R7FG

(FHSS)

INSTRUCTION MANUAL

Two-way Transmission
PWM&PPM&SBUS Signal Supported
7-channel Receiver with Integrated Gyro

Thanks for purchasing RadioLink 7-channel dual antenna receiver R7FG.

To fully enjoy the benefits of this product and ensure safety, please read the introduction carefully and set up the device as instructed steps.

If any problems found during the operation process, please kindly refer to the manual first. Then you could contact our distributors to find solution or follow our Facebook https://www.facebook.com/radiolinkofficial to search related key words. Also you can send your questions to after_service@radioLink.com.cn or after_service1@radioLink.com.cn and we will answer your question at the earliest.

Due to unforeseen changes in production procedures, the information contained in this manual is subject to change without notice.

For more information please check our website https://www.radioLink.com and follow our Facebook and Youtube homepage.

SAFETY PRECAUTIONS

- Never operate your model during adverse weather conditions. Poor visibility can cause disorientation and loss of control of your model.
- Never use this product in a crowd and illegal area.
- Always ensure the trim levers at 0 and battery properly charged before connecting the receiver.
- Always check all servos and their connections prior to each run.
- Always be sure about turning off the receiver before the transmitter.

WARNING

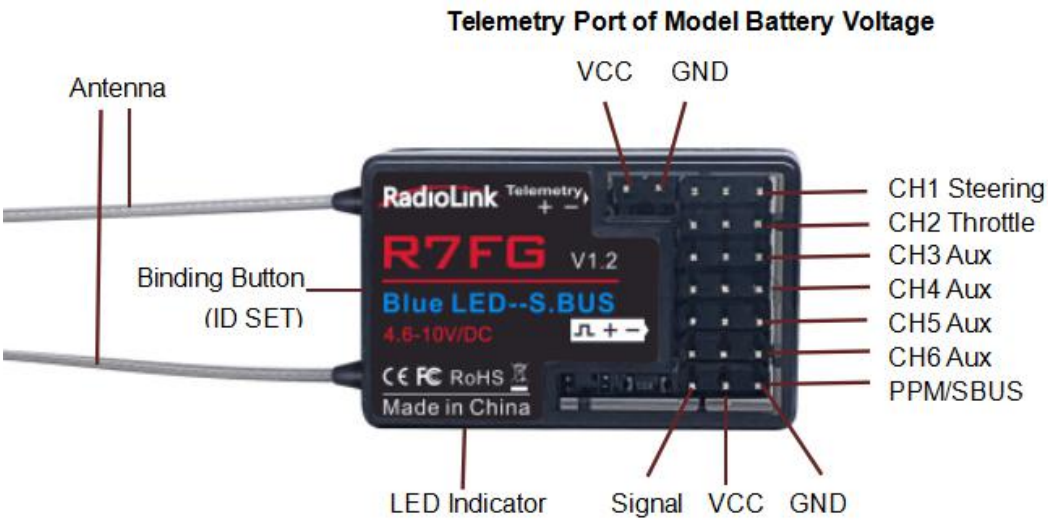
This product is not a toy and is **NOT** suitable for children under the age of 18. Adults should keep the product out of the reach of children and exercise caution when operating this product in the presence of children.

Water or moisture may enter the transmitter inside through gaps in the antenna or joystick and cause model instability, even out of control. If running in the wet weather(such as game) is inevitable, always use plastic bags or waterproof cloth to cover the transmitter.

I. R7FG Introduction

1.1 Compatible transmitters

RadioLink R7FG 2.4G 7-channel receiver with integrated gyro for professional car drifting and high voltage servo supported is compatible with RadioLink RC6GS V2/RC6GS/ RC4GS V2/RC4GS/ RC3S/RC4G/T8FB/T8S.



1.2 Binding

Each receiver has an individual ID code and must bind with transmitter before using. When the binding is done, the ID code will be stored in the transmitter and there's no need to rebind. Therefore, when a new R7FG is purchased, binding needs to be done in order to work with transmitter.

Binding steps:

1. Put the receiver and the transmitter close to each other (about 50cm).
2. Power on the transmitter and R7FG will bind to the closest transmitter automatically.
3. Press the ID SET on the receiver's side for more than 1s and the GREEN indicator will flash, meaning the binding process has begun.
4. When the GREEN indicator stops flashing, binding is complete.
5. Test the model servo to make sure it can be operated by the transmitter.

