

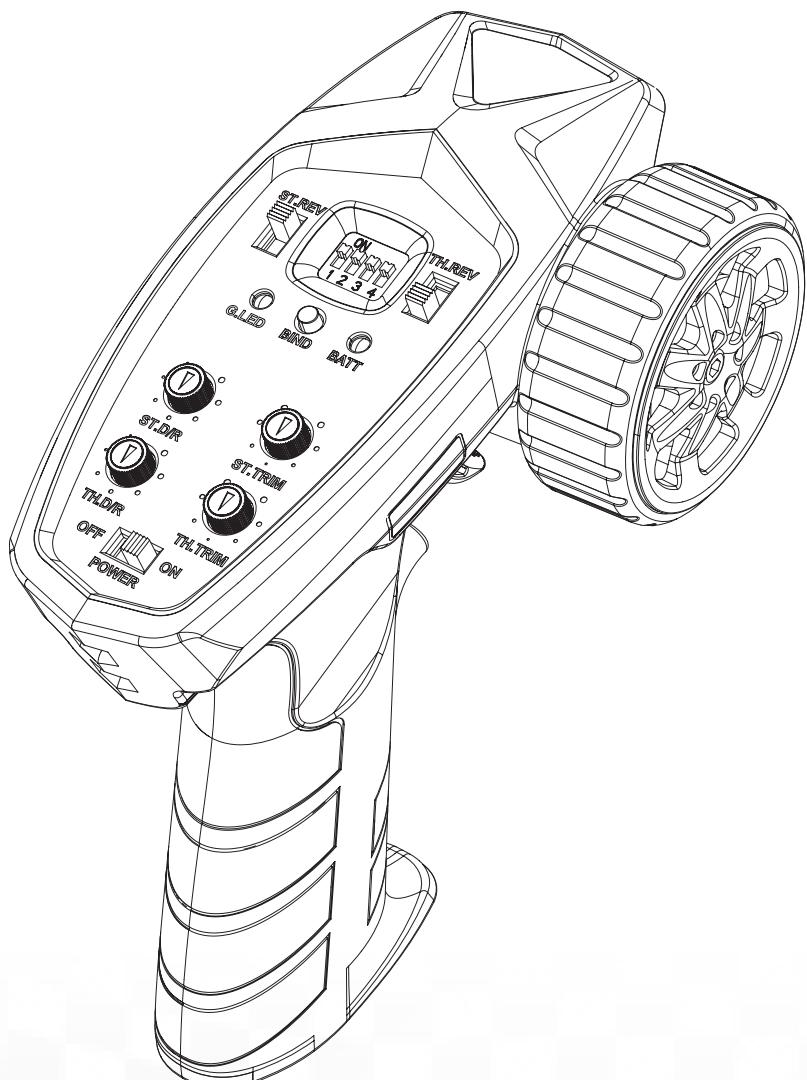
FS-MG2-BS

USER MANUAL

Digital Proportional Radio Control System

FLYSKY

2.4GHz
2A-BS



Copyright ©2025 Flysky Technology Co., Ltd.



微信公众号



Bilibili



Website



Facebook



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
1.1 Safety Symbols	1
1.2 Safety Guide.....	1
2. Introduction	2
2.1 Transmitter Overview.....	2
3. Getting Started	3
3.1 Transmitter Antenna	3
3.2 Receiver and Servo Installation	3
3.3 Transmitter Battery Installation.....	4
4. Instructions	5
4.1 Powering ON.....	5
4.2 LED Indicator.....	5
4.3 Binding.....	5
4.4 Stick Calibration	6
4.5 Powering OFF	6
5. System Functions	7
5.1 Channel Description	7
5.2 Channel Reverse.....	7
5.3 Trims.....	7
5.4 D/R.....	8
5.5 Failsafe	8
5.6 ESC Parameters Setting	9
5.7 Idle Alarm	10
5.8 Sleep Mode	10
5.9 Low Voltage Alarm	10
6. Product Specifications	11
6.1 Transmitter Specifications	11
7. Package Contents	12
8. Certifications	13
8.1 DoC Declaration	13
8.2 CE Warning.....	13
8.3 FCC Statement	13
8.4 Environmentally friendly disposal.....	14
8.5 RF Exposure Statement.....	14

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	<ul style="list-style-type: none">Not following these instructions may lead to serious injuries or death.
 Warning	<ul style="list-style-type: none">Not following these instructions may lead to major injuries.
 Caution	<ul style="list-style-type: none">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.



