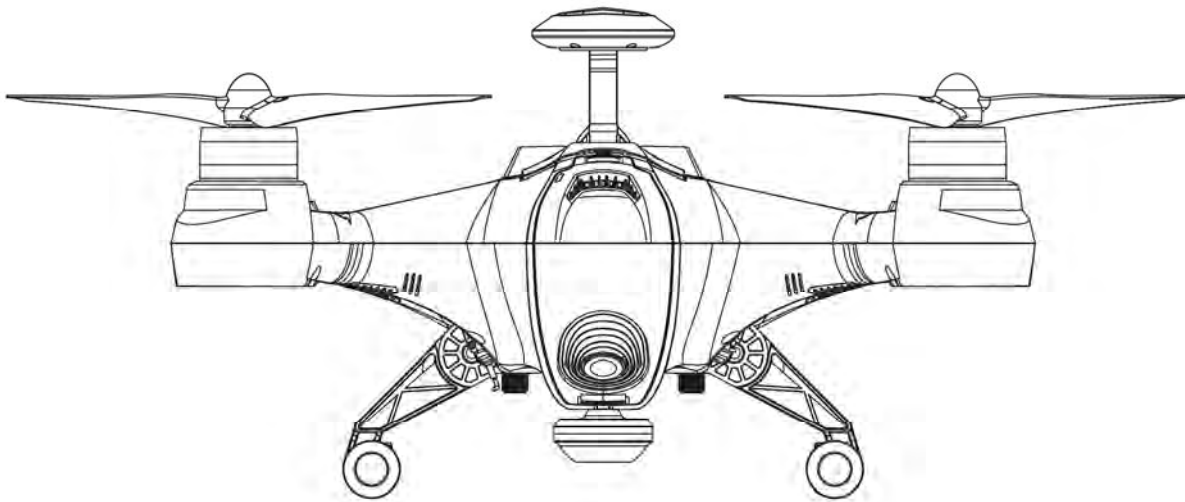


QR X350 **Premium**

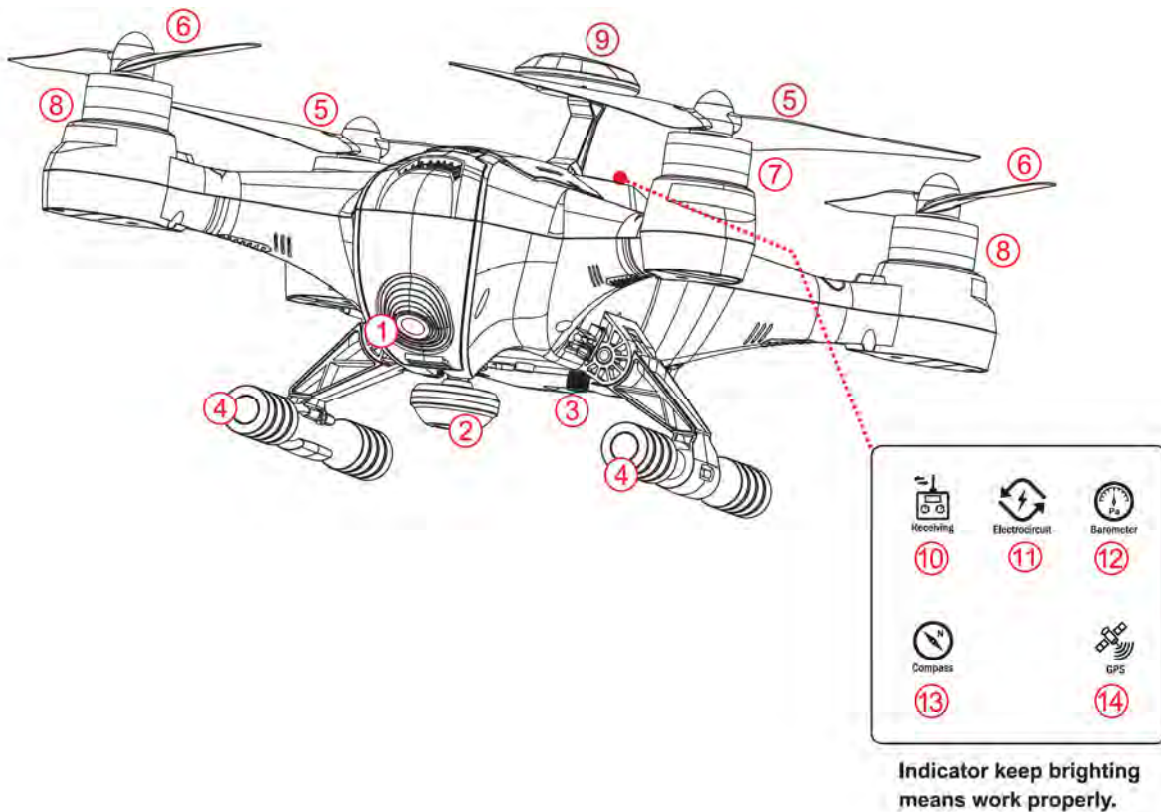
Match with **GCS Ground Station Software**
Quick Start Guide and Systems Flowchart



1.0 Preparation before flying

1.1 Get to know your aircraft

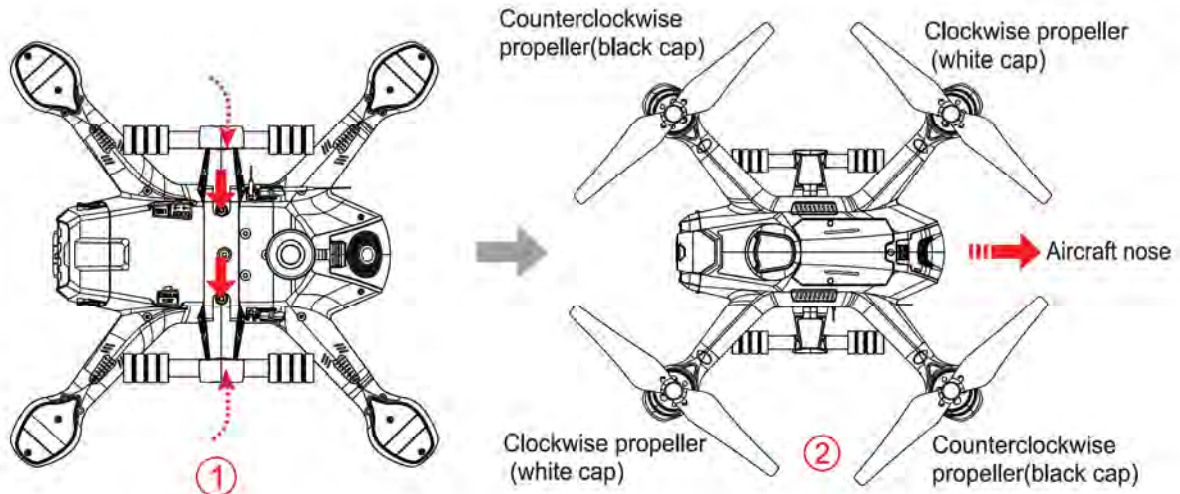
- Adopting Modular Design, easy to install and connect.
- A new generation flight control system be built, promote stable flight performance.
- Insert 5.8G image transmit system and OSD system, can get image and OSD information easily.
- Adopting indicator light on GPS, Compass, barometer and other parts, observation more intuitive.



