

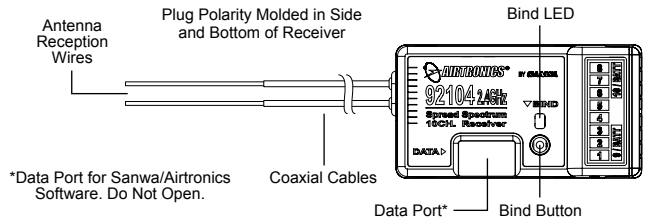
92104 2.4GHz FHSS-3 SD-10G 10-Channel Receiver Operating Instructions



The 92104 2.4GHz receiver is a high-response 10-channel FHSS-3 receiver for use with your Airtronics SD-10G transmitter. Use this receiver with your SD-10G transmitter to take advantage of the Safety Link and Receiver Battery Voltage Fail Safe functions, and the highest receiver response rate possible.

Due to differences in the implementation of 2.4GHz technology among different manufacturers, this receiver is compatible with Airtronics 2.4GHz FHSS-3 aircraft transmitters only.

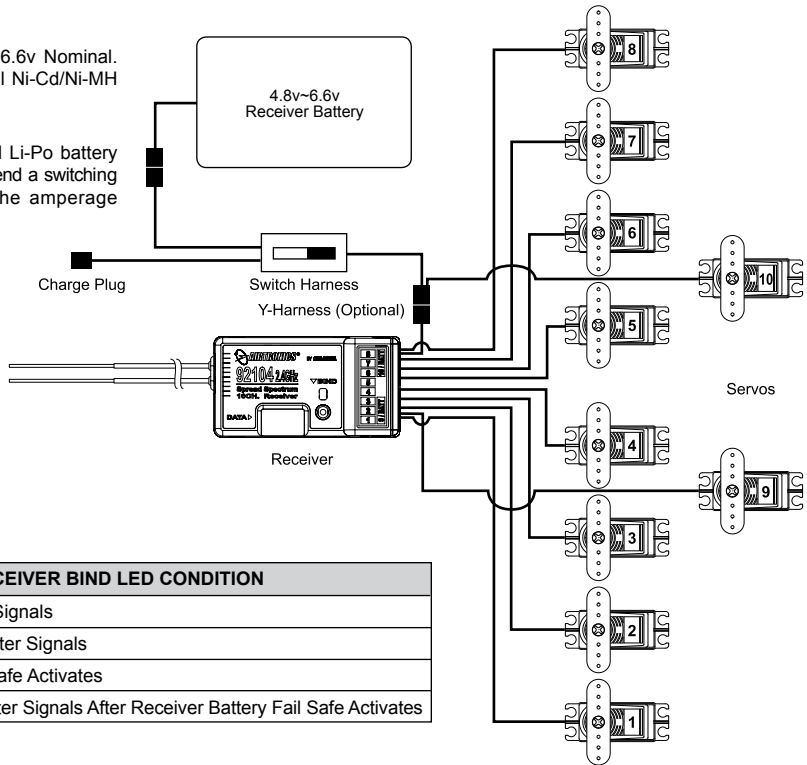
- Model: 92104
- Frequency/Modulation: 2.4GHz/FHSS-3
- Input Voltage: 4.8v~6.6v Nominal
- Weight: .53oz (15gr) with Case and Antenna Wires
- Dimensions: 1.95 x 1.05 x 0.60in (49.5 x 26.7 x 15mm)
- Fail Safe Support: Yes (All Channels Programmable)
- Receiver Battery Voltage Fail Safe: Yes (3.8v~4.6v Adjustable)



! This receiver operates on the 2.4GHz frequency band. The 2.4GHz connection is determined by the transmitter and receiver pair. Unlike ordinary crystal-based systems, your model can be used without frequency control. This receiver uses FHSS-3 modulation which transmits data across the entire frequency spectrum by transmitting data on different channels at an extremely fast interval.

The Input Voltage of the 92104 receiver is 4.8v~6.6v Nominal. This receiver is okay for use with a 4 cell to 5 cell Ni-Cd/Ni-MH battery or a 2 cell Li-Fe/A123 battery.

! This receiver is not compatible with a 2 cell Li-Po battery without using a voltage regulator. We recommend a switching type regulator and it must be able to handle the amperage demands of the servos used in your model.



