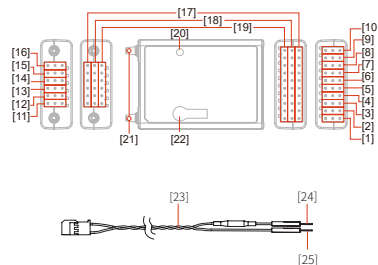


产品介绍 Introduction

FS-SR12 是一款采用 ANT 协议支持 12 个 PWM 通道信号输出的接收机。具有双天线，支持双向传输和回传功能、支持 BVD 功能、设计小巧、可适配多种模型使用。

FS-SR12 is a receiver in compliance with the ANT protocol, supporting the output of 12 PWM channels signals. It has two antennas, supporting two-way transmission, transfer-back function and BVD function, featuring the compact design, adaption to a variety of models.

接收机概览 Overview



[1] CH1 通道接口 /PPM	[10] CH10 通道接口	[19] S(信号端)
[2] CH2 通道接口	[11] CH11 通道接口	[20] LED 灯
[3] CH3 通道接口	[12] CH12 通道接口	[21] 天线
[4] CH4 通道接口	[13] BIND/VCC 接口	[22] 对码按键
[5] CH5 通道接口	[14] BVD/VCC 接口	[23] BVD 功能配件
[6] CH6 通道接口	[15] SENS 接口	[24] 接电池正极
[7] CH7 通道接口	[16] SERVO/S.BUS 接口	[25] 接电池负极
[8] CH8 通道接口	[17] - (电源负极)	
[9] CH9 通道接口	[18] + (电源正极)	

[1] CH1/PPM	[10] CH10	[19] Signal Pin
[2] CH2	[11] CH11	[20] LED
[3] CH3	[12] CH12	[21] Antennas
[4] CH4	[13] BIND/VCC Interface	[22] BIND Button
[5] CH5	[14] BVD/VCC Interface	[23] BVD Harness
[6] CH6	[15] SENS Interface	[24] To Connect Battery Anode
[7] CH7	[16] SERVO/S.BUS Interface	[25] To Connect Battery Cathode
[8] CH8	[17] - (Power Cathode)	
[9] CH9	[18] + (Power Anode)	

BVD 电压检测范围: 0~70V/BVD voltage detection range: 0~70V

产品规格 Specifications

- 产品型号: FS-SR12
- 适配发射机: ANT 协议发射机 (如 FS-ST8)
- 适配模型: 固定翼、直升机、滑翔机、三角翼、多轴、穿越机、工程车、船模、机器人或车模
- PWM 通道数: 12
- 无线频率: 2.4GHz ISM
- 发射功率: 小于 20dBm
- 无线协议: ANT
- 通道分辨率: 4096 级
- 天线类型: 双天线
- 遥控距离: > 1500 米 (空旷无干扰空中距离)
- 工作电压: 3.5~9V/DC
- 输出数据: PWM/PPM/i-BUS/S.BUS
- 固件更新: 支持
- 温度范围: -10°C ~ +60°C
- 湿度范围: 20% ~ 95%
- 外形尺寸: 44.8*32*11.3mm
- 机身重量: 13g
- 认证: CE, FCC ID: 2A2UNS1200
- Product Model: FS-SR12
- Compatible Transmitters: Adapts transmitters with ANT protocol, such as FS-ST8
- Compatible RC Models: Fixed-wing aircraft, helicopters, gliders, delta-wing airplanes, multicopters, engineering vehicles, boats, robots or cars.
- Number of PWM Channels: 12
- RF: 2.4GHz ISM
- Maximum Power: <20dBm (e.i.r.p.) (EU)
- RF Protocol: ANT
- Resolution: 4096
- Antenna: Two antennas
- Distance: > 1500m (Air distance without interference)
- Operating Voltage: 3.5~9V/DC
- Data Output: PWM/PPM/i-BUS/S.BUS
- Firmware Update: Supported
- Temperature Range: -10°C ~ +60°C
- Humidity Range: 20% ~ 95%
- Dimensions: 44.8*32*11.3mm
- Weight: 13g
- Certifications: CE, FCC ID: 2A2UNS1200

