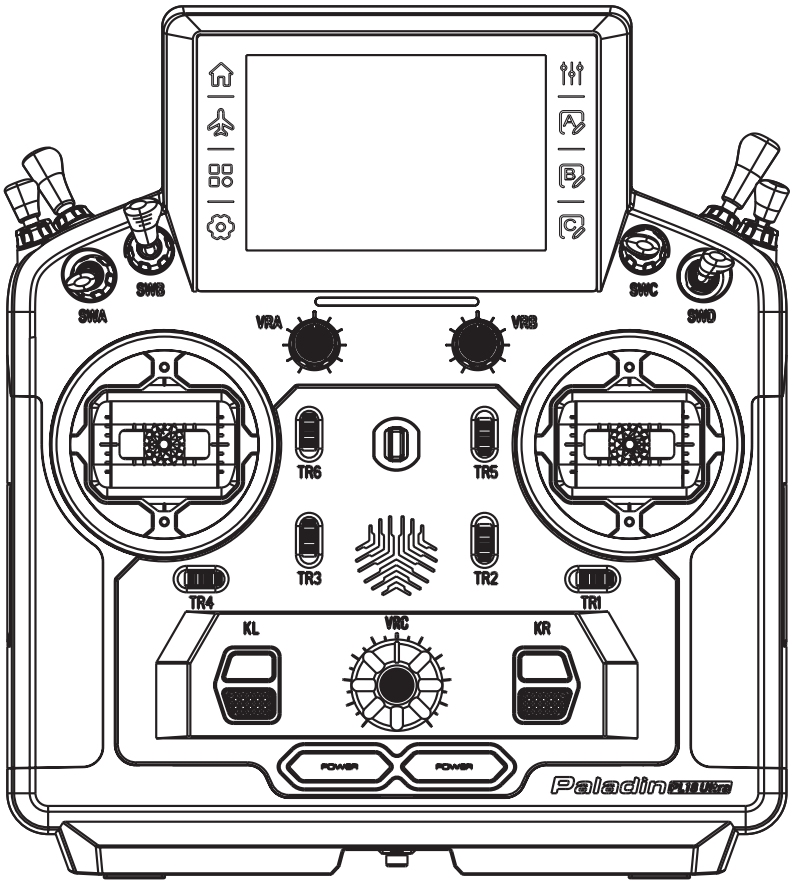
Paladin PL18 Ultra

User Manual

2.4GHz AFHDS 3



FLYSKY

Touching Infinity

15+

WARNING:

This product is only for 15 years old or above.

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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:

http://www.flysky-cn.com

Table of Contents

1. Safety

1.1 Safety Icons

Pay attention to the following icons and their meanings. Failure to follow these guidelines can result in equipment damage or personal injury.

⚠ WARNING	• Not following these instructions may lead to minor injuries.
⚠ CAUTION	• Not following these instructions may lead to major injuries.
⚠ DANGER	• Not following these instructions may lead to serious injuries or death.

1.2 Safety Guide

Prohibited

- **Do not fly 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 the visibility is limited.**
- **Do not use the product on rainy or snowy days. Should any type of moisture (water or snow) enter any component of the system, erratic operation and loss of control may occur.**
- **Interference could 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 high voltage power lines or communication broadcasting antennas.
  - Near water with passenger boats nearby.
  - Near high voltage wires or communication/broadcast antennas.
- **Do not use this product if you are tired, uncomfortable or when using substances that may impair your ability to use the product safely.**
- **The 2.4GHz frequency band requires line of sight from the transmitter to receiver at all times. Avoid large obstacles that could block or interfere with the signal.**
- **In order to ensure good signal quality, do not hold the transmitters antenna during use.**
- **Parts of the model, such as motors or ESC' s may remain hot for a period of time after use and can cause severe burns.**

Mandatory

- **Improper use of this product may lead to serious injury or death to the user and others. To ensure the safety of yourself and others read and follow the instructions set out in the user manual.**
- **To avoid damage to the model, make sure that the product and model are installed correctly before use.**
- **Always power off the receiver before the transmitter. Powering off the receiver before the transmitter could lead to loss of control.**
- **Before use make sure that all the servos and motors are moving in the correct direction.**
- **Make sure to remain within range to prevent loss of control.**

2. Battery Safety Instructions

⚠ Danger

- This products battery is rechargeable and non-removable. Do not remove the battery from the product.
- Do not charge batteries that show any evidence of damage, aging, leakage or exposure to liquids.
- Do not expose the battery to liquids.
  - Do not use a damp battery. Keep your hands try during use and do not leave batteries in areas with lots of moisture.
- Do not Tap the positive and negative terminals of the battery together.
- Do not solder, repair, modify or disassemble the battery.
- Do not throw the battery into a fire.
- Do not charge the battery in direct sunlight, in a hot car or near anything hot such as cookers etc.
- Do not charge without ventilation.
- Do not use near flammable liquids or gasses.
- Charge Transmitter Battery before use.
  - If there is not enough quantity of electricity during the flight, it will lead to a airplane crash.

⚠ WARNING

- Do not Tap the charger or battery during charging.
  - May cause burns
- Do not throw or impact the battery.
  - May cause fire or an explosion.
- Keep the battery away from any heat source if it is leaking or causing strange smells.
  - May catch fire or explode.
- Put some tape on the battery's terminals before recycling.
  - If the short circuit causes fire, heat, rupture, etc.
- Do not store the battery in dusty or humid environments.
  - Remove dust from the power connector before plugging in.
- Do not charger the battery when exposed to extreme heat or cold.
  - May lead to a drop in battery performance. To ensure maximum performance always charge the battery within the temperature range of 10°C ~30°C .

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3. Product Description

The PL18 Ultra transmitter is a comfortable and ergonomic air transmitter. It features the 2.4GHz AFHDS 3 (third-generation Automatic Frequency Hopping Digital System) protocol, offering 18-channel communication. This transmitter is compatible with the RM303 RF module to support various communication protocols and can store up to 50 model setups. It includes a variety of built-in model type setting menus, enabling flexible adaptation to different RC models such as airplanes, gliders, helicopters, multicopters, cars, boats, and robots..

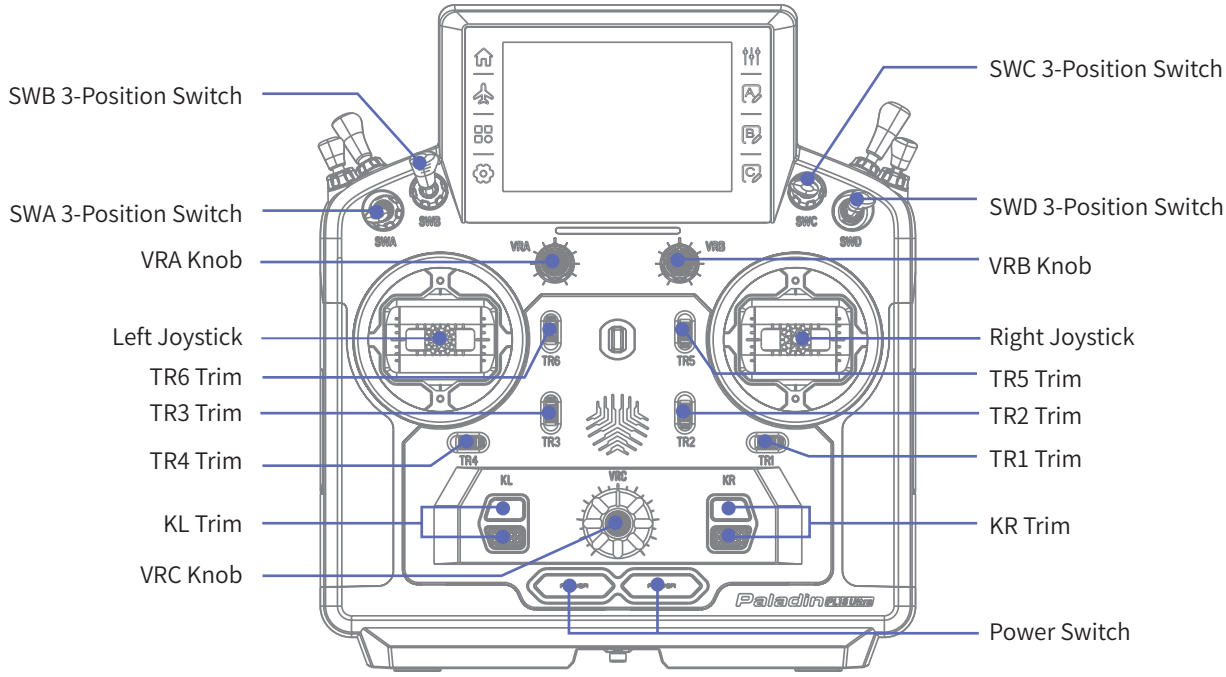
3.1 System Features

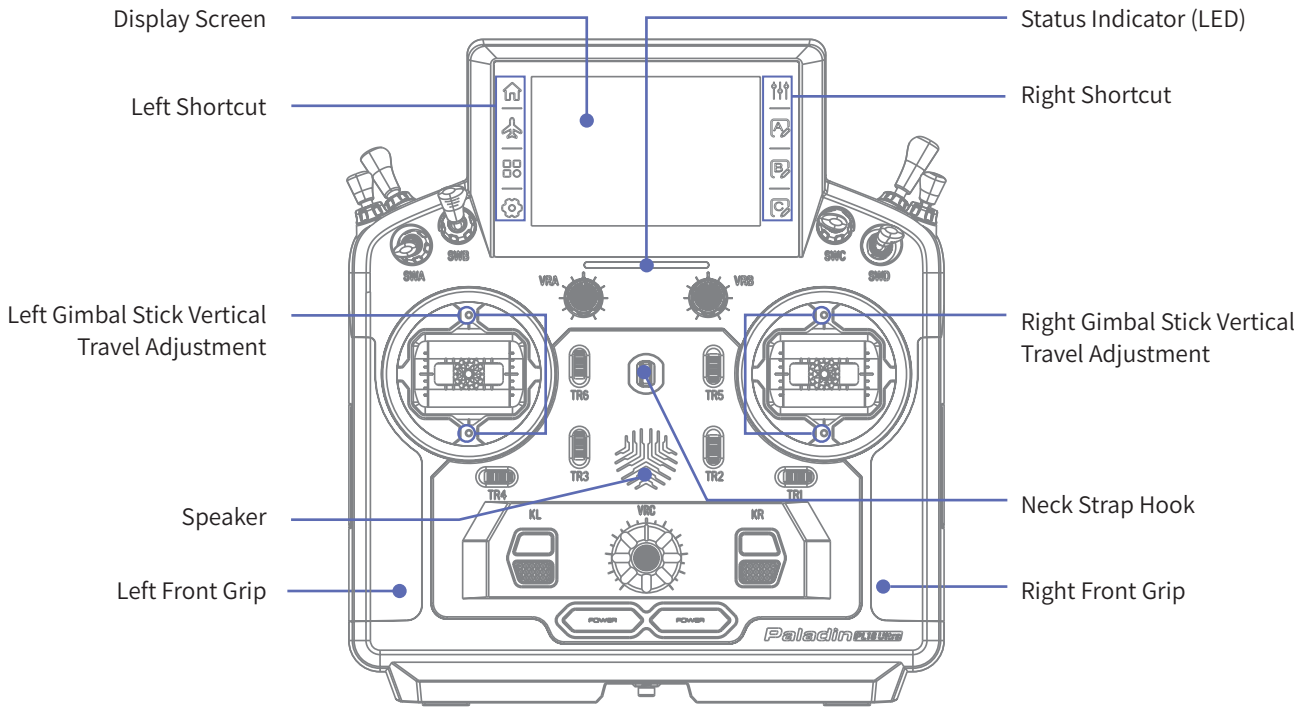
AFHDS 3 (third-generation automatic frequency hopping digital system) is a newly developed digital wireless system with independent intellectual property rights by FLYSKY. It is compatible with one-way and two-way real-time data packet transmission and transparent data stream transmission.In other words, this system has advantages of both AFHDS 2A and WS2A wireless system. It equips with a brand-new 2.4G chip, stable and reliable connection, good real-time performance, and supports various configurations. Bring you the optimal configuration for multi-scenario application performance.

Compatible with Unidirectional/ Bidirectional Real-time Data Transmission	The system supports one-way and two-way connections. When the transmitter is working in one-way transmission way, the receiver can receive data from the transmitter. When the transmitter is working in two-way transmission way. The receiver can receive data from the transmitter and the transmitter can also receive data from the receiver, as well as the information cross from the temperature and speed sensor modules.
Data Transparent Transmission	The independent data transparent transmission module is built into RF system, which can realize data transmission via transmitter and transparent transmission. It can be used for data transmission of flight control.
Intelligent RF configuration	To set the parameters which affect RF transmission distance, speed and anti-interference, such as numbers of channels, resolution, bandwidth and receiver sensitivity. The system can be set according to different application requirements to obtain the most suitable performance.
Multi-channel Frequency Hopping	This systems bandwidth ranges from 2.402GHz to 2.480GHz. Set intelligent RF configurations accordding to your required, it can avoid or reduce the interference from other transmitters with the same frequency via different configurations, different time of powering on the transmitter, various patterns to the hopping frequency and various using frequency spots.
Unique ID Recognition System	Each transmitter and receiver has it's own unique ID. Once the transmitter and receiver have been bound, they will save the each other's ID and only connect with each other. When the syetem is working,if the IDs are matched with each other, then the connection will be connect, otherwise, there is no connection between transmitter and receiver. This unique ID recognition syetem resists the interference so as to make the system stabler and more reliable.
Low Power Consumption	It is built using highly sensitive, low power consumption components. And it works in the way of interval data transmission to improve transmitting efficient effectively and extend the working time of the battery distinctly, while it consumes as little as one tenth the power of a standard FM system.

3.2 Transmitter Overview

Front View





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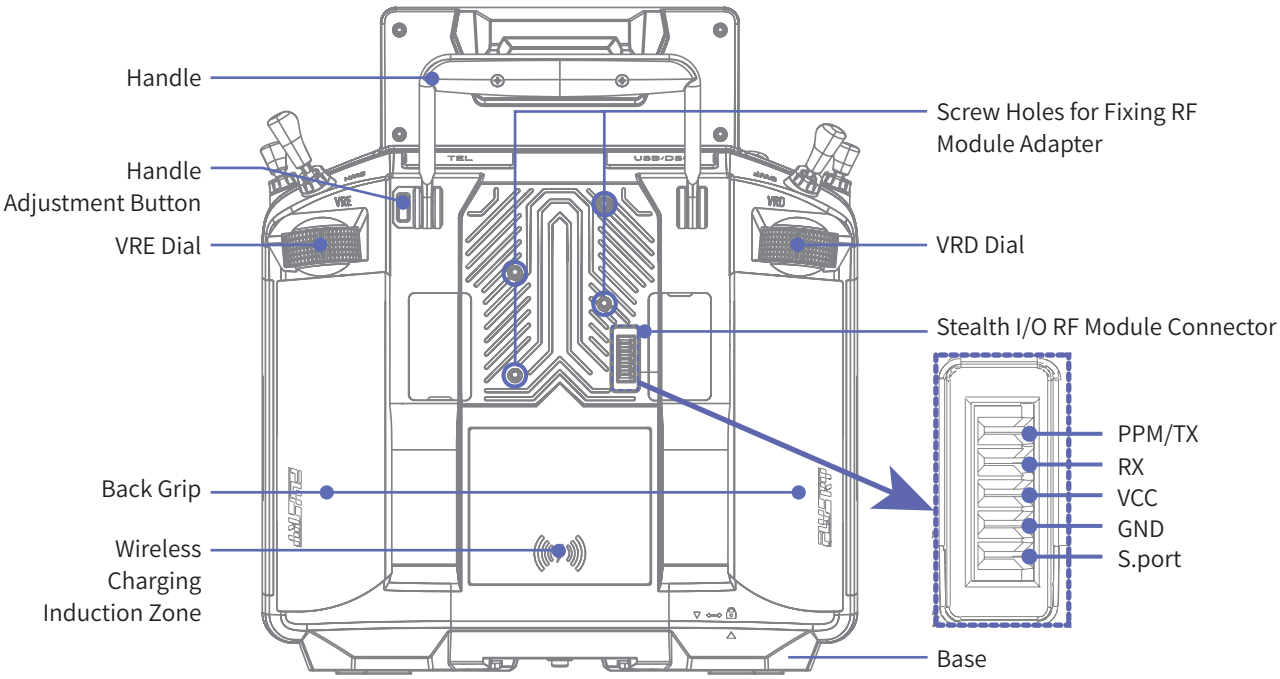
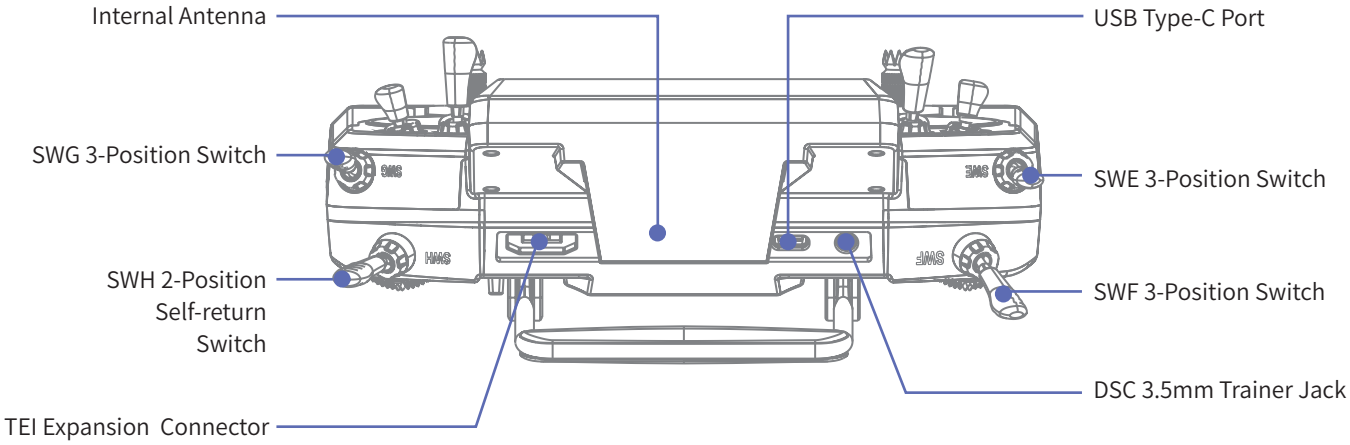
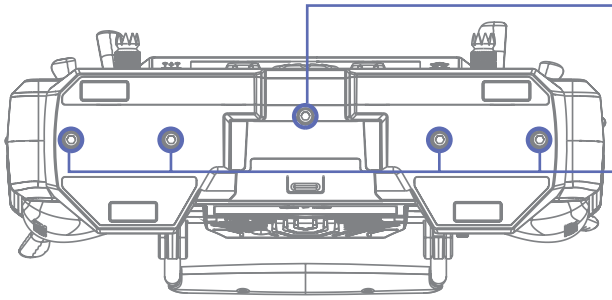
Back View



Top View

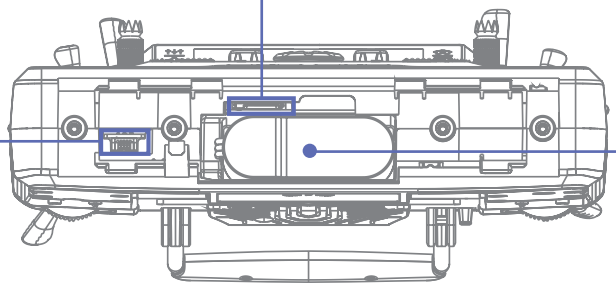


Bottom View



Screw Holes for Fixing FS-TJ01 Bracket

Screw Holes for Fixing Base



SD Card Slot

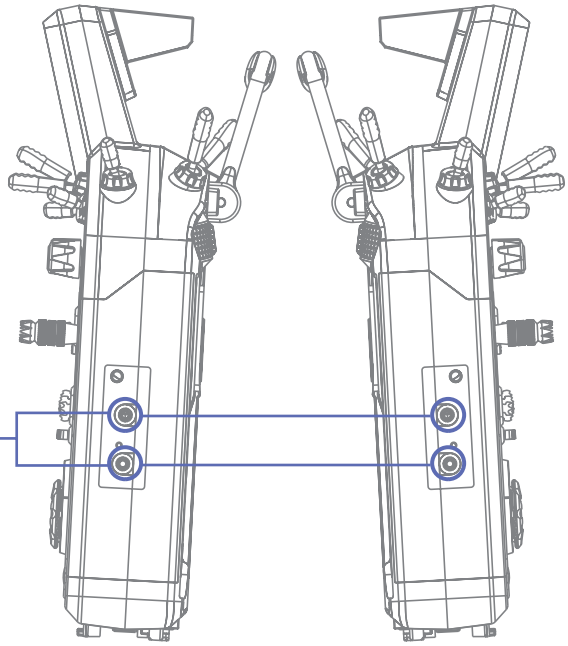
Note: This product does not include an SD card when shipped. Users need to purchase a suitable SD card according to their own requirements.

