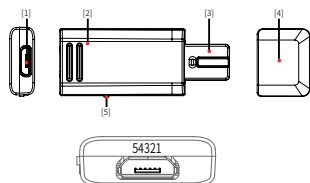## 产品介绍 Introduction

感谢您购买富斯无线教练模块，选用本模块，就可以实现教练机与学员机无线连接，让您省却配备专门的教练线，感受更多乐趣。

Thank you for purchasing Flysky wireless trainer unit. By choosing this unit, you can realize the wireless connection between trainer transmitter and student transmitter. In this way, the special trainer cable is not required.

产品概览 Overview

[1] USB 接口
[2] LED 指示灯
[3] 信号接头
[4] 信号接头保护帽
[5] 三档开关 (AFHDS 2A/AFHDS 3/UPD)

[1] Micro USB
[2] LED
[3] Signal plug
[4] Protective cover
[5] Three-level switch (AFHDS 2A/AFHDS 3/UPD)

1、电源正极
2、信号输出端 1
3、信号输出端 2
4、/
5、电源负极

1、Power anode
2、Signal 1
3、Signal 2
4、/
5、Power cathode

产品规格 Specifications

- 产品型号：FS-WTM01
- 适配发射机：PL18 等 AFHDS 3 或 AFHDS 2A 协议发射机
- 通道个数：18
- 无线频率：2.4GHz ISM
- 无线协议：AFHDS 2A/AFHDS 3
- 天线类型：内置天线
- 遥控距离：>50 米
- USB 接口供电范围：3.5 ～ 9V/DC
- 发射功率：<13dBm
- USB 接口数据输出类型：PPM
- 温度范围：-10℃ ~ +60℃
- 湿度范围：20% ~ 95%
- 在线更新：支持
- 外形尺寸：42.2mm*18mm*6.6mm
- 重量：4.5g
- 认证：CE、FCC ID: N4ZWTM0100

- Product Name: FS-WTM01
- Adaptive Transmitter: Transmitters with AFHDS 3 protocol(such as PL18) or transmitters with AFHDS 2A protocol
- Numbers of Channels: 18
- RF: 2.4GHz ISM
- Protocol: AFHDS 2A/AFHDS 3
- Antenna: Built-in antenna
- Distance: >50m
- Input Power for USB interface: 3.5 ～ 9V/DC
- Maximum Power: <13dBm(E.I.R.P.) (EU)
- Data Output for USB Interface: PPM
- Temperature Range: -10℃ ~ +60℃
- Humidity Limit: 20% ~ 95%
- Online Update: Yes
- Dimension: 42.2mm*18mm*6.6mm
- Weight: 4.5g
- Certifications: CE, FCC ID: N4ZWTM0100

接口介绍 Interface introduction

本无线教练模块有一个 Micro USB 接口和一个信号接头。

USB 接口

无线教练模块通过 USB 接口，既可以实现为本模块供电，又可以实现教练功能。

• USB 接口供电：将 FS-XC002、FS-XC003 或 FS-XC004 转接线与无线教练模块 USB 接口连接后，可通过 USB 接口由 FS-XC003 或 FS-XC004 转接线的 JST 接口连接电源或由 FS-XC002 转接线所连接遥控设备的电源为无线教练模块供电。
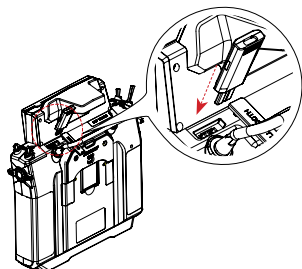
信号接头

无线教练模块通过信号接头与 PL18 发射机相连接，既实现通道数据传输，又可以通过发射机界面查看相关信息。

• 信号接头供电：将无线教练模块连接 PL18 发射机的蓝牙接口。

注：

1. USB 接口与信号接头独立供电，优先选用信号接头供电；

2. 若不使用信号接头时，请不要取下信号接头保护帽，以保护信号接头；

3. **PL18 发射机固件需 1.0.60 及以上版本才可通过信号接头与无线教练模块通信。**

无线教练模块与 PL18 发射机蓝牙接口连接的示意图如下：

This wireless trainer unit has a micro USB interface and a signal plug.

