build documentation for:

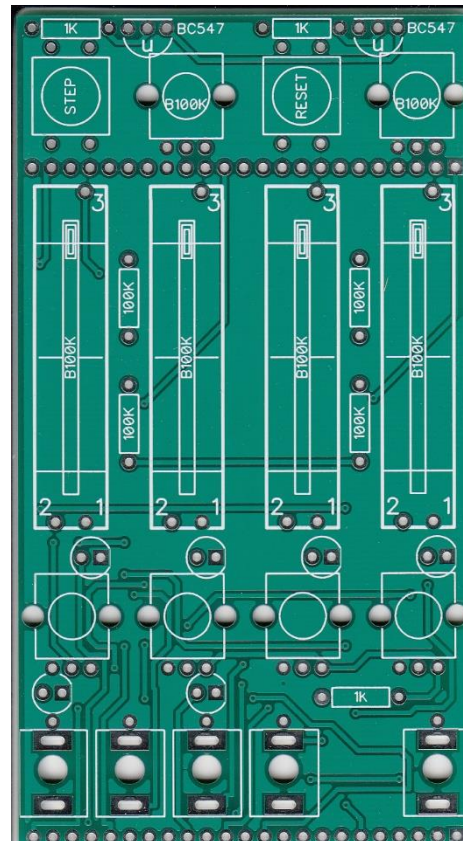
LITTLE MELODY

Featuring code by Jetroid

Main PCB



Control PCB



Little Melody is a generative sequencer based around clock divisions and a chromatic quantiser, used to create in-the-moment licks and riffs. It is more than the sum of its parts.

Little Melody's internal operations can be considered as 4 clock dividers patched into a CV mixer via attenuators. The attenuators select notes over a 5 octave range, the clock dividers determine how often those notes are added to the mix. The final output of Little Melody is quantized chromatically for fast set up and continuously pleasing results.

The 4 clock dividers are labelled A, B, C, and D. They all receive clocks from the same source, the divisions may be selected using the presets and the individual division selectors. The clock dividers can be set to count up, down, or to one of a variety of modes that move between counting up and down.

For further information see the Little Melody User Guide.

Key to PCB screen print:

n: This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.

Please observe the correct polarity for all ICs, voltage regulators, diodes and electrolytic capacitors.

Bill of Materials

330R x 1 1K x 14 10K x 7 12K x 2 100K x 8 100K 1% x 3* <u>All resistors ¼ watt metal film.</u>	<u>10nF x 2</u> <u>100nF x 2**</u> <u>10uF x 1</u> <u>47uF x 2</u>	TOOL PIC <u>TL084 x 1</u> <u>TL072 x 2</u> <u>BC547 x 6</u> <u>1N4148 x 3</u> <u>78L05 x 1</u> <u>3mm red LED x 6</u> <u>14 pin IC socket x 2</u> <u>8 pin IC socket x 2</u>	<u>B100K x 2</u> metal shaft <u>B100K x 4</u> sliders <u>B100K x 4 (or these)** *</u> plastic shaft <u>10K trimmer x 1</u> <u>3.5mm socket x 5</u> <u>Tactile switch x 2</u> <u>Male header x 1</u> (cut to size) <u>Female header x 1</u> (cut to size) <u>Power header x 1</u> <u>Knobs x 2</u> <u>Slider caps x 4****</u>
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* They don't have to be 100K exactly, they just have to be matched to each other, so for example if they are all 99.9K that's fine. Grab a bunch of 100K resistors, measure each one, make little piles of 100k, 99.9K, 99.88K etc. Before long one of the piles will have three resistors in it, that's your matched set! Should only take 5 minutes.

