SKYSIGHTHOBBY

Long Range Wireless OSD 5.8G FPV Transmitter

Built-in 10 Axis AHRS + MAVLINK + 600mW

Support all flight controller and GPS

User's Guide

Catalogue

Product Instruction

Welcome to enjoy the **Skysighthobby** 5.8GHz Video Transmitter with OSD. **Skyshighthobby** products have forged a reputation for quality and reliability and are tested and developed by FPV pilots for FPV pilots. The **SKY-S60** transmitter packs a whopping 600mw of ultra clean 5.8GHz power! It can transmit a full range of 32 channels and comes with a clean pre-wired harness; it's perfect for any long range aircraft.

The **SKY-S60** boasts an impressive new feature; with built-in OSD (On Screen Display). It provides flight data output function such as satellite count, battery voltage, flight time, latitude/longitude, altitude, horizontal distance, horizontal speed, vertical speed, and flight mode. It's compatible to all fly controllers.

Features:

●Dual color dot-matrix OLED display, high contrast and brightness, also visible under the sun, direct frequency, channels and reference transmit power display, supply voltage and current instructions, video mode instructions, the serial interface baud rate indicates

●Power: 600mW, >=1km open distance with 2dbi Omni-directional antenna

● Automatic video mode switching (NTSC/PAL)

● 2 OSD panel, 3 display modes (OSD panel 1, OSD panel 2, OSD off) switch with the remote channel

● Built-in 10-axis AHRS attitude detect, contains a 3-axis accelerometer, 3-axis gyro meter, 3-axis digital compass, barometric altimeter

● Support all of the flight controllers, easy to install and use

● Support MAVLINK protocols

● Support GPS

● Suitable for airplanes, cars, and boats

Specifications

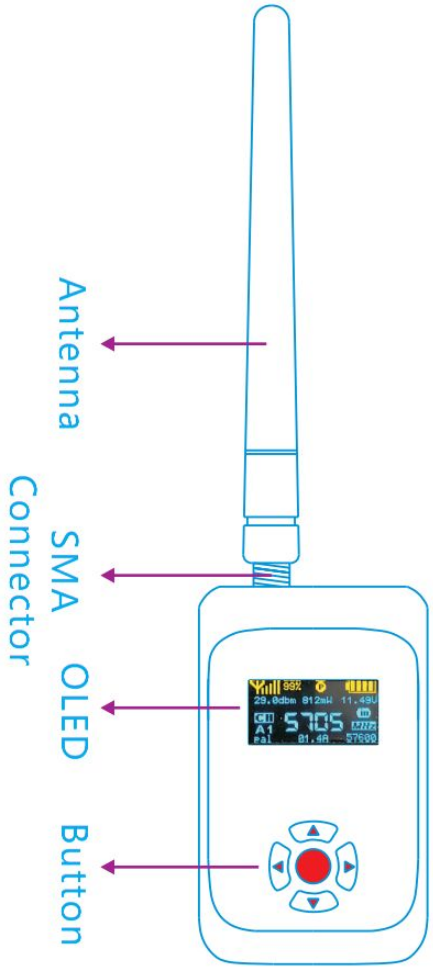
	Test conditions	Min	Typical	Max
Supply voltage		6.5V	12V	28V
Transmission power	@T=25degrees 5705MHz	400mW	600mW	750mW
Antenna connector			SMA Jack	
Current consumption	@voltage12V	NA	0.4A	0.6A
Temperature range		-10 degrees		80 degrees
Voltage accuracy		±0.05V	±0.1V	±0.5V
Video Bandwidth		5MHz	6MHz	6MHz
Impedance			75Ω/1Vp-p	

Subcarrier			6.5MHz	
Audio Impedance			4.7KΩ	
Gyroscope errors			NA	
Accelerometer errors			NA	
Electronic compass errors			NA	
Barometer errors			NA	
Net weight			NA	
Size			68x42x18 mm	

