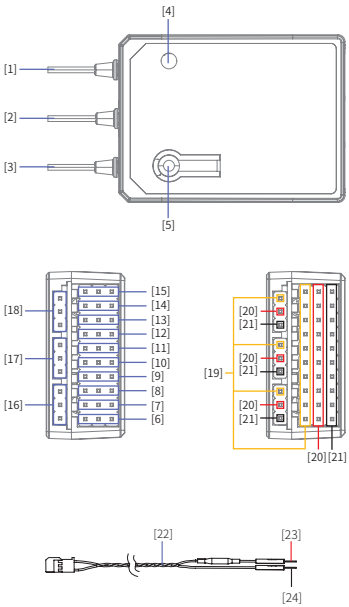
产品介绍 Introduction

Xr12 是一款 12 通道双频段接收机，它支持 900MHz 老鹰协议和 2.4GHz AFHDS 3（第三代自动跳频数字系统）协议。本接收机配备了三根外置天线，支持单双向传输和回传功能。它支持 4 个 Newport 接口，可自定义这些接口的输入或输出的信号类型，包括 i-BUS2/S.BUS/i-BUS/PPM/PWM 等。此外，它还支持 BVD 功能，并可适配飞机模型使用。

The Xr12 is a 12-channel dual-band receiver that bases on the 900MHz Eagle protocol and the 2.4GHz AFHDS 3 (third-generation automatic frequency hopping digital system) protocol. This receiver is equipped with external three antennas, supporting one-way and two-way transmission as well as telemetry functionality. It supports 4 Newport connectors, allowing for customization of the input or output signal types for these connectors, including i-BUS2, S.BUS, i-BUS, PPM, PWM, etc. Additionally, it supports BVD functionality and is compatible with airplane RC model.

接收机概览 Receiver Overview



[1] 天线（2.4GHz 频段）
[2] 天线（900MHz 频段）
[3] 天线（2.4GHz 频段）
[4] LED 灯
[5] 对码按键
[6] CH1 通道接口
[7] CH2 通道接口
[8] CH3 通道接口
[9] CH4 通道接口
[10] CH5 通道接口
[11] CH6 通道接口
[12] CH7 通道接口
[13] CH8 通道接口
[14] CH9/NPD 通道接口
[15] BVD/VCC 接口
[16] CH10/NPC 通道接口
[17] CH11/NPB 通道接口
[18] CH12/NPA 通道接口
[19] S (信号端)
[20] + (电源正极)
[21] - (电源负极)
[22] FS-XC101 电池电压检测线
[23] 接电池正极
[24] 接电池负极

[1] Antenna (2.4GHz)
[2] Antenna (900MHz)
[3] Antenna (2.4GHz)
[4] LED
[5] BIND Button
[6] CH1
[7] CH2
[8] CH3
[9] CH4
[10] CH5
[11] CH6
[12] CH7
[13] CH8
[14] CH9/NPD
[15] BVD/VCC
[16] CH10/NPC
[17] CH11/NPB
[18] CH12/NPA
[19] S (Signal Pin)
[20] + (Power Anode)
[21] - (Power Cathode)
[22] FS-XC101 Battery Voltage Detection Cable
[23] Connect to Battery Anode
[24] Connect to Battery Cathode

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

产品规格 Product Specifications

- 产品型号：Xr12
- 适配发射机：支持 FRM304 高频头的发射机
- 适配模型：飞机
- PWM 通道数：12
- 无线频率：2.4GHz ISM&915MHz (FCC) ISM/868MHz (CE) ISM
- 无线协议：AFHDS 3 CP Eagle
- 发射功率：<20dBm
- 天线类型：双 2.4G 天线 + 单 900M 天线
- 工作电压：3.5 ～ 9V/DC
- 通道分辨率：4096
- 数据输出：PWM/PPM/i-BUS2/S.BUS/i-BUS
- 温度范围：-10°C ~ +60°C
- 湿度范围：20%~95%
- 在线更新：支持
- 外形尺寸：43*32*15mm
- 机身重量：18g
- 认证 : CE, SRRC，FCC ID: 2A2UNXR1200

- Product Model: Xr12
- Compatible Transmitters: The transmitter that is compatible with FRM304 RF Module
- Compatible RC Models: Airplanes
- Number of PWM Channels: 12
- RF: 2.4GHz ISM&915MHz (FCC) ISM/868MHz (CE) ISM
- RF Protocol: AFHDS 3 CP Eagle
- Maximum Power: <20dBm (e.i.r.p.) （EU）
- Antenna: Dual 2.4G antennas and Single 900M antenna
- Operating Voltage: 3.5~9V/DC
- Resolution:4096
- Data Output: PWM/PPM/i-BUS2/S.BUS/i-BUS
- Temperature Range: -10°C ~+60°C
- Humidity Range: 20%~95%
- Online Update: Yes
- Dimensions: 43*32*15mm
- Weight: 18g
- Certifications: CE, SRRC, FCC ID: 2A2UNXR1200

