



ETC62D-2.4GHz

LCD DIGITAL PROPORTIONAL RADIO CONTROL SYSTEM

Operating Manual



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Thanks for purchasing ETC62D-2.4GHz radio control set. For safe use, please read this manual before using carefully. Any damage or loss to radio control set and model due to improper use will not be shouldered by Art-Tech.

Function of Transmitter

ETC62D-2.4GHz is a newly developed 6 channel proportional transmitter. The latest developed product of ART-TECH RC Hobby Corporation. The 2.4GHz RC system uses digital frequency-hopping technology; it has enormous advantage compared with traditional system: no crystal, no frequency interference, short antenna length and low power consumption.

1. Flying time display: less than 1 minute seconds showed, more than 1 minute minutes showed.
2. Supply voltage display and low voltage alarm function: When the battery voltage is lower than 8.5V, the red LED flashes, and alarm.
3. Channel output reverse set.
4. 5 kinds of aircraft modes to choose, 12 independent aircraft data storage and call.
5. Mode I and mode II exchange.
6. Throttle protection: in order to avoid danger of starting the motor of a sudden, when throttle hold switch is turned on, throttle output value is the minimum.

When boot, for various reasons (location of the assembly, curve setup), throttle output value is not the minimum, the red LED flashes and alarm, as shown in the figure. The throttle lose automatically locked out for a minimum value, when the transmitter adjustment is appropriate (that is, the throttle output is the smallest), the transmitter is unlocked.

7. Ch1 ch2 ch4 DR (Dual Rate) setting.
8. Ch1 ch2 ch4 EXP(exponential curve) setting.
9. All channel EPA (end of the process) setting.
10. Ch5 two-state setting (gyroscope sensitivity setting for helicopters, landing gear set up for fixed-wing planes).
11. Ch3 ch6 general and 3D mode curve set for general helicopters and CCPM helicopters
12. 4 groups channel mixing control
13. All channel output dynamic display
14. All channel mid-point regulation
15. Restore the factory settings
16. Ch1 ~ Ch6 auxiliary fine-tuning settings



Contents:

Transmitter:	ETC62D-2.4GHz	1pcs	Belt:	1pcs
Receiver:	ER62-2.4GHz	1pcs	Manual:	1pcs
Simulator cable:		1pcs	CD:	1pcs

We do not offer servo, speed controller, battery or changer with the radio control system .

Users can buy as spare parts.

Servo:	AS-100(9 g)	3pcs	Battery packs: 9.6V/Ni-MH	1pcs
Speed controller:	ESC-30A	1pcs	Charger:	1pcs

Specifications

Number of channels: 6

Charging jack: yes

3D switch: yes

Power supply: 12 V (1.5V * 8AA batteries)

Voltage Display: LCD

Color: Black

Antenna length: 15 cm

Using occasions: aircraft, helicopters

Certification: FCC, CE, RoHS

Notice for use

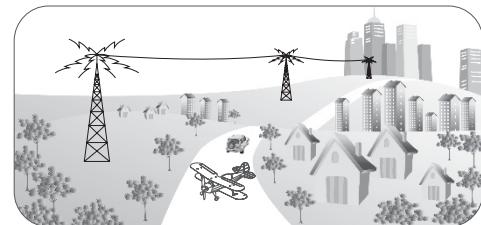
Please do not fly in the rain or strong wind. The water can sink into the transmitter which can cause out of control, leading to crash.

The transmitter can not work properly if the frequency bind button is pressed down negligently. In this case, The transmitter and the receiver must be bind again. More details , Please refer to the process of frequency bind for 2.4 GHz R/C system.

Please do not turn on several RC devices and bind them at the same time, bind only one set of RC device at one time. The RC device should not be stay in bind state for a long time.

Please note before using, test the radio set first and any change to the radio set or model can cause crash.

Please do not fly near housing, road, airport or power line



Notification before Using

Indications of Special signs

Please pay more attention to signs in this manual and safety while using

Show	Logo	Meanings
WARNING		I improper operation may cause injury or hurt
CAUTION		I improper operation may cause injury or hurt

Storage note

▲Please do not place the radio control set in the below situation:

hot or cold (60°C above or -10°C below)
under the sunshine long time
moist condition
dusty place
vibration condition

▲long time without using, please pick up batteries from the bay and store in the dry condition.

▲It is forbidden to clean the radio control set with chemical solvent such as acetone

▲The over used dry batteries can not be dispatched anywhere. That should be stored in a non-metal tool and dispatched by environment-protection department.

▲ It is strongly recommended to use chargeable battery for the transmitter with the hope of environment-protection and cost-reducing.

Attention

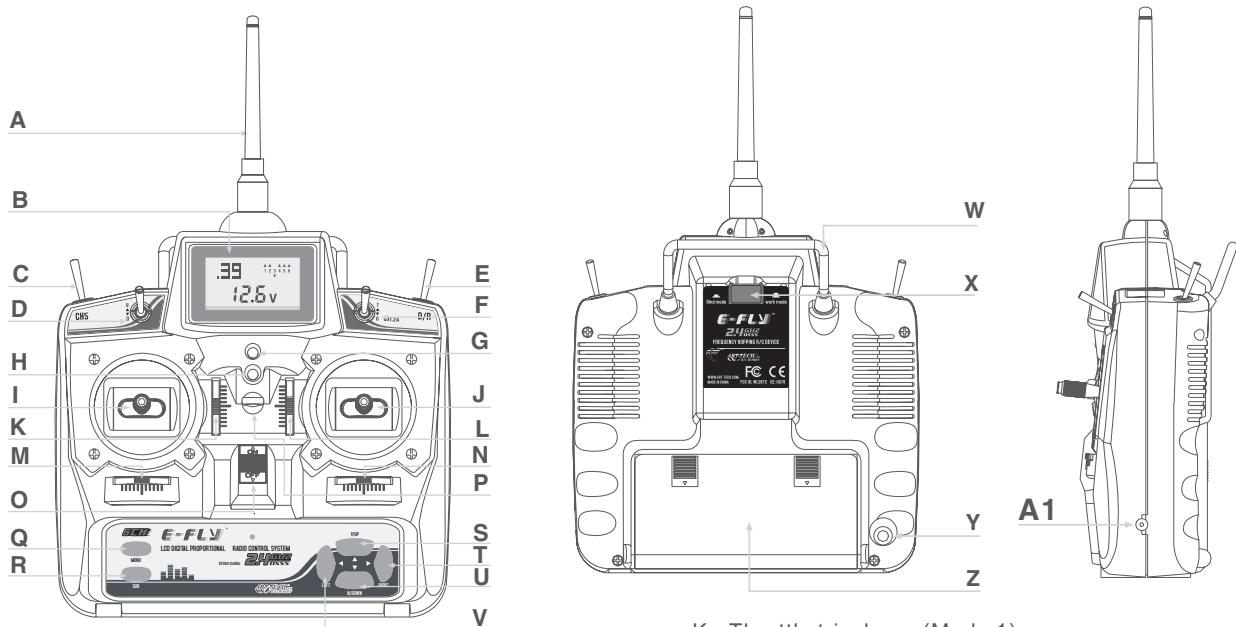
While opening the transmitter, the joystick for throttle should be on idle; only opening the transmitter can connect the power to model.

