SN-AAT

AAT - Auto Antenna Tracker.

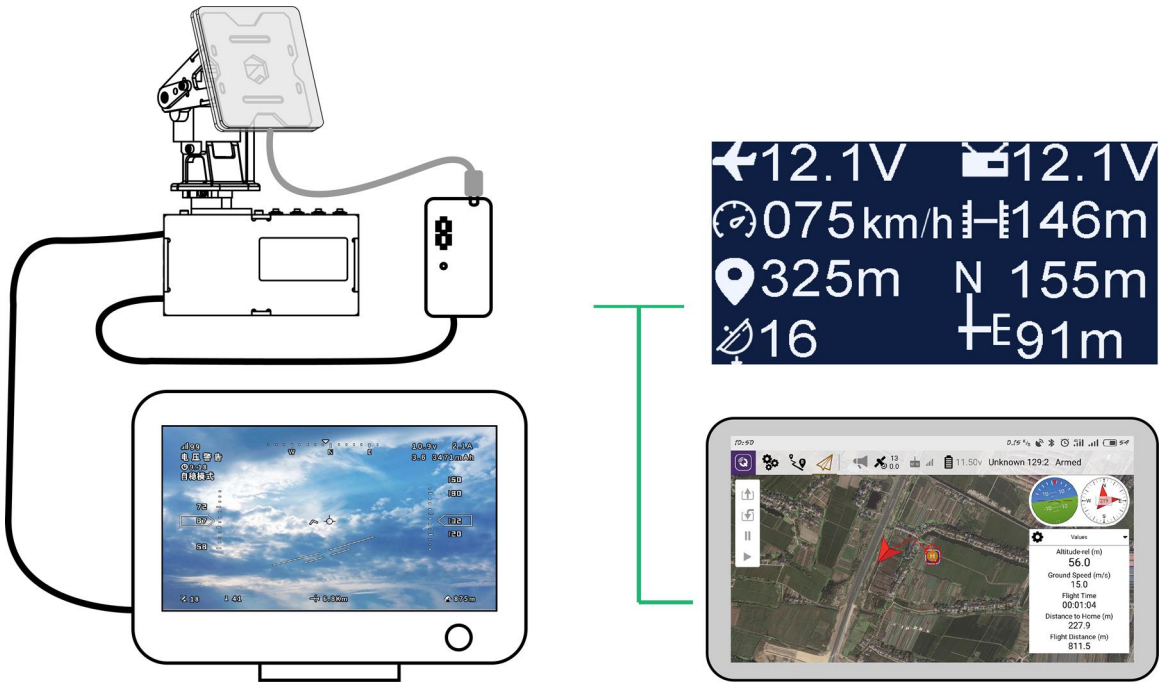
SN-AAT uses an efficient video signal superposition algorithm, SN-L (Airborne module) superimposes information such as GPS onto video, then transmits the video to AAT through the video transmitter, completes information encoding-transmission-decoding; AAT aligns the antenna with the aircraft in real time based on the acquired aircraft position information, and outputs its information according to mavlink protocol or screen output.

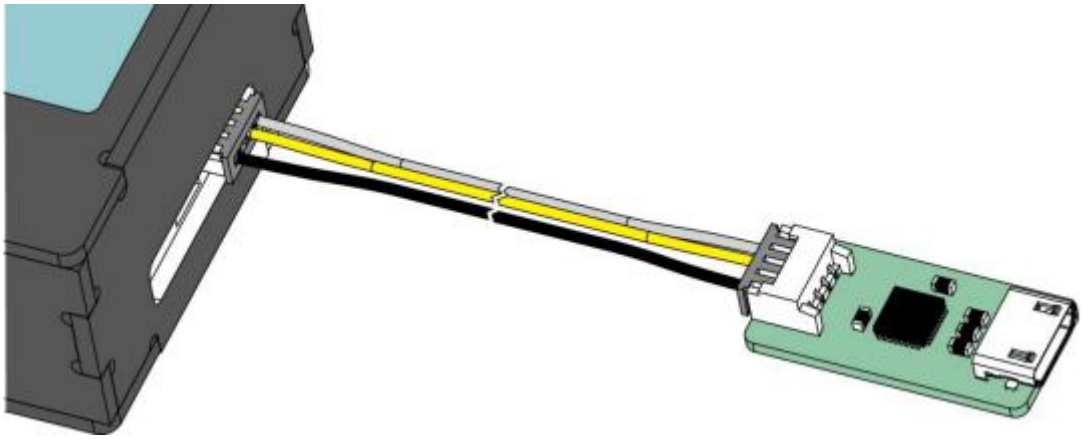
Features

- ❖ Compact design,easy to use,easy to carry.
- ❖ Standard video transmission channel.
- ❖ Support MAVLINK protocol,real-time path display with GCS such as QGC.
- ❖ Support compass and gyroscope.
- ❖ Support GPS,dynamic positioning.
- ❖ Automatically select and save the takeoff position.
- ❖ Support OLED display.
- ❖ Plug and play;Easyest connection with 2 wires only!

