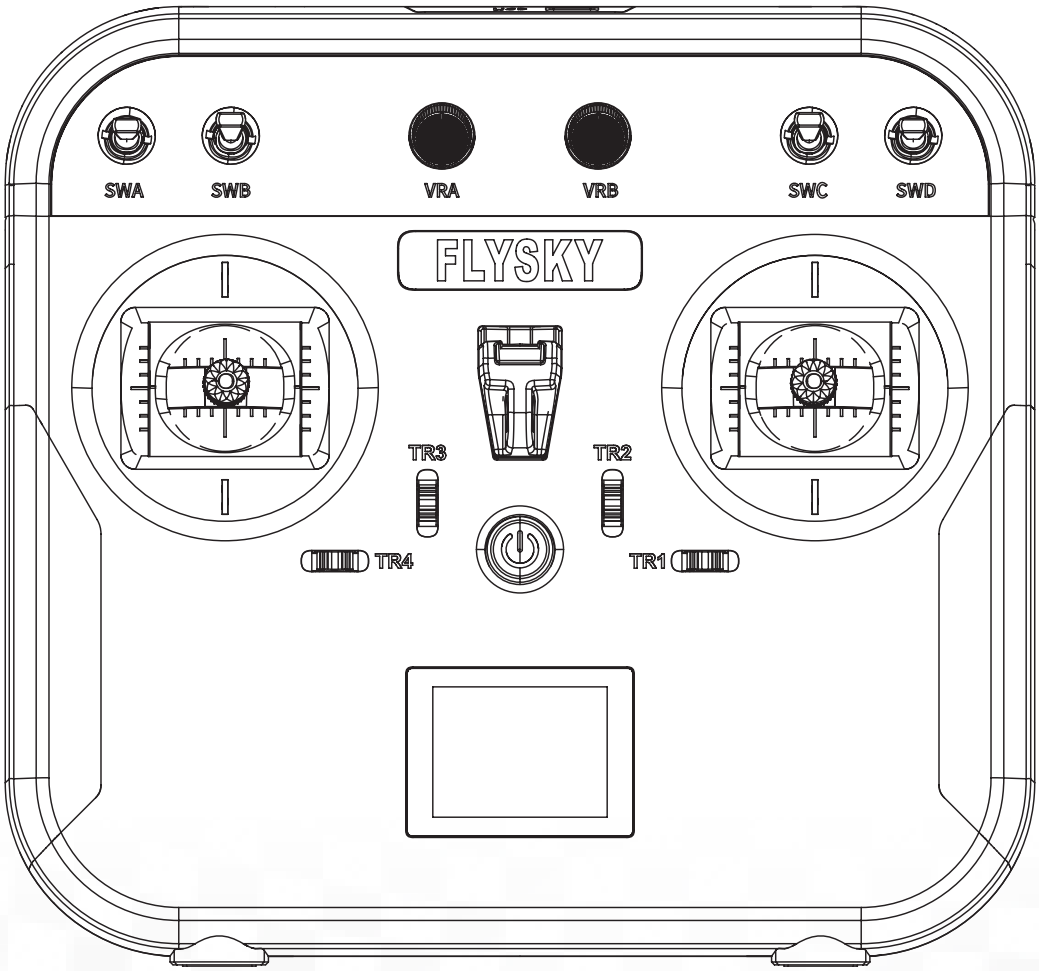
FS-L12

USER MANUAL

Digital Proportional Radio Control System

FLYSKY

2.4GHz AFHDS 2A



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WARNING:

This product is only for 15 years old or above.

Thank you for purchasing our products.

Read the manual carefully to ensure your personal safety as well as the safety of your equipment.

If you encounter any problems during using, please refer to this manual first. If the problem is still not resolved, please contact the local dealer directly or contact the customer service staff via the website below:

www.flysky-cn.com

Contents

1.Safety

1.1 Safety Symbols

Pay close attention to the following symbols and their meanings. Failure to follow these warnings could cause damage, injury or death.

⚠ Danger	• Not following these instructions may lead to serious injuries or death.
⚠ Warning	• Not following these instructions may lead to major injuries.
⚠ Caution	• Not following these instructions may lead to minor injuries.

