Instructions for QR X350 PRO match with DEVO-F12E

walkera

- One key to take off
- Altitude hold
- Roundly cruise flight
- One key go home
- Hyper IOC
- GPS Telemetry function
- 5.8G real time image transmission

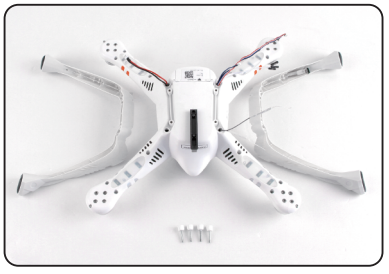
Specification:

Main Rotor Blade Length: 232mm
Length: 289mm
Wisth: 289mm
Height: 220mm

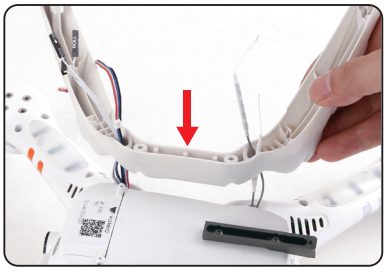
Weight: 1000g(Battery included)
Takeoff Weight: <1350g
Brushless Motor spec:WK-WS-28-008C
Brushless ESC spec: WK-WST-15A(G/R)

Receiver: DEVO-RX705
Transmitter: DEVO-F12E
Battery: 11.1V 5200mAh LiPo

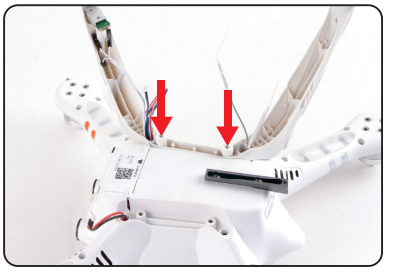
1 Install the Landing gear



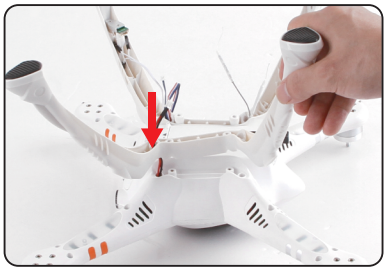
1.1 Prepare quadcopter,landing gear and 4 landing gear fixing screws.



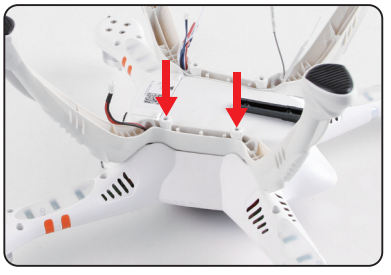
1.2 Install the right skid, carefully pull the cables and the antenna throu the holes in the landing gear.



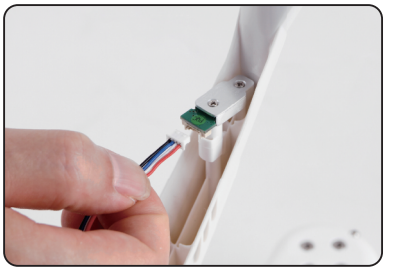
1.3 Secure the landing gear with 2 screws, tighten firmly with your fingers.



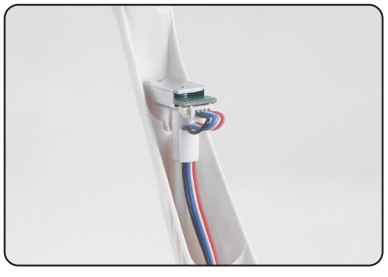
1.4 Install the left skid, carefully pull the cable throu the hole in the landing gear.



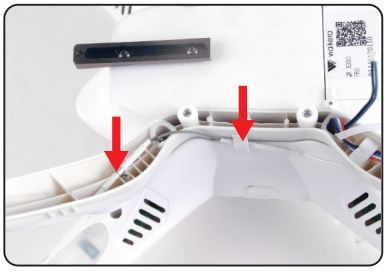
1.5 Secure the landing gear with 2 screws, tighten firmly with your fingers.



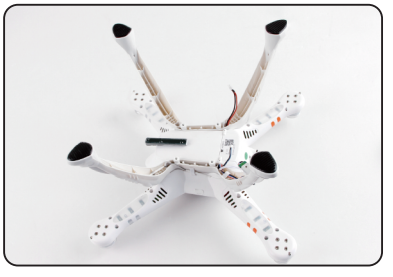
1.6 Connect compass.



1.7 Secure the cable by pushing it under the “clip” on the compass mounting part.

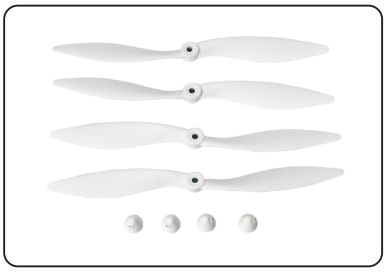


1.8 Secure the cable into the hollow part of the leg with one of the supplied foam tape strips.

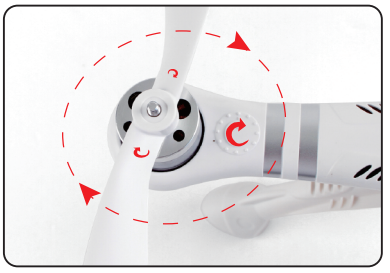


1.9 Congratulations, you have installed the landing gear next let’s install the propellers.

2 Install the Propellers



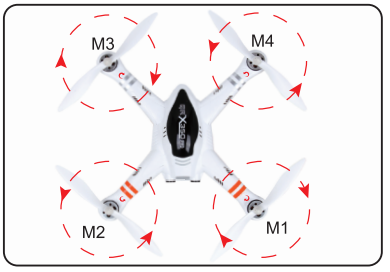
2.1 Prepare 4 propellers and the rounded “nuts” , these are called “Spinners”.



2.2 Match the arrow on the arm to the arrow on the propellers. Double check, this is important.

2.3 Match the concave part on the propeller to the concave part on the brushless motor.

2.4 Screw the “spinner” on Then tighten using one of the allen wrenches in the kit.



2.5 DONE, the prop arrows should now match this illustration, please check.

3 Install the Gimbal and Camera

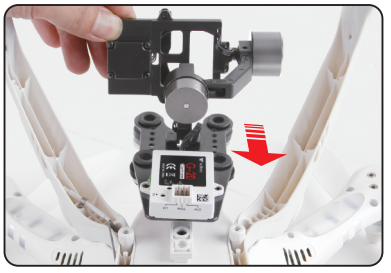
NOTE:

1 G-2D/G-3D is one ultraportable and high-performance gimbal , please install it following the base, as it may break the screw and influence the gimbal functions if pressing the gimbal arm incorrectly .

