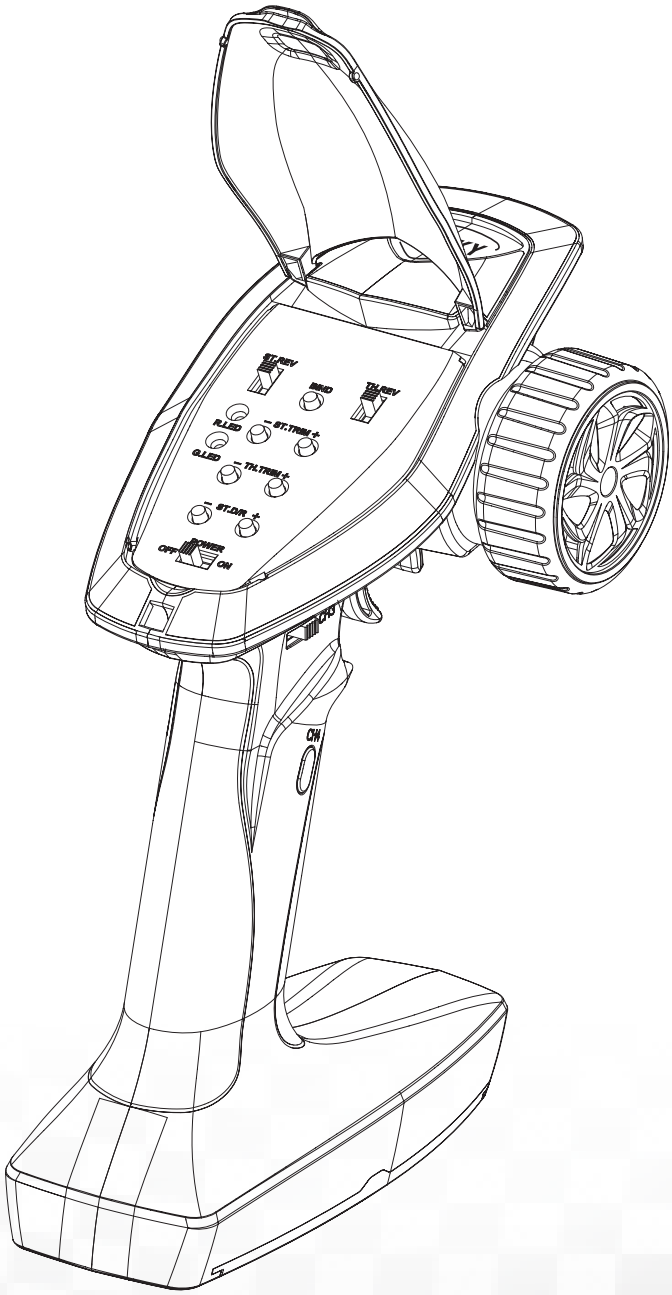
FS-RCR-G4P-BS&RCR-R3A

USER MANUAL

FLYSKY

Digital Proportional Radio Control System



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15+

WARNING:

This product is only for 15 years old or above.

Thank you for purchasing our products.

Read the manual carefully to ensure your personal safety as well as the safety of your equipment.

If you encounter any problems during using, please refer to this manual first. If the problem is still not resolved, please contact the local dealer directly or contact the customer service staff via the website below:

www.flysky-cn.com

Contents

1.Safety

1.1 Safety Symbols

Pay close attention to the following symbols and their meanings. Failure to follow these warnings could cause damage, injury or death.

⚠ **Danger**	• **Not following these instructions may lead to serious injuries or death.**
⚠ **Warning**	• **Not following these instructions may lead to major injuries.**
⚠ **Attention**	• **Not following these instructions may lead to minor injuries.**

