ATLAS

Quick Start Guide

Thank you for purchasing this RCTimer product. Please strictly follow these steps to mount and connect this Flight Controller on your aircraft, as well as to install the Assistant Software on your computer.

Index

Instruction

Please read this disclaimer carefully before using the product. By using this product, you hereby agree to this disclaimer and signify that you have read them fully. THIS PRODUCT IS NOT APPROVED FOR USE UNDER THE AGE OF 18.

This product is an autopilot system designed for serious multi-rotor enthusiasts providing excellent self-leveling and maintaining altitude, which aids in relieving the stress of flying RC multi-rotors for both professional and hobby applications. Despite the system having a built-in autopilot system and our efforts in making the operation of the controller as safe as possible when the main power battery is connected, you must remove all propellers when calibrating and setting parameters. Make sure all connections are good, and keep children and animals at a safe distance at all times. RCTimer accepts no liability for damage(s) or injuries incurred directly or indirectly from the use of this product in the following conditions:
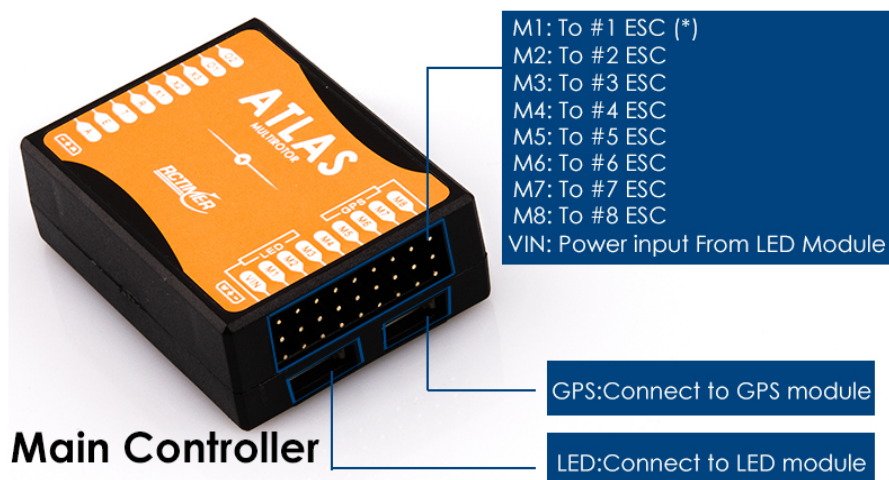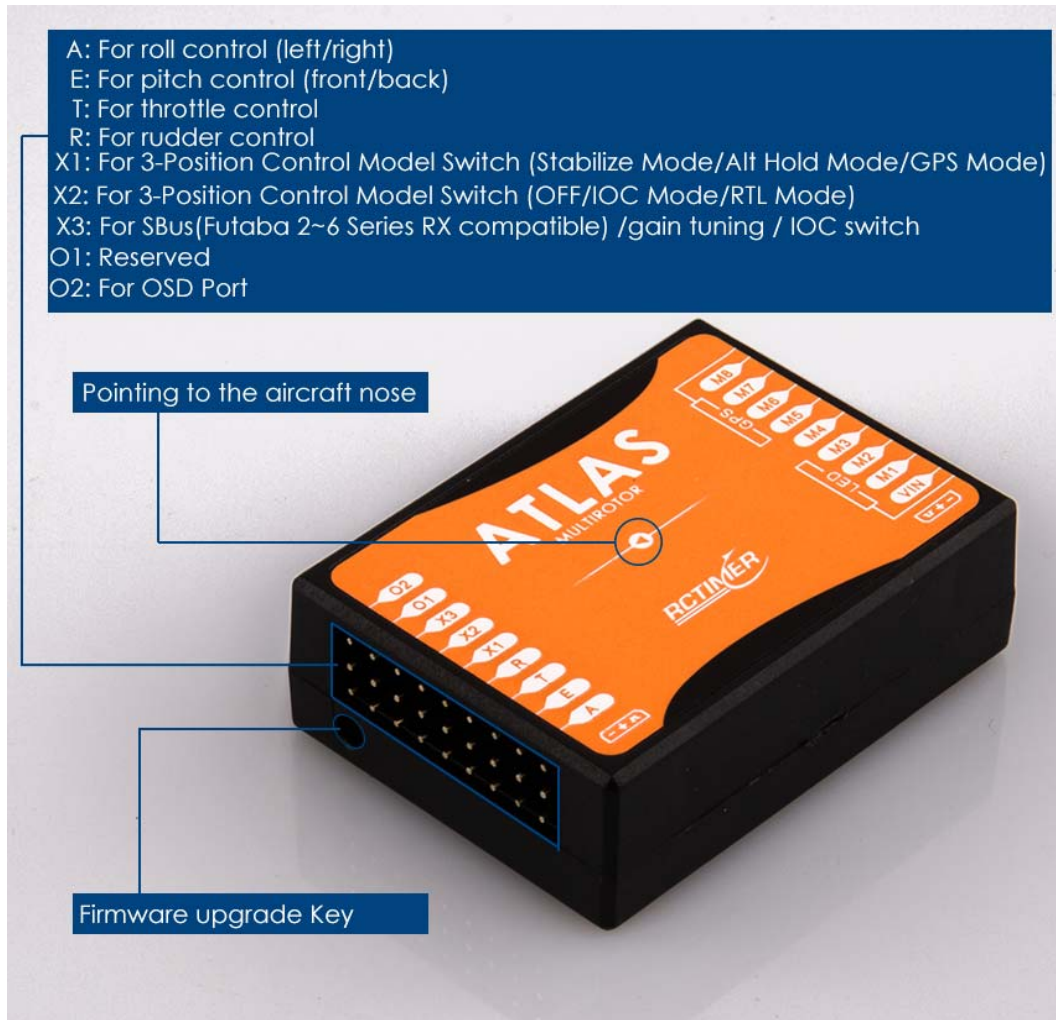
1. Damage(s) or injuries incurred when users are drunk, taking drugs, drug anesthesia, dizziness, fatigue, nausea and any other conditions no matter physically or mentally that could impair your ability.