Note:

- NO gyro by default as factory setting. Since integrated gyro in R7FG will self-check, it is very important to remain R7FG still when powering it on. There are two LED indicators on R7FG. GREEN LED (always on) indicates normal working mode while GREEN+RED LEDs (always on) indicate gyro working mode.
- When R7FG is powered on, the FLASHING green LED means no signal or binding WITHOUT success. Please bind the receiver to the transmitter.

II. Telemetry

R7FG can return the real-time flight information such as RSSI, receiver voltage and model battery voltage.

In order to enjoy this function, please upgrade **RC6GS(3-position switch version)** with the firmware **RC6GS_RadioLink_bin_1d15_V_6_1_2** downloaded via https://www.radiolink.com/rc6gs_firmware

Or upgrade RC4GS(produced after 2018-01-01) with the firmware **RC4GS_RX_RadioLink_bin_2f50_V_6_0_1** downloaded via https://www.radiolink.com/rc4gs_firmware

If you are using RC6GS V2 or RC4GS V2, the default firmware supports telemetry function.

2.1 Telemetry of Signal and RSSI

Power on the transmitter and the receiver and complete the binding, signal will be displayed on the homepage of transmitter. Short press EXIT twice and enter the interface with returned information including RSSI value.

Warning can be set with a certain low RSSI value after testing by changing distance:

Press EXIT and ENTER simultaneously to enter MENU=>press Inc(+) to highlight “19. ALARM =>Press ENTER to (dis)activate the warning and set the RSSI warning value.

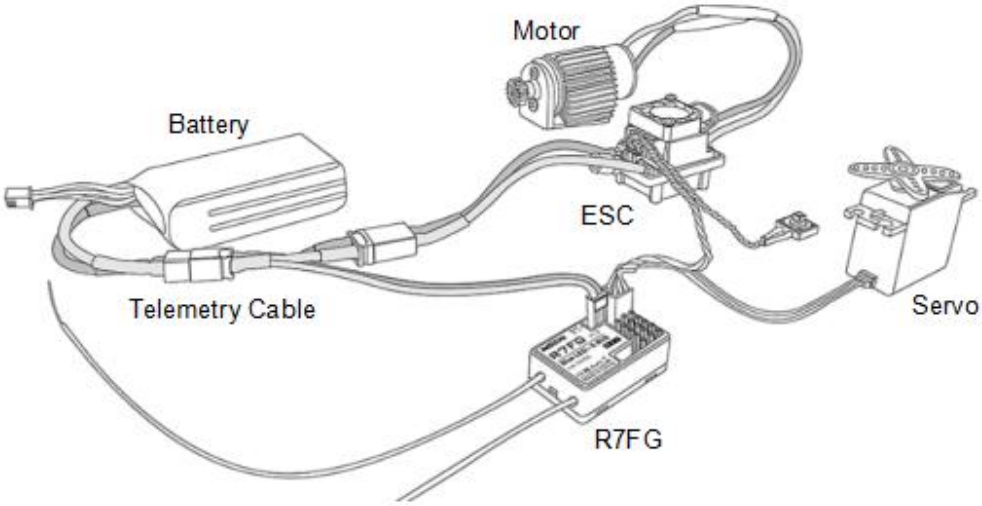
2.2 Telemetry of model battery and receiver voltage

Besides the return of receiver voltage, model battery voltage (maximum up to 6S lithium battery) can also be returned in real time. Users can personalize the warning value of low model battery voltage depending on the actual needs.

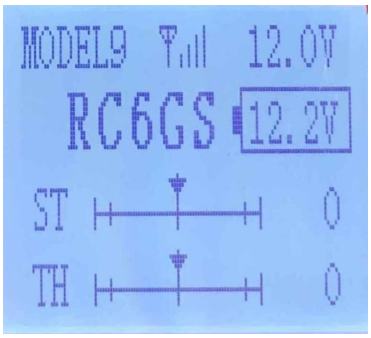
Press EXIT and ENTER simultaneously to enter MENU=>press Inc(+) to highlight “19. ALARM =>Press ENTER to set the model battery voltage warning value.

Normally we set the warning value with the single cell voltage as 3.7V. For example, if it is 3S lithium battery used in the model car, the warning value should be set as (3.7V*3S=) 11.1V.

Model battery voltage return can be easily achieved by connecting the male end of the battery wire to ESC while the female end to the battery and the wire with a JST head connects Telemetry (+-) port of R7FG/R8F as below pic shown. No extra module is needed.



