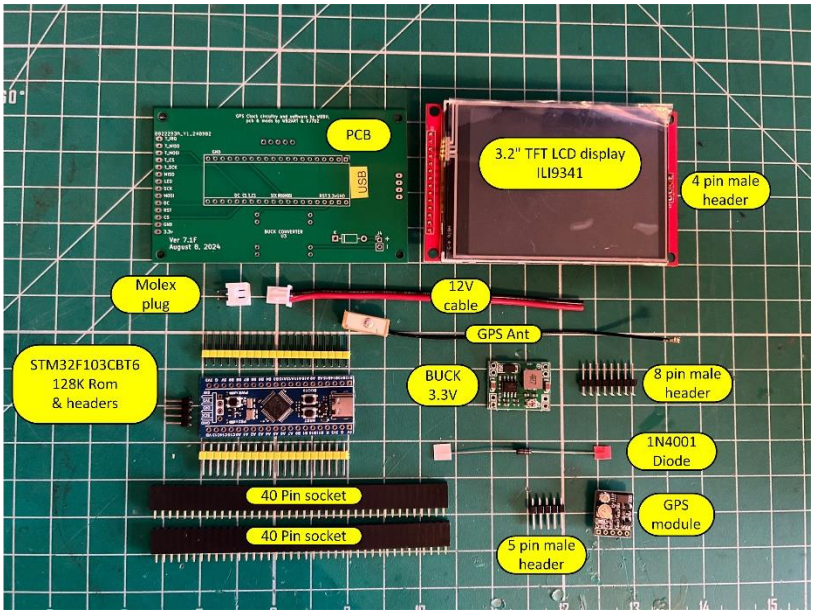
Assembly instructions for GPS clock

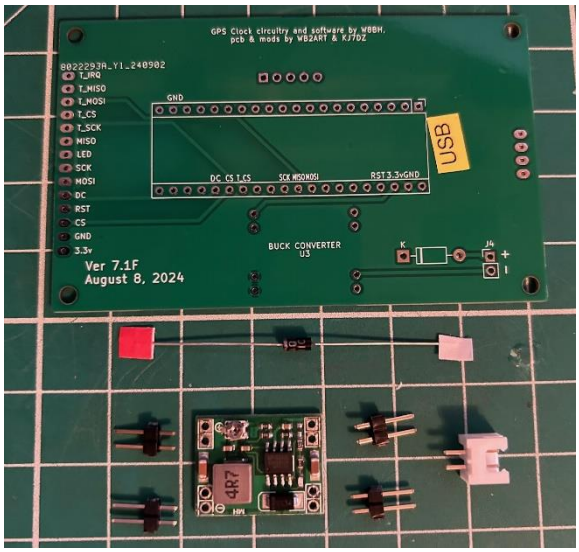
Based on Bruce W8BH NTP clock.
PCB designed by Ken WB2ART and Frank KJ7DZ



Parts included in kit

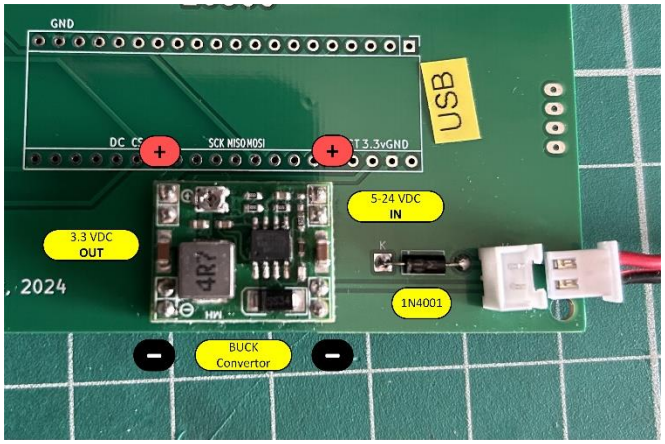
- PCB
- 3.2” TFT LCD display & 4 pin header
- STM32 module & (3) pin headers
- (2) 40 pin sockets
- Molex plug & 4” power cable
- GPS w/ antenna & 5 pin header
- 3.3VDC BUCK convertor & 8 pin header
- 1N4001 diode