- | | |
|--|---|
| 1. Camera | 8. Motor (dextrogyrate thread is clockwise) |
| 2. TX Mushroom antenna | 9. GPS module |
| 3. M3x18 Screw | 10. Receiving detecting light |
| 4. Skid landing | 11. Electrocircuit detecting light |
| 5. Clockwise propeller (white cap) | 12. Barometer detecting light |
| 6. Counterclockwise propeller(black cap) | 13. Compass detecting light |
| 7. Motor (levogyrate thread is counterclockwise) | 14. GPS detecting light |

1.2 Assemble the aircraft

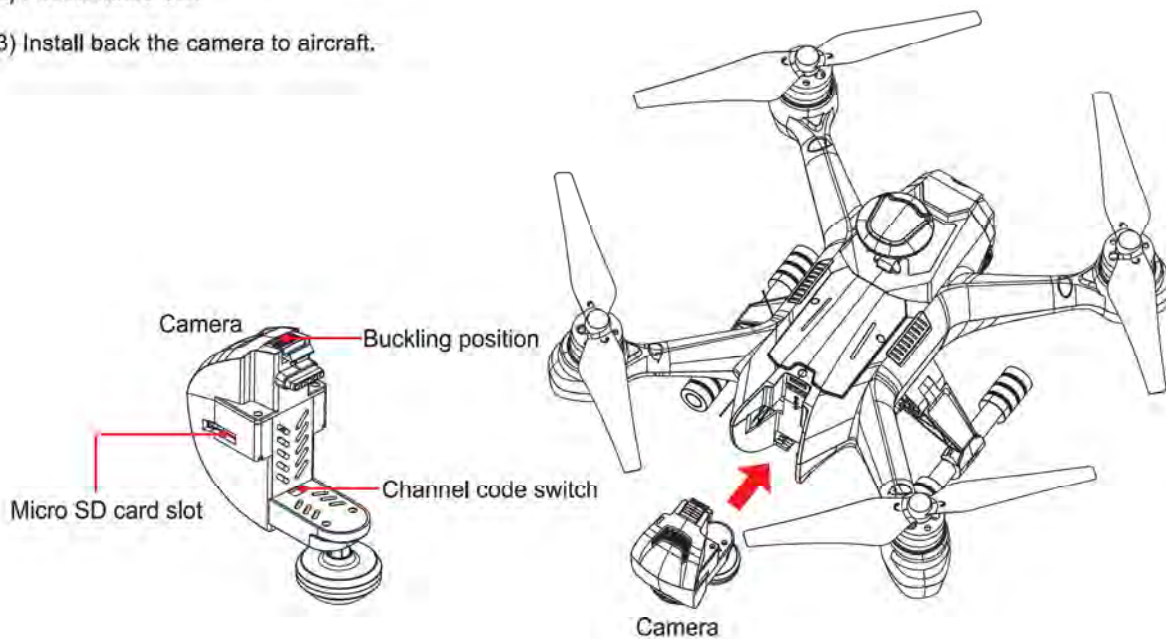
- ① Turn down the skid landing, and fix it tightly with screws.
- ② Install the clockwise propeller (white cap) to the clockwise motor (levogyrate thread is counterclockwise); install the counterclockwise propeller (black cap) to the counterclockwise motor (dextrogyrate thread is clockwise).



- ③ Put on Micro SD

If you want to take video, please put on Micro SD, disassembly method:

- (1) Hold the camera on the buckling position, hold the camera bottom and then push it outward, remove the camera.
- (2) Put on Micro SD.
- (3) Install back the camera to aircraft.



1.3 Learn how to fly safely

- (1) This product is suitable for people who has flight experience of model plane and older than 14-year-old.
 - (2) Do not fly in bad weather, such as windy, snowy, foggy weather, etc..
 - (3) Select the open, no-tall-buildings area. Extensive use of steel buildings will affect the compass work, blocking the GPS signal, causing worse on the aircraft positioning effect or even not able to locate.
 - (4) Please away from high-speed revolution parts(such as propellers and motors) during flight.
 - (5) When flying, PLZ keep the drone in sight control, away from obstacles, people, water and so on.
 - (6) Do not fly it in where there is high-voltage lines, communication base stations or towers, in order to avoid interference by the remote control.
 - (7) Please don't drive it in no-fly zone.
 - (8) Flight performance will be effected with environment when you drive it with altitude of 4500 meters, as the battery and gravity system will be influenced.
-

1.4 Specifications

● Aircraft specifications

Main Rotor Dia.: 233mm

Overall (L x W x H): 303 x 303 x 176mm

Weight: 1650g (Battery included)

Transmitter: DEVO F12E (White Version)

Receiver: BTR-2401(FCC)

Brushless Motor: WK-WS-34-002A

Brushless ESC: QR X350 Premium(R/B)

Main Controller: QR X350 Premium

Battery: 29.6V 3000mAh 10C(8S) LiPo

2.4G Bluetooth Datalink: BTR-2401(FCC) / BT-2401B(FCC)

Flight Time: Approximately 25 minutes

Working environment: -10℃ ~ +40℃

● Camera specifications

a. Video

- Video Resolution: 1920 x 1080 Full HD
- FPS: 30
- Micro High Speed SD card: Max 64G
- Video Format: MOV
- Imaging Sensor: 3,000,000 Pixels

b. 5.8G wireless

- 5.8G wireless image transmission
- FCC Bind B section: 4 channels
- FCC Output Powers≤200mW

1.5 Download and software installation


- Devices that support Ground Station: Android and Apple phone

Android phone requirements:

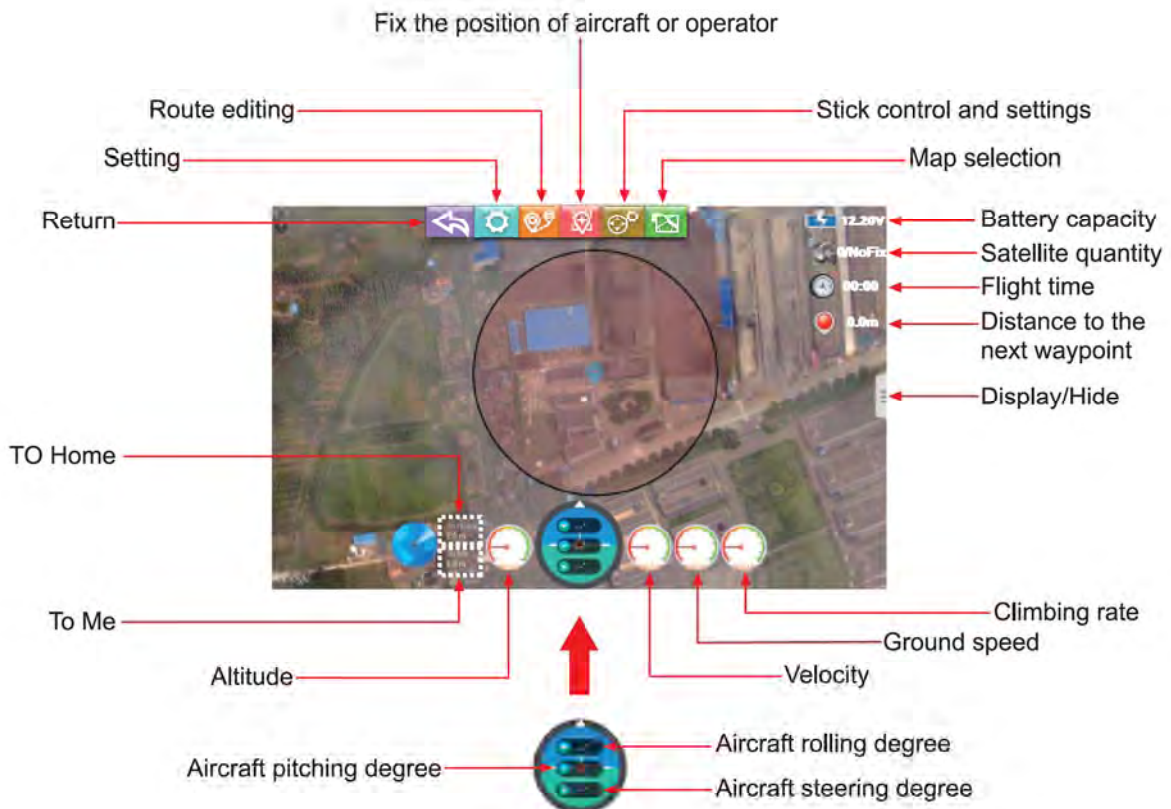
- (1) The Android version should be 4.0 or above, the screen resolution should be 480 x 800 pixels or above.
- (2) Google play services, google play store and TTS software should be preinstalled in the phone.

- Download and software installation

- (1) Download the "GCS Ground Station" software from official website (www.walkera.com / www.iuasinc.com) / Google for Android version 4.0 above.
- (2) Apple IOS system, download the "GCS Ground Station" software from APP Store.

 **Suggestion: set the phone to flight mode when you are using the GCS software to control the flight.**

1.6 Get to know GCS ground station software interface

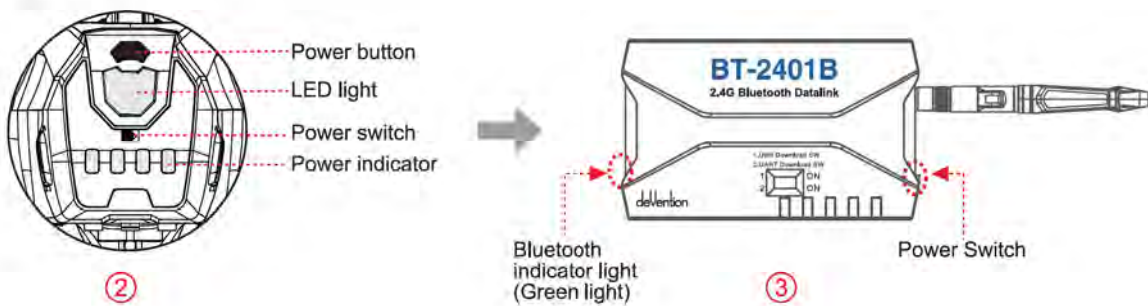



2.0 Ready for flight

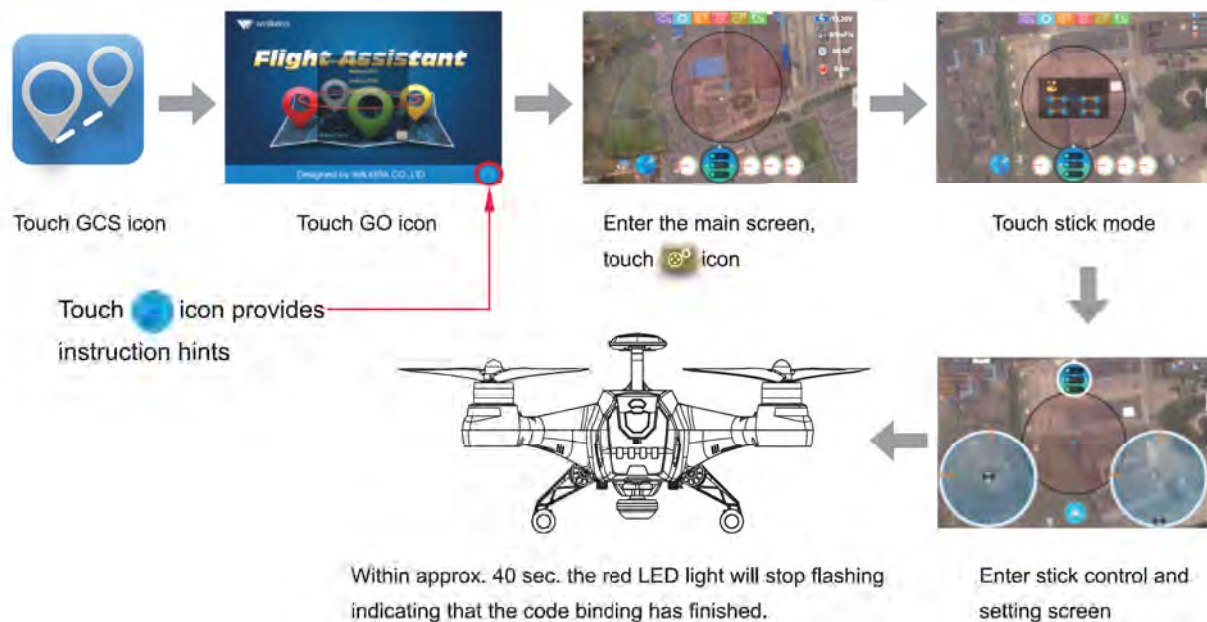
Place the aircraft on a flat surface, in an open space, with the back facing you.