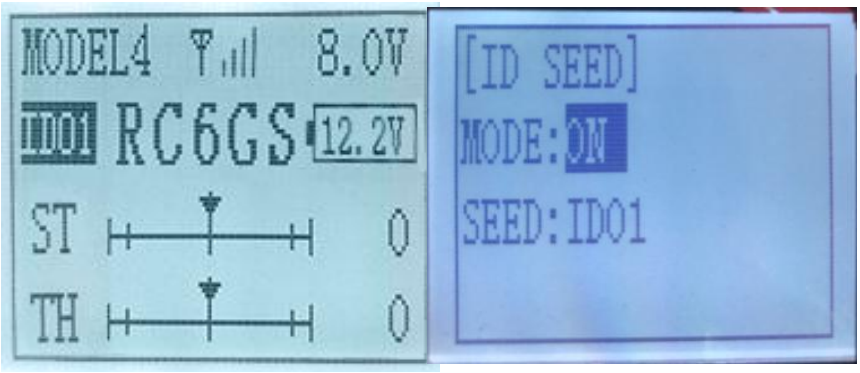
When connect with success, users can check the battery voltage on the main interface of the transmitter.



III. Subsidiary ID

Subsidiary ID function means designating a subsidiary ID among multiple binding receivers to realize the control and it can be realized by on the ID seed menu of RC6GS(3-way switch version with latest firmware V6.0.0) or RC4GS(Produced after 20180101 with the latest firmware V6.0.1). There are totally 10 independent subsidiary IDs can be stored in a transmitter..

For example, RC6GS has completed the binding with 10 different boats and the setup of respective parameters. Turn on the ID SEED function, select ID.1 boat and drive it to the central of water but it stops working unexpectedly. Then we can change to the ID.2 boat (or any other subsidiary ID boat preferred) and control it independently to rescue ID. 1 boat instead of controlling both boats at the same time, which makes the rescue more difficult. Unlike traditional binding mode, independent ID can easily realize.
Press EXIT and ENTER simultaneously to enter MENU=>press Inc(+)/DEC (-) to highlight “22. ID SEED=>Press ENTER => Change the MODE from OFF to ON=> set the subsidiary ID number=> complete biding and parameters setting.
Once finished , the corresponding ID number will be displayed on the RC6GS main interface .
Then the other receivers can be bounded as the same way with the following numbers.



IV. Working Modes

R7FG has four working modes:

R7FG Working Mode					
Working Mode	**Mode 1**	**Mode 2**	**Mode 3**	**Mode 4**	**Note**
Indicator Color	Green	Blue	Red&Blue (Purple)	Red&Green (Orange)	/
With Gyro	N	N	Y	Y	Red indicator on means gyro funtion on
Channel	Corresponding signal output in different channel				/
BAT+-	Return port of model battery voltage				/
1	PWM	PWM	PWM	PWM	Rudder
2	PWM	PWM	PWM	PWM	Throttle
3	PWM	PWM	PWM	PWM	Aux
4	PWM	PWM	PWM	PWM	Aux
5	PWM	PWM	PWM	PWM	Aux
6	PWM	PWM	PWM	PWM	Aux
PPM/S.B	PPM	SBUS	SBUS	PPM	Green is PPM, Blue is SBUS , FC can be connected under SBUS/PPM mode and achieve different models control ind. Mecanum car/Robot/Engineering Off-road cars
Signal Switch	Short press ID set once to Mode 2	Short press ID set once to Mode 1	Short press ID set once to Mode 4	Short press ID set once to Mode 3	/
	Short press ID set 3 times quickly to Mode 4	Short press ID set 3 times quickly to Mode 3	Short press ID set 3 times quickly to Mode 2	Short press ID set 3 times quickly to Mode 1	/

Mode 1: PWM+PPM output (factory setting by default)

When the green indicator is on, Ch1 to Ch6 output standard PWM while Ch7 outputs PPM. Short press ID SET once to change Mode 1 to Mode 2 and three times within 1 second to Mode 4.

Mode 2: PWM+SBUS output

When the blue indicator is on, Ch1 to Ch6 output standard PWM while Ch7 outputs SBUS. Short press ID SET once to change Mode 2 to Mode 1 and three times within 1 second to Mode 3.

Mode 3: PWM+SBUS output+ Gyro

When both the red and the blue indicators are on (purple), Ch1 to Ch6 output standard PWM while Ch7 outputs SBUS. Meanwhile, gyro function is also on, stabilizing the direction, keeping car from slipping and ensuring safer turning to preventing drifting from fast speed.

Short press ID SET once to change Mode 3 to Mode 4 and three times within 1 second to Mode 2.

