

# RC-6S

Thank you for purchasing the RC-6S receiver - a small and light receiver with high-performance using the latest in receiver technology.



## Specifications

Size	33.2x18.3x8.6mm(1.3" x0.7" x0.3" )
Weight	7.3g
Range	>700m
Crystal size	UM-5
Sensitivity	better than 2.0 $\mu$ V
Number of channels	6
Modulate	FM/PPM
Filtering	DSP
Operating Voltage	4.8V~6.0VDC
Compatible	Futaba\JR\Hitec\Multiplex\Sanwas

## Features

### **Sensitivity**

With traditional technology, a micro receiver has lower sensitivity (control distance) than a full-sized receiver. Our receiver uses a state-of-the art receiver chip, careful filtration, and DSP technology to achieve full-range while remaining small and light weight. With this combination, the RC-6S receiver has capabilities which could only be obtained by old technology receivers that weigh several dozen grams. Because of its light weight, the RC-6S can be used in many applications including indoor electric aircraft, 3D fixed-wing airplanes, and outdoor glow planes of several kilograms. With a sensitivity of better than 2  $\mu$  V, the receiver range can reach as far as 700m.

\*This range is based on our test conditions. The actual result of range check will be different depending on your local environment.

### **Selectivity and Dual Ceramic IF filter**

The RC-6S uses dual tuned RF circuitry with dual ceramic IF filters. Compared to a single ceramic filter, it has a better steep flank which reduces group delay effectively and ensures that the receiver has ultra narrow selectivity to more effectively reject adjacent channel interference. This is especially important when flying indoor airplanes

where many transmitters may be operating near each other.

### **DSP**

With traditional technology, the sensitivity of a receiver is limited and the signals are always mixed with noise during decoding. Even with digital signal processing (DSP), if the filtering is too aggressive, the control outputs can be significantly different from the pilot's control inputs. This is especially true with 3D airplanes and helicopters where the pilot makes fast control movements. If the RF section of the receiver is too susceptible to noise the control signals will wind up being excessively garbled. Because the FD receiver chip has high sensitivity, the microprocessors almost always receive a valid signal. The DSP software can pass on the signals faithfully unless it is interrupted by a severe loss of signal. The RC-6S receiver is a 6-channel receiver. It auto-detects the shift type (positive or negative) and is compatible with most brand of transmitters. The RC-6S uses UM-5 or UM-1 small single conversion receiver crystals.

## **Installing the RC-6S Receiver**

1. Plug in crystal, all the servos, and ESC. Pay attention to the polarity of the wire. Please consult the labels on the case for the channel number and polarity.

**Caution:** If the polarity of the plug is wrong, it will damage the servos/ESC.

2. If not using an ESC with a built-in battery-eliminator circuit (BEC), plug a 4.8V battery/switch harness into any unused channel. If you are using all the channels for servos, use a Y harness to connect the battery and servo to one channel.

3. Wrap receiver in foam rubber to isolate it from vibration.

4. Secure the receiver with rubber band or hook-and-loop

5. Unwind the antenna fully. Do not coil or cut the antenna.

## **Range checking**

### **Quick range checking**

Fully collapse the transmitter, antenna and move the transmitter sticks continuously. Ask someone to watch the servos to see whether the receiver has lost the signal. If the receiver does not lose the signal until you are at least 90m (270feet) away from it, it passes the quick range check.

### **Rigorous range checking**

Your local environment can affect the range of the receiver, so quick range checking may not reflect the actual range correctly. If you suspect range problems, perform a rigorous range check.

1. Place the receiver on a non-metallic surface (for example, a wooden bench) which is at least 2 feet (60cm) off the ground.

2. Fully extend the antenna of the receiver and fix it vertically. Don't let it touch the ground.

3. Connect one servo to channel 1.

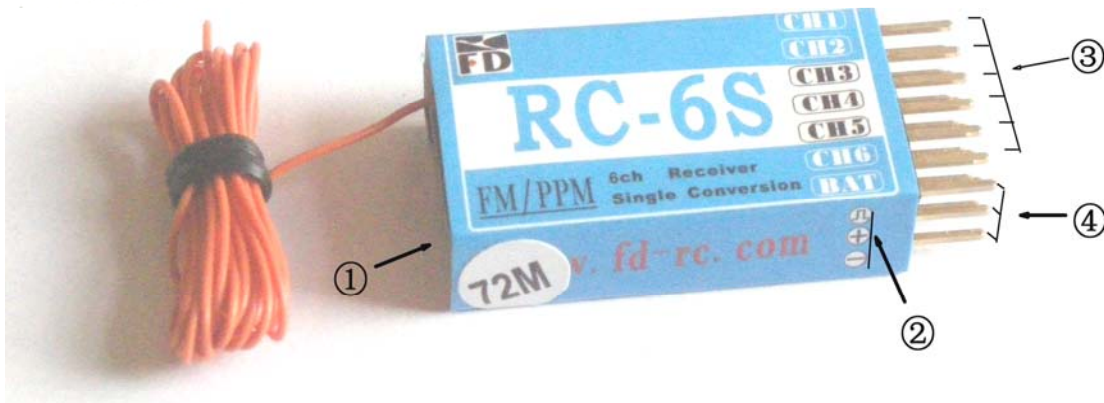
4. Fully extend the antenna of the transmitter.

5. Turn on the transmitter and then turn on the receiver.

6. Walk away from the receiver while moving the transmitter sticks continuously. Ask someone to watch the servo and note any loss of control.

**Caution:** The range depends on the power of the transmitter, so use a freshly charged transmitter battery. Range checking must be done in an open field to avoid environmental interference. Note that the range in the air will be longer than on the ground.

*If you have any questions please do not hesitate to visit our website: [www.fid-rc.com](http://www.fid-rc.com) and contact us.*



- ① Connector for crystal, notice that the crystal is micro-crystal (UM-5)
- ② This mark from up to down is signal, power supply(positive), ground
- ③ From CH1 to CH6 has 6 channels ,and the CH3 used for MC
- ④ BAT channel as extra power channel, it is convenient for receiver to supply power alone, if you use ESC to supply power, and you needn't to use this channel