2.1 Binding of the aircraft


- ① Put the smart aircraft battery into the aircraft.
- ② Turn the power switch to "ON", then press the power button for 3-5 seconds until the green power indicator lights up.
- ③ Turn on the 2.4G Bluetooth Datalink. The green light will flash quickly, waiting for the connection with the phone bluetooth.



- ③ Enter phone settings and open the bluetooth function. In the bluetooth search list find and touch "walkera-****", input password 1234 to connect. The connection is successful if it displays "connected". Exit the settings when finished.
- ④ Touch the GCS icon in the middle of the mobile screen, the GCS software will search automatically and display matched bluetooth, then select the matched bluetooth and touch the GO icon to enter into the main screen. In the main screen, touch  icon then touch stick mode to enter the stick control and setting screen.



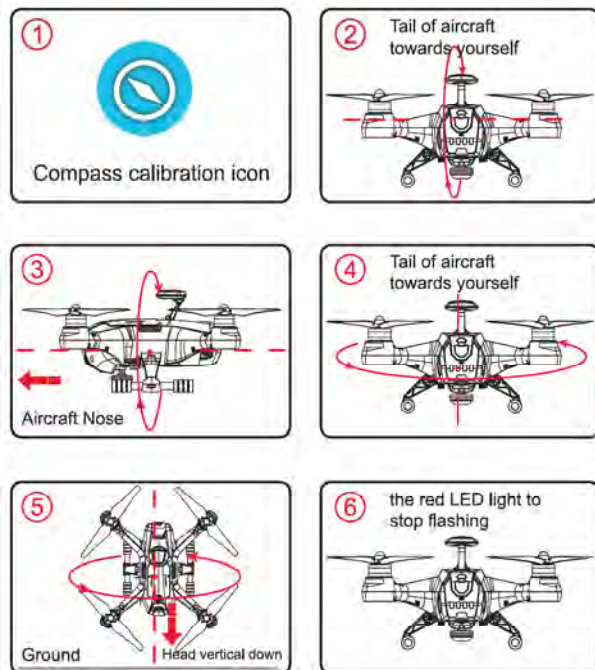
2.2 Compass Calibration

In the main screen, touch  icon then touch stick mode to enter stick control and setting screen.





IMPORTANT: Make sure the motors are locked before calibration (Aircraft red LED indicator is NOT flashing). Factory default setting, is for the motors to be locked after completing the ID binding process. (For details on locking and unlocking the motors see point 2.5.)

- ① Touch the icon and enter compass calibration. The red LED on the aircraft will flash rapidly.
- ② FORWARD rotation. Smoothly rotate the aircraft forward in 90 degree increments, pausing for 1 second every 90 deg. (0 / 90 / 180 / 270 / 360)
- ③ CLOCKWISE rotation. Rotate the aircraft around the roll axis smoothly in 90 deg increments. Pausing 1 second for each 90 deg. (0 / 90 / 180 / 270 / 360)
- ④ HORIZONTAL rotation. Rotate the aircraft around the YAW axis smoothly in 90 deg increments. Pausing 1 second for each 90 deg. (0 / 90 / 180 / 270 / 360)
- ⑤ NOSE DOWN rotation. Rotate the aircraft facing the nose down. rotate smoothly in 90 deg increments. Pausing 1 second for each 90 deg. (0 / 90 / 180 / 270 / 360)
- ⑥ Put aircraft in the horizontal position, Wait approx. 40 sec. for the red LED light to stop flashing indicating that the code binding has finished.



2.3 Route editing illustration

In the main screen, touch  icon and enter the route editing screen. When finished editing, touch  icon to upload the route into the aircraft.

Position hold function: fix the position of the aircraft or operator



2.4 GPS indicator lights

GPS Satellites	<6	6	7	8	9	10	11	12	13
The blue LED status	No blinking	Blinking once	Blinking 2 times	Blinking 3 times	Blinking 4 times	Blinking 5 times	Blinking 6 times	Blinking 7 times	Blinking 8 times

IMPORTANT: For SAFE flight in GPS flight mode:


The BLUE indicator light should at least "double" blink, (two blinks at a time).

It is highly recommended that you wait for "triple blink" 8 statelites before starting the flight.

NEVER attempt to AUTO-START with less than "triple blinks"

2.5 Motor Unlock / Lock

● Motor Unlock


After successfully binding, push the throttle control ball to the lowest point under stable mode. Long press the stable mode icon , when **the red LED indicator turn solid red, the motor is unlocked**. In this condition, when you move the throttle control ball up, the motor will run.

Note: For safety, the motors will automatically lock after 10 seconds. If you do not start flying in 10 seconds, you will have to unlock the motors again.