Receiver Bind LED Conditions:

RECEIVER BIND LED	RECEIVER BIND LED CONDITION
Solid Blue	Receiving Transmitter Signals
Extinguished	Not Receiving Transmitter Signals
Red and Blue Flashing	Receiver Battery Fail Safe Activates
Solid Red	Not Receiving Transmitter Signals After Receiver Battery Fail Safe Activates

2.4GHZ FREQUENCY BAND PRECAUTIONS

- The 2.4GHz frequency band may be used by other devices, or other devices in the immediate area may cause interference on the same frequency band. Always before use, conduct a bench test to ensure that the servos operate properly. Also, conduct a range test at the area of operation to ensure that the radio control system has complete control of the model at the farthest reaches of the operational area.
- The response speed of the receiver can be affected if used where multiple 2.4GHz radio control systems are being used, therefore, carefully check the area before use. Also, if response seems slow during use, discontinue use as quickly as possible.
- If the 2.4GHz frequency band is saturated (too many radio controllers on at once), as a safety precaution, the radio control system may not bind. This ensures that your radio control system does not get hit by interference. Once the frequencies have been cleared, or the saturation level has dropped, your radio control system should be able to bind without any problems.
- Observe any applicable laws and regulations in place at your flying site when using the 2.4GHz radio control system.
- Unlike frequency bands used with earlier radio control systems, reception with this 2.4GHz radio control system can be adversely affected by large obstructions and concrete or steel structures between your model and the transmitter. Also, wire mesh and similar barriers can adversely affect operation. Keep this mind to ensure the safety of your model.

GENERAL SAFETY PRECAUTIONS

- Be certain to read these Operating Instructions in their entirety.
- 'Safety First' for yourself, for others, and for your equipment.
- Observe all the rules of the flying site or anywhere you operate your radio control equipment.
- If at any time during the operation of your model should you feel or observe erratic operation or abnormality, end your operation as quickly and safely as possible. DO NOT operate your model again until you are certain the problem has been corrected.
- Your model can cause serious damage or injury, so please use caution and courtesy at all times.
- If you have little to no experience operating models, we strongly recommend you seek the assistance of experienced modelers or your local hobby shop for guidance.

TRANSMITTER AND RECEIVER BINDING

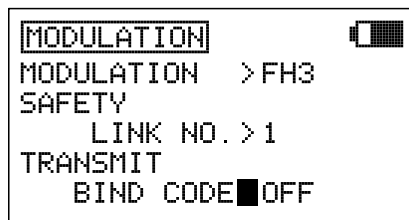
It is necessary to pair the transmitter and receiver to prevent interference from radio controllers operated by other users. This operation is referred to as 'binding'. Once the binding process is complete, the setting is remembered even when the transmitter and receiver are turned OFF, therefore, this procedure usually only needs to be done once.

A Safety Link function is featured which can be used to program a unique bind code to each receiver/model pair, preventing the transmitter from controlling a model that it's not currently programmed for. For more information, see page 34 of your SD-10G Operating Manual.

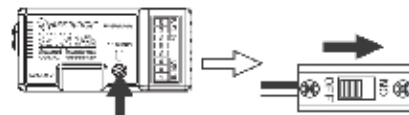
- 1) Connect the switch harness, servos, and the receiver battery to your receiver, using the diagram on the previous page, then turn the transmitter ON.

⚠ Before proceeding with the Binding procedure, we suggest selecting the desired model number (using the Model Select menu) that you would like to bind this receiver to.

- 2) From within the MODULATION menu, press the Navigation Pad $\blacktriangle \blacktriangledown$ to highlight TRANSMIT BIND CODE.

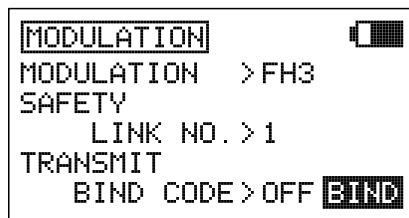


- 3) While holding down the Bind Button on the receiver, turn the receiver ON. The Bind LED on the receiver will flash slowly. After ~2 seconds release the Bind Button. The Bind LED on the receiver will continue to flash slowly.



⚠ Use the tip of a pencil or a 1.5mm hex wrench to press the Bind Button on the receiver.

- 4) Quickly press the YES/+ key. The green RF Output Indicator will flash, the TRANSMIT BIND CODE selection will change to ON, and BINDING will flash. The Bind LED on the receiver will flash rapidly for ~3 seconds, then go out.



- 5) After the Bind LED on the receiver goes out, press the END key. The Bind LED on the receiver, as well as the green RF Output Indicator, will turn solid and the LCD will revert to the System menu indicating the binding process is complete. Press the END key two times to return to the Top menu.

⚠ When the binding procedure is successful, the Bind LED on the receiver will stay solid blue when both the transmitter and receiver are turned ON. If the Bind LED on the receiver is flashing rapidly or not ON at all, the transmitter and receiver are not paired. In this case, turn both the transmitter and receiver OFF, then repeat the binding procedure.

MOUNTING THE RECEIVER

When mounting the receiver into your aircraft, it's important to mount the receiver exactly as described. In addition, the receiver should be wrapped in foam rubber to protect it from vibration. Failure to mount the receiver antenna wires as described can result in poor reception, or in some cases, complete loss of reception.

