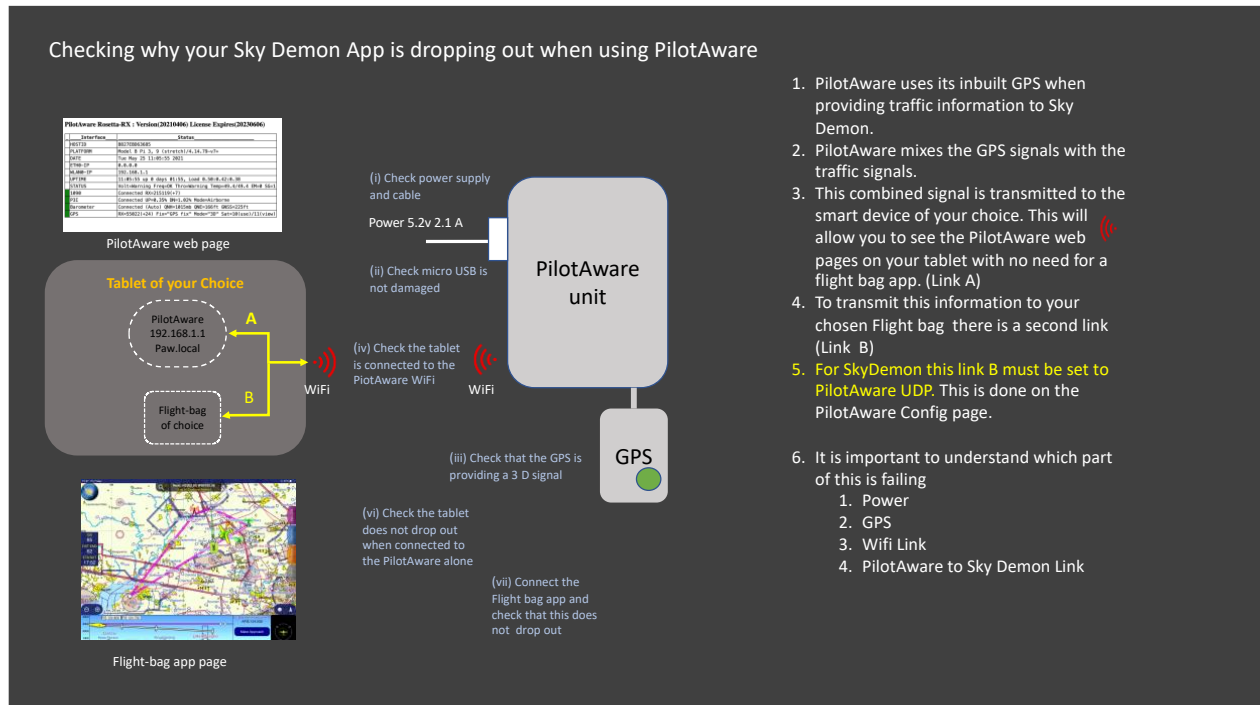# Difficulties in connecting PilotAware to Flight- Bag Applications

If you are having difficulties connecting to your Flight Bag Application or there are regular disconnections when using your PilotAware Classic or Rosetta Unit Please read the following to help you understand and fix the problem.

The following diagram shows the generic connection from the PilotAware to the Tablet of your Choice and the Flight-Bag App of your Choice.
PilotAware will (i) work as a stand-alone device showing aircraft on the PilotAware RADAR screen (ii) is compatible with most Flight Bag Apps including Sky Demon, EasyVFR, Foreflight, AirMate, Runway HD etc.

Checking why your Sky Demon App is dropping out when using PilotAware

PilotAware web page

Tablet of your Choice

PilotAware
192.168.1.1
Paw.local

A

B

Flight-bag
of choice

WiFi

Flight-bag app page

(i) Check power supply and cable
Power 5.2v 2.1 A

(ii) Check micro USB is not damaged

(iv) Check the tablet is connected to the PiotAware WiFi

WiFi

PilotAware unit

GPS

(iii) Check that the GPS is providing a 3 D signal

(vi) Check the tablet does not drop out when connected to the PilotAware alone

(vii) Connect the Flight bag app and check that this does not drop out

1. PilotAware uses its inbuilt GPS when providing traffic information to Sky Demon.
2. PilotAware mixes the GPS signals with the traffic signals.
3. This combined signal is transmitted to the smart device of your choice. This will allow you to see the PilotAware web pages on your tablet with no need for a flight bag app. (Link A)
4. To transmit this information to your chosen Flight bag there is a second link (Link B)
5. For SkyDemon this link B must be set to PilotAware UDP. This is done on the PilotAware Config page.
6. It is important to understand which part of this is failing
   1. Power
   2. GPS
   3. Wifi Link
   4. PilotAware to Sky Demon Link