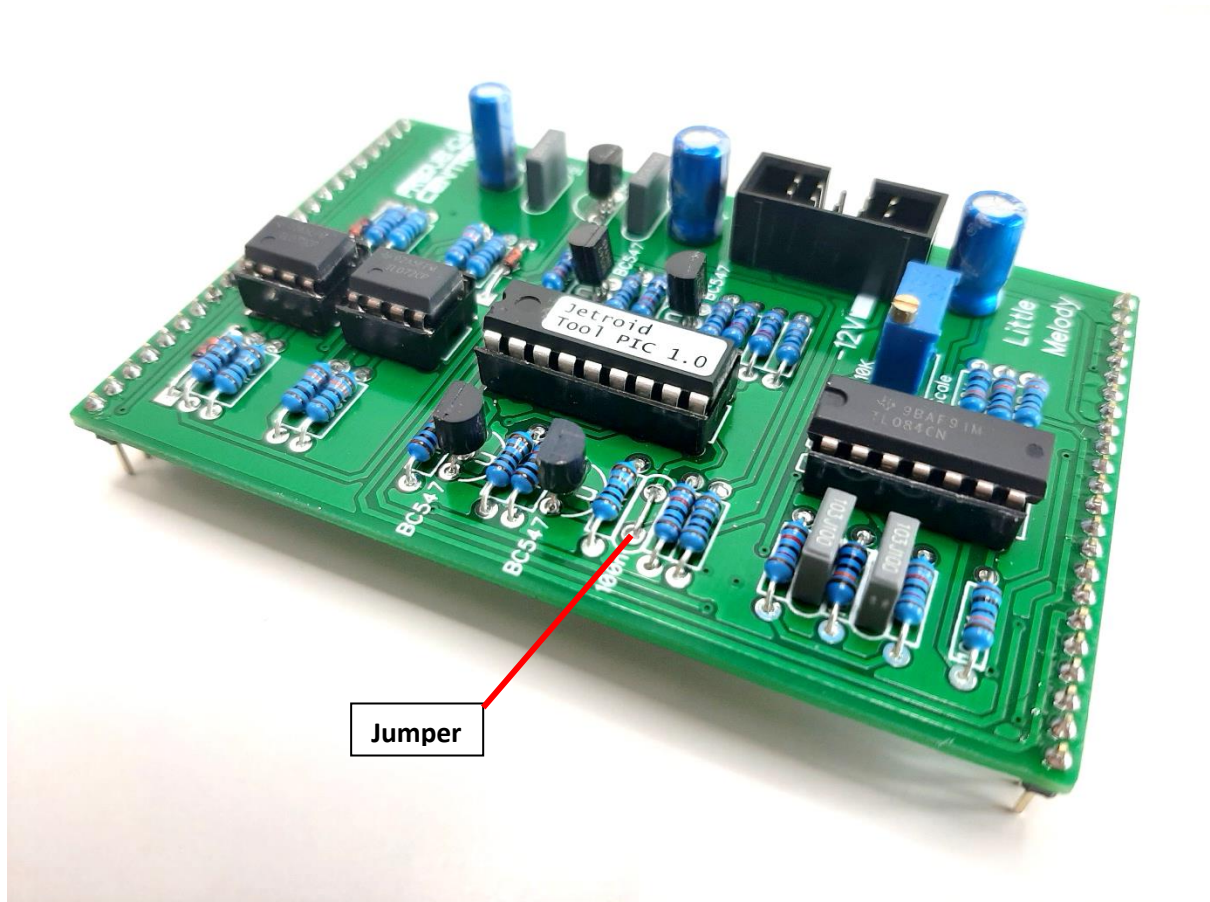
** Early rev PCBs show 100nF x 3, one should be replaced with a jumper (see text below).