1.2 Safety Guide

Prohibited **Mandatory**

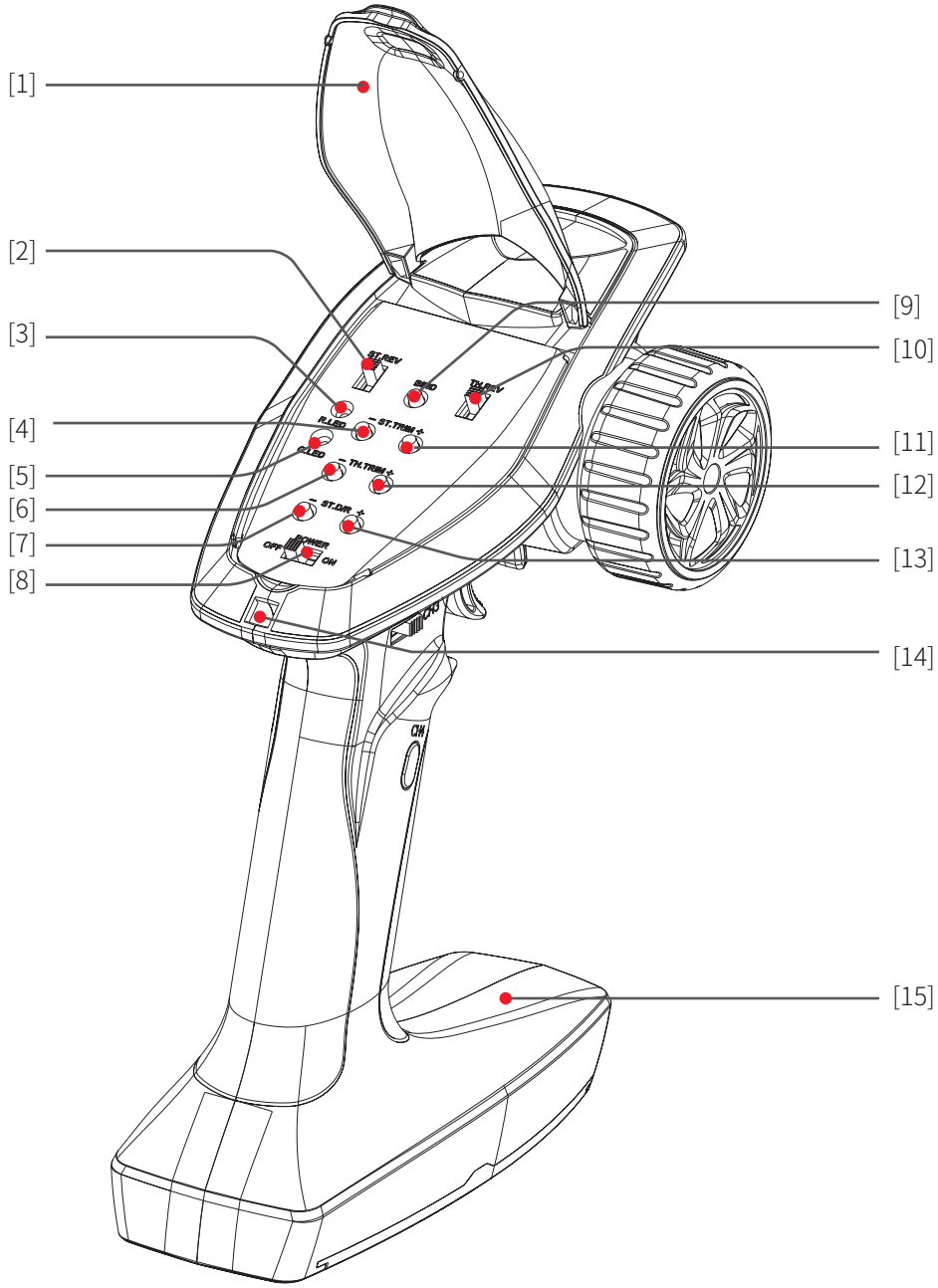
- **Do not use the product at night or in bad weather like rain or thunderstorm. It can cause erratic operation or loss of control.**
- **Do not use the product when visibility is limited.**
- **Do not use the product on rain or snow days. Any exposure to moisture (water or snow) may cause erratic operation or loss of control.**
- **Interference may cause loss of control. To ensure the safety of you and others, do not operate in the following places:**
  - Near any site where other radio control activity may occur
  - Near power lines or communication broadcasting antennas
  - Near people or roads
  - On any body of water when passenger boats are present
- **Do not use this product when you are tired, uncomfortable, or under the influence of alcohol or drugs. Doing so may cause serious injury to yourself or others.**
- **The 2.4GHz radio band is limited to line of sight. Always keep your model in sight as a large object can block the RF signal and lead to loss of control.**
- **Do not touch any part of the model that may generate heat during operation, or immediately after use. The engine, motor or speed control, may be very hot and can cause serious burns.**