1.2 Safety Guide

Prohibited

- **Do not use the product at night or in bad weather like rain or thunderstorm. It can cause erratic operation or loss of control.**
- **Do not use the product when visibility is limited.**
- **Do not use the product on rain or snow days. Any exposure to moisture (water or snow) may cause erratic operation or loss of control.**
- **Interference may cause loss of control. To ensure the safety of you and others, do not operate in the following places:**
  - Near any site where other radio control activity may occur
  - Near power lines or communication broadcasting antennas
  - Near people or roads
  - On any body of water when passenger boats are present
- **Do not use this product when you are tired, uncomfortable, or under the influence of alcohol or drugs. Doing so may cause serious injury to yourself or others.**
- **The 2.4GHz radio band is limited to line of sight. Always keep your model in sight as a large object can block the RF signal and lead to loss of control.**
- **Do not touch any part of the model that may generate heat during operation, or immediately after use. The engine, motor or speed control, may be very hot and can cause serious burns.**

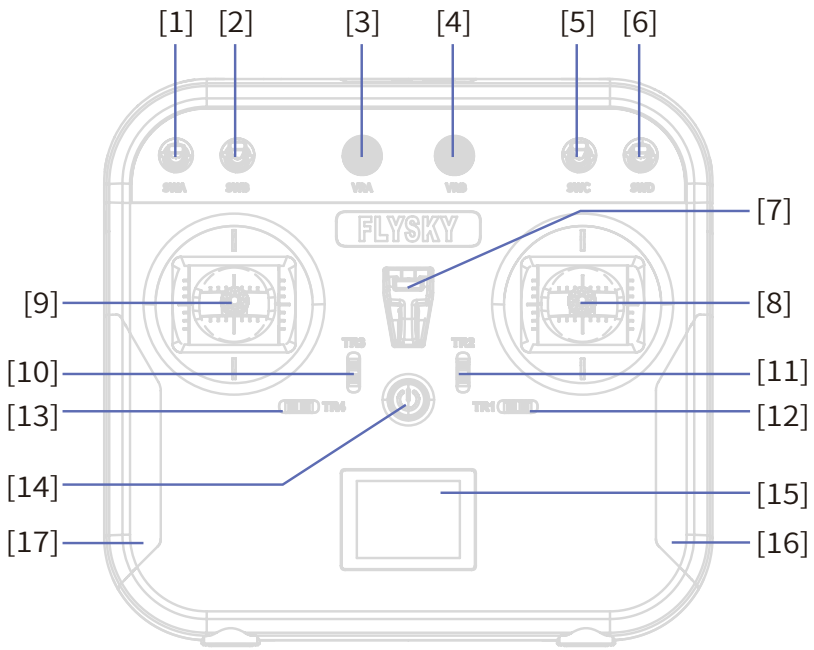
Mandatory

- **Misuse of this product may lead to serious injury or death. To ensure the safety of you and your equipment, read this manual and follow the instructions.**
- **Make sure the product is properly installed in your model. Failure to do so may result in serious injury.**
- **Make sure to disconnect the receiver battery before turning off the transmitter. Failure to do so may lead to unintended operation and cause an accident.**
- **Ensure that all servos operate in the correct direction. If not, adjust the direction first.**
- **Make sure the model stays within the systems maximum range to prevent loss of control.**

2.Introduction

The FS-L12 transmitter and FS-iA10B receiver constitute a 10 channel 2.4GHz AFHDS 2A (Automatic Frequency Hopping Digital System Second Generation) digital proportional computerized R/C system. This system is compatible with RC models, including engineering vehicles, fixed-wing aircraft, gliders, boats and helicopters.

2.1 Transmitter Overview



[1]	SWA Position Switch (CH5)	[10]	TR3 Trim
[2]	SWB Position Switch (CH6)	[11]	TR2 Trim
[3]	VRA Knob (CH9)	[12]	TR1 Trim
[4]	VRB Knob (CH10)	[13]	TR4 Trim
[5]	SWC Position Switch (CH7)	[14]	⏻ (Power Switch)
[6]	SWD Position Switch （CH8）	[15]	LCD Display Screen
[7]	Neck Strap Hook/ Cell Phone Holder Mounting Hole	[16]	Right Grip
[8]	Right Stick（CH1/CH2)	[17]	Left Grip
[9]	Left Stick (CH3/CH4)		

