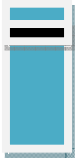
Ⅰ **Notice：**

1. Please change to manual while unforeseen circumstances；
2. It must be landed while the fly lights display. white；
3. GPS is not less than six stars（that’s to say the light is red, the flashing frequency is 1 or does not flash）then make flight operations；
4. It can’t be corrected when flying；
5. It is irreversible operation when returning；
6. The battery voltage is not lower than 10.0V. when using

Ⅱ **The RC channel diagram：**

Flight mode	CH5 switch position	CH6 switch position	Ground display	Instruction
Manual			Manual	Please change to manual while any unforeseen circumstances，**In order to avoid lost because out of control。**
Fixed- high			Manual	CH5 moved to-2 position (motor may be rotated slightly), push the gas to take off, that is, the whole climb and landing control by the flight control; enter this 2 position the gas in the middle position is fixed high, the gas up is climbing down is landing
Fixed-point			Spot hover	Before departure, CH5 moved to 3 positions, CH6 in 1 position, push the gas, will be taken off automatically. When you let go, it will be hover no move, push, pull, left and right will change the flight speed, let go and then continue to hover no move.
Airline flying			Airline flying	Flying according to the lines automatically; before this operation, need to plan routes on ground stations on the map and then upload it to the aircraft.

Back Landing			Return & Land	The landing points for the take-off point by default. The propeller maybe still continue to turn when landed, close the gas make the propeller stop .

III **Preparation before using:**

1， Built Wi-Fi AD (connecting data communication)；

a. WIFI wireless router IP will be set to 192.168.1.1, the wireless AP name is xxxx, password xxxxxxxxxx then connected to the wireless router with the WLAN of the tablet PC (or mobile) Communication link is established automatically when power on

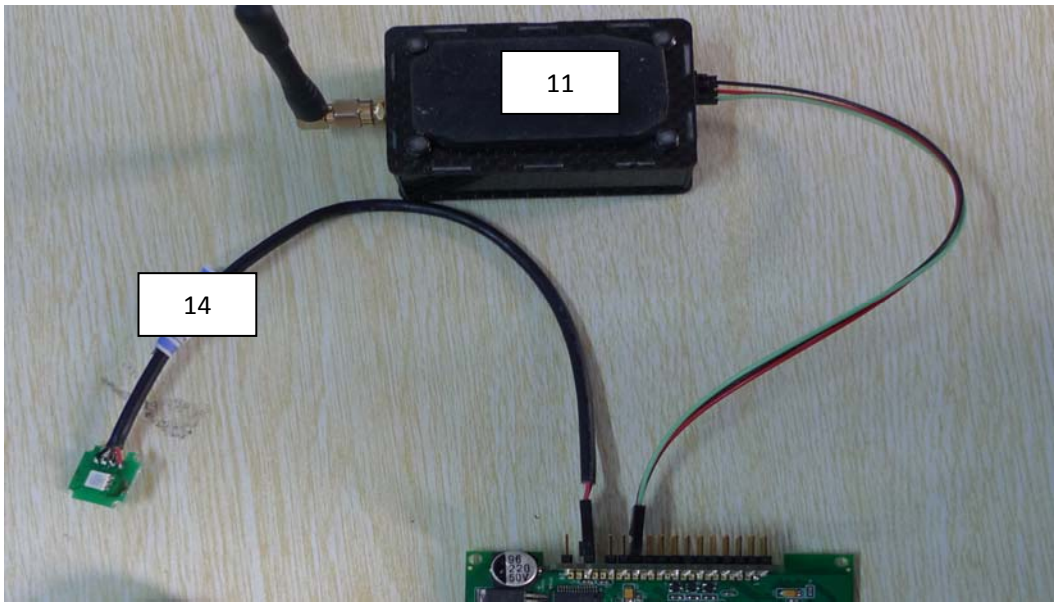
b. Establish a named output hot spots with the mobile phone which can create a WIFI AP hotspots, no need the router, but the phone's power is small, the communication distance is shorter than a router.

2， Connecting RC equipment correctly；

Input interface

No.	Down4	Middle3	Up2	Top1	Remarks
1	GND	5.7V	CH1	No	Aileron
2	GND	5.7V	CH2	No	Up and down
3	GND	5.7V	CH3	No	Gas
4	GND	5.7V	CH4	No	Direction
5	GND	5.7V	CH5	No	The fifth channel
6	GND	5.7V	CH6	No	The sixth channel
7	GND	5.7V	CH7	No	The seventh channel
8	GND	5.7V	CH8	No	The eighth channel
9	RXD1	GND	TXD1	No	Connecting computer serial port
10	RXD2	GND	TXD2	No	NG
11	RXD3	GND	TXD3	No	Wi-Fi model
12	GND	FORCE/FIRE	No	No	NG
13	GND	5.7V	CURRENT	No	NG
14	LED3	LED2	LED1	5.7V	Indicator lamp
15	GND	POWER	No	No	Power