微信公众号



Bilibili



Website

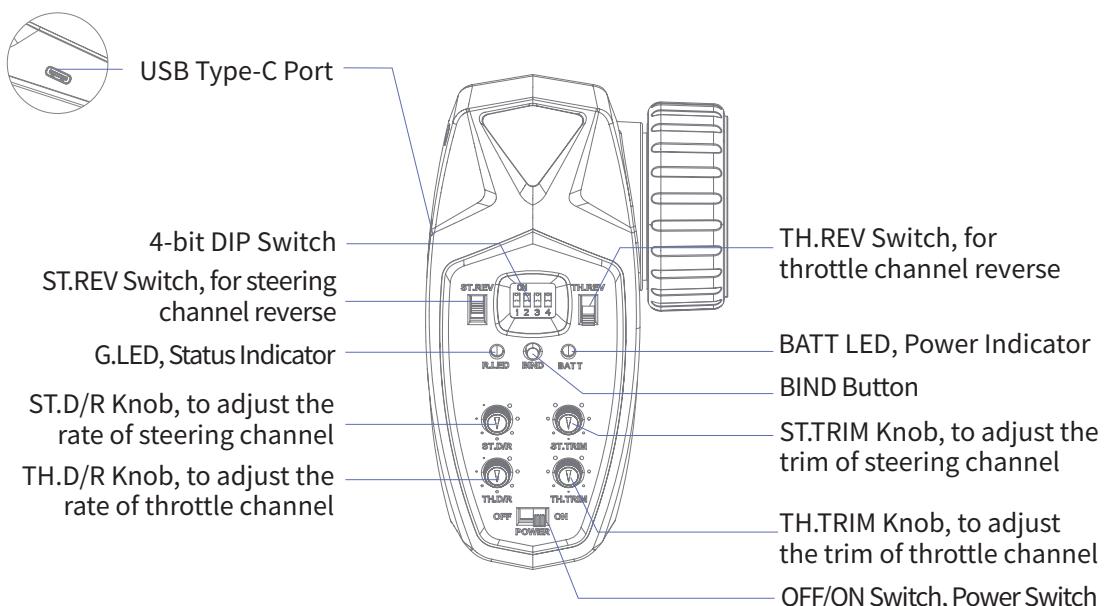
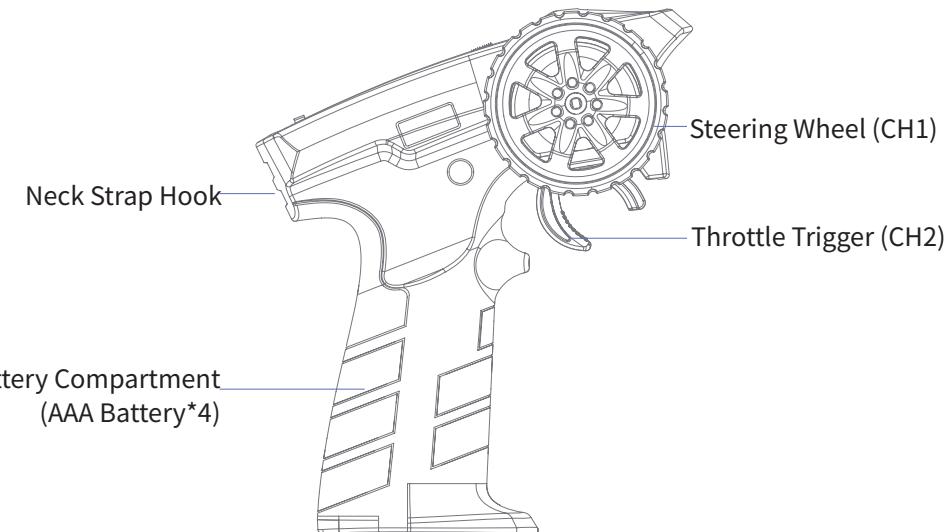