- **Misuse of this product may lead to serious injury or death. To ensure the safety of you and your equipment, read this manual and follow the instructions.**
- **Make sure the product is properly installed in your model. Failure to do so may result in serious injury.**
- **Make sure to disconnect the receiver battery before turning off the transmitter. Failure to do so may lead to unintended operation and cause an accident.**
- **Ensure that all servos operate in the correct direction. If not, adjust the direction first.**
- **Make sure the model stays within the systems maximum range to prevent loss of control.**

2.Introduction

This system adopts 2.4GHz 2A-BS protocol and consists of FS-RCR-G4P-BS transmitter and RCR-R3A receiver. The FS-RCR-G4P-BS is a simple 4-channel transmitter using the latest 2.4GHz 2A-BS Automatic Frequency Hopping Digital System. The appearance of the sports car elements to highlight the speed, passion and power, the transmitter also has a beginner mode for beginning players.

2.1 Transmitter Overview



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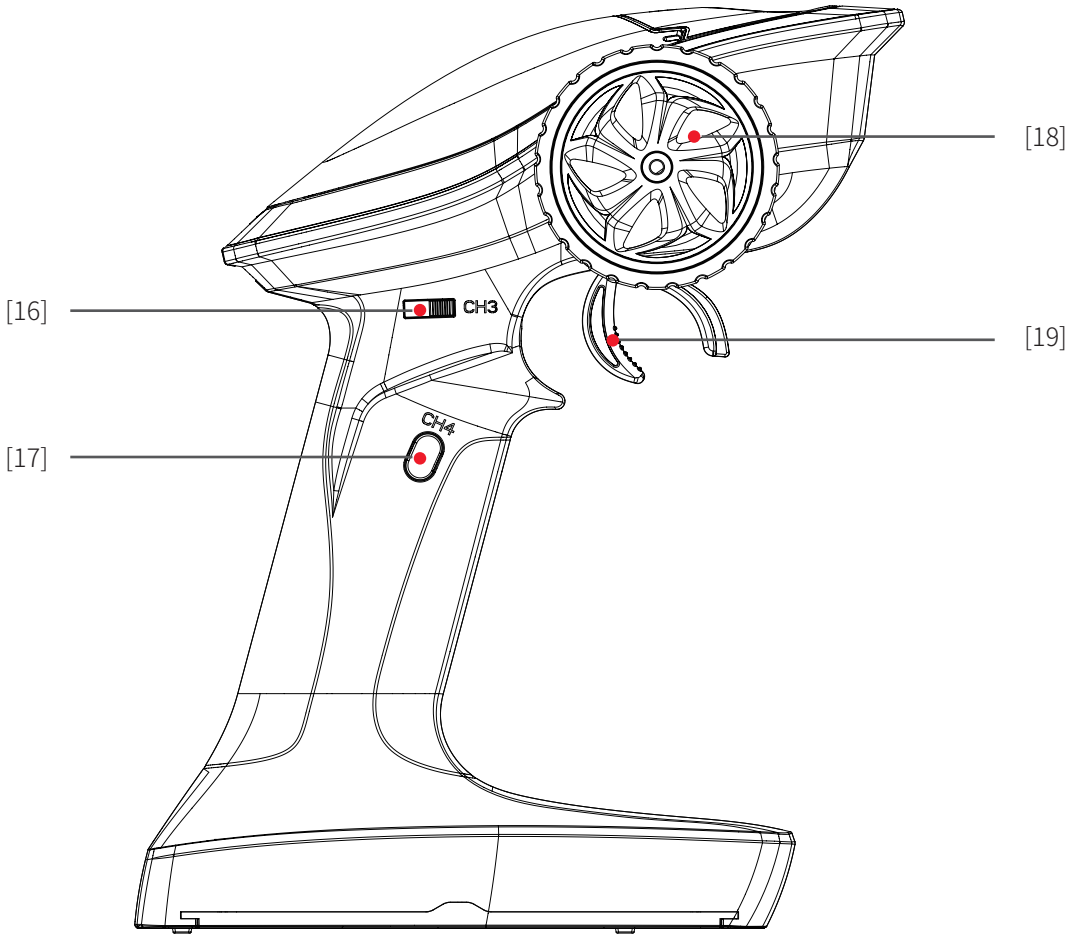
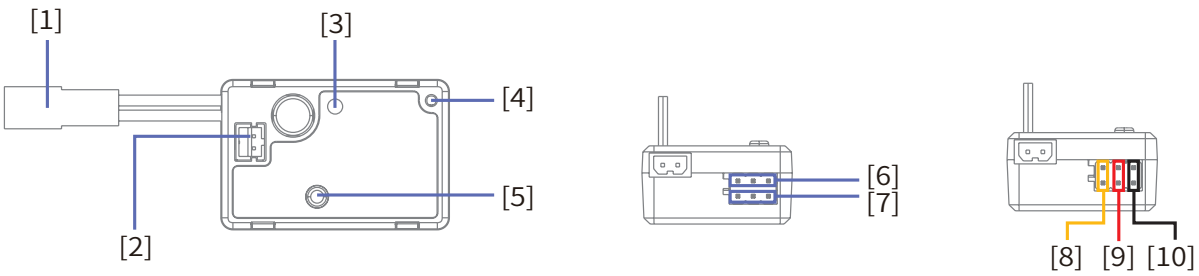