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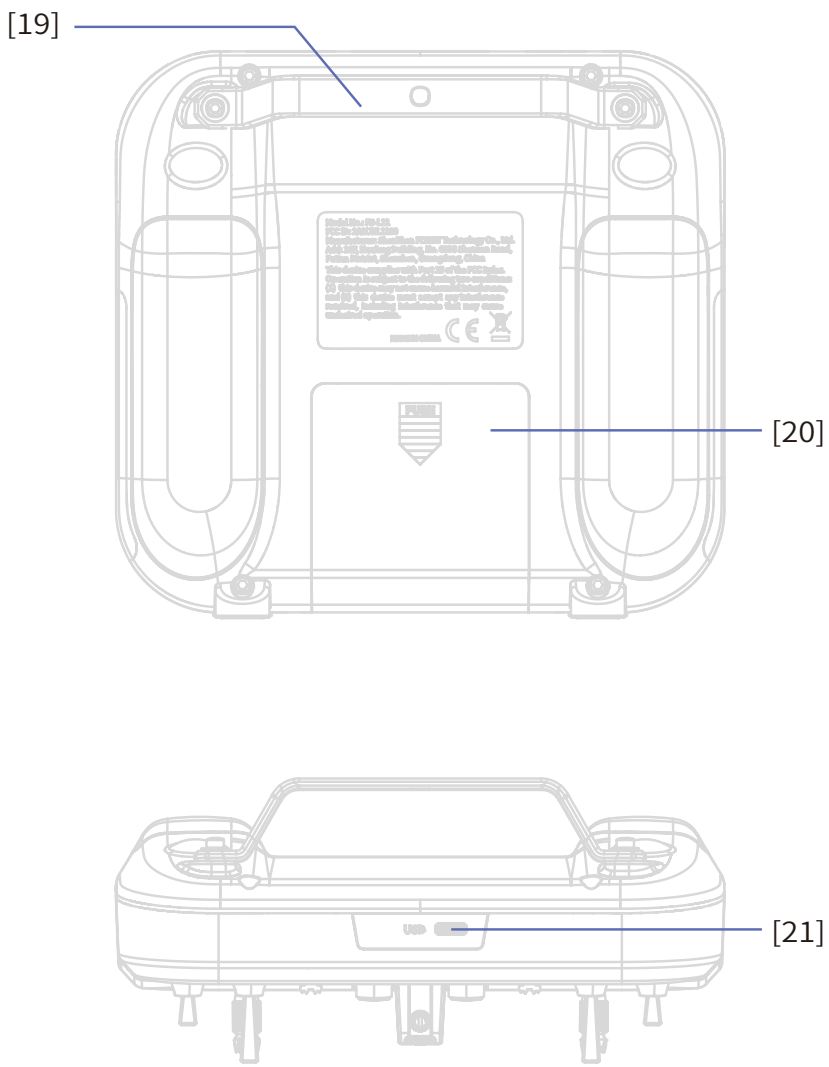
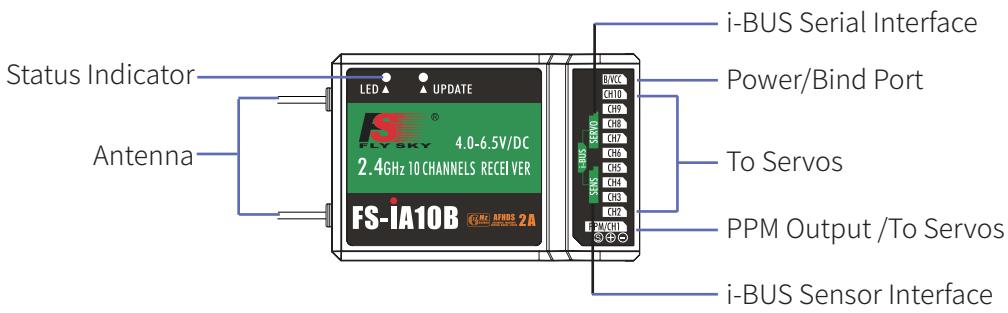


[19] Carry Handle

[20] Battery Compartment

[21] USB Type-C Port

2.2 Receiver Overview



2.2.1 Receiver LED

The status indicator is used to indicate the power and working status of the receiver.

Off: the power is not connected.

Lit in red: the receiver is on and working.

Flashing quickly: the receiver is binding mode.

Flashing slowly: the bound transmitter is off or signal is lost.

2.2.2 Connectors

Power, Bind, Channel, Serial and PPM output ports for connecting various components to the receiver.

PPM/CH1：Can be connected to servo or used as a PPM output.

CH2 ～ CH10: Can be connected to servos, power supply or other compatible components.