Micro USB interface

The wireless trainer unit can realize power supply and trainer function through this micro USB interface.

• Power supply through the micro USB interface: FS-XC002, FS-XC003 or FS-XC004 cables are required to realize power supply through the micro USB interface. The supply power for the wireless trainer unit is implemented by connecting these cables through mirco USB interface: Supply power for the wireless trainer unit via the power supply connected by the JST interface of FS-XC003 or FS-XC004 cable, or the device connected by FS-XC002 cable.

Signal plug

The wireless trainer unit (FS-WTM01) is connected to the PL18 transmitter through the signal plug to transfer datas. You can view the information related to the wireless trainer unit on the main interface of the transmitter.

• Power supply through the signal plug: Connects the signal plug of the wireless trainer unit to the Bluetooth port of the PL18 transmitter.

Notes:

1. The power supply of the micro USB interface and signal plug is provided independently. The signal plug supply is preferred.

2. If you don't use the signal plug, please don't take off the signal plug protective cover. This protective cover is for the protection of the signal plug.

3. **The PL18 transmitter with firmware version 1.0.60 or above can connect with the wireless trainer unit through the signal plug.**

Connecting to the Bluetooth port of PL18 transmitter is showing on the left, for your reference.

三档开关 Switch introduction

三档开关（AFHDS 2A/AFHDS3/UPD）分别对应 AFHDS 2A 和 AFHDS 3 协议对码通讯以及无线更新模式三个选项。请根据实际发射机的无线协议和是否需要更新固件来选择相应的开关位置。

注：（1）通电前需设置好档位开关，通电后即进入该模式；

（2）若您在无线模块使用过程中重新设置三档开关模式，此操作无效。

The three-level switch (AFHDS 2A/AFHDS 3/UPD) corresponds to the three options of AFHDS 2A and AFHDS 3 protocol binding communication and wireless update mode respectively. Please select the corresponding switch position according to the actual transmitter's wireless protocol. In addition, you need to check whether the firmware needs to be updated so as to determine the switch position.
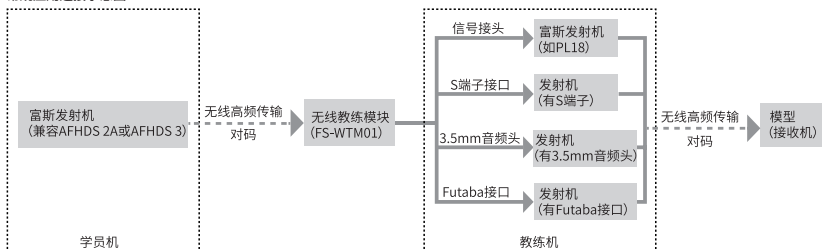
Notes:

1. The three-level switch needs to be set before power-on. It enters this configured mode after power-on.
2. If you reset the three-level switch mode while the wireless trainer unit is in use, this operation is invalid.
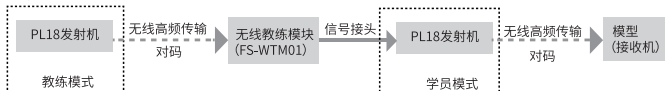
实现教练功能 Realize trainer function

若将富斯无蓝牙接口的发射机和非富斯的发射机设置为教练机，请根据发射机实际接口选择 FS-XC002、FS-XC003 或 FS-XC004 转接线来连接无线教练模块与发射机，设为学员机的发射机则必须是富斯发射机，同样需兼容 AFHDS 2A/AFHDS3 协议，连接参考示意图如下。
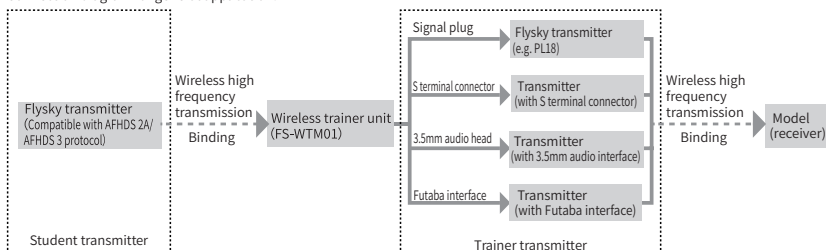
常规应用连接示意图：