*The 3.3VDC power supply is **NOT** needed if you plan to power the clock using the USB C connector on the STM32*

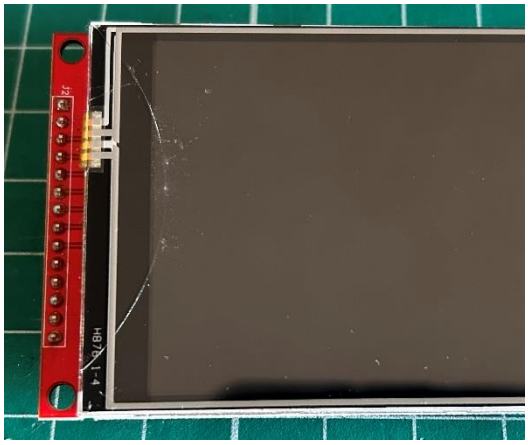


3.3VDC Power supply
Using the 8-pin header, cut it into (4) 2-pin headers

Install diode*, (4) header pins, molex plug* and BUCK* convertor on the PCB
*Verify part’s orientation

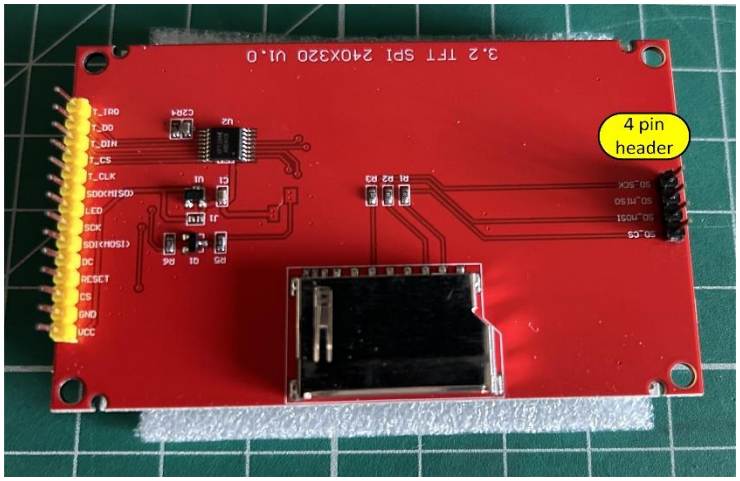


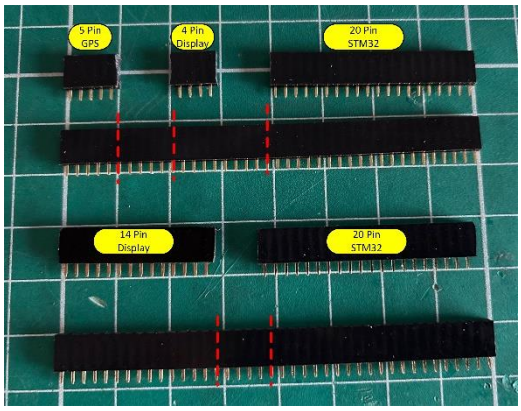
Connect the board to 12V supply. Measure the output voltage on the BUCK convertor and adjust the trim pot to **3.3VDC**



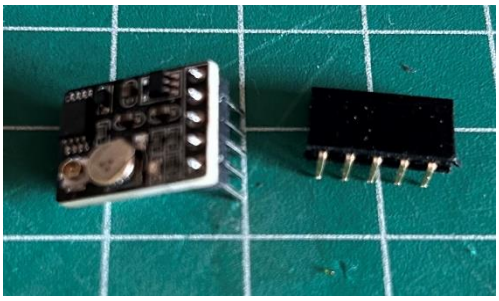
CAUTION:
DO NOT press on the edges of the glass