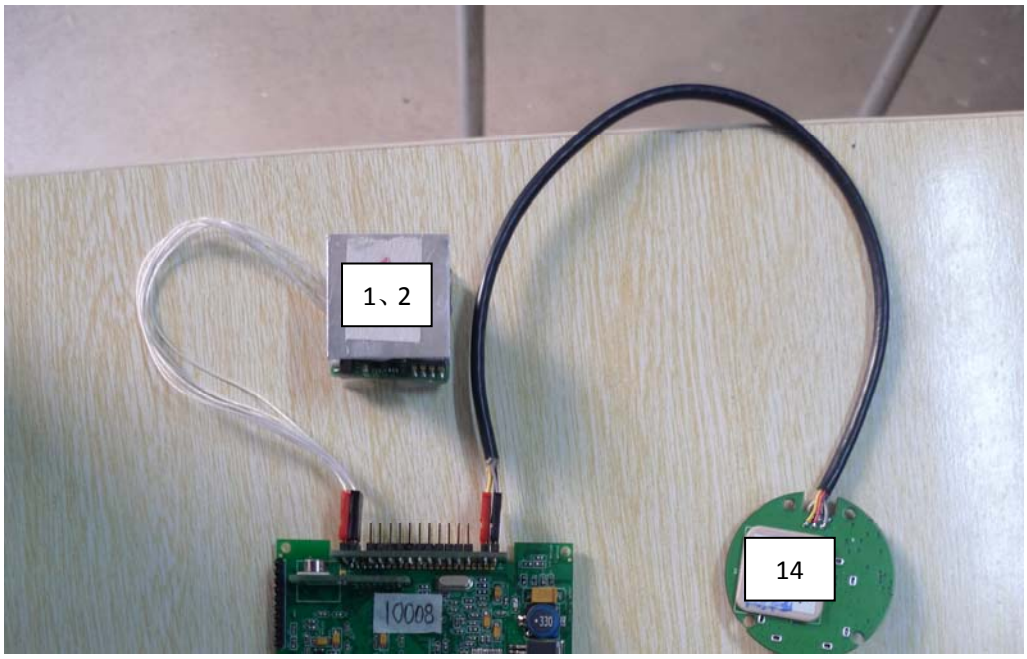
As shown：



Output interface

No.	Up1	Middle2	Down 3	Remarks
1	SIMO	5.7V	SOMI	IMU interface
2	CS	GND	SCLK	
3	M1	VDD	GND	Motor 1 or the SCL of IIC
4	M2	VDD	GND	Motor 2or the SDA of IIC
5	M3	VDD	GND	Motor 3
6	M4	VDD	GND	Motor 4
7	M5	VDD	GND	Motor 5
8	M6	VDD	GND	Motor 6
9	M7	VDD	GND	Motor 7 or hall element
10	M8	VDD	GND	Motor 8 and Servo voltage
11	Y1	VDD	GND	Task servo 1 (head roll)
12	Y2	VDD	GND	Task servo 2 (Head tilt)
13	PHOTO	无	GND	Take photos（just High and low level）
14	TXD	3.3V	RXD	GPS and magnetic heading board Interface
15	SDA	GND	SCL	

As shown：



3， Gas correction ；

4， Do not install the propeller when the first power on, only to the flight control, then correcting the gas route

In the "Settings" select "calibrate gas”, and then within 5 seconds, the gas lever of RC move up and down to the maximum and minimum, 5 seconds after the flight control collected completed automatically, the user can observe when move the gas lever, the" data "shows the manual control gas lever, pull into the end show 7 pushed to the maximum display 90, then finished correction.

5， The magnetic compass correction (how much is the regional change);

a. Selecting the "magnetic compass" button appears dialog box as figure. First select the level of calibration, and then click OK. Determined, click the "Get parameter” there will display flight control whether receive the instructions from the magnetic compass which level calibration in the middle of the status box

if display successful, you can start the level calibration: the aircraft away from the car, metal, mobile phones, slow rotate2-3laps in level The attitude angle can be monitored by an assistant in the data window, make sure the aircraft is balancing when rotation, the light on the aircraft is on, the attitude level, does not shine, the attitude deviation from the horizontal is big.

b. After finished 2 -3 laps level rotation, putting the head vertical down, selecting “vertical calibrated magnetic compass” in the phone, getting parameter after sent, confirm successfully sent, and then look at the "data" in the attitude angle will become slowly across roll, pitch are close to 0 degrees (change the reference coordinate system, the head are horizontal while down,), then using head as the rotation axis, keep horizontal rotation 2 -3 laps.
   The attitude is level when the lights on, , if not, the attitude deviate from the horizontal.
c. Put the aircraft on the ground when complete, and then at the ground station select "Save magnetic compass" getting parameter after sent, confirm successfully sent. And attitude angle will slowly return to normal, fit the static angle after ten seconds (reference coordinate system to change back to the initial state).
d. After the above operation, the magnetic compass calibration is completed, can be verified as follows: "remote control" interface, select the "magnetic data" and wait for ten seconds, the ground station will display the magnetic sensor data of the flight control, only check red and blue two circles in the middle of cross coordinates if close to the standard round, calibration is successful, data good.

