

Stratux

Hardware Guide

Overview

Stratux is software written to enable pilots to build their own ADS-B receiver. It uses mostly off-the-shelf hardware that is available on Amazon and other sources. There are two major variations in the configuration you choose: **dual or single band** (two or one “radio” or “SDR” units) and **GPS or no GPS**.

In all variations, you will need the following:

1. A Raspberry Pi 3 (“Model B”) Motherboard.
2. A Micro SD card loaded with the latest stable release of Stratux (see <http://www.stratux.me/> for the latest).
3. At least one radio dongle with matching antenna.
4. A power source (power bank, cigarette lighter USB adapter, etc).
5. A quality Micro USB cable for power.

Section 1 - Micro SD Card Prep

If you’ve purchased a pre-programmed Micro SD card, then this step is not necessary – skip ahead to Section 2- Assembly.

1. Download the latest release from <http://www.stratux.me>. The file will be in a “ZIP” file. It is available from the “Download” link at the top of the page.
2. Un-ZIP the file so that an “.img” file remains. On Mac OSX, just double click the file and the “.img” will appear. On Windows, you will want to download a program like WinRAR to extract the “.img” file.
3.
 - a. On Windows: Download Win32DiskImager and follow the instructions at <https://www.raspberrypi.org/documentation/installation/installing-images/windows.md>.
 - b. On Mac OSX: Download Pi Filler at <http://ivanx.com/raspberrypi/>.
4. Use the appropriate program to load the software onto the Micro SD card. With Pi Filler, follow the on-screen steps and don’t insert the SD card adapter into the slot on your computer until you get the “Looking for your SD card...” prompt.

Section 2 - Assembly

1. Unpack all of the parts. Flip the Raspberry Pi 3 Motherboard so that it appears as in the picture. Insert the Micro SD card into the slot indicated by a red arrow, metal contacts facing downwards.

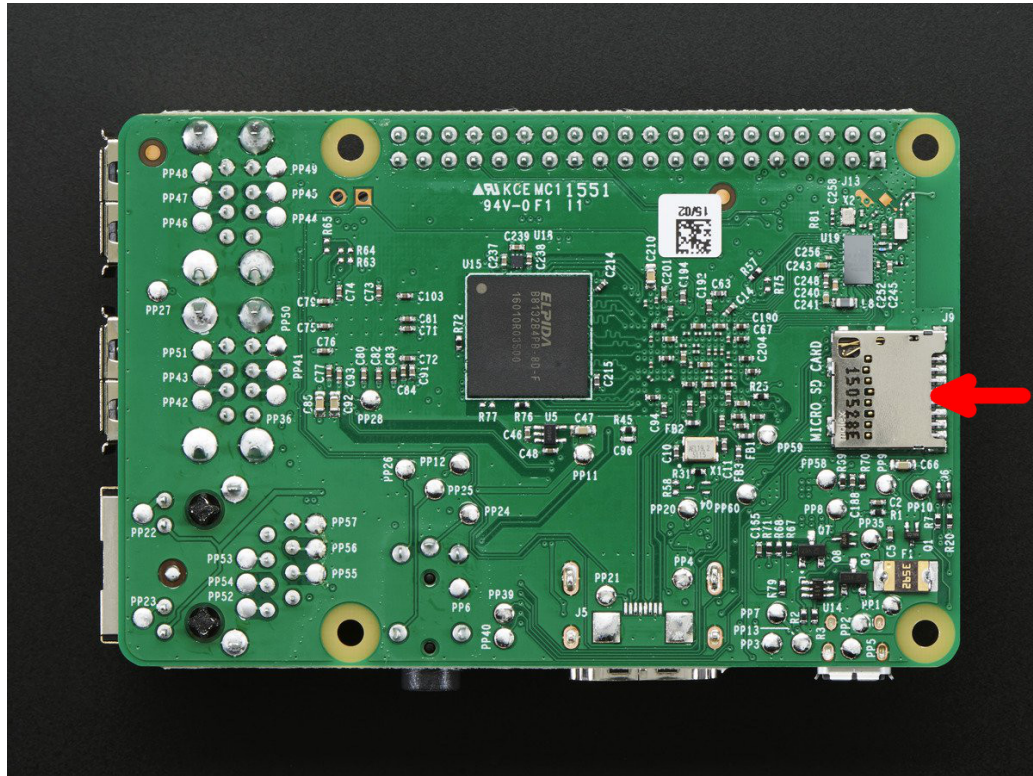


Figure 1

2. Insert your radios, GPS unit, and plug in your antennas. If you are using more than one radio (**dual band**), you will either need to remove the plastic enclosure on your radio if it has one. **Figure 2** and **Figure 3** show what a **dual band w./ GPS** unit looks like when it is ready to be mounted in an enclosure.