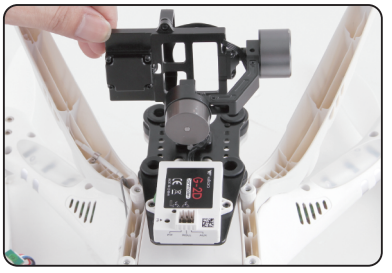
2 When camera is mounted to the gimbal and lead to gimbal lose the balance, please try to adjust the gimbal balance accessory till it keep balance.

3.1 Install the G-2D gimbal

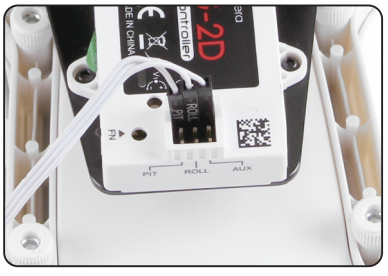
3.1.1 Prepare the G-2D gimbal



3.1.2 Slide the gimbal onto the mounting track, push on the base until it is all the way back.



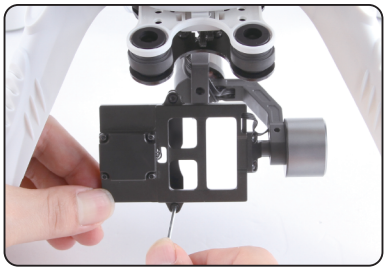
3.1.3 Done, the gimbal is installed.



3.1.4 Insert the signal wires, put the gimbal signal wire inside the first core of the port(match the illustration).

3.2 iLooK+ camera mounted to G-2D

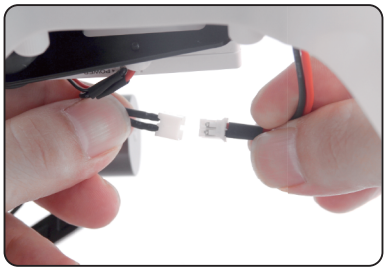
3.2.1 Screw the camera mushroom antenna into Camera.



3.2.2 Unscrew 2 M2x4 screw, Loosen the camera fixed frame.

3.2.3 Install the camera into gimbal,Fix it with camera fixed frame (ensure the gap close to the lens), then screw the M2x4 screw to the camera fixed frame again.

3.2.4 Please insert one mail connector of power conversion line to the power input power of gimbal main control board



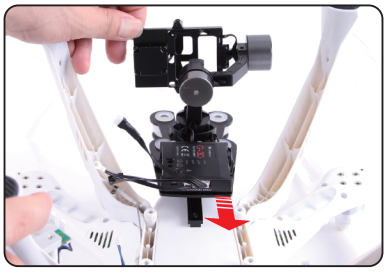
3.2.5 Please connect one female connector of power conversion line with the copter power output wire

3.2.6 Please connect the camera video cable with copter video signal wire

3.2.7 Wiring is done, make sure the camera cable is free so the camera can move freely ,camera installation finished

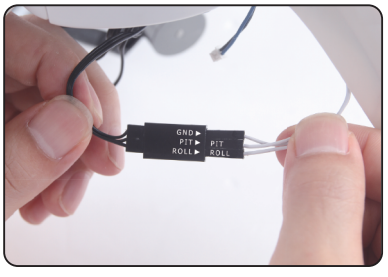
3.3 Install the G-3D gimbal

3.31 Prepare the G-3D gimbal, Gimbal fixed block, gasket, screw, spring.



3.3.2 Slide the gimbal onto the mounting track, push on the base until it is all the way back.

3.3.3 Put the spring into M3x12 screw, aim to the threaded hole, tighten up the screw to Gimbal.



3.3.4 Please insert the gimbal signal to the gimbal data port

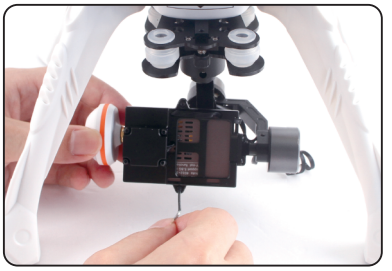
3.3.5 Please connect gimbal video cable with copter video cable

3.3.6 Please connect gimbal power wire with copter power output wire

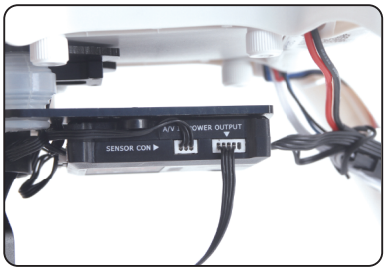
3.4 iLooK+ camera mounted to G-3D

3.4.1 Screw the camera mushroom antenna into Camera.

3.4.2 Unscrew 2 M2x4 screw, Loosen the camera fixed frame.



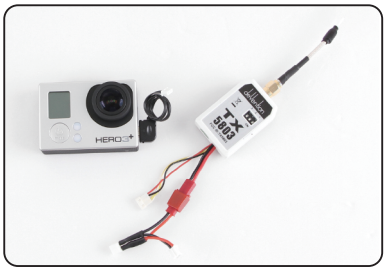
3.4.3 Install the camera into gimbal,Fix it with camera fixed frame (ensure the gap close to the lens), then screw the M2x4 screw to the camera fixed frame again.



3.4.4 Insert the camera power cable into power output port of G-3D.

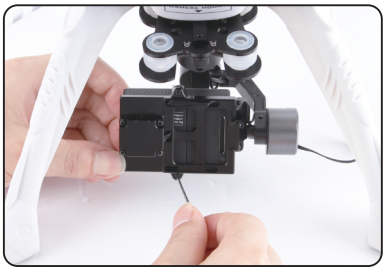
3.4.5 Wiring is done, make sure the camera cable is free so the camera can move freely ,camera installation finished.

3.5 GoPro camera and 5.8G emitter mounted to the G–3D gimbal



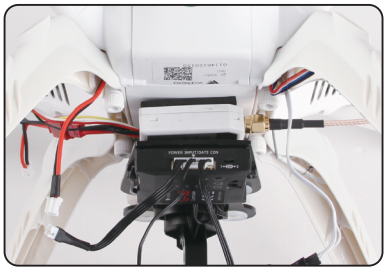
3.5.1 Prepare GoPro camera(please purchase it separately and connect the video cable in advance) and 5.8G emitter.

