

Raspberry Pi Touch Screen Ground Station

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Alan Johnston edited this page 10 hours ago · [9 revisions](#)

These instructions are to build a Raspberry Pi Touch Screen Ground Station based on the Fox-in-a-Box v4 disk image.

Video

Here is a [video of this](#).

Parts

Here's what you need:

- Raspberry Pi 4 (or Raspberry Pi 5) Single Board Computer. Any RAM amount is fine.
- Micro SD card with Fox-in-a-Box v4 disk image (FIABv4)
- Sunfounder 7" Touch Screen with Speakers
- RTL-SDR radio dongle
- Antenna for RTL-SDR
- USB extender cable
- Raspberry Pi power supply
- Wireless mouse
- two AAA batteries for mouse

Here's how the parts look:

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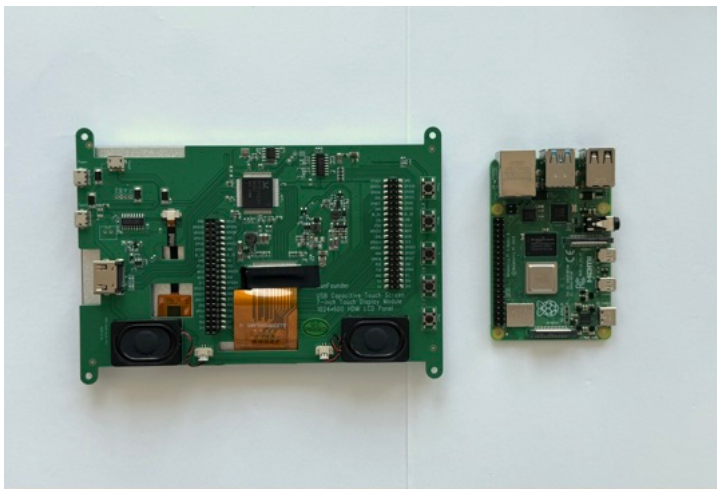


Steps

Here's the parts to put together the Touchscreen:



The first step is to plug the Pi 4 (or Pi 5) into the back of the touch screen:

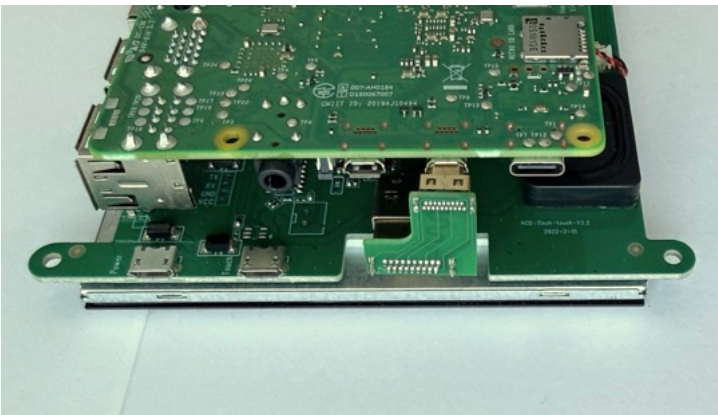
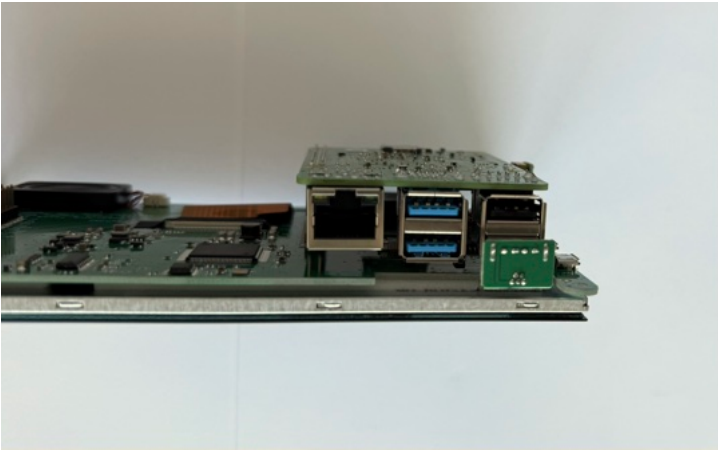
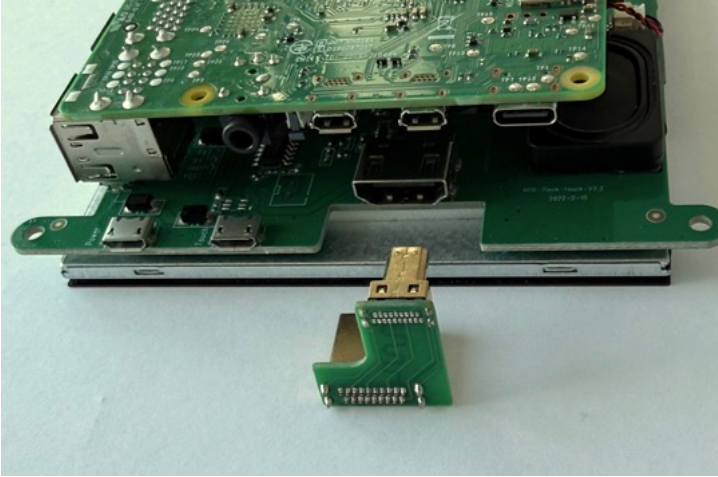
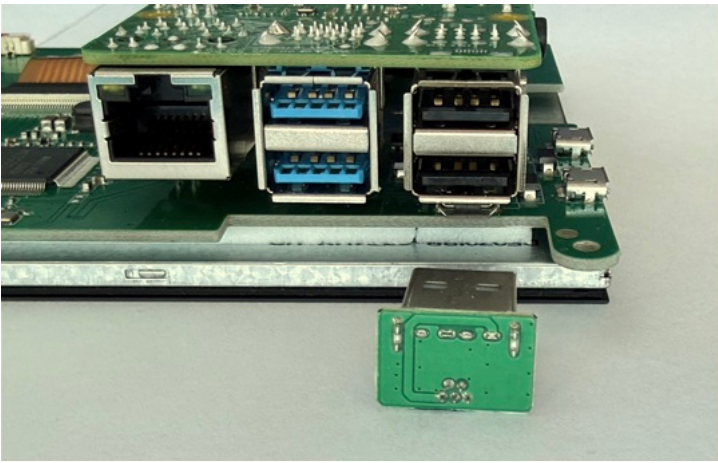


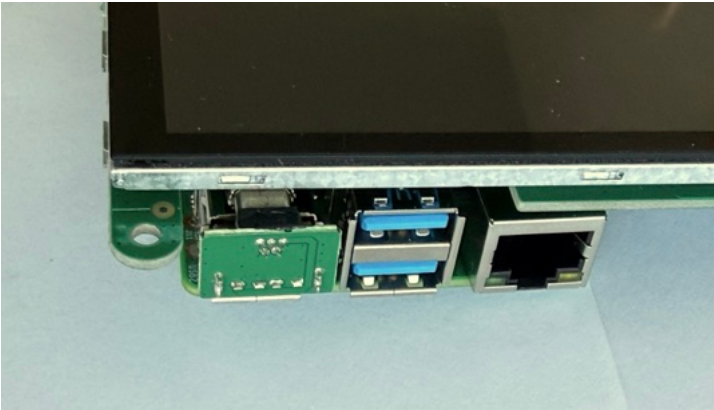
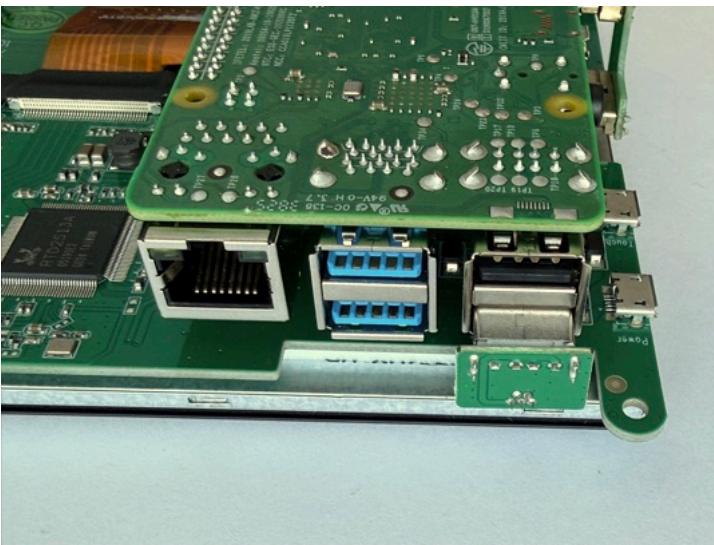
Here's how it looks:



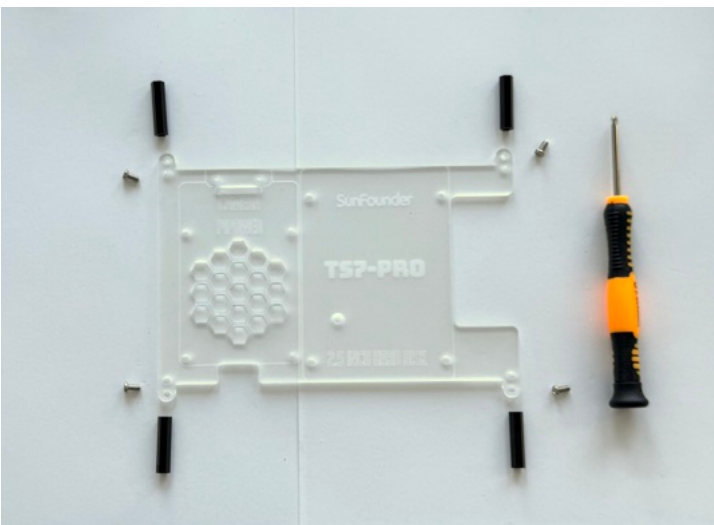
Next plug the HDMI adapter and the USB adapter into the Pi and the touch screen as shown:







Next, attach four nylon standoffs to the touchscreen back using four screws:

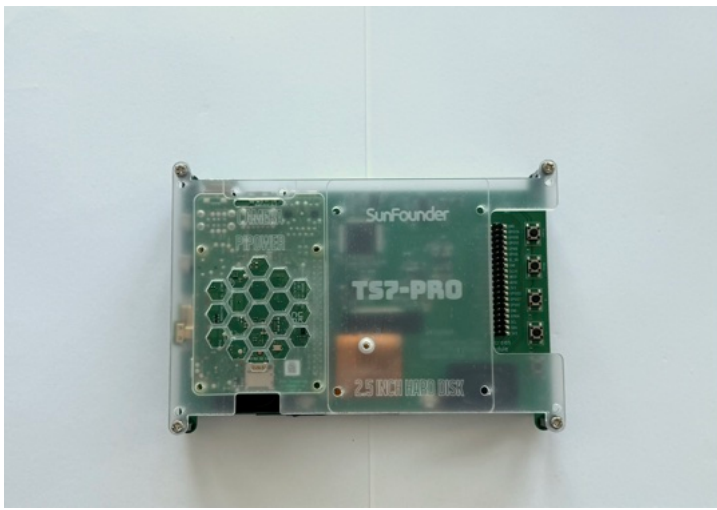


Here's how it looks:



Then place the screen on top and secure with four screws:



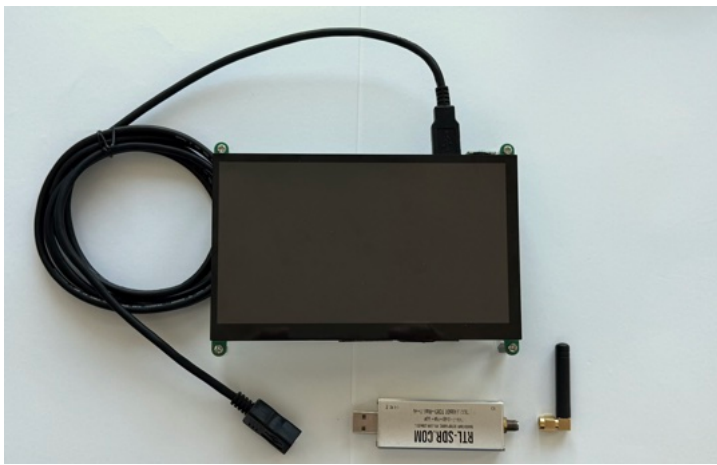


Here are the rest of the parts that we will plug in:



Start with the USB extender cable:





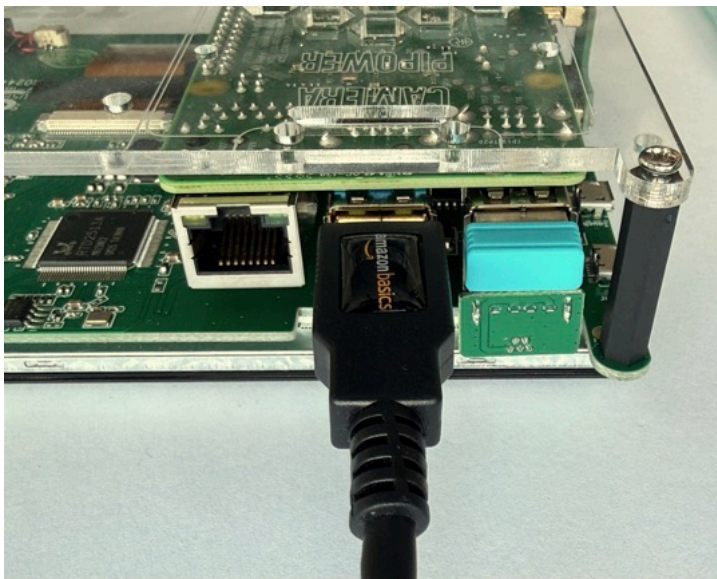
Then plug the RTL-SDR into the USB cable and screw the SMA antenna into the RTL-SDR:



Flip the mouse upside down and remove the plastic cover:



Unplug the colored USB receiver and plug it into a USB port on the Pi:



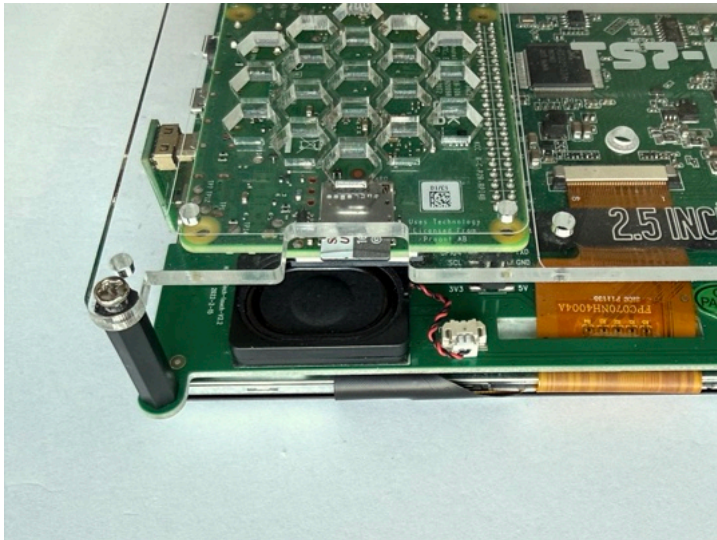
Put two AAA batteries into the mouse:



Put the cover back on and slide the switch to the ON position:



Plug the micro SD card into the Pi:



Plug the USB-C power supply into the Pi:



Power up the Pi and you will see the AMSAT background then FoxTelem will run:



The Ground Station is now ready to use!

Here's a [video of testing it](#).

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