6. Height and gyro calibration

a. Because the gyroscope is sensitive devices, it maybe appear zero drift as temperature, humidity and location changes, we need make gyroscope clear operation, in order to eliminate the drift effect, Vehicle is completely stationary (do not need to be placed level), select OK, enter the data, flight status will change to "Please wait for the gyro cleared" after 30 seconds changes back to the manual.

   Clear end, in the stationary state, the attitude angle and the static angle is the same, then clear normal.

   NOTE: It can't be gyroscope cleared in flight must be kept in free vibration case; the gyroscope operation can be done.

b. Height cleared is calibrated the ground and the height while the large deviation of barometer. Take off the ground, the flight control will calibrate one time automatically, no need manual operation.

7, Parameter settings;

Usually, the parameter has been set before out of factory, Do not recommend users to change the parameter.

a. magnetic declination * 10: Fill in the local magnetic declination * 10, for example Beijing, magnetic declination is 6 degrees 30 minutes, or 6.5 degrees, then fill in 65. The magnetic declination must be completed correctly according to the local position; if you fill errors can cause performance degradation.

b. The magnetic declination can be found on this site:
   http://www.ngdc.noaa.gov/geomagmodels/struts/calcDeclination

c. types of aircraft: fill in 0 for the four-axis cross flight, 1for four-axis X word flight; 2 for six-axis cross-flight, 3 for six-axis X-word flight; more control manner set by the manufacturer.

d. Brake strength: the default filled 8. The increase can be adjusted to 10 to 15.

e, Control mode: the default filled 2。

8, Median correction;

a. Capturing median is the user in the manual model using RC fly and after adjustment collecting median when the remote control is loosen (in flight or on the ground still all OK, as long as the remote control no operation), After capturing median, change to automatic hover the flight control can recognize the RC rocker median, for determine whether the user has to release the rocker..

b. After small adjustment for RC, check from the ground station data: manual direction, aileron, up and down is not in median and deviate from the median more than 2, must capture median..

Ⅳ Using steps:

1， , Check the aircraft status;

a: All parts of the body is solid installed

b: The propeller is installed correctly, make sure no loosen ..

c: Receivers and flight control is correct and reliable connected.

d: The battery is fixed, whether the power is adequate.

e: Test RC distance whether can meet fly, can be checked on the ground pull distance

Red light flashes 3 times every second	Did not receive the satellite signal
Red light flashes 2 times every second	Received 3 satellites, and has not been successful positioning

Red light flashes 1 times every second	Received more than 5 satellites, positioning
Red light is off	Received more than 7 satellites, positioned in good condition

2. Waiting for the GPS positioning；

Put the aircraft on the open ground, connected to the battery, 5 seconds after the signal light will be red light shining in the flying field without interference and occluded objects, wait for about 30 seconds, the GPS positioning success. The flashing beat of the red light stand for the received star status of GPS：

3. Test low-level manual flight；

Flight mode switch CH5 moved to 1 location, aircraft work in manual flight mode, push the gas to the appropriate location so that the propeller is rotated, continue to push the gas to make the aircraft off the ground, forward, backward, left and right flight, check flight status, the light can’t be white in flight, if white, system need to be checked, after landing, operation, please refer to the height and gyro calibration.

4. Fixed high-flying steps：

Determining aircraft works well, falling to the ground, the flight mode switch CH5 moved to 2 position, now the propellers are turning slowly, pushing the gas to the middle position, the aircraft will take off slowly again, push, pull the gas lever, make the hover height of the aircraft change, when the gas lever in the center position, the aircraft can be set fixed high hover.

It will be affected the fixed high because of the wind speed at this time

recommend to switch to manual flight mode, control the flying height by the ground staff.

5. Fixed point flying steps；

The flight mode switch CH5 moved to 3 position flight mode is automatic fixed high and point mode , after take-off ,move the RC make the aircraft forward, left and right fly, and check the aircraft whether fixed-point hovering while release the remote control lever,. Otherwise need to recapture the rocker in median, please refer to the median correction

6. Automatic return operation

The flight mode switches CH5 in the 3 position, CH6. Switch will be taken effect. Aircraft fixed point hover or flight, CH6. Moved to 3 positions, the flight control will control automatically the aircraft to fly back to takeoff position of the GPS coordinates, and then slowly lower the height, until fall to the ground, this process is irreversible. For example, implemented automatic landing, and then move CH6 back to 1 position, the aircraft will not be returned to automatic hover. The RC can still control the landing position of the aircraft during landing.

Ⅴ **Airline flight steps:**

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