In order to close the transmitter, the joystick for throttle should be on idle. Disconnect the power of model, and close the transmitter. The propeller may cause damage if improper operation.

Stop the motor while transmitter adjustment. Please pay attention to the motor during adjustment. It is better to use transmitter, receiver etc, together from ART-TECH.

Please do not do any change to transmitter, otherwise it can affect transmitter's function.

Transmitter particular introduce



A: Antenna

B: LCD(Liquid Crystal Display)

- 1) display battery voltage of transmitter
- 2) display whether the channels are reversed
- 3) display flying time
- 4) display menus
- 5) Display lock or unlock state

Display area

- 1)function display area
- 2)channels direction display area
- 3)data display area
- 4)option number display area

C: Throttle hold switch

D: Ch5 switch

This switch is for Ch5 that can be used for aerial camera, collapsible landing gear and shift between gyro mode and gyro gain, etc.

E: 3D switch

F: D/R switch

G: Indicator LED for Power voltage

H: Red Indicator LED for low voltage alarm: When battery voltage is under 8.5V, the LED will flash and alarm; the LCD will cut off when voltage is under 7.6V. Note: When red LED flashes or nothing shows on LCD, please change the battery in order to avoid flying out of control.

I: Joystick

- 1) If the transmitter is Mode 1,CH1 is for aileron and CH3 for throttle.
- 2) If the transmitter is Model 2,CH1 is for aileron and CH2 for Rudder

J: Joystick

- 1) If the transmitter is Model 1,CH2 is for elevator and CH4 for rudder.
- 2) If the transmitter is Model 2,CH3 is for throttle and CH4 for rudder.

K: Throttle trim lever (Mode 1)

Elevator trim lever (Mode 2)

- 1) If the transmitter is Mode 1,it is for Ch3
- 2) If the transmitter is Mode 2,it is for Ch1

L: Elevator trim lever (Mode 1)

Throttle trim lever (Mode 2)

- 1) If the transmitter is Mode 1,it is for Ch1
- 2) If the transmitter is Mode 2,it is for Ch3

M: Rudder trim lever

N: Aileron trim lever

O: Switch for Power

P: Flying Ring

Q: Menu Button

- 1) Enter into main menu
- 2) Enter into next main menu
- 3) Enter into time page menu (release after long press)

R: Sub Button

- 1) Enter into sub menu
- 2) Enter into next sub menu
- 3) Enter into time page menu (release after long press)

S: Y/UP

- 1) Selection validate
- 2) Data increase
- 3) Normal channel direction selects (release after long press)

T: RIGHT Button, selection(right)

U: N/DOWN

- 1) Selection cancels
- 2) Data decrease
- 3) Reverse channel direction select (release after long press)

V: LEFT Button, selection(left)

W: Steel Handle

X: Bind Button

Y: Plug for Simulator

Z: Battery bay for transmitter

A1: Rechargeable plug (Note: Only 9.6V Ni-MH battery pack can be recharged)

Menu introduction

After turn on the radio, the screen displays the time page. Press menu several times to enter the required main menu, Press the sub button during this period you can enter into the sub-menu of corresponding main menu.

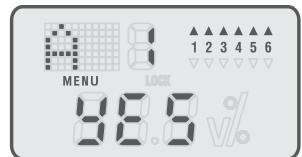
In the menu operation, the success of the button operation will accomplish with a prompt sound. If there is no prompt sound, maybe the button is not in place or this button has no function in this menu. When the special function button (y / up or n / down button) to confirm the implementation of operation, there will be 3 prompt sounds; as for the abolition of operation, there will be 3 demotion sounds. When menu setting is complete, press the menu button or sub button for about 1 second you will hear 2 prompt sounds, then release the button you will return to the time page.



1. Mode selection

1.1 Flying mode setting:

1. Press the menu button; enter into the data storage menu (Mode select function).
2. Press the Left or right button, choose the right mode, press the y / up button to confirm. (In the option number display areas the number of the recently called file is displayed, as shown in Figure 1, the number of the recently called file is the No.1 File. Yes means that the present chosen mode is what is shown at the function display area, as shown in Figure, the present chosen mode is A mode.) Of all the modes: A (aero plane mode); V (V tail mode); C (CCPM helicopter mode); H(helicopter mode) D(Delta plane mode)



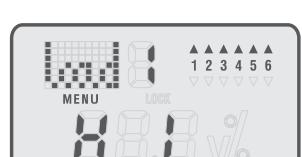
1.2 Storage mode:

1. Press the sub button; enter into the mode menu (Save function).
2. Press the Left or right button, choose the right store location, press the y / up button to confirm storage. You can store a total of 12 models.



1.3 Mode call:

1. Press the sub button; enter into the data call menu (Load function).
2. Press the Left or right button, choose a suitable stored location, press the y / up button to confirm data call. (Note: Call will coverage the data value being set now. non means no data has been stored in selected location. As in Figure, H means in the storage location the model mode is helicopter mode, L means Mode II and r means Mode I.)



