Thank you for purchasing EAGLE series of flight controller. If any difficulties are encountered while setting up or operating your A3 Pro, please consult this manual first. For further help, you may also visit our website at www.geeetech.com, or contact us via email support@geeetech.com

Features

★ 3 Flight Modes can be switched between **Normal Mode**, **AVCS Mode** and **Gyro Off** in flight;
★ 3 Model Types supported: **Normal Airplane**, **Flying-wing (Delta-wing)** and **V-tail**;
★ Specifically optimized to work for 3D flight;
★ Independent gyro gain adjustment for Aileron, Elevator and Rudder;
★ Basic setting functions including Stick Centering and Gyro Reversing;
★ Smaller and lighter, more compatible with small airplane;
★ Firmware can be updated from PC easily.

Specifications

Voltage Range: 4 - 6V DC
PWM Output: 50Hz/1520μs, 1020 ~ 2020μs
Full-Scale Range of Gyro: ±1000dps
Sample Rate of Gyro: 1KHz
Operating Temperature: -40 ℃ to 85 ℃
Dimensions: 30 × 40mm
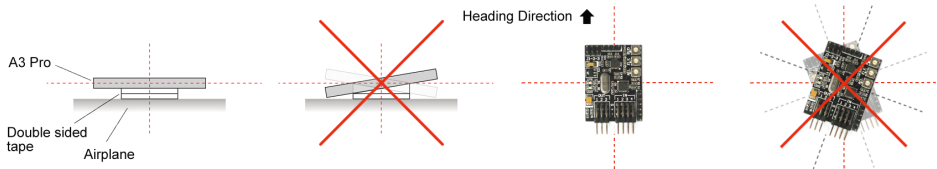Weight: 8 g

Attentions

1.   Make sure that your plane has been well installed before use;
2.   In order to make the best use of your board, please read this manual carefully and install it step by step following the instructions below;
3.   Set the trimming and sub-trim parameters to "0" for channels of aileron, elevator and rudder within your transmitter;
4.   **Verify that the mixing of flying-wing (delta-wing) or v-tail has been disabled within your transmitter as A3 Pro has already built these functions in.**

Installation Guide

【Step 1: Board Mounting】

The board need to be firmly mounted near the center of gravity of the plane, by the double sided tape provided. Please make sure the longer side of the board is along with the heading direction. The board must be leveled with the body of the plane. Please refer to the illustration below.

【Step 2: Wiring】

Once installation is completed, please connect the channels of aileron, elevator, rudder and switch from your receiver to the pins marked "IN", pin 1 for aileron, pin 2 for elevator, pin 3 for rudder and pin 4 for the flight mode switch (**You should directly connect the throttle channel to ESC or throttle servo without bridging the board**). Connect the servos to the pins marked "OUT", pin 1 for aileron servo, pin 2 for elevator servo and pin 3 for rudder servo. When the aileron is operated by two separate servos, you should use a Y extension cable. Pay attention to the color of wires to avoid anti-plug.

【Step 3: Model Type Selection】

A3 Pro uses a 3-bit jumper (J1-2-3) for model type selection. Please match the type of your plane with Normal Airplane, Flying-wing (Delta-wing) and V-tail according the table as shown below. **Restart the board to activate the selected type**.

No.	Model Types	Jumper Setting			Servo Connection		
		J1	J2	J3	OUT-1	OUT-2	OUT-3
1	Setting Mode	0	0	0	-	-	-
2	Normal Airplane ▲	1	0	0	Aileron Servo	Elevator Servo	Rudder Servo
3	Flying-wing (Delta-wing)	0	1	0	Left Wing Servo	Right Wing Servo	* Rudder Servo
4	V-tail	0	0	1	* Aileron Servo	Left Tail Servo	Right Tail Servo

Notes: "0" represents "OPENED", "1" represents "CLOSED", "▲" is the default setting.