Mode 4: PWM+PPM output+Gyro

When both the red and the green indicators are on (orange), Ch1 to Ch6 output standard PWM while Ch7 outputs PPM. Meanwhile, gyro function is also on, stabilizing the direction, keeping car from slipping and ensuring safer turning to preventing drifting from fast speed.

Short press ID SET once to change Mode 4 to Mode 3 and three times within 1 second to Mode 1.

V. Gyro Introduction

5.1 Gyro Function

The R7FG integrated gyro for professional car drifting can be enabled and disabled. When it's enabled, the turning stability can be maximized during competition. When there is false position, gyro function keeps the car straight forward and turn precisely.

5.2 Gyro Parameter

A. Gyro Enabled

Factory setting is gyro function OFF by default. When power on R7FG, the gyro will self check. There are two indicators on R7FG while always-on GREEN LED is working mode WITHOUT gyro and always-on GREEN+RED LED is working mode WITH gyro.

B. Gyro Phase

As model aircraft, car gyro also has phase. Only the phase is correctly set that the gyro can always revise directions.

5.3 Gyro Setup

A. Gyro Enabled

Short press ID SET three times with interval less than 1s, the RED indicator flashes three times. Red LED on/off indicates the gyro function is on/off.

B. Gyro Phase

When the gyro forward is enabled, try to turn the model car to see if the gyro is correcting the wheels. Normally, the wheels should turn right to correct when the car is turned left while the wheels should turn left to correct when the car is turned right. If the gyro phase is reversed, short press ID SET twice with interval less than 1s. The Red indicator flashes twice means the gyro phase setting is complete.

5.4 Transmitter Sensitivity Adjustment

Gyro sensitivity setting is CH3 by default (factory setting) and can be adjusted by the VR rotary switch. Percentage is displayed when sensitivity is adjusted while the bigger percentage means higher sensitivity. If the VR rotary switch/CH3 is set with other function, menu setting on transmitter can be used to adjust

gyro sensitivity.

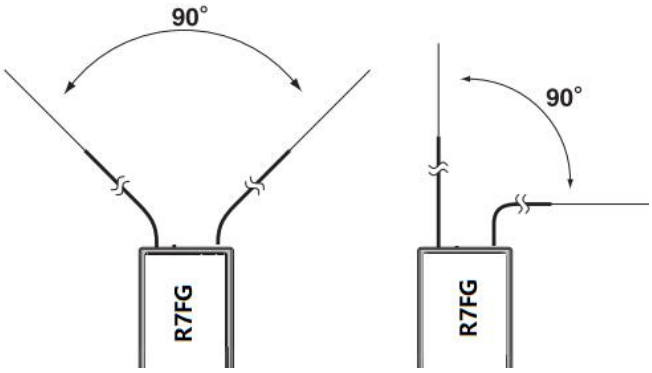
VI. R7FG Specifications

1) Frequency：2.4GHz ISM band(2400MHz~2483.5MHz)
2) Dimension: 35*20*13mm
3) Weight: 6g
4) Channel Qty: ：7 channels
5) Signal Output：PWM&SBUS/PWM&PPM
6) Model Application: Car/Boat/Fixed Wing/Glider/Multirotor
7) Encode: FHSS 67-channel pseudo random frequency hopping
8) Antenna Length：200mm (dual antennas)
9) Voltage Range：4.6-10V
10) Channel Resolution: 4096
11) Operating Current: 30mA (Depending on power supply)
12) Backhaul: Signal/RSSI/Model Battery Voltage
13) Control Distance: 600 meters on the ground

VII. Note of Antenna Installation

In order to maximize the signal transmission, it's greatly advised that

1. Keep antennas as straight as possible, or the effective control range will reduce.
2. Keep the two antenna in 90° angle as shown below



3. Big models may contain metal parts that influence signal emission. In this case. antennas should be positioned at both sides of the model to ensure the best signal status in all circumstances.
4. Antennas should be kept away from metal conductor and carbon fiber at least half inch away and no over bending.
5. Keep antennas away from motor, ESC or other possible interference sources.
6. Sponge or foam material is advised to use to prevent vibration when installing receiver.
7. Receiver contains some electronic components of high-precision. Be careful to avoid strong vibration and high temperature.
8. Special vibration-proof material for R/C like foam or rubber cloth is used to pack to protect receiver. Keeping the receiver in a well sealed plastic bag can avoid humidity and dust, which would possibly make the receiver out of control.

When all the above steps are complete, please turn off the transmitter and repower on to test if the receiver is correctly bind with it.

Thank you again for choosing RadioLink product.