Long press stable mode icon: Motor unlocked

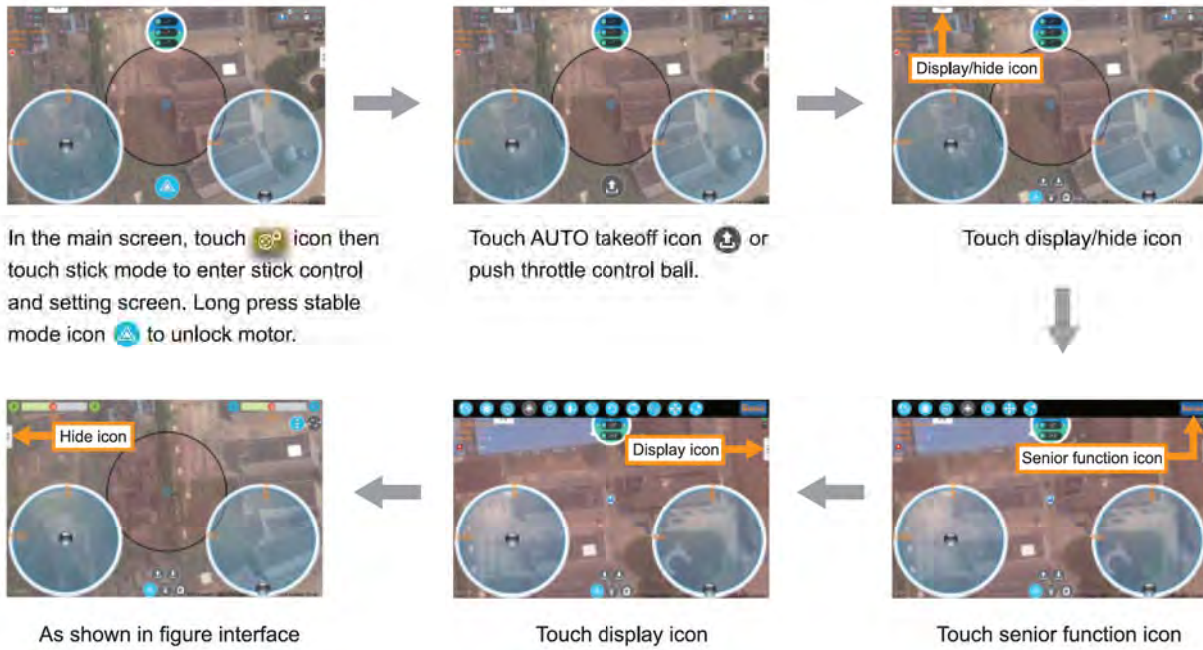
● Motor Lock

After unlocking the motors, push the throttle control ball to the lowest point, then long press "AUTO TakeOff" icon , when **the Red LED indicator light goes out**, the motors are locked and won't start if you push the throttle control ball up.










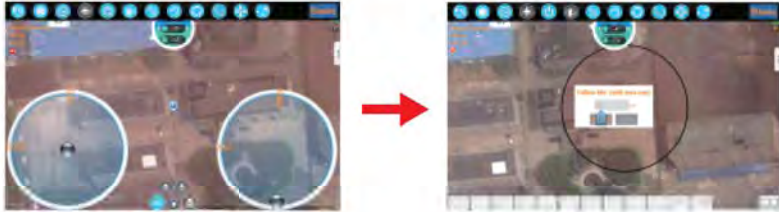





















Long press AUTO takeoff icon: motor locked

2.6 Function and stick control interface description



Function	Icon	Instructions
Stable (normal) mode		Touch icon → Switch to common flight, using the control ball to control the Aircraft. Long press the icon to unlock the motor.
AUTO TakeOff		Place aircraft on level ground → Unlock Motors → Touch icon → The aircraft will automatically takeoff. Notes: You can use this function only when receiving a strong GPS signal.
Auto Landing		Touch icon → The aircraft will land automatically
Altitude hold mode		Touch icon → The aircraft will enter into Altitude hold mode automatically Notes: (1) You can use this function only when receiving a strong GPS signal. (2) If there is no GPS signal or the signal isn't in good condition, the aircraft will enter automatically altitude hold mode, instead of holding at one position.
One key Return To Home		Touch icon → The aircraft will automatically return to the point of origin. Notes: You can use this function only when receiving a strong GPS signal.

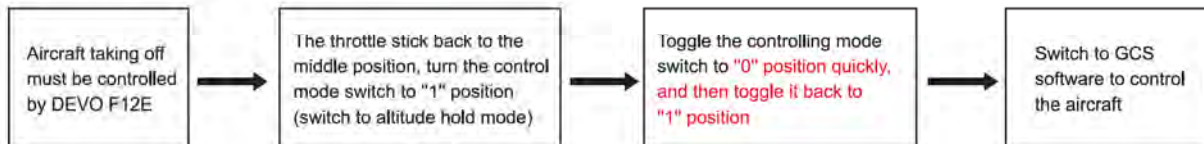
Function	Icon	Instructions
Map selection		Map selection
Stick mode selection		There are 4 types of stick modes.
Compass calibration		Compass calibration
Gravity Sensor		<p>The default setting is off, after turning on, the device is switched to gravity sensor control.</p> 
DATA Switch		Factory defaults are set to "open".
Hyper IOC mode		<p>IOC means that the aircraft's flight direction is related to the position of the first GPS signals, rather than the direction the aircraft is pointed.</p> <p>Notes:</p> <ul style="list-style-type: none"> (1) You can use this function only when you are receiving a strong GPS signal. (2) During flight, the drone will enter hyper IOC mode when the distance between the flight position of the drone and the initial position where the GPS signal was established is more than 10m. (3) In the IOC mode, regardless of which way the aircraft is pointing, you just need to press and hold back the control ball to make the aircraft fly back to the original takeoff position.
Waypoint record		<p>Touch icon → The aircraft will record the flight points automatically.</p> <p>Notes: You can use this function only when you are receiving a strong GPS signal.</p>
Follow me mode		<p>Touch icon → The aircraft could follow the location of mobile automatically</p>  <p>Touch the icon  under flight condition.</p> <p>In the automatically altitude setting box, according to environment choose "Normal" or "Fast" to set altitude.</p> <p>Notes: You can use this function only when you are receiving a strong GPS signal.</p>

Function	Icon	Instructions
Automatic Cruise		<p>Touch icon  → The aircraft will cruise automatically</p> <p>Touch icon , the aircraft will automatically cruise according to pre-set route.</p> <p>During flight, if you want to edit a new route, long press the Automatic Cruise Icon  .</p> <p>Touch icon  to upload to the aircraft the new route.</p>  <p>Notes: You can use this function only when receiving a strong GPS signal.</p>
Backtracking		<p>Touch icon  → The aircraft will automatically return to the point of origin.</p> <p>In automatic cruise mode, touch the icon, and the aircraft will come back automatically according to the pre-set route.</p> <p>Notes:</p> <p>(1) You can use this function only when receiving a strong GPS signal.</p> <p>(2) You must touch the icon before the aircraft reaches the last waypoint in order to backtrack along the same path.</p>
Circle flight		<p>Touch icon  → The aircraft will automatically begin to circle.</p>  <p>Touch the icon  .</p> <p>In the automatic radius setting box, you can set radius according to environment and touch the Go icon to start.</p> <p>Notes: You can use this function only when receiving a strong GPS signal.</p>
Single Waypoint flight		<p>Touch icon  → The aircraft will enter a hover when arriving at the flight point.</p>  <p>Touch the icon  .</p> <p>In the automatic altitude setting box, you can set altitude according to environment and touch OK icon to start.</p> <p>Notes: You can use this function only when receiving a strong GPS signal.</p>
Fence flight		<p>Touch icon  → Automatically enter fence flight.</p> <p>After touching the icon, the aircraft will fly within the set area. The aircraft will return automatically when reaching the edge.</p> <p>Notes: You can use this function only when receiving a strong GPS signal.</p>

Function	Icon	Instructions
Skid landing folded		Touch the icon to make the landing skids retract/fold up.
Skid landing unfolded		Touch the icon to make the landing skids extend/unfold.
Return distance		Return distance
Control the gimbal tilting		Controlled variable
Control the gimbal rolling		Controlled variable

2.7 Instruction for switching from DEVO F12E controlling to GCS controlling

Switching operation flow chart



1 position $\xrightarrow{\text{Toggle fast to}}$ 0 position
 $\xleftarrow{\text{Toggle back to}}$

DEVO F12E(white)control mode switch:
 0 Manual
 1 GPS
 2 Return Home



- Make sure the transmitter and GCS connect to the aircraft well.
- The GCS will has voice remind when the switching done.
- Operate the control mode switch for one more time, the transmitter will gain the control right again.