Battery Connector (JST)

Battery

Note: The base has been removed in this diagram.

Side View



Holes for Mounting FS-ST01 Hand Tray

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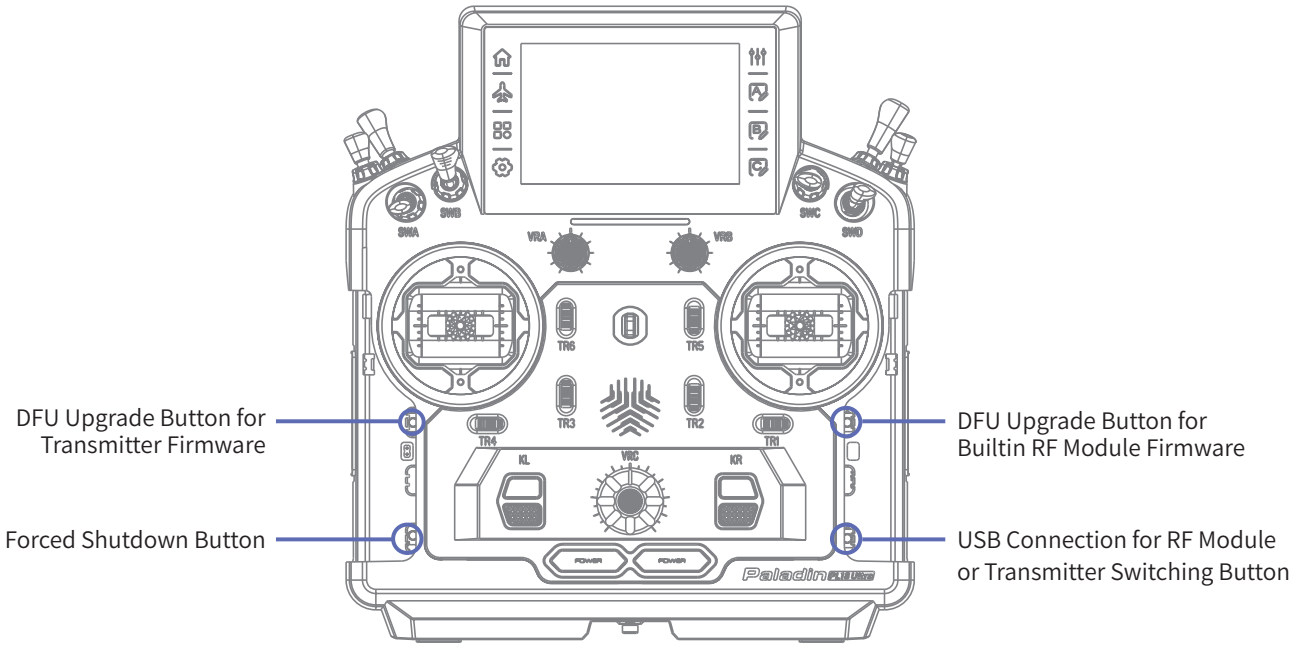
Buttons Under Left Grip and Right Grip



The positions of the 'DFU Upgrade Button for Transmitter Firmware', 'Forced Shutdown Button', 'DFU Upgrade Button for Builtin RF Module Firmware' and 'USB Connection for RF Module or Transmitter Switching Button' are shown in the figure above, you need to tear apart the grip to find it. To press the four keys shown above by using a long thin tool.

Caution: Do not use sharp or metal objects to operate the four buttons as shown in the diagram to prevent damage to the internal structure.

Forced Shutdown Button

In case of the transmitter can not be powered off by pressing the two Power Switches, please reset the transmitter with this button.

Setup:

1. Pull the grip on the left side of the transmitter and find the Forced Shutdown Button under the grip.
2. Insert a long, thin tool into the small round hole and press the Forced Shutdown Button located there. The transmitter will turn off immediately after pressing it.

⚠ CAUTION	• After resetting, the settings which set before resetting may be invalid.

3.2.1 Transmitter Antenna

PL18 transmitter has two built-in antennas. When the transmitter starts to work, the antennas automatically operate, without additional operations.

⚠ CAUTION	• To ensure a good signal do not cover or block the antenna.

3.2.2 Stick/Knob/Dial/Switch/Button

The PL18 Ultra features two joysticks (left and right), three knobs (VRA, VRB, and VRC), eight switches (SWA, SWB, SWC, SWD, SWE, SWF, SWG, and SWH), two dials (VRD and VRE), and eight trim buttons (TR1, TR2, TR3, TR4, TR5, TR6, KL, and KR).

Sticks: They output different values depending on their position and can output continuous signals. They can be used as function controls, as well as switches to turn functions on or off.

Knobs/Dials: The can perform the same functions as sticks. Some of them can also be used as trim controls, as well as switches to turn functions on or off.

Switches: There are two-position, three-position and self-return switches. Different values correspond to different positions. They can be used as function controls, as well as switches to turn functions on or off.

Trim buttons: They output different values when toggled up or down. They can be used as function controls; for detailed information, refer to section 7.8 on Digital Trim.

3.2.3 Status LED

Status indicator (LED) is used to indicate the power and working status of the transmitter.

- The LED is off: Indicates that the transmitter is powered off and not in a charging state.

When the transmitter is powered on, the LED can be in two states: flashing or solid on.

- The LED is off: The transmitter is shutting down.
- The LED is flashing in red: Indicates an alarm, such as a sensor alarm trigger, receiver disconnection, or power-on control position alarm.
- The LED is flashing in green: Indicates binding is in progress or PWM converter is being configured.
- The LED is solid on in green: Indicates connection to the receiver.
- The LED is solid on in blue: Indicates no receiver connected or searching for the receiver.
- The LED is solid on in cyan: Indicates the transmitter is powering on.
- The LED is solid on in yellow: Indicates that the RF is not enabled.

When the transmitter is in a powered-on dormancy state and not charging:

- The LED flashes slowly in blue: Indicates the battery level is high.
- The LED flashes slowly in red: Indicates the battery level is low.
- The LED flashes slowly in yellow: Indicates the battery level is medium.

When the transmitter is in dormancy or power-off state and charging:

- The LED is solid on in blue: Indicates the battery is full charged.
- The LED flashes in blue: Indicates the battery level is high, and it is charging.
- The LED flashes in red: Indicates the battery level is low, and it is charging.
- The LED flashes in yellow: Indicates the battery level is medium, and it is charging.

3.2.4 Stick Mode

This system supports four stick modes. As for aircraft models, from channel 1 to channel 4, by default, these four channels are assigned to aileron, elevator, throttle, and rudder. There are four preset modes of the sticks in order to meet the different requirements. You can select suitable mode among **Mode1**, **Mode2**, **Mode3** and **Mode4**. The green frame indicates the currently selected mode, and the default mode is **Mode 2**. You can select suitable mode as your desired. Then you need to adjust the gimbals as needed to match the mode. Follow the steps below.

Setup:

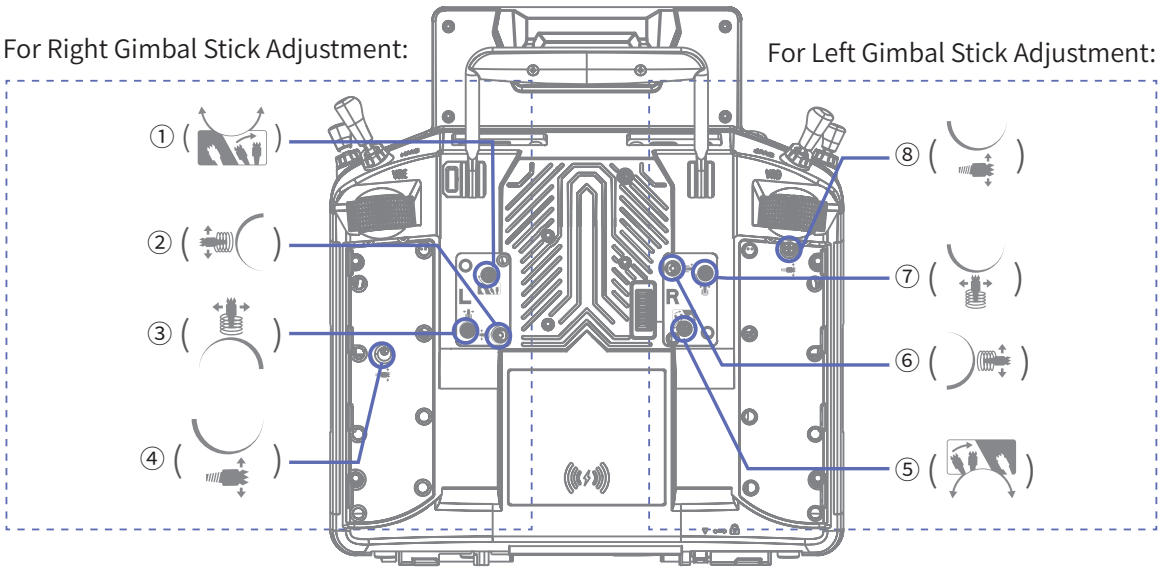
Enter the Model setup interface via (Basic) > **Models**, then tap the function box next to **Stick** to enter the stick mode interface.

Select the mode as your desired. Then click to return.

This can also be done after upgrading the firmware or performing a factory reset.

3.2.5 Gimbal Assembly Adjustment

Gimbal Assembly non self-centering(self-centering)/
Friction/Tension Adjustment



As shown above, by adjusting the screws which are located in the screw holes in the back of the transmitter, the gimbal stick can be set to either self-centering or non-self-centering and the friction in case of non self-centering, as well as changing stick tension in case of self-centering (Remove the grips to find the relevant screw holes and screws). Screw description is as following:

① . ⑤	Gimbal stick self-centering/non-self-centering adjustment	② . ⑥	Gimbal stick vertical tension adjustment
③ . ⑦	Gimbal stick horizontal tension adjustment	④ . ⑧	Gimbal stick vertical friction adjustment

Always perform a stick tension test while turning the screws to ensure stick tension is not too loose or too tight. Overtightening a screw can damage the spring. Loosening a screw too far can cause a spring to fall out in the transmitter and possibly damage the circuitry within. Pay attention to the force when adjusting.

Take right gimbal stick as example.

Non-Self-Centering to Self-Centering

1. Use the screwdriver to adjust the screw ① (shown on previous diagram)counterclockwise until the gimbal stick changes to self-centering.
2. Adjust the screw ④ counterclockwise to adjust the frictional force.
3. If you need to adjust the horizontal centering force or vertical centering force, adjust the corresponding screw ③ or ② accordingly. The force increases clockwise, and decreases counterclockwise.

Self-Centering to Non Self-Centering

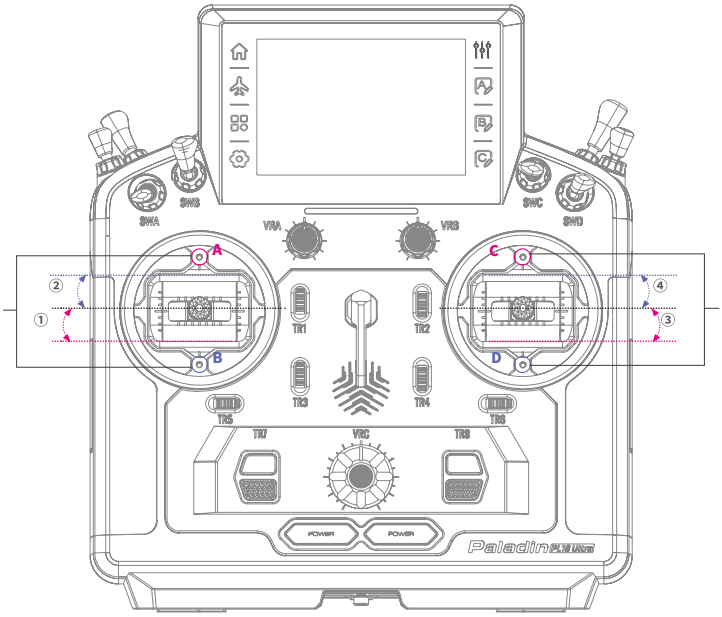
1. Use the screwdriver to adjust the screw ① clockwise until it is tightened so that the gimbal stick changes to non self-centering.
2. Adjust the screw ④ clockwise to strengthen the frictional force.
3. If you need to adjust the horizontal centering force, adjust the screw ③ accordingly. The force increases clockwise, and decreases counterclockwise.

Gimbal Assembly Vertical Travel Adjustment

For the gimbal assembly of the transmitter, the adjustable range of mechanical travel is from 38° to 54° . Travel can be adjusted as your desired.

After the adjustment is finished, the stick must be recalibrated.

Left gimbal stick vertical travel adjustment



Right gimbal stick vertical travel adjustment

Note: The screw A is used to adjust ① half travel, and the screw B is used to adjust ② half travel. The screw C is used to adjust ③ half travel, and the Screw D is used to adjust ④ half travel.

Note: Pay attention to the force when adjusting.

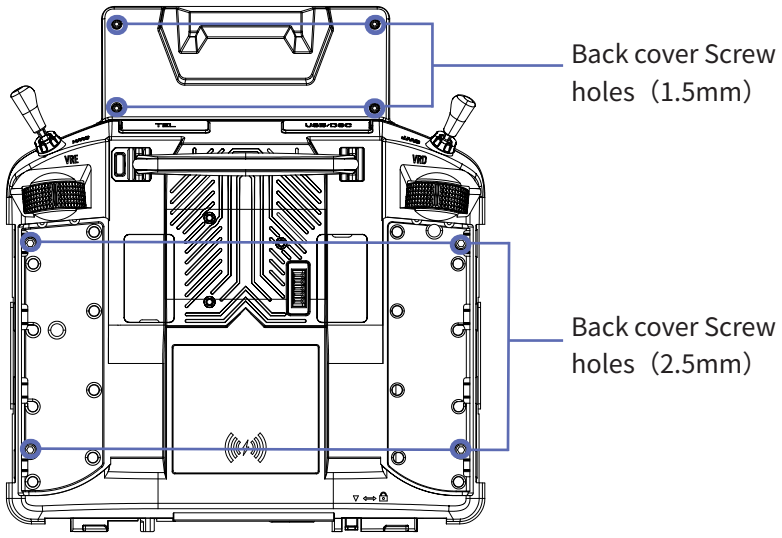
The steps are as follows:

1. Use a metric 1.5mm Allen wrench to adjust the corresponding screw in a clockwise direction to increase the travel.
2. Adjust the corresponding screw in the counterclockwise direction to decrease the travel.

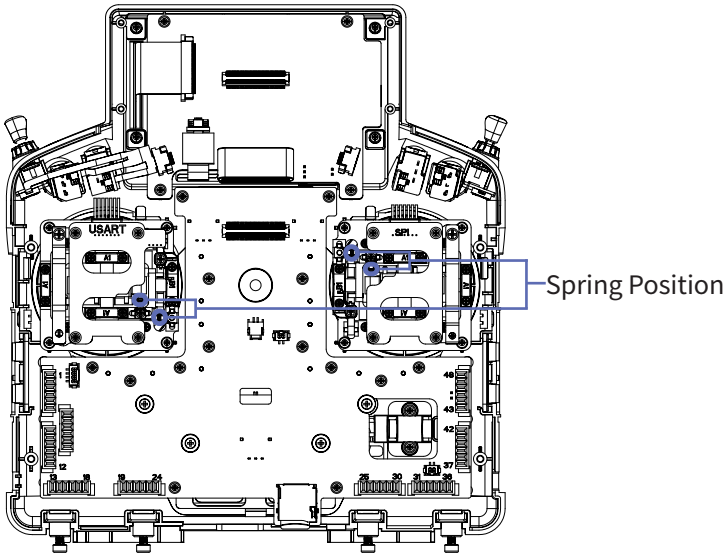
3.2.6 Gimbal Spring Replacement

If the gimbal spring is not elastic enough or is damaged, the user can replace it. Please refer to the following steps:

1. Remove the 8 screws with an appropriate size Allen wrench after removing the transmitter's grip.



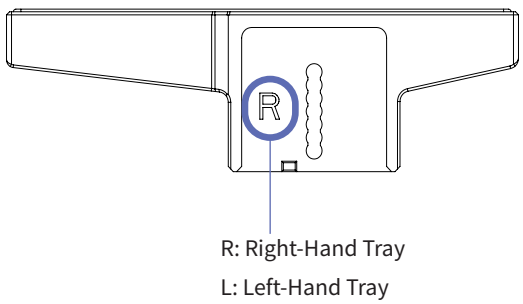
2. After removing the back cover of the transmitter, the spring can be replaced with a suitable tool such as tweezers.



