

Thank you for purchasing EAGLE series of flight controller. N6V2 is a flight control board designed specifically for remote control multicopters with 3, 4 and 6 rotors. With a high-precision MEMS digital three-axis gyro built in, it provides sound stability, flexibility and reliability by automatically correcting for axes of pitch, roll and yaw. Specifically optimized software put in place for sport flight mode without undermining stability, whether you are a beginner or advanced, it can bring to you the most excellent performance!

## 【Features】

- ★ Supports 6 multicopter types including TriCopter, Quad+4Copter, QuadX4Copter, HexCopter, H6Copter and Y6Copter, can be easily switched by the on-board Coding-Switch;
- ★ 2 flight modes to choose from for each type, including Normal Mode and Sport Mode;
- ★ **The throttle lock function has been cancelled in N6V2, it is ready for flight any time when the blue LED turns ON;**
- ★ Independent gyro gain adjustment for pitch, roll and yaw;
- ★ Basic setting modes including stick centering and ESC throttle calibration;
- ★ Blue and red LEDs for working status display and error report.

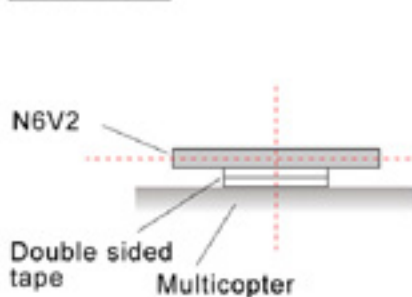
## 【Specifications】

Voltage Range: 4 - 6V DC  
 PWM Output: 400Hz for ESC, 50Hz for servo  
 Full-Scale Range of Gyro:  $\pm 500\text{dps}$   
 Sample Rate of Gyro: 1KHz  
 Operating Temperature:  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$   
 Dimensions:  $40 \times 40\text{mm}$   
 Weight: 8 g

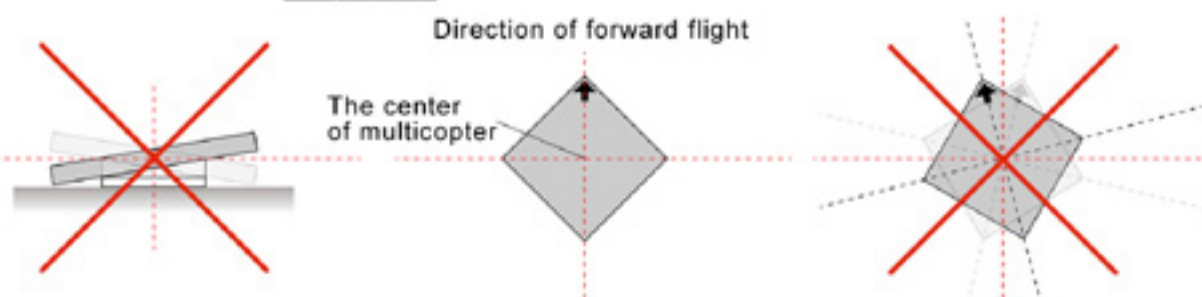
## 【Installation & Wiring】

The board should be securely mounted in the center of your multicopter applying the provided double sided tape. Please align the white arrow with forward flight direction when mounting. Inappropriate or inaccurate installation could decrease the performance of the board or even result in complete failure.