3.0 End flight

- ① Manual landing or back home function landing.
- ② First, power off aircraft battery, then exist out of GCS software.
- ③ Take the battery out of aircraft.

4.0 Additional remark

4.1 Ground station software settings

● Channel setting

In the main screen, touch  icon to enter into the setting interface.



ELEV, AILE, THRO, RUDD, GEAR default setting is "NORMAL".

● Parameter Setting



(1) Gsensor Reverse

If the gravity sensor is activated and the aircraft acts differently from the corresponding tablet pc or phone's inputs (please refer to page 9 for Gravity Sensor explanation), please press "√" to reverse it.

(2) FollowMe Height Set

Default height=10m

You can change the height with new settings(5-200m).

(3) One Key Takeoff

Default height=10m

You can change the height with new settings(5-15m).

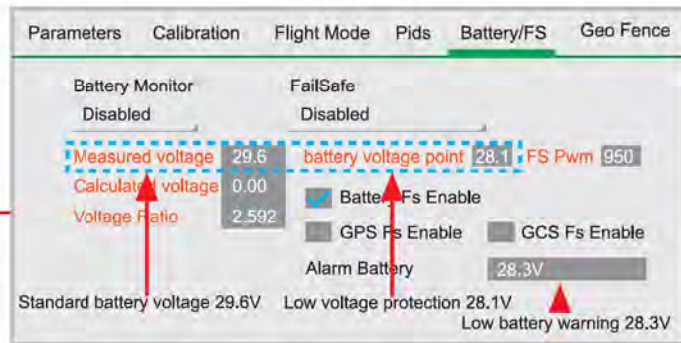
(4) Waypoint Default Altitude

Default height=15m

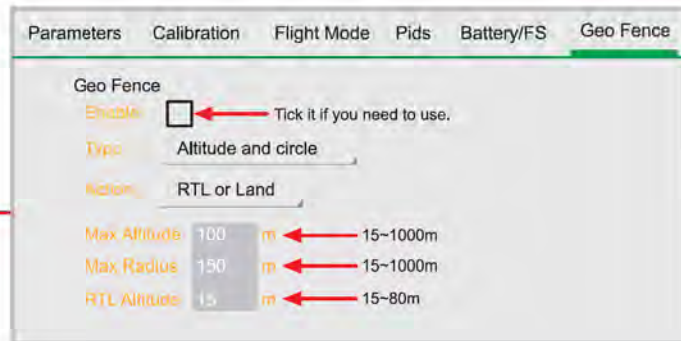
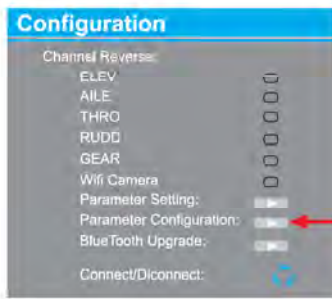
You can change the height with new settings(5-400m).

QR X350 Premium

Battery voltage point



Geo Fence

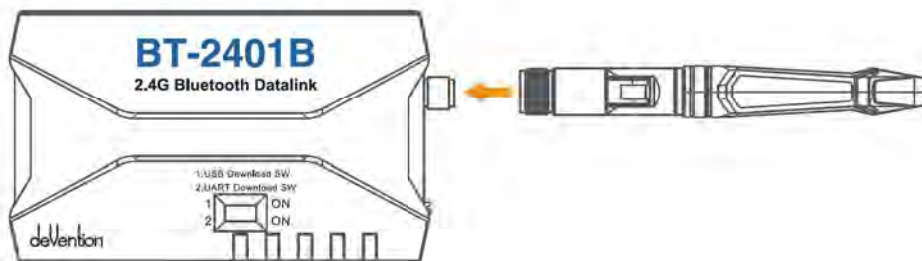


4.2 2.4G Bluetooth Datalink

The 2.4G Bluetooth Datalink consists of an Air end and Ground end, which provide reliable and stable long distance wireless transmission when Ground Station software is used. The signal flow is as shown below.