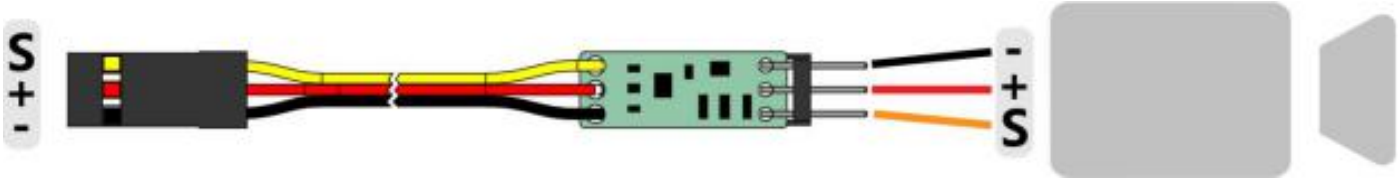
Precautions

1. Operating Voltage:2S-4S(7-16v).
2. Vedio Input:Must be connected during normal work.
3. GPS:Plug and play.
4. Compass:Try to avoid disturbing the compass.





Upgrade Wiring



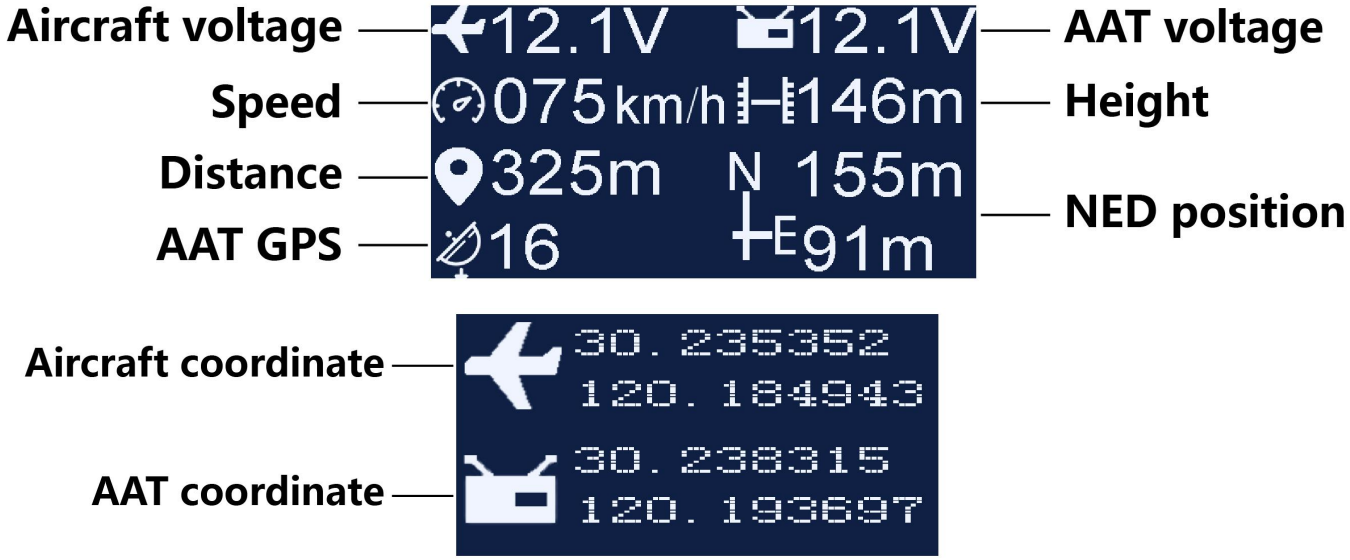
Conditioning Moudle

KEY OPERATION

UP	Switch menu;Select menu;Hold for 3 seconds to release,switch offline/tracking mode.
DOWN	Switch menu;Select menu.
ENTER	Enter menu;Hold for 3 seconds to release,compass calibration.
BACK	Back to previous.