【Step 4: Gyro Gain Setting】

A3 Pro offers 3 fine tuning potentiometers to adjust the gyro gain for aileron, elevator and rudder (clockwise for increase, anticlockwise for decrease). The best setting is determined by factors like fuselage size, weight and the power allocation used and so on. We recommend you put the gain to a lower volume for the first flight, then fine tune to get the best result. The adjustment will take effect immediately without a restart. For your safety, please don't adjust them until all the propellers become motionless.

【Step 5: Switch Channel Configure】

Assign a 3-position switch to the channel which connected to the pins "IN-4" for switching the flight mode in flight. When use a 2-position switch, you can only switch between Normal Mode and AVCS Mode. It will be set to Normal Mode by default if the switch channel is not connected to the board. **However it is not recommended as the board might get interrupted by the reception during the flight, which will result in the unexpected flight mode**. When the board is operating, the indicator lights show the current flight mode, blue for normal mode, red for AVCS mode and both blue and red off indicates that the gyro has been disabled.

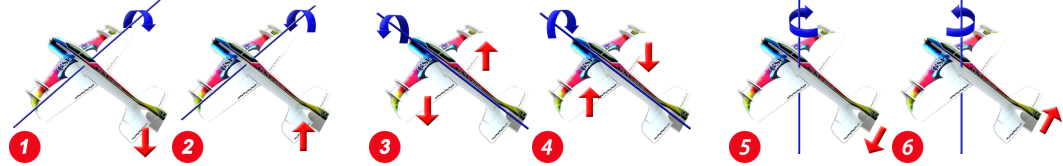| No.	Flight Modes	Switch Position	Pulse Range	LED
1	Normal Mode▲	ON	< 1320μs	Blue
2	Gyro Off	MIDDLE	1520±200μs	Off
3	AVCS Mode	OFF	> 1720μs	Red

【Step 6: Stick Centering】

To get the best result, you should apply the "Stick Centering" function to calibrate channel range following the Map of Setting Methods. For the first use of A3 Pro

or replacing a new radio system, calibration is needed to obtain the best performance. After calibration, the servos will center, **center the aileron, elevator and rudder of your plane by adjusting the length of the linkage rods, it is NOT recommended to adjust it through the "Sub-Trim" function within your transmitter directly as it might reduce the performance of A3 Pro**. Stick Centering works on of aileron, elevator and rudder channels. To enter this function, you must get IN 1-2-3 ready.

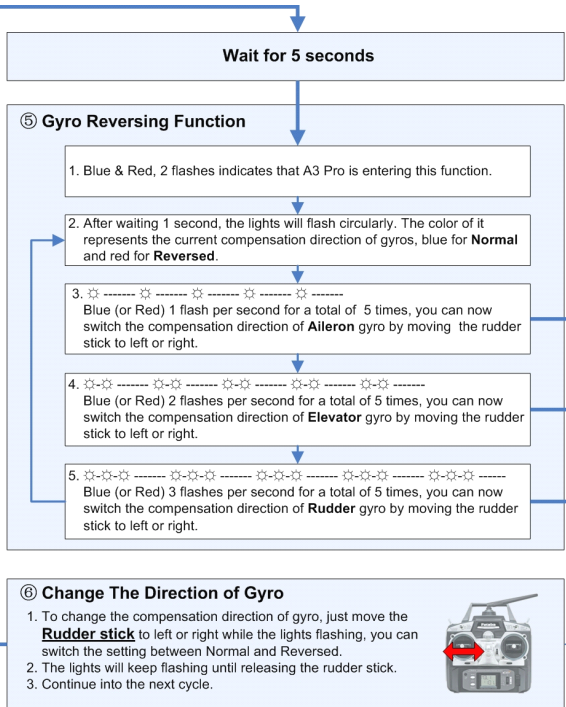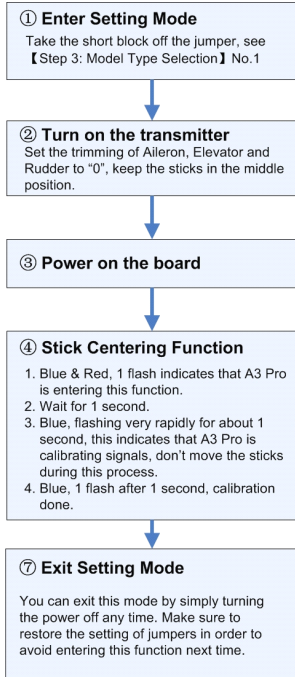## 【Step 7: Before Flight Checking】