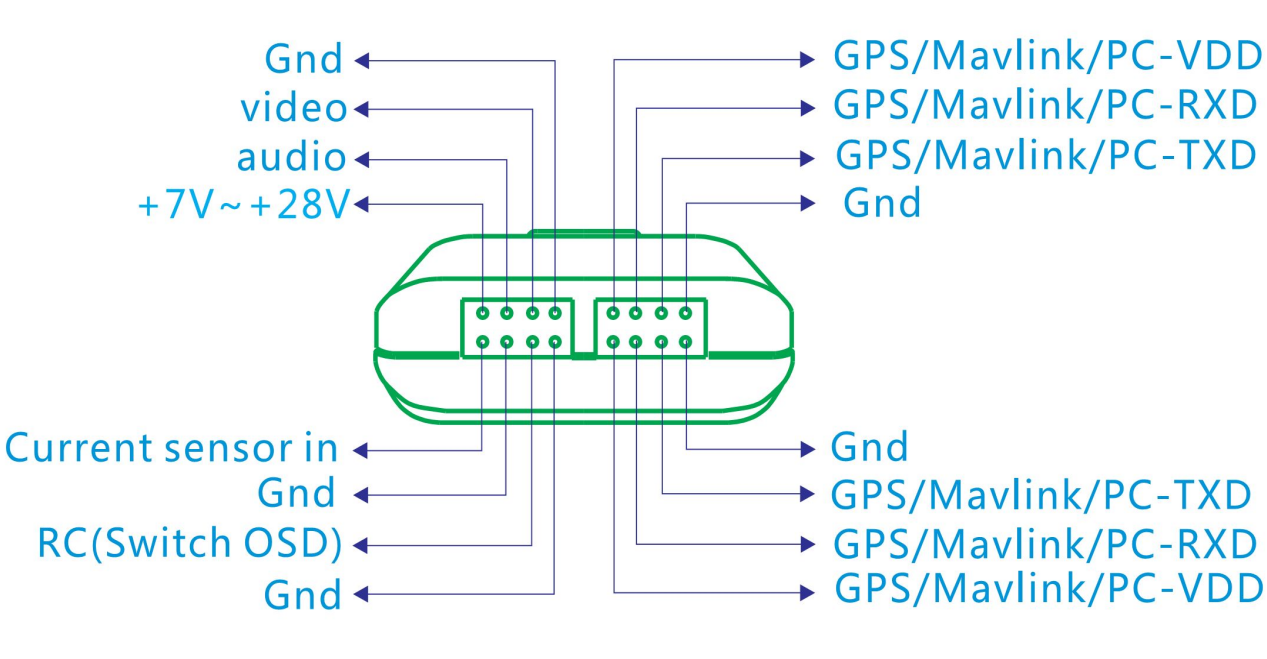
Channel frequency table (32CH): (Unit of frequency: MHz)