MENU

1. Parameter menu:includes two pages,switch by UP and DOWN.



2. Setting menu:as follows.

Item	Meaning
PORT	Port output mode
SERVO	Offline/Tracking
COMPASS	ON/OFF
DIR	AAT installation direction
CAL	Angle calibration
VOL	Voltage offset
YWA/PITCH1/2	Accurately adjust the angle range of servo
BIAS1/2	Adjust the servo offset

PORT MODE

MAVLINK:GCS such as QGroundControl can be connected via tools such as Bluetooth,Achieve attitudes and real-time flight path display;One-way reception.

NONE:Not working.

*Need to restart AAT after changing the mode.

*The specific setting parameters in MAVLINK are baud rate 57600,no parity,1 stop bit.

SERVO AND BIAS

servo mode

1. Tracking: AAT real-time automatic control servo.
2. Offline: Keep the last moment;If the signal is lost or the AAT tilt angle is too large,it will automatically enter offline mode.

*Please try to ensure that the device is stationary when powering up.

servo bais

1. bais1: Horizontal servo bais,1 degree at a time.
2. bais2: Vertical servo bais,1 degree at a time.

YWA/PITCH1/2

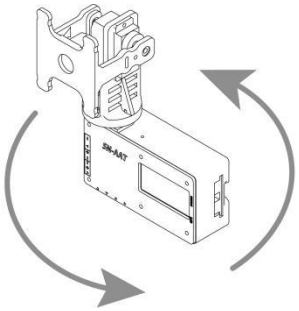
Accurately set the range of servo motion,avoid dead zones caused by a larger or smaller range of motion angles than normal.

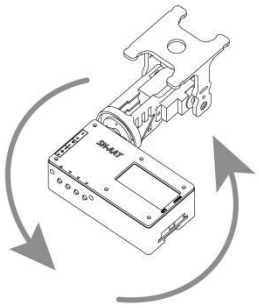
CALIBTATION

Compass calibration:

(1) Enter calibration:<KEY OPERATION>.

(2) Calibration step:vertical and horizontal for 3 turns.





(3) Verify calibration:enter the seting menu for angle calibration. If it is not accurate, there may be magnetic field interference nearby,please check again.

(4) Gyroscope: try to ensure that the device is stationary when powering up,AAT starts working after gyroscope calibration is completed.

Angle calibration:

(1) Enter calibration:<CAL>.

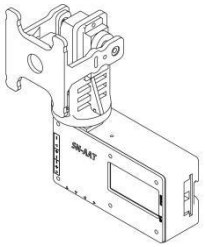
(2) Calibration step:

① 1st step:point north,pitch is 0 degrees.

② 2nd step:point east,pitch is 30 degrees.

③ 3rd step:point south,pitch is 60 degrees.

④ 4th step:point west,pitch is 90 degrees.



Calibration instructions:

If the compass is turned on during angle calibration, the above orientation refers to the geographical orientation; otherwise, the front direction of the AAT is north.

INSTALLATION DIRECTION

	Compass Closed	Compass Open
FORWARD	Screen pointing to south	No need to care
BACKWARD	Screen pointing to north	No need to care

*After changing the installation direction, you need to restart AAT and recalibrate the compass!

PRE-FLIGHT CHECK

GPS connected	GPS not connected
FC positioned and AAT connected normally can take off.	Place the aircraft near the AAT (within 3m) and take off when the FC is positioned.

FIRMWARE

Tools required for upgrading include software consistent with SN_L, use the upgrade wire that comes with AAT.

CONDITIONING MOUDLE

Some cameras cause video to shake or flicker due to problems such as system and compatibility, in turn, affecting signal recognition, This module can be used at this time. Use this method to connect the module between the camera and the flight controller; or directly replace the camera.

FAQ

Q: The communication failed and there is no data.

A: Check if the wiring is correct;Check if the camera system is PAL; Try adjusting SN_L black level.

Q: Communication is normal but cannot be tracked.

A: Check if the servo is in tracking mode;When the AAT is connected to the GPS, check whether the AAT is unlocked, after unlocking, the number of satellites stops flashing;Check if the SN meets the takeoff conditions.

Q: Horizontal pointing is not accurate.

A: When the compass is not enabled, check the angle error by angle calibration;When the compass is enabled, check if the calibration is correct and there is interference around.

Q: Vertical pointing is not accurate.

A: <CALIBRATION> -- <angle calibration>.

Q: AAT is not pointing correctly.

A: For ground testing, it is recommended that the horizontal distance is more than 20 meters and the height is more than 5 meters;Because of the gyroscope, the AAT is kept as static as possible when power is on.