2. Damage(s) or injuries caused by subjective intentional operations. Any mental damage compensation caused by accident.

3. Failure to follow the guidance of the manual to assemble or operate.

4. Malfunctions caused by refit or replacement with non-RCTimer and parts.

5. Damage(s) or injuries caused by improper operation or subjective misjudgment.

6. Damage(s) or injuries caused by mechanical failures due to erosion, aging.

7. Damage(s) or injuries caused by continued flying after low voltage protection alarm is triggered.

8. Damage(s) or injuries caused by knowingly flying the aircraft in abnormal condition (such as water, oil, soil, sand and other unknown material ingress into the aircraft or the assembly is not completed, the main components have obvious faults, obvious defect or missing accessories).

9. Damage(s) or injuries caused by flying in the following situations such as the aircraft in magnetic interference area, radio interference area, government regulated no-fly zones or the pilot is in backlight, blocked, fuzzy sight, and poor eyesight is not suitable for operating and other conditions not suitable for operating.

10. Damage(s) or injuries caused by using in bad weather, such as a rainy day or windy (more than moderate breeze), snow, hail, lightning, tornadoes, hurricanes etc.

11. Damage(s) or injuries caused when the aircraft is in the following situations: collision, fire, explosion, floods, tsunamis, subsidence, ice trapped, avalanche, debris flow, landslide, earthquake, etc.

12. Damage(s) or injuries caused by infringement such as any data, audio or video material recorded by the use of aircraft.

13. Damage(s) or injuries caused by the misuse of the battery, protection circuit, RC model and battery chargers.

14. Other losses that are not covered by the scope of RCTimer liability.
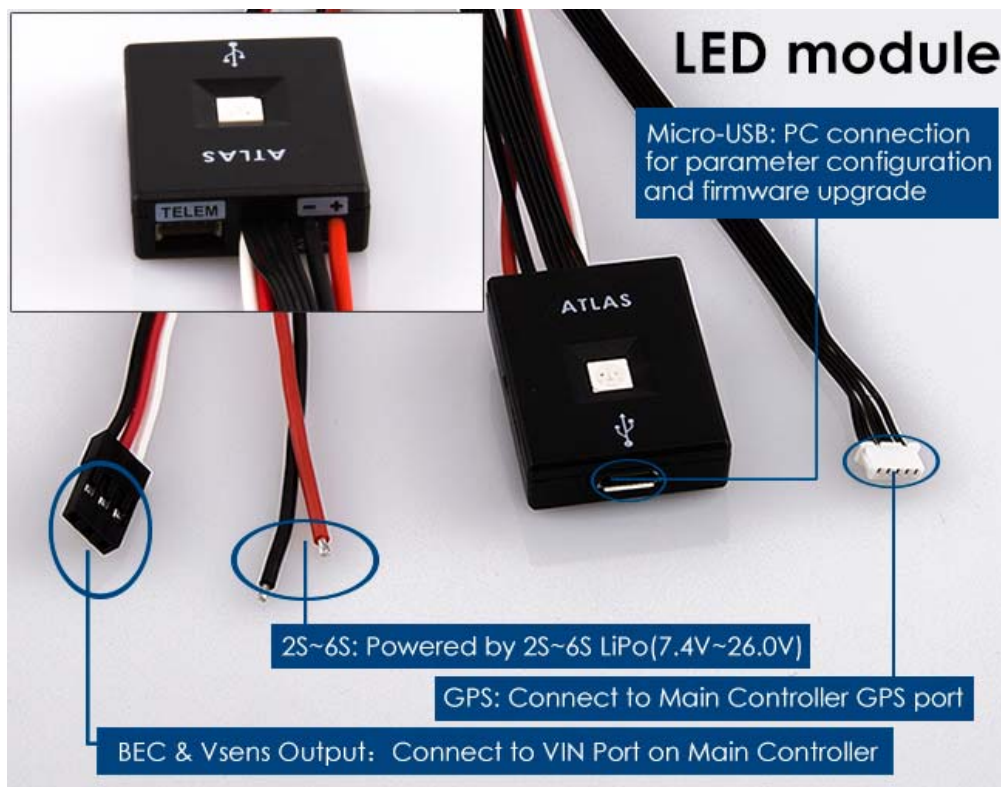
Assembly & Connection

In the Box:
Main controller X1, GPS X1, GPS Bracket X1, LED X1, Servo Cable X6, Micro-USB Cable X1, 3M
Adhesive Tape.

