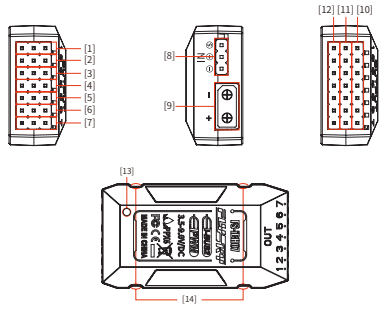


产品介绍 Introduction

感谢您购买富斯 FS-iBH07 扩展器，该扩展器尺寸小巧，拥有 7 个输出通道，可满足您连接多个识别 i-BUS2 设备或 PWM 通道扩展的需求。

Thank you for purchasing the Flysky FS-iBH07 Expander. It features a compact size. The expander provides 7 output channels, which can meet your requirements for PWM channel expansion or connection of multiple identifier i-BUS2 devices.

扩展器概览 Overview



[1] 信号输出接口 1	[8] 信号输入接口
[2] 信号输出接口 2	[9] DC 电源接口 (XT30)
[3] 信号输出接口 3	[10] 信号端
[4] 信号输出接口 4	[11] + (电源正极)
[5] 信号输出接口 5	[12] - (电源地)
[6] 信号输出接口 6	[13] LED 指示灯
[7] 信号输出接口 7	[14] 扎带卡扣

[1] Output 1	[8] Input
[2] Output 2	[9] DC input(XT30)
[3] Output 3	[10] Signal pin
[4] Output 4	[11] + (Positive power terminal)
[5] Output 5	[12] - (Power ground)
[6] Output 6	[13] LED
[7] Output 7	[14] Zip tie slots

产品规格 Specifications

- 产品型号: FS-iBH07
- 适配产品: 具有输出 i-BUS2 信号功能的产品
- 适合机种: 飞机、车、船、机器人等模型
- 通道个数: 7
- 输入电源: 3.5V~9.0V (DC)
- 工作电流: 15mA(5V)
- 数据输入: i-BUS2
- 数据输出: PWM/i-BUS2
- 温度范围: -10°C~+60°C
- 湿度范围: 20%~95%
- 防水等级: PPX6
- 在线更新: 无
- 外形尺寸: 46.5mm*26.2mm*12.6mm
- 机身重量: 11.2g
- 认证: CE, FCC

- Product Name: FS-iBH07
- Adaptive transmitter: Products with i-BUS2 signal output function
- Model Type: Models of aircraft, cars, boats, robots, etc.
- Channels: 7
- Input Power: 3.5V~9.0V (DC)
- Current: 15mA(5V)
- Data Input: i-BUS2
- Data Output: PWM/i-BUS2
- Temperature Range: -10°C~+60°C
- Humidity Limit: 20%~95%
- Waterproof: PPX6
- Online Update: No
- Dimensions: 46.5mm*26.2mm*12.6mm
- Weight: 11.2g
- Certification: CE, FCC

安装说明 Installation

可使用扎带将扩展器与模型固定。
也可使用双面胶将扩展器固定在模型上。

注意: 固定时要将扩展器正面(有文字的一面)朝上或外, 以便以后查看相关信息。

The expander can be fixed to the model with a tie.
It can also be fixed to the model using double-sided tape.

Note: Fix it with the front side (the side with text) of the expander facing upward or outward so that you can view the relevant information later.

功能说明 Function

此扩展器通过 FS-XC001 线与具有输出 i-BUS2 信号功能的接收机连接使用，将 FS-XC001 线一端连接扩展器的信号输入接口，另一端与接收机可以输出 i-BUS2 信号的接口相连。扩展器有两种工作模式，既可作为 i-BUS2 Hub 设备（以下简称 Hub）使用也可作为 PWM 信号转换器使用。当作为 Hub 使用时，接口均输出 i-BUS2 信号，供多个 i-BUS2 设备使用；当作为 PWM 信号转换器时，接口输出 PWM 信号，供舵机等设备使用。

