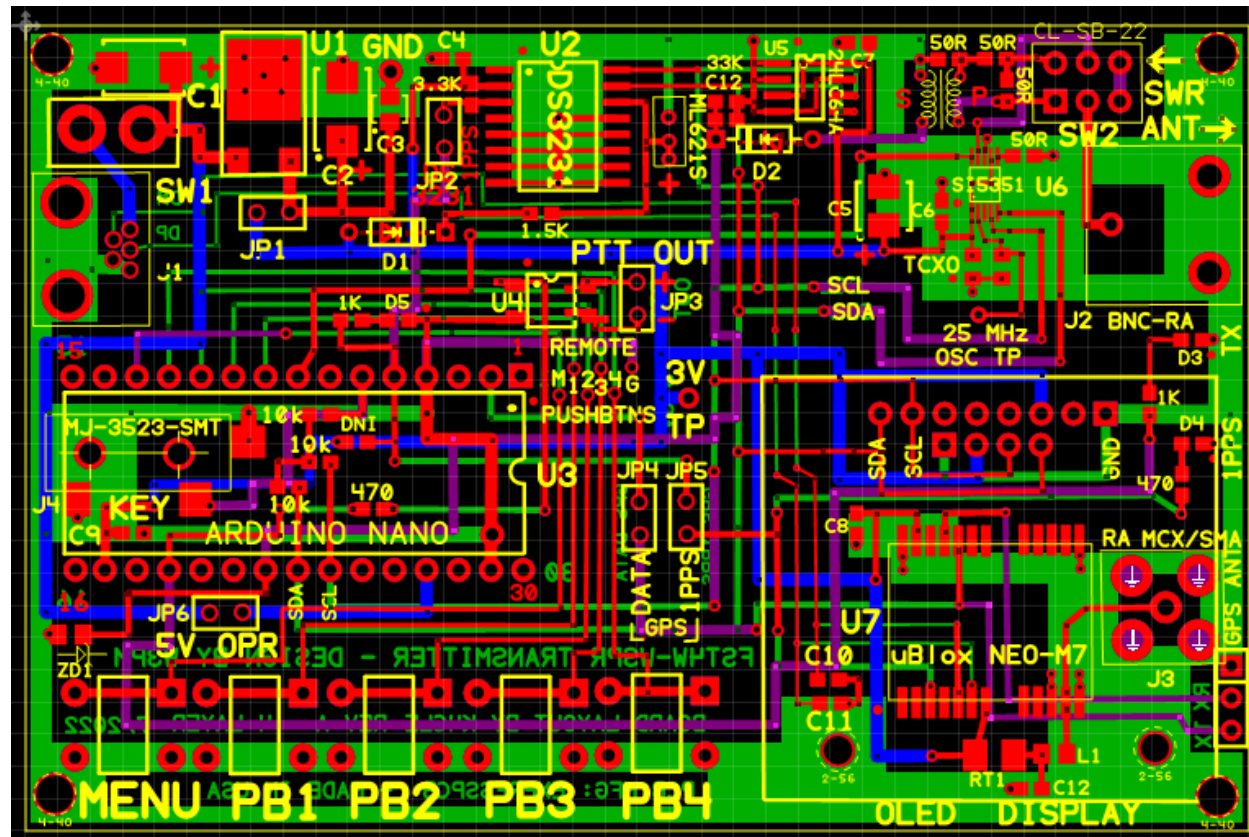


FST4W/WSPR FOUR-LAYER BOARD DESIGN/PCB LAYOUT

This board has the following components and capabilities:

1. A plugin socket to accept either standard Arduino Nano or the Arduino Nano 33 IOT. There is a jumper (JP6) to permit 5 volts for the standard Nano operation. **Note that this jumper must not be installed when the Nano 33 IOT module is installed.** The Nano 33 IOT operates on 3.3 volts and 5 volts could damage the module.
2. A GPS receiver module (uBlox 7M) is installed with an external bias-tee on board for supplying 3.3 volts to the GPS antenna. If you plan on using anything other than an antenna with a pre-amp, you may want to use a DC isolation device on the SMA connector. There is a re-settable fuse in the circuit to prevent a short circuit in the antenna line. A SMA female connector is used on this layout. The SMA connector is a little more rugged than the MCX/OCX connector used on the previous layout. There are jumpers that are used to connect the data output and 1PPS signal from the GPS receiver, JP4 & JP5 respectfully. Normally the 1PPS jumper (JP5) is not required as the 1PPS signal is furnished by the DS3231 and jumper JP2 must be installed for this function.
3. There is a 3.5 mm CW/FSK/etc. mono socket that is tied to data line D3. This socket is underneath the Nano module. When no connector is installed in the socket, data line D3 is at ground potential.
4. A 4-pin socket is installed for using an alternate, lower cost, OLED display. This item can be purchased from Amazon, Uctronics brand, part number 12864. Unfortunately only one of the two stand-off posts can align with this part for securing the display.
5. The USB Mini connector has both DM/DP data lines tied to uBlox receiver. This in case a future firmware release is available for upgrade of the GPS receiver.
6. This board has the SWR components that were not installed on the previous layout. This is nice to have for testing the RF output of the Si5351. A small slide switch was selected for this function which makes the RF signal flow in the same direction as the antenna connector.

Four-Layer Board Layout





4 - LAYER FST4W/WSPR BOARD