Port Description

A: For roll control (left/right)
E: For pitch control (front/back)
T: For throttle control
R: For rudder control
X1: For 3-Position Control Model Switch (Stabilize Mode/Alt Hold Mode/GPS Mode)
X2: For 3-Position Control Model Switch (OFF/IOC Mode/RTL Mode)
X3: For SBus(Futaba 2~6 Series RX compatible) /gain tuning / IOC switch
O1: Reserved
O2: For OSD Port

Pointing to the aircraft nose

Firmware upgrade Key

M1: To #1 ESC (*)
M2: To #2 ESC
M3: To #3 ESC
M4: To #4 ESC
M5: To #5 ESC
M6: To #6 ESC
M7: To #7 ESC
M8: To #8 ESC
VIN: Power input From LED Module

GPS:Connect to GPS module

LED:Connect to LED module

Main Controller

GPS/Compass

Pointing to the aircraft nose direction

Connect to GPS port of Main Controller

LED module

Micro-USB: PC connection for parameter configuration and firmware upgrade

2S~6S: Powered by 2S~6S LiPo(7.4V~26.0V)

GPS: Connect to Main Controller GPS port

BEC & Vsens Output：Connect to VIN Port on Main Controller

The connect leads

Please solder the Red and Black silicon wires to Power Distribution Board, it support 2-6S, can't be over 28V.

Please connect White/Red/Black lead to the VIN (Voltage In) of Main Controller; it supports the Power to FC from the battery.

Connect the white connector to LED port of the Main Controller; it is for the signal connection on LED/USB

GPS / Compass Module

Connect GPS lead to GPS Port on Main Controller.

A/E/T/R of the forward in Main Controller stands for Aileron / Elevator / Throttle / rudder channel; you can choose a 3-position switch as control mode switch in X1 or X2.

X1: 3-Position Control Model Switch (Stabilize Mode/Alt Hold Mode/GPS Mode)

X2: 3-Position Control Model Switch (OFF/IOC Mode/RTL Mode)

X3: SBUS Input channel, supported Futaba 2/6 series Receiver;
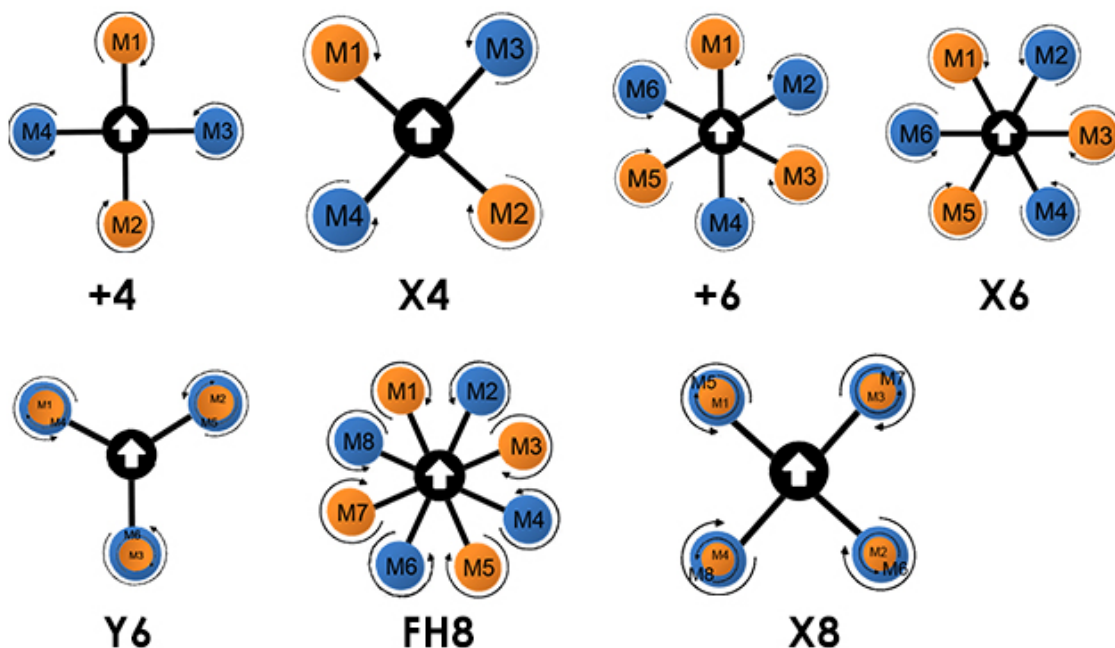
O1: Reserved, not used currently;

O2: OSD Port.

M1 ~ M8 are ESC signal output port, please follow the parameters tuning tool sequence to connect.

