FMS-R3A1

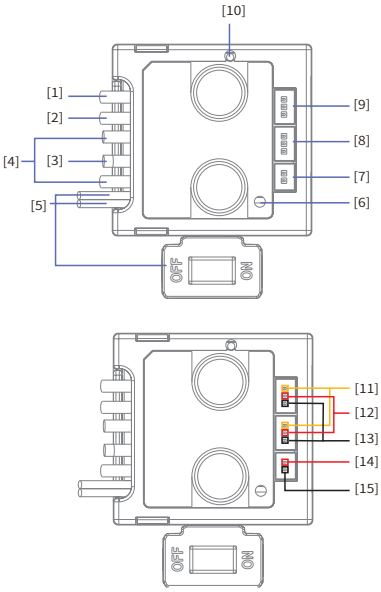
接收机 Receiver

产品介绍 Introduction

FMS-R3A1 采用 2A-BS 协议，是一款集无刷电调和 LED 灯组的三通道二合一接收机。本接收机外置单天线，输出 PWM 信号和车灯控制信号，支持双向传输，采用上电自动对码，设计小巧紧凑，可适配多款模型车使用。

The FMS-R3A1, in compliance with the 2A-BS protocol, is a 2-in-1 3-Channel receiver with brushless ESC and LED light set. The receiver, equipped with a single external antenna, can output PWM signals and vehicle light control signals, and support 2-way transmission. It adopts auto-bind upon power-on and lightweight and compact design, and adaptation to a variety of model cars.

接收机概览 Receiver Overview



[1] 马达接口 A 相（黄色）
[2] 马达接口 B 相（黑色）
[3] 马达接口 C 相（红色）
[4] 电池接口
[5] 电源开关线
[6] LED
[7] 车灯接口
[8] CH1
[9] CH3
[10] 天线
[11] S（通道接口信号端）
[12] +（通道接口正极）
[13] -（通道接口负极）
[14] +（车灯接口正极）
[15] -（车灯接口负极）

[1] Motor Interface A (Yellow)
[2] Motor Interface B (Black)
[3] Motor Interface C (Red)
[4] Battery Interface
[5] Power Switch Cable
[6] LED
[7] Car Light Interface
[8] CH1
[9] CH3
[10] Antenna
[11] Signal Pin (CH Interface)
[12] + (CH Interface Anode)
[13] - (CH Interface Cathode)
[14] + (Light Interface Anode)
[15] - (Light Interface Cathode)

注：马达接口采用 3.5mm 香蕉头母头；电池接口采用 XT30 公头；CH1 和 CH3 通道接口采用标准 1.25mm*3Pin 端子座；车灯接口采用标准 1.25mm*2Pin 端子座。

Note: The spec of motor interface is a 3.5 mm banana female connector. The battery interface uses an XT30 male connector. CH1 and CH3 interfaces use standard 1.25mm*3Pin terminal blocks. The car light interface uses standard 1.25mm*2Pin terminal blocks.

产品规格 Product Specifications

- 产品型号：FMS-R3A1
- 适配发射机：FMS-G3
- 适合模型：1/18、1/24 竞速、仿真、攀爬车
- 适配电机：2030 无刷电机
- 通道个数：3
- 车灯组数：1
- 无线频率：2.4GHz ISM
- 无线协议：2A-BS
- 天线类型：外置单天线
- 输入电源：2S 锂电池
- BEC 输出：5V/1A
- 持续 / 峰值电流：16A/64A
- 遥控距离：> 100 米 (空旷无干扰地面距离)
- 数据输出：PWM
- 温度范围：-10°C ~ +60°C
- 湿度范围：20% ~ 95%
- 防水等级：PPX4
- 在线更新：无
- 外形尺寸：33.0*31.7*22.0mm
- 机身重量：24.3g
- 认证：CE，FCC ID：2A2UNR3A10

- Product Name: FMS-R3A1
- Applicable Transmitters: FMS-G3
- Model Type: 1/18, 1/24 Racing, Simulation Model Car or Crawler Car
- Applicable Motors: 2030 Brushless Motor
- Number of Channels: 3
- Number of Light Interfaces: 1
- RF: 2.4GHz ISM
- 2.4G Protocol: 2A-BS
- Antenna: Single External Antenna
- Input Power: 2S Lithium Battery
- BEC Output: 5V/1A
- Continuous / Peak Current: 16A/64A
- Distance: > 100m (Ground distance without interference)
- Data Output: PWM
- Temperature Range: -10°C ~ +60°C
- Humidity Range: 20% ~ 95%
- Waterproof: PPX4
- Online Update: No
- Dimensions: 33.0*31.7*22.0mm
- Weight: 24.3g
- Certifications: CE, FCC ID: 2A2UNR3A10

对码 Binding

本款接收机采用上电自动进入对码的方式设计：

- 接收机上电即进入等待连接状态，等待与已对码的发射机建立通信；
- 若 2S 未与已对码的发射机建立通信，则自动进入对码状态，此状态持续 10 秒；
- 若与发射机对码成功，即进入正常通信状态；否则退出对码状态，回到等待连接状态。

注：对码时，接收机 LED 灯快闪；等待连接时，接收机 LED 灯慢闪；正常通信时，接收机 LED 灯常亮。

对码步骤如下：

1. 将发射机进入对码状态（发射机进入对码状态的方式可能不同，请根据发射机的使用说明书进行操作）；
2. 接收机上电等待 2 秒没有连接将自动进入对码；
3. 对码成功后 , 接收机 LED 指示灯常亮；

注：对码时请先将发射机进入对码状态，再将接收机进入对码状态，若 10 秒内对码没有完成，接收机指示灯进入慢闪状态。

This receiver is designed to automatically enter the binding mode at power-on.