学员机		教练机	
富斯发射机（兼容AFHDS 2A或AFHDS 3）	无线高频传输 对码 → 无线教练模块（FS-WTM01）	信号接头 — 富斯发射机（如PL18） S端子接口 — 发射机（有S端子） 3.5mm音频头 — 发射机（有3.5mm音频头） Futaba接口 — 发射机（有Futaba接口）	无线高频传输 对码 → 模型（接收机）

特殊应用连接示意图：

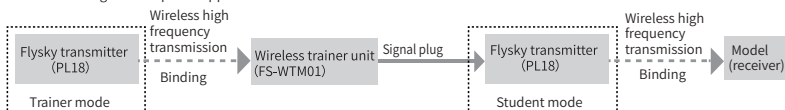| PL18发射机	无线高频传输 对码 →	无线教练模块（FS-WTM01）	信号接头 →	PL18发射机	无线高频传输 对码 →	模型（接收机）
教练模式				学员模式		

If you set Flysky transmitter without Bluetooth port and non-Flysky transmitter to trainer transmitter, please choose FS-XC002, FS-XC003 or FS-XC004 cable to connect the wireless trainer unit to the transmitter according to the actual interface of the transmitter. The transmitter which set to student transmitter must be a Flysky transmitter, which is also compatible with AFHDS 2A/AFHDS 3 protocol. The connection reference diagrams are as below.

Connection diagram for general application:

Student transmitter		Trainer transmitter	
Flysky transmitter（Compatible with AFHDS 2A/AFHDS 3 protocol）	Wireless high frequency transmission Binding → Wireless trainer unit (FS-WTM01)	Signal plug — Flysky transmitter (e.g. PL18) S terminal connector — Transmitter (with S terminal connector) 3.5mm audio head — Transmitter (with 3.5mm audio interface) Futaba interface — Transmitter (with Futaba interface)	Wireless high frequency transmission Binding → Model (receiver)

Connection diagram for special application:

Flysky transmitter（PL18）	Wireless high frequency transmission Binding →	Wireless trainer unit (FS-WTM01)	Signal plug →	Flysky transmitter（PL18）	Wireless high frequency transmission Binding →	Model (receiver)
Trainer mode				Student mode		

对码 Binding

注：

1. 在无线教练模块通电之前请先设置好三档开关，如发射机使用 AFHDS 3 协议，则将三档开关拨至 AFHDS 3 位置。
2. 对码成功后，无线教练模块的 LED 灯常亮；对码时，若十秒内对码没有完成，则 LED 灯进入慢闪闲置状态。
3. 完成对码后，下一次开机无需再次对码。
4. **PL18 发射机固件版本需 1.0.55 及以上版本可与本模块对码。**

本无线教练模块通电之后即自动进入对码状态。

- 若通过信号接头连接 PL18 发射机通电，则本无线教练模块与另一台发射机对码。
- 若通过 Micro USB 接口连接电源，本模块与两台发射机的其中一台对码，对码成功后，将 Micro USB 接口转接线连接另一台发射机。

对码 Binding

以本无线教练模块通过连接蓝牙接口通电为例，对码的步骤如下：
1. 接通需要与本无线教练模块对码的发射机电源，并处于对码状态。
2. 将本无线教练模块插入另一台发射机后开机，无线教练模块通电后进入对码状态，等待完成对码。

Notes:
1. Please set the three-level switch before the wireless trainer unit is powered on. For an example, if the transmitter uses AFDS 3 protocol, toggle the three-level switch to the AFDS 3 position.
2. When the binding is completed, the LED indicator should be solid on. If the binding is not completed within ten seconds, the LED indicator will enter its slow flashing state.
3. After the binding is completed, there is no need to bind again when the wireless trainer unit is to be powered on next time.
4. **PL18 Transmitter with the firmware version 1.0.55 or above can bind with this wireless trainer unit.**

The wireless trainer unit will enter bind mode after power-on automatically.
- If the wireless trainer unit is connected to the bluetooth port of PL18 transmitter, then the wireless trainer unit will be powered by PL18 transmitter, the wireless trainer unit needs to bind with another transmitter.
- If the wireless trainer unit is powered by the power supply via USB interface, then the wireless trainer unit should bind with either of the two transmitters. After the bind is successful, connect the other transmitter to the another end of the USB cable.