[1]	Panel Flip Cover	[11]	ST.TRIM+, to adjust the trim of steering channel.
[2]	ST.REV, Steering Channel Reverse Switch	[12]	TH.TRIM+, to adjust the trim of throttle channel.
[3]	R. LED, Power Indicator	[13]	ST.D/R+, to adjust the end points of steering channel.
[4]	ST.TRIM-, to adjust the trim of steering channel.	[14]	Lanyard Eye
[5]	G.LED, Status Indicator	[15]	Base, 4 * AA Battery Compartment
[6]	TH.TRIM-, to adjust the trim of throttle channel.	[16]	CH3 Three-position Switch (CH3)
[7]	ST.D/R-, to adjust the end points of steering channel.	[17]	CH4 Button (CH4)
[8]	POWER ON/OFF, Power Switch	[18]	Steering Wheel, the maximum rotation of the steering wheel is 35 degrees from center to left or right (CH1)
[9]	BIND, BIND Button	[19]	Throttle Trigger, has a total moving angle of 37.5 degrees, 25 degrees forward, and 12.5 degrees backward (CH2)
[10]	TH.REV, Throttle Channel Reverse Switch	/	/

2.2 Receiver Overview (RCR-R3A)



[1]	Battery Interface	[6]	CH1 Interface
[2]	Motor Interface	[7]	CH3 Interface
[3]	LED	[8]	S (Channel Interface Signal Pin)
[4]	Antenna	[9]	+ (Channel Interface Anode)
[5]	Power Switch	[10]	- (Channel Interface Cathode)

2.2.1 Receiver LED

The LED status indicates the power supply state of the receiver and its working state.

OFF: The receiver is not powered on.

Solid ON: The receiver works normally.

Fast Flashing: The receiver is in the binding mode.

Slow Flashing: The transmitter bound is powered off, or the receiver does not receive any signal.

2.2.2 Interface

CH1 and CH3 channel interfaces are 2.54mm*3 Pin standard pins, and the battery interface is a JST female interface, and the spec of motor interface is a PH2.0 female connector. Interfaces are used to connect the receiver to the various components of the model.

2.2.3 Antenna

It is an external antenna.

Caution	• Do not pull the antenna of the receiver. Do not tie the antenna and the servo cable together.
Warning	• Do not put the antenna close to the metal materials, because this will affect the signal strength of the receiver. Keep the receiver's antenna at least 1cm away from conductive materials such as carbon or metal.

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3.Getting Started

Before operation, install the battery and connect the system as instructed below.

