R4FGM
(FHSS)

User Manual

4-channel Receiver with Integrated Gyro

RadioLink Electronic Ltd

www.radiolink.com

Thanks for purchasing RadioLink 4-channel mini receiver R4FGM.

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 homepage https://www.facebook.com/radiolinkofficial/ and Youtube homepage to search related key words. Also you can send your questions to after_service@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.

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 14. 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
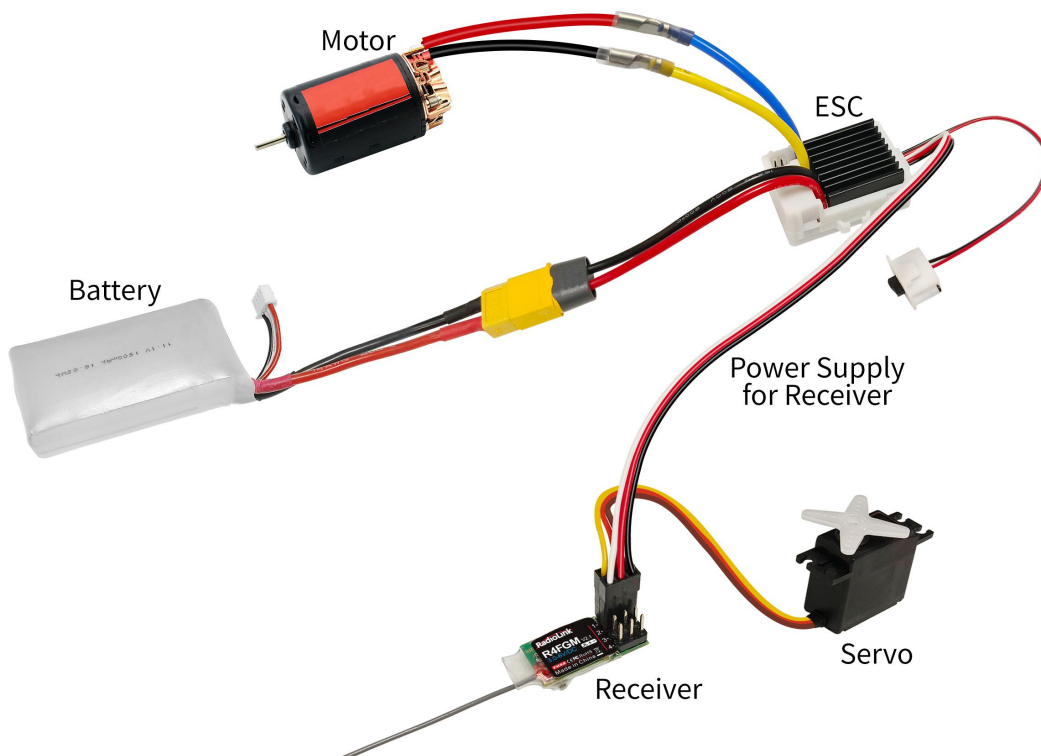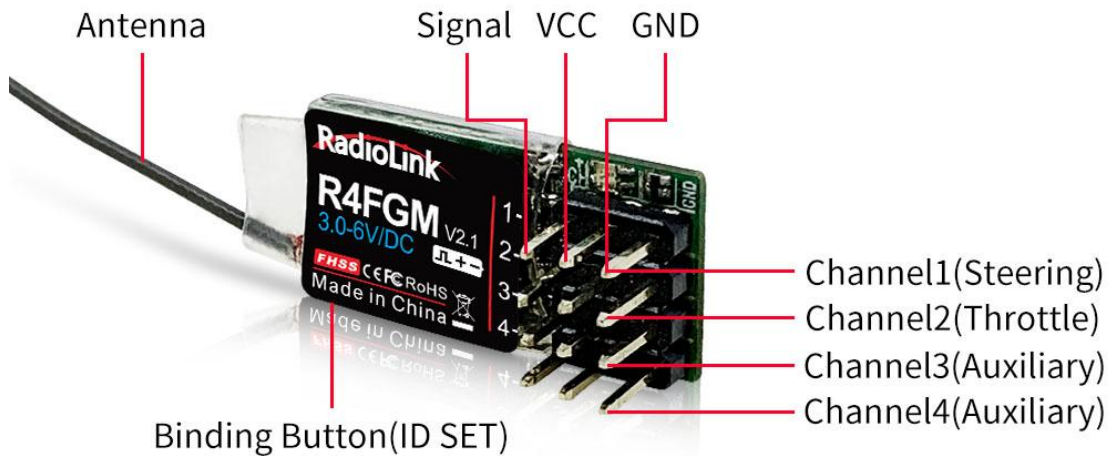
Contents

