

# Precision Aero Products

## Precision Black Box “Turn Key” Flight Coach V3

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### **Installation & Use Notes**

Thank you for choosing to purchase a Precision Aero Products “Precision Black Box”. This product is proudly designed and partly manufactured/ assembled in Australia by Precision Aero Products. The aim of the product is to make the configuration and installation process as easy as possible for you.

The unit is comprised of the following items:

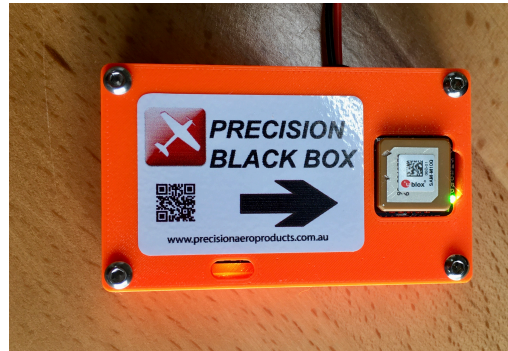
- Precision Black Box Control/GPS/Compass assembled into a 3D printed orange enclosure.
- Sandisk Micro SD Card (fitted to controller).



Additional items required:

- PC or Mac computer. **Google Chrome is the recommended web browser.**
- Micro SD Card Reader.
- 2S LiPo RX(500 mAh or less) pack battery to power system.
- Plotter at [flightcoach.org](http://flightcoach.org)

1. The system is designed to sit on a flat, level surface in your fuselage. It can be secured in place with velcro or double sided tape etc. It's **important that the black arrow on top of the unit points to the nose of the model. The unit label should be facing up. Avoid locating the unit on the main flight batteries or carbon plates as this may cause shielding that could affect the displayed plotter results.**
2. The system is powered from a 2S RX LiPo pack via a JR type lead. A pack with a capacity of 500 mAh or less is suitable. The RX pack should be safely secured within your model.  
When the system is powered up, the LED lights on the controller (opening below label) will flash. At the front of the unit a green LED will be illuminated. This indicates the power is on. This green LED will flash once the system locks onto GPS satellites. The system is now logging to the SD card in the controller.



3. The system comes pre-loaded with the latest firmware and configuration parameters. The accelerometer and compass have already been calibrated for you. Recalibration is of course possible if needed. You will need to do a pre-flight calibration at your flying site. When using the Flight Coach system for the first time at a new flying site, it is important to gather GPS information for where you stand (the Pilot Position) and also where the 'box' or flight line is.  
\*Details of initialising hardware. Placing model at the pilot position to determine this point. Or manually entering initial GPS position. Storing this as the default\*  
From the Flight Coach FAQ:
  - How to initialise system so it has the correct Origin:
  - The Origin is captured when GPS has locked in and several other conditions are met, like model velocities are very small, etc. This is needed to have the Origin as accurate as possible. To facilitate it, the model shall be stationary and less than 50m from your pilot position, and (roughly) levelled and then the controller shall be powered. It will go through initialisation sequence including arming itself and will wait for the GPS to lock in. First time on the day it may take longer, otherwise it should be 2-5 s. On some hardware the blue LED goes green and another blue LED in GPS starts blinking. It means that the Origin has been defined, time to go flying. Confirm indications on your HW. Otherwise, when you carry the model or you are already flying, the Origin may not be set at all or set in some remote position.
  - BTW, all displayed GPS position (Origin, Pilot, Centre) are links that will take you to Google Maps, just click them.
  - Origin can be manually adjusted when the FC is run with moveOrigin parameter set to true using the link <https://flightcoach.org/ribbon/plotter.html?moveOrigin=true> . The three additional controls on the right allow moving the Origin sideways and up and down.
4. After a flight, power down the system and carefully remove the SD card from the bottom of the unit. The SD card just pulls out. The SD card has a small ridge on the outer edge. You can use your thumbnail on the ridge to remove the SD card. Plug the SD card into a card reader so you can display the files on the computer. You should see some .bin files in the APM/LOGS folder. These are the files loaded into the plotter at <https://www.flightcoach.org/ribbon/plotter.html> You'll see a button on the right side of the screen to load the .bin file and then set the display/site parameters etc.