3.2.7 Installation of Hand Tray

Follow the steps below to install the right hand tray, the left hand tray can be installed by following the same steps.

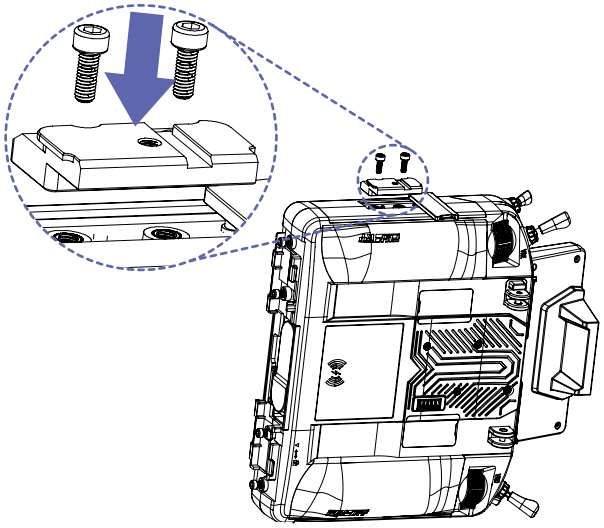
1. According to the letters on the hand tray, you can confirm whether the right-hand tray or the left-hand tray.



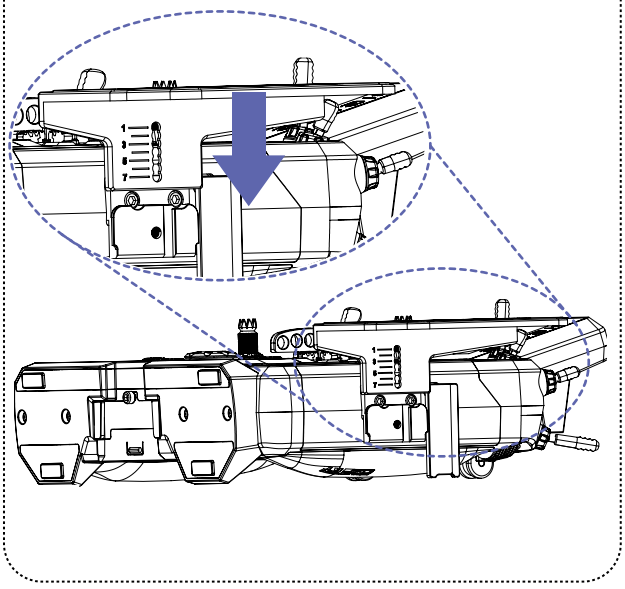
R: Right-Hand Tray

L: Left-Hand Tray

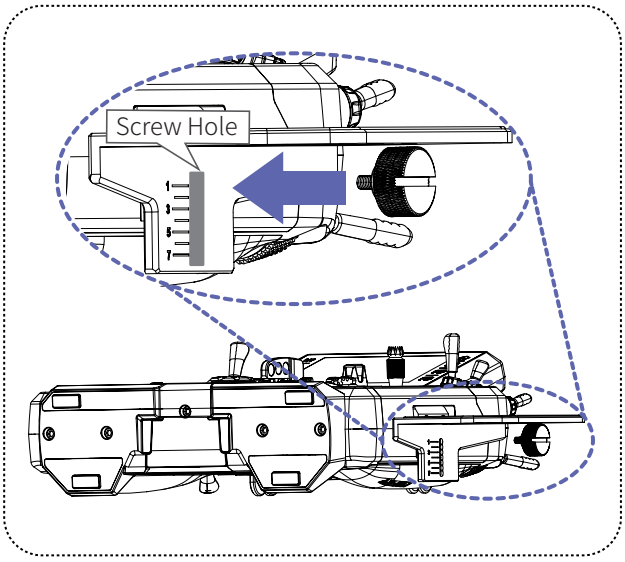
2. After confirming the position of the right-hand tray screw holes, install the screws using a metric 2.5mm Allen wrench.



3. Push the right-hand tray in the direction of the arrow as shown until it is not easily dropped.



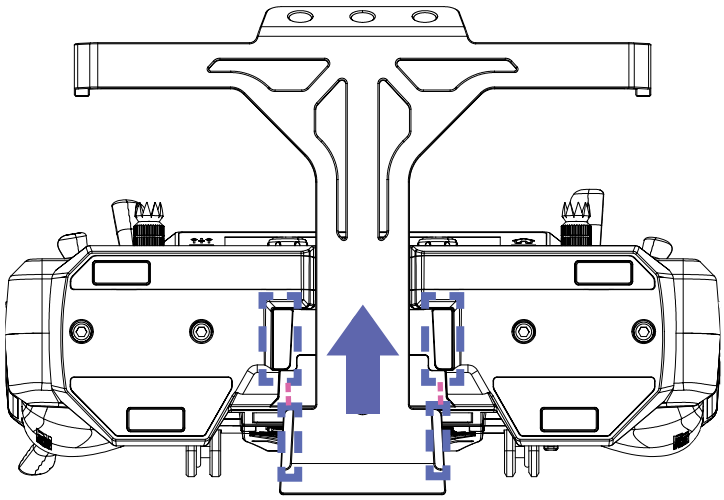
4. Install the screw in the direction of the arrow as shown, and select the appropriate position based on the scale marks on the right-hand tray for installation, until the right-hand rest is securely in place and does not easily become loose.



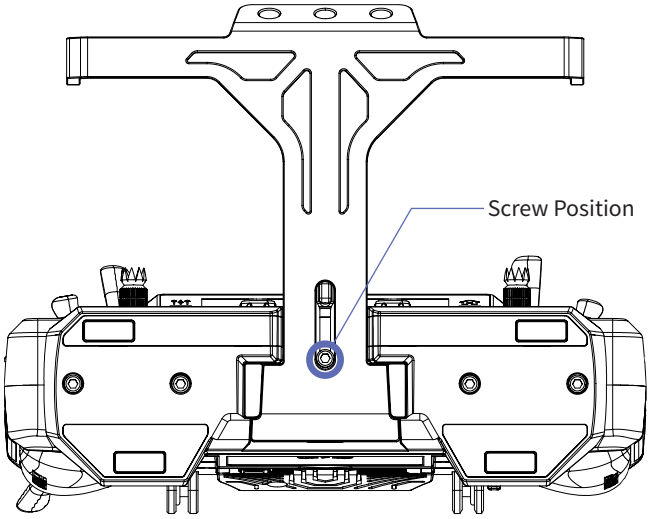
3.2.8 Installation of Bracket

Follow the steps below to install the bracket:

1. Align the bracket with the slot position of the transmitter base, push the bracket in the direction of the arrow as shown until the bracket snaps into the position properly.



2. Use a metric 2.5mm Allen wrench to attach the screw in order to secure the bracket.



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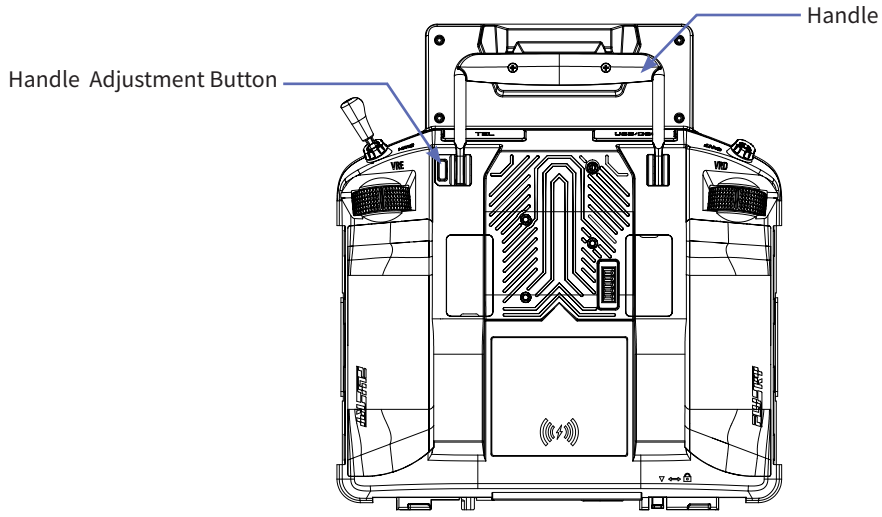
3.2.9 Handle Adjustment

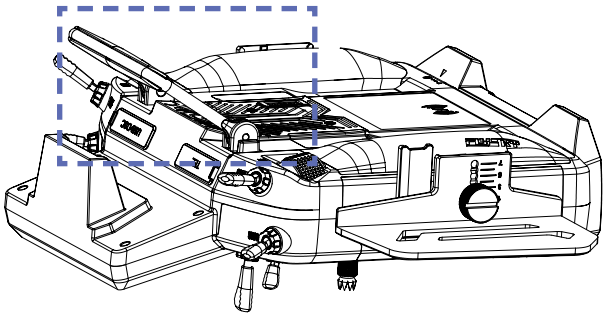
The handle can be adjusted according to the two positions in Figure 2 and Figure 3.

Steps:

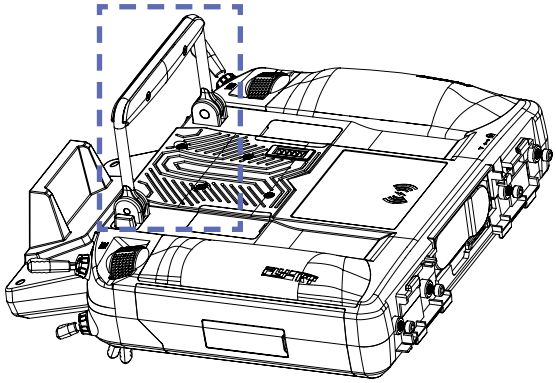
Press the Handle Adjustment Button and turn the handle. Then, release the handle until it locks into place.



①



②

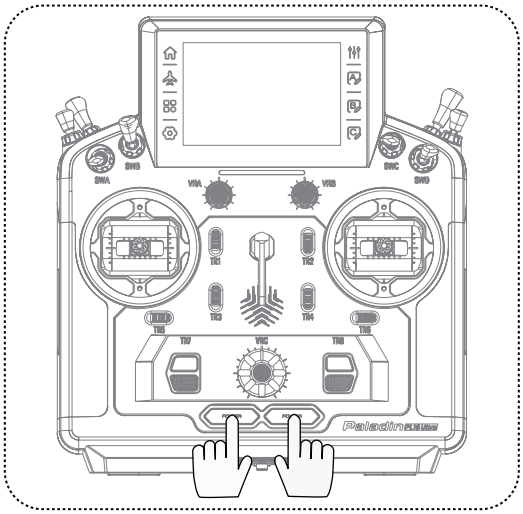


③

Note: The handle can be adjusted to its maximum or minimum position for easier storage.

3.2.10 Power Switches

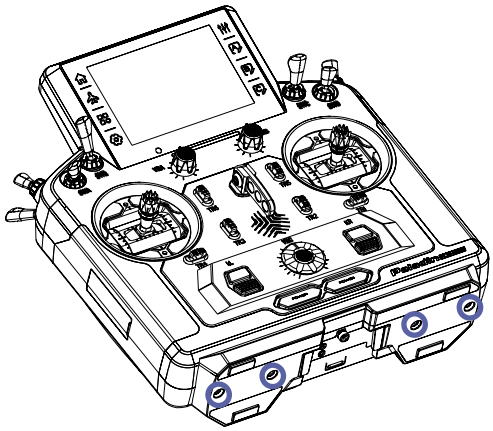
To prevent false triggering, there are two switches on the lower part of the transmitter. Turn on or turn off the transmitter when both switches are pressed at the same time.



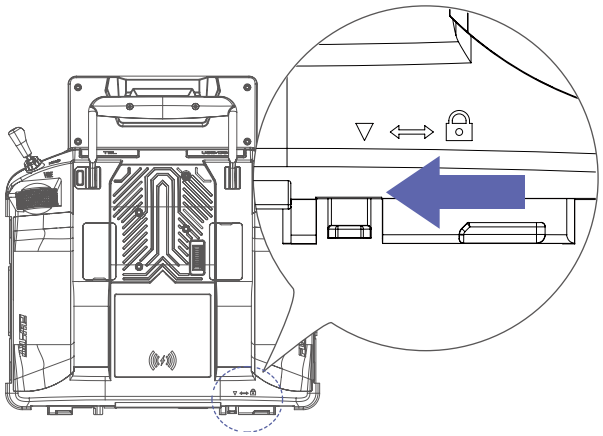
3.2.11 Battery Installation

Follow the steps below to install the transmitter battery:

1. Remove the 4 screws securing the base.



2. Push the base in the direction of the arrow as shown until it is removed.



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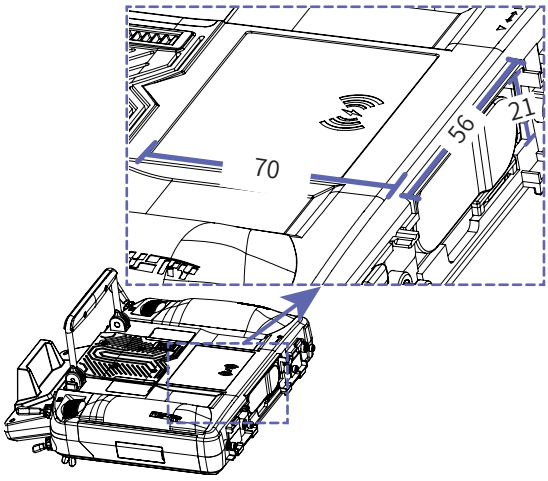
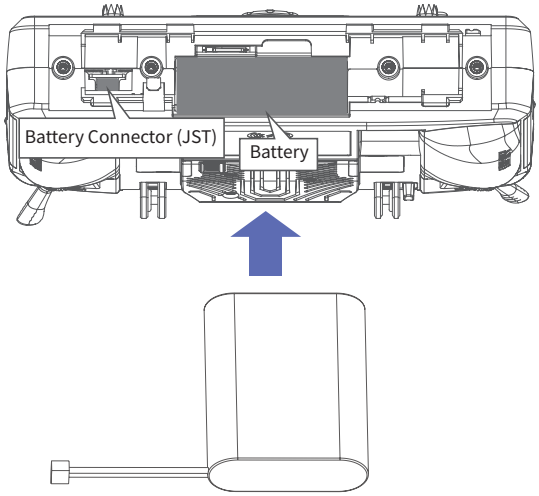
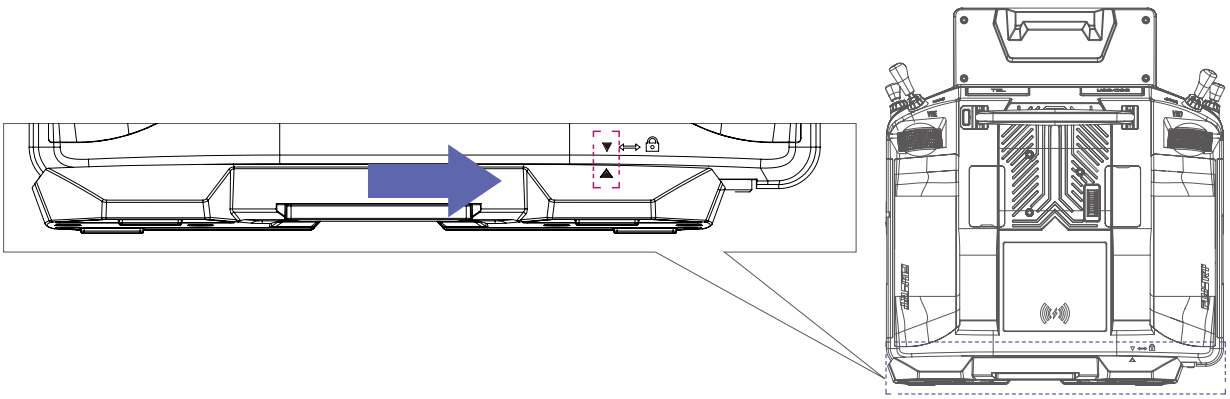
3. Install the 1S LiPo battery into the battery compartment and connect the battery wiring to the Battery Connector (JST).

Battery Compartment Parameter (Unit: mm)





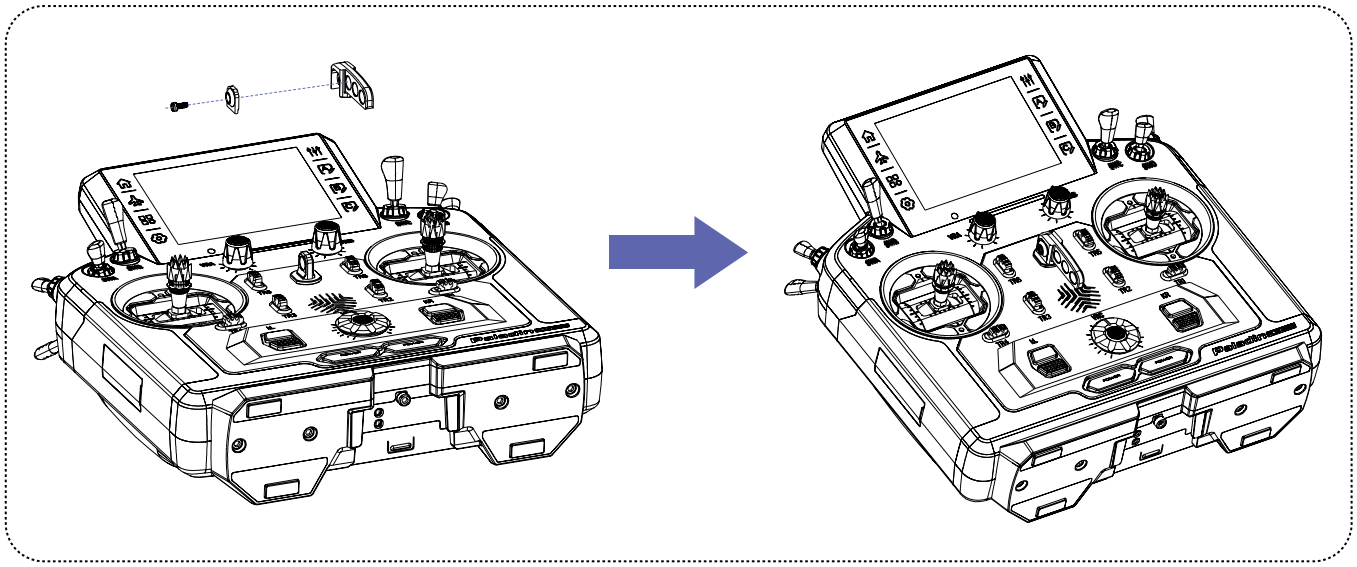
4. After aligning the icons on the base and the transmitter, push the base in the direction of the arrow until it is in place. Then, lock the screws and be careful to avoid pinching the battery wiring.