1. R4FGM Introduction

RadioLink R4FGM 2.4G 4-channel mini receiver with integrated gyro for professional car drifting and high voltage servo supported.
R4FGM receiver is compatible with RadioLink RC8X/RC6GS V3/RC4GS V3/RC6GS V2 /RC4GS V2/RC6GS/RC4GS/T8FB(BT)/T8S(BT)/T8FB(OTG)/T8S(OTG) transmitters.

2. Receiver Protocol Selection

If you are using R4FGM with RC8X transmitter, please select correct receiver protocol in RC8X first and then bind them. Enter the "Basic Menu" - "Receiver setting" of RC8X and then select FHSS V1 or FHSS V2 protocol (as shown below). FHSS V1 receivers have a PWM output resolution of 2048, and FHSS V2 receivers have a PWM output resolution of 4096. The higher the resolution, the more delicate the angle of servo motion.
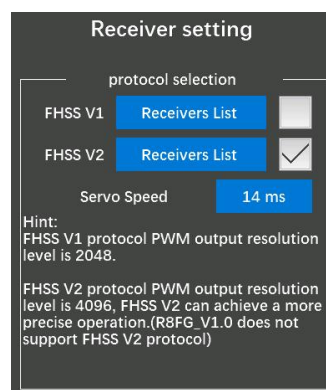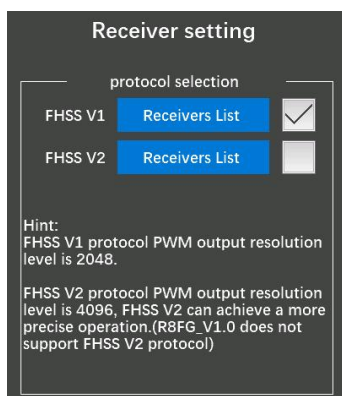
Please click "Receivers List" (as shown above) to check whether the receiver you are currently using belongs to FHSS V1 or FHSS V2 protocol list. R4FGM V1.0 only supports FHSS V1 protocol, not FHSS V2 protocol; R4FGM V2.0 and later versions support FHSS V1 and FHSS V2 protocol. Before operating the model, please make sure protocol of the receiver is selected correctly, otherwise some functions will not work properly.

3. Servo Speed Setting

When FHSS V2 protocol is selected in RC8X, servo Speed will appear on the screen (as shown below).
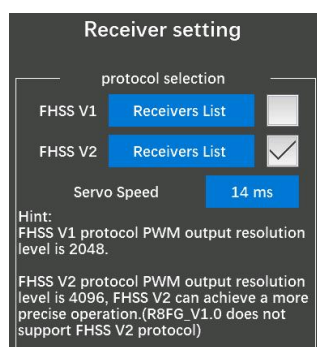
Servo Speed setting method:
(1) Transmitter: It is necessary to update the RC8X firmware to V1.1.5 or above, and then select FHSS V2 protocol to display this option. Servo speed can be selected from 14ms, 4ms, and 3ms. The default servo speed is 14ms (analog servo speed), 4ms and 3ms (digital servo speed).