Verify that the gyro compensation is in the correct direction for the first-time installation, otherwise, it could lead to losing control or even crash during the flight! Turn on the board, pick the plane up and check it by following the 6 steps shown below:
① Rise the head up around the pitch axis, the elevator should flap down accordingly; ② Put the head down around the pitch axis, the elevator should flap up accordingly. ③ Rotate left around the roll axis, the left aileron should flap down and the other one flap up accordingly; ④ Rotate right around the roll axis, the left aileron should flap up and the other one flap down accordingly; ⑤ Rotate right around the yaw axis, the rudder should turn left accordingly; ⑥ Rotate left around the yaw axis, the rudder should turn right accordingly.

If the gyro compensates in an incorrect direction, reverse it by following the instructions of Gyro Reversing Function below.

Map of Setting Methods

① Enter Setting Mode
Take the short block off the jumper, see 【Step 3: Model Type Selection】No.1

② Turn on the transmitter
Set the trimming of Aileron, Elevator and Rudder to "0", keep the sticks in the middle position.

③ Power on the board

④ Stick Centering Function
1. Blue & Red, 1 flash indicates that A3 Pro is entering this function.
2. Wait for 1 second.
3. Blue, flashing very rapidly for about 1 second, this indicates that A3 Pro is calibrating signals, don't move the sticks during this process.
4. Blue, 1 flash after 1 second, calibration done.

⑦ Exit Setting Mode
You can exit this mode by simply turning the power off any time. Make sure to restore the setting of jumpers in order to avoid entering this function next time.

Wait for 5 seconds

⑤ Gyro Reversing Function

1. Blue & Red, 2 flashes indicates that A3 Pro is entering this function.

2. After waiting 1 second, the lights will flash circularly. The color of it represents the current compensation direction of gyros, blue for **Normal** and red for **Reversed**.

3. ☼ ------- ☼ ------- ☼ ------- ☼ ------- ☼ -------
Blue (or Red) 1 flash per second for a total of 5 times, you can now switch the compensation direction of **Aileron** gyro by moving the rudder stick to left or right.

4. ☼-☼ ------- ☼-☼ ------- ☼-☼ ------- ☼-☼ ------- ☼-☼ -------
Blue (or Red) 2 flashes per second for a total of 5 times, you can now switch the compensation direction of **Elevator** gyro by moving the rudder stick to left or right.

5. ☼-☼-☼ ------- ☼-☼-☼ ------- ☼-☼-☼ ------- ☼-☼-☼ ------- ☼-☼-☼ ------
Blue (or Red) 3 flashes per second for a total of 5 times, you can now switch the compensation direction of **Rudder** gyro by moving the rudder stick to left or right.

⑥ Change The Direction of Gyro
1. To change the compensation direction of gyro, just move the **Rudder stick** to left or right while the lights flashing, you can switch the setting between Normal and Reversed.
2. The lights will keep flashing until releasing the rudder stick.
3. Continue into the next cycle.

LED Indicator Description

Condition	LED Indicator	Description
Initialization	Blue, 1 flash after power on	Initialize success, type of Normal Airplane selected
	Blue, 2 flashes after power on	Initialize success, type of Flying-wing(Delta-wing) selected
	Blue, 3 flashes after power on	Initialize success, type of V-tail selected
	Red, very rapid flashing	Undefined Model Type, check the setting of jumper J1-2-3
Operating	Solid Blue	Normal Mode, ready for flight
	Solid Red	AVCS Mode, ready for flight
	Both Off	Gyro is disabled, ready for flight
Setting Mode	Red, slow flashing	No signal, you must get IN 1-2-3 connected before entering setting mode.