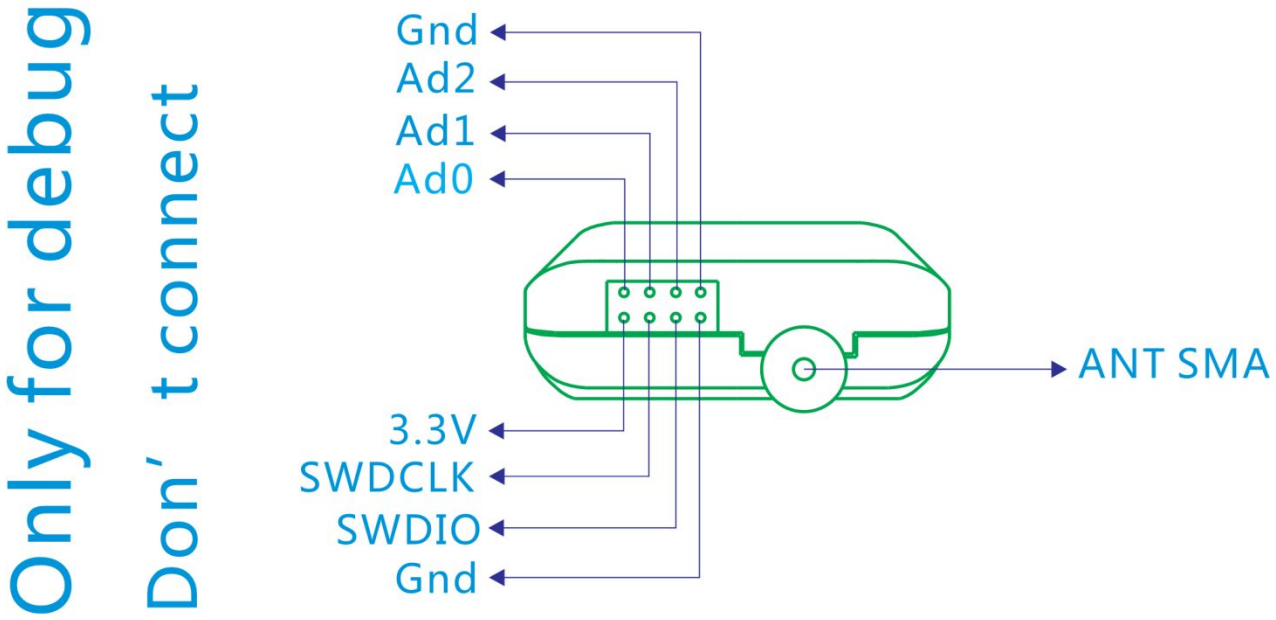
	A	B	C	D
1	5705	5733	5865	5740
2	5685	5752	5845	5760
3	5665	5771	5825	5780
4	5645	5790	5805	5800
5	5885	5809	5785	5820
6	5905	5828	5765	5840
7	5925	5847	5745	5860
8	5945	5866	5725	5880

Schematic diagram:


Antenna
SMA Connector
OLED
Button

Interface:


Gnd
video
audio
+7V~+28V
Current sensor in
Gnd
RC(Switch OSD)
Gnd
GPS/Mavlink/PC-VDD
GPS/Mavlink/PC-RXD
GPS/Mavlink/PC-TXD
Gnd
Gnd
GPS/Mavlink/PC-TXD
GPS/Mavlink/PC-RXD
GPS/Mavlink/PC-VDD
Serial data input/output



Button function：

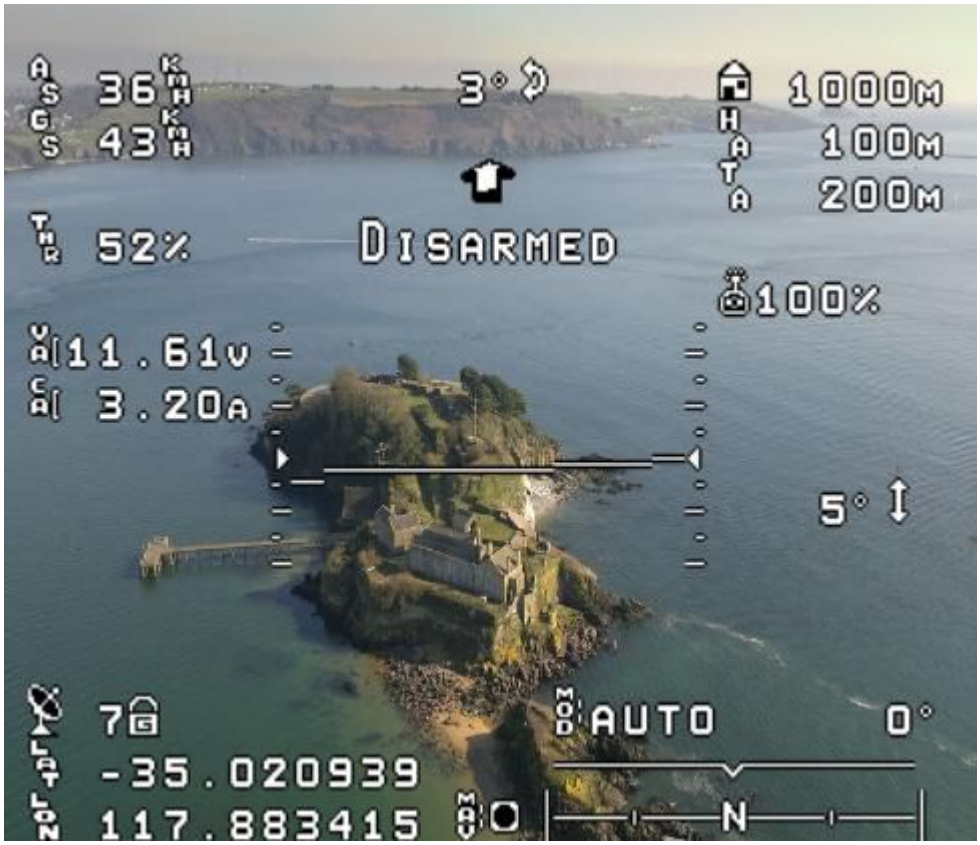
- Button ◂:
  1. OLED main interface push to change the RF channel group
  2. Menu interface , push back previous menu
- Button ▸ : OLED main interface push to change the RF channel
- Button ▲ : Up
- Button ▼ :
  1. Down
  2. Long press for 3 seconds Sets the current position to home
- Button ● : Menu / Confirm