2. Servo Reversing settings

1. Press the menu button; enter into the Rev menu (Servo Reversing).
2. Press the Left or right button, choose a channel, press the y / up button to change the Reversing setting.



3. Popular options:

1. Press the menu button, enter into the Set menu. (There are 5 submenu included: D'R, Exp, Epa, Gyr, Mrv)

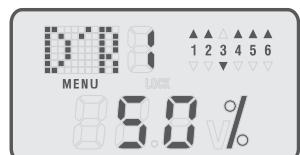
3.1 D'R (Dual Rate) settings:

1. Press the sub button; enter into the D'R menu (Dual Rate Settings).
2. Press the Left or right button, choose a channel (aileron, elevator or rudder), press the y / up or n / down button to increase or reduce the value. The values set take effect when the D'R switch is switched on. The Dual Rate exponential curve may be set anywhere between 0% and 125%



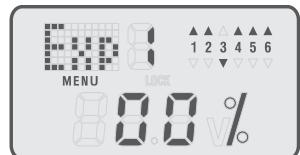
3.2 Exponential Settings:

1. Press the sub button; enter into the Exp menu (Exponential Settings).
2. Press the Left or right button, choose a channel (aileron, elevator or rudder), press the y / up or n / down button to increase or reduce the value. The exponential curve may be set anywhere between -100% and 100%



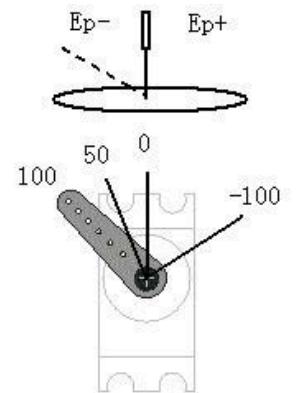
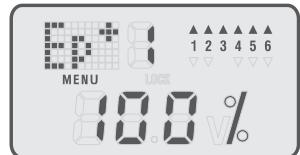
3.3.EPA (End Point Adjustment):

1. Press the sub button; enter into the Ep menu (End Point Adjustment).



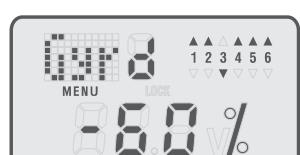
2. Press the Left or right button, choose a channel (minus signal means the minus half part, while plus signal means the plus half part), press the y / up or n / down button to increase or reduce the value. The values may be set anywhere between -100% and 100%

The Ep- is corresponding to one half trip of the stick, while the Ep+ is corresponding to the other counterparts half. Reasonable settings of Ep can achieve 3 point curve of any channel.



3.4 Gyroscope sensitivity / landing gear setting:

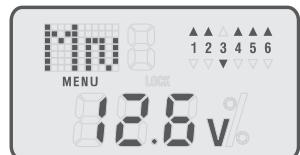
1. Press the sub button; enter into the Gyr menu (GYRO mixing).
2. Press the Left or right button, choose a channel (d means the CH5 switch is down, u means the CH5 switch is up), press the y / up or n / down button to increase or reduce the value. The value may be set anywhere between -100% and 100%



3.5 Mixing Rate Settings

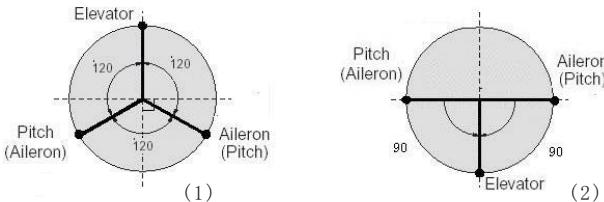
(A.V.D mode)

1. Press the sub button and enter the Mrv menu (Mixing Rate Settings).
2. Press the left or right button to choose the right option (A for aileron, E for elevator, R for rudder). Press the y/up button or n/down button to increase or decrease the setting value (The value -100%~100% indicates the actual output mixing rate).



(C mode)

1. Press the sub button to enter the Swash menu (Swash Rate Setting). The following Figure (1) is 120° CCPM and Figure (2) is 90° CCPM. Press y/up button or n/down button to choose to connect the aileron to CH1 or CH6, elevator to CH2, Pitch to CH6 or CH1.



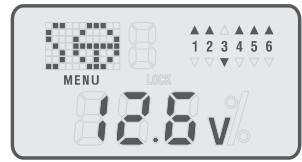
2. Press the left button or right button to choose the right option (A for aileron, E for elevator, P for pitch). Press the y/up button or n/down button to increase or decrease the setting value (The value -100% ~ 100% indicates the actual output mixing rate).

4. Curve settings

Press the menu button, enter into the Cuv menu (there are 4 submenu included: Thr, Pit, T3d, P3d). Switch on the 3D switch, the 3D curve can be activated.

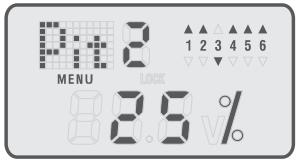
4.1 Normal Throttle settings:

1. Press the sub button; enter into the Thr menu (Normal throttle curve function).
2. Press the Left or right button, choose the key point to be set (5 key points are corresponding to the channel trip of 0% 25% 50% 75% 100%), press the y / up or n / down button to increase or reduce the value. The value may be set anywhere between 0% and 100%)



4.2 Normal pitch settings:

1. Press the sub button, enter into the Pit menu (Normal throttle curve function).
2. Press the Left or right button, choose the key point to be set (5 key points are corresponding to the channel trip of 0% 25% 50% 75% 100%), press the y / up or n / down button to increase or reduce the value. The value may be set anywhere between 0% and 100%)



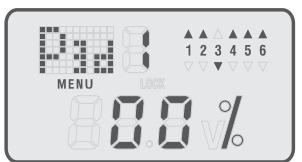
4.3 3D throttle settings:

1. Press the sub button; enter into the T3d menu (3D pitch curve function).
2. Press the Left or right button, choose the key point to be set (5 key points are corresponding to the channel trip of 0% 25% 50% 75% 100%), press the y / up or n / down button to increase or reduce the value. The values set take effect when the 3D switch is switched on. The value may be set anywhere between 0% and 100%)