3.2.12 Installation About the Center of Gravity Regulator

The center of gravity regulator can be installed according to the usage scenario. The steps are as follows:

Align the screw, washer and center of gravity regulator in sequence with the center of the neck strap hook as shown, and secure them at neck strap hook position.

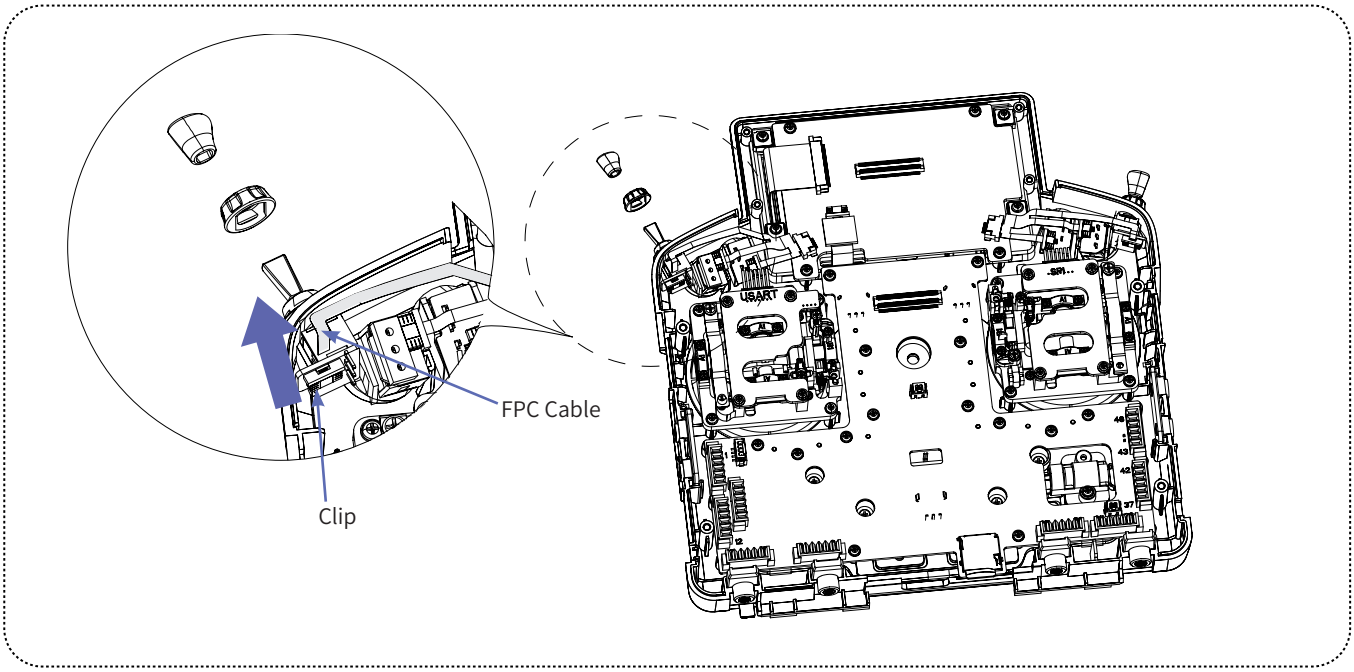


3.2.13 SW-type 3-Position/2-Position Switch Replacement

This transmitter supports replacement of SW-type 3-Position/2-Position switches, which can change from 3-Position switch to 2-Position switch or vice versa.

The steps are as below:

1. Refer to the previous steps to remove the grips, then remove the eight screws securing the back cover.
2. Remove the back cover of the transmitter.
3. First, if the cover of the switch is installed, please remove it from the switch. Next, use the appropriate wrench to loosen and remove the sleeve of the switch. Then, carefully release the clip on the switch PCB board. Finally, remove the FPC cable.



4. Take out the switch from the inside of the transmitter.
5. Insert the switch to be replaced (with the switch cover removed) into the fixing hole that secures the switch from the inside of the transmitter. Next, release the clip on the switch PCB board and insert the FPC cable connector into the clip. Then, secure the clip and make sure the FPC cable is secured. Finally, use a wrench to tighten the switch sleeve and put on the switch cover.
6. Tighten the 8 screws that secure the back cover, and then install the grips one by one.

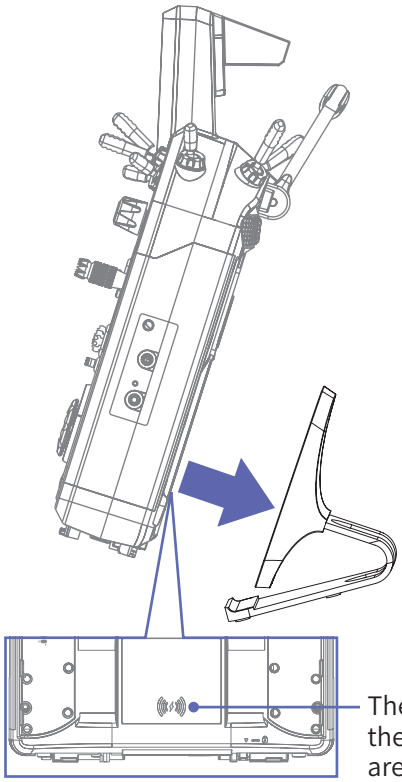
3.2.14 Charging Mode

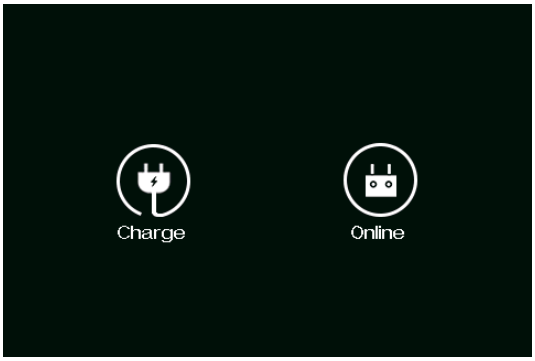
The transmitter can be charged in two ways: Wired charging (USB charging) and wireless charging.

- Wired charging: The USB Type-C cable is connected to the power supply at one end and to the USB Type-C port of the transmitter at the other end.
- Wireless charging: Use the wireless charging dock to charge it (as shown in the figure).

Wired charging supports fast charging up to 18W, and wireless charging supports fast charging up to 12W, both of which will be shown as fast charging mode. If you use a fast charging charger that cannot recognize by the transmitter, it will be shown as normal charging.

Note: When charging with the power off, tapping the transmitter screen will display charging mode information.





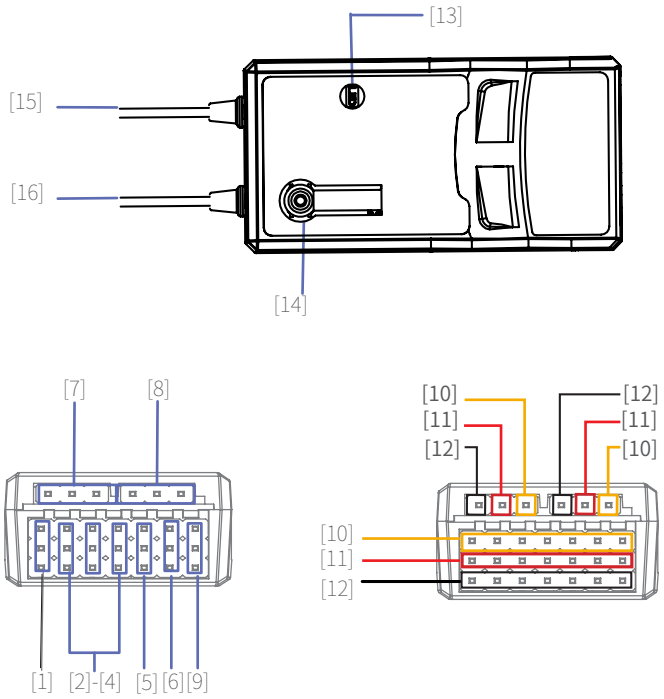
CAUTION	• **Please use the micro USB cable shipped with this transmitter. Improper use may cause damage to the battery and affect its service life.**

Notes:

1. Before the transmitter is turned on, and the transmitter with the computer is connected via the USB Type-C cable. After the transmitter is turned on, a pop-up window will appear, indicating to select the USB function: "Charge" or "Online ". If you choose "Charge", the transmitter does not communicate with the computer. If you choose "Online", the transmitter communicates with the computer, that is, FlySky Assistant or simulator software can be accessed.
2. By default, wired charging is prior to wireless charging, namely, if the transmitter is connected to both wireless charging and wired charging, wired charging is enabled and wireless charging is disabled.
3. Charging in a low temperature, battery capacity and cycle life will reduce.
4. Do not storage exceed half year. Must charge at least once when storage half year, and must charge the battery when storage for three months.
5. If the transmitter has removed the battery or the battery is in over-discharge protection, the transmitter cannot be turned on by connecting the power supply via the USB Type-C cable, it can be powered on by re-installing the battery or when the battery is charged to a usable state.

3.3 Receiver Overview(Take FTr8B as an example)

3.3.1 Receiver Overview



[1] CH1

[2]-[4] CH2-CH4

[5] CH5 (NPD)

[6] CH6 (NPC)

[7] CH7 (NPB)

[8] CH8 (NPA)

[9] BVD/ VCC(Battery voltage detection/Power supply interface)

[10] S(Signal Pin)

[11] + (Power Anode)

[12] - (Power Cathode)

[13] LED

[14] BIND Button

[15] Antenna 1 (The right antenna)

[16] Antenna 2 (The left antenna)

3.3.2 Status Indicator

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

- Off: The receiver power is not connected.
- Solid on in red: The receiver is connected to the power supply and is working properly.
- Fast flashing: The receiver is in binding mode.
- Slow flashing: The transmitter which the receiver is bound is powered off, the signal is lost or the receiver firmware is updating.
- Three-flash-one-off: The receiver has entered forced firmware update mode.

4. Pre-operation Setup

Follow the instructions and guidelines in this chapter before use.

4.1 Receiver And Servo Installation

Make sure that the receiver is mounted in an appropriate location within the model, to ensure a stable signal, maximum range and to mitigate external interference, follow these guidelines:

Pay attention to the following when installing the receiver:

1. Make sure the receiver is not installed near ESCs or other sources of electrical noise.
2. Keep the receivers antenna away from conductive materials such as carbon or metal. To ensure normal function make sure there is a gap of at least 1cm between the antenna and the conductive material.

⚠ **CAUTION**	• **To prevent damage do not power on the receiver during installation.**

5. Operation Guidelines

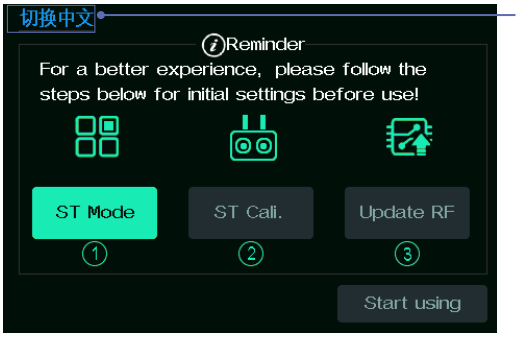
Follow these guidelines to use the transmitter and the receiver.

5.1 Power-On

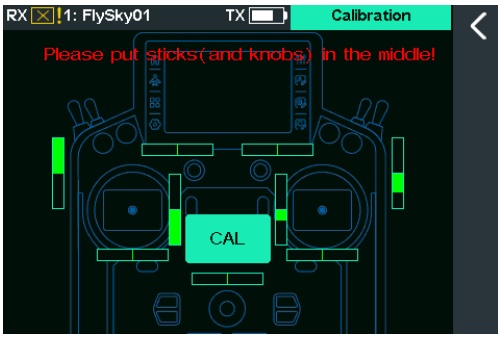
When the transmitter is powered on for the first time, the power-on wizard interface will appear. Finish the settings on Stick Mode (ST Mode), Stick Calibration(ST Cali.) and Update RF according to the interface prompts, and then click Start using.

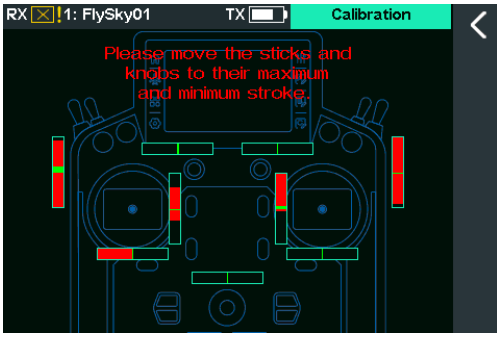
The transmitter will also enter the power-on wizard function after upgrading the firmware via TX firmware update function or do resetting via the Factory reset function.

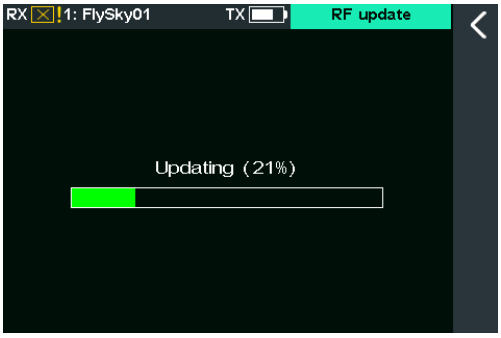
In addition to this, please follow the steps below to power on the transmitter:



Tap to change language







1. Check to make sure that the battery is fully charged;
2. Press and hold the two Power Switches at the same time until the screen turns on;
3. Follow the pop-up prompts accordingly to power on the transmitter.
   - Whether to turn on the transmit function. If RF is not required for this power-up, the transmit function can be switched off.
   - Whether the switch in a safe position. (A red background on a control indicates that the position needs to be adjusted.) Check the position of the control according to the prompts and move it to the correct position.
   - Whether the current model is set failsafe. To turn off the failsafe setting reminder when powering on the device, click Ignore or turn off "Startup reminder failsafe is not set" in General.

⚠ CAUTION	• **The system is now active, be cautious to not cause damage or personal injury.**

⚠ CAUTION	• **If SWA/SWB/SWC/SWD/SWE/SWF/SWG/SWH switches are not at their safe positions and the throttle stick is not at its low position when the transmitter is powered on. A prompt will appear to remind you to put these switches and throttle stick to their proper positions. It is recommended to follow the reminder to put them to their proper positions. The transmitter will launch. If you click Go to launch the transmitter without putting them to their proper positions, this may lead to danger.**

5.2 Binding

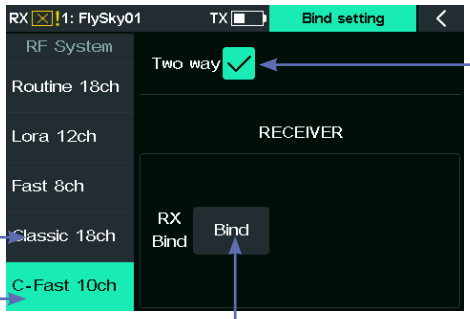
The transmitter and the receiver have been pre-bound at the factory. If you need to rebind or bind a new receiver follow the steps below. The Flysky AFHDS 3 receivers are consisted by classic edition receivers and enhanced edition receivers. The bind method is slightly different between these two editions.

Note: The Flysky AFHDS 3 classic edition receiver models include FTr10, FGr4, FGr4s, FGr4P, FTr4, and FTr16S. Other Flysky AFHDS 3 receivers are considered enhanced edition receivers.

⚠ **WARNING**	• **Power off the servo while the transmitter and the receiver is binding. Otherwise, it may lead to danger.** • **After the binding process is completed, power off the receiver, then power on the receiver and check to make sure that the transmitter and the receiver have bound successfully.**

To enter the Bind setting interface via ⊞ (**Basic**) > **RX setting**.

The binding interface of classic edition receiver:



To be compatible with Flysky AFHDS 3 classic edition receivers, click 'Bind'. After clicking, a menu prompt for adaptive receivers will appear.

To be compatible with Flysky AFHDS 3 classic edition receivers. It supports 10-channel, the delay effect is better than that of Class 18ch.

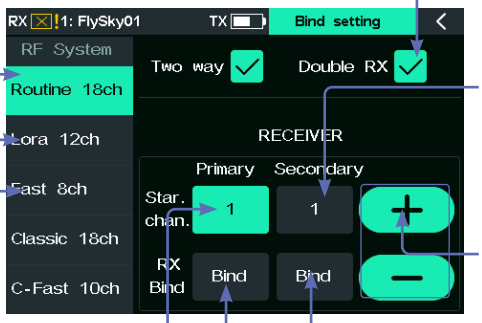
Two way: To set the transmitter and the receiver to connect in either one-way or two-way. If a checkmark (√) appears, it indicates that the transmitter and the receiver are connected in two-way mode.

Note: When you choose one-way communication, the receiver does not send data to the transimitter, the LED flashes slowly after the receiver has received the binding information. You need to manually exit the binding mode on the transmitter side. When the LED of the receiver is solid on, it indicates that the binding is completed.

Click **Bind** to put the transmitter into binding mode. After that, a menu will pop up, showing the binding process.

The binding interface of enhanced edition receiver:

Note: Routine 18ch, Lora 12ch and Fast 8ch can only be bound with enhanced edition receivers.



Provides 18 channels with moderate communication distance.

Provide 12 channels with super anti-interference and moderate communication distance.

Provide 8 channels, fast communication within short distance.

To set the starting channel of the primary receiver.

To bind the transmitter with the primary receiver. Click it to put the transmitter into binding mode. "Connected" will be displayed once the binding is finished.

To set double receivers or not. If a checkmark (√) appears, it indicates that the double receivers are set.

To set the starting channel of the secondary receiver.
For example, if the Primary receiver has 4 channels and the starting channel is set to 1, then the starting channel of the Secondary receiver is set to 5.

To increase/decrease a value. Increase a value by tapping **+** and decrease a value by tapping **−**.

To bind the transmitter with the secondary receiver. Click it to put the transmitter into binding mode.

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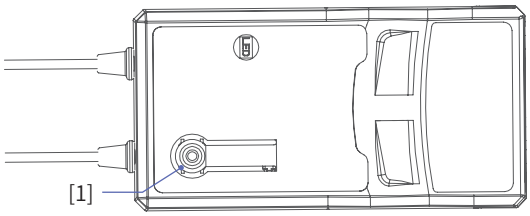
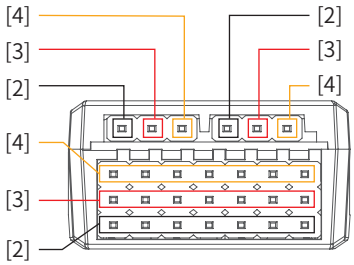
Take FTr8B receiver as an example, the overview of FTr8B receiver is the following.