As an example, follow the following steps for binding, if the wireless trainer unit is connected to the bluetooth port of the transmitter:
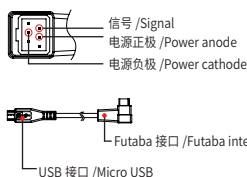1. Power on the transmitter that needs to bind with this wireless trainer unit, then put it in the bind mode.
2. Plug the wireless trainer unit to the other transmitter via the signal plug, then power on the transmitter. The wireless trainer unit enters the bind mode after power-on.

转接线概览 Overview

当您使用的教练机非富斯 PL18 发射机时，本无线教练模块可以与有 Futaba 接口、S 端子或 3.5mm 音频接口的发射机通过如下几款转接线连接，实现教练功能。

When you choose other transmitter as a trainner transmitter instead of PL18 transmitter, this wireless trainer unit can connect the transmitter which has Futaba interface, S terminal connector or 3.5 mm Audio head through the cabels listed below to realize the trainer function.

FS-XC002

信号 /Signal
电源正极 /Power anode
电源负极 /Power cathode
Futaba 接口 /Futaba interface
USB 接口 /Micro USB

产品型号：FS-XC002

长度：100mm

重量：7g

适用范围：与带有 Futaba 接口的发射机连接使用。可连接本无线教练模块，实现教练功能。

Futaba 接口：连接带有 Futaba 教练接口的发射机。

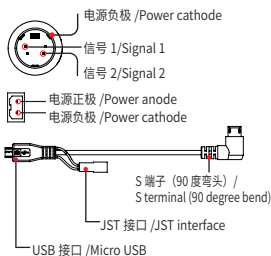USB 接口：连接带有 USB 接口的设备，如本无线教练模块。

Product name: FS-XC002

Length: 100mm

Weight: 7g

Scope of application: Connects to the transmitter with the Futaba interface.It can be connected to this wireless trainer unit for the trainer function.

Futaba interface: Connects this interface to the transmitter with the Futaba interface.

Micro USB: Connects to the devices with USB interface, such as the wireless trainer unit.

FS-XC003

电源负极 /Power cathode
信号 1/Signal 1
信号 2/Signal 2
电源正极 /Power anode
电源负极 /Power cathode
S 端子（90 度弯头）/ S terminal (90 degree bend)
JST 接口 /JST interface
USB 接口 /Micro USB

产品型号：FS-XC003

长度：140mm

重量：10g

适用范围：与带有 S 端子接口的发射机连接使用。可连接本无线教练模块，实现教练功能。

S 端子接口：连接带有 S 端子教练接口的发射机。

JST 接口：为 USB 接口设备供电，供电电压参考连接的设备，如连接本无线教练模块，其支持的电压为 3.5~9V/DC，可使用 1-2S 锂电池供电。

USB 接口：连接带有 USB 接口的设备，如本无线教练模块。

Product name: FS-XC003
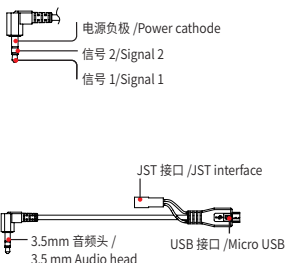
Length: 140mm

Weight: 10g

Scope of application: Connects to the transmitter with the S terminal interface. It can be connected to this wireless trainer unit for the trainer function.

S terminal connector: Connects to the transmitter with the S terminal trainer interface.

JST interface: Power supply for a device with the USB interface. For the power supply voltage, refer to the connected device. For example, this wireless trainer unit supports 3.5 ~9V/DC, which can be powered by 1-2S lithium battery.

Micro USB: Connects to devices with USB interface, such as this wireless trainer unit.

FS-XC004

电源负极 /Power cathode
信号 2/Signal 2
信号 1/Signal 1
JST 接口 /JST interface
3.5mm 音频头 / 3.5 mm Audio head
USB 接口 /Micro USB

产品型号：FS-XC004

长度：100mm

重量：7g

适用范围：与带有 3.5mm 音频接口的发射机连接使用。可连接本无线教练模块，实现教练功能。

3.5mm 音频头：连接带有 3.5mm 音频教练接口的发射机。

JST 接口：为 USB 接口设备供电，供电电压参考连接的设备，如连接本无线教练模块，其支持的电压为 3.5~9V/DC，可使用 1-2S 锂电池供电。

USB 接口：连接带有 USB 接口的设备，如本无线教练模块。

Product name: FS-XC004

Length: 100mm

Weight: 7g

Scope of application: Connects to the transmitter with the 3.5 mm audio trainer interface. It can be connected to ths wireless trainer unit for the trainer function.