### Side View

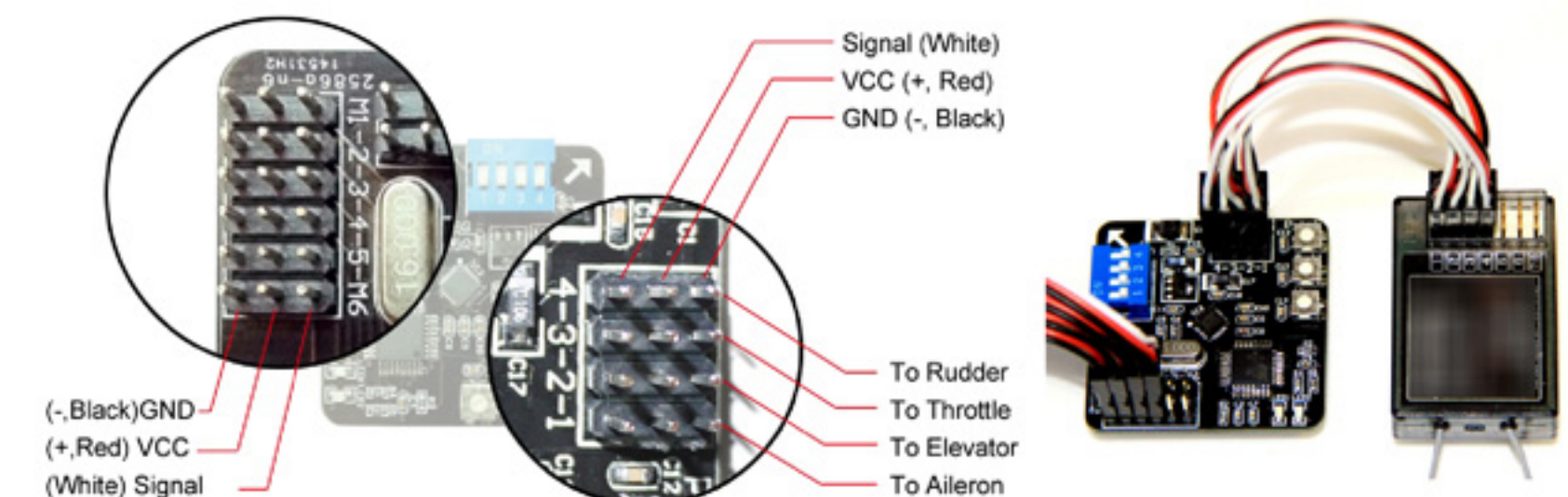


### Top View



After installation, connect the channels of Aileron, Elevator and Rudder from your receiver to the pins on the board marked No. 1 to 4, and the ESCs ( or servos) to the pins marked M1 to M6 in the correct order according to the selected multicopter type (See P4 "Supported Multicopter Types"). When connecting, please pay attention to the color of wires to avoid anti-plug. The WHITE(or YELLOW) signal wires should be connected corresponding to the inner pins on the board, the RED(VCC) wires to the center pins, and the BLACK(GND) wires to the pins on the outer edge of the board, as shown below:

### Wiring Diagram





## 【Multicopter Type & Flight Mode Selection】

N6V2 has a 4-bit coding-switch for multicopter type and flight mode selection, the first 3 bits for multicopter type and the last bit for flight mode. **VERY IMPORTANT! Please restart the board to activate the selected type or mode.**

**Multicopter Types Setting Table**

No.	Multicopter Types	SW1	SW2	SW3	SW4
1	Stick Centering Function	0	0	0	×
2	ESC Throttle Calibration Function	1	1	1	×
3	Tri Copter	1	0	0	×
4	Quad +4 Copter	0	1	0	×
5	Quad X4 Copter ▲	0	0	1	×
6	Hex Copter	1	1	0	×
7	H6 Copter	1	0	1	×
8	Y6 Copter	0	1	1	×

**Flight Mode Setting Table**

No.	Flight Mode	SW1	SW2	SW3	SW4
9	Normal Mode (Recommended for beginners) ▲	×	×	×	0
10	Sport Mode	×	×	×	1

Notes: "0" represents "OFF", "1" represents "ON"; "×" represents influence-proof for the mode set. i.e. Modes between normal and sport are either available for any multicopter types; "▲" is the default setting.



## 【Stick Centering】

The Stick Centering Function is used to calibrate channel range of aileron, elevator, throttle and rudder. To obtain the highest performance it is recommended to apply this function after first-time installation or application of new radio system. Follow the steps as shown below:

- Step 1** Set the coding-switch to the "Stick Centering Function", see "Multicopter Types Setting Table";
- Step 2** Turn on the transmitter, set the trimming of channels aileron, elevator, throttle and rudder to zero, keep the throttle stick in the bottom position, the other sticks in the middle;
- Step 3** Power on the board. Both the blue and red LEDs will begin flashing simultaneously for once after initialization, this indicates that the board is entering the stick centering function. Wait for 1 second. Both the blue and red LEDs will flash 4 times quickly, this indicates that system is calibrating signals. Don't move the sticks during this process;
- Step 4** After calibration done, the blue LED will turn ON and the red one OFF, please turn the power off and restore the setting of the coding-switch in order to avoid entering this function next time.