3.5.2 Unscrew 2 M2x4 screw, Loosen the camera fixed frame.

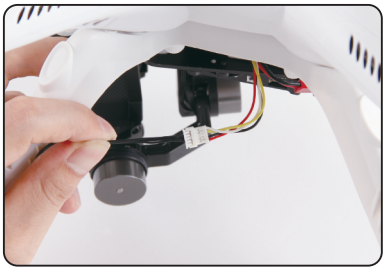


3.5.3 Install the camera into gimbal,Fix it with camera fixed frame (ensure the gap close to the lens), then screw the M2x4 screw to the camera fixed frame again.

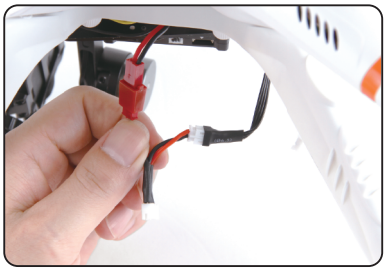
3.5.4 Take off the gimbal balance accessory.



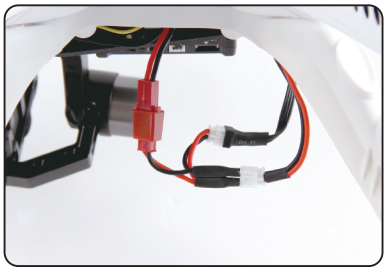
3.5.5 Please install the 5.8G emitter to the copter bottom with double side tape.



3.5.6 Connect the Gopro video cable with the image signal cable of 5.8G transmitter.



3.5.7 Please connect one mail connector of power conversion line with the. gimbal power wire.



3.5.8 Please connect one female connector of power conversion line with the copter power output plug.

3.5.9 camera and 5.8G emitter installation finished.

4 Code binding

4.1 Before pairing, please install the 2.4G radio signal antenna and 5.8G transmission receiver antenna(Fig. 1).

4.2 Please keep transmitter all function switch in the position “0”, and throttle stick to the extreme lower position, turn on the transmitter power by pulling forward the power switch(Fig. 2).

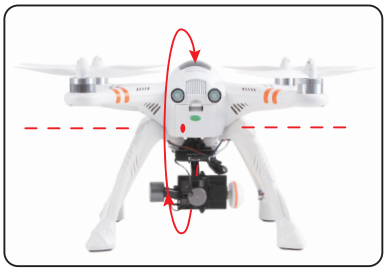
4.3 Connect the battery to the quad. Before powering the quad, make sure the quad is level and sitting stable on the ground, do not move the quad until the binding is finished(Fig. 3).

4.4 When the LEFT indicator light stop flashing, the binding is successful(Fig. 4).

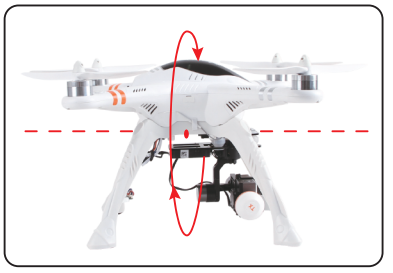
5 Compass Calibration

IMPORTANT: Make sure the motors are locked before calibration (left indicator is NOT flashing). Factory default setting, is for the motors to be locked after the completed ID binding process. (For details on motor lock and unlock process see point 6 and 7).

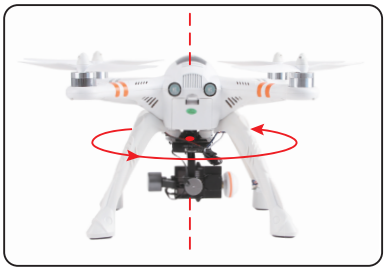
5.1 Enter compass calibration



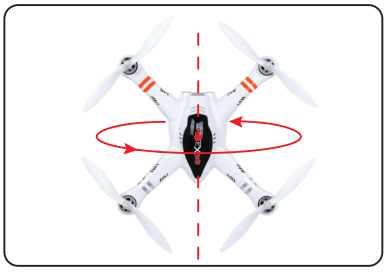
5.2 Forward& backward 360° rotation (Rotate the aircraft, from 0° to 90°, 180°, 270°, 360°, all need to pause for 1 second.)



5.3 Leftward & rightward 360° rotation (Rotate the aircraft, from 0° to 90°, 180°, 270°, 360°, all need to pause for 1 second.)



5.4 Horizon level 360° rotation(Rotate the aircraft, from 0° to 90°,180°, 270°, 360°, all need to pause for 1 second.)



5.5 Vertical direction (Head down) rotation 360°(Rotate the aircraft, from 0° to 90°, 180°, 270°,360°, all need to pause for 1 second).

5.6 The left green LED flash quickly till light out which means calibration finished. Please reconnect the aircraft power after calibration.

Attention:

1 After calibration, first time taking off, the aircraft may drift in the sky, please just ignore that, and meantime the system will do compass calibration automatically. After 3-5 minutes flight, please land the quadcopter on the ground and hold the motor in order to save calibration parameter;

2 please do the calibration in open space and far away from the Strong electromagnetic interference.

6 Motor Unlock

After Binding, move the throttle stick to the lowest position,at the same time move the rudder stick to the far left side.The left green LED indicator light will turn solid green, this indicate that the motors are unlocked.

TEST: gently push the throttle up a little, the motors will spin.

NOTICE: The MIX switch much be in Manual to unlock the motors. It is not possible to unlock the motors in GPS or RTH mode.

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

Motor Unlock(Mode 1)

Motor Unlock(Mode 2)

7 Motor Lock

To Lock the motors.

Move the throttle stick to the lowest position,and move the rudder stick to the far right.The left green LED indicator light will go out when the motors are locked.