[1] Bind Button
[2] - (Power Cathode)
[3] + (Power Anode)
[4] S (Signal Pin)

Setup:

1. Tap (Basic) > RX setting > Bind setting to enter the binding setting interface.
2. Click the appropriate RF system and whether two-way communication, and set the starting channel for the enhanced edition receiver, then tap Bind, the transmitter will enter the binding state.
3. Press and hold the Bind button on the receiver while powering it on; the LED of the receiver will flash rapidly to indicate that it has entered the binding state.
4. The binding process is finished when the LED of the receiver stops flashing and is solid on.
   - When the transmitter enters binding state in one-way mode, after the receiver LED becomes slow flashing, then put the transmitter to exit the binding state. At this time, the receiver LED is solid on indicating the binding is successful.
5. Check to make sure the transmitter and the receiver are working normally, repeat steps 1 to 3 (binding process) if any problems arise.

Notes:

1. The binding method may vary with different receivers, For specific binding methods, please visit the official website of FLYSKY for receiver instruction or other relevant information.
2. After the transmitter and receiver establish stable two-way communication, a pop-up window will appear when the receiver is identified as a compatible receiver of a non-FlySky authorized thirdparty brand. Meanwhile, the radio frequency will be interrupted.

5.3 Pre-operation Checks

Always perform the following steps before each operating:

1. Inspect the entire system to make sure that everything is working as expected.
2. Perform a range test as described in the **14.6 Range Test** section of the user manual.

DANGER	• **Do not use the model if there are any abnormal behaviors during the test.**
DANGER	• **Do not exceed the maximum rated range during use.**
CAUTION	• **Interference from other transmitting devices may reduce signal quality.**

5.4 Power-Off

Follow these steps to power off the system:

1. Power off the receiver.
2. Press and hold both Power Switches on the transmitter. The screen will then dim, displaying the prompt 'Shut down... please waiting for!' After that, the screen turns off, indicating that the transmitter has been powered off.

Note: Pressing both power switches on the transmitter will pop up a prompt displaying the shutdown duration and dormancy mode icon. For more information on the dormancy function, refer to section 14.2.5 Dormancy.

⚠ DANGER	• **To avoid any risk of loosing control of the model, always power off the receiver before powering off the transmitter.**

5.5 Low Voltage Alarm (Pop-up/Audible)

When the transmitter is powered on and not in dormancy mode, if the system detects low voltage, an audible alarm will sound and a pop-up alarm will appear with relevant information, as described below.

- When the system detects low voltage of battery, 'Transmitter voltage low!' will activate in pop-up alarm and audible alarm. In this status, both the pop-up alarm and the audible alarm prompt once.
- when the voltage is detected to be even lower, a screen pop-up will display 'Transmitter voltage very low', accompanied by an audible alarm that repeats every 20 minutes.
- When the voltage is detected to be too low, a screen pop-up will display 'Transmitter Voltage Low, please charge' accompanied by an audible alarm that repeats once every 10 minutes.
- If the transmitter's voltage drops below 3.2V, the system will automatically shut down, and a pop-up message 'Transmitter voltage low, automatic shutdown!' will appear on the screen, accompanied by an audible alarm.

Notes:

1. To turn off the audible alarm, you can go to ⚙ (System) > General > Sound to disable the alarm sound.
2. If the transmitter is in the process of binding, powering on, powering off, updating RF module firmware, or other operations, no low voltage alarm will be given.

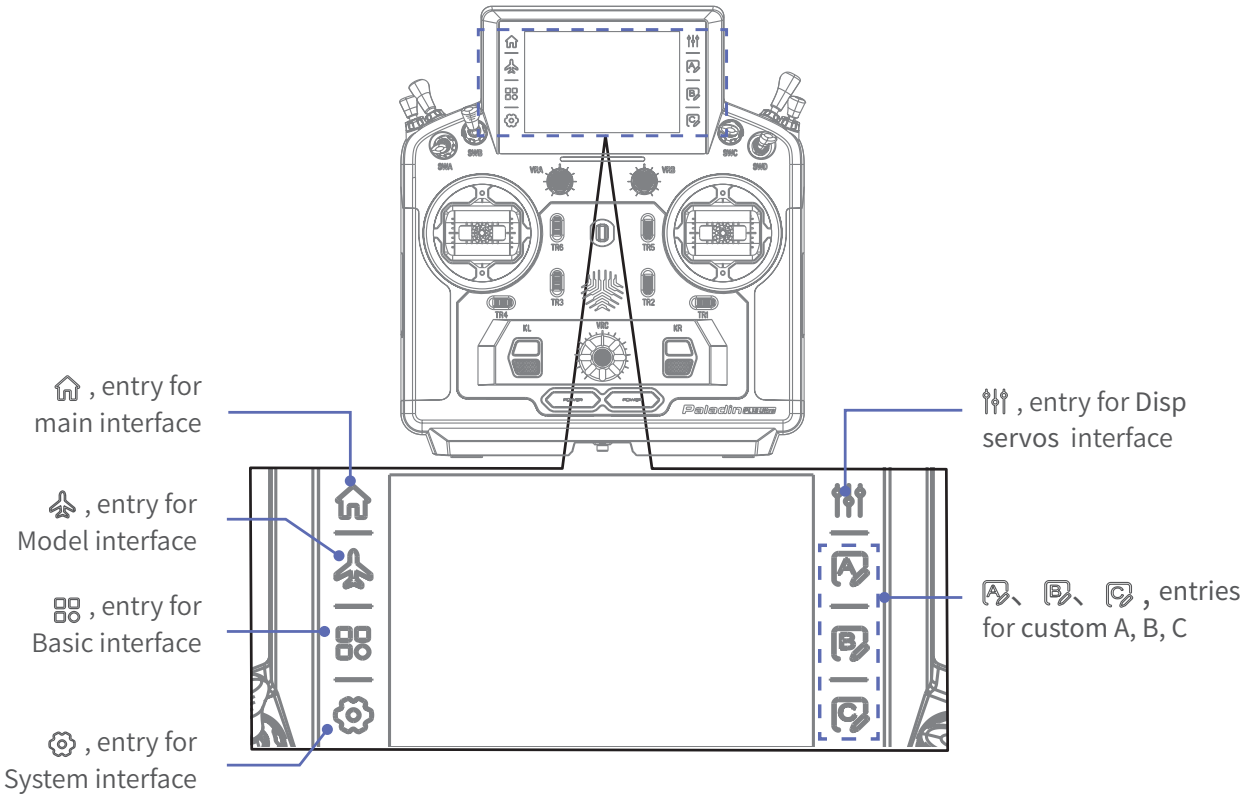
6. Main Interface

This is an introduction about the transmitter's main interface.

6.1 Main Interface Overview

The main interface primarily shows information related to the model, such as sensor data and function status, and offers quick access to these features. By taping on the relevant areas of the main interface and the right main interfaces, you can quickly access the corresponding functional interfaces.

Left and Right Shortcuts



Note: Custom A, Custom B and Custom C of the Right Shortcut are not assigned by default and do not respond when touching. Then after setting the specific functions, you can use the shortcut here to access the corresponding function quickly.

Main Interface

Status Column: Some function icons are displayed in this area if the corresponding functions are activated, such as **Condition**( ), **Vibration** ( ), **Sound**( ) , and Fuel alarm(/). Different function icons will appear in this area in various models, the details are as follows:

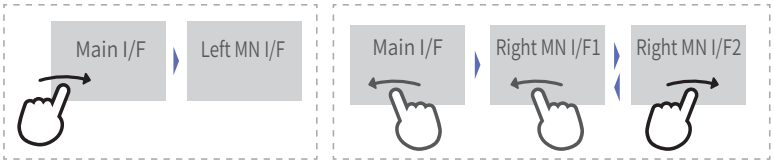
- Airplane: **Airbrake**( ), **Butterfly**( ), **Throttle cut** ( )and **Idle up** ( )
- Gliders: **Airbrake** and **Butterfly**
- Helicopters: **Throttle cut, Idle up** and **Throttle hold**
- Multicopters: **Throttle hold** ( )
- Cars: **ABS** ( )

Entry for Custom Menu

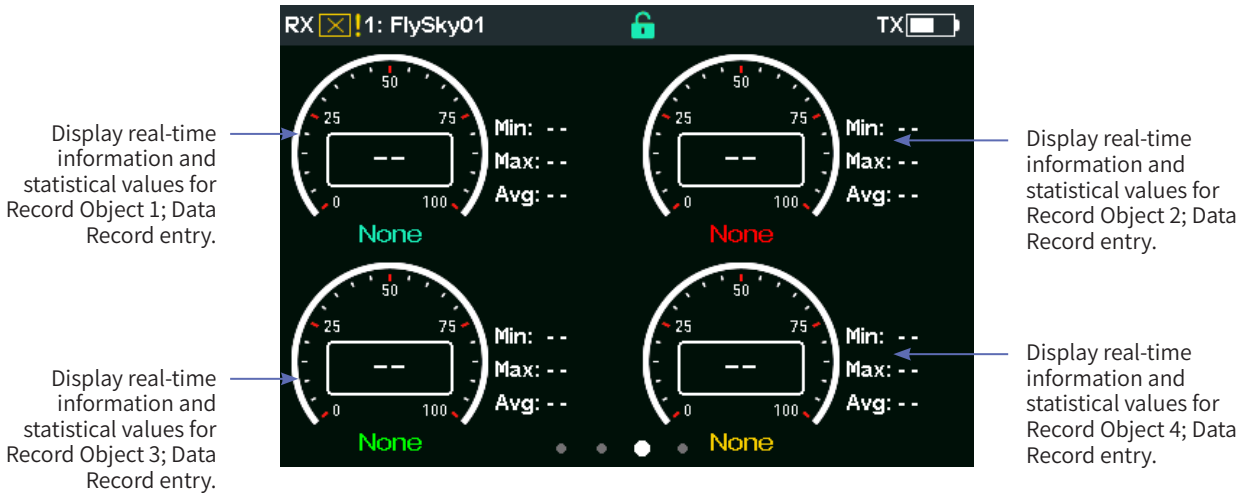
TX, RX voice alarm, Signal, and entry for Sensor

Four dots indicates four pages: The white dot indicates the current page, and the gray dots represent the other pages. To enter the other pages, swipe the screen left or right.

Note:There will be no information in this area, if the RF type is PPM, CRSF or CRSF2.



Right Main Interface 1



Note: The record object can be set to 'Sensor Data', 'Output Channel' or 'Stick or Knob'.

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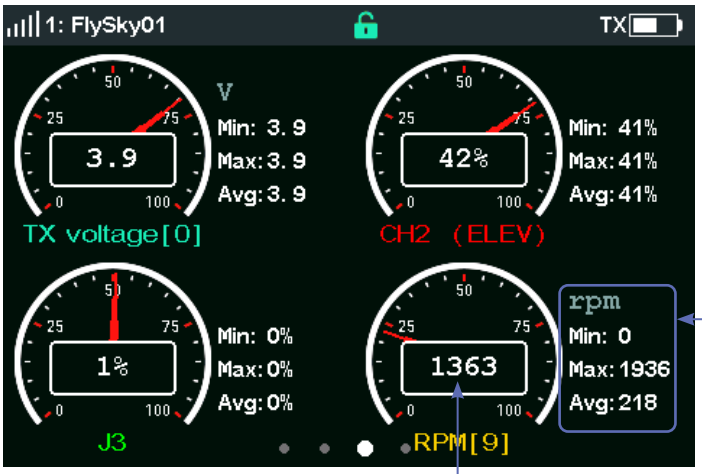
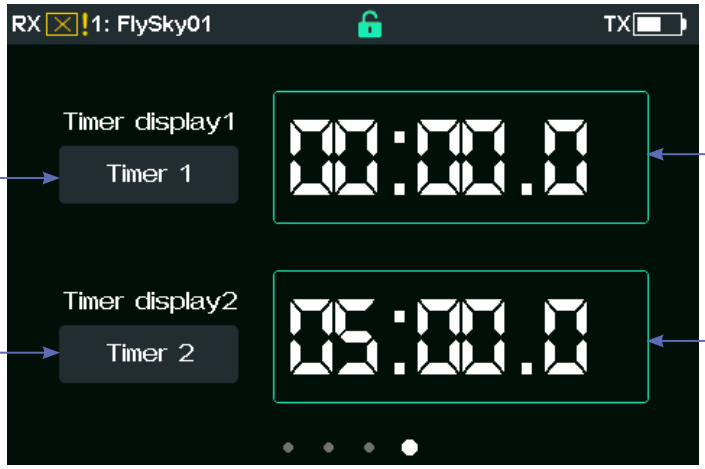
After setting the recording object:



Display real-time maximum, minimum, and average value information of the recording object within the recording duration.

Display real-time value.

Right Main Interface 2



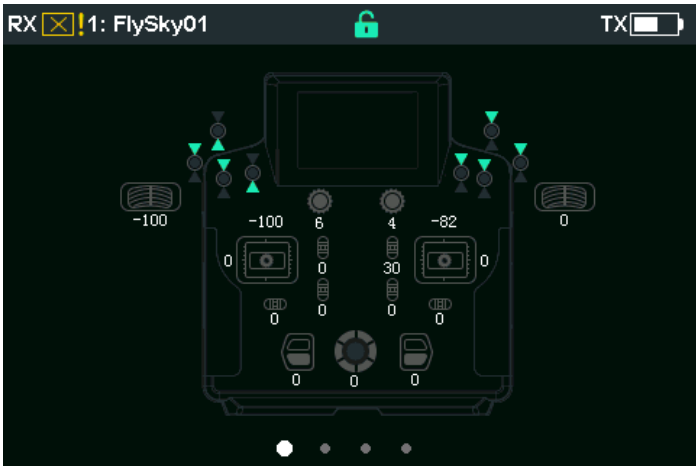
Timer Display: 1; and entry to Timer Display: 1

Timer 1; and entry for Timer1

Timer Display: 2 ; and entry to Timer Display: 2

Timer 2; and entry for Timer2

Left Main Interface



For Switches: Display the current physical position of the switch.

For Knobs/Dials: Display the current value of the knob.

For Sticks: Display the current value of the stick.

For Trims: Display the current value of the trim.

6.1.1 Status Bar (Top)

In slow charging mode

In normal charging mode

In fast charging mode

Battery is full.

Low Voltage

Unlock icon: Tap this icon to lock the screen.

Lock icon: Tap and hold this icon for 1 second to unlock the screen.

Display currently selected model number and name.

The RF module is enabled, but the receiver is not connected (Note: The icon won't be displayed when the transmitter has bound with the receiver in one-way mode).

Tap this icon, a pop-up menu will appear, then tap **Yes** to enter the **Bind setting** interface.

Display the signal strength (Note: This icon won't be displayed if a receiver connects the transmitter in one-way mode).

The RF module is disabled.

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6.2 Interface

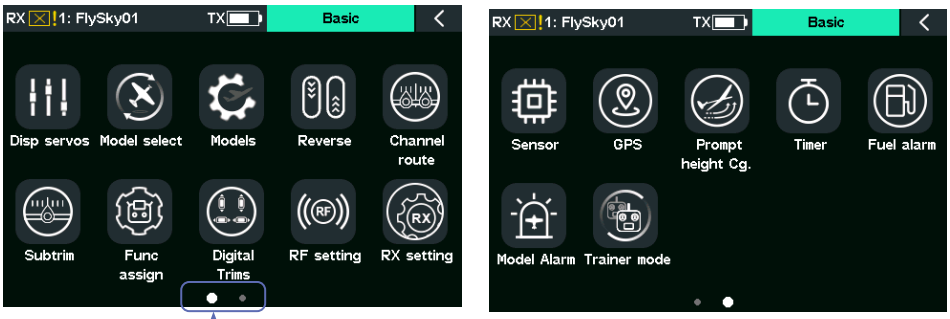
This section is a quick introduction about the icons of the interface.

6.2.1 Function Icons

	The screen is locked.		The screen is unlocked.
	Function is disabled.		Function is enabled.
	Restore functions default settings.		For all conditions
	To assign switch.		For the current condition
	Tap to increase the value, long press to increase rapidly.		Tap to decrease the value, long press to decrease rapidly.
	This indicates that the function item has been selected or enabled.		This indicates that the function item has not been selected or enabled.

7. Basic Settings

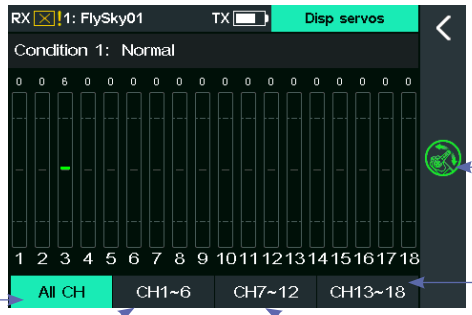
This chapter introduces the settings of basic function. You can access **Basic** function interface via tapping (**Basic**) .



Two dots indicate that there are two pages included in the Basic function interface. If a dot is white, it indicates that the page is the current one. Swipe left to access the other page.

7.1 Display Servos

Display the status of the channels in real-time for the current condition.



The icon of activating channel test mode

To display information for channels 13 through 18.

To display information for channels 7 through 12.

To display the information for all channels.

To display information for channels 1 through 6.

7.1.1 Display Servos

Display the real-time status of the channels.

Setup:

1. Tap **Display servos**.
2. Operate the **control** assigned to the channel.
3. Monitor the output value of the channel in **Display servos** interface.
4. Click to return to the previous interface.

7.1.2 Channel Test

The servo can be tested. When the function is turned on, the servos of all channels will move slowly and repeatedly. Please caution when the function is activated if servos are connected.

Setup:

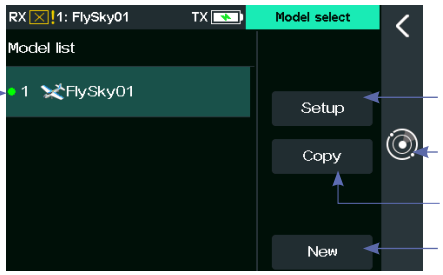
1. Tap to activate channel test mode. A prompt interface will appear; press **Yes** to start. When the test mode is active, all channels will slowly move through their entire range of motion.
2. Click to return to the previous interface.

DANGER	• **When the mode of testing all chanenl is enabled, propellers/rotary wing of models will rotate unexpectly. It is very dangerous! Do not activate this function when the transmitter is connected with the models or the engines of the model is started.**

7.2 Model Select

Used for copying or creating new models, it can also delete models that have been copied or created. Since different RC models have various settings, this function allows a single transmitter to be conveniently compatible with a variety of different RC models..

Interface when selecting the model currently in use:



The green dot indicates that this model is the current model in use.

Tap to enter the model setup interface. Modify the name of the model currently in use, etc.