B/VCC: During the binding process a bind cable is connected here. During normal opertaion the power is applied to this port.

i-BUS Serial Interface: For connecting an i-BUS module, expansion.

i-BUS Sensor Interface: For connecting sensors.

2.2.3 Antenna

FS-iA10B uses dual 26mm antenna and can receive and send information at the same time..

⚠ Caution	• Do not pull the antenna of the receiver. Do not tie the antenna and the servo cable together.

⚠ Warning	• Do not put the antenna close to the metal materials, because this will affect the signal strength of the receiver. Keep the receiver's antenna at least 1cm away from conductive materials such as carbon or metal.

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3.Getting Started

Before operation, install the battery and connect the system as instructed below.

3.1 Transmitter Antenna

The transmitter has a built-in antenna. When the transmitter starts to work, the antenna automatically operate, without additional operations.

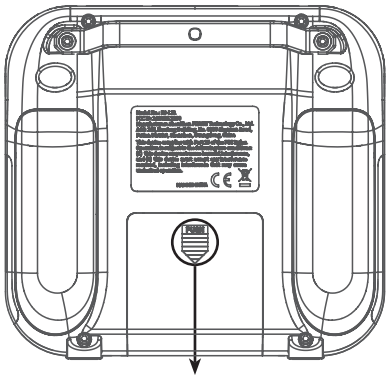
3.32 Transmitter Battery Installation

⚠ Danger	• **Only use specified battery.**
⚠ Danger	• **Do not open, disassemble, or attempt to repair the battery.**
⚠ Danger	• **Do not crush/puncture the battery, or short the external contacts.**
⚠ Danger	• **Do not expose to excessive heat or liquids.**
⚠ Danger	• **Do not drop the battery or expose to strong shocks or vibrations.**
⚠ Danger	• **Always store the battery in a cool, dry place.**
⚠ Danger	• **Do not use the battery if damaged.**

Installing the AA Battery

Follow the steps below to install the AA batteries:

1. Open the battery compartment cover as illustrated.
2. Insert 4 fully-charged AA batteries into the compartment. Make sure that the batteries are well set according to the polarities marked on the battery compartment.
3. Replace battery compartment cover.



Press and slide the cover as illusrtated. Then remove the cover.

Installing the LiPo Battery

Follow the steps below to install the LiPo battery:

1. Open the battery compartment cover.
2. Insert 2S LiPo battery into the compartment.
3. Plug the cable of LiPo battery into the JST Jack. Make sure to connect correctly according to the polarities marked on the battery compartment.
4. Replace battery compartment cover. Be careful not to pinch the cable.

4.Instructions

After setting up, follow the instructions below to operate the system.

4.1 Powering On

Follow the steps below to turn on the transmitter:

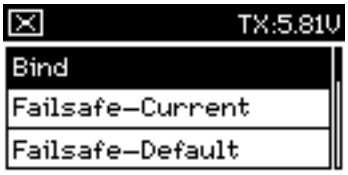
1. Check to make sure that the batteries are fully charged and installed correctly.
2. Long press ⏻ for more than 1.5 seconds, then buzzer sounds once and the screen lights on, indicating the tranmitter is powered on.

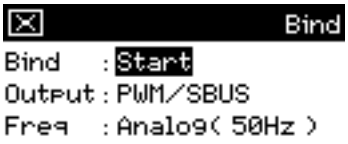
Note: For safety, always power on the transmitter before the receiver.

⚠ Warning	• **Operate with caution in order to avoid damage or injury.**

4.2 Binding

The transmitter and the receiver have been pre-bound before delivery. If you are going to use another receiver, follow the steps below to rebind. The transmitter supports two-way binding, the steps are as following:





1. Long press ⏻ for more than 1.5 seconds while holding any one of 4 trims(TR1 Trim~TR4 Trim) button to turn on the transmitter, then the transmitter will enter the settinging mode.
2. Select BIND by pushing the TR2 Trim upwards/downwards if needed, then push the TR1 Trim to the left to enter the binding menu.
3. Set Output and Frequency .
   - For Output: Two combined output options are available, including four output modes, namely PWM/S.BUS, PPM/i-BUS, PWM/i-BUS and PPM/S.BUS. Choose according to your needs.
   - For Frequency :Set the frequency of channels. Options include Digital Servo, Analog Servo, and Other
4. Select Start by pusing the TR2 Trim upwards, then push the TR1 Trim to the left to put the transmitter into binding state.
5. Put the receiver into the binding mode,at this time, the receiver LED will be flashing fast.
6. Once the binding is successful, the receiver LED will be solid on.
7. Verify that the transmitter and the receiver are working properly. If you need to re-bind, repeat the above steps.