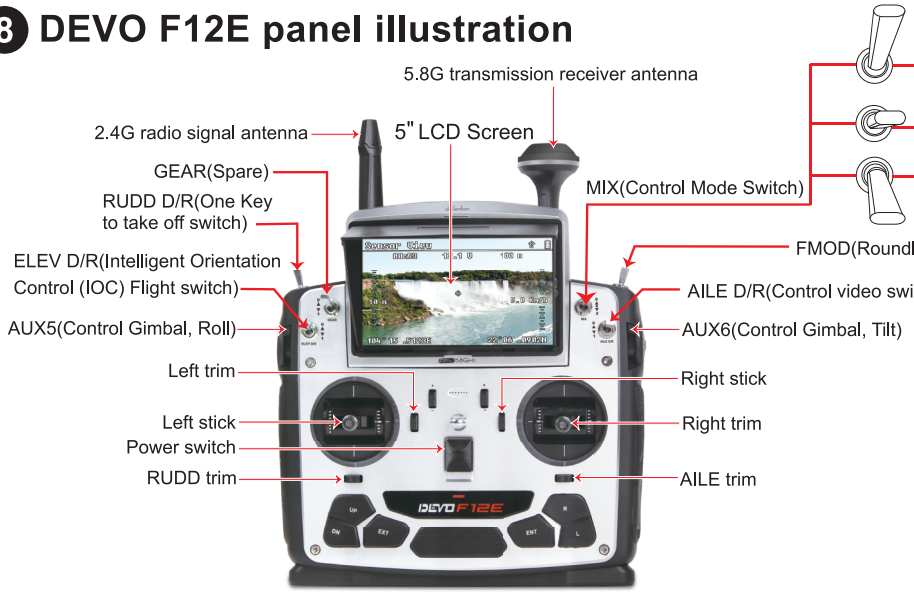
TEST: if you gently push up on the throttle, the motors will not start.

NOTICE: By default. After successful binding, the motors is locked.

Motor lock(MODE 1)

Motor lock(MODE 2)

8 DEVO F12E panel illustration



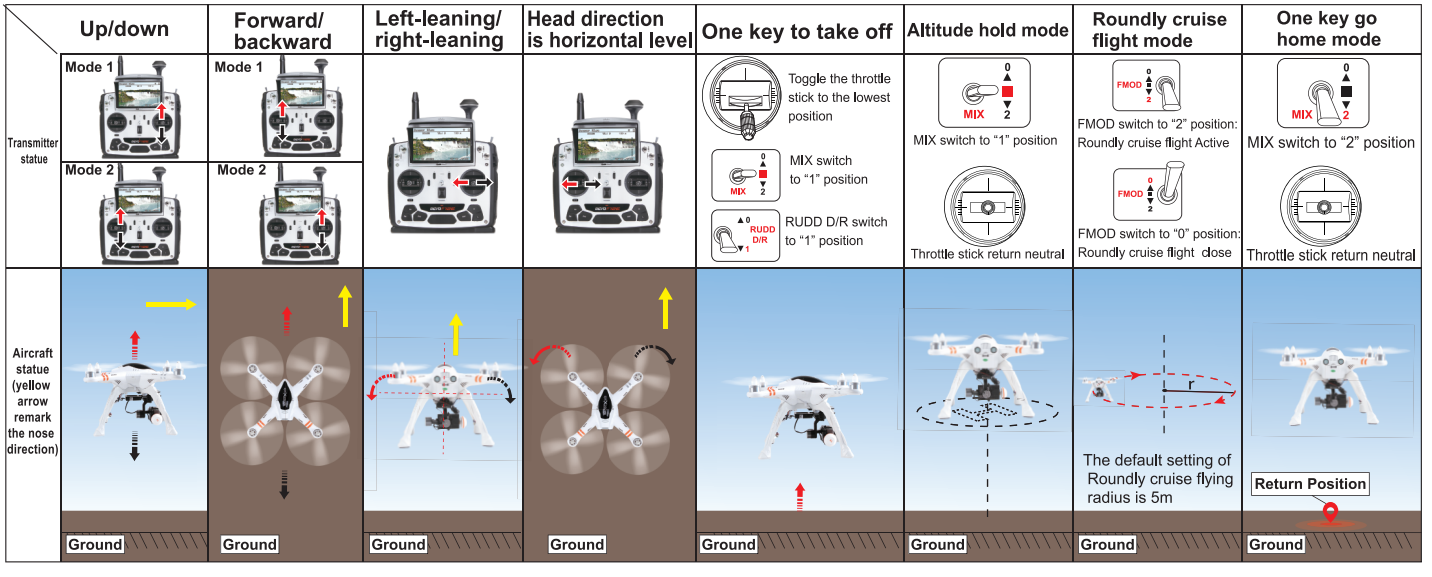
Mode 2 (Throttle stick on the left)	Left stick	THRO/RUDD stick
	Right stick	ELEV/AILE stick
	Left trim	THRO trim
	Right trim	ELEV trim
Mode 1 (Throttle stick on the right)	Left stick	ELEV/RUDD stick
	Right stick	THRO/AILE stick
	Left trim	ELEV trim
	Right trim	THRO trim

9 GPS indicator lights. (Understand the mystical blinking of the right indicator light)

GPS Satellites	<6	6	7	8	9	10	11	12	13
The right Green 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 GPS flight mode, the RIGHT indicator light should be blinking 2 or more times, (indicating 7 or more satelites locked.)