## 【ESC Throttle Calibration】

The ESC Throttle Calibration Function is used to setup the throttle range for the ESCs. To obtain the best throttle linearity we strongly suggest you apply this function after first-time installation or application of new ESCs. Follow the steps as shown below:

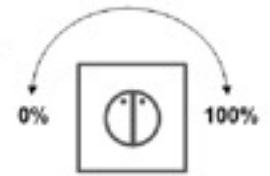
- Step 1** Set the coding-switch to the "ESC Throttle Calibration Function", see "Multicopter Types Setting Table";
- Step 2** Turn on the transmitter, move the throttle stick to the top position;
- Step 3** Power on the board. Both the blue and red LEDs will begin flashing simultaneously for twice after initialization, this indicates that the board is entering the ESC throttle calibration function. Wait for 1 second. The blue LED will turn ON and the red one OFF, this indicates that system is ready to output signal to the ESCs. Please move the throttle stick to the bottom when the tones of throttle range highest point has been confirmed. Specific construction shall be referred to the manual of your ESC;
- Step 4** Once you have completed setting up the ESCs simply turn the power off and restore the setting of the coding-switch in



order to avoid entering this function next time.

## 【Gyro Gain Adjustment】

N6V2 offers 3 trimming potentiometers to adjust the gain of pitch, roll and yaw gyros, clockwise for increase, anticlockwise for decrease. The most suitable volume is determined by many factors, such as fuselage size, weight and power allocation used. We strongly suggest you put the gain at a lower volume for the first flight, and then fine tune to get the best result. The adjustment will take effect immediately without needs to restart. For your safety, please don't adjust them until all the propellers become motionless.



## 【LED Indicator Description】

Slow Flash: 1 second or longer, Fast Flash: 1/5 second or shorter.

Colors	Way of display	Description
Blue	Flash N times when power on	Initialize success, N stands for the multicopter type selected, see "Multicopter Types Setting Table".
	Solid ON	Working, ready for flight.
Red	Solid ON	Undefined multicopter type, double check the setting of the coding-switch.
	Slow circular flashing: "⚙️ ----- ⚙️ ----- ⚙️ ----- ..."	No signal input, check whether the transmitter is on.
	Fast circular flashing: "⚙️ -- ⚙️ -- ⚙️ -- ⚙️ -- ⚙️ -- ..."	The throttle stick is not in the lowest position when power on, move it to the bottom.
Red & Blue	Flash simultaneously for once	Entering the stick centering function.
	Flash simultaneously for twice	Entering the ESC throttle calibration function.

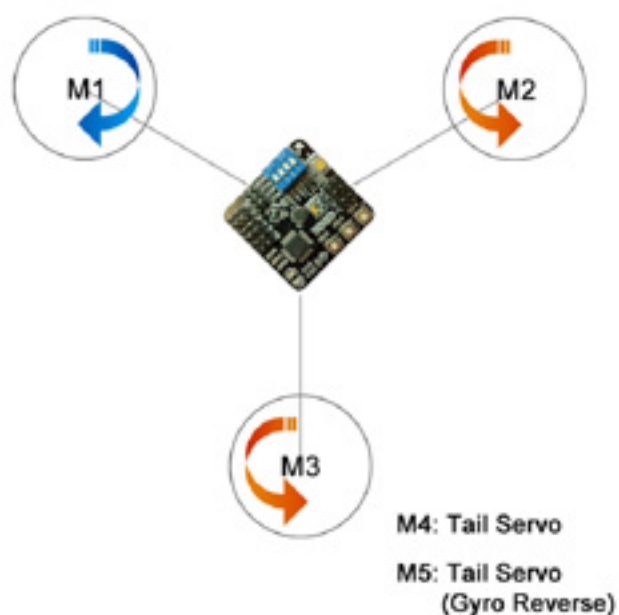
## 【Special Note】

- 1、 Remote Control Models are NOT toys. The high-whirling propeller is very dangerous, therefore please carry out debugging and test flight in open space far away from the crowd. The beginner should be directed by someone experienced;
- 2、 Always use a high-precision, good-quality fuselage and equipments to obtain the highest performance;
- 3、 Make sure to apply the Stick Centering and ESC Throttle Calibration Functions after first-time installation or application of new equipments.