Operators who lose connectivity with their flight bag assume that PilotAware must be faulty when this is not necessarily the case. This instruction will show you the steps that you can take to determine where the issue lies and correct where necessary. Each step is numbered so that you can determine at what stage in the process you have an issue if further help is required.

Before you start please ensure that the license on your unit is current and you are using the latest software.
To upgrade your licence.   https://www.pilotaware.com/knowledgebase/licence-renewal
To upgrade your software.   https://www.pilotaware.com/knowledge-base

Step 1 . Firstly make sure that you are using the correct power supply with the lead supplied with the PilotAware unit. Information on power can be seen at https://www.pilotaware.com/knowledgebase/choosing-your-power-supply

Step 2. Check that the micro USB connector and socket are a good tight fit and not loose. If this joint has been subject to vibration or rough handling this will result in a poor fit. This will cause a momentary power disconnect which will cause the computer in the PilotAware to reset. This will result in a WiFi connection loss that may require a manual intervention for a reconnection. If this connection is loose then the red light at the end of the Raspberry pi board (the end with the large antenna SMA connector on the Classic or the two antenna connections on the Rosetta) will extinguish if the cable is wiggled. This red LED should be permanently on with the green LED next to it flashing occasionally. If this connector is loose the solution is to change the computer for a new Raspberry Pi 3B and ideally also change the cable if this connector has been damaged. Make sure the replacement cable is a genuine PilotAware one. This is not so that we can sell cables but to ensure that the connecters inside are thick enough. 20AWG. To stop this happening again the cable should be secured to the Rosetta or Classic unit to stop vibration fatigue of the connector.

Step 3. Make sure that your smart tablet is connected to the PilotAware WiFi. The PilotAware WiFi SSID is always transmitted even if the licence is out of date. If you are using an Android tablet the you MUST ensure that the power saving option is switched off as this will affect the WiFi performance of your tablet and possibly be the cause of the disconnections. In addition if your tablet is in-range of other WiFi networks that are connected to the internet it may automatically disconnect from the PilotAware WiFi in its search for an internet connection. This should not happen in the

aircraft unless your phone is broadcasting a WiFi hotspot. If you are having disconnections make sure that your tablet is not acting in this way. The power output of the PilotAware WiFi can be changed using the Network Page if required.

Step4. Check that the GPS is collecting enough satellites to give you a 3-D fix. If you are using an internal GPS dongle this will have a green light flashing at 1 second intervals. There is no flashing light on a GPS mouse However for both types you can check the fidelity of the GPS signal by looking at the PilotAware home page which should look like the following screenshot. Line 11 will be green and show the number of satellites in view, the number used and the type of service provided. This should be GPS Fix and 3D.

PilotAware Rosetta-RX : Version(20210406) License Expires(20230606)

Interface	Status
HOSTID	B827EBD63685
PLATFORM	Model B Pi 3, 9 (stretch)/4.14.79-v7+
DATE	Tue May 25 11:05:55 2021
ETH0-IP	0.0.0.0
WLAN0-IP	192.168.1.1
UPTIME	11:05:55 up 0 days 01:55, Load 0.50:0.42:0.38
STATUS	Volt=Warning Freq=OK Thro=Warning Temp=49.4/49.4 EM=0 SG=1
1090	Connected RX=215119(+7)
P3I	Connected UP=0.35% DN=1.02% Mode=Airborne
Barometer	Connected (Auto) QNH=1015mb QNE=166ft GNSS=225ft
GPS	RX=55022(+24) Fix="GPS fix" Mode="3D" Sat=10(use)/11(view)

If line 11 column 1 is Red and states unavailable, then the GPS dongle is missing or faulty. If faulty a new GPS is required. These are available from the PilotAware website. It is very unusual for a GPS to fail.
If line 11 is Orange, it has not received enough satellites or the ephemeris and almanac data has not yet been captured. This may take up to 10 minutes if the unit has not been used for a long time or has moved over a long distance without being switched on and therefore not updated. A good GPS fix must not be expected indoors, but only when in full view of the open sky. In the aircraft it MUST similarly have an unimpeded view of the sky at all times. If this is not the case, consider installing a GPS mouse.