OLED Display interface：

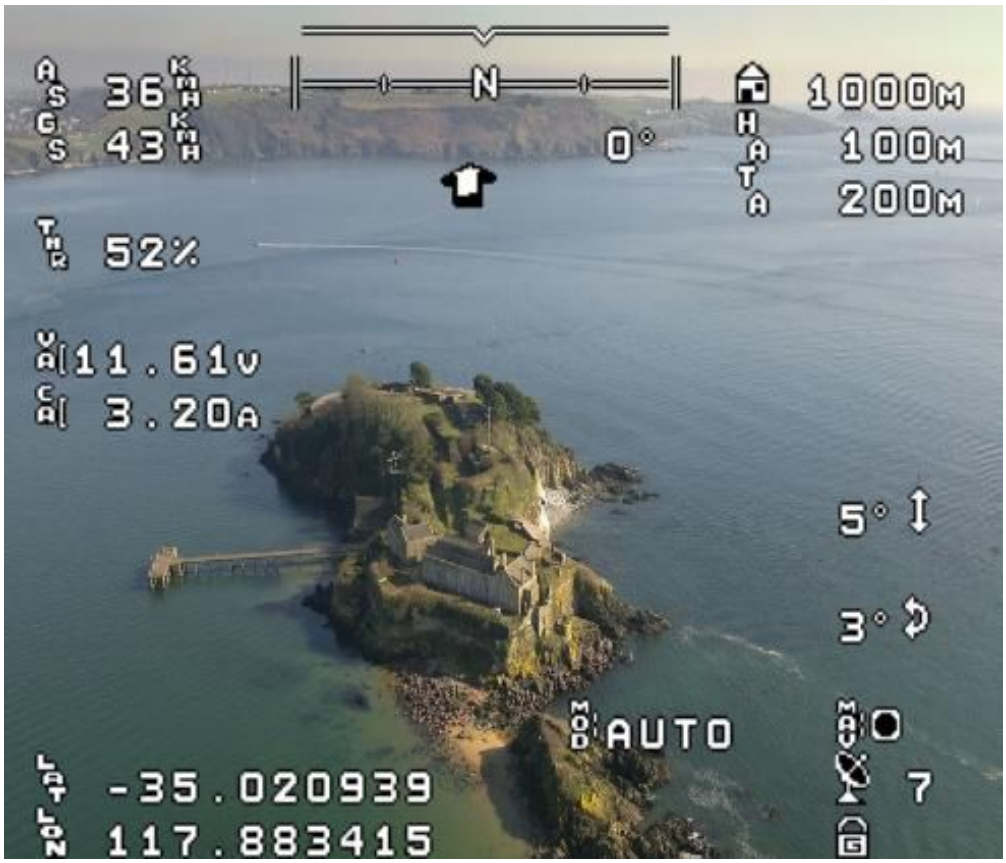
- Note ：The RF power information on OLED display is PA chip detector power , not is actual RF output power