Solder a 4-pin header on the display.
Verify that header is straight up

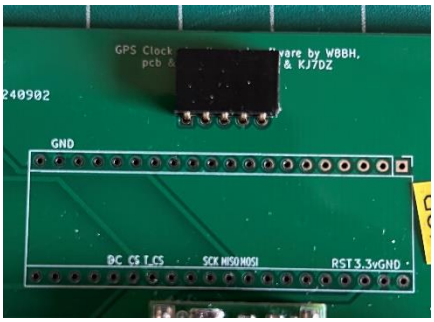




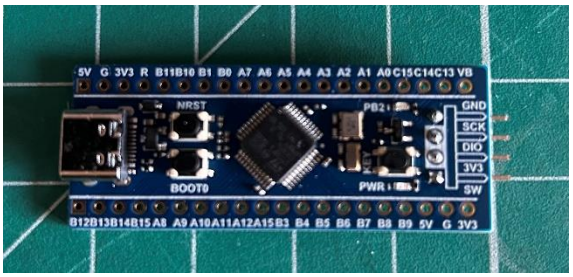
Cut up the (2) 40 pin sockets as shown



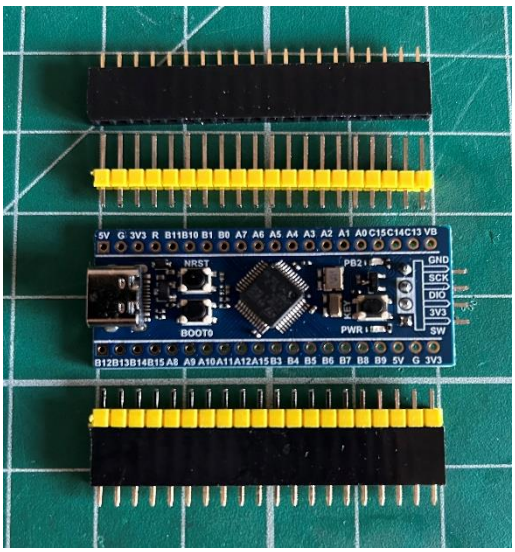
Solder 5 pin header to the GPS module. Bend all pins on GPS 5 pin socket down



Solder the GPS 5 pin socket on the PCB



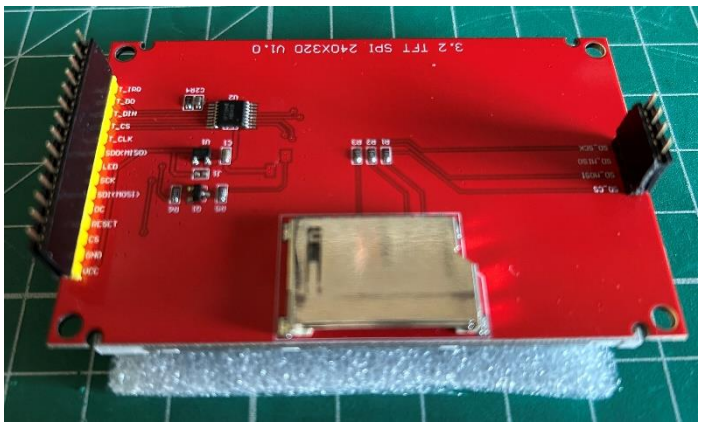
Solder the 4 pin program header on STM32



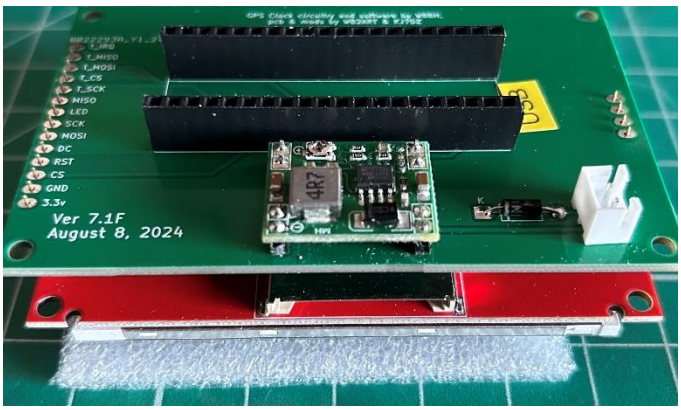
Stack the (2) 20 pin STM32 headers to the (2) 20 pin socket.

Stack the STM32 module with pin headers & sockets on the PCB as shown.

Tack solder a corner of each row and making sure the all pins are straight. Solder all pins on STM32 module and on the PCB



Place the 14 & 4 pin sockets on the display headers



Stack PCB on the display and solder the pins

the PCB to the display, making sure all pins correct.