Step 5. Check that the tablet has a secure connection to the PilotAware unit. This is done by accessing the PilotAware RADAR screen page and running it in the aircraft without connecting to the Flight-Bag App. To do this log onto the PilotAware WiFi, enter paw.local or 192.168.1.1 into your browse and when connected, choose the RADAR screen. Run this in your aircraft for 20 minutes or so. Open up the filters and you will see lots of aircraft on the RADAR screen. Also access the traffic page which will show you a list of the traffic being picked up. This will show you if there is a problem in the connection between the tablet and the PilotAware unit. If it does drop out at this stage then the problem will most probably be to do with steps 1 to 4.

Step 6 If the unit does drop out first check to see if the tablet is still connected to the PilotAware WiFi which is really a check on Step 3.

Step 7. After satisfactorily completing all stages, 1 to 6, with satisfaction then you will have shown that the disconnection is not happening between the PilotAware unit and the Tablet. This then points to the connectivity between the Flight-Bag App and the PilotAware unit. Different Flight bags use different protocols to enable their individual functionality. To cater for this, PilotAware interfaces using several protocols. Information on how to set up the most popular Flight-Bag Apps is available from the PilotAware website. https://www.pilotaware.com/knowledge-base choosing Traffic Integration. How to input the correct protocol is fully described in the latest operating instructions available at
https://global-uploads.webflow.com/5d56c24810fbfdbe08b488cd/5f82df8d591348448e4c7b0c_Operating%20Instructions%2020200906.pdf

There are four settings available.
All	Choose this is you are in doubt
PilotAware (UDP).	**Choose this when connecting to Sky Demon**
GDL 90(UDP).	Choose this when GDL 90 is required
Flarm (TCP).	Choose this when a Flarm input is required
	UDP is a simple connection-less protocol.
	TCP is a connection-oriented protocol.

Different Fault Messages

Your chosen flight bag may give messages to help diagnose the problem. For example on Sky Demon two messages are given after selecting Go Flying use PilotAware.

Message 1 'Waiting for Device'

This message shows that the Sky Demon program is not connected to PilotAware. This will be because

1) Your smart tablet or phone is not connected to the PilotAware WiFi.
2) The correct interface protocol has not been selected. Use PilotAware UDP

Message 2 'GPS Signal Lost'

This message shows that the Tablet and Sky Demon are connected to the PilotAware but the GPS signal is not being provided. Use step4 above to check why you are not getting a GPS signal. This is usually caused by airframe obscuration or dislodged GPS.
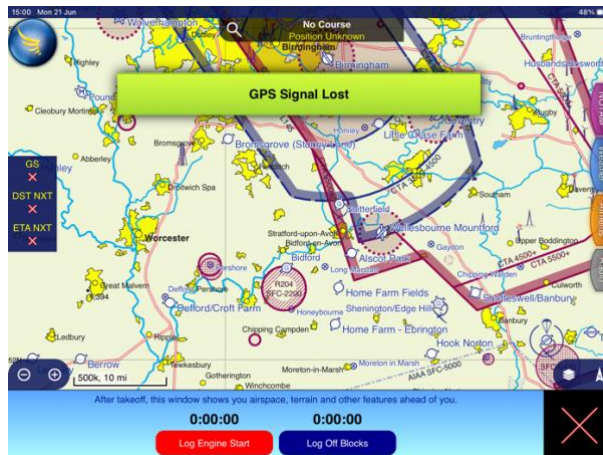
Finally if you are powering PilotAware from your aircraft buss supplying 12 volts to an Anker Power Drive 12V to 5.2V converter or a Charge 2 Charge 4 approved USB power supply, please ensure that there are no voltage spikes coming from your alternator that could cause power issues. To eliminate this a correctly designed aircraft electrical system will use 12 or 24V battery in parallel to smooth out the spikes. Connecting directly to an alternator without a battery will not work.

PilotAware August 2021