OSD Screen display interface：

- **OSD panel 1：**



- **OSD panel 2：**



Frequency and channel groups setting：

- At OLED main interface press button◂ change channel groups
- At OLED main interface press button▸ change RF channel

Home Setting：

- At OLED main interface long press button ▼ about 3 seconds setting the HOME

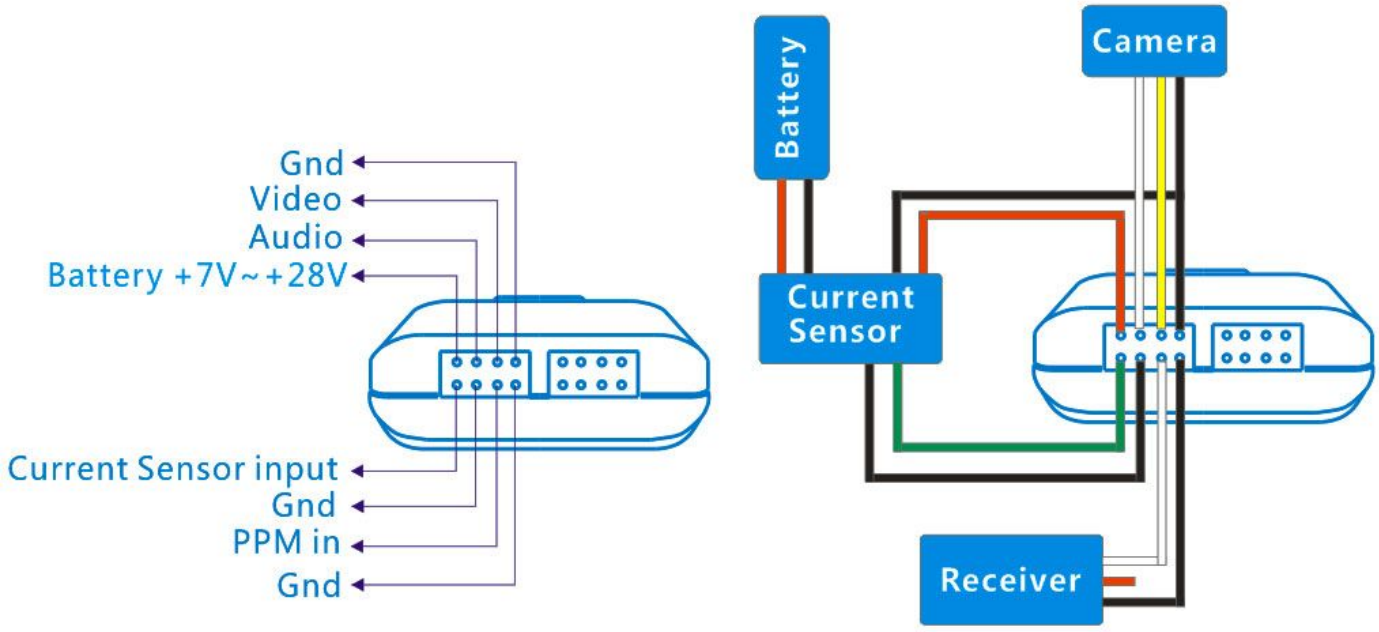
Switch OSD panel with remote：

- Switching OSD panel need to connect PPM output signal with remote control receivers
- Connect to PPM remote control receiver channel and GND wire in the figure below (Switch OSD display mode)

- Using the remote control 3-band switch or joysticks can toggle the OSD panel interface
- PPM<1.2ms is OSD off
- PPM>1.8ms is OSD panel 2
- other PPM>1.3ms and PPM<1.7ms is OSD panel 1