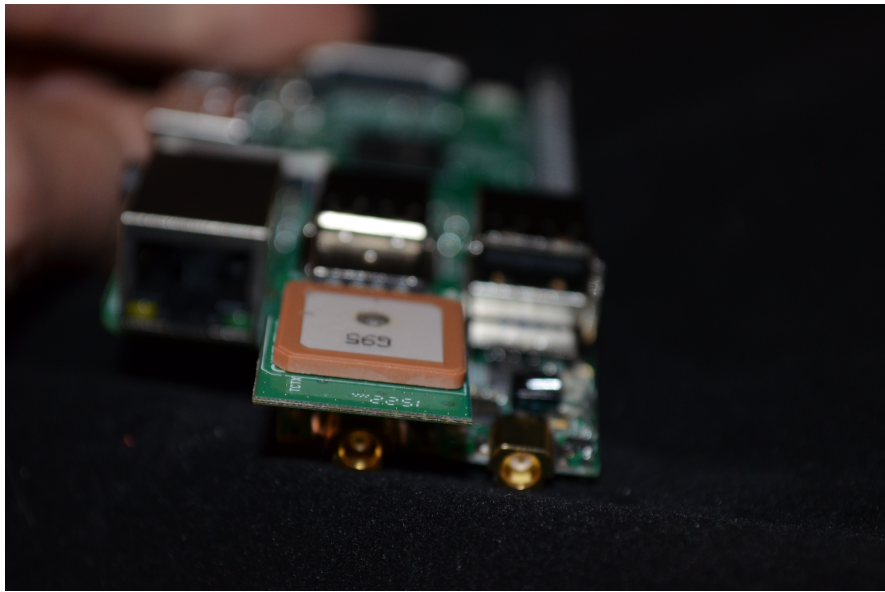


Figure 2

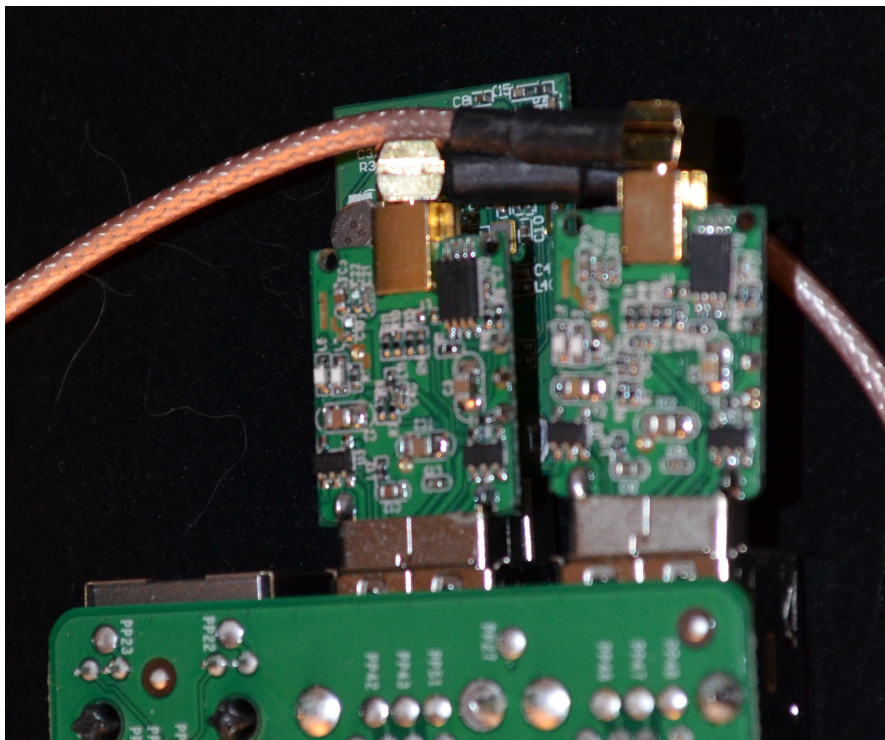


Figure 3

Section 2 - Assembly

Section 3 - Testing

1. Connect your power source to the Micro USB connector.

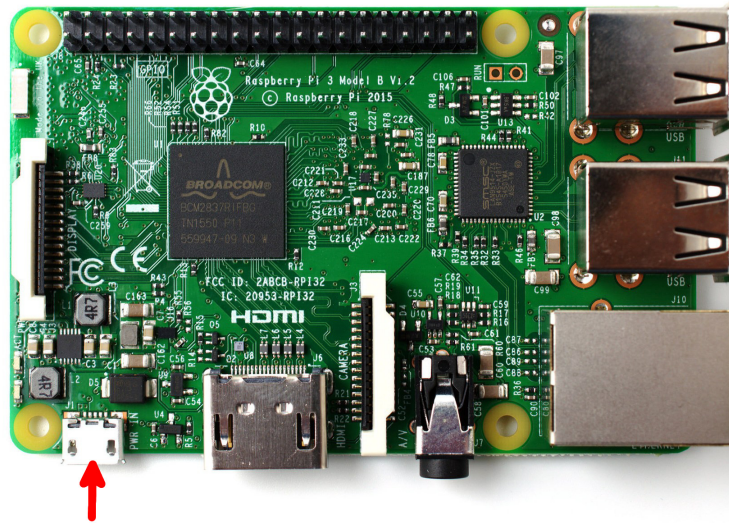


Figure 4

2. Verify that **RED** LED is lit. It should always be on during operations. If it goes out while connected to a power source, there is an issue with the power source – see the main website for a recommended power source and USB power cable. The **GREEN** LED will flash on and off from time to time; this LED should not be used as an indicator for anything (it only indicates write operations to the SD card).

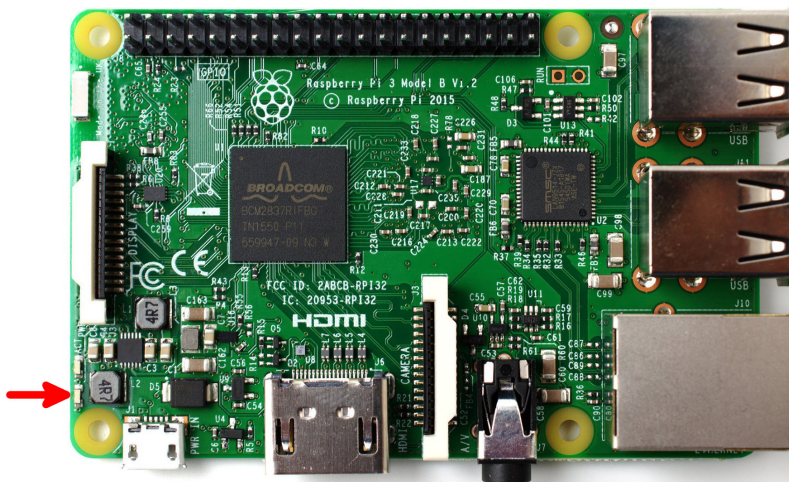


Figure 5

3. Go to the Wi-Fi “Settings” for your tablet (iPad/Android tablet/Kindle Fire/etc.).
4. Look for the “stratux” network. When first connecting the power and booting up for the first time, Stratux needs about 5 minutes to initialize. Boots will be faster after the first time.
5. Connect to the “stratux” network and open your EFB (ForeFlight, WingX, FlyQ, iFly, etc.). If you are running a **dual band** Stratux and live in an area with quite a bit of commercial traffic, you will likely see traffic on your display.
6. Note that you **will not receive weather updates** on the ground (unless you live near an ADS-B tower). ADS-B towers are not always placed at your local airport.
7. Once you’re connected and your EFB recognizes Stratux, you’re ready to go. If you experience an issue, please send me an email at cyoung@gmail.com.