Facebook

2. Introduction

The FS-MG2-BS is a lightweight 2-channel transmitter operating on the 2.4GHz 2A-BS protocol. Featuring an ergonomic design with comfortable grip, this compact transmitter allows direct ESC parameter programming and is specifically designed for RC car applications.

2.1 Transmitter Overview



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:

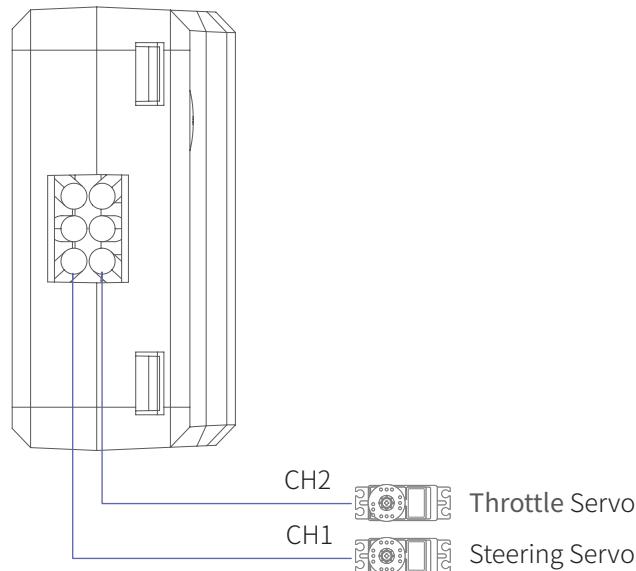
Pay attention to the following when installing the receiver:

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.



To prevent damage do not power on the receiver during installation.

Taking the connection between the FS-R2A-ESC-BS receiver and the servo as an example, other receiver models can refer to this connection method. However, please note that the connector definitions of different receivers may vary. For specific information, please visit the FLYSKY official website to consult the user manual or related materials



微信公众号



Bilibili



Website



Facebook

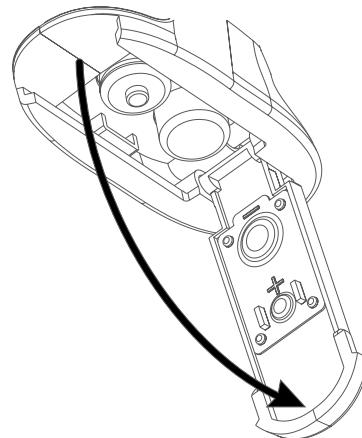
3.3 Transmitter Battery Installation

 Danger	<ul style="list-style-type: none">Only use specified battery.
 Danger	<ul style="list-style-type: none">Do not open, disassemble, or attempt to repair the battery.
 Danger	<ul style="list-style-type: none">Do not crush/puncture the battery, or short the external contacts.
 Danger	<ul style="list-style-type: none">Do not expose to excessive heat or liquids.
 Danger	<ul style="list-style-type: none">Do not drop the battery or expose to strong shocks or vibrations.
 Danger	<ul style="list-style-type: none">Always store the battery in a cool, dry place.
 Danger	<ul style="list-style-type: none">Do not use the battery if damaged.

Installing the AAA Battery

Follow the steps below to install the AAA batteries:

1. Open the battery compartment cover as illustrated.
2. Insert 4 fully-charged AAA batteries into the compartment. Make sure that the batteries are well set according to the polarities marked on the battery compartment.
3. Replace the battery compartment cover.