4.4 3D pitch settings:

1. Press the sub button, enter into the P3d menu (3D pitch curve function).
2. Press the Left or right button, choose the key point to be set (5 key points are corresponding to the channel trip of 0% 25% 50% 75%



100%), press the y / up or n / down button to increase or reduce the value. The values set take effect when the 3D switch is switched on. The value may be set anywhere between 0% and 100%)

5. mixing settings (A, V, D mode)

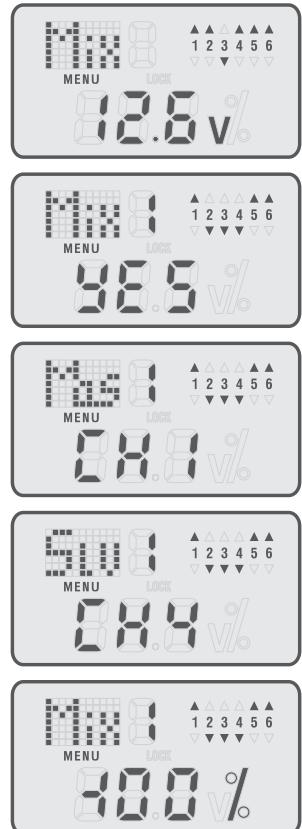
Press the menu button, enter into the Mix menu (mixing). There are 2 sets of mixing settings.

5.1 Mixing setting:

1. Press the sub button; enter into the Mix1 menu (mixing 1).
2. Press the Left or right button, choose the right option (whether to use or not, the master channel, the slave channel, mixing proportion).
3. 1) Whether or not to use option: press y / up or n / down button to confirm (YES) or cancel (NO).
- 2) Master channel option (Mas): press y / up or n / down button to select the master channel.
- 3) Slave channel option (Slv): press y / up or n / down button to select the slave channel.
- 4) Mixing proportion setting: y / up or n / down button to set the mixing proportion. The slave channel is under control of the master channel at the setting proportion. (The value may be set anywhere between 0% and 100%) Reasonable settings of MIX make flight of delta-wing or V-tail aircraft which need the two-channel mixing control easy.

5.2 Mixing setting:

1. Press the sub button; enter into the Mix2 menu (mixing 2,3,4).
2. Specific settings are the same as Mix1.



6. Other function of the transmitter

Press the menu button; enter into the Pls menu (plus function).

6.1 Channel Display and Calibration:

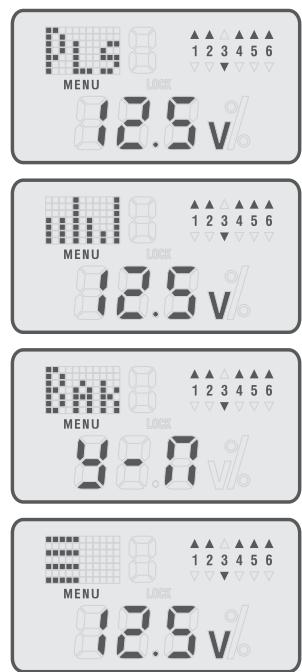
1. Press the sub button, enter into the Chv menu (view of channels).
2. Press the Left or right button, choose a channel, the channel output trip is displayed.

6.2.1 To restore the factory settings:

1. Press the sub button; enter into the Bak menu (back to original set).
2. Press the y / up or n / down button to confirm or cancel restore the factory settings. Press the y / up button to confirm the resumption of the factory settings.

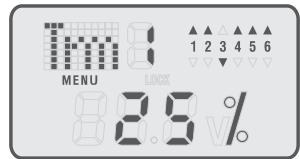
6.2.2 Calibrate Settings:

1. Press the left or right button and enter the calibrate menu (calibrate Settings).
2. (Use at the first flight or the aircraft is changed) Press the y / up button, place the sticks in the normal locations (Throttle channel minimum, other channels middle), press the n / down button to confirm. (In this calibration process, output values of all channels is the initial values)



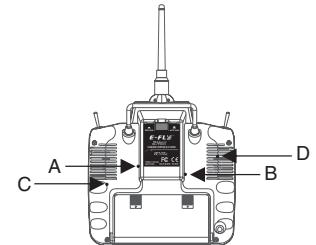
6.3 Auxiliary trim settings:

1. Press the sub button; enter into the Trm menu (Trim Settings).
2. Press the Left or right button, choose a channel.



6.4 Mode I and Mode II setting:

1. Press the sub button, enter into the Mode I and Mode II setting menu. Before Mode Setting, please unplug the power supply of the plane. Adjustment of joysticks The screws for mode setting are in the rear cover. as shown in the figure: The screws A and B play the role of suppressing springs; and the screws C and D play the role of adjusting resist force. Therefore, for mode I, loosen the screws A and C, tighten the screws B and D. For mode II, loosen the screws B and D, tighten the screws A and C.
2. Press the Left or right button to choose the right mode and press the y / up button to confirm. Left stands for Mode II, while right stands for Mode I. After that you can process Channel calibration.



Other function of the transmitter

⚠ Alarm for low voltage of transmitter

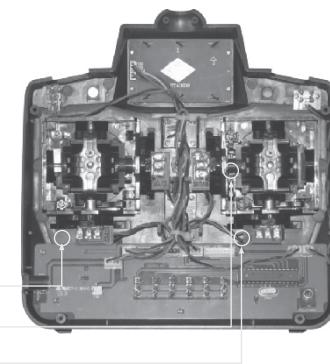
When the voltage of transmitter battery is under working voltage, the red LED will flash. It is better to stop flying, or that can cause crash of model.

Adjustment on Joystick Spring

The joystick spring can be adjusted and it is possible to change that for aileron, elevator and rudder.