对码 Binding

Xr12 接收机支持双向对码和单向对码。在双向对码完成后，发射机会显示接收机回传的信息。因此，对码之前，需要在发射机端先设置好是单向对码还是双向对码。如需对码接收机与发射机，请按照以下步骤操作：

双向对码步骤：

1. 发射机选择双向通信，然后进入对码状态;
2. 本接收机支持两种方式进入对码状态：按键对码和通电后按键对码
   - 按键对码：首先按下接收机的对码按键，然后接通接收机的电源。继续按住对码键 3 秒钟，此时接收机的 LED 灯会快速闪烁，表示已进入对码状态。然后松开对码键。
   - 通电后按键对码：如果接收机通电后尚未与发射机通信，长按对码键 3 秒钟，此时接收机的 LED 灯会快速闪烁，表示已进入对码状态。然后松开对码键。
3. 当接收机的 LED 灯常亮时，表示对码成功（发射机在对码成功后会自动退出对码状态。）；
4. 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：

1. 发射机选择单向通信，然后进入对码状态;
2. 本接收机进入对码状态（具体进入对码状态的方法请参考双向对码时的描述）；
3. 接收机 LED 灯变为慢闪后将发射机退出对码状态。此时，如果接收机的 LED 灯常亮，表示对码成功;
4. 检查发射机和接收机是否正常工作。如果需要重新对码，请重复上述步骤。

The Xr12 receiver supports both two-way and one-way binding. After completing two-way binding, the transmitter will display the information returned by the receiver. Therefore, before binding, it is necessary to set whether it is one-way binding or two-way binding on the transmitter side. If you need to bind the receiver with the transmitter, the steps are as follows.

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

1. Select [2 WAY] for RF standard of the transmitter, then put the transmitter into binding mode.
2. The receiver supports two methods for entering the binding mode: button binding and power-on button binding.
   - Button Binding: Press the binding button on the receiver first, and then turn on the power of the receiver. Hold the binding button for 3 seconds; at this time, the LED of the receiver will flash rapidly, indicating that it has entered the binding mode. Then release the binding button.
   - Power-on Button Binding: If the receiver has not communicated with the transmitter after powering on, hold the binding button for 3 seconds. The LED of the receiver will flash rapidly, indicating that it has entered the binding mode. Then release the binding button.
3. When the receiver's LED is solid, it indicates that the binding is successful. (The transmitter will automatically exit the binding state after a successful binding.).
4. Check if the transmitter and receiver are working properly. If you need to re-bind, please repeat the above steps.

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

1. Select [1 WAY] for RF standard of the transmitter, then put the transmitter in binding mode.
2. This receiver enters the binding state (for details on how to enter the binding state, refer to the description provided for two-way binding).
3. After the receiver LED becomes slow flashing, then put the transmitter to exit the binding state. If the receiver's LED is solid on, it indicates that the binding is successful.
4. Check to make sure the transmitter and receiver functions are working correctly, repeat steps 1 to 4(binding process) if any problems arise.

LED 灯 LED Indicator

接收机状态指示灯用于指示接收机的电源及工作状态。

- 橙色 LED 慢闪：表示 2.4GHz 频段未与发射机通信或掉码（失控状态）。
- 蓝色 LED 慢闪：表示 900MHz 频段未与发射机通信或掉码（失控状态）。
- 橙色 LED 快闪：表示 2.4GHz 频段正在对码。
- 蓝色 LED 快闪：表示 900MHz 频段正在对码。
- 蓝色和橙色 LED 三闪一灭：表示固件正在强制更新。
- 橙色 LED 常亮：表示 2.4GHz 频段与发射机通信正常。
- 蓝色 LED 常亮: 表示 900MHz 频段与发射机通信正常。

The receiver LED is used to indicate the power and operating status of the receiver.

- Orange LED flashing slowly: Indicates that the 2.4GHz band is not communicating with the transmitter or has lost signal (out-of-control state).
- Blue LED flashing slowly: Indicates that the 900MHz band is not communicating with the transmitter or has lost signal (out-of-control state).
- Orange LED flashing rapidly: Indicates that the 2.4GHz band is in the binding process.
- Blue LED flashing rapidly: Indicates that the 900MHz band is in the binding process.
- When both orange and blue LED work in three-flash-one-off orange state repeatedly, it indicates that the firmware of the receiver is in forced update status.
- Orange LED solid on: Indicates that the 2.4GHz band is communicating normally with the transmitter.
- Blue LED solid on: Indicates that the 900MHz band is communicating normally with the transmitter.

