

SN-AAT user manual

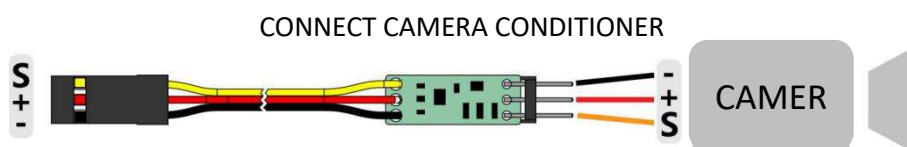
SN-AAT(Auto Antenna Tracker)accept the data passed through the VTX(video signal), can also receive digital signals(mavlink). Point the antenna at the aircraft based on the location information received from the aircraft. Can be used directly with SN(SN_L,SN_N) series flight controller.



The image shown here is indicative only. If there is inconsistency between the image and the actual product, the actual product shall govern.

1. INSTALLATION

- Input voltage: 7-16v.
- If used compass, keep away from interference sources.
- Close the compass, AAT support two installation directions, make sure you know which one you are using.
- WORK WITH SN_L FC
 - ① Make sure your OSD back-level is 125.
 - ② If OSD can not work normally please connect the video conditioner.
 - ③ Check your firmware version is support aat; The latest firmware v6.0 can open the aat function directly in the OSD setting menu.



2. 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.

3. MAIN OSD

The main OSD has three display menus, including distance, speed, latitude and longitude, packet loss rate and other information.

Aircraft voltage	12.1V	AAT voltage	12.1V
Speed	075km/h	Height	146m
Distance	325m	NED position	N 155m
AAT GPS	16		E 91m

4. OSD MENU OPERATION

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

ITEM	DESCRIPTION
PORT	Port output mode
SERVO	Offline/Tracking
COMPASS	ON/OFF
DIR	AAT installation direction
CAL	check servo install error
VOL	Voltage bias
YWA/PITCH1/2	Accurately adjust the angle range of servo
BIAS1/2	Adjust the servo bias

➤ PORT MODE

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

EXTERN: Accept mavlink protocol data and control the antenna to point to the aircraft based on the received location information.

**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

① 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.*

② servo bias

1. bias1: Horizontal servo bias.
2. bias2: Vertical servo bias.

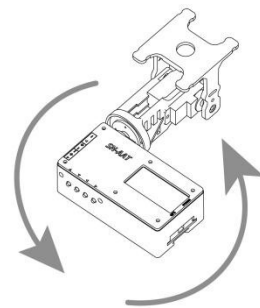
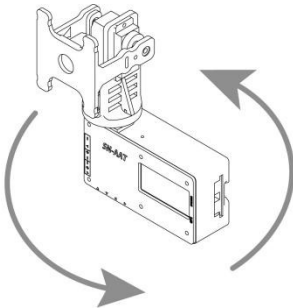
➤ YWA/PITCH1/2

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

➤ COMPASS CALIBRATION

(1) Enter calibration: <KEY OPERATION>.

(2) Calibration step: vertical and horizontal for 3 weeks. After the calibration is finished, the servo starts working.

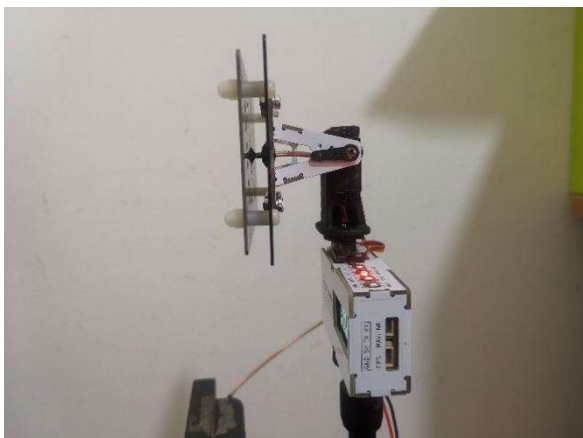


➤ CHECK SERVO INSTALL ERROR

(1) Enter calibration: <CAL>.

(2) check 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.



*Close compass before this step,

➤ **INSTALLATION DIRECTION**

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

5. UPGRADE FIRMWARE

Step1: Download upgrade software and drivers and install: install “CP210x USB to UART Bridge” driver.

https://github.com/HelloLeFei/SN_L/releases

www.lefeirc.com

Step2: Connect via USB: Select correct com ID.



Step3: Upgrade SN_AAT

Step1: power off AAT at first

Step2: Select “AAT”

Step3: load firmware and flash,

Step4: Before the end of the countdown, power on AAT

6. FAQ

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 <CLI>; When the compass is enabled, check if the calibration is correct and there is interference around.21qz

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.