



RC Electronics Eagle Onboard Air Data Measuring System For RC Aircraft Instruction Manual

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Product Information

Eagle Onboard Air-Data Measuring System for R/C Aircraft

The Eagle is an onboard air-data measuring system designed for R/C aircraft. It is manufactured by RC Electronics and has a manual version of 1.0. The Eagle is a compact device with dimensions of 47 mm x 22 mm x 16 mm and features an extended bus connector, servo connector, and micro USB port. It has a multi-color LED and can measure vario from compensated pressure at TEK probe.

Key Features of the Eagle

- Compact design
- Onboard air-data measuring system
- Extended bus connector
- Servo connector
- Micro USB port
- Multi-color LED
- Can measure vario from compensated pressure at TEK probe

Specifications

- Weight: not specified
- Temperature Range: not specified
- Input Voltage Range: not specified, but max voltage input is 12V
- Input Current: not specified
- Measured Voltage: not specified
- Memory Capacity: not specified

Product Usage Instructions

Powering the Module

To power the Eagle module, plug the 3 pin female connector cable into the servo connector and the other end to the R/C aircraft receiver. Be sure to observe proper polarity when plugging the connector into the module and receiver. Alternatively, it can also be powered directly from a battery. Please respect the maximum voltage input of 12V and correct polarity.

Mounting the Module

The Eagle module can be mounted on the R/C aircraft as per the user's requirement.

Connecting Module to Android RC Electronics App

To connect the Eagle module to an Android device, where the RC Electronics app was installed from Google Play, use a USB cable that supports OTG mode on the Android device's side. Such cables (micro USB or USB-C) can be purchased from the RC Electronics web-shop. Run the RC Electronics app and confirm the USB connection. Basic information of the connected device can be seen, settings can be set, and IGC flight can be downloaded from the device if needed.

Settings

The vario filter setting allows users to set the vario response time in seconds. The servo channel setting is used for servo control. If disabled, then normal PWM servo input on the device is used. Else, servo channel from 3rd party telemetry data will be used for servo pulse measurements. Other settings are set in Albatross and will be synced via RF link. Set them only in case of standalone usage or no RF link usage.

Introduction

The "Eagle" is one component of RC Electronics model aircraft telemetry system. The unit is designed to measure many parameters of an R/C model aircraft and transmit them to the ground via the primary system telemetry back link. The unit is capable of measuring sink/climb rate (Vario), altitude, acceleration of the plane in all axes, noise level, servo pulse on servo input, GPS data with 18Hz refresh rate and supply voltage. For storage it has internal fast solid state storage which will record up to last 20h of flying.

Key features of the Eagle

- Integrated fast solid state memory for up to 20h of logging
- Latest pressure sensor for ultra fast detection of climb / sink
- Two pressure sensors for altitude and Vario measuring
- 3 axes accelerometer
- Enl – Environment noise level detection to detect working electric, impeller or jet motor.
- 18 Hz GPS working with GNSS, Glonass and prepared for Galileo global positioning satellites.
- Various telemetry protocol supported over one of servo input (JetiEx, PowerBox System, Hott ...)

Specifications

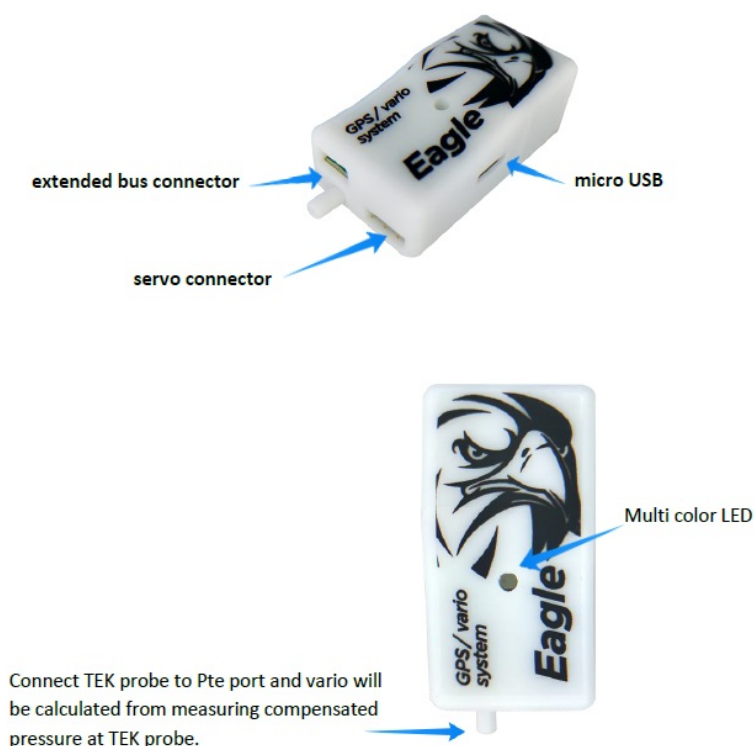
Unit Dimensions	47 mm x 22 mm x 16 mm
Weight	17 grams
Temperature Range ¹	-10°C ~ +60°C
Input Voltage Range	4.0 – 12.0 volts DC
Input Current	80 milliamps @ 8V DC
Measured Voltage	4.0 – 12.0 volts DC
Memory capacity	Up to 20h of flying

