

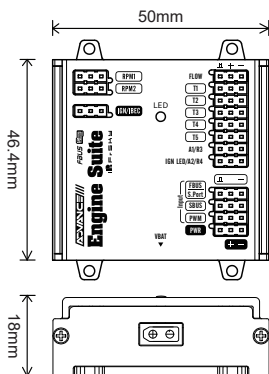
Introduction

Advanced Engine Suite (AES) is a multi-functional management box suitable for application in airplanes equipped with engines.

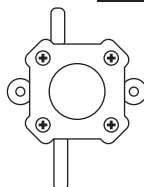
Through the VBAT (XT30/PWR) power port, users can use the same battery to power all connected devices, eliminating the trouble of providing an independent power supply for the ignition control unit. AES also adopts a safety solution to avoid potential risks caused by interference between the connected ignition and receiver devices.

The AES module is equipped with a wealth of sensor interfaces, including 2 RPM sensor ports, 1 flowmeter sensor port, and 5 temperature sensor ports. In addition, AES also provides 2 AD ports, allowing users to flexibly use different types of AD devices required in your airplane. At the same time, through the FBUS/S.Port feature of the connected receiver, users can monitor the telemetry data in real-time on the transmitter to know the aircraft's operating status.

Overview



Flowmeter 03040703 [Optional Accessory]



Measured Range:

- Flow Velocity: 20-800ml/min
- Degree of accuracy: 2%
(The value is influenced by the installation of flowmeter, liquid characteristics, etc.)

TEMS 04100427 [Optional Accessory]



Measured Range:

- TEMP (TEMS) : -20 C ~ 250 C
- Deviation: ±1%

Note: Sensors are required to be purchased separately.

Specifications

- Dimension: 50x46.4x18mm (L×W×H)
- Weight: 53.5g
- Battery Voltage Input Range: 4.5-13V
- Battery Input Connector: XT30
- IGN (Ignition Port) Voltage Output Range: 4.5-13V (Sync with the input voltage settings of VBAT.)
- Operating Current: 20mA@5V
- Signal Voltage Level
 - RPM1/RPM2 Port: 3V-12V (Requires the driven current >5mA)
 - Flow Port: 3.3V
 - AD1/AD2 Port: 0-3.3V

Features

- Battery Eliminator Design for Powering System
- Anti-interference Capability between Ignition & Receiver Parts
- 5 Ports for Temperature Sensors
- 2 Ports for RPM Sensors
- 2 Ports for AD/RPM Sensors
- 1 Port for Flowmeter Sensors
- 1 Powering Port for Receiver
- 1 Powering Port for Ignition Kill Switch Unit
(Note: A Y-Harness wire is required for applications with multiple ignition controls, such as in a twin-engine plane.)
- Signal Input Ports for FBUS/S.Port (Auto Recognition), SBUS, and PWM
- 1 Battery Input Port with XT30 Connector (Input Range: 4.5-13V)
- Real-Time Configuration Capability (by S.Port of ETHOS radio or FBUS capable receivers)

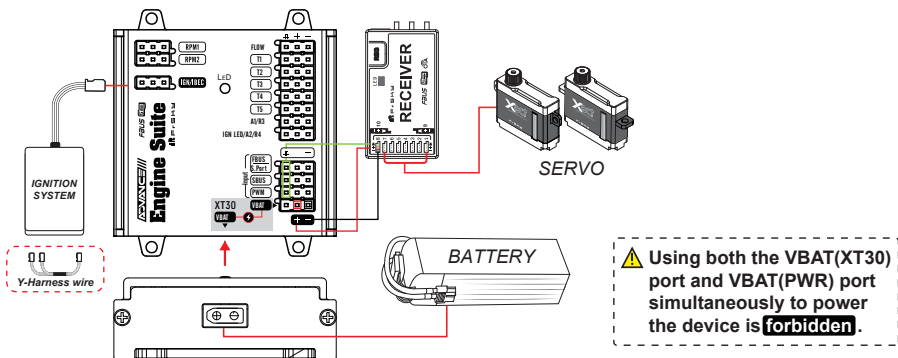
LED Status

LED light	LED Working Status	Mode
Green	Fast Flashing	FBUS Mode
	Slow Flashing	S.Port Mode
Red	Lits	IGN in power
	Off	IGN is unpowered

Recommended Connection Diagram

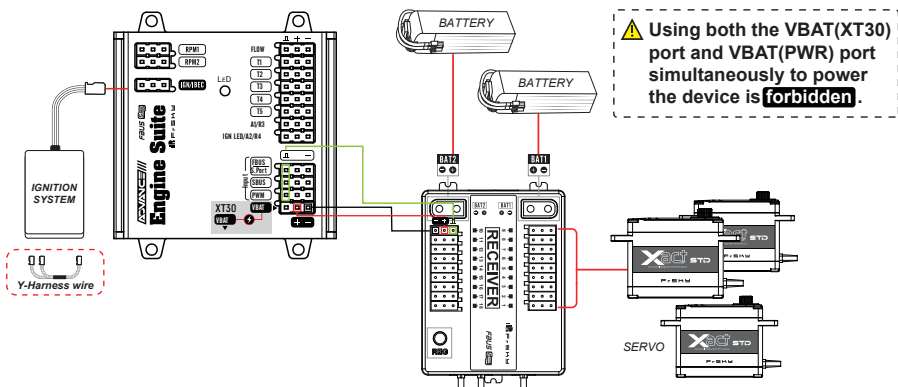
Scenario ① : Power the **AES module** and **Device** by **VBAT(XT30)** port using the same battery.