通过发射机设置扩展器工作模式

可根据实际需要输出的信号，通过发射机设置扩展器的工作模式：是作为 Hub 使用还是作为 PWM 信号转换器使用。

注：扩展器出厂时默认为 Hub。

以 PL18 发射机与 FT8B 接收机为例，注意发射机与接收机先完成对码。

功能说明 Function

设置 Hub 步骤如下:

- 1) 将扩展器通过 FS-XC001 线与接收机可以输出 i-BUS2 信号的接口连接;
 - 2) 通过发射机的系统功能 > 接收机设置 > 自定义接口协议选择连接的接口后，选择 i-BUS2。
- 完成后即可作为 Hub 使用。

设置 PWM 转换器步骤如下:

- 1) 将扩展器通过 FS-XC001 线与接收机可以输出 i-BUS2 信号的接口连接;
- 2) 通过发射机的系统功能 > 接收机设置 > 自定义接口协议选择连接的接口后，选择 i-BUS2 后返回上一级菜单。
- 3) 选择“配置 i-BUS2 HUB 为 PWM 转换器”。

完成后即可作为 PWM 转换器使用。此时选择“i-BUS2 HUB-PWM 转换器”进入 PWM 转换器设置界面，在此界面，既可将设置好的 PWM 转换器重新设回 Hub，也可设置扩展器 7 个输出接口分别对应发射机的输出通道。

扩展器 LED 介绍

当扩展器接通电源后，

- 1) 在未与接收机连接前，扩展器上的 LED 为红色慢闪状态;
 - 2) 当扩展器与接收机已连接，发射机与接收机正常通讯，且已通过发射机将扩展器设置合适的工作模式，在此情况下，可通过 LED 亮灭状态来判断此时扩展器的状态。
- 当扩展器作为 Hub 未收到 i-BUS2 信号时，LED 为慢闪状态;
 - 当扩展器作为 Hub 且收到 i-BUS2 信号时，LED 为常亮状态;
 - 当扩展器作为 PWM 转换器未收到 i-BUS2 信号时，LED 闪两次;
 - 当扩展器作为 PWM 转换器且收到 i-BUS2 信号时，LED 每两秒闪一次;

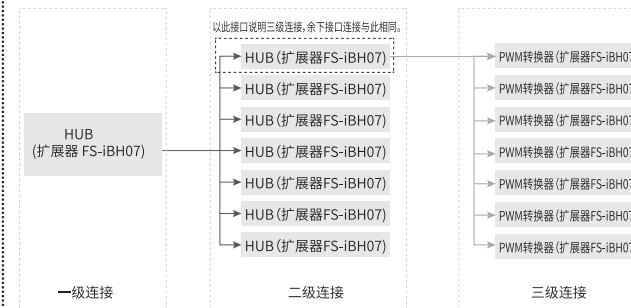
扩展器接口连接介绍

本扩展器有 7 个输出通道，每一个输出接口可以支持下一级扩展器连接，但最多支持两级 Hub 连接，如将扩展器继续作为第三级连接时，发射机端可以识别该扩展器，但无任何功能，需在发射机端将扩展器设置为 PWM 转换器才可使用。相关的连接示意图如下。

发射机、接收机、扩展器与舵机连接示意:



扩展器一级二级连接示意:



This expander is connected to a receiver with the function of outputting i-BUS2 signals through the FS-XC001 cable. Connect one end of the FS-XC001 cable to the signal input interface of the expander and the other end to the interface where the receiver can output i-BUS2 signal. The expander operates in two modes, that is, i-BUS2 Hub device (hereinafter referred to as Hub) and PWM signal converter. When it works as a Hub, the interface outputs i-BUS2 signals for usage by multiple i-BUS2 devices. When it works as a PWM signal converter, the interface outputs PWM signals for usage by servos and other devices.

Set the expander working mode through the transmitter

You can set the working mode of the expander through the transmitter according to the actual signals to be output: Hub or PWM

功能说明 Function

signal converter.

Note: The factory default for the expander is Hub.

Take the PL18 transmitter and FT8B receiver as an example. It should be noted that the binding is completed between the transmitter and receiver first.