10 Operation Instruction

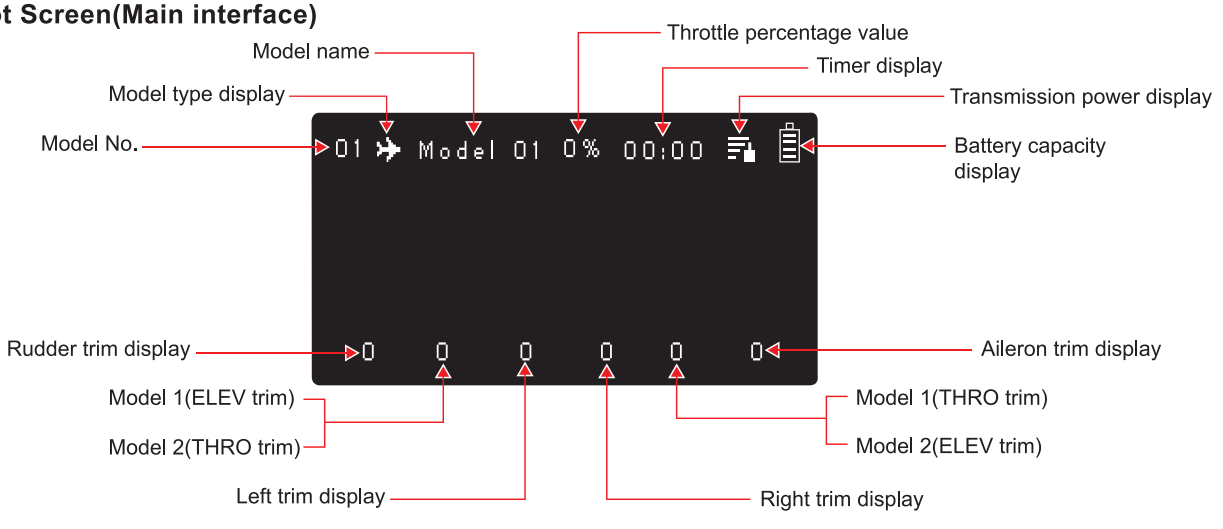


11 Radio function version form

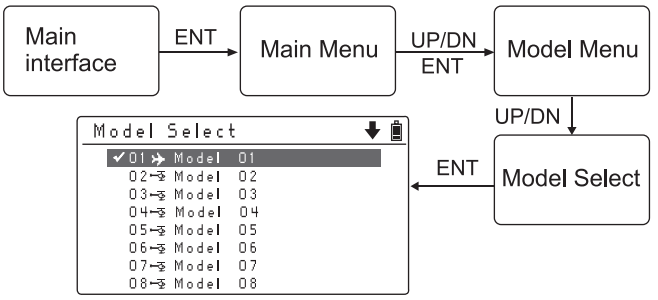
Function	Switch	Transmitter setting	Instructions
One key to take off	RUDD D/R	Model Menu → Device Output → Flap Active ← RUDD D/R ←	Keep copter static in horizontal ground → Motor unlock → Toggle the throttle stick to the lowest position → MIX switch to "1" position → RUDD D/R switch to "1" position Notes: (1) You can use this function only when you can receive GPS signal and the GPS signal should be in good condition. (2) If you want to control manually the throttle, you should toggle the throttle stick to the middle position or above, then you can unlock one key to take off mode.
Altitude hold mode	MIX	Model Menu → Device Output → Gear Active ← MIX SW ←	"0" position: Manual mode "1" position: Altitude hold mode "2" position: One key go home mode MIX switch to "1" position → Throttle stick return neutral Notes: (1) You can use this function only when you can receive GPS signal and the GPS signal should be in good condition. (2) Under Altitude hold mode, the drone will hover only when the throttle stick is in the middle position. (3) If there is no GPS signal or the signal isn't in good condition, it will enter automatically altitude hold mode,instead of holding at one position.
Roundly cruise flight mode	FMOD	Model Menu → Device Output → AUX3 Active ← FMOD SW ←	"0" position: close "1" position: leave unused "2" position: start autorotation mode Notes: (1) You can use this function only when you can receive GPS signal and the GPS signal should be in good condition. (2) The default setting of Roundly cruise flying radius is 5m. If you want to change the Roundly cruise flying radius, you should set the "Travel Adjust" in the transmitter. After having changed the setting, you should turn FMOD switch to "0" position to save the data, then return to "2" position to read the new Roundly cruise flying radius.
One key go home mode	MIX	Model Menu → Device Output → Gear Active ← MIX SW ←	"0" position: Manual mode "1" position: Altitude hold mode "2" position: One key go home mode MIX switch to "2" position → Throttle stick return neutral Notes: (1) You can use this function only when you can receive GPS signal and the GPS signal should be in good condition. (2) When under one key go home mode, do not touch other switches and keys of transmitter.
Hyper IOC Mode	ELEV D/R	Model Menu → Device Output → AUX2 Active ← ELEV D/R ←	IOC means the aircraft flight direction only related to the position of the first GPS signals, unrelated to head direction of the aircraft. "0" position: close "1" position: start hyper IOC mode Notes: (1) You can use this function only when you can receive GPS signal and the GPS signal should be in good condition. (2) During the flight, the drone will enter hyper IOC mode when the distance between the flight position of drone and the initial position where the GPS signal has been received is more than 10m. (3) When under hyper IOC mode, you can make the drone return to the initial position only by holding the stick backwards.

12 DEVO F12E Radio Setting

12.1 Boot Screen(Main interface)

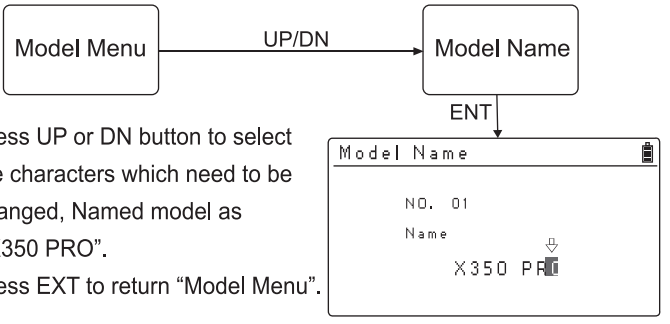


12.2 Model Select



Press UP or DN button to select the stored model No. ,For example "Model 01", press EXT to return back "Model Menu" after finished.

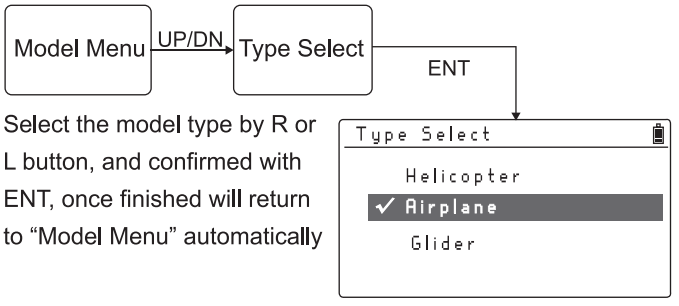
12.3 Model Name



Press UP or DN button to select the characters which need to be changed, Named model as "X350 PRO".

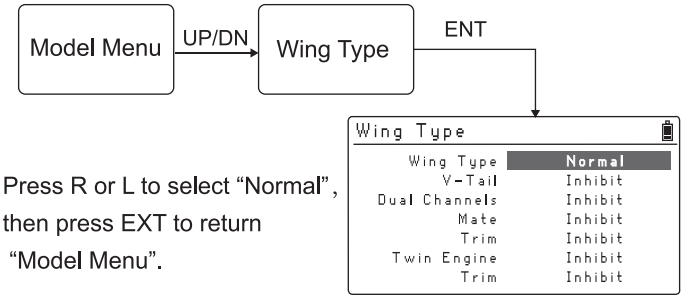
Press EXT to return "Model Menu".