<Warning> Verify Positive and Negative Polarity on the Main controller
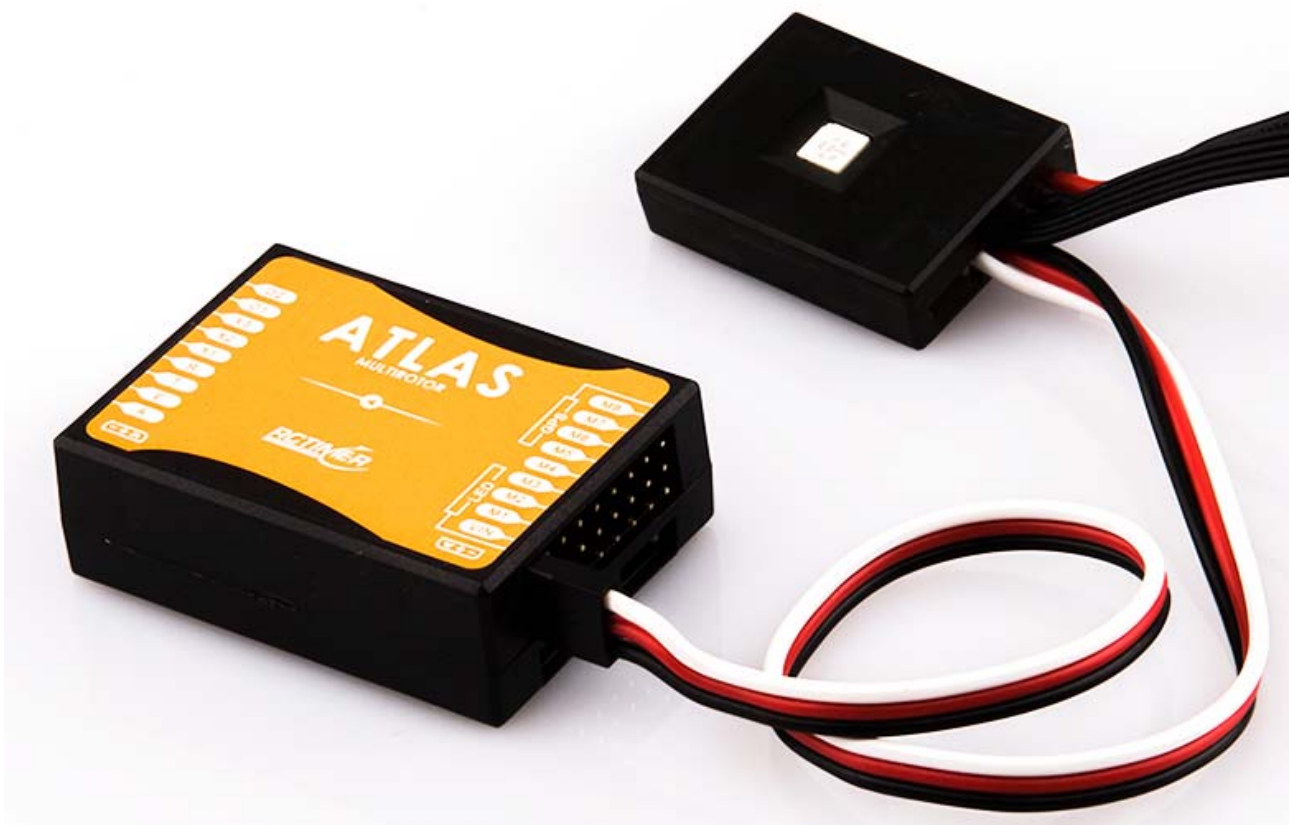
<Warning> All ESCs must be calibrated before connecting to the Main controller, this not provided by the Main controller.

+4   X4   +6   X6
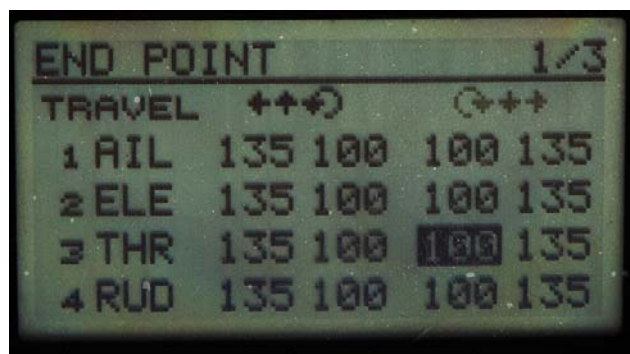

Y6   FH8   X8

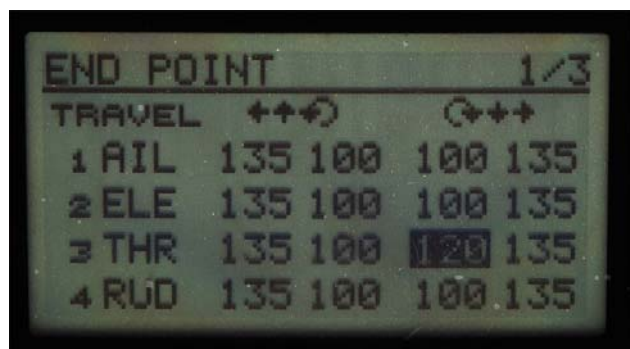**If the ESC is SimonK Firmware, please follow this step calibrated ESC:**

Step 1:

① Select "END POINT' under "Linkage Menu" in your

② Change the value 100 of the 3rd Column in "THR" Remote to 120
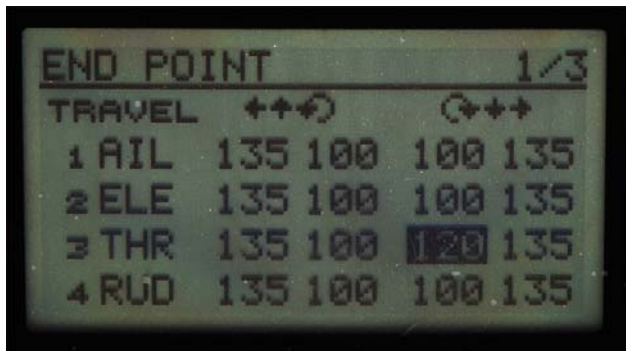

③ Save and Return

Step 2:

Calibrated all ESCs.

Step 3:

① Select "END POINT' under "Linkage Menu" in your Remote

② Change the value 120 of the 3rd Column in "THR" Remote to 100

③ Save and Return
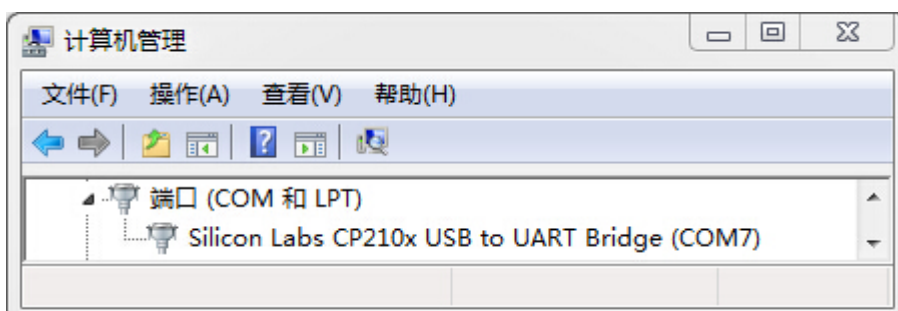
Finshed.

USB Driver

USB driver download

http://www.silabs.com/Support%20Documents/Software/CP210x_VCP_Windows.zip

Please check the COM Port under the device manager of your PC after installed the USB driver, the COM port need under 10, if not please revised it.,

Firmware upgrade

Press the inside hole key of main control, connected USB, the LED state is "red - green - blue" by cycle, then it has upgraded into the model (if not please retry this step), Open the firmware upgrade tool:
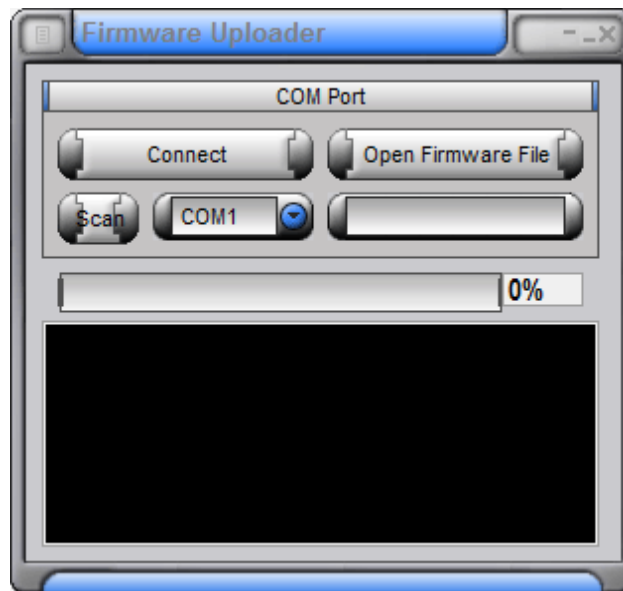

Click "Open Firmware File", select the file"*.fcu"

Click "Scan", and select your COM port.
<Warning> Make sure the COM number ≤10, otherwise please change it to ≤10.

Click "Connect" the upgrade starting now, the details will be display in black window. The LED will blink white in this processing.

