

# FrSky V8 2.4GHz Radio Control System

## Instruction Manual for V8 series

Thank you for purchasing the FrSky 2.4GHz RF radio control system. In order to fully enjoy benefits of this system, please, carefully read the instruction manual and set up the devices as described below.

### 1. Brief Introduction

FrSky V8 2.4GHz radio control system is a new generation of radio control product developed by FrSky RC Technology Co., Ltd. that incorporates the most advanced 2.4GHz digital communication technology. Thanks to the high precision, minimum latency and interference resistant, the system makes the simultaneous use of multiple devices without the risk of interference. Combining our software with FHSS we have developed a system presenting the highest performance available.

We are glad to introduce the FrSky 2.4GHz Radio System.

**ACCST** (Advanced Continuous Channel Shifting Technology) is our advanced technology. The **ACCST** 2.4GHz system shifts the frequency hundreds of times per second. It means there are no signal conflicts and interruptions.

### 2. Main features

- ◆ **Advanced Continuous Channel Shifting Technology ( ACCST SYSTEM)**
- ◆ **Universal transmitter and receiver for all 4ch-8ch controllers.**
- ◆ **Quick and precise channels.**
- ◆ **Error-free Digital link.**
- ◆ **Low power consumption.**
- ◆ **Supports the multiple controls by a single controller.**
- ◆ **Extended operating range (1.2km).**

### 3. FrSky V8 2.4GHz radio control system

If you are into FUTABA OR JR and want to update your radio system to the 2.4GHz technology, the FrSky V8 system is the right choice.

#### 3.1 FrSky V8 2.4GHz radio control system consists of:

- 1x transmitter module (Model: V8FT or V8JT)
- 1x receiver module (Model: V8FR)
- 1x transmitter antenna (Model: V8FTA or V8JTA)

#### 3.2 Transmitter Module is compatible with the following transmitters:

**Futaba module:** Futaba: 3PK, 3PM, 7U, 8U, 8J, 9C, 9Z, 10C and FN series.

Hitec: Optic 6, Eclipse 7.

WFLY: WFT09, WFT 08.

**JR module:**

JR:347/388/783/U8/PCM10/PCM10S/PCM10SX/ PCM10IIS/8103/J9303/MX-22/MX-24S/PX/9XII

### **3.3 Receiver specifications:**

Operating Voltage Range: 4.8V-6V

Operating Current: 30mA

Specified Range: 1.2km

Resolution: 10bit

Latency: 22ms

Number of Channels: 8CH

Dimensions: 60x37x21 mm

### **3.4 Transmitter module specifications:**

Operating Voltage Range: 6.0V-13.0V

Operating Current: 50mA

Output Power: 60mW

Resolution: 10bit

Dimensions: 63.9X48.5X36.5mm (V8JT); 58.5x37.5x22mm (V8FT)

#### **Important!**

The effective range of control refers to the distance between the transmitter and the receiver clear of obstruction. All data was tested and verified by FrSky.

However this is not guaranteed due to many factors such as the flying environment and the weather, which can greatly affect the effective range of control.

**It is extremely important to range check your models prior to each flying session!**

## **4. Setup and Operation process**

### **4.1 Installation of the transmitting module:**

- a) Remove the original transmitting module.
- b) Put the FrSky 2.4GHz transmitter module into the module port of your RC transmitter and screw on the transmitting antenna.
- c) Turn the transmitter power on and check the RF power indicators on the module and transmitter are working.

### **4.2 Installation of receivers:**

The V8FR receiver incorporates two separate antennas into its design which enables it to receive the radio frequency transmission at two different locations. The tip of the antenna cable is the receiving portion (the thinner part). If possible, please make sure that the two antennas are placed at 90 degrees to each other.

Please note:

This is not a critical figure, however, the most important thing is to keep the antennas away from each other as much as possible. If possible place the antennas away from metal, wires or carbon parts of the airframe to avoid signal lost. Tape or glue them in place so they cannot move around.

As the wave length of 2.4GHz is shorter than older RC systems, its ability to go around solid obstacles is weaker than those with frequencies that are below the 100MHz. Therefore, when you locate the antennas you must avoid objects as much as practical with high conductivity, such as; metal parts, servos, ESC's, battery packs, wires, and carbon fiber structures. If possible put the tip of the antennas outside of the fuselage for maximum reception.

### 4.3 Receiver and Transmitter Setup Instructions

Follow the steps below to properly set up your system.

- a) Turn your FUTABA OR JR transmitter on and switch it to PPM mode, power off the TX.
- b) Turn the transmitter on while holding the programming button. Release it a few seconds later. The RED LED on the transmitter module will flash indicating the transmitter is ready to bind the receivers.
- c) Connect the battery to the receiver while holding the receiver's button. The LED on the receiver will flash indicating the binding process is complete. Turn off the receiver.
- d) Turn off the transmitter finish the binding procedure.
- e) Turn on the transmitter. Connect the battery to the receiver when ORANGE LED on TX is on. The LED on the receiver will indicate the receiver is receiving commands from the transmitter. In a few seconds system is ready to work (communication is established).

After the steps above are completed, both the transmitter and receiver are ready to be used. Binding is required only to set up a new link (like new or additional receiver or transmitter module). Otherwise, just go to step **e**.

To control multi-receivers, every receiver should be programmed with the transmitter in binding state (step **b**). After all receivers are binded, turn off the transmitter.

### 4.4 Range check:

For safe operation, it is necessary to perform pre-flight range check.

Caution must be paid when flying the unit in the neighborhood of metal fences, concrete buildings, or rows of trees. If doing so, you may experience unexpected interferences.

Perform a range check as follows (Note: this is done with the receiver installed in the model):

- a) Place the model at least two feet (60cm) above non-metal contaminated ground; for example a wooden bench.
- b) Place the receiver's antenna horizontally. Don't let the antenna touch the ground.
- c) Place the antenna of the transmitter in a vertical position.
- d) Turn on the transmitter and receiver, then press and hold the "F/S Range" button of the transmitter for 4 second, the RED LED of the transmitter module will change into GREEN, this moment, the power of the transmitter module will be reduced to ab. 1/100-th of the nominal value, and the effective distance will be shortened to ab. 1/10-th of the nominal value, thus effective distance will be shortened to just above 60 meter.
- e) Walk away from the model while simultaneously operating the controls on the transmitter. Have an assistant stand to confirm that all controls are completely and correctly operational. You should be able to walk ab. 60m from the receiver without losing control.
- f) Press the "F/S Range" button again, the range check will be finished.

#### **4.5 Safety range indicator**

When the model controlled by V8 2.4GHz radio control system is close to the maximum distance of control, the response of the model will slow down. It is the safety feature designed by FrSky. It means, the user should fly the model closer to the transmitter as soon, as the reactions are getting slower.

#### **4.6 Signal loss indicator**

In some special circumstances, such as a strong interference, the signal can be lost.

When signal lost in a short period, the receiver continues to try to search for the transmitter, at the same time, keeps the last command from transmitter, until a new command is received.

#### **Failsafe:**

Our receivers support all the failsafe function for every channel. Just do it as bellow:

After the receiver has been bind, press briefly the "F/S Range" button of the receiver, the GREEN LED of the receiver will flash twice, the failsafe is set up successfully.

If you do not need the failsafe function any more, just re-bind the receiver.

**Attention:** Controlling distance is affected by the environment too. Please test it in an open field away from any obstacles. The controlling distance in the air is greater than that on the ground. Our controlling range is based on a conservative ground test.

We hope you enjoy our new 2.4GHz products. They have been designed and produced using the highest quality control measures available. If you have any questions please do not hesitate to contact us.