*** I prefer the Song Huei tall trimmers because they have a longer shaft and a white notch.

**** Yes, [these](#), despite the description.

Main PCB assembly

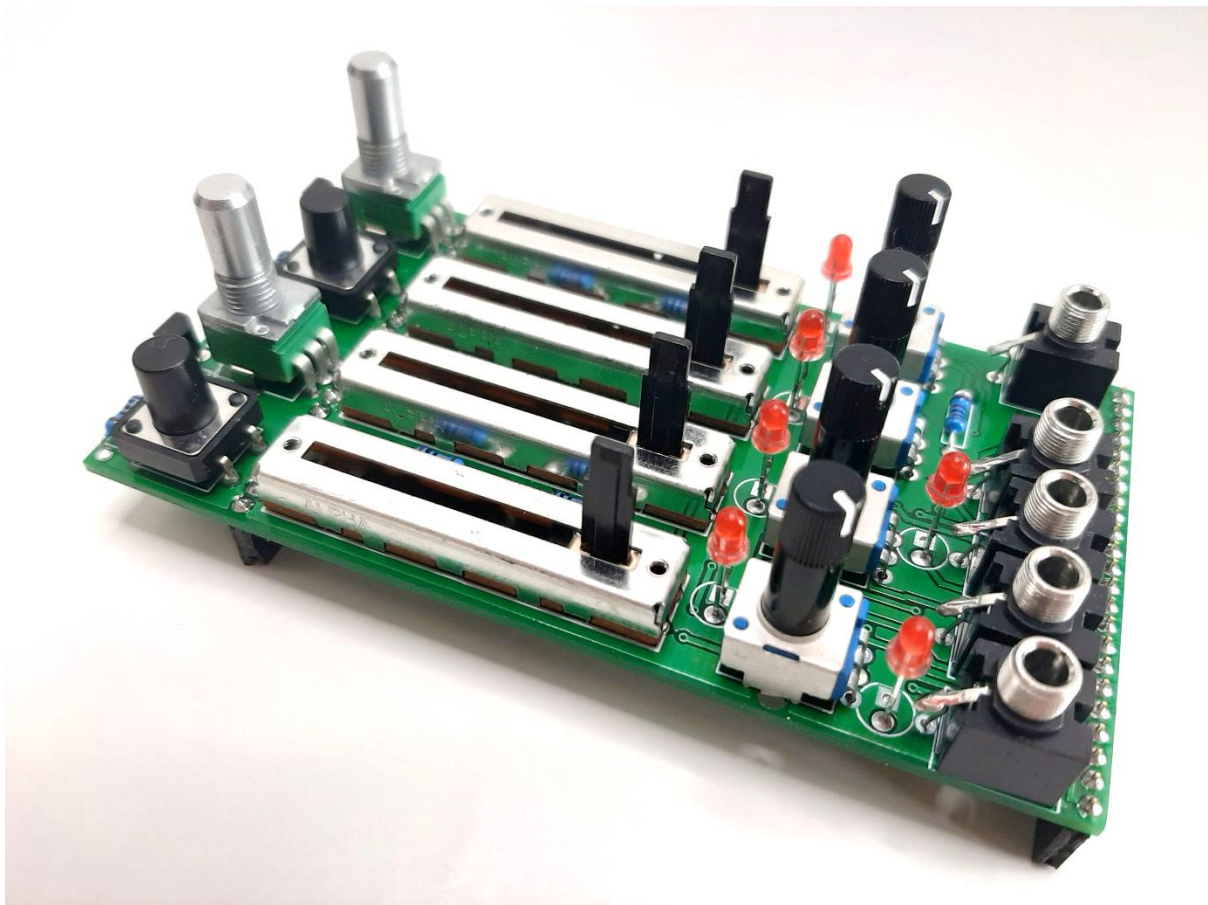
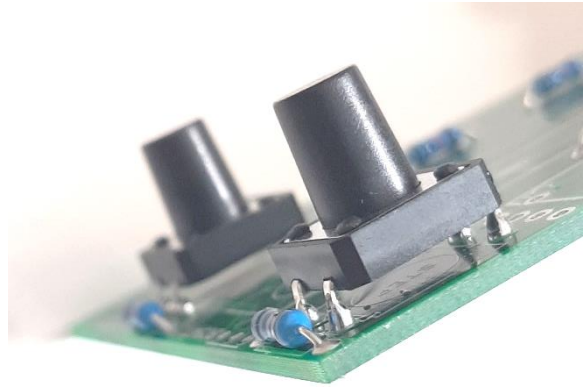
1. One 100nF capacitor is replaced by a jumper – do this first (see photo below)
2. Solder the diode and all resistors
3. Solder all four IC sockets
4. Solder the non electrolytic capacitors
5. Solder the 78L05 and BC547s– watch the polarities!
6. Solder the box power header. Make sure the notch lines 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.
7. Solder all electrolytic capacitors and the trimmer
8. Cut male headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.



Control PCB

It's quite important to follow this sequence!