⚠ We recommend that you bind the transmitter and receiver prior to mounting the receiver into your aircraft, otherwise, it may be difficult or impossible to access the Bind Button on the receiver.

The receiver should be mounted securely in your aircraft and the receiver antenna wires installed per the diagram on the next page. The two receiver antenna wires should be mounted to a wood or plastic non-conductive part of your aircraft and angled so that the reception wires are positioned 90° apart.

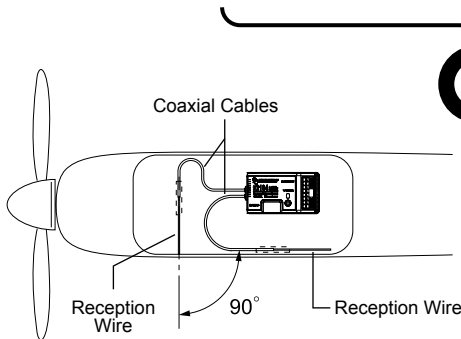
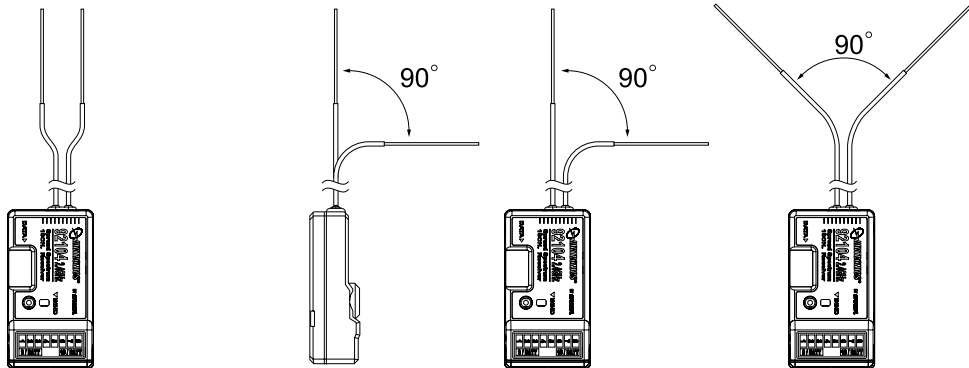
- The receiver antenna wires consists of two coaxial cables and two reception wires (the thin tip at the end of the coaxial cables). When you mount the receiver antenna wires, do not bend the reception wires. Reception performance decreases if the reception wires are bent.
- The receiver antenna wires are delicate, therefore, handle with care. Do not pull on the receiver antenna wires with force. Do not cut or extend the receiver antenna wires.

MOUNTING THE RECEIVER, CONTINUED...

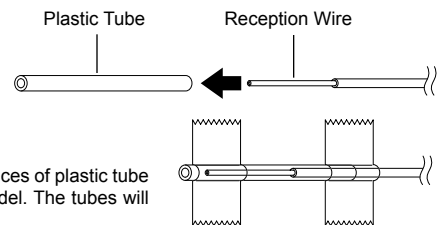
- The coaxial cables (the thicker portion of the receiver antenna wires) can be bent into gentle curves, however, do not bend the coaxial cables acutely, or repeatedly bend them, or the antenna cores can be damaged.
- When installed in an electric-powered model, keep the receiver antenna wires as far away from the motor, battery, and electronic speed control (ESC) as possible.
- There is a danger of runaway operation if connectors shake loose during use. Make sure that the receiver, servo(s), and switch harness connectors are securely fitted.
- The receiver is susceptible to vibration and moisture. Take appropriate measures to protect against vibration and moisture. The receiver should be wrapped in foam and the foam should be secured around the receiver to hold it in place. The foam should not be secured too tightly or the vibration dampening quality will be reduced. Failure to take appropriate measures could result in damage to the receiver.
- When installing the receiver, the antenna reception wires (the thin tip at the end of the coaxial cables) should not come into contact with any carbon or metal components (conductive components). Aircraft fuselages and helicopter frames may contain conductive components. If mounting the receiver surrounded by conductive materials (for example, a carbon fiber fuselage), mount the receiver so that the antenna reception wires can be extended outside of the model. Reception can be blocked if the antenna reception wires are shielded inside a carbon fiber fuselage.

WARNING It is extremely important that the receiver antenna wires be mounted as shown in the diagram below. This will ensure that your aircraft receives control signals no matter what its posture, attitude, or heading.

! The coaxial cables can be mounted parallel to each other, but under no circumstances should the antenna reception wires be mounted parallel to each other.



! If mounting inside a carbon fiber fuselage, the antenna reception wires must be run outside of the model as described above.



Tape can be used to secure the antenna reception wires to your model. Alternatively, cut two short pieces of plastic tube and slide one antenna reception wire into each piece of tube, then tape or glue the tube to your model. The tubes will protect the antenna reception wires from damage.