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 the batteries are fully charged and installed correctly.
2. Toggle the Power Switch to the ON position. The G.LED will be solid on.

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



- **Operate with caution in order to avoid damage or injury.**

4.2 LED Indicator

This transmitter is equipped with a G.LED and a BATT LED, with the following functions:

1. G.LED: The green status indicator
 - When the transmitter is in binding state, the G.LED will flash rapidly.
 - When the transmitter is in normal state, the G.LED will solid on.
 - When the transmitter voltage is low, the G.LED will flash slowly.
 - When the transmitter is in idle alarm/sleep mode, the G.LED will be in gradual light state.
 - When the transmitter's failsafe is successfully set, the G.LED will flash rapidly three times.
2. BATT Indicator: The battery power indicator for the transmitter and 2-in-1 receiver
 - When the battery power is high, the BATT LED will be solid on in green.
 - When the battery power is medium, the BATT LED will be solid on in yellow.
 - When the battery power is low, the BATT LED will be solid on in red.
 - When the battery power is ultra low, the BATT LED will flash slowly in red.
 - When the transmitter is in calibration mode, the BATT LED will flash slowly in green.

Note: In three seconds after the power-on of the transmitter, the BATT LED indicates the transmitter battery power status. When the transmitter is powered on for 3 seconds, the receiver battery power status is indicated.

- When the transmitter does not receive the return message, the BATT LED will be off.
- When the receiver is de-bound, the BATT LED will maintain in the state when the receiver is de-binding.

4.3 Binding

Taking the two-way binding between the FS-MG2-BS transmitter and the FS-R2A-ESC-BS receiver as an example, please follow the steps below:

1. Turn on the transmitter while holding the BIND button, then the transmitter will enter the binding mode. At this time, the G.LED will flash quickly. Once in bind mode release the BIND button.
2. Turn on the receiver, and it will wait for 1 second for connection. If without connection, the receiver will enter the



微信公众号



Bilibili



Website



Facebook

binding mode automatically. At this time, the receiver LED will be flashing fast.

- Once the binding is successful, the receiver LED and the G.LED of the transmitter will be solid on.
- Verify that the transmitter and the receiver are working properly. If you need to re-bind, repeat the above steps.

Note: The FS-MG2-BS transmitter complies with the 2A-BS protocol and is only compatible with receivers conforming to this protocol; Different receivers may have different binding procedures. For more information, visit FLYSKY official website for manuals and other related information.

4.4 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:

- 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, meanwhile, the G.LED and BATT indicators enter a two-flash-one-off state.
- Steering Wheel Calibration: Turn the steering wheel to the max and min travel clockwise/counterclockwise respectively, and the G.LED is off.
- Throttle Trigger Calibration: Push/pull the throttle trigger to forward/backward as far as it will go, and the BATT indicator is off.
 - Note: The calibration sequence for the steering wheel and trigger can be swapped. The G.LED turns off after calibrating either channel, while the BATT indicator turns off only after completing all calibrations.
- Press the BIND button to save and exit in case of the calibration is successful, and the G.LED is on.

If the calibration fails, pressing the BIND button is invalid. Repeat the steps above.

4.5 Powering OFF

Follow the steps below to turn off the system:

- Turn off the receiver first.
- Toggle the transmitter's power switch to the [OFF] position.



- 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

The transmitter outputs a total of 2 channels, which are assigned as below, as well as the functions.

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.

5.2 Channel Reverse

This function reverses the motion direction of steering channel and throttle channel.

The ST.REV and TH.REV switches are reverse setting switches of steering channel and throttle channel respectively. A switch on the upper side indicates that the servo output is normal; a switch on the lower side indicates that the servo output is reverse.

Setup:

Toggle the corresponding setting switch to the upper side. Test to make sure everything is working as expected.

5.3 Trims

This function can set the trim of steering channel and throttle channel.