Click "Disconnect" when the message box is displayed Finished, and close the Firmware uploader.
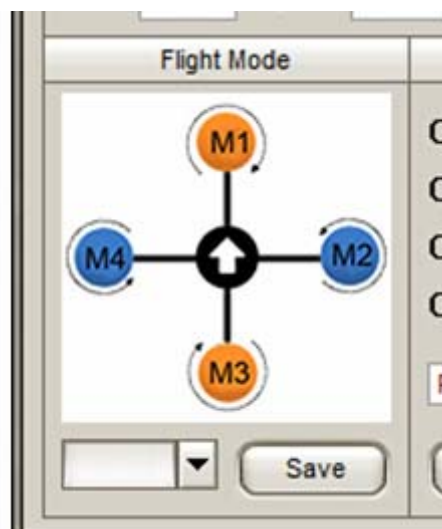
Initialization settings
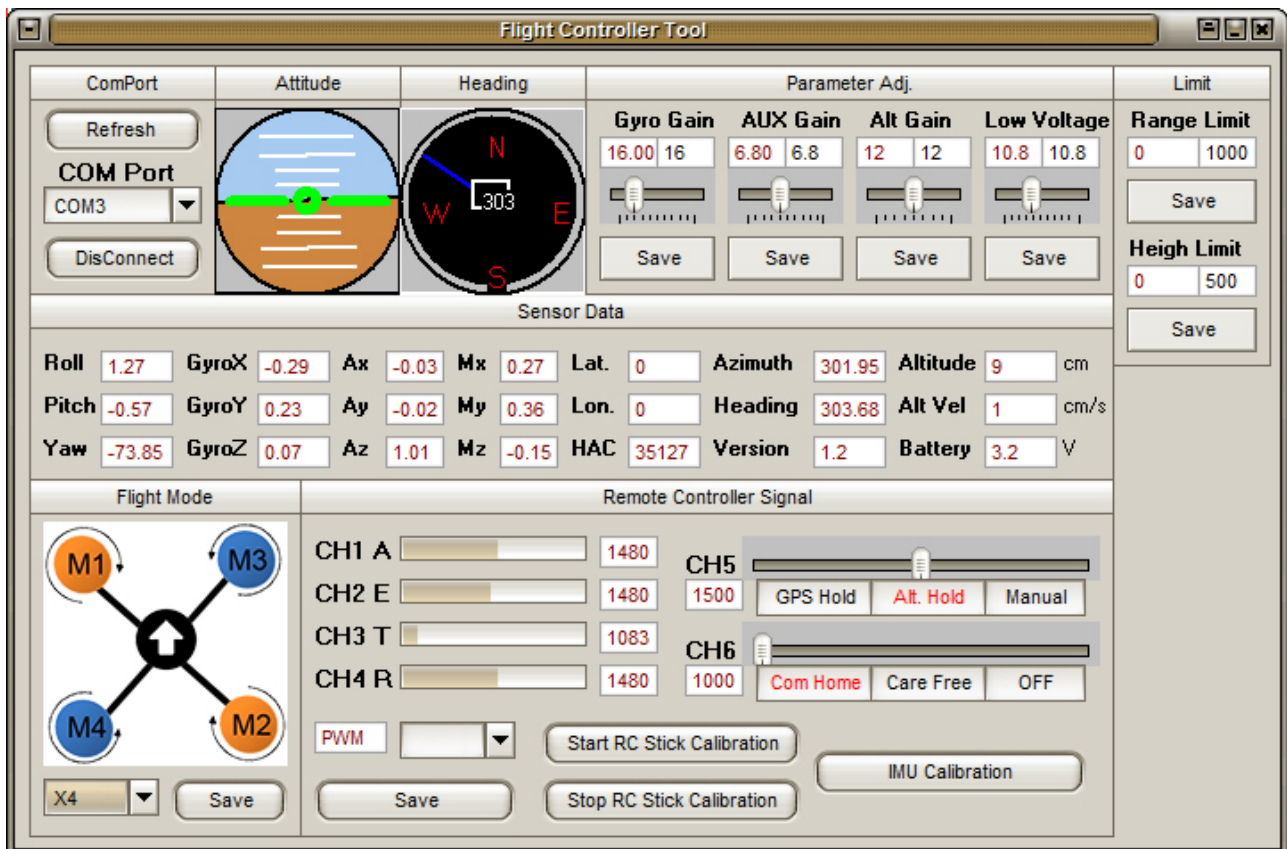
Please check your COM port via "Refresh", click 〞Connect〞, then you can view the Sensor Date, Firmware version, the voltage etc.

Please follow this step when powered the first time

1. Select the flight mode, save it, connect ESCs to the corresponding M1~M8 on the Main controller.

2. Select the remote control signal type "PWM"or "SBUS" and save it.

3. Remote controller Calibration

Click" Start RC Stick Calibration", the LED light blue, move the control sticks and all switches on your transmitter to their limits of travel and observe the results on the radio calibration bars. Please click "Stop RC Stick Calibration" after Calibration(the slider up when you push up the stick , the slider to left when you push the stick to left, if not please change it via the reverse function in remote controller.

4. Hold your Multi-rotor horizontal, click "IMU Calibration", or via remote controller do this (check in back)

Check the "Parameter Adj" in the flight controller tool, please set the value of low voltage warning, the default value is "10.8", it is Warning voltage is lower than 10.8V(10.8V can be regarded as the total voltage of 3S battery in each section of the average 3.6V), the LED blinking RED when "low voltage warning".

