PilotAware Rosetta Quick Start Guide August 2018.

Thank you for purchasing PilotAware Rosetta.   Your PilotAware Rosetta is a secondary positional awareness aid and not a collision avoidance device. PilotAware Rosetta contains NO collision avoidance algorithms and will NOT give you any advice on how to avoid traffic or any advice to other traffic on how to avoid you.

As Pilot in Command it is your responsibility to take all necessary actions to maintain safe flight, including collision avoidance and the safe use of this product.

PilotAware software is provided for use in Visual Meteorological Conditions under Visual Flight Rules only and is not certified to any aviation standard.

It is a mandatory pre-requisite to using this PilotAware Software, that you have read, understand, agree and comply with the latest installation and operating instructions available from the website. pilotaware.com.

Getting Started. This guide is a great start; however, **the FULL INSTRUCTIONS are available at** https://pilotaware.com/wp-content/uploads/2018/08/180520-Operating-Instructions-.pdf

To assemble your PilotAware Rosetta, take the black case with the Rosetta label, uppermost:

1. Screw in the **LARGER** thick 869.5Mhz antenna to the left-hand SMA connector. This is the PilotAware frequency known as P3i. This is a transmitting and receiving Antenna.

2. Screw the **SMALLER** antenna onto the right-hand SMA connector. **This is the 1090MHz ADSB** Mode C/S receive only Antenna.

3. Plug the power cable into the micro USB connector on the left-hand side of the Rosetta unit.

4. Connect the USB connector end of the power cable into a recommended power supply*.

*Power Supply** It is vitally important that PilotAware Rosetta is supplied from a USB power supply of 5.2V with a minimum 2.1A output. Without this amount of power provided PilotAware Rosetta will not work properly.

IMPORTANT If you are having any problems and you are NOT using one of the recommended noise free power supplies AND THE SUPPLIED POWER LEAD, then this will usually be the problem.

Recommended power supplies are available from Amazon cheaper than we can supply. These are:
   1. ANKER PowerCore 20100
   2. ANKER PowerCore 10000
   3. ANKER 4.2A/24W 2 port rapid USB car charger

Powering Up PilotAware Rosetta.   With the correct power applied to PilotAware Rosetta, the software will take around 90 seconds to load, test and boot the system. When the unit is ready, it will broadcast a WiFi signal with the name "PilotAware-B827nnnnnnn", where the last 8 digits are unique to your PilotAware Rosetta unit and **ALL of the 12 digits constitute your *unique* MAC ADDRESS.** On your tablet or smart phone, the PilotAware WiFi network will look something like the screenshot below.
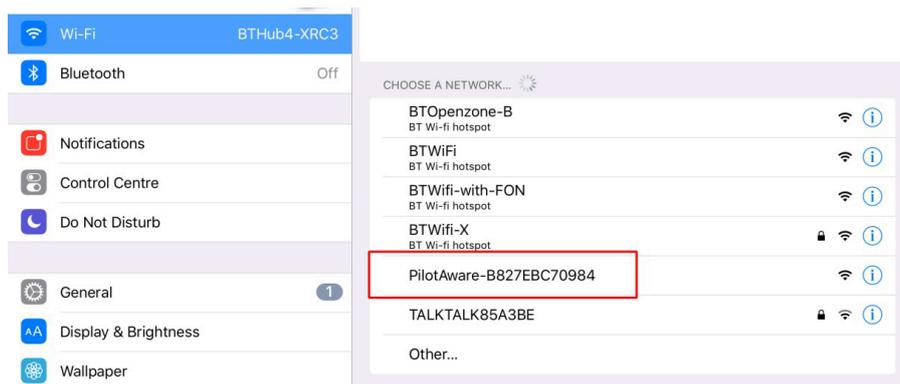
Using your tablet (iOS or Android) log onto this WiFi to gain access to PilotAware. *Please note that connecting to PilotAware Rosetta WiFi does not connect you to the internet. You may get a message, or another symbol, to let you know this.* Ignore this message as PilotAware Rosetta **does not** need an internet connection for correct operation. WiFi is just used as a convenient alternative to a wired connection. IMPORTANT Turn off power saving on Android devices.

Retrieving your 1ˢᵗ year System Key.   **If you bought your Rosetta from the PilotAware.com website, then your license key will have been emailed to you following acceptance of the terms and conditions.** Otherwise, to activate your PilotAware Rosetta, you will first need to download your first-year License Key. To do this, use a tablet or iPhone connected to the internet, and log onto the PilotAware Licensing web portal at http://pilotaware.lode.co.uk Select the option :1st Year System Key, then follow the instructions to obtain your License Key for the first year. Make a note of

your 16 digit, System Key provided below. The first 4 digits will be 5D9F. *Please note that this is a hexadecimal code so it only contains digits 0-9 and A-F. Please make sure that you use "0 = Zero" not the letter O.* A new key is required annually.

