



PiAware SD Card Setup Guide

Setup a PiAware

1. Flash the piaware-sd-card-X.X.img file onto your SD card

2. Connect your PiAware to the Internet

Connecting to wired Ethernet

If you are using a wired Internet connection with DHCP, then the PiAware SD card image is “plug and play” without any configuration changes needed to connect to the Internet.

Connecting to a WiFi network

- Using a mobile device or supported web browser - See *Wireless Setup over Bluetooth* section on page 5
- Using piaware-config settings – See *Configuring your PiAware* section on page 2

3. Claim your PiAware

This will associate your PiAware with your FlightAware account and create a My ADS-B Statistics page for your receiver. See *Claiming your PiAware* section on Page 4.

4. Once setup is complete, you can view your receiver’s statistics on your My ADS-B Stats page on FlightAware.com. You can access your local SkyAware interface by entering your PiAware’s local IP address in a web browser.



Configuring your PiAware

The fully pre-configured FlightAware PiAware SD card includes a default configuration file, `piaware-config.txt`, that can be edited or overridden by the user to configure PiAware settings.

Configuration File Format

The configuration file is a simple plain text format file. You may find it helpful to view a sample `piaware-config.txt` which can be found here: <https://flightaware.com/adsb/piaware/piaware-config.txt>

Lines beginning with a “#” are comment lines and are ignored. Blank lines are also ignored. All other lines specify configuration settings.

Configurable Options

The configuration file allows the user to configure and set the following:

- Wired network
- Wireless (WiFi) network
- Automatic or manual updates
- Multilateration (MLAT) output
- Receiver type (RTL-SDR, Beast, Radarcapex or other Mode S/ADS-B source)
- RTL-SDR gain, PPM, device index and other miscellaneous settings
- PiAware Feeder-ID



How to configure PiAware settings

There are two ways to edit PiAware settings:

Manually edit the piaware-config.txt

1. Insert the SD card into your computer using an SD card reader.
2. The SD card should be recognized as a partition labeled "boot". Open the text file "piaware-config.txt".
3. Edit the file with your desired configuration settings.

For example, to set your WiFi credentials, edit the lines and replace the default values:

```
wireless-ssid      MyWifiNetwork
wireless-password  s3cr3t99
```

4. Save your changes and eject the SD card before physically removing it.
5. Place the SD card into your Pi, power it on, and PiAware should boot with the new configuration settings.

Command line (Advanced):

1. Configuring options via the command line will require you to attach a keyboard and monitor or have SSH access to your Pi (See the "**Enable SSH Access**" section below for steps on how to do this)
2. Once you've booted up and logged into your Pi, you have two options:
 - a. Use the "**piaware-config**" command to view and change settings.

Example usage show below.

Usage	Command
Show currently configured settings	<i>piaware-config -show</i>
Show all piaware settings	<i>piaware-config -showall</i>
Set a piaware-config setting	<i>piaware-config <setting> <value></i>
Clear a piaware-config setting	<i>piaware-config <setting> ""</i>

- b. Use the nano text editor to edit **/boot/piaware-config.txt** with desired configuration settings (same as the manual step, just via the command line)



If it is not convenient to remove the SD card and command line access is not possible, an external USB flash drive containing a `piaware-config.txt` file can be attached to the Pi. Settings in that file override any settings on the SD card. The flash drive should be attached before powering on the Pi and should remain connected while the Pi is running.

To ensure that all configuration changes take effect, please restart/reboot the Raspberry Pi after making changes.

Advanced Configuration

Enable SSH access

For security reasons, SSH access is disabled by default on new PiAware SD card installs, starting with version 3.3. To enable SSH, create an empty file named `ssh` (no file extension) on the **/boot/** partition of the SD card. When this file is present, SSH will be automatically enabled. The default login for the SD card image is `pi` and the password is `flightaware` to connect via SSH once your PiAware has an IP address.

Restart network

To restart the network after changing any network settings, enter `sudo piaware-restart-network` on the command line or reboot the device (recommended). Allow some time for network changes to take effect.