(2) Receiver: If you are using a digital servo, you need to choose a servo speed of 4ms or 3ms. Please confirm whether the receiver you are using supports digital servo. Currently, R4FGM V2.1 and R4FGM with a factory date of 2023/4/26 and later support digital servo. Previous versions of R8FG, such as R4FGM V1.0, does not support digital servos. Even if 4ms or 3ms is selected when using it, the default servo speed is 14ms.

(3) Status indication: When switching the servo speed, the green LED light of the receiver will flash twice, which means that the switching of the servo speed is successful; if the green LED of the receiver does not flash when switching the servo speed of the servo, it means that the switching of the servo speed of the servo is unsuccessful or the current receiver does not support digital servos.

4. 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 R8FG is purchased, binding needs to be done in order to work with transmitter.

Binding steps:

(1) Select the correct receiver protocol in RC8X (please refer to Chapter 2. Receiver Protocol Selection) Note: If you are using a transmitter other than RC8X, such as RC6GS, RC4GS, etc., go to step 2 directly.

(2) Put the receiver and the transmitter together within 30-50cm.

(3) Turn on both the transmitter and the receiver.

(4) There is a black binding button (ID SET) on the side of the receiver. Press the button for more than 1 second and release, the LED will flash quickly, indicating the binding process is ongoing.

(5) When the LED stops flashing and is always on, binding is complete and there will be a signal tower shown on top of the screen of the transmitter(As shown on the right). If not successful, the LED will keep flashing slowly to notify, repeat the above steps.
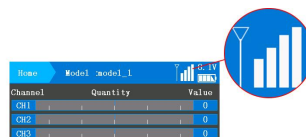
Note:

- The gyro is turned off by default in the factory setting. Since the gyro has a self-test prompt, the receiver must remain in a static state when powered on. The indicator light of this receiver has 2 colors, red and green. The red light is off when gyro is turned off, and the red light is on when gyro is turned on.

- When R4FGM is powered on, the indicator FLASHING means no signal or binding WITHOUT success. Please bind the receiver to the transmitter.

5. Telemetry of Signal and RSSI

R8FG can return the real-time signal and RSSI(Received Signal Strength Indicator).

Power on the transmitter and receiver. The signal and other telemetry information will be displayed in the home page of the transmitter if the binding is successful and the telemetry cable is connected correctly.

If RC8X is used with R4FGM, the signal and RSSI will be displayed on the homepage of transmitter after successful binding.(See picture below).
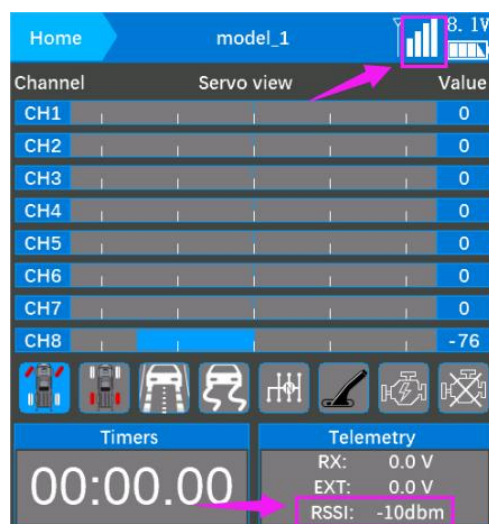
Warning can be set with a certain low RSSI value after testing by changing distance. Enter Telemetry setting--Receiver signal to set the RSSI warning value, alarm sound type etc..
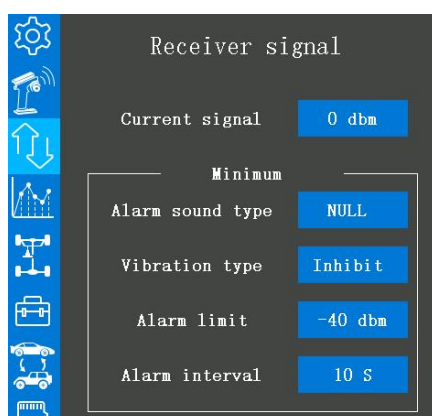
If RC6GS/RC4G is used with R4FGM, the signal will be displayed on the homepage of transmitter after successful binding. Short press EXIT button twice to check the RSSI value. If you need to set the alarm of RSSI value, press EXIT and ENTER simultaneously to enter MENU=>press Inc (+) to highlight "19. ALARM =>Press ENTER to (dis)activate the warning and set the RSSI warning value.