3.1 Transmitter Antenna

The transmitter has a built-in antenna. When the transmitter starts to work, the antenna automatically operate, without additional operations.

3.2 Receiver and Servo Installation

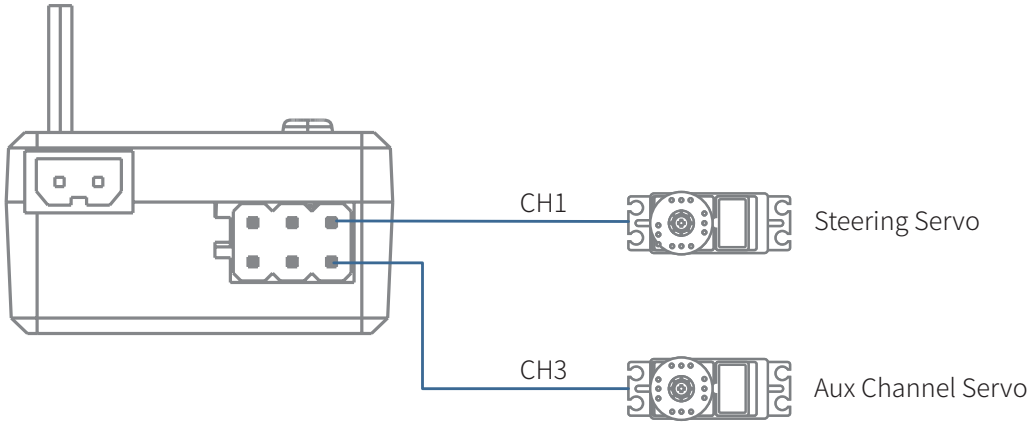
Make sure that the receiver is mounted in an appropriate location within the model, to ensure a stable signal, maximum range and to mitigate external interference, follow these guidelines:

Pay attention to the following when installing the receiver:

1. Make sure the receiver is not installed near motors or sources of electrical noise.
2. Keep the receiver's antenna away from conductive materials such as carbon or metal. To ensure normal function, make sure there is a gap of at least 1cm between the antenna and the conductive material.

⚠ **Caution**	• **To prevent damage do not power on the receiver during installation.**

Connect the servos to the receiver according to the digram below.



3.3 Transmitter Battery Installation

⚠ Danger	• Only use specified battery (X4 AA batteries).
⚠ Danger	• Do not open, disassemble, or attempt to repair the battery.
⚠ Danger	• Do not crush/puncture the battery, or short the external contacts.
⚠ Danger	• Do not expose to excessive heat or liquids.
⚠ Danger	• Do not drop the battery or expose to strong shocks or vibrations.
⚠ Danger	• Always store the battery in a cool, dry place.
⚠ Danger	• Do not use the battery if damaged.

Battery Type: AA

Battery Installation:

1. Open the battery compartment cover.
2. Insert 4 fully-charged AA batteries into the compartment. Make sure that the battery makes good contact with the battery compartment's contacts.
3. Replace battery compartment cover.

Low Battery Alarm: When the battery is lower than 4.2v, the G.LED will flash slowly for prompt.

4.Instructions

After setting up, follow the instructions below to operate the system.

4.1 Powering ON

Follow the steps below to turn on the transmitter:

1. Check to make sure that that battery is fully charged and installed correctly.
2. Toggle the Power Switch to the ON position, and the R.LED will be solid on.
3. Power on the receiver.

Note: For safety always power on the transmitter before the receiver.

⚠ Warning	• **Operate with caution in order to avoid damage or injury.**

4.2 Binding

The transmitter and receiver have already been bound at the factory.

However if the receiver needs to be replaced or additional receivers bound follow these steps:

1. Turn on the transmitter while pressing and holding the BIND button, then the transmitter will enter the binding mode. At this time, the G.LED will start flashing quickly. Once in binding mode release the Bind button.
2. The receiver will enter the binding mode atomically when powered on.
3. Once binding is successful, the LED of the receiver will flash slowly, and the transmitter LED will remain solid on after being repowered on.

Note: When binding, put the transmitter into binding mode first, then the receiver.