对码 Binding

本款接收机支持双向对码和单向对码, 双向对码完成后发射机将显示接收机回传的信息。

双向对码步骤:

- 发射机端选择双向通信后, 使发射机进入对码状态;
- 本接收机支持三种方式进入对码状态: 按键对码、对码线对码和通电后按键对码
 - 按键对码: 按下接收机对码按键且同时上电, 接收机 LED 灯快闪表示进入对码状态, 松开对码键;
 - 对码线对码: BIND 接口连接对码线后上电, 接收机 LED 灯快闪表示进入对码状态。注意对码成功后需取下对码线;
 - 通电后按键对码: 接收机上电后未与发射机通信过, 长按对码键 3 秒, 接收机指示灯快闪表示进入对码状态, 松开对码键。
- 接收机 LED 灯常亮, 即对码成功 (发射机对码成功后自动退出对码状态);
- 检查发射机、接收机是否正常工作。如需重新对码, 请重复以上步骤。

单向对码步骤:

- 发射机端选择单向通信后, 使发射机进入对码状态;
- 使接收机进入对码状态 (进入对码状态的方式请参考双向对码时描述);
- 接收机 LED 灯变为慢闪后将发射机退出对码状态, 此时接收机 LED 灯常亮, 表示对码成功;
- 检查发射机、接收机是否正常工作。如需重新对码, 请重复以上步骤。

对码 Binding

The receiver supports two-way binding and one-way binding. The transmitter will display the information returned from the receiver after the two-way binding is completed.

Follow the steps below to bind in two-way binding:

1. At the transmitter side, set 2WAY for RF standard of the transmitter, then put the transmitter into bind mode.
2. The receiver supports three ways to enter bind mode: BIND button binding, bind cable binding and BIND button binding after power-on.
 - BIND button binding: Press and hold the BIND button of the receiver while powering on the receiver, the LED of the receiver should be flashing, indicating that the receiver is in bind mode. Then release the BIND button.
 - Bind cable binding: Insert the bind cable to the BIND interface of the receiver, then power on the receiver. The LED of the receiver should be flashing, indicating that the receiver is in bind mode. Note that you need to remove the bind cable from the receiver after the binding process is completed.
 - BIND button binding after power-on: The receiver has not been connected to the transmitter when it is powered on. Press and hold the BIND button for 3 seconds, the LED of the receiver should be flashing, indicating that the receiver is in bind mode. Then release the BIND button.
3. The receiver LED is always on after the binding is successful (The transmitter automatically exits the binding state after the successful binding).
4. Check to make sure the transmitter and receiver functions are working correctly, repeat steps 1 to 3 (binding process) if any problems arise.

Follow the steps below to bind in one-way binding:

1. At the transmitter side, set 1WAY for RF standard of the transmitter, then put the transmitter into bind mode.
2. Put the receiver into bind mode (Refer to the description above for entering bind mode).
3. When the LED of the receiver is in slow flashing state, the binding process should be completed. You need to manually put the transmitter to exit the bind mode. Then the LED of the receiver is solid on, indicating that the binding is completed.
4. Check to make sure the transmitter and receiver functions are working correctly, repeat steps 1 to 3 (binding process) if any problems arise.