固件更新 Firmware Update

本接收机的固件更新需要通过富斯遥控管家（FlySkyAssistant）来完成。请注意，只有 3.0 及以上版本的富斯遥控管家支持此操作，相关固件可以从官网 www.flyskytech.com 下载。更新过程可以通过以下两种方式进行：

方式一：首先完成发射机与接收机的对码（接收机 LED 灯常亮），然后将发射机连接到电脑。在电脑端打开富斯遥控管家软件，通过该软件进行固件更新。

方式二：首先将发射机连接到电脑，然后按照以下步骤使接收机进入强制更新状态（接收机 LED 灯状态为三闪一灭）：

- 按下对码按键，上电后等待 10 秒直到指示灯三闪一灭，然后松开对码按键；
- 先给接收机上电，然后长按对码键 10 秒，直到指示灯三闪一灭，随后松开对码按键。

完成上述步骤后，在电脑端打开富斯遥控管家软件，通过该软件完成固件的强制更新。强制更新完成后，接收机的指示灯将由三闪一灭状态变为慢闪状态。

The firmware update for this receiver must be completed through FlySkyAssistant. Please note that only versions 3.0 and later of FlySkyAssistant support this operation, and the relevant firmware can be downloaded from the official website www.flysky-cn.com. The update process can be carried out in two ways:

Method Ⅰ: First, complete the binding between the transmitter and the receiver (the LED of the receiver is solid on), then connect the transmitter to the computer. Open FlySkyAssistant on the computer and perform the firmware update through the software.

Method Ⅱ: First, connect the transmitter to the computer, then follow these steps to put the receiver into forced update mode (the LED of the receiver will operate in three-flash-one-off mode repeatedly):

- Press the binding button, power on and wait for 10 seconds until the LED operates in three-flash-one-off mode repeatedly, then release the binding button.
- Power on the receiver first, then hold down the binding button for 10 seconds until the LEDoperates in three-flash-one-off mode repeatedly, then release the binding button.

After completing the above steps, open FlySkyAssistant on the computer and complete the forced firmware update through the software. After the forced update is completed, the LED of the receiver will change from three-flash-one-off state to a slow flashing state.

失控保护 Failsafe

失控保护功能用于在接收机失去信号（2.4GHz和900MHz两个频段）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。

本款接收机共支持三种失控保护模式：[无输出]、[保持] 和 [固定值]

[无输出]PWM 通道接口为无输出状态；

[保持] 输出失控前最后的通道值；

[固定值] 输出设置的通道值。

注：

1. 对于 PPM/i-BUS/S.BUS/i-BUS2 等总线信号类型不允许单个或其中几个通道为 [无输出] 模式，通道设置为 [无输出] 模式时，实际信号是保持最后输出值；
2. 因 S.BUS/i-BUS2 信号信息包含失控标志位，各通道失控保护设置被失控标志位传达给后续设备，若连接的设备支持失控标志位解析，则失控后，输出各通道设置的失控保护值；
3. 对于无失控标志位的信号 PPM/i-BUS，支持设置失控时信号 [无输出] 模式。设置为 [无输出] 模式后，不管各通道失控保护如何设置，失控后各通道均为 [无输出] 模式。

The failsafe function is used when the receiver loses signal and is out-of-control, in both 2.4GHz and 900MHz. The receiver performs channel output according to the set failsafe value to protect the safety of the model and personnel.

This receiver supports three fail-safe modes: **No output**, **Hold**, and **Fixed value**.

No output: No output for PWM channel.

Hold: Maintain the last output value.

Fixed value : Output the failsafe values that have been set for each channel.

Notes:

1. For bus signal types such as PPM/i-BUS/S.BUS/i-BUS2, a single or several of these channels are not allowed to be in No output mode. The actual signal is held at the last output value when the channel is set to No output mode.
2. Because the S.BUS/i-BUS2 signal information contains failsafe flag bits, the failsafe settings of each channel are communicated to subsequent devices by the failsafe flag bits. If the connected devices support the failsafe flag bit analysis, the failsafe values set for each channel are output after out of control.
3. For the signal PPM/i-BUS without failsafe flag bits, it supports the setting of the signal to No output mode in case of out of control. After setting to No output mode, regardless of the setting of the failsafe of each channel, each channel will be in No output mode after out-of-control.

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。

Attention:

- 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 lead to lose 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 Certification

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 [Xr12] 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

This equipment complies with FCC/ISED RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 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: 2A2UNXR1200

微信公众号 Bilibili Website Facebook

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