1. Turn the screw on the transmitter back anticlockwise, and open the back
2. turn the screw of the channel to adjust the spring, deasil for stronger and anticlockwise for weaker.
3. close the back and turn the screw deasil

screw adjustment
screw adjustment
screw adjustment



Adjustment for the joystick's length

1. turn the head of joystick anticlockwise to prolong the length and deasil for shorten the length. Please note do not prolong too much.
2. tighten the lower part of the joystick anticlockwise



Operation for chargeable plug

The chargeable plus is on the side of transmitter, and it is specially designed for charging the transmitter battery. Please note the batteries should be well arranged in the bay and do not over charged

Receiver

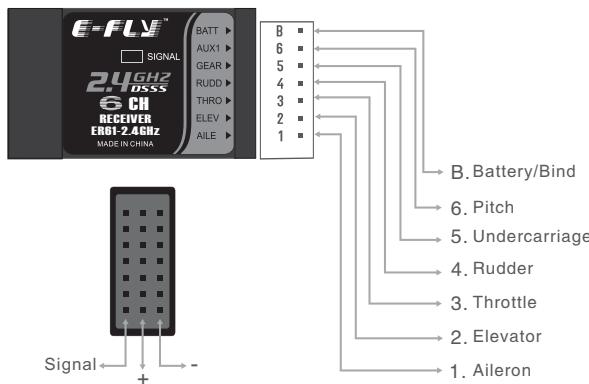
Specifications

Operating voltage: 4.8V~5.2V
Current drain: <40mA
Weight: 12g
dimension: 44mm*23mm*15mm
Channels: 6 Channels
Range(Height): ≥350m
Adjacent channel rejection: ≥-85dBm ± 16kHz

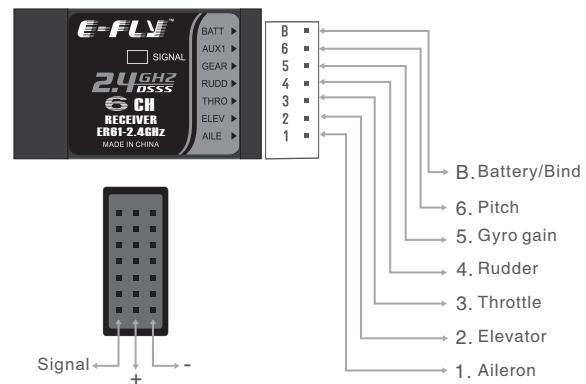


Function

Operation for aeroplane



For operating helicopter



Power supply for the receiver

To make the receivers work normally, the input DC power should be stable and meet some requirements. The input power is for receiver circuit and for servos.

The input voltage should be between 4.8V ~ 6V.

The working current is 0.25A of the receiver plus the current of servos.

Usually there are three ways for the receiver power supply:

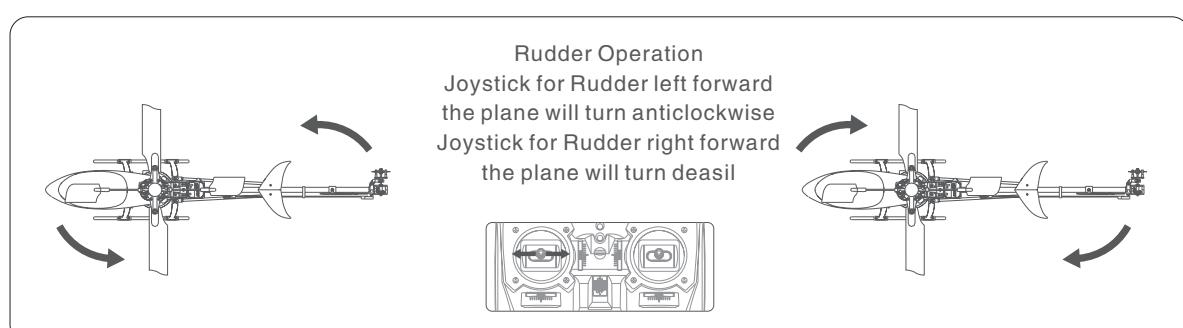
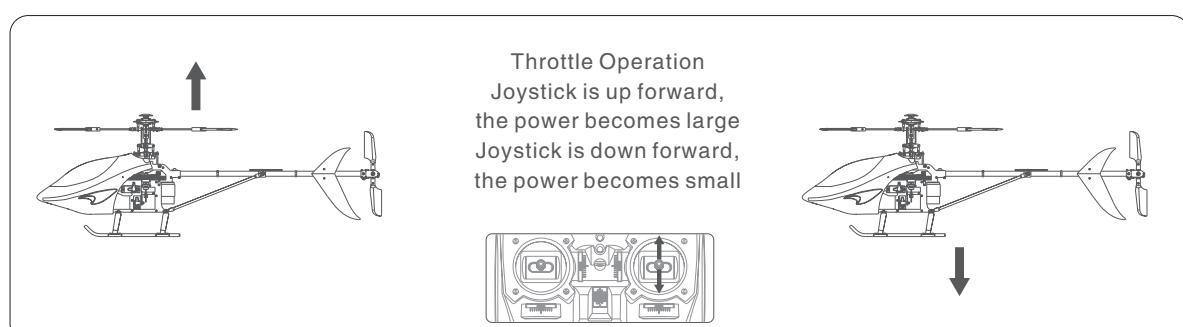
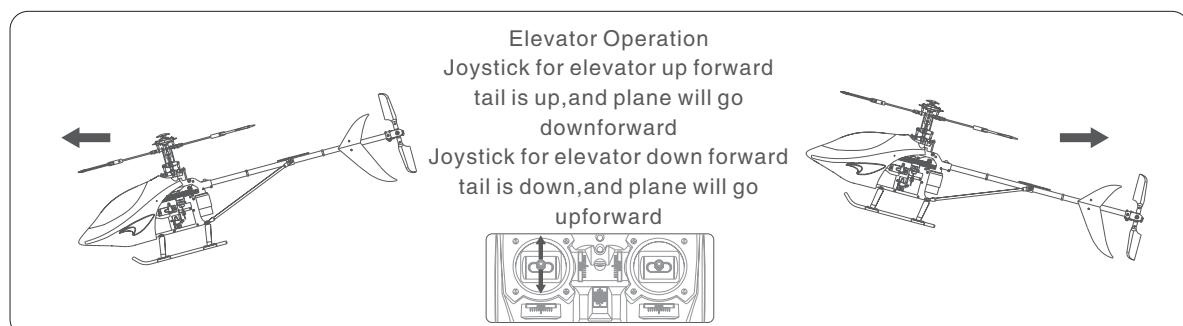
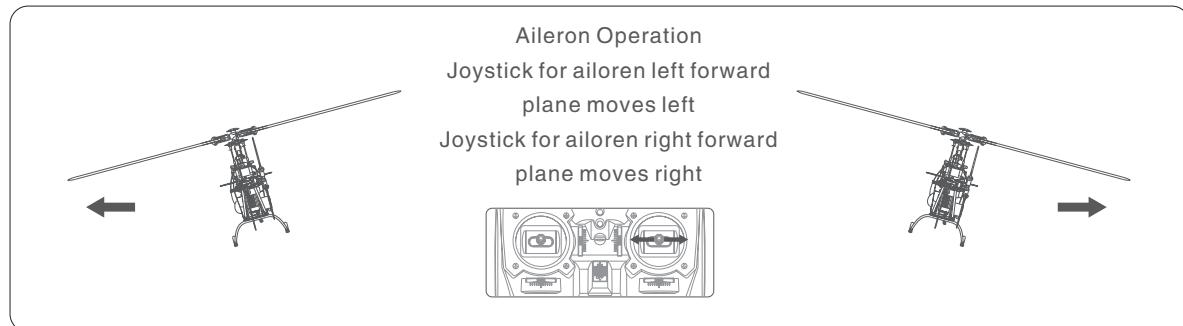
1. Separate battery pack for the receiver.
2. Electronic speed controller with BEC (Battery Eliminate Circuit).
3. Dedicated receiver power supply distributor (UBEC).