Note: A Y-Harness wire is recommended to be applied to ensure that the IGN/IBEC ignition power output meets the requirement of using dual ignition system.



Scenario ② : Power the **AES module** and **Device** by **VBAT** port using the same battery.

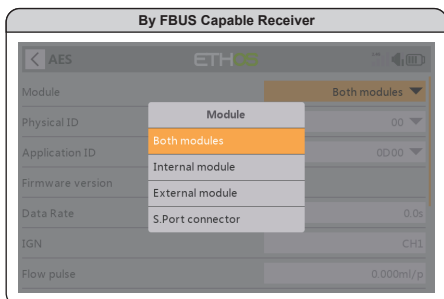
Note: A Y-Harness wire is recommended to be applied to ensure that the IGN/IBEC ignition power output meets the requirement of using dual ignition system.



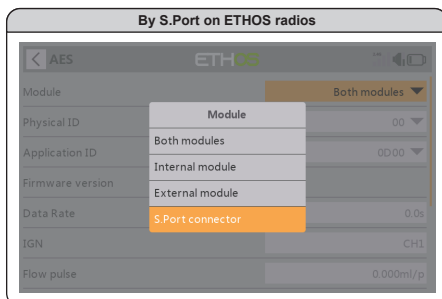
Configuration Method Selection (Wireless or Wired)

Before configuring the AES module, users can decide on the method to configure the module.

Note: Please ensure the ETHOS version has been upgraded to the 1.5.8 or the later versions.

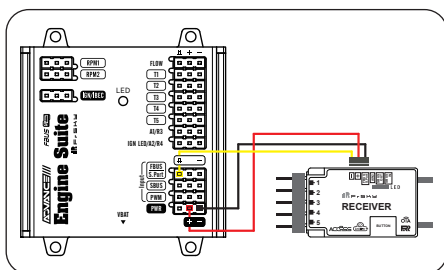


When the AES module is connected to the receiver in FBUS mode, users can select the [Both modules] method to recognize the receiver automatically for configuring the AES module remotely. Users can also manually select the [Internal/External module] method according to the type of the connected RF module in binding.

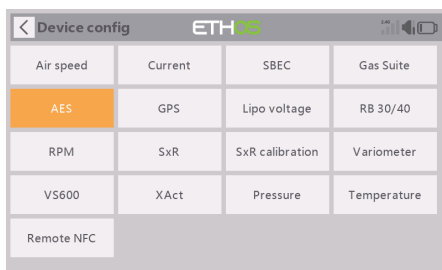


By leading a cable to connect the AES module which is powered to the S.Port of the ETHOS radio, and select the [S.Port connector] mode, users can configure the module directly without adding any other devices.

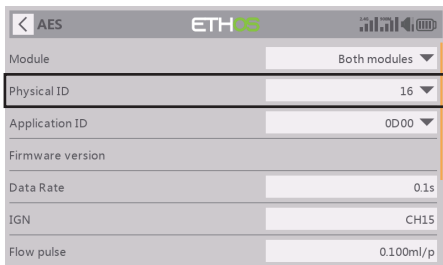
ID Setup (by ETHOS)



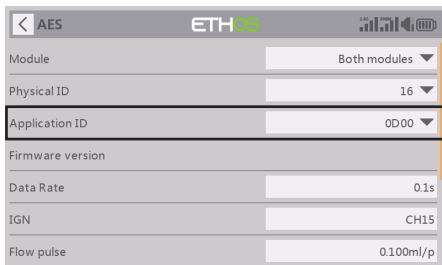
Ensure the FBUS capable receiver is bound to the ETHOS radio, and connect the receiver to the AES module by the FBUS/S.Port port.



[System] > [Device Config] > [AES]

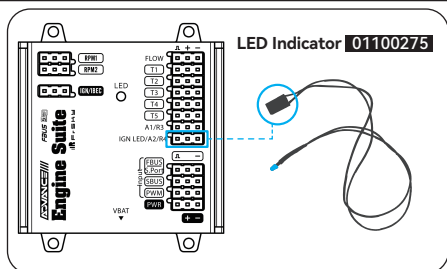


[Physical ID] Each type of FrSky devices has its unique physical ID. The default physical ID for this AES module is 16.

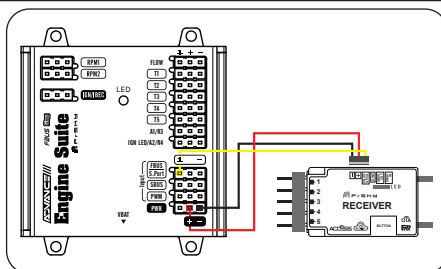


[Application ID] To achieve the same type of telemetry data from the different types of devices, please ensure the set Application IDs are different.

How to enable the external IGN LED ignition indicator



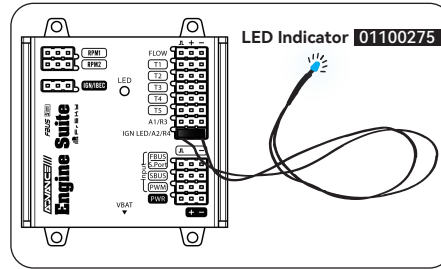
1. Plug the external LED [01100275] to the IGN LED/A2/R4 port of AES module;



2. Connect the FBUS port of the receiver to the FBUS/S.Port of AES as the diagram;



3. In the [Device Config]→[AES] tool menu, set the ADC2 Config as the IGN LED; (ETHOS is required to update to v1.5.10 or later versions.)



4. When the LED starts lighting, it indicates the ignition device is powered by the AES module properly.