

# Receiver RD620

Thank you for purchasing the latest product of technology - Receiver RD620, a small and light receiver with great functions!

## Features

### Sensitivity

With the traditional technology, a micro receiver cannot avoid losing the sensitivity (control distance). We decide to make the smallest and lightest receiver with the greatest receiver chip after a careful filtration. Based on this, Receiver RD620 can reach the capability which can only be obtained by the old technology receiver of several dozens grams. Therefore, receiver RD620 can be used in various ways, including indoor electric aircraft, 3D fix-wing airplane, 3D helicopter, and outdoor glow plane of several kilograms. The sensitivity of better than  $2\mu\text{V}$  means that the receive range can reach as far as 1.2km.\*

*\*The range checking should be taken under the condition which is admitted by CORONA. The result of the range checking will be different according to different checking environments of different users.*

### Selectivity and Dual ceramic IF filter

Aside from using the traditional dual turned RF circuitry, receiver RD620 also uses dual ceramic IF filter. Compared with using a single ceramic filter, it will get a better steep flank. By this, it can reduce group delay effectively and make sure that the receiver has an ultra narrow selectivity.

By using two ceramic IF filters, receiver RD620 not only has a great sensitivity, but also has an ultra narrow selectivity. Narrow the selectivity can reject the adjacent channel interference effectively. When using indoor airplanes, we must choose a receiver with an ultra narrow selectivity. Then, the adjacent channel interference caused by many transmitters that are working around can be rejected.

### DSP

CORONA receiver will weighing the relationship of the sensitivity of the hardware and the filtering of the software. By using the traditional technology, the sensitivity of a receiver is limited. Therefore, the signals are always mixed with noise when decoding it. On this occasion, we have digital signal processing (DSP) within the decoder of receiver RD620 to filter the noise ("glitch"). However, if we give too many options to the software, the shape of the output

wave will err from the instructions. But it is inapplicable on fast occasion, such as 3D fix-wing airplane, 3D helicopter, etc. The instruction that the user gives to the aircraft updates rapidly. If the receiver can be interrupted by the noise easily, it will cause the software to fill up the signal bug. Therefore, the receiver cannot execute the instruction faithfully.

Because the receive chip of receiver CORONA has a great power, it has sufficient sensitivity. This means that the microprocessor can always receive a valid signal. Then the software can pass on the signals faithfully unless it is interrupted fiercely.

Receiver RD620 is a 6-channels receiver. It auto-detects the positive or negative shift, and is available with most transmitter, including Futaba, JR, Hitec, SANWA, GWS, MULTIPLEX. Decoded by microprocessor, the resolution reaches 1024 in order to adapt to the digital servo and accurate servo. Also, RD620 has programmable fail-safe arithmetic.

RD620 uses the standard crystal of 50U Dual conversion receiver.

## Specifications

Size	1.4"x0.7"x0.3"(35x19.5x7.8mm)
Weight	0.27oz/7.7g(with shrink wrap)
Sensitivity	better than $2.0\mu\text{V}$
Selectivity	$\pm 8\text{kHz}$ at 65dB down
Number of channels	1-6
Filtering	Dual turned RF circuitry
Filtering	Dual 4 element ceramic filter
Filtering	DSP filtering in MCU with mild algorithm
Shift polarity	positive or negative (auto-detect)
Modulate	FM/PPM(pulse position modulation)
Case	Shrink wrap
Operating Voltage	4.8V~6.0VDC
Operating Current	11mA

## Installing the RD620 Receiver

Plug in crystal.

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

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

2. Plug battery/switch harness into any unused channel. If channel is not enough, you can use Y harness to connect battery and servo to one channel.
3. Wrap receiver in foam rubber to isolate it from vibration.

4. Secure the receiver in aircraft with rubber band or Velcro.
5. Unwind the antenna. Please don not snip the antenna.

### Range checking

#### Quick range checking

Fully collapse the antenna of the transmitter, and move the transmitter sticks ceaselessly. You can ask someone to watch the receiver whether it has lost the control. If the aircraft loses the signal when you are 90m (270 feet) away from it, it passes the quick range checking.

#### Rigorous range checking

Affected by the environment greatly, the quick range checking cannot reflect the actual range correctly. If you suspect range problems, please take the rigorous range checking.

1. Place the receiver on a non-metallic surface (for example, a wooden pew) 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 ceaselessly. Ask someone watch the servo and note any loss of control.

**Caution: The range is susceptible to the power of the transmitter, so please use a new battery. The range will be affect by the environment, so the range checking must be taken in the open field. The range tested in the air will lager than that on the ground, so we suggest you guarantee the range according to the range checking on the ground. Sometimes, the lack of range is caused by the transmitter or the frequency tolerance. Please use another transmitter or another set of crystal to ensure where the problem is.**

### Fail-safe

The fail-safe of RD620 is holding the last valid position.

### Sketch map