12.4 Type Select



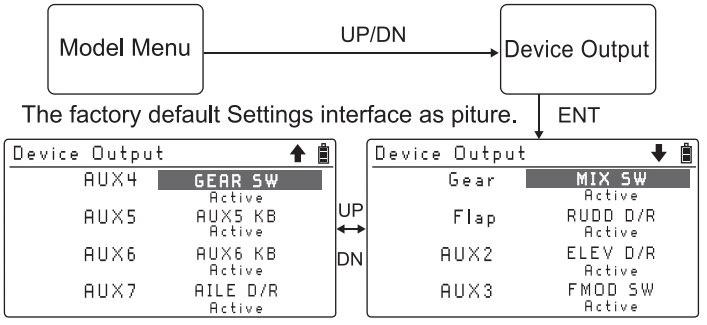
Select the model type by R or L button, and confirmed with ENT, once finished will return to "Model Menu" automatically

12.5 Wing Type



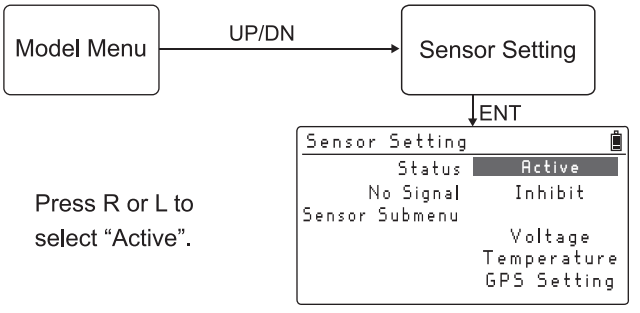
Press R or L to select "Normal", then press EXT to return "Model Menu".

12.6 Device Output



Press EXT to return back "Model Menu" after finished.

12.7 Sensor Setting



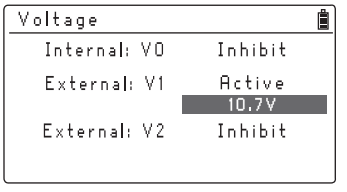
Press R or L to select "Active".

12.8 Voltage Setting

Press UP or DN to select Voltage in the Sensor Setting. Press ENT to enter Voltage interface.

Internal shows the Radio battery voltage.

X350 PRO default setting is 10.7V,please fly back the copter when you get a warning asap.



12.8 Voltage Setting

12.9 GPS Receive Setting

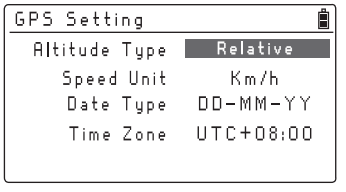
Press UP or DN to select GPS setting on the Sensor Setting interface, then press ENT to enter GPS Setting interface.

(1) Altitude Type setting: Press R or L to select Absolute or Relative.

(2) Speed Unit setting: Press R or L to select Km/h or Knote.

(3) Date Type setting: Press R or L to select DD-MM-YY\ MM-DD-YY\ YY-MM-DD.

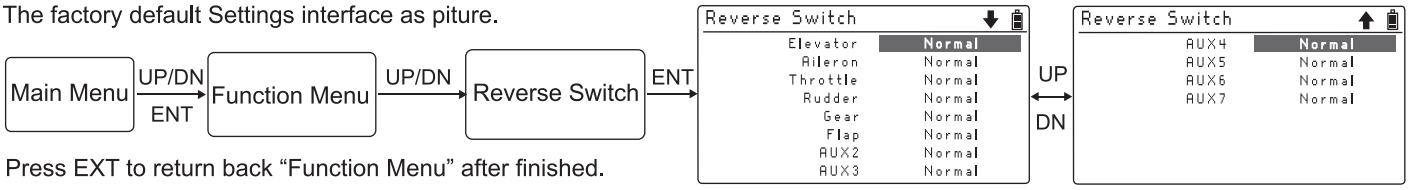
(4) Time Zone: Press R or L to select Time Zone, then press EXT to return "Main Menu".



12.9 GPS Receive Setting

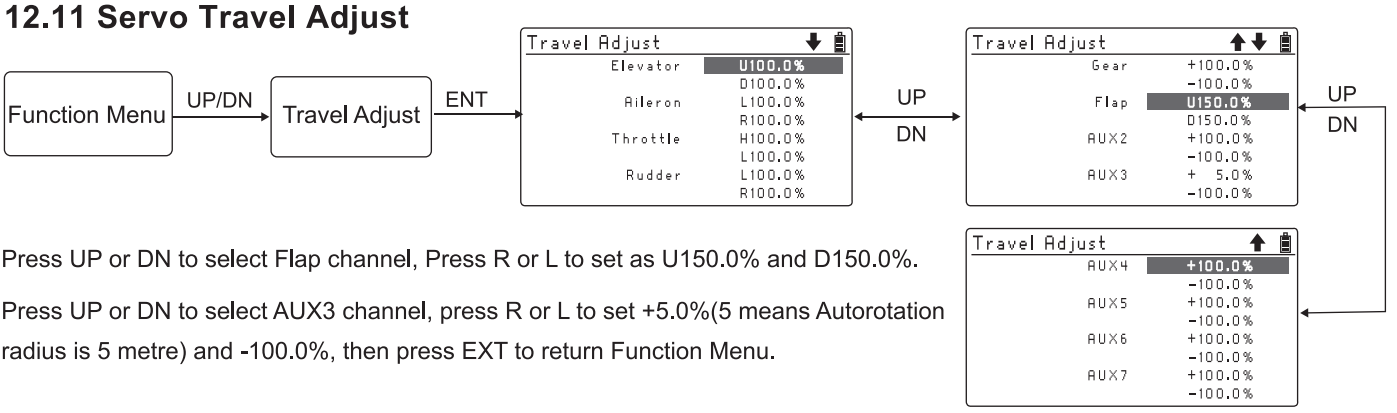
12.10 Reverse Switch

The factory default Settings interface as piture.



Press EXT to return back “Function Menu” after finished.

