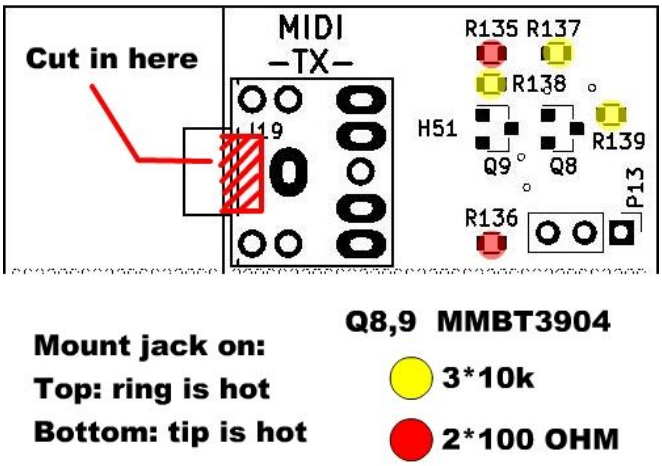
SDS_VCO_MIDI Expansion DIY

The MIDI Expansion (if included in your kit) can be added once the SDS_VCO has been tested and run for a while. Reason being the MIDI board covers part of the circuit underneath and if there are any problems it can be difficult to remove once in place.

If you have the board and no parts for the MIDI expansion (all kits include the board) then you'll need the following:
3 x 10K resistors (603 size)
2 x 100 ohm resistors (603 size)
2 x MMBT3904 transistors
1 x SJ1-3525N stereo board mount jack.
*The jack is optional if you plan to direct wire to a 5 pin MIDI jack.
1 x 3 pin male header (2.54mm / .1 inch pitch)

All of these parts are available at Digikey or Mouser. (603) is NOT metric size!
You will also need a MIDI jack and 3.5mm stereo plug. If your MIDI uses only 3.5mm jack, then a standard stereo male-male patch will work fine. Keep in mind all 3.5mm MIDI wiring isn't completely standard though!

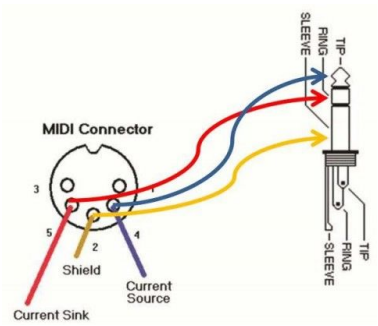


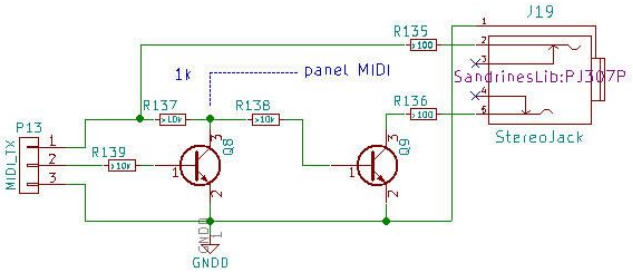
Place parts as shown.

If a jack is to be used then it's important to grind down the edge of the board so the jack sits more flush. This can be done with a dremel or even a round file.

If directly wiring to the MIDI jack (5 pin) the top pin on the board's jack pads is the MIDI "hot" or pin #4, while #5 is the lower pad.

This is also reflected in the schematic shown here. The shield line (pin 2) isn't absolutely required as it doesn't usually carry any of the MIDI signals, but is recommended.



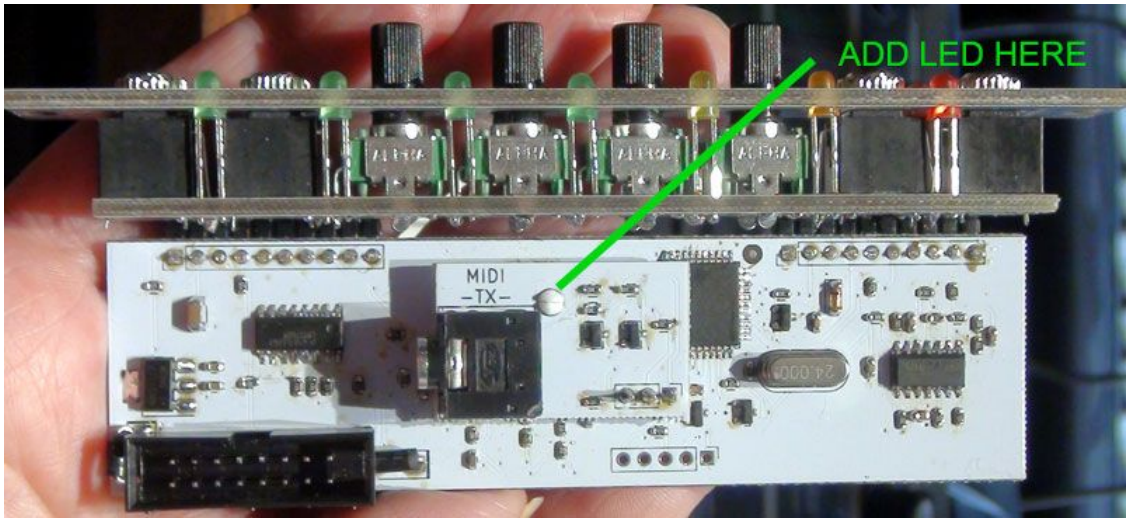


Not that the MIDI connector shown here is the back of a male plug. If using a MIDI socket, then #4 & #5 will be reversed from the rear-of-jack viewpoint.

Good rule of thumb is:
If it doesn't work one way, then it must be the other!
This goes for the 3.5mm type of MIDI jacks as well. The tip/collar connections can be reversed as there's no standard for these.

Attach the MIDI board to the mother board as shown.
For extra strength, an old 3mm LED can be poked into the hole and it's leads soldered to the ground plane around the hole in the mother board. A small area of the under side of the mother board must be ground off around the hole to solder the LED leads to.

The white standoffs shown here weren't working out so we use an LED now also.



Check that the plug when in the jack doesn't protrude past the modules face panel (possibly interfering with adjacent modules) I should be fairly parallel to the board and not sticking up. The LED will also help with this alignment.

That's it!

Please refer to the Users Guide for more on how the MIDI is implemented.

Happy MIDI'ing!

Sandy Sims, SDS Digital 2017
Owner's manual: http://www.freshnelly.com/sdsvco/0-SDS_VCO_usersMan.pdf

The firmware at the time of this document is V1.00, so you can check the website at http://www.freshnelly.com/sdsvco/sdsvco.htm for possible updates or alternates.