**T41 V12 Display Driver – Combo 3.3V and 5V - Assembly Manual**

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**INTRODUCTION**

The Teensy 4.1 processor on the T41 Main board connects to the display via the SPI communication bus. This bus runs at a very high speed (in the may show a tendency to

**INVENTORY AND PREWORK**

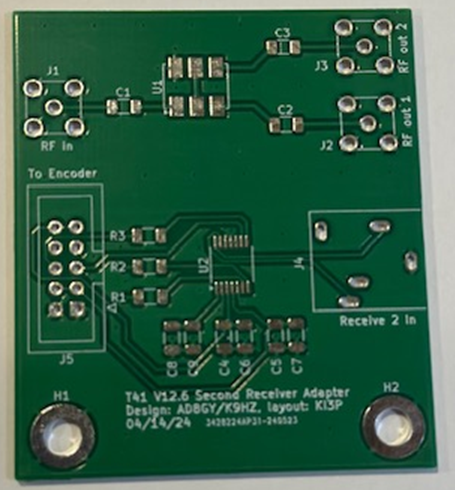
Before you begin, inventory the parts against the latest V012 Display Driver BOM to make sure you have everything you need to complete the adapter board. The BOM is available below and on the GITHUB: [T41/T41\_V012\_Files/T41\_V012\_Assembly\_Manuals at main · DRWJSCHMIDT/T41](https://github.com/DRWJSCHMIDT/T41/tree/main/T41_V012_Files/T41_V012_Assembly_Manuals)

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**BUILDING THE BOARD**

1. Find a place where you can spread out your work, including printouts of the schematic and BOM. Your workstation should be such that you can leave it overnight without having to "clean up". The workspace should also be kid- and cat-proof. If you get tired, stop. Come back to it tomorrow. Rushing the assembly rarely works out saving time.
2. Start by cleaning the bord with IPA (Iso-propyl or “rubbing” alcohol) to make sure it’s clean:



3. Next, place the hardest part on the board… U2, the PCM1808PWR. It's hard to see the pin 1 mark on some of the ICs. In the picture above, its at the lower left-hand corner of U2.

4. Do the "low-lying" SMDs next (e.g., caps and resistors). Place and solder C1-C9 and R1-R3.

5. Add U1, the transformer to the board. Make sure the orientation is correct (the print on the part should read normally when placed on the board above in its current orientation. If the print is upside-down, it’s the wrong way).

6. Finally add the five connectors to the board J1-J5.

7. The board is now complete. Use IPA again to clean the flux off the board.

A green electronic device with gold and silver connectors

Description automatically generated

**USING THE BOARD**

First, this adapter can only be used when the K9HZ front panel boards are used. This is because the 10-pin “Encoders” connector on the main board is connected to the 10-pin “Encoders” connector on the adapter. The RF-in connector is connected to the receiver antenna output on the LPF board. This signal is split into two channels, one for each receiver. These signals go to the input of the RX and second RX’s BPFs. Finally, the second Rx’s I/Q stream input is plugged into the 1/8” phono jack J4. See this diagram:

A close-up of a computer chip

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