Mode 1: using the built-in 10 axis AHRS

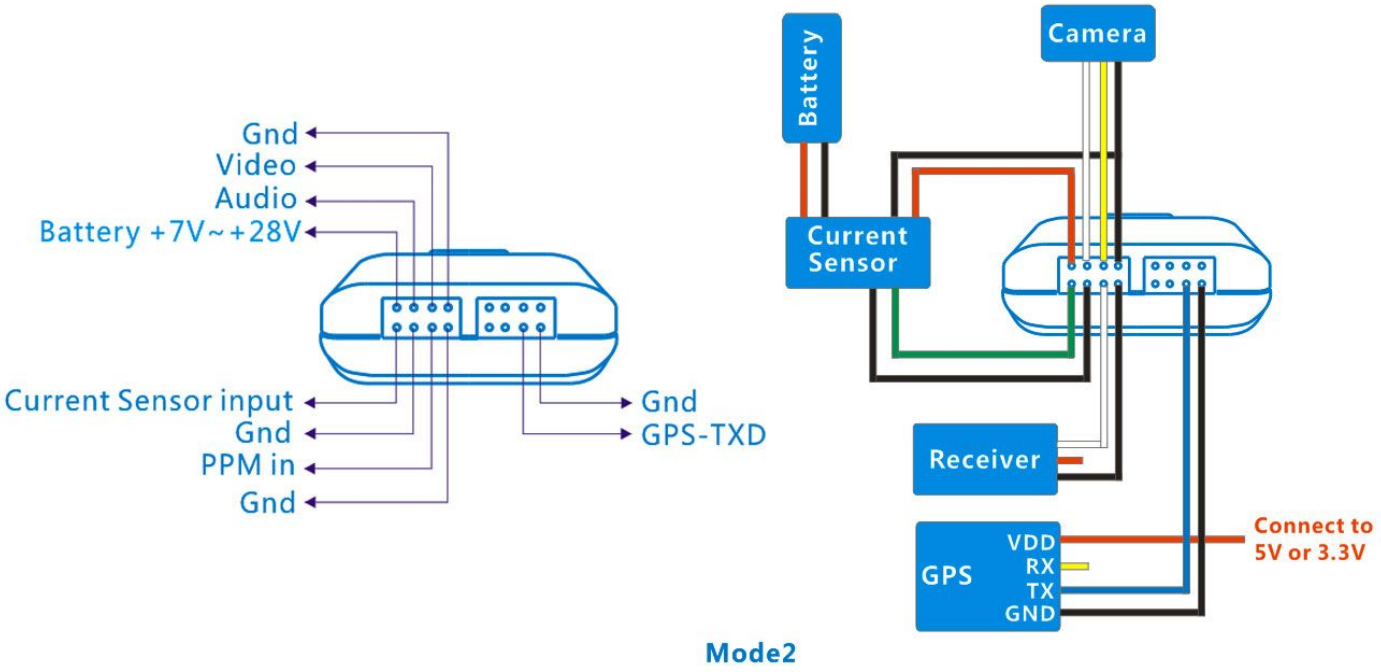
- Click OK，select Com Setting in the menu，select GPS in list Com Type，click OK to save setting ，click ◂ back
- This mode is the easiest to use mode, users only need connect to the battery power, video, audio, GND wire, without having to connect other devices, built-in AHRS provides attitude message, for example: pitch angle, roll angle, heading direction, barometer etc.
- This mode，geographic and distance(home distance) with no data



Mode1

Mode 2: using the built-in 10 axis AHRS + GPS

- Click OK，select Com Setting in the menu，select GPS in list Com Type，click OK to save setting ，click ◂ back
- Click OK，select GPS Band rate in the menu，select the baud-rate for GPS in list，typical GPS baud rate is 4800 or 9600 and 19200
- This mode is mode 1 for additional，need connect to GPS module
- Will be complete show all profile information, as well as the whole function of longitude, latitude and distance display