1. Place the PCB on a flat surface. Place the 2 tactile switches into their solder pad. Do not push them all the way through, they should sit proud of the PCB (see photo), their legs should not protrude through the other side. Solder them into place from the top of the PCB.
2. Solder the 6 resistors
3. Solder the 2 x BC547
4. Solder the 2 x metal shaft pots and the 5 x sockets. Use the panel to ensure these line up nicely
5. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
6. Solder the 4 x sliders
7. Solder the 4 x plastic shaft pots
8. Solder the 6 x LEDs. Use the panel to ensure these line up nicely

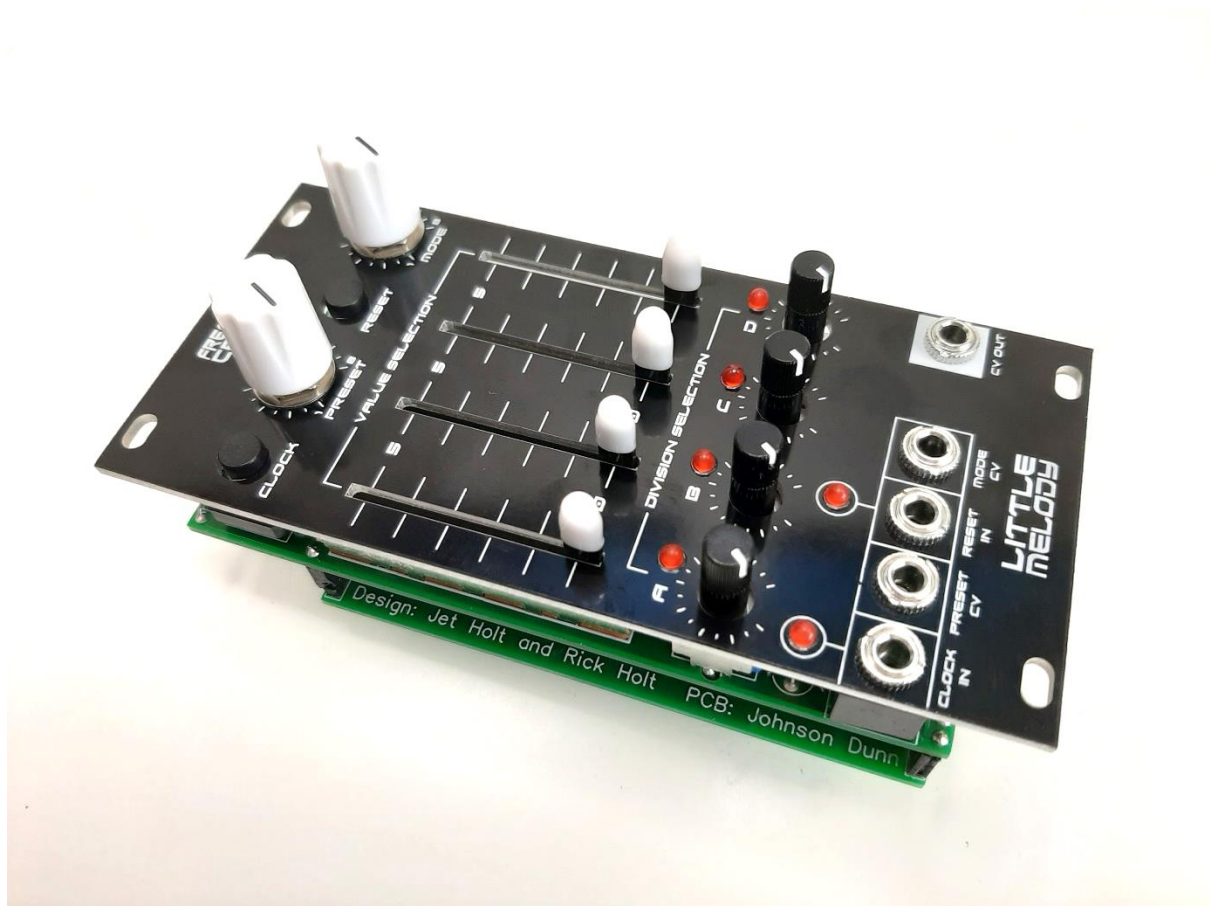


Bolt the metal shaft pots and the sockets to the panel using their nuts and washers. Pop the knobs on the pots and the caps on the sliders. Looks nice huh?

Calibration

1. Set all rotary pots fully anticlockwise
2. Set all sliders to 5
3. Plug a patch cable into Little Melody's CV Out
4. Using a [digital multimeter](#) (DMM), connect the black probe to the sleeve of the patch cable (ie ground), connect the red probe to the tip of the patch cable (I find a couple of [crocodiles](#) can help here)
5. Set the DMM to read DC voltage.
6. Adjust the trimmer on the back of Little Melody until the DMM reads 5.00V.

All done! Go be generative!



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