5   D   9   F

— — — —   — — — —   — — — —   — — — —

Installing your 1st year System Key into your PilotAware Rosetta. When connected to the PilotAware Rosetta WiFi, open a modern browser such as Safari, Chrome, Firefox etc. and type in **192.168.1.1** to gain access to the PilotAware Rosetta internal web pages. This is how you communicate with PilotAware Rosetta and gain access to the various configuration and information pages. Once connected, navigate your way to the PilotAware Rosetta Configuration Page by selecting it from the menu which appears at the top of each page. The software version on your unit will be different but It will look something like the image on the next page, showing License Expired. To activate your unit, insert your unique 16-digit License Key into the 4 boxes shown. When this is done press the "Save" button at the bottom of the page, which will activate the code.

Input your unique code onto the 4 boxes on the PilotAware Configuration Page.

Following this the License Expiry Date will be shown on the Home and Configuration Pages.

Your Pilot Aware Rosetta has now been activated for use for 1 year after which re-license will be required

Collecting the Initial GPS Data. When first using PilotAware Rosetta the internal GPS needs to capture the satellite emeriphis data before it will get a proper location fix. To do this the PilotAware Rosetta unit needs to be powered up with an uninterrupted view of the satellites in medium earth orbit. This should ideally be done outside any buildings and may take up to 10-20 minutes to initially get all the data. When the minimum amount of data has been captured a green LED on the GPS dongle, will flash with a period of 1 second, after this leave it for a further 10 minutes to capture the rest. The GPS dongle can be seen by taking off the lower portion of the Rosetta case. *Please note most modern conservatories and double glazing contain filters that inhibit the GPS signals so doing this capture is best done outside.* Once in the aircraft all will be well. However, if the unit is portable and is moved over long distances before its next use, like all GPS units, capture of the emeriphis data may have to be repeated. The amount of satellites captured is shown on row 11 of the HOME Page. 8-10 satellite capture is very good.

Voice Alerts. PilotAware Rosetta can provide situational awareness using transmissions from more types of aircraft than any other device available to date. Please study the following matrix which shows the extent of the 'see and be seen' capabilities of PilotAware Rosetta. Who can see whom and the types of voice alerts that will be given against each received transmission

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PilotAware			
System	Can See	Can Be Seen By	Voice Alerts
PilotAware	Yes	Yes	With Bearing
FLARM * With Mouse	Yes	Yes	With Bearing
ADSB	Yes	No	With Bearing
Mode C	Yes	No	Bearing-less
Mode S	Yes	No	Bearing-less

It can be seen from the chart above that whilst PilotAware will detect all types of transponder or transceiver transmissions, not all aircraft will see you. Additionally, a significant amount of General Aviation aircraft including Gliders and Microlights have no transponder or transceiver output at all. Therefore, Primary Situational Awareness remains a precise and continuous visual scan and is your responsibility.

*Full transmission of FLARM equipped aircraft (ie they will see you and you will see them) will be achieved with the addition of a Flarm Mouse to PilotAware. The Flarm Mouse is available from your local FLARM stockist and not available from PilotAware.

Reception only of FLARM equipped aircraft is achieved by all PilotAware units when in the location of an Open Glider Network Antenna that has been updated to re-broadcast their GPS co-ordinates to PilotAware users. For a fuller description of the coverage and how this works please visit PilotAware.com. If you don't have an OGN-R transmitter in your area contact OGN@pilotaware.com

Rosetta Provides 2 Types of Voice Alert. The type of voice alert that is given depends on the type of transmission received and the information provided.

1. Detection of transmissions with a GPS Co-Ordinate.   Modern transponders and Electronic Conspicuity transceivers supply GPS Co-ordinates which allow an accurate location of the transmitting aircraft, their speed and whether they are ascending or descending. These modern systems are PilotAware, FLARM and 1090MHz ADSB transmissions.

With this type of transmission, a voice alert similar to that given by an Air Traffic Service will be provided by PilotAware and is as follows.

Traffic, One O'clock, 900ft Above, Five Kilometres

2. Detection of transmissions <u>without a GPS co-ordinate.</u>   Older Systems such as Mode-C and Mode-S contain no GPS co-ordinates, so provide less information in their transmissions. The information provided by these systems is based on signal strength and barometric height only. Voice Commands from these transmissions therefore have to be in a different format. Three levels of voice alert are given as the distance and/or the height of local traffic transits your user defined thresholds.