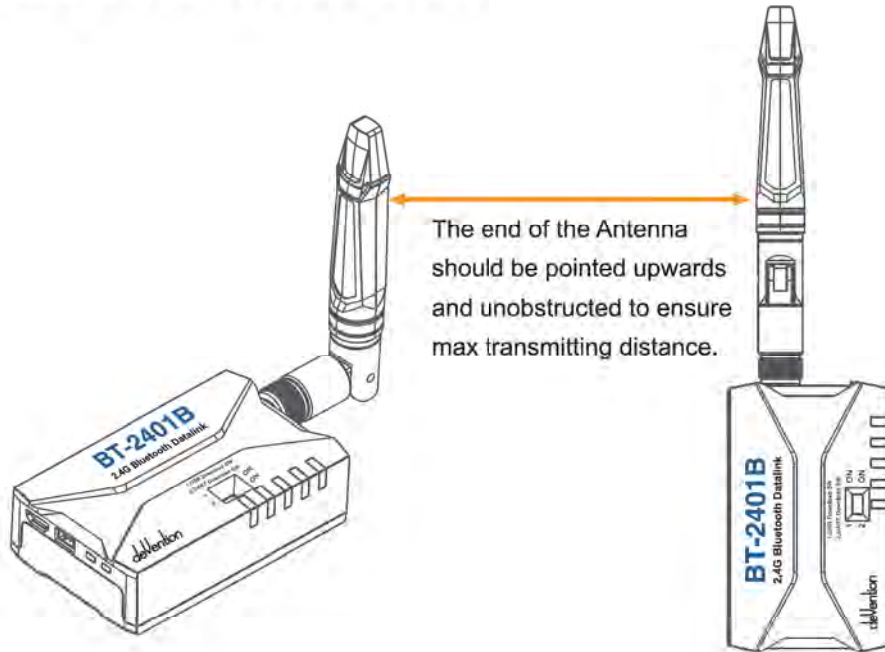


Antenna Installation

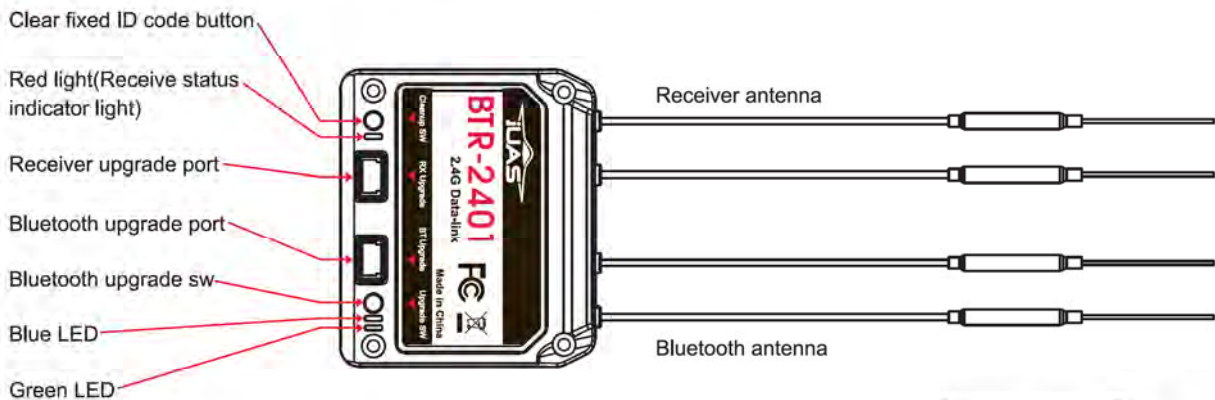




- If there are obstacles between the ground and air ends then the radio signal between the 2.4G Bluetooth Datalink will be weak; make sure that the antennas are always visibly unobstructed during the flight. Human bodies, trees, buildings or hills will disconnect the link between the Air end and the Ground end.
- Make sure that the antenna of the Air end is pointing down, and the antenna of the Ground end is pointing up; it's best to put the Ground end at a high place to get further transmission distance.

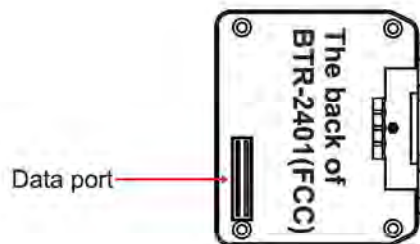


● The cognition of BTR-2401(FCC) the Air end

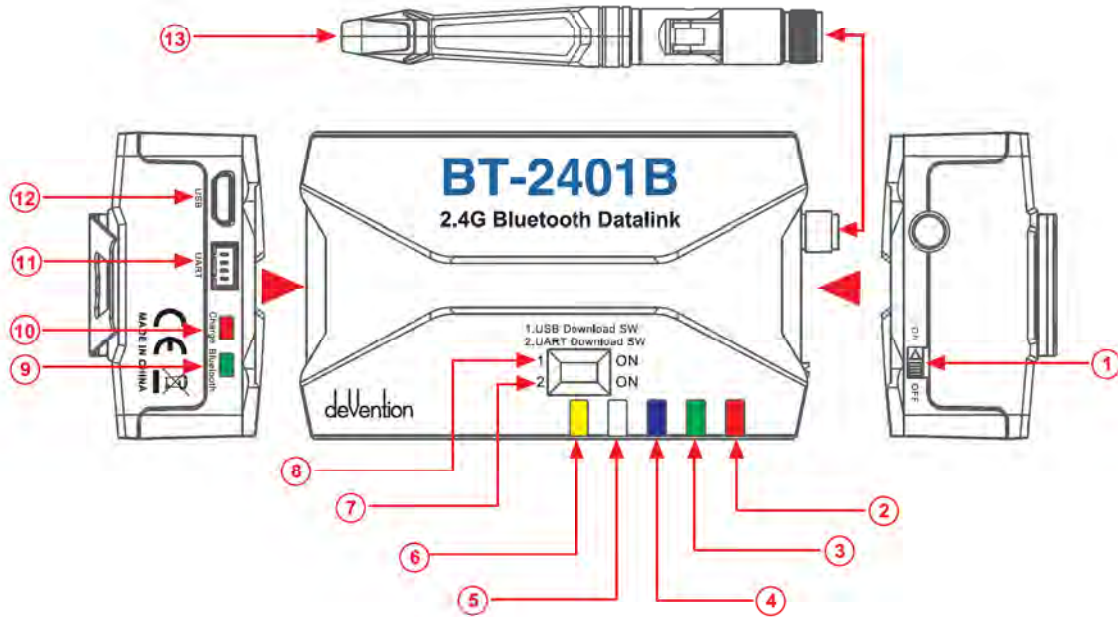


Green LED: Data receiving or transmitting indicator between the Air and Ground end.

Blue LED: Data receiving or transmitting indicator between the Air end and flight controller.



● BT-2401B(FCC) Ground end instruction



①	ON-OFF: Power switch
②	Power LED: Power indicator(RED)
③	COM-TX LED: Indicator of data receiving from ground station to the ground end (Green).
④	COM-RX LED: Indicator of data transmitting from the ground end to the ground station (Blue).
⑤	RF-RX LED: Indicator of data receiving from the flight controller to the ground end (White).
⑥	RF-TX LED: Indicator of data transmitting from the ground end to the flight controller (Yellow) .
⑦	1 USB Download SW
⑧	2 UART Download SW
⑨	Bluetooth: Bluetooth indicator (Green)
⑩	Charge: Charging indicator (Red)
⑪	UART
⑫	USB: USB port
⑬	Antenna