After Assembly, please learn the stick combined movement functions description: Based on Mode2 (Left Hand Throttle)
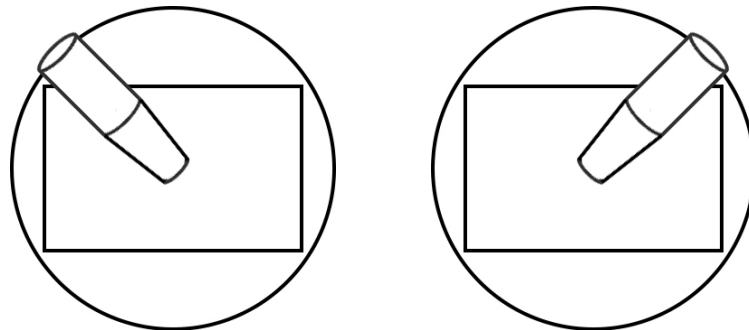
Calibration

IMU Calibration: please follow the below icon and check the LED state. When the blue light is on, please keep this action Wait about 5 seconds, then release the green light
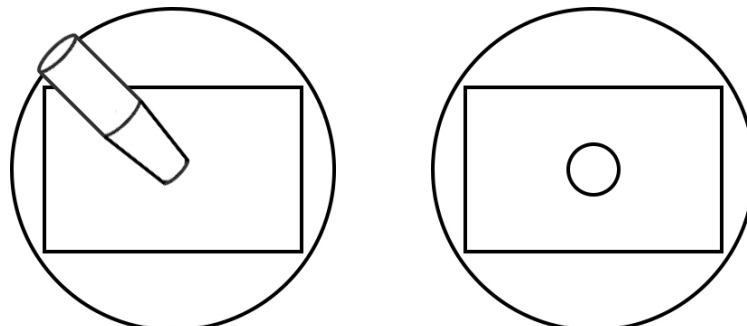
MAG Calibration: please follow the below icon and hold 1 second, reset the stick and it entered the calibration mode.
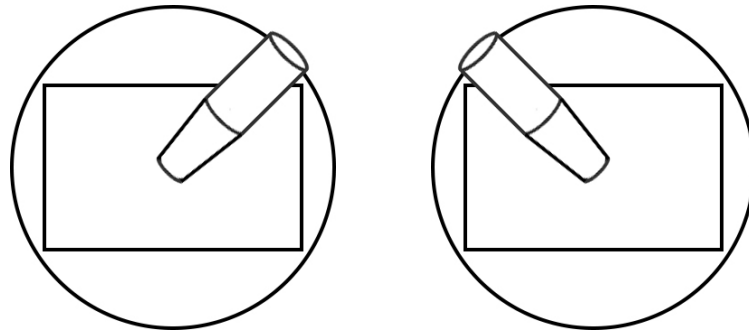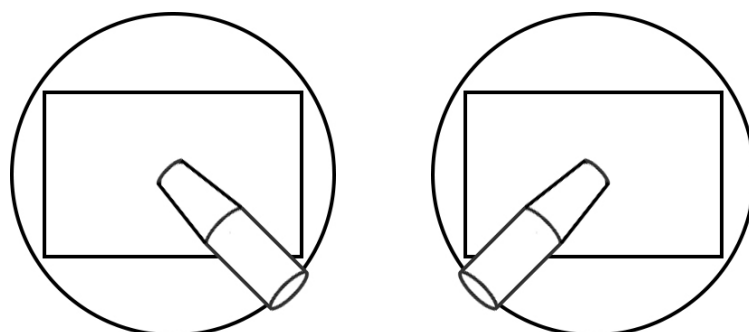

Around all-axis of rotation multi-rotor copter, the indicator will show a faint blue, until completely blue calibration is complete, you can exit the calibration mode follow the below icon.

Rotating your Multi-rotor three axis around the gravitational force line (about 360 degrees)
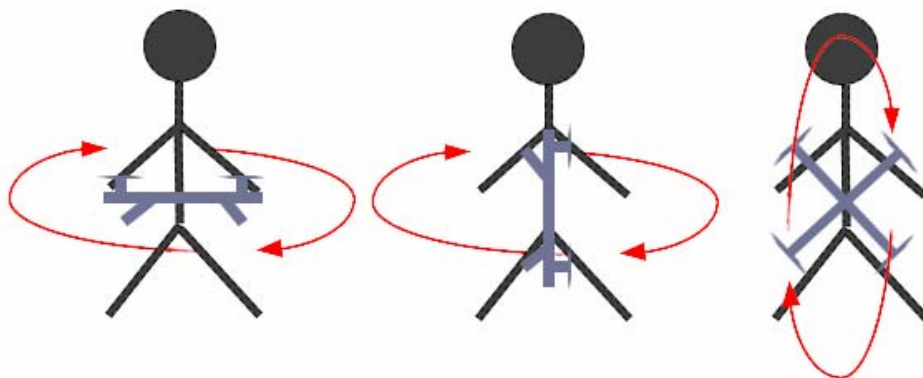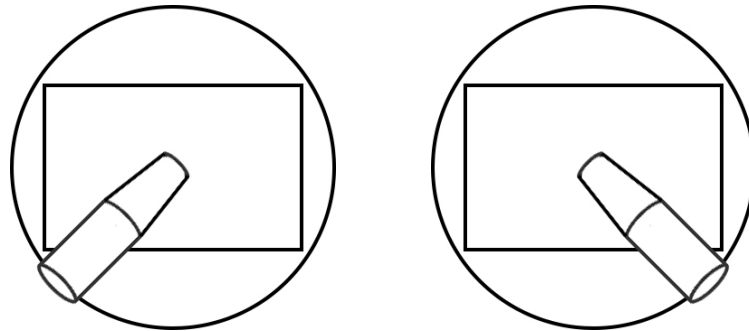

Throttle unlock icon:

After throttle unlock, the propellers should spin at a low speed, if not or high speed rotation, please throttle calibration again.