There are 3 levels of voice Alert

1. **"TRAFFIC NOTICE"** – Advises you of a Mode C/S contact at your maximum chosen range.
2. **"TRAFFIC ALERT"** – Advises that the aircraft has entered your next chosen range. You should now be maximizing your visual scan guided by the relative height and also planning avoiding action. E.g. climbing, descending or turning to increase separation. The choice is yours.
3. **"TRAFFIC DANGER"**- The aircraft is now in relative close proximity and all efforts should be concentrated on a visual scan to locate it and avoid it. Also, keep an eye (or two) out for other aircraft that are not transmitting any conspicuity signal at all.

Voice alerts are available via the 3.5mm jack on the side of your PilotAware Rosetta and can be forwarded to your noise cancelling headsets, intercom or traditional headsets (amplifier or mixer may be needed depending on your specific installation).

Visual Alerts.   PilotAware Rosetta comes with a built-in software "PilotAware RADAR screen" that can be accessed via your Electronic Tablet or smart device after logging onto your PilotAware Rosetta WiFi and accessing the PilotAware internal web pages, by typing in 192.168.1.1 into your browser. Up to 5 devices, as necessary can be used simultaneously, either accessing the PilotAware internal web pages or running separate Flight Bag applications. For more information on this please consult the PilotAware Operating instructions at PilotAware.com.

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Configuring PilotAware Rosetta   PilotAware Rosetta is highly configurable for your specific application. Configurable items include: -

Voice Alert Settings, Mode-C/S detection, Tail Registration, ICAO code, Audio Volume, SSID, WiFi power, Password, Static vs Dynamic IP addressing, software updates, RADAR icons and vertical and horizontal thresholds for visual display. Full information on how to configure your PilotAware Rosetta is available from the latest Operating instructions at PilotAware.com.

When things don't go quite right!   PilotAware Rosetta is provided with several monitoring lights to help you diagnose problems. These are on the Raspberry Pi single board computer (SBC), on the PilotAware Radio Bridge and on the GPS dongle.

Computer Lights.   Firstly, there are 2 **small** LED's mounted on the Raspberry Pi SBC. These can be seen by looking through the slots on the front left hand side of Rosetta case. There should be one permanent red LED showing power is supplied and one green LED that flashes when there is a disc access. The red LED should be permanently on, showing that there is the correct power supply to the Raspberry Pi. If there are any problems, first check that your power supply is giving 5.2V and 2.1A. *Failure to do this is the most common fault.*

A permanent green light on the Computer Board indicates that there is an SD card fault either the SD card has become dislodged or more seriously, the software has been corrupted. There is also a bright green LED on the top of the GPS dongle, accessible by removing the lower cover on the Rosetta case. When sufficient GPS satellites have been captured this flashes periodically at 1 second intervals. If this is not the case, then ensure that a clear view of the sky is available.

Additionally, there are two bright LED's on the side of the PilotAware Radio Bridge identified as L1 and L2 on the left-hand side of the front label. These can be used to diagnose faults.

L1. This illuminates when there is a PilotAWare P3i, Tx or Rx signal. Red = Tx. Green =Rx.

L2. This LED flashes to indicate the status of your Rosetta.
Solid Green   All OK
Alternate Flashing Green and Flashing Red   License Expired
L2 will also flash in line with indicators on column 1 rows 8 to 11 of the Rosetta Home Page.
1 ADSB
2 P3i TxRx
3 Barometer
4 GPS
If there is a problem, there will be 4 flashes. Ie RGGG indicates No ADSB reception and GGGR means No GPS etc. Often a single fault will cause several red indicators. For example, loss of a GPS signal will also cause loss of P3i Tx and will result in four flashes of GRGR

Trouble Shooting

Common Faults PilotAware has been shown to be robust in operation. However here are a few common issues.
1. **Ensure you have the correct power supply. 5.2V 2.1A and supplied lead 22AWG.**
2. **Ensure that you have read the Operating instructions available at** Pilotaware.com
3. Ensure that your tablet is connected to the PilotAware WiFi not another by mistake.
4. When connected to the WiFi hotspot use 192.168.1.1 to connect to PilotAware Rosetta.
5. Ensure that your PilotAware unit can see the sky and pick up GPS signals.
6. Make sure that you have put your unique aircraft ICAO number in the configuration page.
7. Configure your Rosetta unit to detect Mode C/S aircraft via the Configuration Page
8. Configure your Rosetta unit Mode C/S sensitivity using the Configuration Page.
9. Ensure that you have selected "Save" when making configurations.
10. Ensure that your navigation device is configured correctly to connect with PilotAware
11. Ensure that you have configured your navigation device to show bearing-less targets.
12. Take time to understand the full functionality of PilotAware before you use it in the air.
13. **Do Not** Set android devices to power saving mode as this may upset the WiFi reception.