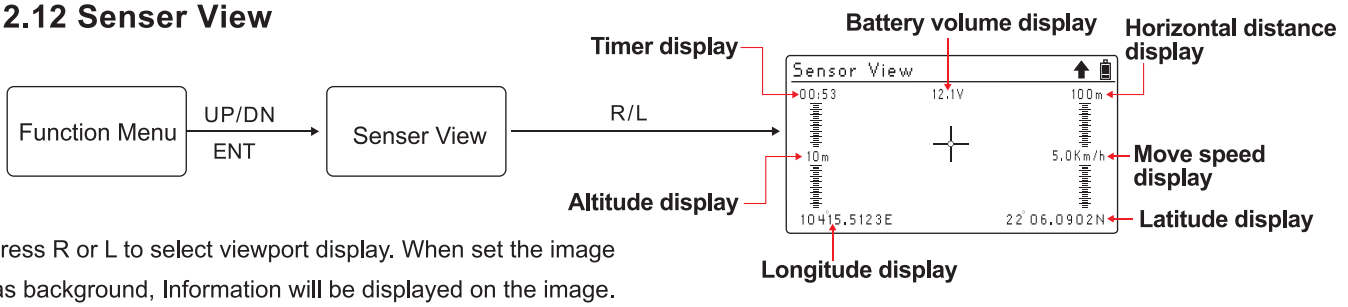
12.11 Servo Travel Adjust



Press UP or DN to select Flap channel, Press R or L to set as U150.0% and D150.0%.

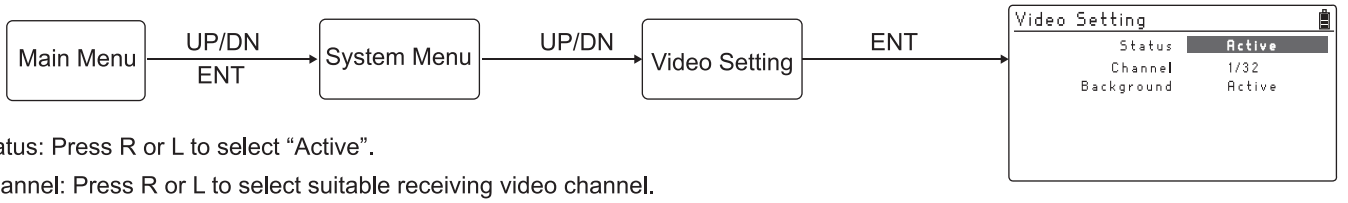
Press UP or DN to select AUX3 channel, press R or L to set +5.0%(5 means Autorotation radius is 5 metre) and -100.0%, then press EXT to return Function Menu.

12.12 Senser View



Press R or L to select viewport display. When set the image as background, Information will be displayed on the image.

12.13 Video Setting



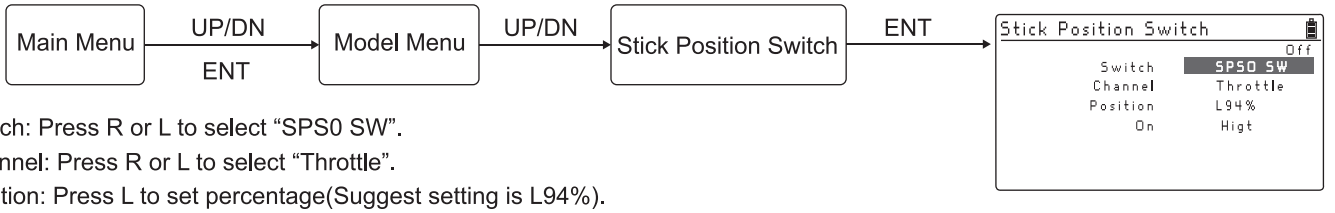
Status: Press R or L to select “Active”.

Channel: Press R or L to select suitable receiving video channel.

Background: Press R or L to select Active, Real-time image could be set as background in Main Menu.

Press EXT to show full screen image in Main Menu.

12.14 Timer Setting



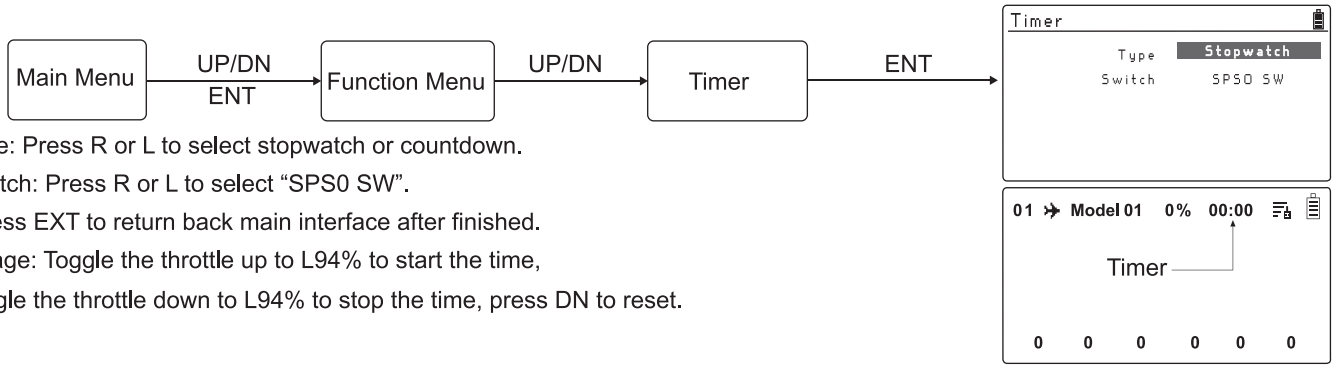
Switch: Press R or L to select “SPS0 SW”.

Channel: Press R or L to select “Throttle”.

Position: Press L to set percentage(Suggest setting is L94%).

On setting: Press R or L to select “High” as rocker direction of on.

Move up and down of the throttle to check if the direction of the switch is set correctly. Then press EXT to return “Main Menu”.



Type: Press R or L to select stopwatch or countdown.

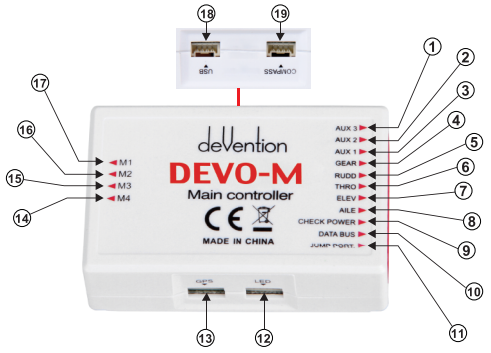
Switch: Press R or L to select “SPS0 SW”.

Press EXT to return back main interface after finished.