All configuration settings

Complete details of all configuration settings including their possible settings and default values can be found here: https://flightaware.com/adsb/piaware/advanced_configuration



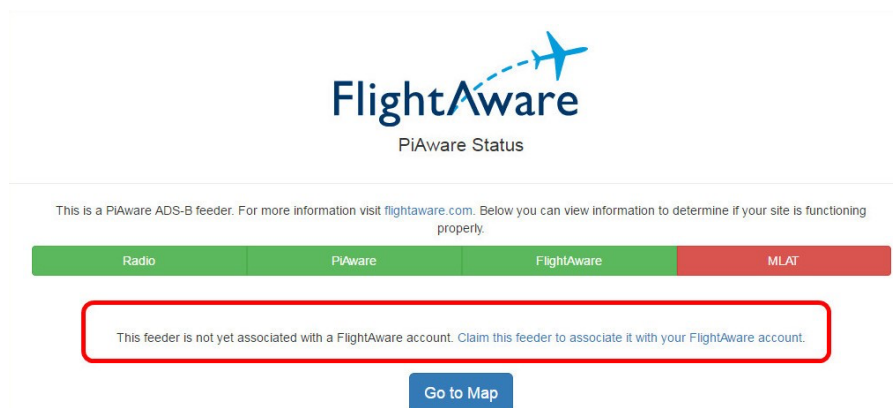
Claiming your PiAware

Once you have your PiAware set up and connected to FlightAware, you can “Claim” your unique feeder-id on your FlightAware account to view your receiver statistics and status from FlightAware.com.

If you setup WiFi using a mobile or web device, your device should be automatically claimed to your account.

If it is not, you can claim your PiAware using two other options:

1. Enter the Pi’s local IP address in a web browser. You should see a web page with a link to claim your receiver.



2. Visit <https://flightaware.com/adsb/piaware/claim>

Note: With this method, your PiAware must be on the same network as the computer you are trying to claim from!

If after 5 minutes your device hasn't displayed as claimed, try restarting the device. If that still doesn't work re-confirm the Wi-Fi settings (if using Wi-Fi) are correct. Lastly contact us at ADSBSupport@FlightAware.com for assistance.



Wireless Setup over Bluetooth LE

WiFi setup over Bluetooth LE is supported on **PiAware 7 or later**. Bluetooth should be enabled on your computer or mobile device and you must be logged into your FlightAware account as the setup process will automatically claim your receiver if it is unclaimed.

iOS Setup

1. Download the FlightAware app in the App Store
2. Open the app and select the 3-dot menu in the top right corner and select the new “ADS-B” menu
3. Select “Setup a new ADS-B receiver” and follow the steps to set up WiFi

If your iOS device cannot find your PiAware, reboot your receiver and wait a few minutes before retrying.

Android/Web Browser Setup

Browser requirements: Chrome (version 79 or higher)

Chromium, Opera, and Microsoft Edge also supported but not extensively tested. You may need to enable the experimental-web-platform-features flag in your browser: `chrome://flags/#enable-experimental-web-platform-features`

1. Visit <https://flightaware.com> and log in to your FlightAware account
2. Go to <https://flightaware.com/adsb/piaware/build/configure>
3. Follow the steps to setup a new PiAware

If your browser cannot find your PiAware, reboot your receiver and wait a few minutes before retrying.

A few notes:

- A brand new SD card installation will have Bluetooth setup enabled by default.
- PiAware is only discoverable over Bluetooth if 1) your PiAware cannot connect to the Internet AND 2) your PiAware is unclaimed. If these two conditions are met, Bluetooth discovery is disabled. It will remain disabled on all subsequent reboots unless PiAware cannot connect to the Internet for some reason, in which case Bluetooth pairing will be re-enabled to allow for configuration.
- If you’ve configured WiFi manually via piaware-config, Bluetooth setup will be disabled unless you set “allow-ble-setup” to yes.
- Bluetooth services will remain active for a maximum of 15 minutes before shutting down. You must reboot to re-enable the Bluetooth services.
- To disable Bluetooth setup completely, you can set the “allow-ble-setup” piaware-config setting to “no” and reboot.