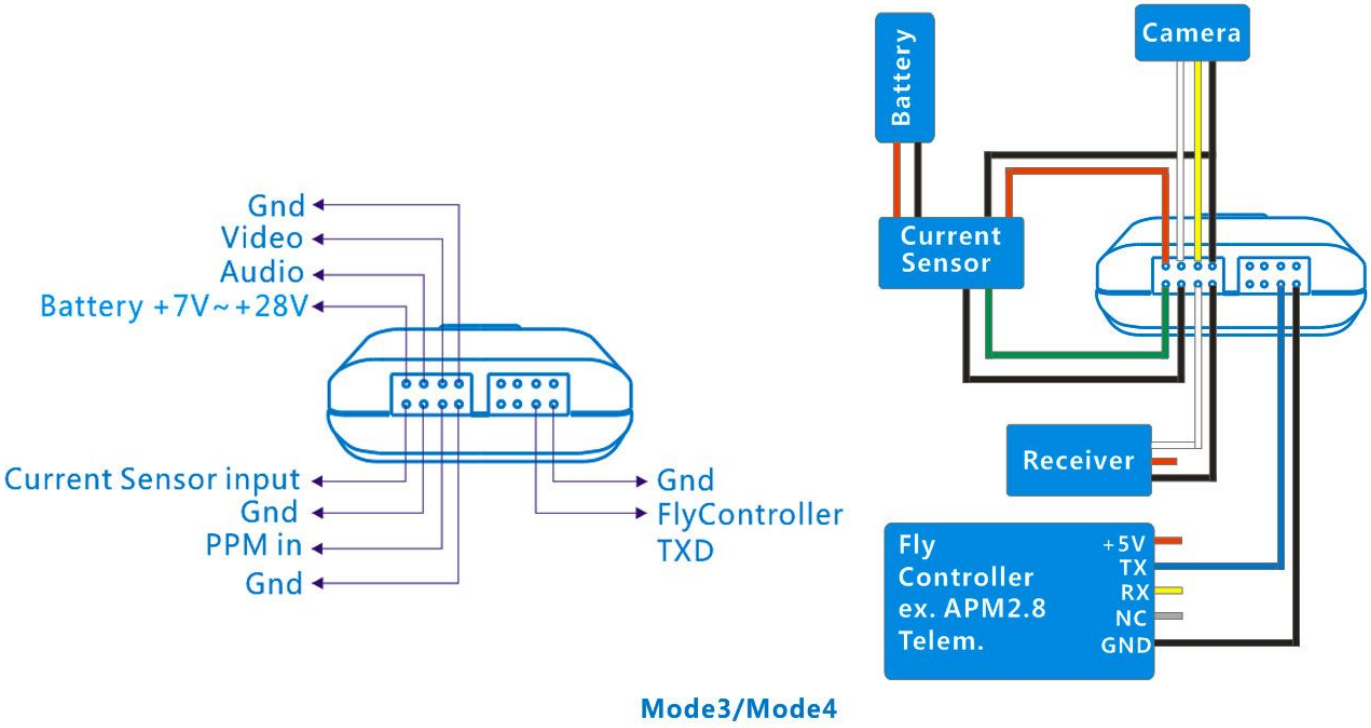
Mode2

Mode 3: MAVLINK serial data

- This mode only for MAVLINK protocol's flight controller, ex. APM flight controller
- Need connected to flight control's digital transmit interface
- Click OK , select Com Setting in the menu , select Mavlink in list Com Type , click OK to save setting , click ◄ back
- Click OK , select Mavlink Bandrate in the menu , select the baud-rate for flight controller's Mavlink protocol in list , typical Mavlink protocol baudrate is 57600

Mode 4: Skysight flight controller

- This mode only for Skysight flight controller
- Click OK ,select Com Setting in the menu ,select Skysight in list Com Type ,click OK to save setting , click ◄ back
- Click OK, select Skysight Bandrate in the menu , select the baud rate for Skysight flight control in list , typical Skysight flight controller baudrate is 57600