If the flight model using this set of remote control device needs large manipulation force when flying, that is, in case the servos may bear greater reaction and the work current of the servos is large, you need to pay more attention to the receiver power supply stability in particular. Electricity supply equipment with good performance is proposed to choose.

Operation for transmitter and servo

For operating helicopter (Mode 1)

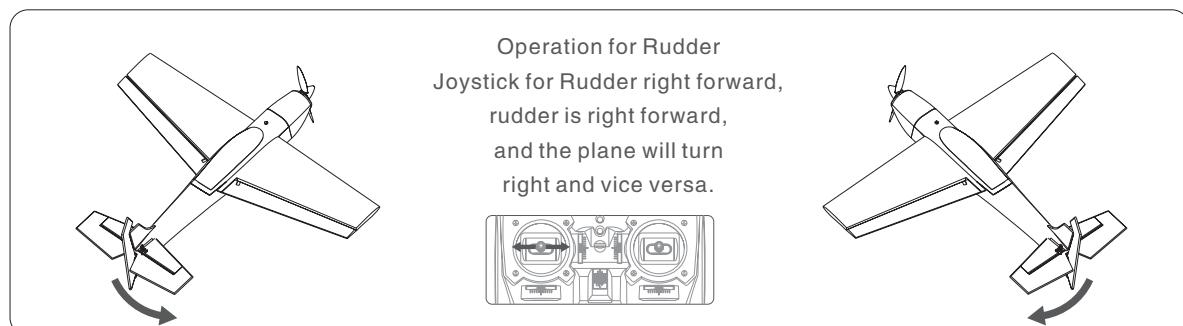
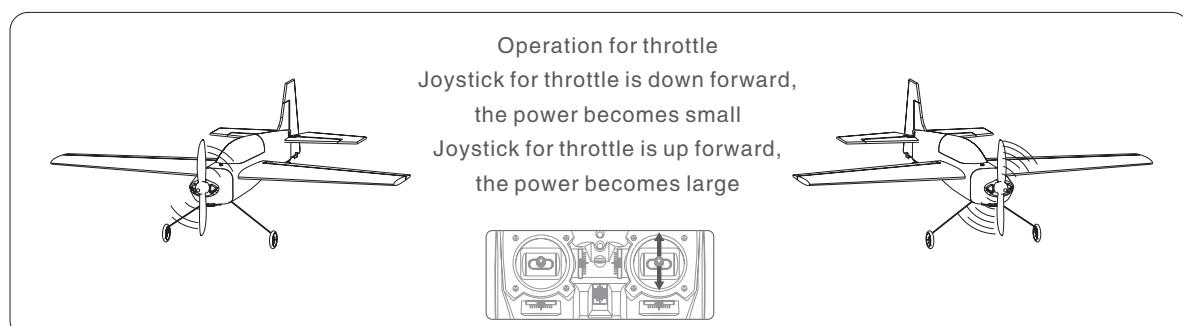
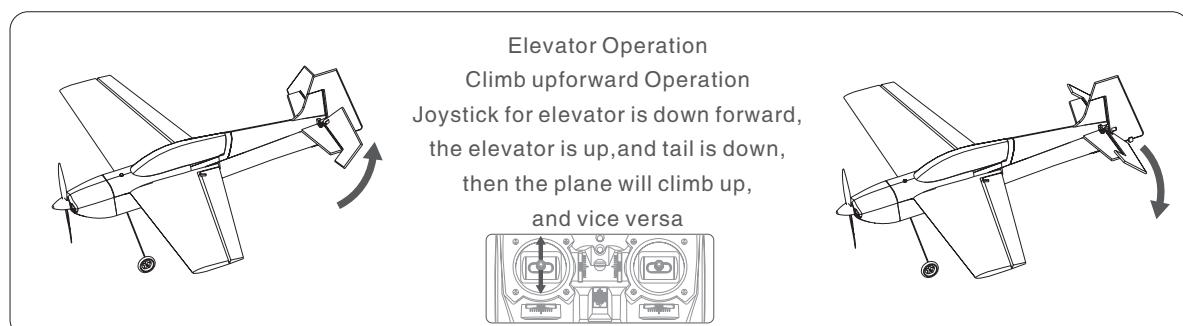
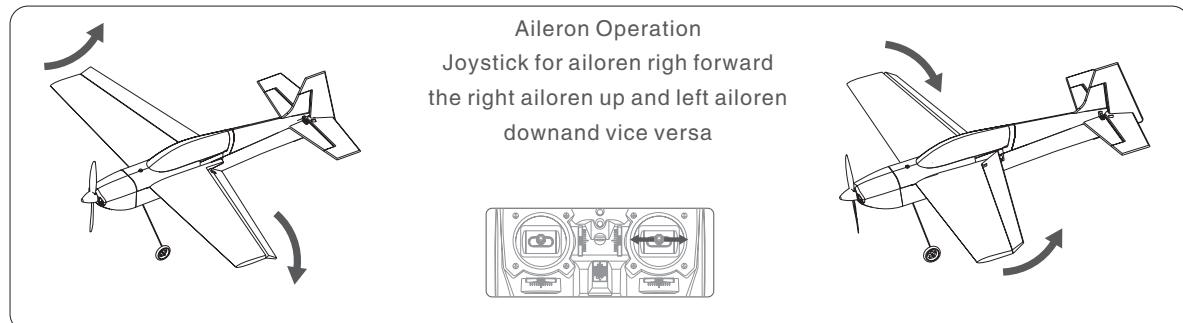
Before adjusting, please be familiar with transmitter operation and servo(Below description in case of all neutral)



