## 产品介绍 Introduction

FGr8B 采用 AFHDS 3（第三代自动跳频数字系统），外置单天线带回传功能，设计小巧轻便，易于安装，支持 4 个 Newport 功能接口（Newport 接口可自定义输入或输出的信号类型：i-BUS2/S.BUS/i-BUS/PPM 等），支持所有 AFHDS 3 发射机和高频头。

The FGr8B receiver adopts Flysky's third-generation automatic frequency hopping digital system (AFHDS 3). It uses a single-antenna bidirectional transmission system and is uniquely designed to install. It supports 4 Newport function interfaces (Newport interface can be customized with the input or output signal type: i-BUS2/S.BUS/i-BUS/PPM, etc.). It adapts all transmitters which support AFHDS3 protocol, as well as RF modules.

接收机概览 Receiver overview
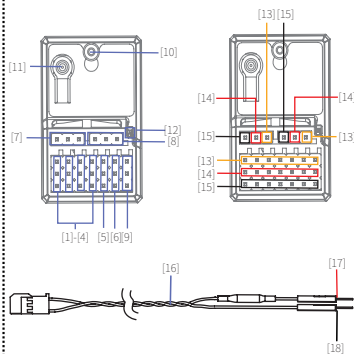
[1]-[4] CH1-CH4
[5] CH5(NPD)
[6] CH6(NPC)
[7] CH7(NPB)
[8] CH8(NPA)

[9] BVD/VCC（电池电压检测 / 供电接口）
[10] 天线
[11] 对码按键
[12] LED 灯
[13] S（信号脚）

[14] +（电源正极）
[15] -（电源地）
[16] BVD 功能配件
[17] 接电池正极
[18] 接电池负极

[1]-[4] CH1-CH4
[5] CH5(NPD)
[6] CH6(NPC)
[7] CH7(NPB)
[8] CH8(NPA)
[9] BVD/VCC(Battery Voltage Detection/ Power Supply Interface)
[10] Antenna

[11] BIND button
[12] LED
 [13] S (Signal Pin)
[14] + (Power Anode)
[15] - (Power Cathode)
[16] BVD Harness
[17] Connect to Battery Anode
[18] Connect to Battery Cathode

注：BVD 电压检测范围：0~70V

Note: BVD voltage detection range: 0~70V

产品规格 Product specification

- 产品型号：FGr8B
- 适配发射机：所有支持 AFHDS3 的发射机和高频头
- 适配模型：车、船等
- PWM 通道数：8
- 无线频率：2.4GHz ISM
- 无线协议：AFHDS 3
- 天线类型：单天线
- 输入电源：3.5 ～ 9V
- 数据输出：PWM/PPM/i-BUS2/S.BUS/i-BUS
- 温度范围：-10℃ ~+60℃
- 湿度范围：20%~95%
- 在线更新：是
- 外形尺寸：35*23.3*13.3mm
- 机身重量：9.4g
- 认证：CE，FCC ID:N4ZFGR8B

- Product Model: FGr8B
- Compatible Transmitters: All transmitters which support AFHDS3 protocol, as well as RF modules.
- Compatible Models: Cars or Boats, ect.
- Number of PWM Channels: 8
- RF: 2.4GHz ISM
- 2.4G Protocol: AFHDS 3
- Antenna: Single Antenna
- Input Power: 3.5~9V
- Data Output: PWM/PPM/i-BUS2/S.BUS/i-BUS
- Temperature Range: -10℃ ~+60℃
- Humidity Range: 20%~95%
- Online Update: Yes
- Dimensions: 35*23.3*13.3mm
- Weight: 9.4g
- Certifications: CE, FCC ID:N4ZFGR8B

对码 Binding

1. 使发射机进入对码状态；
2. 按住接收机对码按键同时上电后松开对码键（或者先给接收机上电后，长按对码键 3 秒），接收机指示灯快闪，表示进入对码状态；
3. 当接收机指示灯变为常亮时，对码成功；
   - 当对码的发射机是单向模式进入对码状态时，接收机收到对码信息后指示灯慢闪；然后手动将发射机退出对码状态，接收机指示灯变为常亮表示对码成功；
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。

1. Put the transmitter to enter binding mode;
2. Press and hold the receiver BIND button [5] while powering on the receiver, release the BIND button after receiver is powered on or powering on the receiver first, then press and hold the BIND button 3 seconds, the LED [7] of the receiver will flash rapidly, indicating the receiver is in binding mode;
3. The binding process is complete when the LED of the receiver stops flashing and is solid on.

对码 Binding

- If a transmitter that has had its radio frequency (RF Standard) set to "AFHDS3 1 way" (please refer to your transmitter user manual) enters bind mode, the LED will instead flash slowly. Exit bind mode on the transmitter manually and if the LED of the receiver stops flashing and is on continuously, the binding process is complete.
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

接收机固件更新可以通过对码已建立连接且内置了接收机固件的发射机更新；或者通过与发射机建立连接的遥控管家完成更新。

若要更新接收机时，如无法与发射机对码建立连接，则需要手动强制更新接收机固件，进入强制更新状态的操作方式有如下两种方式：

- 按下对码按键，上电十秒钟后指示灯三闪一灭，松开对码按键；
- 先给接收机上电，长按对码键 10 秒后指示灯三闪一灭，松开对码按键。

Update the firmware of the receiver by the transmitter which has bound with the receiver and has the built-in firmware of the receiver. You can also update it by FlySky Assistant that establishes a connection with the transmitter.

While updating the firmware of the receiver, the transmitter is unable to bind with the receiver, the receiver need to update the firmware mandatorily. There are two methods to let the receiver into forced update mode.

- Power on the receiver while pressing the BIND button for over ten seconds, until the LED of the receiver work in three-flash-one-off mode repeatedly, then release the BIND button.
- Power on the receiver first, then press and hold the BIND button 10 seconds, the LED of the receiver work in three-flash-one-off mode 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。
本款接收机支持各通道单独设置失控保护，共支持三种失控保护模式：[无输出]、[保持]、[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 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.
It can also be set failsafe for each channel respectively. This receiver supports three failsafe modes: [No output], [Hold], and [Fixed value].
[No output] No output for PWM interface;
[Hold] Keeps the last output value;
[Fixed value] Outputs the failsafe values 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.

兼容性 Compatibility

该接收机兼容所有 AFHDS3 的发射机和高频头。（注：因 AFHDS 3 分为 2.0 版本和 3.0 版本，发射机高频版本需与接收机高频版本一致）

The FGr8B receiver is compatible with all transmitters which support AFHDS 3 protocol, as well as RF modules. (Note: The radio requency library includes version 2.0 and 3.0, the RF version of the transimitter must be same with the RF version of the receiver.)

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, [Flysky Technology Co., Ltd.] declares that the Radio Equipment [FGr8B] 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.

微信公众号	Bilibili	Website	Facebook

R210-166841

FCC ID:N4ZFGR8B

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