FAIL SAFE PROGRAMMING

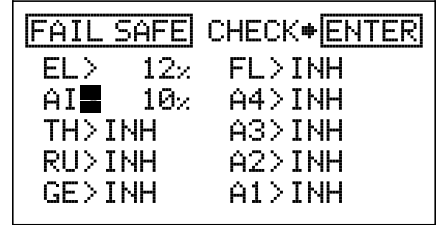
The Fail Safe function automatically sets the servos to a predetermined position in the event that the signal between the transmitter and the receiver is interrupted, whether due to signal degradation or to a low transmitter battery. The Fail Safe function can be set to Hold the servos in the last position they were in when the signal was lost, or each of the servos can be set to move to a custom position when the signal is lost. For example, for a model aircraft, the Fail Safe can be set so that the throttle servo returns to low, the elevator moves slightly up, and the ailerons move slightly right or left, to result in a shallow downward decent.

! For more detailed information on Fail Safe programming options, and programming the Receiver Battery Voltage Fail Safe function, see pages 37 and 38 of your SD-10G Operating Manual.

Changing Fail Safe Settings

- 1) Turn both the transmitter and the receiver ON. Press the Navigation Pad $\blacktriangle \blacktriangledown$ to highlight FAIL SAFE, then press the ENTER key to display the FAIL SAFE menu. The cursor will default to EL>INH.

- 2) With the cursor next to EL>INH move the elevator control stick in the direction and the amount you want the elevator to move to when the Fail Safe activates.
- 3) While holding the elevator control stick in position, press the YES/+ key to set the elevator Fail Safe position. A percentage value will be displayed.
- 4) Press the Navigation Pad \blacktriangledown to move the cursor to AI>INH, then follow the same procedures to set the pre-programmed aileron Fail Safe position.
- 5) Repeat the same procedures to set the custom Fail Safe positions for the desired remaining channels. After setting the Fail Safe positions, check the Fail Safe settings by following the procedures in the Fail Safe Check section below.



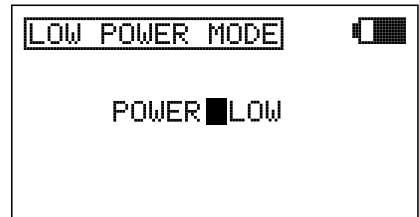
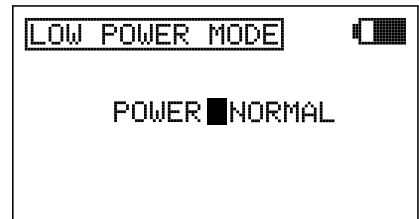
RANGE CHECKING - LOW POWER MODE

The Low Power Mode function lowers the transmitter's RF output level to check radio signal reception (Range Check). Use this function to check radio signal reception on the ground, prior to flight.

POWER MODE	TRANSMITTER STATUS
Low Power Mode	Green RF Output Indicator Flashes, Power Selection >LOW, Audible Alarm
Normal Mode	Red and Green Output Indicators Solid, Power Selection >NORMAL, No Audible Alarm


Activating Low Power Mode


- 1) Turn both the transmitter and the receiver ON. Press the Navigation Pad $\blacktriangle\blacktriangledown$ to highlight LOW POWER MODE, then press the ENTER key to display the LOW POWER MODE menu. The cursor will default to POWER>NORMAL.
- 2) Press the YES/+ or NO/+ keys to place the transmitter in Low Power Mode. The green RF Output Indicator will flash, the POWER selection will change to LOW, and an audible alarm will sound. The transmitter is now in Low Power Mode and you can begin the Range Check process.
- 3) With the transmitter in Low Power Mode, walk approximately 30 paces from your model (approximately 90 feet) and, with the help of another person, check to make sure that the servos move without any problems. If there is a problem with servo movement, try moving to a different position while still maintaining the same distance from your model, then check servo movement again. If there is still a problem, **DO NOT FLY**. Check to make sure that all receiver, servos, switch, and onboard battery connections are correct and secure. Check to ensure that the receiver antenna wires are correctly mounted as described previously.



Turning Off Low Power Mode

- 1) After you have completed your range check, press the YES/+ or NO/- keys to place the transmitter back into NORMAL mode. In NORMAL mode, the RF Output Indicator will be solid green, the POWER selection will change to NORMAL, and the audible alarm will cease.

 The transmitter will stay in Low Power Mode until you place in back into NORMAL mode. **Do not attempt to fly with the transmitter in Low Power Mode. You will be unable to control your model once it is a certain distance away from you.**

 If, after checking all airborne system components and verifying correct antenna wire mounting, your radio control system still fails the Range Check, **DO NOT FLY**. Please contact Airtronics Customer Service.



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