Operation for transmitter and servo

Operation for aeroplane (Mode 1)

Before adjusting, please be familiar with transmitter operation and servo(Below description in case of all neutral)

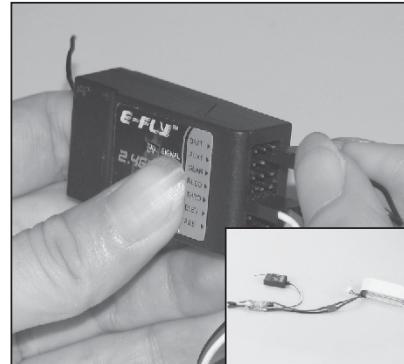


The process of frequency bind for 2.4GHz R/C system (Receiver with one antenna)

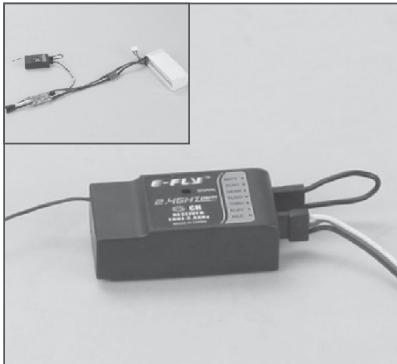
★ If oil aircraft, please connect the power of receiver to other channel at first, and then plug it to BATT after frequency bind.



1. Press the frequency bind button, then turn on the transmitter's power.



2. Connect the ESC to receiver for electricity supply, which results to the indicator light glitter. And then plug the short-circuit plug into the Receiver in the position of BATT.



3. If the frequency bind is successful, the indicator light will extinguish.



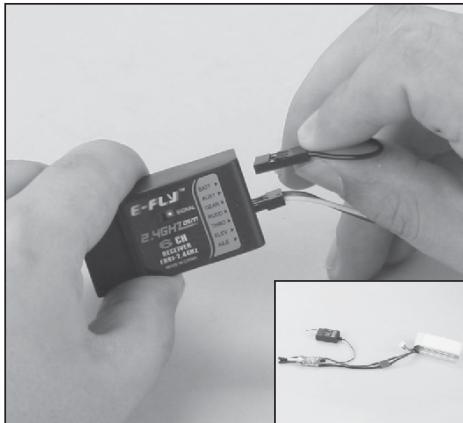
4. Press frequency bind button again to get it rebound. The transmitter get into working mode.



5. The indicator light turns bright again seconds after pulling out the short-circuit plug, which means that the radio system can work normally now.

The process of frequency bind for 2.4GHz R/C system (Receiver with two antenna)

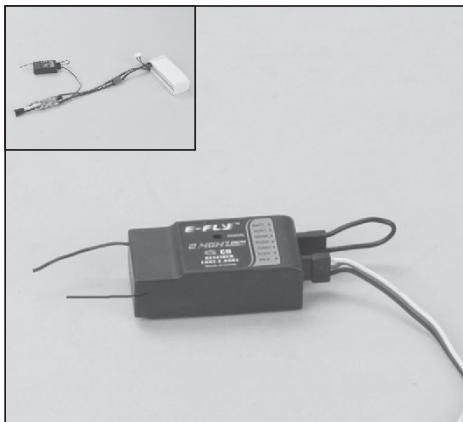
★ If oil aircraft, please connect the power of receiver to other channel at first, and then plug it to BATT after frequency bind.



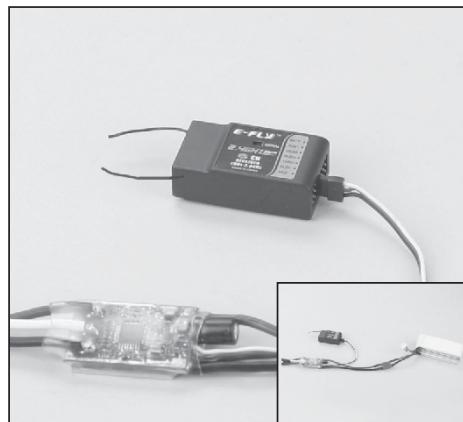
1. Plug the short-circuit plug into the Receiver in the position of BATT. Connect the ESC to receiver for electricity supply, which results to the indicator light glitter.



2. Press the switch for frequency bind, then turn on the transmitter's power.



3. If the frequency bind is successful, the indicator light will light.



4. Pulling out the short-circuit plug, the indicator light turns flash. The receiver gets into working mode.



5. Press frequency bind switch again to get it rebound. The transmitter gets into working mode. the indicator light will light, which means that the radio system can work normally now.

Adjust order

Open the battery bay, and range the 8 cells AAA battery into the battery bay, then close the bay.