6. Working Modes

R4FGM has two working models: factory setting by default is standard mode with PWM signal output without Gyro; The second mode is Gyro mode.

6.1 Standard Mode (Factory Setting by Default)

When the green indicator is on, Ch1 to Ch4 output standard PWM signal.

6.2 Gyro Mode

The R4FGM integrated gyro for professional car drifting and Mosquito car(MINIZ) .

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

Stabilizing the direction, keeping car from slipping and ensuring safer turning to preventing drifting from fast speed.

7. Gyro Function

The R4FGM integrated gyro for professional car 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.

7.1 Gyro Enabled

Factory setting is gyro function OFF by default. When power on R4FGM, the gyro will self-check. There are two indicators on R4FGM while always-on GREEN LED meaning working mode WITHOUT gyro.

Short press ID SET three times with interval less than 1 second, the RED indicator flashes three times, always-on GREEN+RED LED is working mode WITH gyro.

Attention: It's normal that the servo keeps shaking when connected to the receiver. Because the gyro is helping to correct the steering gear angle of the servo automatically if the gyro function has turned on, you can turn off the gyro function if you do not need this function.

If the receiver has not to be moved, but the servo keep shaking, the gyro may be too much sensitive. Please reduce the gyro sensitivity.

7.2 Gyro Phase

As model aircraft, car gyro also has phase. Only the phase is correctly set that the gyro can always revise directions. 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 1 second. The Red indicator flashes twice means the gyro phase setting is complete.

7.3 Gyro Sensitivity Adjustment

Gyro sensitivity setting is in CH3 by default (factory setting). If RC6GS/RC4GS transmitter is used, gyro sensitivity 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. If RC8X transmitter is used with R4FGM, you can set DL1 to adjust the sensitivity or click "-" or "+" in setting page of Gyro mixing to adjust it.

8 Specifications

1）Dimension: 25*13mm
2）Weight: 3g
3）Antenna Length: 90mm(3.54")
4）Channel Qty: 4 channels
5）Response Latency: When bound to RC8X, 3ms, 4ms, and 14ms can be selected, if bind to other transmitters, it default 14ms. If you want to select 3ms or 4ms digital servo speed, make sure the firmware of RC8X is V1.1.5　or above, and FHSS V2 protocol to display this option. R4FGM is V2.1 or R4FGM with a factory date of 2023/4/26 and later.
6）Frequency: 2.4GHz ISM
7）Model Application: Cars/Boats/Micro Airplane/Glider
8）Encode: FHSS 67-channel pseudo random frequency hopping
9）Voltage Range: 3-6V
10）Operating Current: 30mA@5V
11）Telemetry: Signal/RSSI
12）Control Distance: 400 meters on the ground
13）Compatible transmitter: RC8X/RC6GS V3/RC4GS V3/RC6GS V2/RC4GS V2 /RC6GS/RC4GS/T8FB(BT)/T8S(BT)/T8FB(OTG)/T8S(OTG)

9 Note of Antenna Installation

In order to maximize the signal transmission, it's greatly advised that
● Keep antennas as straight as possible, or the effective control range will reduce.
● 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.
● Antennas should be kept away from metal conductor and carbon fiber at least half inch away and no over bending.
● Keep antennas away from motor, ESC or other possible interference sources.
● Sponge or foam material is advised to use to prevent vibration when installing receiver.
● Receiver contains some electronic components of high-precision. Be careful to avoid strong vibration and high temperature.

- 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.

Thank you again for choosing RadioLink product.