4.3 Stick Calibration

Use this function to correct for the mechanical deviation of the throttle trigger and steering wheel, for example, deviation occurred in the self-centering or maximum minimum travel, the steps are as following:

1. Turn and hold the steering wheel clockwise to the max travel and push the throttle trigger forwards as far as possible, and at the same time turn on the transmitter, the transmitter will be in calibration mode. The R.LED and G.LED will work in two-flashing-one-off state repeatedly.
2. Steering Wheel Calibration: Turn the steering wheel to the max and min travel clockwise/counterclockwise respectively. When calibration is completed, the R.LED will be off.
3. Throttle Trigger Calibration: Push/pull the throttle trigger to forward/backward as far as it will go. When calibration is completed, the G.LED will be off.
4. Once calibration is complete, press the BIND button to save and exit. And the G.LED will be solid on at the time.

4.4 Powering OFF

Follow the steps below to turn off the system:

1. Disconnect the receiver power.
2. Toggle the Power Switch to the OFF position.

⚠ **Danger**	• **Make sure to disconnect the receiver power before turning off the transmitter. Failure to do so may lead to damage or serious injury.**

5.System Functions

This section focuses on the functions and how to use them.

5.1 Channel Description

Channel	Assigned Control	Function
CH1	Steering Wheel	Steering, to make the model car to turn right or left. Turn the steering wheel in clockwise or counterclockwise direction to control the left/right steering.
CH2	Throttle Trigger	Throttle, to control the model car to move forward, reverse or brake. Push or pull the throttle trigger to control the model car forward, brake or backward.
CH3	CH3 Three-position Switch	User can customize the channel function. For example, function as a fast / slow-position servo channel.
CH4	CH4 Button	

Note: By default, the output of CH4 is 1000us, after which pressing the button will toggle between 1000 and 2000us.

5.2 Channel Reverse

This function is used to adjust each channel's direction of movement in relation to its input.
The ST.REV and TH.REV are the reverse switches for CH1 and CH2. If the switch is up, it indicates reverse, and the down indicates normal.

5.3 Trims

The ST.TRIM+ and ST.TRIM- are the trim buttons for CH1 (steering), and can be multiplexed as trims of CH3 and CH4. For multiplexing switching mode, refer to [5.5 Mode Switching].

TH.TRIM+ and TH.TRIM- are the trim buttons for CH2(throttle).

Adjustment Range: -120us - + 120us, and the step is 4us;

ST.TRIM +/TH.TRIM+: Increases trim adjustment value;

ST.TRIM-/TH.TRIM-: Decreases trim adjustment value.

LED status:

- When pressing the trim keys, the G.LED will flash slowly on short presses and quickly on long presses.
- When the trim adjustment value is at the netrual position, the G.LED will flash twice slowly.
- When the trim adjustment value is at both ends (+ 120us / -120us), the trim adjustment is at its maximum/ minimum and as such G.LED will not flash(If the trim adjustment value has been adjusted to + 120us, then press ST.TRIM+ or TH.TRIM+ is invalid and the G.LED will be off than flashing.)

Note: After the throttle trim is changed, the receiver needs to be re-powered on to recognize the new throttle neutral. Otherwise, an exception may occur during vehicle reversing.

5.4 END Point Adjustment

ST.D/R+ and ST.D/R- are used for servo travel adjustment, which can be multiplexed as CH2 (throttle), CH3, CH4 servo travel adjustment, refer to [5.5 Mode Switch] for multiplex switching mode;

Adjustment Range: 0-120%(the default is 100%), and the step is 5%.

ST.D/R+: Increases servo travel.

ST.D/R-: Decreases servo travel.

LED status:

- When using the D/R keys, the G.LED will flash slowly on short presses and quickly on long presses.
- When the travel adjustment value is at both ends (0/120%), the travel adjustment is at its maximum/minimum and as such G.LED will not flash (if the travel adjustment value has been adjusted to 120%, then press ST.D/R+ is invalid and the G.LED will be off than flashing.)

5.5 Mode Switching

This function is for reusing ST.TRIM(inculding ST.TRIM+ and ST.TRIM-) and ST.D/R (inculding ST.D/R+ and ST.D/R-) for different channels (Refer to [5.3 Trims] and [5.4 END Point Adjustment).