● LED Indicator descriptions

	LED status	Status instructions
The Air end	Green LED flashes quickly	The Air end and Ground end are receiving/transmitting data
	Green LED keeps solid	The Air end and Ground end are not receive/transmit data
	Blue LED flashes quickly	The Air end and Flight control end are receiving/transmitting data
	Blue LED keeps solid	The Air end and Flight control end are not receive/transmit data
	Green and Blue LED flashes slowly	The Air end and Ground end have lost signal
The Ground end	Power LED keeps solid Red	Normal power voltage
	Power LED flashes Red	Power voltage is less than 3.3V
	COM-TX LED flashes Green quickly	The Ground end is receiving Ground Station data
	COM-TX LED keeps solid Green	The Ground end is not receiving data from the ground station.
	COM-RX LED flashes Blue quickly	The Ground end is transmitting data to the Ground Station
	COM-RX LED keeps solid Blue	The Ground end is not transmitting data to the ground station.
	RF-RX LED flashes White quickly	The Ground end is receiving Flight Control data
	RF-RX LED keeps solid White	The Ground end is not receiving Flight Control data
	RF-TX LED flashes Yellow quickly	The Ground end is transmitting data to the Flight Control
	RF-TX LED keeps solid Yellow	The Ground end is not transmitting data to the Flight Control
	RF White and Yellow LED flashes slowly	The Ground end lost contact with the Air end
	Bluetooth LED flashes Green quickly	Bluebooth unconnected
	Bluetooth LED flashes Green slowly	Bluebooth connected
	Charge LED keeps solid Red	Charging
	Charge LED lights out	Charging finished / normal situation

4.3 Program Upgrade

- Upgrade (UP02 and UPO2 adaptor requested)

Both the Air end and the Ground end program can be upgraded at the Walkera website.

a. Air end Upgrading

- (1) Receiver upgrade: plug the red, yellow, blue and black flat cables to RX Upgrade port, then enter the upgrade status after power connection.

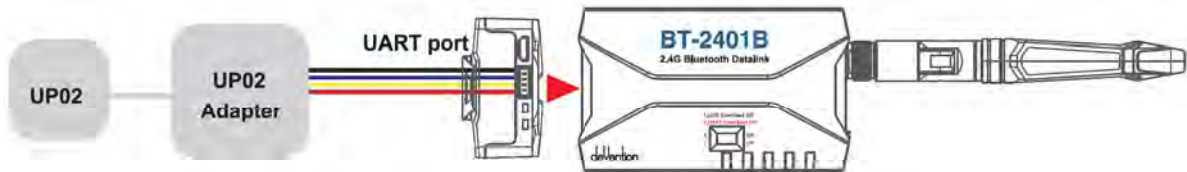


- (2) Bluetooth upgrade: Plug Red, Yellow, Blue and Black wire into BT Upgrade Port, press "Bluetooth Upgrade SW" access to upgrading status.



b. Ground end Upgrading

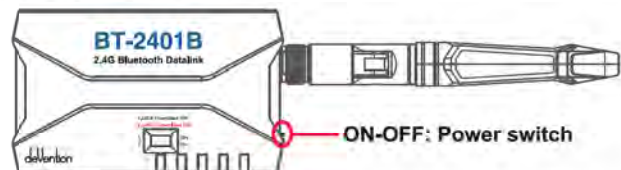
- (1) Insert the red, yellow, blue, black color flat cable into the **UART** port.



- (2) Turn the switch "UART Download SW" ("ON" position)



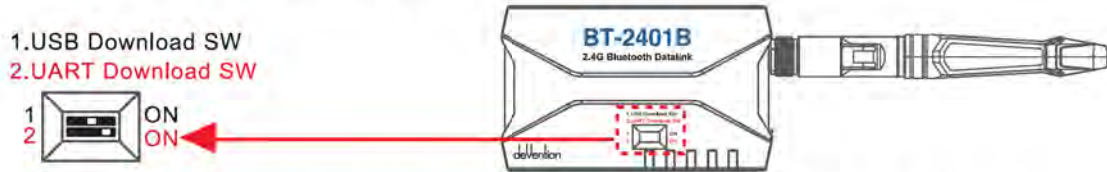
- (3) Turn on the power switch to enter into upgrading status ("on" position)



● Upgrade (GCS Software requested)

a. BT-2401B(FCC) Ground end upgrading

(1) Turn on the switch "2. UART Download SW" (position "ON")



(2) Connect the Ground end BT-2401B(FCC) to the Ground Station software GCS and enter into the upgrade interface.

(3) Choose the correct Ground end file to upgrade

b. BTR-2401(FCC) Air end upgrading

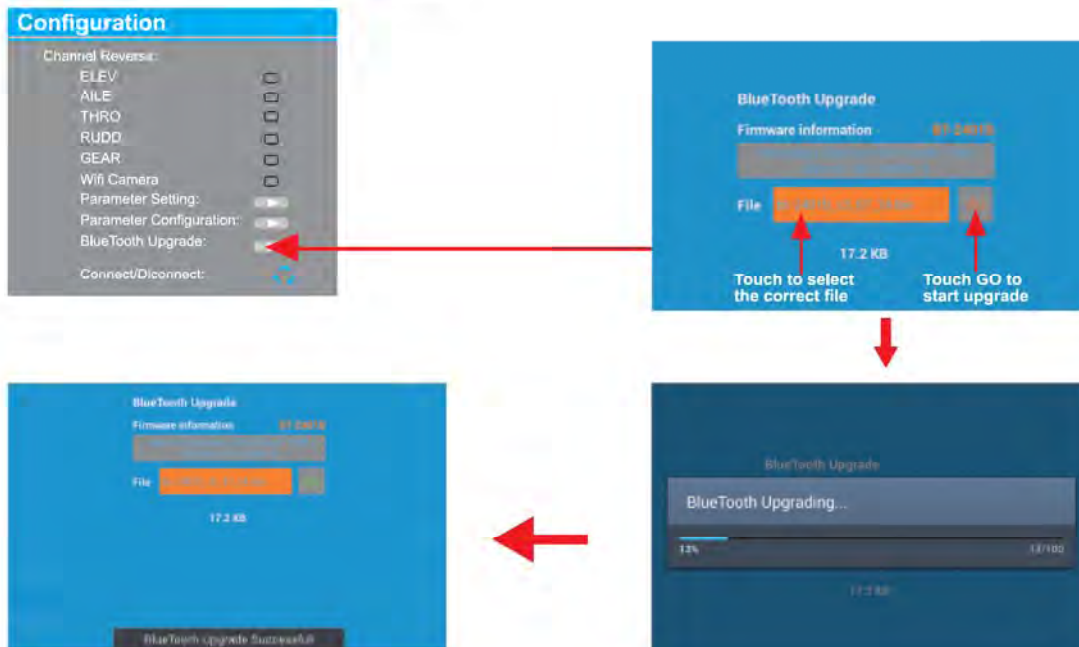
(1) Turn ON switches "1. USB Download SW" and "2. UART Download SW"



(2) Connect the ground end BT-2401B(FCC) to the Ground station software GCS and enter into the upgrade interface

(3) Connect the Air end BTR-2401(FCC) to the Ground end BT-2401B(FCC).

(4) Choose the correct air end file to upgrade



Tips: Please reconnect and upgrade again if the upgrading can't be finished successfully within one minute.