- The receiver enters the waiting-for-connection state upon power-on, waiting for the connection to the bound transmitter.
- If the receiver does not connect the bound transmitter within 2S, it automatically enters the binding state. This state lasts for 10S.
- If the binding with the transmitter is successful, it enters the normal connection state, otherwise, it exits the binding state and returns to the waiting-for-connection state.

Note: In case of binding, the receiver LED flashes quickly. In case of waiting-for-connection, the receiver LED flashes slowly. In case of normal connection, the receiver LED is solid on.

The binding steps are as below.

1. First put the transmitter into bind mode (See the transmitter's user manual for instructions on how to activate bind mode.).
2. When the receiver is powered on and waits for 2 seconds, it will automatically enter the binding state if it is not connected.
3. After the binding is successful, the LED indicator of the receiver is solid on.

Note: Set the transmitter to its binding state first, and then set the receiver to its binding state. If the binding is not finished within 10S, the LED of the receiver will enter its slow flashing state.

保护功能 Protection

本接收机具有电池电压过低保护功能。

- 电压过低保护：当检测到电池电压过低时，所有通道无输出，车灯慢闪提示。

本接收机电调具有过热保护和堵转保护功能。

- 过热保护：当检测到整机温度过高时，CH2 马达无输出，CH1 和 CH3 正常输出；当温度正常后，通道恢复输出。
- 堵转保护：当外部马达堵转时，进入堵转保护状态，用于保护电调和马达。

The receiver supports the low voltage protection function.

- Low Voltage Protection: The receiver will enter the low voltage protection state in case of detecting low voltage, all channels won't output, and the car light will flash slowly for prompt.

The receiver supports the overheating protection and the blocking protection function.

- Overheating Protection: The receiver will enter the overheating protection state in case of the high internal temperature of the ESC, the CH2 motor channel won't output, but the other channels will output normally. The CH2 motor channel will output normally when the temperature is normal.
- Blocking Protection: When the external motor is blocked, it enters the blocking protection state, to protect the ESC and the motor.

车灯控制 Car Light Control

在发射机与接收机正常通信状态下，短按发射机 BIND 按键开或关闭车灯。默认为关闭状态。

When the receiver and the transmitter has connected normally, press the BIND button of the transmitter to turn on or turn off the car llight. By default, the car light is off.

电调运行模式 ESC Running Mode

电调运行模式

电调运行模式可设置为 [直接正反转] 或 [正反转带刹车]，默认模式为 [直接正反转] 模式。

对于 [正反转带刹车] 模式，可在发射机端设置最大刹车力度，支持设置为 55%、70% 或 100%。

注：电调运行模式需在与本接收机完成对码的发射机端设置，具体设置方式参考发射机说明书。

ESC Running Mode

The running mode can be set to Forward/Reverse/Brake mode or direct Forward/Reverse mode, and by default, the running mode is direct Forward/Reverse mode.

When the running mode is set to Forward/Reverse/Brake mode, the maxmam brake force can be set to 55%, 70% or 100% through the transmitter.

Note: The running mode of the ESC can be set at the transmitter side which is bound with the receiver. For the details, refer to the transmitter manual.

失控保护 Failsafe

此功能用于当接收机无法正常收到发射机的信号不受控制时，保护模型和操作人员的安全。

失控后 CH2 通道进入刹车状态；CH1、CH3 通道默认为未设置，未设置时保持最后输出。可在发射机端设置 CH1、CH3 通道失控保护值。

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

The CH2 channel will enter the brake state when the receiver is out-of-control. By default, the CH1 and CH3 channels are not set, and these two channels will maintain the last output in case of out-of-control. You can set the failsafe value for CH1 and CH3 channels at the transmitter side.

注意事项：

- 使用前必须确保本产品与模型安装正确，否则可能导致模型发生严重损坏。
- 关闭时，请务必先关闭接收机电源，然后关闭发射机。如果关闭发射机电源时接收机仍然在工作，将会导致遥控设备失控。失控保护设置不合理可能引起事故。
- 确保接收机安装在远离电机，电子调速器或电子噪声过多的区域。
- 接收机天线需远离导电材料，例如金属棒和碳物质。为了避免影响正常工作，请确保接收机天线和导电材料之间至少有 1 厘米以上的距离。
- 准备过程中，请勿连接接收机电源，避免造成不必要的损失。

Attentions:

- Make sure the product is installed and calibrated correctly, failure to do so may result in serious injury.
- 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.
- Make sure the receiver is mounted away from motors, electronic speed controllers 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.

认证相关 Certifications

FCC Compliance Statement

This device 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.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

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.

EU DoC Declaration

Hereby, we declare that the Radio Equipment [FMS-R3A1] is in compliance with RED 2014/53/EU.

RF Exposure Compliance

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 centimeters between the radiator and your body.

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.

FCC ID: 2A2UNR3A10