Specifications are taken from component ratings and system limits and may not have been tested to the full extent of the specified ranges.

Physical overview

Pictures bellow are showing the Eagle unit. It has build in GPS antenna, one pressure port (Pte – total energy compensated pressure from TEK probe) and a multi-color LED to show the status of the unit. It also has 3 connectors. The micro USB is used for future updates, settings and flight log download. The 4 pin connector is prepared for future use (extended bus). JR 3-pin servo input is used to measure normal PWM servo pulse or to transmit 3rd party telemetry protocol on it (depends on unit setting). The unit gets power from USB or JR connector.

Important: Be careful on polarity when connecting power to the unit. Improper connection can damage unit! Correct polarization is marked on the bottom of the unit by the servo connector!



Using the Eagle module

Powering the module

To power the module plug the 3 pin female connector cable into servo connector and the other end to the R/C

aircraft receiver. Be sure to observe proper polarity when plugging the connector into the module and receiver. You can also power it directly from a battery. Please respect max voltage input of 12V and correct polarity.

When power on the LEDs will flash red, green, blue and white to confirm its operation. During operation LED status is:

- red – module is waiting for GPS signal
- green – module is ready for flight
- blue – onboard logger is running
- white – not yet implemented.

Mounting the module

The Eagle module can be mounted using double-sided tape, cable ties or Velcro. Velcro is recommended, so that the module can be easily removed.

Mount Eagle under no carbon surface as it has built in GPS antenna. If there is any carbon or metal part above it, GPS reception will be compromised.

Be sure that the module is not touching any metal surfaces. Although unlikely, there is a possibility of shorting the metal contacts on the module, which could result in a radio system failure.

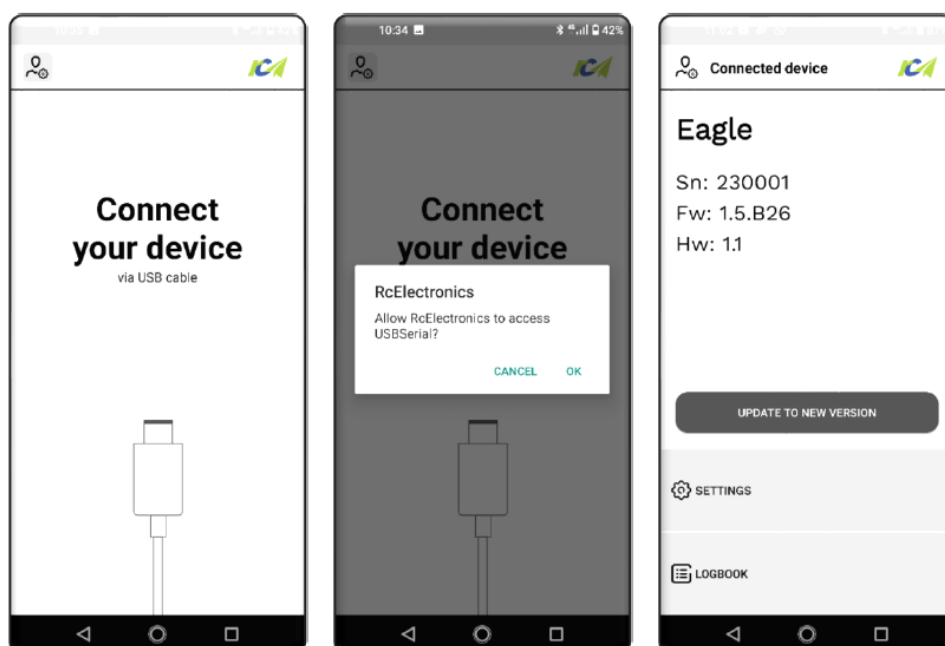
Do not mount the module on top of power batteries when using electric motors, because they get hot and this can affect the altitude readings by up to 30m.

Be sure to keep the module away from water, fuel and other liquids. Always range check and test the aircraft's radio systems before flying with the Eagle module installed, to verify that all connections have been made correctly and there is no system interference.