Setup:

In normal power-on condition, quickly press the BIND button twice (within 1 second) to cycle through modes 1, 2, 3, and 4. The default setting when powering on is mode 1.

Mode 1: The G.LED flashes slowly once, the ST.TRIM is used for CH1 trim adjustment, the ST.D/R is used for CH1 end point adjustment.

Mode 2: The G.LED flashes twice slowly, the ST.TRIM is used for CH1 trim adjustment, the ST.D/R is used for CH2 end point adjustment.

Mode 3: The G.LED flashes three times slowly, the ST.TRIM is used for CH3 trim adjustment, the ST.D/R is used for CH3 end point adjustment.

Mode 4: The G.LED flashes slowly four times, the ST.TRIM is used for CH4 trim adjustment, the ST.D/R is used for CH4 end point adjustment.

5.6 Failsafe

The failsafe function is used to protect the model and personnel when the receiver is out-of-control.

By default, it is not set.

- The failsafe for receiver CH2 is enabled by default, the ESC will enter the brake state when the receiver is out-of-control.
- For the other channels, the interfaces will maintain the last output in case of out-of-control. It can be set at the transmitter side. The setting steps are as following :

  In the normal power-on state, hold the control corresponding to the channel at the desired failsafe position. Then press and hold the BIND button for 3 seconds, if the G.LED starts flashes for 2 seconds, indicating that the setting is successful.

5.7 Beginner Mode

Beginner mode is designed for the people who is new to the hobby.

In this mode the throttle output has been limited to 50 percent, the channel range by default has been set to 1250~1500~1750us.

Setup:

To switch between beginner mode and normal mode, press and hold the CH4 button while turning the steering wheel completely counterclockwise as far as it can, and at the same time, power on the transmitter. When the G.LED works in two-flash-one-off mode for 3 seconds, then the beginner mode has switched.

Note: By default, the system is set to normal mode.

6. RCR-R3A Function Instructions

This chapter mainly introduces the precautions for using the RCR-R3A receiver and the settings of the related function.

6.1 Attention

- Make sure the product is installed and calibrated correctly, failure to do so may result in serious injury.
- Please carefully check each power device and car frame instructions to ensure the power matching is reasonable before use. Avoid damaging power system due to incorrect matching.
- Do not let the external temperature of the system exceed 90°C /194 °F , because high temperature will damage the power system.
- Make sure the receiver's battery is disconnected before turning off the transmitter, failure to do so can result out of control. Unreasonable setting of the Failsafe may cause accidents.
- After use, remember to disconnect the battery and the ESC. If the battery isn't disconnected, the ESC will consume electric energy all the time even if it is off. It will discharge completely if connect the battery for a long time, thus resulting in the failure of the battery or the ESC. We are not responsible for any damage caused by this!
- Make sure the receiver is mounted away from motors or any device that emits excessive electrical noise.
- Keep the receiver's antenna at least 1cm away from conductive materials such as carbon or metal.
- Do not power on the receiver during the setup process to prevent loss of control.
- If the throttle trim is changed on the transmitter side, the receiver needs to be re-powered to recognize the new throttle neutral. Otherwise, an exception may occur during vehicle reversing.

6.2 Binding Instruction

If it needs to rebind the receiver and the transmitter, refer to 4.2 Binding for details.

6.3 Protect Function

This receiver has low voltage protection function.

- Low Voltage Protection: When the voltage is detected to be low, all channels have no output.

The receiver ESC has the overheating protection function and the blocking protection function.

- Overheating Protection: When the internal temperature of the ESC is detected to be too high, CH2 has no output. When the temperature is normal, the channel resumes output.
- Blocking Protection: When the external motor is blocked, it enters the blocking protection state, to protect the ESC and the motor.

6.4 Failsafe

The receiver supports the failsafe function, refer to 5.6 Failsafe for details.