Usage: Toggle the throttle up to L94% to start the time,

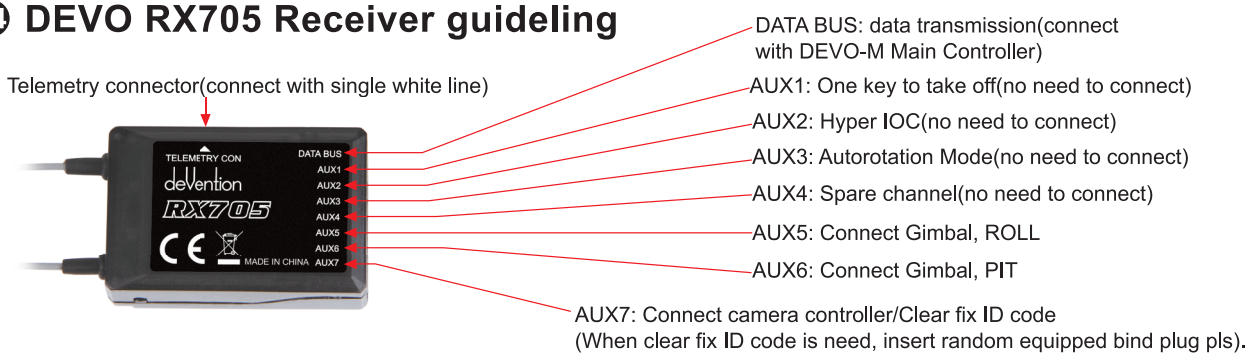
toggle the throttle down to L94% to stop the time, press DN to reset.

⓭ DEVO-M Main controller guideline



1	To roundly cruise flight	11	Jumper port, when regular receiver is need, insert random equipped bind plug pls.
2	To hyper IOC		
3	To one key to take off	12	To link LED
4	Control Mode Switch	13	To link GPS module
5	To control Rudder	14	Connect with forth way brushless ESC
6	To control Throttle	15	Connect with third way brushless ESC
7	To control Elevator (forward & backward)	16	Connect with second way brushless ESC
8	To control Aileron (leftward & rightward)	17	Connect with first way brushless ESC
9	To check voltage(connect with power board)	18	Upgrade channel
10	Data transmission(connect DEVO-RX705)	19	To link Compass(red black double color cable)

⓮ DEVO RX705 Receiver guideling



⓯ Instruction for knobs of G-2D/G-3D gimbal

V2/ROLL: Set up gimbal rolling angle(control angle range 45°~ 45°), please refer to the mid-point as starting point, proper adjust the knob in counterclockwise direction.

V1/PIT: Set up gimbal tilt angle(control angle range -135° ~ 90°), please refer to the mid-point as starting point, proper adjust the knob in counterclockwise direction.

⓰ 5.8G(TX5803/4) emitter setting(with Gopro series)

16.1 (5.8G) TX5803/TX5804 Transmitting channel selection

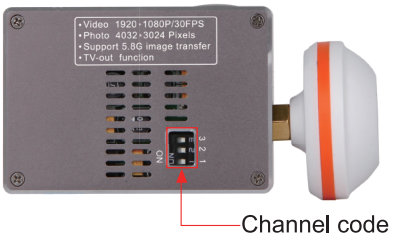
There are 8 different channels can be selected,You can choose the best frequency channel according to the image quality as bellow:

Channel	1	2	3	4	5	6	7	8
Frequency	5866MHz	5847MHz	5828MHz	5809MHz	5790MHz	5771MHz	5752MHz	5733MHz
code position (off/on)	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON

Note: Only transmitting channel 2, 4, 6, 8 are available for the TX5803.

⓱ Instructions for iLook+ Camera

17.1 Pictures illustration



17.2 Specifications

(1) Video

a. Video Resolution: 1920 x1080 Full HD

b. FPS: 30

c. Micro High Speed SD card: Max 64G

d. Imaging Sensor: 3,000,000 Pixels

e. Video Format: MOV

f. Photo: 4032x3024 Pixels

(2) 5.8G wireless

a. 5.8G wireless image transmission

b. FCC Output Power≤200mW

c. CE Output Power≤25mW

d. CE Bind B section: 8 channels

e. FCC Bind B section: 4 channels

17.3 iLook+(FCC/CE) camera transmitting channel selection

There are 8 different channels can be selected,You can choose the best frequency channel according to the image quality as bellow:

Channel	1	2	3	4	5	6	7	8
Frequency	5866MHz	5847MHz	5828MHz	5809MHz	5790MHz	5771MHz	5752MHz	5733MHz
code position (off/on)	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON	3 2 1 ON

Note: Only transmitting channel 2, 4, 6, 8 are available for the iLook+(FCC).

17.4 Video and Photo user guide

Warm tips:

(1) Micro SD card must be inserted to the iLook+ camera before connecting the power,and took off after disconnecting the power. (Recommend to use high speed SD card)

(2) Insert MICRO SD card, the camera is powered on, the red indicator light indicates the camera is initialized, the red light goes out indicates the camera enters standby mode initialization is complete.

(3) Insert MICRO SD card, the camera is powered on, if the red indicator light blinks rapidly means formatting it is necessary.pls stir video/ photo switch to position ress shutter last for 5 sec.format after the completion of the proposed re-energized camera.

17.5 Video instruction

(1) Radio Operation

Switch	Transmitter setting	Instructions
AILE D/R	Model Menu ↓ Device output ↓ AUX7 ↓ AILE D/R ↓ Active	(1) It's a must to turn the switch of iLook+ to " " position. (2) **Start video:** turn the AILE D/R switch from "0" position to "1" position, wait for 1-2 seconds, then return to "0"position, the camera will start to video (A red video identification will be display on the radio screen, while the camera red LED will flash within 0.5 seconds). **Stop video:** turn the AILE D/R switch from "0" position to "1" position, wait for 1-2 seconds, then return to "0" position, the camera will stop video (When the red video identification on radio disappear, the camera red LED will go out). (3) Make sure that the video recorded will not be saved in the SD card if you haven't finished the "stop video"operation.

(2) Manual Operation

Turn the Video/Photo Swich to first please, press the shutter button once, iLook+ camera starts to Video(the Red indicator flash for 0.5sec interval); Press the shutter button again, iLook+ camera stops video(The Red indicator light out).

(3) Photo instruction

Please Turn the video/photo switch to , Press the shutter button once, iLook+ camera Will take a photo (The Red indicator blinks once then light out), press the shutter button again, it will take another photo.

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