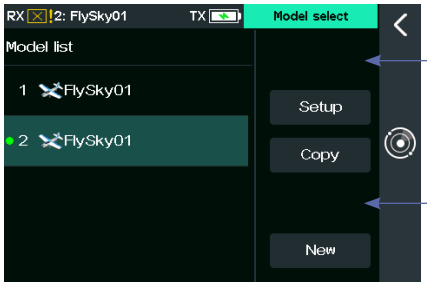
Tap to activate the automatic search for the receiver mode.

Tap to copy the selected model.

Tap to create a new model.

Note: When the number of models exceeds 50, a prompt will be displayed indicating that memory is insufficient. You'll need to delete some models before you can create a new model.

Interface when selecting the model that is not currently in use:



Tap to set the selected model as the current model.

Tap to delete the selected model.

7.2.1 Automatic Search For The Receiver

Used to search for a receiver that is powered on and bound with the transmitter in two-way mode. After taping , the system will sequentially switch models to connect the receiver under this model.

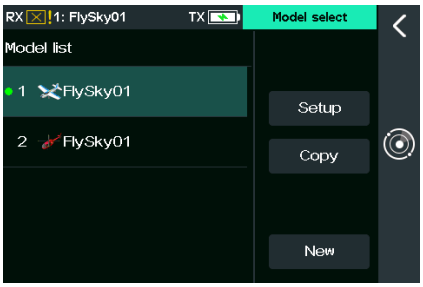
Setup:

1. Power on the receiver.
2. Enter **Select model** interface.
3. Tap on the right of the interface to automatically search for the receiver. A prompt window will appear. Press Exit to stop the search.
4. After the search process is completed, the green dot will move to the model corresponding to the receiver, indicating that the transmitter has connected to the receiver normally.

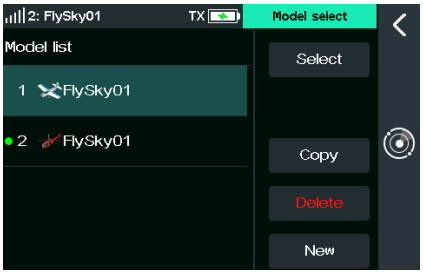
Notes:

1. The RF must be enabled.
2. To achieve this function, ensure that the receiver is only bound with one model of this transmitter, as duplicate models may not be searched.

Pre-search Interface:



Post-search Interface:



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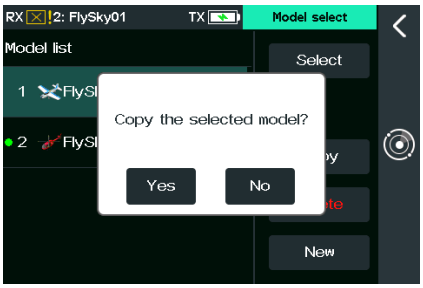
7.2.2 Copying A Model

Using the copy function, you can create a new model based on the data of the currently selected model. When setting up the new model, you can take advantage of this feature to duplicate the data from an existing model and modify different parts without having to go through the setup process again.



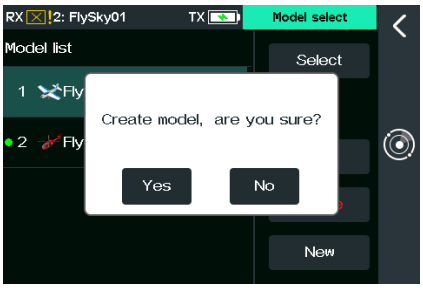
Setup:

1. Enter **Select model** interface.
2. Tap the model that you want to copy.
3. Tap **Copy** and click **Yes** on the pop-up interface to complete. Afterwards, click ◀ to return to the previous interface.

Note: After copying model is finished, the new model is selected by default which is the last one in the list.

7.2.3 Creating A New Model

To create a new model, up to 50 new groups of models can be created.



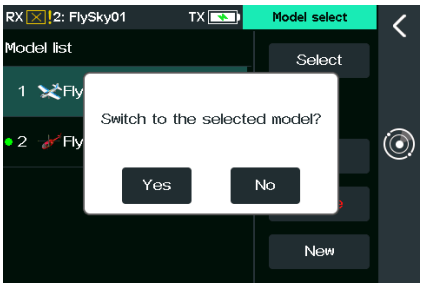
Setup:

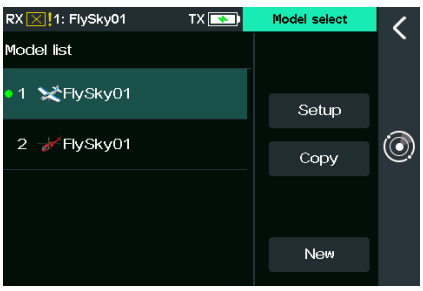
1. Enter **Select model** interface.
2. Tap **New** and click **Yes** on the pop-up interface to create a new model. Afterwards, click ◀ to return to the previous interface.

Note: After copying model is completed, the new model is selected by default which is the last one in the list.

7.2.4 Selecting A Model

To set the selected model as the model currently in use.



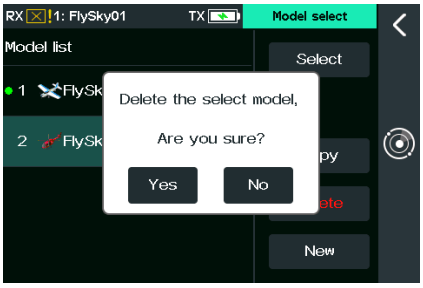


Setup:

1. Enter **Select model** interface.
2. Tap the model that you want to set.
3. Tap **Select** and click **Yes** on the pop-up interface to complete. The green dot will move to the selected model. Afterwards, click ◀ to return to the previous interface.

7.2.5 Deleting A Model

To remove a model from the memory of the transmitter .



Setup:

1. Enter **Select model** interface.
2. Tap the model that you want to delete.
3. Tap **Delete** and click **Yes** on the pop-up interface to complete. Afterwards, Tap ◀ to return to the previous interface.

Note: The model currently in use can not be deleted.

Caution: Model data can be inherited through FlyskyAssistant (FlyskyAssistant firmware Ver. 3.0 and later)

7.3 Model Setup

⚠ DANGER	• Before operating, make sure to check whether the status of each channel is safe. If the channel is not in safe state, this may lead the destroy to the structure of the airplane. Or if the model airplane starts directly, it may lead to personal injury or other accidents.

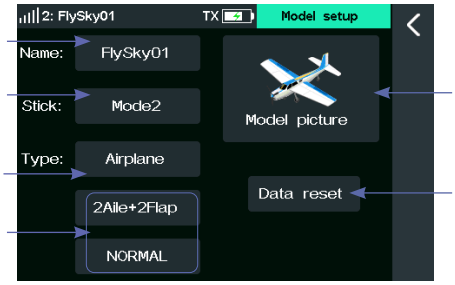
The transmitter includes a variety of options for models, including Airplanes, helicopters, gliders, multicopters, cars, boats and robots. You can set the related settings of models, such as configurations and functions.

Tap to enter the interface for renaming the model's name.

Tap to enter the interface for selecting stick mode.
Note: For car, robot or ship models, the stick mode is set to mode 2 and can not be set.

Tap to enter the interface of selecting model type.

For airplanes/gliders, tap to enter and select wing and tail settings; for cars/robots, set up movement settings; for helicopters, configure the swash plate type; for ship models, set the drive structure; while for Multicopters, nothing is displayed here, and you cannot tap.



Tap to enter the interface for selecting model picture.

Tap to reset all data for the model.

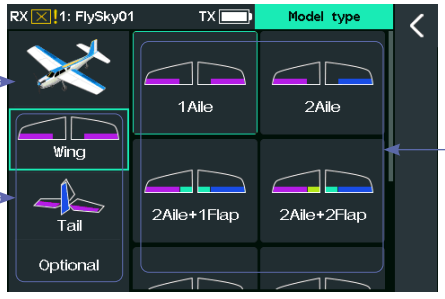
Model Type Setup

Sets model type and related parameters and functions. For **Airplane/Glider**, you can set **Wing**, **Tail** and **Optional**. For **Helicopter**, you can set **Swash plate** and **Optional**. For **Car** and **Robot**, you can set **Move setup** and **Optional**.

Note: If the model type is changed, the model data will be reset and the sub-configuration will be changed, as well as the function assign interface will be changed accordingly.

Model Categories
Display the default picture of the model.

Model sub-configuration
The function items differ due to different model categories.



Display the corresponding item, after the model category and model sub-configuration have been selected.

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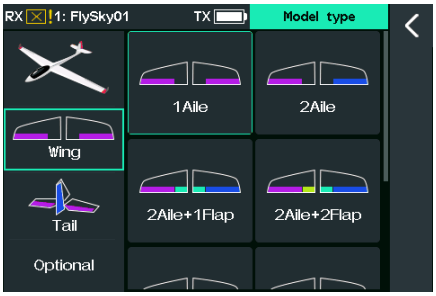
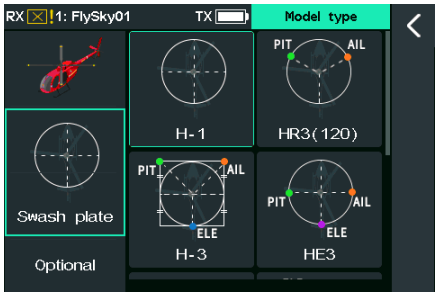
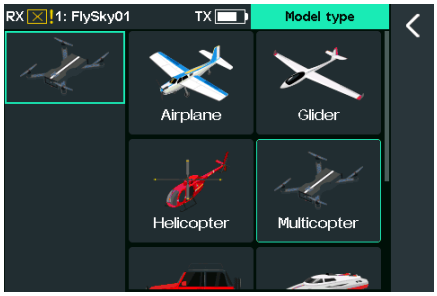
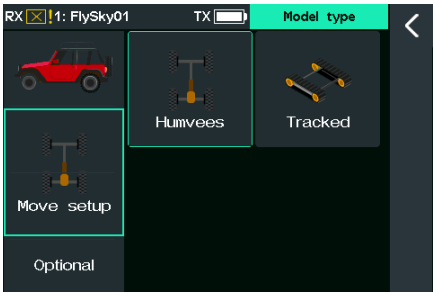
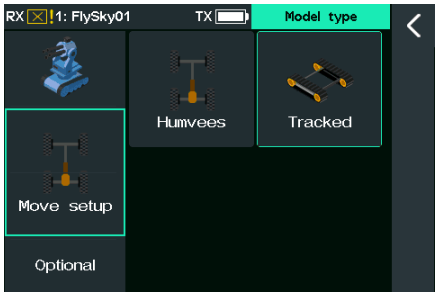
The parameters and optional functions for different model type may differ.









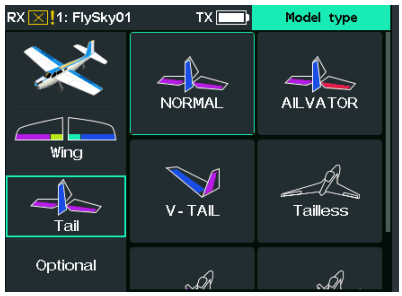


Take the airplane as an example; the setting steps are as follows. For the related settings of other models, refer to the steps below.

Setup:

1. Enter **Model type** interface.
2. Click **Wing** directly as the airplane is the default model, then tap the appropriate wing configuration according to the actual model. Afterwards, it goes to the next setting automatically.
3. Click the appropriate tail configuration according to the actual model, then it goes to the next setting automatically.
4. Click the appropriate function item according to the actual model. Afterwards, click ◀ to return to the previous interface.

Note: The optional function items vary with different model types. For example, for the Airplane, you can set the Rudder wheel, Gear, and so on, but for the Ship, you can set the Wave and the Grip.



(1) Wing configuration

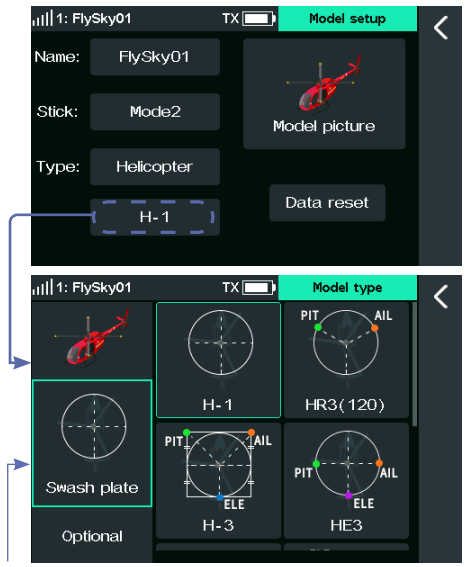
(2) Tail configuration

Note: For Tail configuration, when you set two ailerons or more for the wing, then some configuration items related to tailless will be displayed.

Tap to set the quantity. You can set more than one for some functions, for the Throttle, there are up to 4.

For Helicopter, follow the steps below to change the swash plate type.

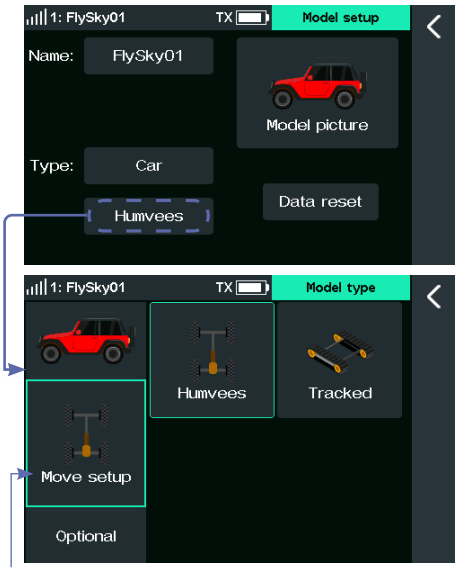
1. Enter **Model setup** interface.
2. Tap **H-1**.
3. Tap the appropriate swash plate according to the actual model. Afterwards, click ❮ to return to the previous interface.



Select the swash plate type, and the interface will display the available types on the right side.

For Car or Robot, follow the steps below to change the move setup.

1. Enter **Model setup** interface.
2. Tap **Humvees**.
3. Tap the appropriate item according to the actual model. Afterwards, click ❮ to return to the previous interface.



Select the move setup, and the interface will display the available types on the right side.

7.4 Reverse

To reverse the output direction of each channel.

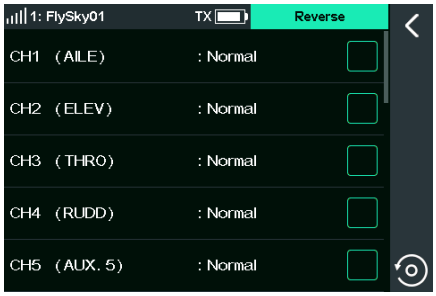
This function can be used to correct the direction of the servo action which is opposite to the intended operation, due to different servo types or installation methods. Servo directions can be set for 18 channels.

Normal: Indicates that the channel output is the default direction.

Reverse: Indicates that the channel's direction has been reversed.

Notes:

1. If a new model is connected, make sure the corresponding channel of the servo is correct.
2. Move the stick, switch or knob related to each channel to ensure that the direction is correct.



Setup:

Tap the box at the right of the channel name to toggle reverse for that channel. If there is a tick in the box it means that the channel is reversed.

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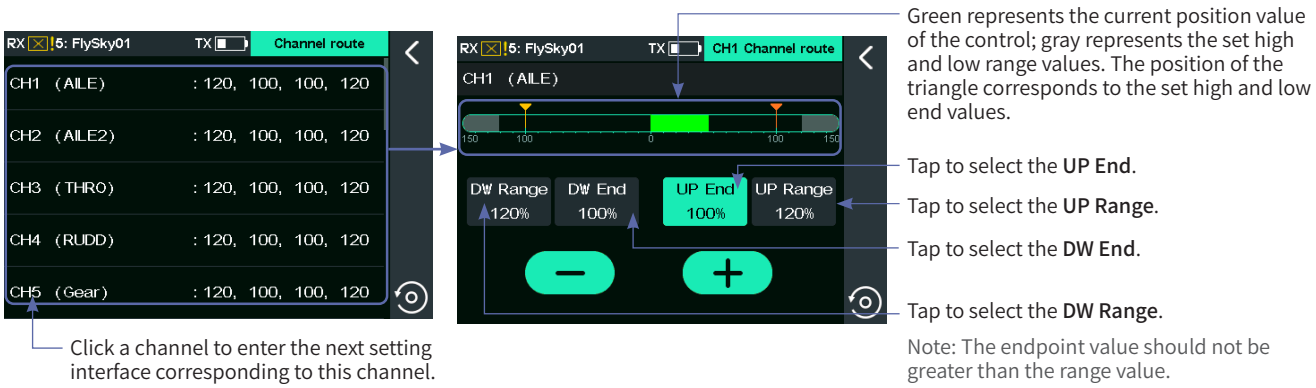
7.5 Channel Route

Change the maximum range and the movement range limitations (minimum and maximum values) for each channel.

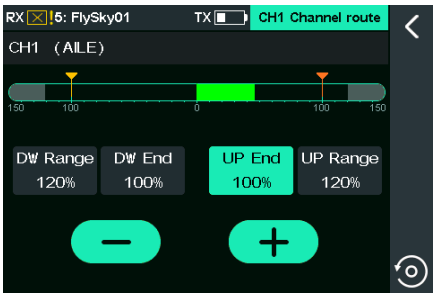
The **End** is used to define the maximum movement value for the servo's travel range, while **Range** sets the limiting value. Once the **Range** is set, even if the mixing function increases the travel value of the servo, the servo's movement range will not exceed this value, thus to protect the servo.

If the servo's neutral position significantly deviates from the required configuration position, position adjustment through this function alone may not achieve the desired effect. First, adjust the servo's neutral position using Subtrim. With this function, you can adjust the maximum servo movement for each of the 18 channels individually.



Setup:

1. Tap the channel to be adjusted and enter the setting interface.
2. Tap **DW Range 120%**.
3. Click **+** or **-** to set the appropriate travel range value. Afterwards, click ◀ to return to the previous interface.



For **Low End**, **Up Range** and **Up End**, refer to **DW Range** for function settings.

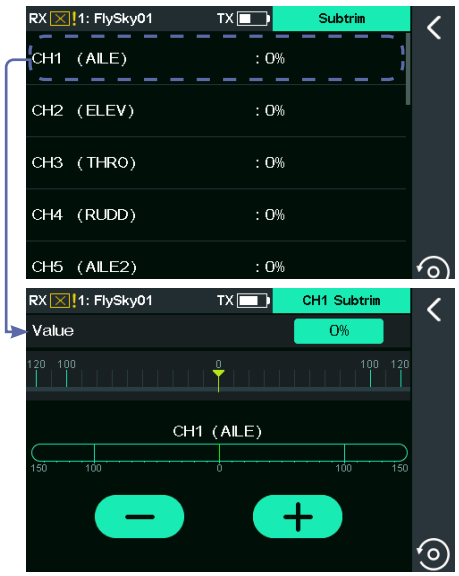
7.6 Subtrim

To adjust the neutral position of each servo.