6.5 Trouble Shooting

Troubles	Possible Causes	Solutions
The motor cannot start and the LED is not on after power-on.	1. The ESC has no working voltage.	Check whether there is any connection problem between the battery and the ESC and whether there is faulty welding of the relevant plug.
	2. The switch of receiver or the ESC itself is damaged.	Return to factory for inspection and treatment.
When forward the car by the transmitter, it reverse.	1. It may cause by the connection sequence between output line of ESC and motor line.	Exchange the position of two lines of motor.
	2. The throttle direction of transmitter is wrongly set.	Set throttle direction of transmitter to the opposite direction.
The motor suddenly stops rotating during rotation.	1. The throttle signal is lost.	Check the transmitter and the receiver.
	2. The ESC enters low voltage protection or overheat protection of battery.	The receiver LED will flash slowly and continuously. Please check the battery voltage and the temperature of the ESC.
When the motor starts, it accelerates rapidly, and the motor is stuck or stops.	1. Battery discharge capacity is insufficient	Replace battery with strong discharge capacity.
	2. The rotation speed of motor is too fast, the gear ratio is not reasonable.	Replace low speed motor, or increase the reduction ratio.

7. Product Specifications

This section contains the specifications of the FS-RCR-G4P-BS transmitter and the RCR-R3A receiver.

7.1 Transmitter Specifications

Product Model	FS-RCR-G4P-BS
Number of Channels	4
Compatible Receivers	RCR-R3A
Compatible Models	Car, Boat
RF	2.4GHz ISM
Maximum Power	<20dBm (e.i.r.p.) (EU)
2.4GHz Protocol	2A-BS
Distance	>300m (Ground Distance without Interference)
Channel Resolution	1024
Input Power	1.5AA*4
Charging Jack	None
Life Time	According to battery type
Low Voltage Alarm	<4.2V
Antenna	Single Built-in Antenna
Data Interface	None
Temperature Range	-10°C ~ +60°C
Humidity Range	20% ~ 95%
Online Update	None
Color	Black
Dimensions	160*193*97mm
Weight	220g
Certifications	CE, FCC ID: N4ZG4P00

7.2 Receiver Specifications

Product Model	RCR-R3A
Number of Channels	3
Compatible Transmitters	FS-RCR-G4P-BS
Compatible Models	1:18 Crawler
RF	2.4GHz ISM
2.4GHz Protocol	2A-BS
Distance	⩾ 300m (Ground Distance without Interference)
Antenna	Single External Antenna
Input Power	2S LiPo
BEC Output	5V/1A
Data Interface	PWM
Continuous / Peak Current	10A/40A
Motor Type	Brushed Motor
Applicable Motors	180 Brushed Motor
Online Update	None
WaterProof	PPX4
Temperature Range	-10°C ~ +60°C
Humidity Range	20% ~ 95%
Online Update	None
Weight	9.8g
Dimensions	38*25*13mm
Certifications	CE, FCC ID: 2A2UNR3A00

8. Package Contents

Transmitter*1(FS-RCR-G4P-BS)
Receiver*1(RCR-R3A)

9. Certifications

9.1 DoC Declaration

Hereby, [Flysky Technology Co., Ltd.] declares that the Radio Equipment [FS-RCR-G4P-BS&RCR-R3A] is in compliance with RED 2014/53/EU.

The full text of the EU DoC is available at the following internet address: www.flyskytech.com/info_detail/10.html

9.2 CE Warning

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

9.3 FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or televison reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.and (2) This device must accept any interference received, including interference that may cause undesired operation.

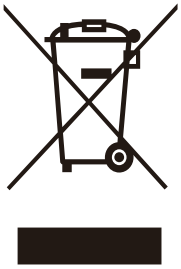
Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

1. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-lacated or operating in conjunction with any other transmitter.End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
2. Move all your channels to the desired position.
3. Select [All channels] and then [Yes] in the confirmation box.

9.4 Environmentally friendly disposal

Old electrical appliances must not be disposed of together with the residual waste, but have to be disposed of separately. The disposal at the communal collecting point via private persons is for free. The owner of old appliances is responsible to bring the appliances to these collecting points or to similar collection points. With this little personal effort, you contribute to recycle valuable raw materials and the treatment of toxic substances.



CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

9.5 IC STATEMENT

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC: 25584-G4PBS00

FLYSKY

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CE, FCC ID：N4ZG4P00

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