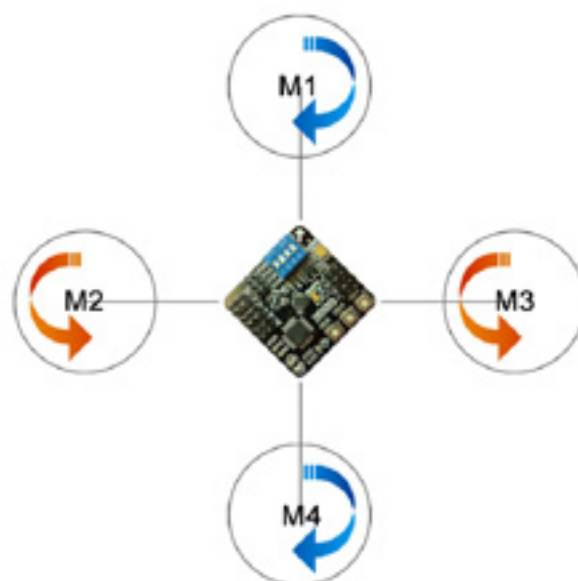


**【Supported Multicopter Types】**

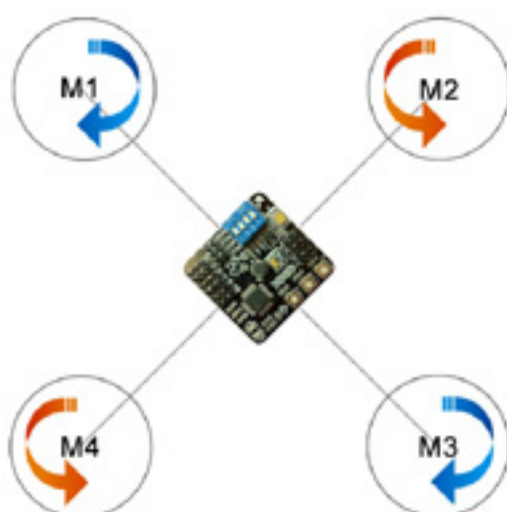
Tri Copter



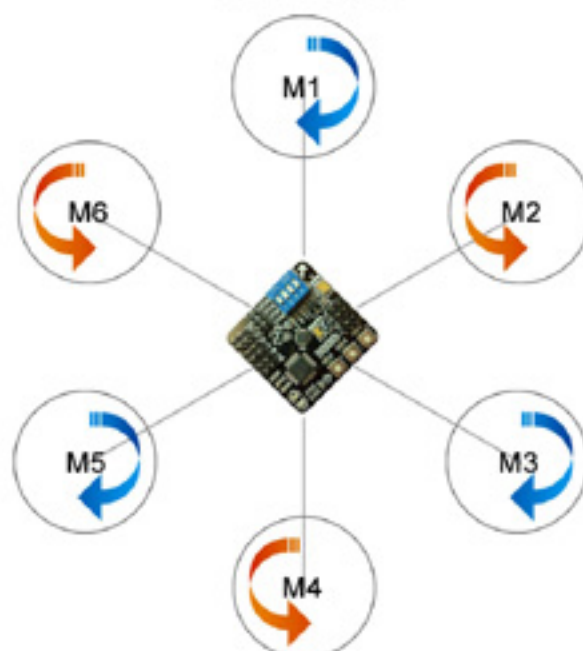
Quad +4 Copter



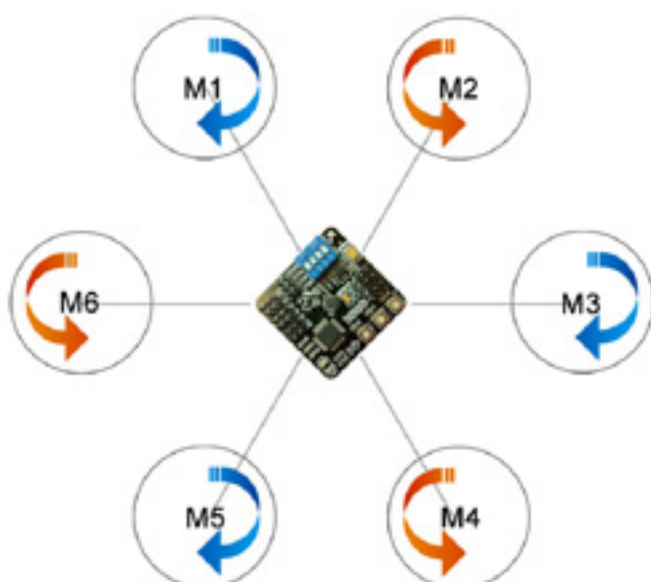
Quad X4 Copter



Hex Copter



H6 Copter



Y6 Copter