This function can be used to solve the problem of angle difference between the servo and model structure, whether caused by installation or the servo's inherent structural clearance. To set the subtrim, first toggle the trim to the neutral position.

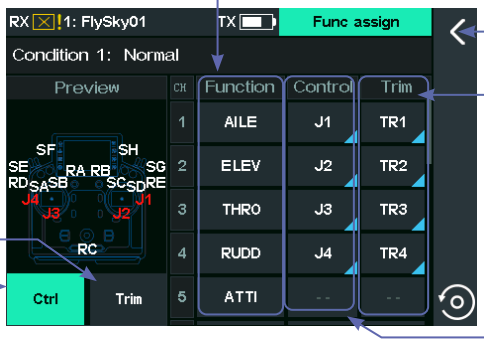
Setup:

1. Click a channel you want to adjust to enter.
2. Click **+** or **-** to adjust the neutral position value of the channel to the desired point. Then, click ◀ to return to the previous interface.



7.7 Function Assignment

Assign corresponding functions, controls, and trim buttons to all channels. After creating a new model, the system will automatically assign default functions based on the model type. If you wish to make personalized assignments according to your preferences, you can configure them here.



Function items corresponding to the channels.

Return Button, tap to return to the previous interface.

Set the specific trim button for this function. If the small triangle at the bottom right of the function box is cyan, the setting is for all conditions. If it is orange, then the setting is for the current condition.

Trim Preview

Control Preview

Note: The Control/Trim name is red, indicating that the control/Trim is assigned.

Set the specific control for this function. If the small triangle at the bottom right of the function box is cyan, the setting is for all conditions. If it is orange, the setting is for the current condition.

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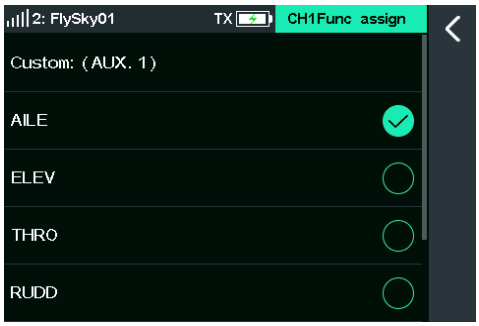
7.7.1 Assigning Function Items

Set the functions controlled by each channel.

Setup:

1. Tap the function item that needs to be set and enter the next interface.
2. Tap the appropriate function.
3. If you need to customize a function, you can select **Custom:(AUX.1)** to enter the software pad interface and set an appropriate name; then click the 'Enter' key or to return.

Note: The custom channel name should be defined separately for different languages.



7.7.2 Control Assign

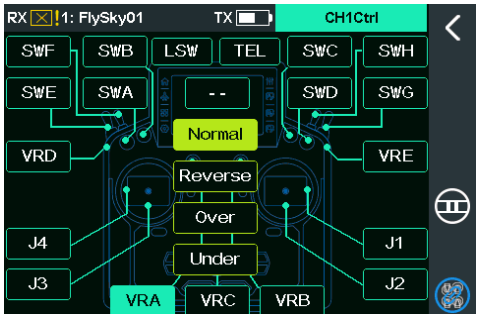
To assign a specific control to each channel.

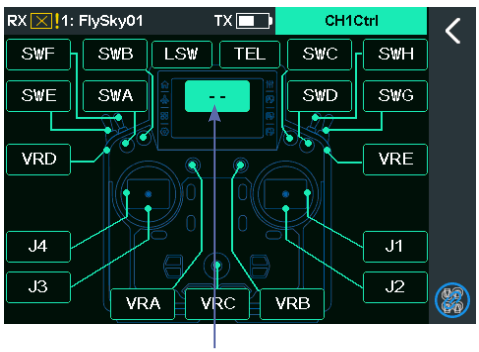
The controls that can be assigned are SWA to SWH switches, LSW (LS1 to LS4) logic switches, J1 to J4 sticks, VRA to VRE trim knobs, and TEL telemetry controls.

Setup:

1. Tap the control item you want to assign to enter the setting interface.
2. Tap **Control** on the interface or toggle the control on the transmitter to select it. Then the control assignment is completed.

Note: If you assign a logic switch or telemetry switch as a function control, you can only complete the assignment by clicking [LSW] or [TEL] on the interface, and then clicking the appropriate switch.





Click to cancel the assignment of the control.

You can set the related parameters after the control assignment is completed. The parameters are different for different controls.

- For consecutive type switches, you can select **Normal**, **Reverse**, **Over** and **Under**.

  Normal means that the corresponding control ratio changes from "-100% to 100%" when the control is moved from "down" to "up".

  It is conversely for **Reverse**. In other words, When the consecutive switches are moved from "down" to "up", the corresponding control ratio changes from "100% to -100%".

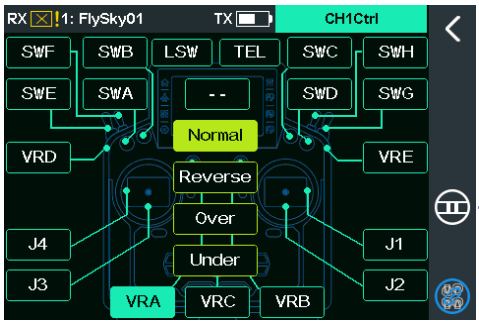
  For **Over** (Up side) or **Under** (Down side),

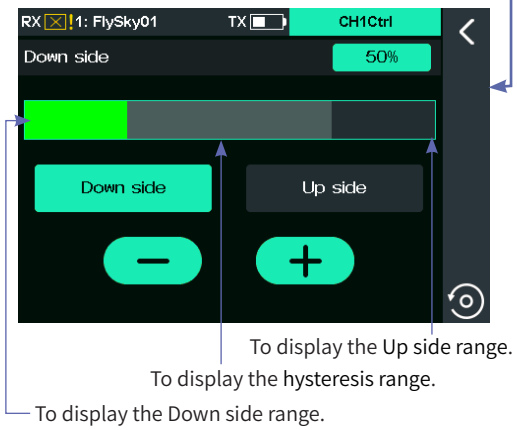
  The control ratio only switches between -100% and 100%, and the middle area is the hysteresis area. Selecting **Up side** means the control ratio is 100% in the high position and -100% in the low position.For Under (Down side), it is the reverse.

Take **VRA** as an example.

Setup:

1. Tap **VRA**, then click **Normal** or **Reverse**.
2. Click **Over**, then click to enter the next interface. After selecting **Down side** or **Up side**, click **+** or **-** to adjust the **Up-side** and **Down-side** values to the desired point. Then, click to return to the previous interface.





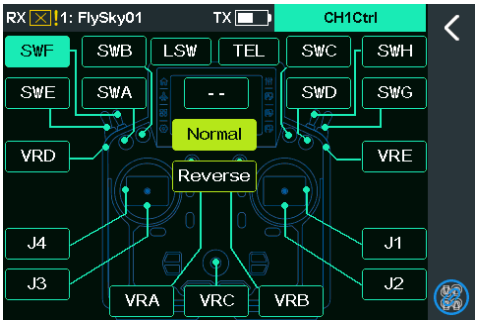
Notes:

1. You can click to choose to set only for the current condition or set for all conditions.
2. In the Control / Trim assignment interface, clicking the left and right shortkeys(functions already assigned) will have no effect.

- For switches named after **SW** characters, you can set **Normal** or **Reverse**.

  Normal means the control ratio is -100% when the control position is in the low position and 100% when the control position is in the high position (the neutral position control ratio in the 3-position switch is 0%).

  It is conversely for **Reverse**. In other words, the control ratio of SW switches is 100% in the low position and -100% in the high position.



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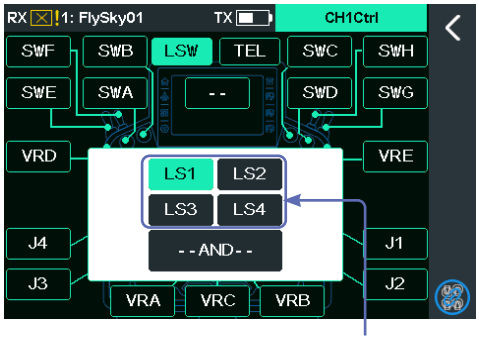
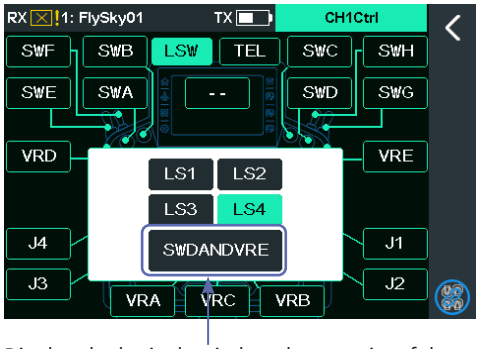
- For logical controls, when the switch is in the **ON** state, the corresponding control ratio is 100%; when it is in the **OFF** state, the corresponding control ratio is -100%. By clicking on the LSW control on the interface, you can select logical switches LS1 to LS4 as controls in the pop-up window. After selection, you can view the current settings of the logical switches at the bottom button on the interface, and you can enter the logical switch settings interface by clicking that button to make modifications.

Logical Switch (Not Set):



Tap to select Logical Switch.

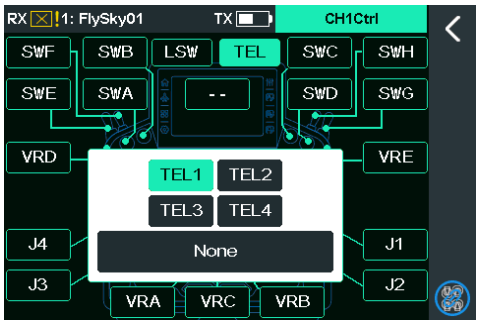
Logical Switch (Set):



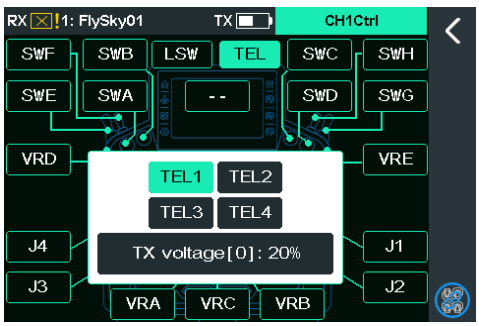
Display the logical switches that consist of the assigned controls; click to enter the logical switch settings interface.

- For **TEL** telemetry controls, set the relevant parameters in the **Telemetry control** function, using the real-time values obtained as the control. By clicking on the TEL telemetry control on the interface, you can select TEL1 to TEL4 as controls in the pop-up window. After selection, you can view the current settings of the telemetry controls at the bottom button on the interface, and you can enter the telemetry control settings interface by clicking that button to make modifications.

Telemetry Switch (Not Set):



Telemetry Switch (Set):



7.7.3 Function Trim Assignment

To assign a trim button to each channel.

Setup:

1. Enter **Trim** interface,
2. Tap the trim button on the interface or toggle the trim button you want to assign. Then the trim assignment is completed.

You can set the related parameters for the trim button after the trim assignment is completed. **Trim mode** and **Trim rate** can be set.

In the **trim mode**, you can select **Normal**, **Cen Max** (center MAX), **H-Max** (high-end MAX)and **L-Max** (low-end MAX).

Normal means normal trimming (linear) operation.

Cen Max means the maximum trim adjustment in the neutral position, and no trim adjustment in the lowest and highest positions.

H-Max means when the function control is at the highest position, the trim adjustment is at its maximum; as the control approaches the lower end, the adjustment gradually decreases until it reduces to 0 at the lowest position.

L-Max means when the function control is at the lowest position, the trim adjustment is at its maximum; as the control approaches the higher end, the adjustment gradually decreases until it reduces to 0 at the highest position.

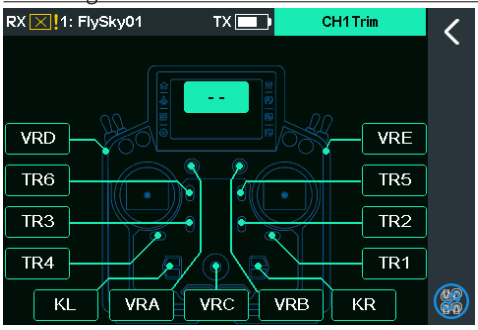
Trim rate A total travel range of the channel that can be controlled by the trim knob. A negative value indicates the reverse.

Note: In all conditions, the settings for trim ratio are same, as well as trim mode. If trim is not assigned, trim settings cannot be made, and the parameters that have been set will be retained.

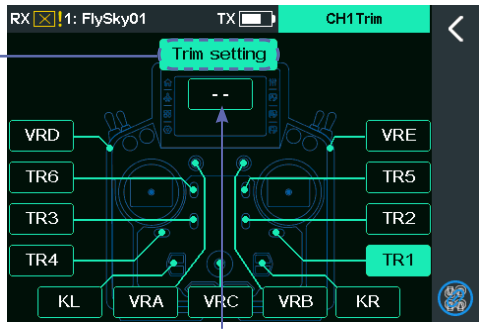
Follow the steps below to set:

1. Tap **Trim setting** to enter the trim setting interface.
2. Click the option box on the right of **Trim mode**, and select the appropriate trim mode according to the description above.
3. Tap **Trim rate** and click **+** or **-** to adjust the trim rate value to the desired point. Then, click ◀ to return to the previous interface.

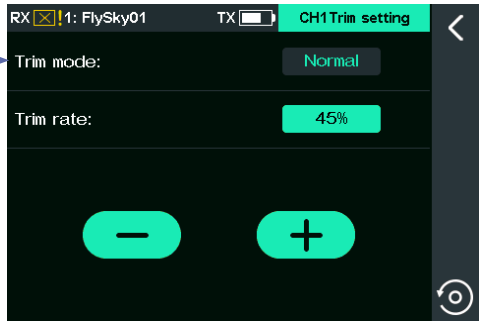
Trim assignment screen for no trim control selected.



Trim assignment screen for a trim control selected.



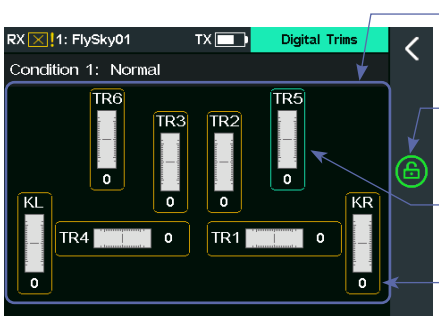
To cancel the trim control assignment.



7.8 Digital Trim

You can view the trim values of **TR1-TR6**, **KR** and **KL** in this preview interface. You can set the appropriate step value and the backup trim value for current condition/all condition.

During use, a model control surfaces may occur a deflexion based on some situations, such as centre-of-gravity shift or anti-torque force produced by aerodynamics. You can use this function to correct it during flight to keep stable state. Please re-adjust the model in case of the overall excessive offset of the model cannot be corrected by trims function.



Tap a Trim (TR1-TR6, KL or KR) to enter the corresponding setting interface.

Tap / to lock or unlock the trim function. That is, when toggle or turn the controls in case of the icon is red, the values recorded in the system won't be changed.

If the edge colour is cyan, it indicates the trim value applies to the all conditions.

If the edge colour is orange, it indicates the trim value applies to the current condition.

7.8.1 Setting TR1 Trim

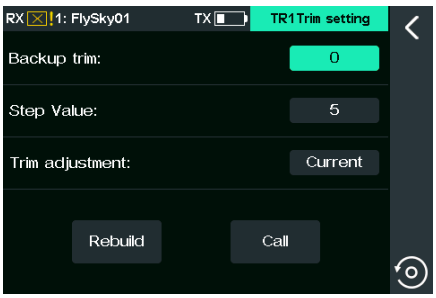
Set the trim step value. You can set it for all conditions or for the current condition. It only supports one-time storage.

Backup and call setting for TR1 trim button

Set backup value for **TR1** trim button.

Setup:

1. Tap **TR1** to enter the setting interface, the previous set backup value is displayed in **Backup trim** area.
2. Toggle the **TR1** on the transmitter to a desired value.
3. Click **Rebuild** to set it to the backup value.
4. Click **Call** to call the backup value. Then click to return to the previous interface.

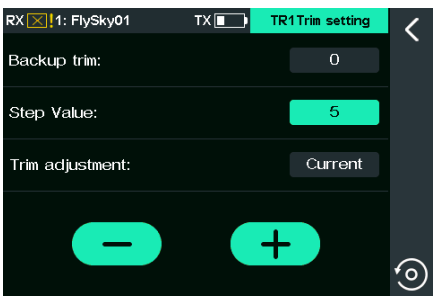


Step value setting for TR1 trim button

Set step value for **TR1** trim button.

Setup:

1. Tap **TR1** to enter the setting interface.
2. Click **Step Value**, click **+** or **-** to adjust the value to the approiate value. Then click to return to the previous interface.



Trim adjustment setting for TR1 trim button

Set trim adjustment for **TR1** trim button.

1. Tap **TR1** to enter the setting interface.
2. Click **Trim adjustment** and click **Yes** to adjust the condition. Then click ◀ to return to the previous interface.

Note: When for all conditions is activated, trim values in all conditions will call the current trim value, so please operate with caution.

For others settings, please refer to the relevant settings of **TR1**.

7.9 RF Setting

Set and display RF-related parameters/data, such as enabling the RF function, setting the transmit function and RF mode to be enabled by default at power-on, and the binding setting function.

7.9.1 Transmit

To enable or disable the transmit function, you have the option to do so. If you do not need the transmit function—for example, if the transmitter is working as a USB simulator—you can disable it through this function.

Setup:
Click the check box next to the **Transmit**. "√" means the function is activated.

Note: For safety, the RF function cannot be disabled if the receiver is connected to the transmitter.

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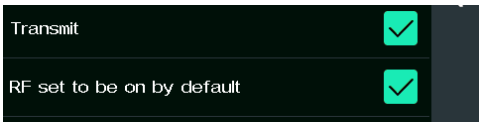
7.9.2 RF Set To Be On By Default

Set whether to enable the transmit function at startup. If not checked, the system will enter the selection interface for enabling the transmit function after power-up; if checked, the system will bypass the selection and directly enable the transmit function at startup.

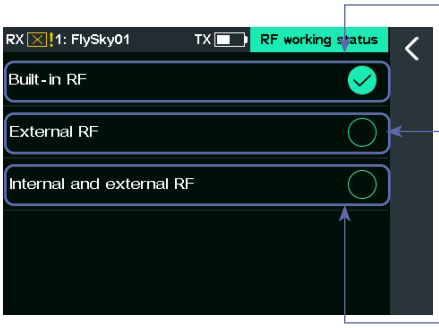
By default, the transmit function is set to be enabled at startup.

Setup:
Click the check box next to the **RF set to be on by default**. "√" means the function is activated.