Throttle lock icon:

LED Description for more LED details:

Always switch on the transmitter first, then power on multi-rotor!

GPS Signal Status LED Indicator
None 🔴　　GPS Signal is Best;
🔴　　　　GPS Signal is Well;
🔴🔴　　　GPS Signal is Bad;
🔴🔴🔴　　GPS Signal is Worst.
<**Warning**> Recommend you use the "GPS Mode" and "RTL" when Red LED is not blinking.

Low voltage warning
🔴🔴🔴🔴🔴🔴 LED warning, the Low-Voltage Alert is to indicate that the battery cannot provide enough power for the aircraft, in order to warn you to land the aircraft ASAP.
Extreme Caution, you should land your aircraft ASAP to prevent your aircraft from crashing or other harmful consequences!!!

MAG interference warning
🟡🟡🟡

When the GPS is abnormal, the Main controller will tell you by the LED blinking Yellow （🟡🟡🟡） alternately, disable the GPS Module, and automatically enter the Alt Hold Mode

LED Signal
🟢🟢　　　　　　Stabilize Mode
🟢　　　　　　　GPS Mode
🔵　　　　　　　IOC Mode
⚪　　　　　　　RTL Mode

Assembly Checking List

Please check each item, to insure your safety.

Any of the following mistakes will lead to a dangerous accident, double check all these items:
(1) Rotation direction of motors
(2) Confirm connections between the motor and the ESC
(3) Confirm correct installation of Main controller
(4) Confirm connections between the main controller and ESC.
(5) Proper Propeller installation
(6) The aircraft will not unlock under the GPS Mode
(7) Magnetic Fields near the compass

IOC Mode

Intelligent Orientation Control (IOC) Flight Mode (with GPS module)
Definition of Forward Direction:
Multirotor will fly toward the Stick Direction, independent of the Nose Heading

In, Course Lock flying, the forward direction is the same as the nose direction. All the following requirements are met: the autopilot system is in ATTI. + Alt-Hold or GPS Mode.
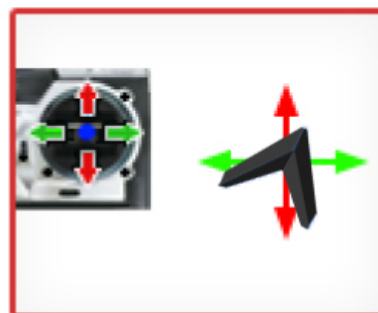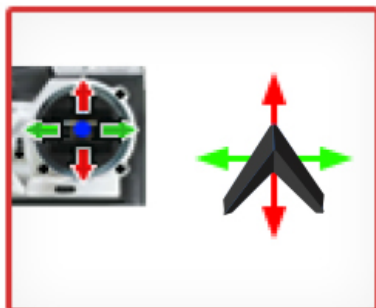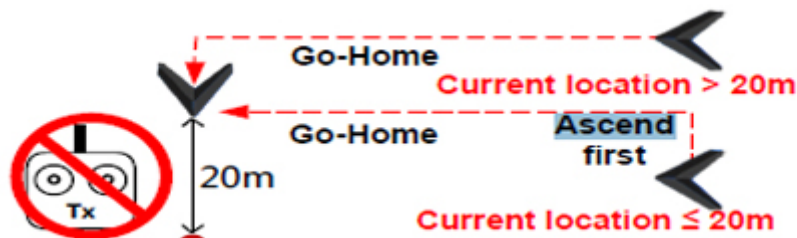
RTL (Return To Land)

Ensure the aircraft has no Red LED warning, GPS is working well, switch to RTL, the throttle needs to be in the middle(see icon)(ATTI. + Alt-Hold mode), if not, the RTL is disabled.

The aircraft will be Ascend 20 meter when RTL starting:

Upon Arrival Home and Landed, turn off the RTL switch.

NOTE:
During RTL process, you can still maneuver the aircraft when moving the sticks.
When you free the control sticks, RTL will continue home, but please hold the throttle in the middle position.

Specifications:

Features	Easily-useable
	Seven type Multi-rotor supported
	External LED module with build-in PMU
	No compass need during stab mode
	Manual controllable during RTH and Auto Landing, avoiding accidents
	Compass disturbance alert
	Low voltage alert

Flight Performance (can be effected by mechanical performance and payloads)

Hovering Accuracy(GPS Mode)	Horizontal ±2M Vertical ±1M
Max Tilt Angle	30°
Max Horizontal Speed	6M/s
Max Ascent Speed	3.2M/s
Max Descent Speed	2.5M/s
Wind Resistance	Continue 6~8M/s Gust 10~12M/s

Electrical & Mechanical Input Voltage Range:

MAIN Controller	4.5~5.5V
LED Module	7~28V

Dimension / Weight

MAIN Controller	Dimension : 46.5x34.5x15.3mm Weight: 19.7g
GPS Module	Dimension : 50x50mm Weight: 30.0g
LED Module	Dimension : 33.2x24.9x8.5mm Weight: 16.9g