The ST.TRIM and TH.TRIM knobs correspond to the trim adjustments of the steering channel and throttle channel respectively. When the knob is centered by default, the trim value is zero. When adjusting counterclockwise, the trim value increases to a maximum of 120us. When adjusting clockwise, the trim value decreases to a minimum of -120us. Note that when the channel is set in reverse, the trim is reversed at the same time, that is, the trim value decreases in the counterclockwise adjustment, and the trim value increases in clockwise adjustment.

Setup:

Turn the trim knobs corresponding to the channel clockwise or counterclockwise for trim adjustment.

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.



微信公众号



Bilibili



Website



Facebook

5.4 D/R

This function is used to adjust the rate of steering channel and throttle channel, so that the servo actions tend to be sensitive.

ST.D/R is used to adjust the steering channel rate. TH.D/R is used to adjust the throttle channel rate. Turning the knob counterclockwise will increase the value. Turning the knob clockwise will decrease the value. Smaller values indicate finer adjustment. The range is 0 ~100%.

Setup:

Turn the D/R knobs corresponding to the channel clockwise or counterclockwise for D/R adjustment.

5.5 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, and the interfaces will maintain the last output in case of out-of-control. The default failsafe protection status may vary depending on the model of the receiver, and it should be based on the specific receiver that is bound.

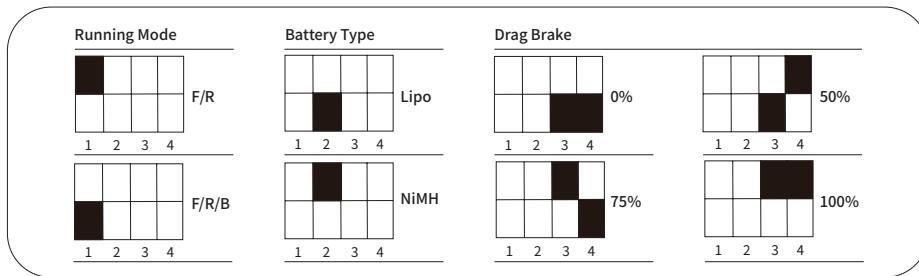
It can be set at the transmitter side. The setting steps are as following:

In the normal power-on state, set the control corresponding to the channel to be configured with failsafe to the preset position, meanwhile, press and hold the BIND button for 3 seconds to set the output value as the failsafe value. And the G.LED will flash rapidly three times to indicate successful configuration.

Notes: When a 2-in-1 receiver has connected, the ESC will enter the brake state when the receiver is out-of-control.



5.6 ESC Parameters Setting



4-bit DIP Switch Sign

The ESC parameters can be set by the 4-bit DIP Switch of the transmitter, that is, the DIP switch is located at different positions and the corresponding parameter values are different. There are three parameters can be set for the ESC, which are "Running Mode", "Battery Type" and "Drag Brake".

Running Mode

Forward/Reverse/Brake(F/B/R): When the throttle trigger is pulled back and then quickly pushed forward, the motor will only brake and will not reverse. When the throttle trigger is moved back to the neutral range and pushed to the reverse area, it will reverse. This mode is applicable to general models.

Forward/Reverse(F/R): When the throttle trigger is pushed into the reverse zone, the motor will immediately reverse, which is generally applied to rock crawler.

The switch marked 1 of the 4-bit DIP switch is used to set the ESC running mode. The switch on the upper side indicates that the running mode is Forward/Reverse; and the switch on the lower side indicates that the running mode is Forward/Reverse/Brake.

Battery Type

There are LiPo and NiMH cells. It can be set according to the actual use.

The switch 2 of the 4-bit DIP switch is used to set the battery type. The switch on the upper side indicates that the battery type is NiMH cells; and the switch on the lower side indicates that the battery type is LiPo.

Drag Brake

The drag brake means that when the throttle trigger moves from the forward or reverse area to neutral range, it will produce certain braking force to the motor, the larger the value is, the greater the drag brake force is. And this is applicable to decelerate into a turn and model crawler applications. Select proper braking force according to the actual situation.