1. enter into the Chv menu, press the Left or right button, check whether the channels are in the right positions, at this time channel 1, 2 and 4 should be 0% ,the minimum value of channel 3 should be -100%, and the maximum should be 100%. If curve setting values are changed, it should be the set value. If the values are different Please adjust the channels mid points. (Strongly recommended for the first use)
2. Check every servo's movement and make sure every movement of control arms and servo arms is correct. If not, please enter into the Rev menu for reverse.
3. Check the centering position of aileron, elevator and rudder
Open the transmitter and connect the power to motor. Make sure every servo is in centering position
And check servo arm has a 90 angel with servo. Adjust the length of control rod, and check all control Arm is in neutral position.
4. Adjustment for range
Check the movement range and the centering position of each servo. If the traveling range is not accepted, it can be adjusted by the position of clevis on the servo arm.
5. Check the connection of ESC and Motor
Check the joystick for throttle movement is in accordance with motor. If not, it is can be adjusted by reverse switch.
6. Check the tiny mix for every control horn.

Charge method of battery

Charge method:

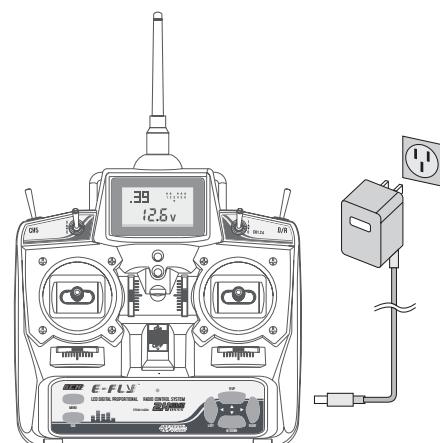
1. Turn off the transmitter, connect the transmitter with the charger in the kits

(Note: Please make sure the transmitter be off before charging, It will not charged unless it is off)

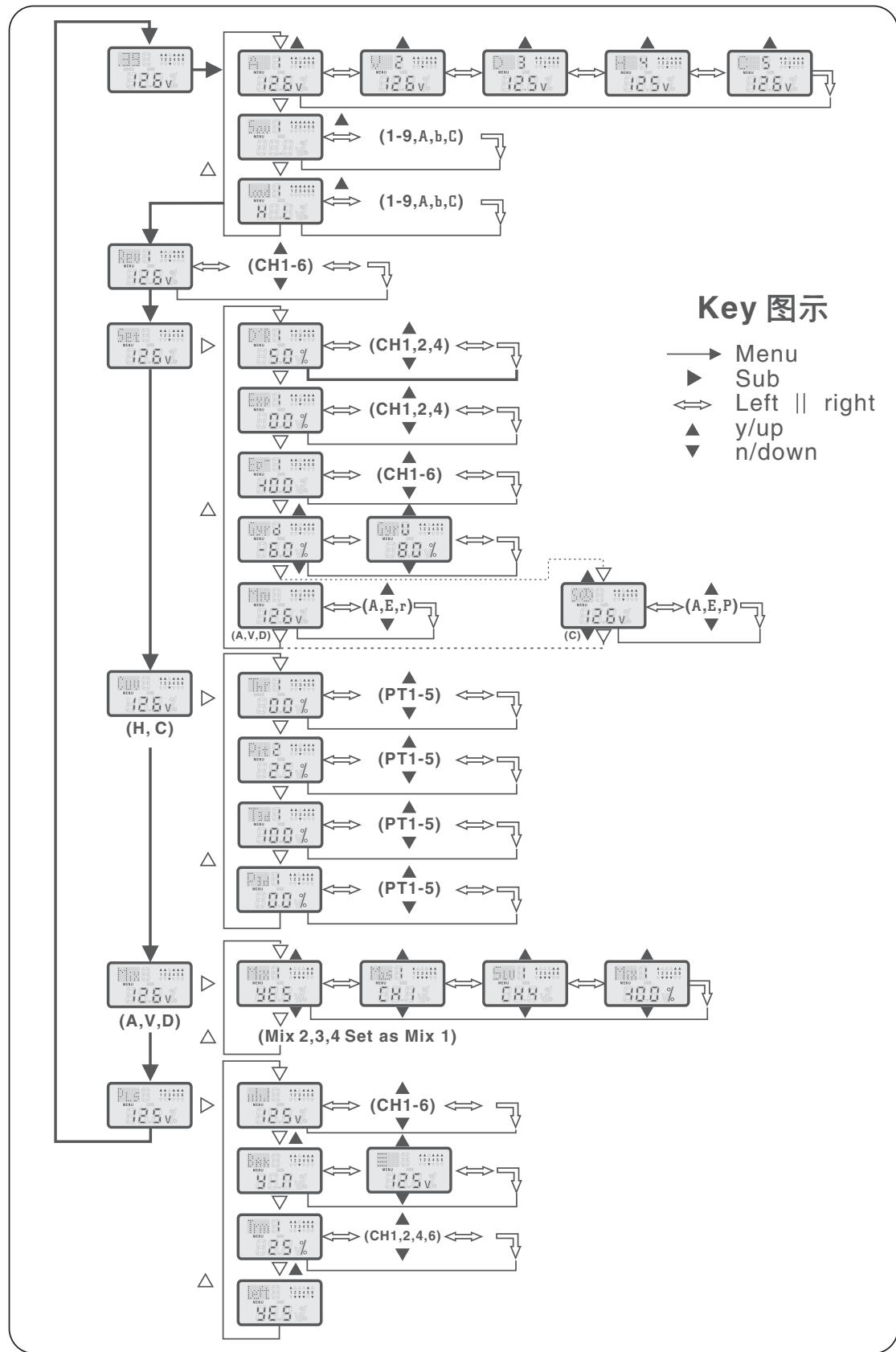
2. Check it the input voltage is same as the main voltage,
the plug the charger into the socket.
3. The charging time should be no more than 5 hours,
it should be recharged if it has been unused in long time.

Remark:

1. Only the 9.6V Ni-He rechargeable battery can be charged, the dry cell should not be charged.
2. Order to prolong the life of battery, please do not charge more than the required time.



Flow list



FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference

to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of FCC RF Rules. Operation is subject to the following two conditions:

- 1) This device may not cause interference and
- 2) This device must accept any interference, including interference that may cause undesired operation of the device.

Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

Declaration of Conformity

Hereby, ShenZhen ART-TECH R/C Hobby Co., Ltd., declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.



深圳市艾特航模有限公司
SHENZHEN ART-TECH R/C HOBBY CO., LTD