Monitoring using the Home Page The PilotAware Rosetta web pages 'Home Page' provides more useful information for self-diagnosis. Get to the home page by typing in 192.168.1.1/home.

Column 1 rows 7-11 should all be showing green. 5 greens are good. If not possible faults are shown below the following representative screenshot.

| Home | Configure | Logging | Traffic | Updates | Network |

PilotAware Version(20161124) License Expires(20170813)

Interface	Status
HOSTID	B827EB48AC45
PLATFORM	Model B Pi 2, kernel=4.1.19-v7+
DATE	Sat Nov 26 21:09:31 2016
ETH0-IP/GW	192.168.0.100 / 192.168.0.1
WLAN0-IP	192.168.1.1
UPTIME	21:09:31 up 0 days 00:03, Load 0.48:0.31:0.14, cpu_temp=32.0'C
NAVIGATION	Connected 0 Devices
ADS-B (DVB-T)	Connected Msgs=452(+75)
TRX (RXTX)	Connected TX=64 RX=0 CRCFAIL=0
Pressure Altitude (BMP)	Connected (Auto) QNH=1025mb QNE=-42ft GNSS=286ft
GPS	USB Msgs=1394(+40) Fix="GPS fix (SPS)" Mode="3D" Satellites=5
USB 1d6b:0002	Linux 4.1.19-v7+ dwc_otg_hcd DWC OTG Controller
USB 0bda:2838	Realtek RTL2838UHIDIR
USB 1546:01a7	u-blox AG - www.u-blox.com u-blox 7 - GPS/GNSS Receiver
USB 148f:5370	Ralink 802.11 n WLAN

Row 7 Navigation, shows whether there is a Navigation Flight Bag or other, device(s) connected
Row 8 ADS-B shows how many ADSB contacts have been detected since switch on. This may occasionally go red if no contacts have been received in the last few seconds. If both numbers show 'Connected messages =0 (0)', no ADSB contacts have been received since last switched on. Suspect a fault with the RTL-SDR (the dongle with the pigtail) or the thinner antenna. Unusual!
Row 9 TRX (RXTX) shows the number of PilotAware Tx/Rx and any failures in transmission. If this line is red then this may be due to the fact that there is a fault in the radio bridge but is very much more likely that there is no, or limited GPS reception.
Row 10 Pressure Altitude. This shows the barometric pressure. If this is dead or wildly inaccurate then this shows that the barometric chip is faulty. Highly unlikely.
Row 11 GPS Shows Orange if there is the minimum amount (4) or zero satellites detected and Red if the dongle is not detected. IMPORTANT ensure that the unit has full initial access outside the building to capture the satellites, (allow 20 minutes) and the GPS dongle is located correctly.

Connecting to Tablet Based Navigation Systems. PilotAware units can connected via WiFi to electronic tablets using Navigation Apps and Flight Bags. These include EasyVFR, Runway HD, AirMate, Sky Demon and others. Information on how to do this varies from App to App with information on how to do this for the most common apps being available in the PilotAware Operating Instructions available from the Document Downloads at PilotAware com.

More information on using your PilotAware. More information on PilotAware is available in several You Tube videos. They are:

Introduction to PilotAware
https://www.youtube.com/watch?v=jUaxbGnfZX0&t=01s

Getting Started With PilotAware
https://www.youtube.com/watch?v=XGIE_bJhVVE&t=01s

All About Power Supplies
https://www.youtube.com/watch?v=iWe03AiJSWA&t=01s

PilotAware Home Page Information
Https://www.youtube.com/watch?v=XYuML1-hK-E&t=01s

PilotAware Configuration Page Information
https://www.youtube.com/watch?v=rWAXDC64SdQ&t=01s

PilotAware Traffic Page Information
https://www.youtube.com/watch?v=lp92EuUvL-Q&t=01s

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Further Help Further help is available from the PilotAware Community at forum.pilotaware.com where you will be able to get your questions answered and see what is trending with PilotAware. In addition, you will see how others are installing PilotAware in their aircraft and be kept up to date on new software releases and further innovations. **Join the forum today to keep in touch.**

Additionally, there are several downloadable documents on all aspects of installation operation and maintenance of your PilotAware Rosetta from the PilotAware website at Pilotaware.com.

PilotAware is also available on Facebook @PilotAwareOfficial.

Thanks again for purchasing PilotAware and becoming one the thousands of Pilots in Europe who are benefitting for low cost Electronic Conspicuity. Spread the good news.

FULL OPERATING INSTRUCTIONS AVAILABLE AT
https://pilotaware.com/wp-content/uploads/2018/08/180520-Operating-Instructions-.pdf

FLY SAFE AND KEEP LOOKING OUTSIDE

PilotAware Team