固件更新 Firmware update

本接收机固件更新需通过富斯遥控管家 (FlySkyAssistant) 完成 (仅 3.0 及以上版本支持, 富斯遥控管家固件可从官网 www.flyskytech.com 获取)。

本接收机可以通过以下两种方式进入更新:

1. 先将发射机与接收机对码后 (接收机 LED 灯常亮), 再将发射机与电脑连接, 然后在电脑端打开富斯遥控管家, 通过富斯遥控管家进行固件更新;
2. 将发射机与电脑连接, 参考如下方式使接收机进入强制更新状态 (接收机 LED 灯状态三闪一灭), 然后在电脑端打开富斯遥控管家, 通过富斯遥控管家进行固件更新。

进入强制更新状态的操作方式如下:

- 先将接收机 BIND 和 CH11 通道的信号端相连接, 然后给接收机上电;
- 按下对码按键, 上电十秒后接收机 LED 灯状态三闪一灭, 松开对码按键;
- 先给接收机上电, 长按对码键十秒后接收机 LED 灯状态三闪一灭, 松开对码按键。

The firmware of this receiver can be updated through the FlyskyAssistant (Only version 3.0 or above is supported. The FlyskyAssistant firmware is available on the official Flysky website: www.flysky-cn.com).

This receiver can be updated via the following two ways:

1. After the binding between the transmitter and the receiver (the LED of the receiver is solid on), connect the transmitter to the computer, then open the FlyskyAssistant on the computer to update the firmware.
2. Connect the transmitter to the computer. Then put the receiver to enter the forced update mode by referring to the following way (The LED of the receiver operates in three-flash-one-off manner repeatedly). Afterwards, open the FlyskyAssistant on the computer to update the firmware.
 - Connect the signal pin of the BIND interface to the signal pin of the CH11 interface first, then power on the receiver.
 - Power on the receiver while pressing and holding the BIND button for more than ten seconds, until the LED of the receiver operates in three-flash-one-off manner repeatedly, then release the BIND button.
 - Power on the receiver first, then press and hold the BIND button for more than ten seconds, when the LED of the receiver operates in three-flash-one-off manner repeatedly, then release the BIND button.

失控保护 Failsafe

失控保护功能用于在接收机失去信号不受控制后, 接收机按设置好的失控保护值进行通道输出以保护模型及人员安全。

本款接收机共支持两种失控保护模式: [无输出] 和 [有输出]

[无输出] i-BUS/PPM/PWM 通道接口为无输出状态;

[有输出] i-BUS/PPM/PWM 通道接口输出设置的固定值。

注:

1. 因为 S.BUS 信号包含失控标志位, 所以接收机可通过失控标志位将“失控状态”信息传递到后续设备, 而无需通过 [无输出] 状态传递 (后续

失控保护 Failsafe

- 设备通过解析失控标志位信息做出相应地应对即可)；
- 对于无失控标志位的信号 PWM/PPM/i-BUS，支持设置失控时信号 [无输出]，通过 [无输出] 状态将“失控状态”信息传递给后续设备。

The failsafe function is used to output the channel value according to the out-of-control protection value set by the user after the receiver loses its signal and is out of control to protect the model and personnel.

This receiver supports two failsafe modes: **ON** and **OFF**

OFF It is no output for the interface of i-BUS/PPM/PWM.

ON Outputs the failsafe values set for the interface of i-BUS/PPM/PWM.

Notes:

- Because the S.BUS signal information contains failsafe flag bits, the failsafe information can be transmitted to the subsequent devices by the failsafe flag bits rather than by OFF state. The subsequent devices gives response according to the analysed information for the failsafe flag bits.
- For the signal PWM/PPM/i-BUS without failsafe flag bits, it supports the setting of the output signal to **OFF** in case of failsafe, transmitting the failsafe information to the subsequent devices by OFF state.

⚠ 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。
- 为了一切正常，请养成先开发射机再接收机通电以及先接收机断电再关闭发射机的习惯。
- 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.
- Normally, you must power on the transmitter and then receiver, and power off the receiver and then the transmitter.
- 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, [ShenZhen FLYSKY Technology Co., Ltd.] declares that the Radio Equipment [FS-SR12] 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

RF Exposure Compliance

The distance between user and products should be no less than 20cm.

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: 2A2UNSR1200



微信公众号



Bilibili



Website



Facebook

Manufacturer: ShenZhen FLYSKY Technology Co., Ltd.

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

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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.

<http://www.flysky-cn.com>

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