

CORONA RS410 Receiver

Thank you for purchasing the RS410 receiver - a small and light receiver with high-performance using the latest in receiver technology.

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 RS410 receiver has capabilities which could only be obtained by old technology receivers that weigh several dozen grams. Because of its light weight, the RS410 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 $2\mu\text{V}$, the receiver range can reach as far as 1.2km.*

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

Selectivity and Dual Ceramic IF filter

The RS410 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 than 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 CORONA receiver chip has high sensitivity, the microprocessor 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 RS410 receiver is a 4-channel receiver. It auto-detects the shift type (positive or negative) and is compatible with most brand of transmitters. The RS410 uses UM-5 or UM-1 small single conversion receiver crystals.

Specifications

Size	1.1"x0.6"x0.3"(28x15x7.6mm)
Weight	0.17oz/4.7g(with shrink wrap)
Sensitivity	better than $2.0\mu\text{V}$
Selectivity	$\pm 8\text{kHz}$ at 65dB down
Number of channels	1-4
Filtering	Dual turned RF circuitry
Filtering	Dual 4 pole ceramic filter
Filtering	DSP filtering with mild algorithm
Modulate	FM/PPM

Shift polarity	Positive or Negative (auto-detect)
Case	Shrink wrap
Operating Voltage	4.8V~6.0VDC
Operating Current	11mA

Installing the RS410 Receiver

1. Plug in crystal.
2. Plug in all the servos/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.

3. 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.
4. Wrap receiver in foam rubber to isolate it from vibration.
5. Secure the receiver in aircraft with a rubber band or hook-and-loop fastener.
6. 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 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.

Connection Diagram