To set to Hub, do as follows:

1. Connect the expander through the FS-XC001 cable to the interface where the receiver can output i-BUS2 signals.
2. Select i-BUS2 after selecting the interface to be connected through the transmitter's System Functions > Receiver Settings > Custom Interface Protocol.

After the completion, it can work as Hub.

To set to the PWM converter, do as follows:

1. Connect the expander through the FS-XC001 cable to the interface where the receiver can output i-BUS2 signals.
2. Select the connected interface through the transmitter's System Functions > Receiver Settings > Custom Interface Protocol, then select i-BUS2 and return to the previous menu.
3. Select "Configure i-BUS2 HUB as PWM converter".

After the completion, it can work as the PWM converter. At this time, select "i-BUS2 HUB-PWM converter" to enter the PWM converter setting interface. You can reset PWM converter to the Hub, or set the 7 output interfaces of the expander to correspond to the output channels of the transmitter.

Introduction to the expander LED

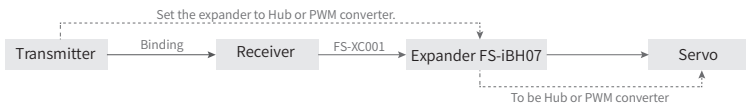
When the expander is powered on,

1. The LED on the expander is flashing slowly before it is connected to the receiver.
2. When the expander and receiver are connected, the transmitter and receiver communicate normally, and the expander is set to the appropriate working mode through the transmitter. In this case, the status of the expander can be judged through the LED state (On or Off) at this time.
 - When the expander works as the Hub and does not receive i-BUS2 signals, the LED is in the slow flashing state.
 - When the expander works as the Hub and receives i-BUS2 signals, the LED is always on.
 - When the expander works as the PWM converter and does not receive i-BUS2 signals, the LED flashes twice.
 - When the expander works as the PWM converter and receives i-BUS2 signals, the LED flashes once every two seconds.

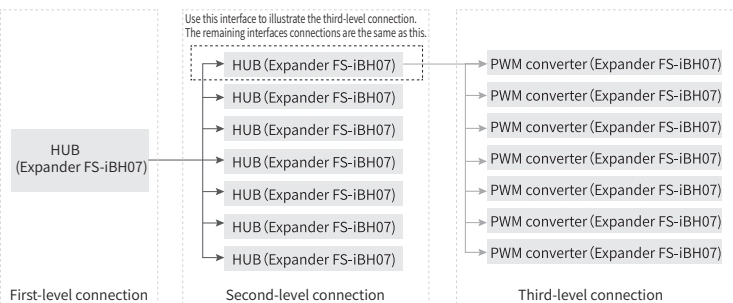
Introduction to the expander interface connection

The expander has 7 output channels, each output interface can support the next level of expander connection. It supports up to two levels of Hub connection. If the expander continues to work as the third level of connection, the transmitter side can identify the expander without any functions. To use it, you need to set the expander as a PWM converter at the transmitter side. The related connection schematic is as follows.

Transmitter, receiver, expander and servo connection schematic:



Schematic of the first-level and second-level connections of the expander:



失控保护 Failsafe

本扩展器设有失控保护功能。失控后输入的通道值与接收机保持一致，具体请参看相应的接收机说明书。

This expander is equipped with the fail-safe function. The input channel value is the same as that of the receiver after fail-safe. For details, see the corresponding receiver manual.

► 注意事项:

- 使用前必须确保本产品与接收机连接正确。
- DC 电源接口 (XT30) 与扩展器的信号输入接口、信号输出接口共电源，请注意输入的电压要符合连接设备的电压范围。

► Attention:

- Make sure the product is properly connected to the receiver before use.
- The DC power supply interface (XT30), and the signal input interface of the expander and the signal output interface of the expander use the same power supply. It should be noted that the input voltage should be in line with the voltage range of the connected devices.

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 [FS-iBH07] is in compliance with RED 2014/53/EU. The full text of the EU DoC is available at the following internet address: www.flysky-cn.com.

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 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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 for bringing 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.



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