Notes: Different receivers have different bind procedures. For more information, visit the FLYSKY website for manuals and other related information.

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4.3 Stick Calibration

Use this function to correct for the mechanical deviation of the sticks, for example, deviation occurred in the self-centering or maximum minimum travel, the steps are as following:

1. Refter to the step 1 of 4.2 Binding to put the transmitter into setting mode.
2. Select CALI by pushing the TR2 Trim upwards/downwards, then push the TR1 Trim to the left to enter calibration menu.
3. According to the scren prompt to put the stick at them center positions, then then push the TR1 Trim to the left to continue.
4. Move the sticks to their Max/Min travels.
5. Push the TR1 Trim to the left, and a popup screen will appear.

   When the popup screen prompt that the calibration is successful, then push the TR1 Trim to the left to exit.

   If the calibration fails, pushing the TR2 Trim upwards/downwards to select the appropriate option, then push TR1 Trim to the left.

4.4 Powering Off

Follow the steps below to turn off the system:

1. Turn off the receiver first.
2. Long press ⏻ for more than 1.5 seconds to turn off the transmitter.

⚠ **Danger**	• **Make sure to disconnect the receiver power before turning off the transmitter. Failure to do so may lead to damage or serious injury.**

5.System Functions

5.1 Failsafe

The failsafe function is used to protect the model and personnel when the receiver is out-of-control.

By default, it is not set, and the PWM interfaces will maintain the last output in case of out-of-control. The setting steps are as following.

Setup:

1. Refer to previus steps to put the transmitter into the setting mode.
2. To use the current output channel value as the failsafe setting value, then select Failsafe-Current by pushing the TR2 Trim upwards/downwards, then toggle the corresponding control to the desired position and push the TR1 Trim to the left, then a popup screen will appear to prompt.
3. To restore the failsafe settings to default value, then select Failsafe-Default, and push the TR1 Trim to confirm.

5.2 Return to normal State

Used to change the transmitter state from the setting state to normal state.

Setup:

1. When the transmitter is in the setting mode, select Return to normal state by pushing the TR2 Trim upwards/downwards.
2. Push the TR1 Trim to confirm.

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6. Product Specifications

This section contains the specifications of FS-L12 transmitter.

6.1 Transmitter Specifications

Product Model	FS-L12
Compatible Receivers	FS-iA10B
Number of Channels	10
Compatible RC Models	Fix-wing aircraft, helicopter, glider ,helicopter or boat
RF	2.4GHz ISM
Maximum Power	0dBm±2 (e.i.r.p.) (EU)
RF Protocol	AFHDS 2A
Distance	>50m(Ground Distance without Interference)
Resolution	4096
Input Power	4~9.0V/DC;1.5AA*4 or 2S LiPo
Working Current	About 60mA/6V
Low Voltage Warning	AA battery: <4.2V; LiPo battery: <7.2V
Antenna	Single Built-in Antenna
Data Interface	USB Type-C
Online Update	Yes
Temperature Range	-10°C ~ +60°C
Humidity Range	20% ~ 95%
Color	Black
Dimensions	165.7*178*50.7mm
Weight	448.5g
Certifications	CE, FCC ID：2A2UNL1200

7. Certifications

7.1 DoC Declaration

Hereby, [ShenZhen FLYSKY Technology Co., Ltd.] declares that the radio equipment type [FS-L12] is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

www.flyskytech.com/info_detail/10.html

7.2 CE Warning

The ce warns that the installation of the antenna used in this transmitter must be kept in distance from all the personnel and shall not be used or used with any other transmitter. The end user and the installer must provide antenna installation instructions and transmitter operating conditions to meet the requirements for rf exposure compliance.

7.3 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.

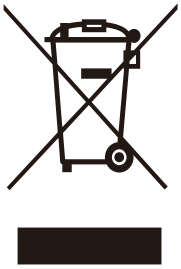
-- Increase the separation between the equipment and receiver.

-- 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.

7.4 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.



CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

7.5 RF Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

CAUTION

- replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types);
- disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;
- leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas; and
- a battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

Figures and illustrations in this manual are provided for reference only and may differ from actual product appearance. Product design and specificatiions may be changed without notice.

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FCC ID：2A2UNL1200

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