Connecting module to Android RC electronics app

Connect the unit to any Android device where RC electronics app was installed from Google Play using a USB cable which has OTG mode supported on Android device side. Such cables (micro USB or USB-C can be purchased from www.rc-electronicis.eu web-shop)

Run RC electronics App and confirm USB connection.



You will be able to see basic info of the connected device, set the settings and download the IGC flight from

device if needed.

Settings:

- **Vario filter:**

Vario response time in seconds.

- **Servo channel:**

Servo channel for servo control. If disabled then normal PWM servo input on device is used, else servo channel from 3rd party telemetry data will be used for servo pulse measurements.

Other settings are set in Albatross and will be synced via RF link. Set them only in case of standalone usage or no RF link usage.



Servo trigger:

Servo trigger in % for arming the task for GPS triangle flying. When such level of servo pulse is detected, additional record is stored in IGC file

3rd party telemetry:

Select which 3rd party telemetry protocol will be used on Servo connector.

Firmware update

For updates, please use Android RcElectronics app. Provide internet access and app will automatically download latest firmware from our cloud.

Connect the unit to any Android device where RC electronics app was installed from Google Play using a USB cable which has OTG mode supported on Android device side. Such cables (micro USB or USB-C can be purchased from www.rc-electronicis.eu web-shop)

Run RC electronics App and confirm USB connection.

If there is any newer version available, then "UPDATE TO NEW VERSION" button will be visible. Click on it and

update will start. Unit will reset 2 times in this process so you will need to confirm USB connection to the Android device for 2 times. During update blue LED is turned on. After update, the update button will disappear.

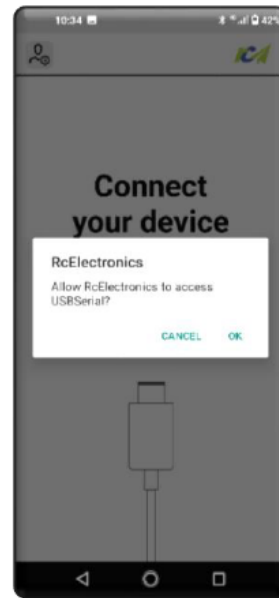
Below is an example of what user will see during update process. Update from v1.5.B26 to 1.5.B30 for example:



Welcome screen



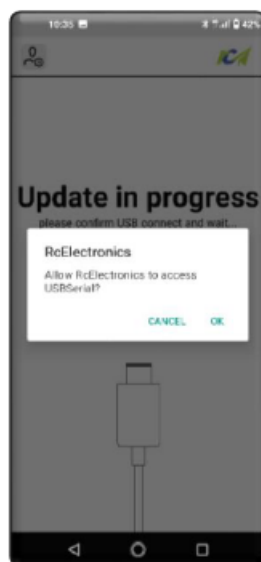
Connect the device



Confirm USB connect



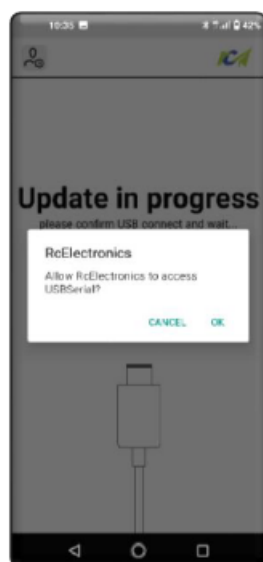
Click "UPDATE" button



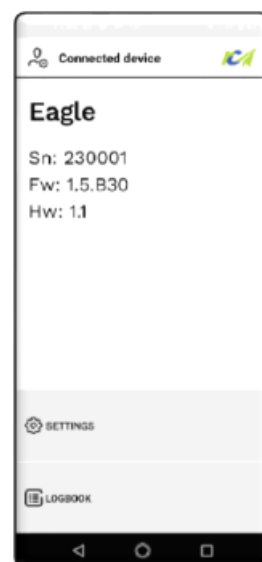
Confirm USB connect



Wait



Confirm again after update





New version is installed

Revision history

29.03.2023	v1.0	– initial version
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Eagle – Onboard air-data measuring system for R/C planes.

Documents / Resources

 	RC Electronics Eagle Onboard Air Data Measuring System For RC Aircraft [pdf] Instruction Manual Eagle Onboard Air Data Measuring System For RC Aircraft, Onboard Air Data Measuring System For RC Aircraft, Data Measuring System For RC Aircraft
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References

-  [Price request of this domain - Domeinenbank](#)
-  [Home ~ RC Electronics](#)

Manuals+.