Mode3/Mode4

Set the serial interface baud rate

- GPS Band rate Setting
- Click OK，select GPS Band rate in the menu , select the baud-rate for GPS in list , typical GPS baud rate is 4800 or 9600 and 19200
- Mavlink Band rate Setting
- Click OK，select Mavlink Band rate in the menu， select the baud-rate for flight controller's Mavlink protocol in list , typical Mavlink protocol baud rate is 57600
- PC Bandrate Setting
- Click OK, select PC Bandrate in the menu , select the baudrate for PC debug in list , typical PC debug baudrate is 57600
- Skysight Bandrate Setting
- Click OK, select Skysight Bandrate in the menu , select the baud rate for Skysight flight control in list , typical Skysight flight controller baudrate is 57600

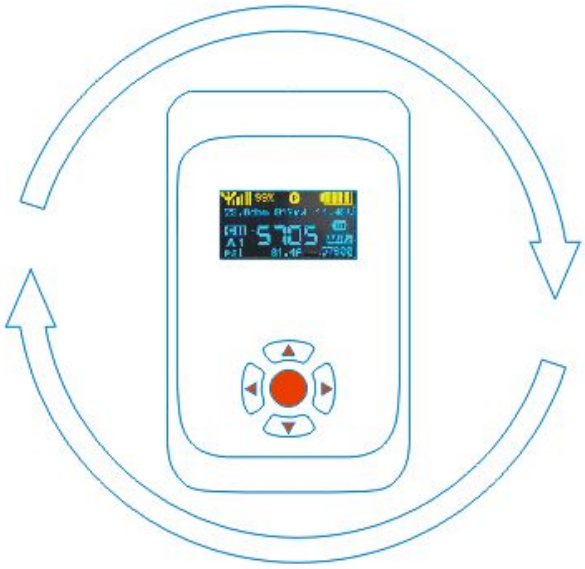
IMU Selftest

- When use built-in 10-axis AHRS IMU, you need to do built-in IMU Selftest for the first time use or after restoring the factory settings and the flight place is changed
- Select IMU Selftest in the menu and press the OK , Selftest will begin after 10 seconds, please hold in a quiescent state

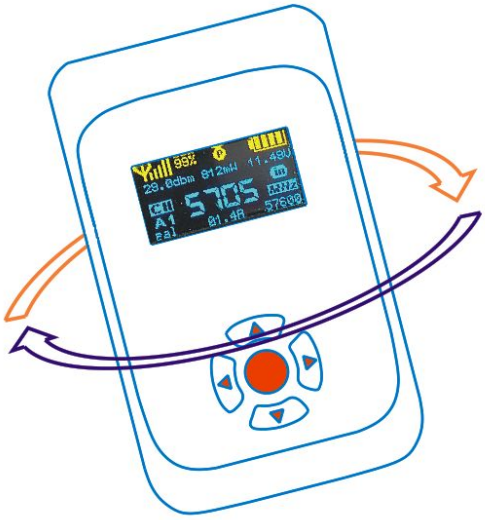
IMU Calibrate

- When use built-in 10-axis AHRS IMU, you need to do built-in IMU calibrate for the first time use or after restoring the factory settings and the flight place is changed
- Select IMU Calibrate in menu and press OK , follow to the tips on OLED display,
  press any buttons start calibration of accelerometer and gyroscope after 10 seconds , please hold in a quiescent state , after accelerometer and gyro calibration is completed, OLED screen will prompt calibration of data ,
  after 5 seconds will enter the digital compass calibrate state
- Compass Calibrate state

Follow the tips of OLED display, pressing any key will begin compass calibration, and that you must to do rotating horizontally slowly at least once



And then do the following rotate once



Calibrate will be finish in about 30 seconds

Reset Default Setting

- Choose Reset Default in the menu and press the OK key, it will restore the factory settings
- After restoring factory settings, depending on the connection mode, please configure the serial data type and baud rate once again , do IMU self test and IMU calibrate if using the built-in AHRS modules

View AHRS Data

- Menu select View AHRS data and confirm , the IMU self test and calibrate values will be display in OLED panel

OSD ON/OFF

- Select OSD ON/OFF and confirm in the menu, to switch the OSD enable or disable

Warning:

- Because the interface wiring much more , so please again to make sure wiring is correct, incorrect connection may cause damage

Packing list:

- OSD Transmitter*1
- Cable set*1
- Antenna*1