3.5 mm audio head: Connects to the transmitter with the 3.5 mm audio trainer interface.

JST interface: Power supply for a device with the USB interface. For the power supply voltage, refer to the connected device. For example, this wireless trainer unit supports 3.5 ~9V/DC, which can be powered by 1-2S lithium battery.

Micro USB: Connects to devices with USB interface, such as this wireless trainer unit.

固件更新 Firmware update

本无线教练模块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.flysky-cn.com 获取）。

可通过以下两种方式进入更新：

1. 先将发射机与本无线教练模块对码后（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. 先将发射机与电脑连接，再将无线教练模块的三档开关拨至 UPD 位置，之后接通无线教练模块电源，无线教练模块即进入强制更新状态（LED 灯三闪一灭），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。

注：PL18 发射机固件版本需 1.0.55 及以上版本可与本无线教练模块对码。

The firmware of this wireless trainer unit is updated through the FlyskyAssistant (Only version 3.0 or above is supported. The firmware of FlyskyAssistant is available on the Flysky official website).
It can be updated through the following two ways:
1. After the binding between the transmitter and the wireless trainer unit (the LED 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 first, then toggle the three-level switch (AFHDS 2A/AFHDS3/UPD) to UPD position, afterwards power on the wireless trainer unit. The wireless trainer unit will enter the forced update state (the LED operates in three-flash-one-off manner repeatedly). Open the FlyskyAssistant on the computer to update the firmware.

Note: PL18 Transmitter with the firmware version 1.0.55 or above can bind with this wireless trainer unit.

本无线教练模块兼容：AFHDS 2A/AFHDS 3 协议发射机（如 PL18 等）。可兼容教练接口为 Futaba 接口、S 端子接口或 3.5mm 音频输出接口且支持标准 PPM 信号的发射机作为教练机。

The wireless trainer unit is compatible with the transmitters with AFHDS 2A/AFHDS 3 protocol, such as PL18 and etc, it can also be compatible with the transmitter which is set as a trainer transmitter, and this transmitter should has Futaba interface, S terminal connector or 3.5 mm Audio head, as well as should support standard PPM signal.

⚠ 注意事项：

- 使用前必须确保本模块安装正确，否则可能导致设备严重损坏。
- 关闭时，请务必先关闭本模块电源，然后关闭遥控器。否则将有可能导致遥控设备失控或者引擎继续工作而引发事故。
- 确保本模块安装在远离电机或电子噪声过多的区域。
- 本模块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，请确保本模块和导电材料之间至少有 1 厘米以上的距离。
- 准备过程中，请勿接通本模块电源，避免造成不必要的损失。
- 为了防止短路，请注意所有的正负极连接正确。
- 在使用过程中，请避免用力拉扯此线材，以免造成线材损坏影响正常使用。
- 此线缆仅用于 RC 模型，不要在其他地方时使用。

⚠ Attentions:

- Make sure the unit is installed correctly, failure to do so may result in serious injury.
- Make sure the unit is powered off before turning off the transmitter, failure to do so may lead to unintended operation or loss of control.
- Make sure the unot is mounted away from motors or any device that emits excessive electrical noise.
- Keep the antenna of the unit 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.
- To prevent short circuit, please make sure that all the anode and cathode are connected correctly.
- Do not pull hard the wire during use to avoid causing damage to the wire, thus affecting its normal use.
- The cable are used for only the RC model and shall not be used for other purposes.

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, [Flysky Technology co., ltd] declares that the Radio Equipment [FS-WTM01] 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.

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.

🗑 CE FCC ID: N4ZWTM0100

Manufacturer：FLYSKY Technology Co., Ltd
Address: 16F, Huafeng Building, 6006 Shennan Road, Futian District, Shenzhen

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http://www.flysky-cn.com
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