The switches 3 and 4 of the 4-bit DIP switch are used to set the ESC drag brake force. The drag brake force can be set to 0%, 50%, 75% or 100%.

Setup:

- Toggle both the switch 3 and 4 to the lower side, then the drag brake force is set to 0%.
- Toggle the switch 3 to the lower side and switch 4 to the upper side, then the drag brake force is set to 50%.
- Toggle the switch 3 to the upper side and switch 4 to the lower side, then the drag brake force is set to 75%.
- Toggle both the switch 3 and 4 to the upper side, then the drag brake force is set to 100%.



微信公众号



Bilibili



Website



Facebook

5.7 Idle Alarm

The transmitter will go into idle alarm state when there is no operation over 10 minutes.

In this mode, BATT indicator will be in gradual light state.

Operate any of transmitter controls to exit the idle alarm state.

5.8 Sleep Mode

When the transmitter has been in idle alarm state over 2 minutes, it will enter the sleep mode.

In this mode, the BATT indicator will be in gradual light state, G.LED turns off, and RF is disabled.

To exit the sleep mode, power off the transmitter and restart it.

5.9 Low Voltage Alarm

When the system detects a low voltage, it will give an alarm. Avoid accidents caused by long-term operation under low voltage.

When the voltage is detected below 4.4V(AAA battery), there is an alarm due to low voltage. At this time, the G.LED will flash slowly.

When the voltage is detected below 3.5V (ultra-low), the transmitting function is disabled. The G.LED will flash slowly.



6. Product Specifications

This section contains the specifications of FS-MG2-BS transmitter.

6.1 Transmitter Specifications

Product Model	FS-MG2-BS
Compatible Receivers	FS-R2A-ESC-BS
Compatible RC Models	Car
Number of Channels	2
RF	2.4GHz ISM
Maximum Power	<20dBm (e.i.r.p.) (EU)
RF Protocol	2A-BS
Resolution	4096
Input Power	1.5AAA*4
Low Voltage Alarm	Supported
Antenna	Single Built-in Antenna
Charging Jack	None (The USB Type-C port is only for power supply)
Firmware Update	Not Supported
Distance	>60m(Ground Distance Without Interference)
Temperature Range	-10°C ~ +60°C
Humidity Range	20% ~ 95%
Dimensions	120.5*145.2*72.6mm
Weight	128g
Color	Black
Certifications	CE, FCC ID: 2A2UNMG200



微信公众号



Bilibili



Website



Facebook

7. Package Contents

The accessories included are different in different versions, please consult your dealer for details.



8. Certifications

8.1 DoC Declaration

Hereby, [ShenZhen Flysky Technology Co., Ltd.] declares that the Radio Equipment [FS-MG2-BS] is in compliance with RED 2014/53/EU.

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

8.2 CE Warning

The ce warns that the installation of the antenna used in this transmitter must be kept in distance from all the personnel and shall not be used or used with any other transmitter. The end user and the installer must provide antenna installation instructions and transmitter operating conditions to meet the requirements for rf exposure compliance.

8.3 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 television 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.
- (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-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.
2. Move all your channels to the desired position.
3. Select [All channels] and then [Yes] in the confirmation box.



微信公众号



Bilibili



Website



Facebook

8.4 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

CAUTION

- replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types);
- disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;
- leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas; and
- a battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

8.5 RF Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Figures and illustrations in this manual are provided for reference only and may differ from actual product appearance. Product design and specifications may be changed without notice.



FLYSKY



微信公众号



Bilibili



Website



Facebook

www.flsky-cn.com

Copyright ©2025 Flysky Technology Co., Ltd.

Release date: 2025-05-21



FCC ID: 2A2UNMG200

Manufacturer: Shenzhen FLYSKY Technology Co., Ltd.

Address: 16F, Huafeng Building, No. 6006 Shennan Road, Futian District, Shenzhen, Guangdong, China