7.9.3 RF Working Status

Three RF Mode: **Built-in RF**, **External RF**, **Internal and external RF**.



Default to this option. The transmitter powers the built-in RF module.

Please note, if you have not selected an external RF module, you do not need to change RF working status.

If you wish to switch to an external RF module, you can select this feature option.

It supports the Flysky FRM303 RF module and also RF modules that are compatible with PPM, CRSF, or CRSF2 protocols.

After installation, the transmitter can power the external RF module, or you can also use a separate power supply to power the external RF module.

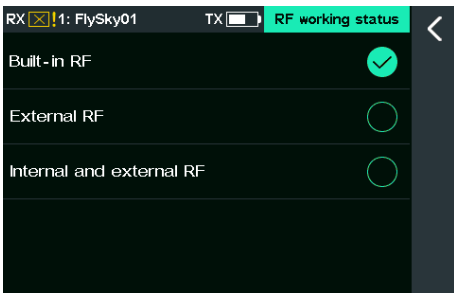
Internal and external RF modules work simultaneously.

Compatible with RF modules with PPM or CRSF protocols.

After installation, the transmitter can power both internal and external RF modules simultaneously.

Setup:

1. Click **RF working status** to enter the setting interface.
2. Tap the appropriate RF, and the icon to the right of the selected item changes to .
3. Click to return to the previous interface. The selected item is displayed after the RF working status.



Note: If RF working status is set to "External RF", the default option is FRM303; If RF working status is set to "Internal and external RF", the default option is PPM.

When the **RF working status** is set to **External RF**, the RF settings interface will include two additional options: **External RF type** and **FRM303 RF setting**. When set to **Internal and External RF**, the interface will include one additional option: **External RF type**.

7.9.4 External RF Type

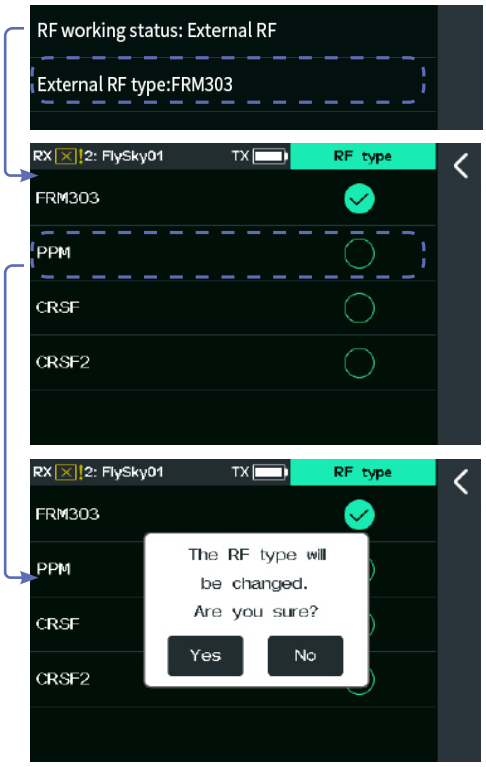
Used to select an appropriate RF type as per the communication protocol of the receiver bound with the transmitter. This item is displayed under **RF mode: External RF** or **RF mode: Internal and external RF**.

FRM303 adopts AFHDS 3 protocol and is compatible with classic edition and enhanced edition receivers; **PPM** or RF module that use the PPM protocol, **CRSF** for RF module that use the **CRSF** protocol, and **CRSF2** for the Black Sheep RF module, which is compatible with **CRSF2** protocol.

Setup:

1. Click **External RF type** to enter the setting interface.
2. Tap the appropriate external RF type, and click **Yes** on the pop-up interface to finish. Then click ◀ to return to the previous interface.

Note: When the external RF type is set to CRSF2 and successfully connected to the receiver, it is possible to obtain RSSI parameters and the current connected flight control parameters, which include flight control voltage, current, and battery capacity. The telemetry data can be set for alarms through Model Alarm > Custom alarm.



7.9.5 FRM303 RF Module

When the FRM303 RF module is used, you can utilize this function to set the RF type to FRM303. After setting, the RF buzzer alarm can be enabled or disabled in the FRM303 RF settings interface. Once the buzzer is enabled, the alarm will sound in cases of low signal or low voltage, as well as when the temperature is too high or too low. Additionally, three power versions are supported: the non-adjustable version, the 25mW to 1W version, and the 25mW to 2W versio.

When using the FRM303 RF module, you must first establish a connection with the transmitter through the FGPZ03 adapter. Then, at the FRM303 RF module end, set the input signal to a

1.5M UART signal (closed-source protocol).

The setup method is as follows:

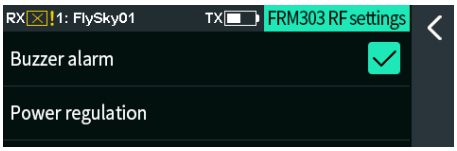
1. Push the Up key on the FRM303 five-way button upwards and hold it for a duration that is more than 3 seconds but less than 9 seconds to enter the input signal setup state. At this point, the LED will on in blue.
2. Push the Up key upwards or push the Down button downwards to switch the input signal. When the LED operates in a three-flash-one-off mode repeatedly , it indicates that the correct protocol has been matched.
3. Press and hold the Center key for 3 seconds to save the settings.
4. Push the Left key leftwards to exit the signal setup state.

The FRM303 LED is solid on in blue, indicating normal communication with the transmitter.

Note: Refer to the FRM303 manual for more information.

Buzzer Alarm

To enable or disable the buzzer alarm, the alarm function triggers under the following conditions: when the temperature of the RF module is too high, when the external power supply voltage is too low, or when the signal is low.

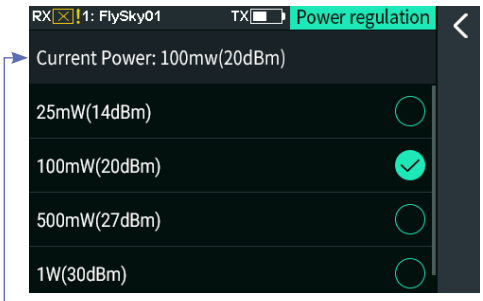


Setup:

1. Tap FRM303 RF settings to enter the settings interface.
2. Tap Buzzer alarm. " √ " means the function is activated. Click ◀ to return.

Power Regulation

The power adjustment interface varies depending on the different adjustable versions. Note that the power supply mode of the FRM303 RF module also affects the actual output power. That is, if the power setting exceeds the limit range, the maximum power within the limit range will be output. When the power is switched to a value other than 25mW, a popup prompt window will appear.

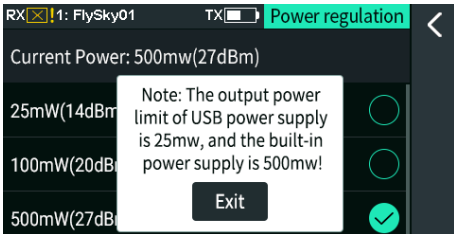


Current power of the RF module

Setup:

1. Tap **Power Regulation** to enter the settings interface.
2. Tap an appropriate power item. Click ◀ to return.

Note: The External RF type is set to FRM303, the RF temperature and external RF voltage can be got. The obtained data can be set to alarm via **Model alarm** > **Custom alarm**.



Disclaimer: The factory preset transmission power of this product is ⩽ 20dBm. Please adjust it in accordance your local laws. The consequences of damage caused by improper adjustments shall be borne by the user.

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7.9.6 PPM Setup

If the RF type is set to PPM, the RF settings interface will display PPM setup options for configuring PPM signal-related parameters.

Signal polarity: Defaults to positive, meaning a high voltage level is considered an effective signal. If some devices recognize a low voltage level as an effective signal, the signal polarity can be set to negative, meaning a low voltage level is considered an effective signal.

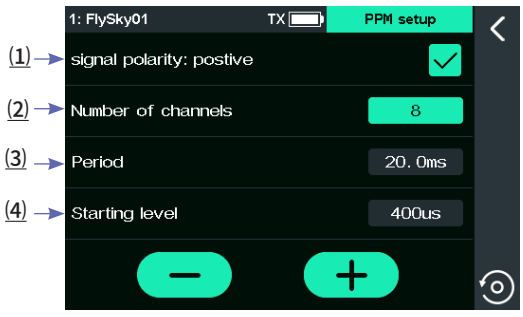
Number of channels: Used to set the number of channels included in a PPM signal. By default, a PPM signal includes 8 channels, but the number of channels can be adjusted according to specific circumstances.

Period: Refers to the time it takes to transmit a PPM signal. The standard period for an 8-channel PPM signal is 20ms. When using fewer channels, a shorter period can be set to reduce the time required to transmit the signal and thus decrease latency. However, adjusting the period can only shorten the duration of the idle time and does not shorten the duration of the effective signal. Therefore, reducing the period will not decrease the number of signal channels. If the number of channels increases such that the effective signal transmission time exceeds the period, the system will handle the signal with the minimum idle method, and the interface setting value will not change accordingly.

Starting level: Used to identify the start index time of the PPM signal, with a default of 400us. Appropriate values can be set based on actual conditions, with a setting range of 100us to 700us.

Setup:

1. Tap **Signal polarity** to set the the signal polarity, "√" means the signal is postive.
2. Tap **Number of channels**. Then click **+** / **-** to set an appropriate number of channels.
3. Click **Period**. Then click **+** / **-** to set an appropriate period value.
4. Tap **Starting level** and click **+** / **-** to set an appropriate value. Then click ❮ to return to the previous interface.



(1) Tap to switch the signal polarity.

(2) Tap to select the function of Number of channels.

(3) Tap to select the function of Period.

(4) Tap to select the function of Starting level.

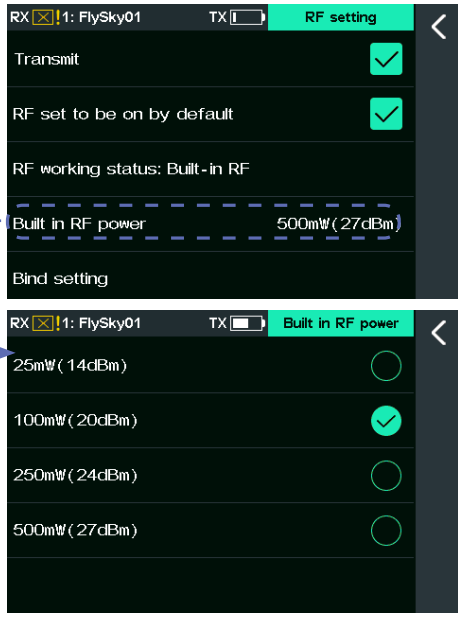
7.9.7 Bulit-in RF Power

This function is displayed when the transmitter firmware is the adjustable power version and the RF working status is set to Built-in RF or Internal and external RF.

This function is used to set the internal RF transmission power. It can be set to **25mW (14dBm)**, **100mW (20dBm)**, **250mW (24dBm)** or **500mW (27dBm)**.

Setup:

1. Tap **Bulit-in RF power** to enter the settings interface.
2. Tap an appropriate power item. Then click to return to the previous interface.



Disclaimer: The factory preset transmission power of this product is ⩽ 20dBm. Please adjust it in accordance your local laws. The consequences of damage caused by improper adjustments shall be borne by the user.

7.9.8 Bind setting

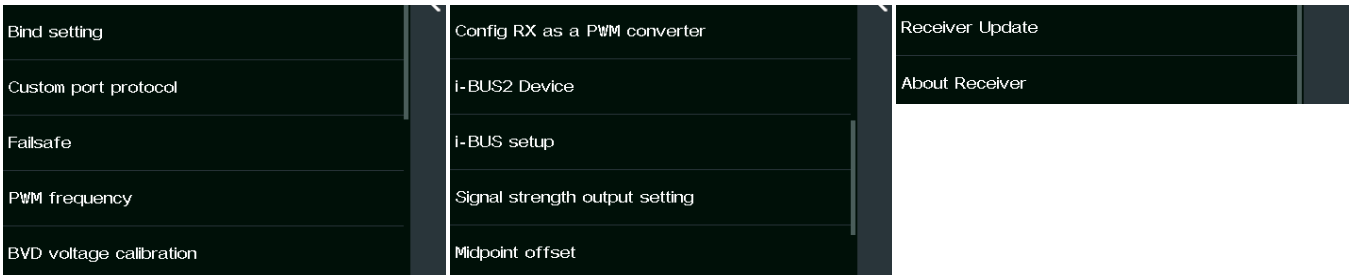
This function is used to put the transmitter into the binding state in order to bind with the receiver.

Refer to 5.2 Binding for detailed.

Note: When the RF working status is set to External RF and PPM, CRSF, or CRSF2 is selected, this function item is unseen.

7.10 RX Setting

Information about receiver functions. It can be used to set various functions before the receiver is ready for work.



7.10.1 Bind Setting

This function is used to adjust the transmitter to the bind state in order to bind with the receiver.

Refer to **5.2 Binding** for detailed bind operations.

7.10.2 Custom Port Protocol

Set the signal type output by the receiver connectors. The left side of this interface displays the configurable connectors, while the right side displays the available protocol options. Only the enhanced edition of the receiver supports outputting i-BUS2 protocol signals through the connector.

For the enhanced edition receiver: When not connected to a receiver, it defaults to showing 4 configurable Newport connectors; after connecting the receiver, it displays the Newport connectors supported by that receiver. The protocol types that can be set for Newport connectors include PWM, PPM, S.BUS, S.BUS-IN, i-BUS-IN, i-BUS-OUT, i-BUS2, or i-BUS2-IN. When set to i-BUS2-IN or S.BUS-IN, signal redundancy functionality can be achieved.

For the classic edition receiver: When not connected to a receiver, it defaults to showing i-BUS/Servo and CH1; after connecting the receiver, it displays the connetors that can be set for this receiver.

Setup:

1. Tap **Custom port protocol** to enter the setting interface.
2. Tap the Newport you want to set, e.g. **NPA**. Then click the appropriate protocol.
3. Click ◀ to return to the previous interface.

For the enhanced edition receiver:

(1) Tap to select the newport: **NPA**, **NPB**, **NPC** or **NPD**.

Note: Neither classic edition receiver nor enhanced edition receiver supports i-BUS-IN setting when connected to the transmitter in one-way. More notes are as below:

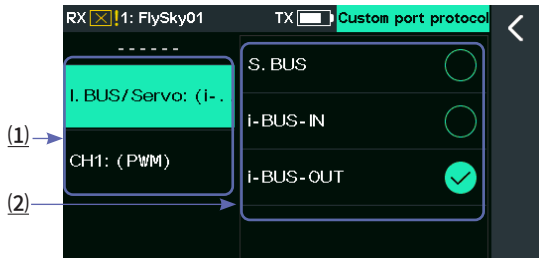
For enhanced edition receiver:

- For double receivers, you can set the type of output signals for the interfaces of the primary and secondary receivers separately. However, the secondary receiver does not support external sensors. Therefore, the interface protocol cannot be set to i-BUS-IN.
- The signal types that can be selected once only in multiple for any Newport: PPM, S.BUS, i-BUS-IN and i-BUS-OUT. If NPA is set as i-BUS-OUT, NPB, NPC and NPD can no longer set to i-BUS-OUT.
- If i-BUS is selected for any Newport, i-BUS2 cannot be selected for any other Newport; If i-BUS2 is selected for any Newport, i-BUS cannot be selected for any other Newport. For i-BUS2 and PWM options, Newport can select them repeatedly.
- If you have bound double receivers, you can set the interface protocol of the primary and secondary receivers separately.
- Once any Newport interface is set to i-BUS2-IN, other interfaces cannot be set to S.BUS-IN, and vice versa.

For classic edition receiver:

- For CH1, you can select PPM or PWM only. If the receiver does not support PPM signal output, the setting is invalid.
- For receivers with SENS connector, i-BUS/Servo does not support i-BUS-IN.

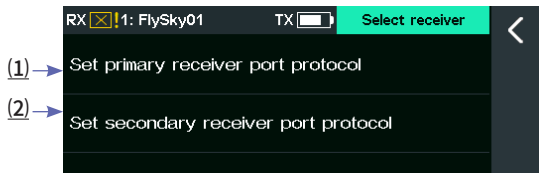
For the classic edition receiver:



(1) Tap to select **i-BUS/Servo** or **CH1**.

(2) Tap to select the signal type for i-BUS/Servo or CH1.

The interface is for double receivers are bound.



(1) Entry for the port protocol setting menu for primary RX.

(2) Entry for the port protocol setting menu for secondary RX

Signal Redundancy Feature (i-BUS2-IN/S.BUS-IN) Introduction

Notes:

1. Enhanced edition receivers compatible with redundancy functionality include: car model receivers FGr4B, FGr8B, FGr12B, and FGr4D; and aerial model receivers FTr8B, FTr12B, Tr8B, and TMr. These receivers will have signal redundancy functionality after updating to firmware version V1.0.22 or later. Some receivers, like the FTr8B, can be updated through the firmware packaged with the transmitter; whereas others, such as the TMr, require firmware updates to be completed using FlySky Assistant (only versions 3.0 and later are supported, and firmware can be obtained from the official website www.flysky-cn.com).
2. Both receiver firmware versions that implement redundancy through i-BUS2-IN must be V1.0.22 or later; for redundancy implemented through S.BUS-IN, the firmware version of the receiver with redundancy capabilities must be V1.0.22 or later, while the other receiver can simply output S.BUS signals.
3. If the receiver does not support redundancy functionality, the related settings will be ineffective, and the Newport connector output will remain at default.

When the Newport connector protocol of the receiver is set to i-BUS2-IN or S.BUS-IN, the receiver will have signal redundancy functionality. This allows the receiver to receive signals input through the i-BUS2-IN or S.BUS-IN protocol connectors, and after performing redundancy judgment, it can select to use these signals to control the device. This feature ensures that the controlled device can be operated by the signal with the lowest delay, the best signal quality, or the one that is not out-of-control.

A receiver with redundancy functionality is denoted as

RX1, and the other receiver as RX2. When RX1's Newport connector protocol is set to i-BUS2-IN and RX2's Newport connector protocol is set to i-BUS2, and these two Newport connectors are connected using a double-female header Dupont cable, RX1 can receive the signals output from RX2's Newport connector.

- When RX1 and RX2 are bound with the same transmitter, signal redundancy judgment can perform packet-level redundancy. The redundancy judgment always outputs the most recent control signals, ensuring that device control uses the signal with the lowest latency.
- When RX1 and RX2 are bound with different transmitters, if RX1 fails to receive control signals and it is judged that RX2 has not lost control, RX2's signals will be used to output to the controlled device.

When RX1 (S.BUS-IN) is connected to RX2 (S.BUS), that is, after RX1's Newport connector protocol is set to S.BUS-IN, it can receive signals output from RX2's Newport connector set to the S.BUS protocol. In this case, the receiver does not have packet-level redundancy judgment.

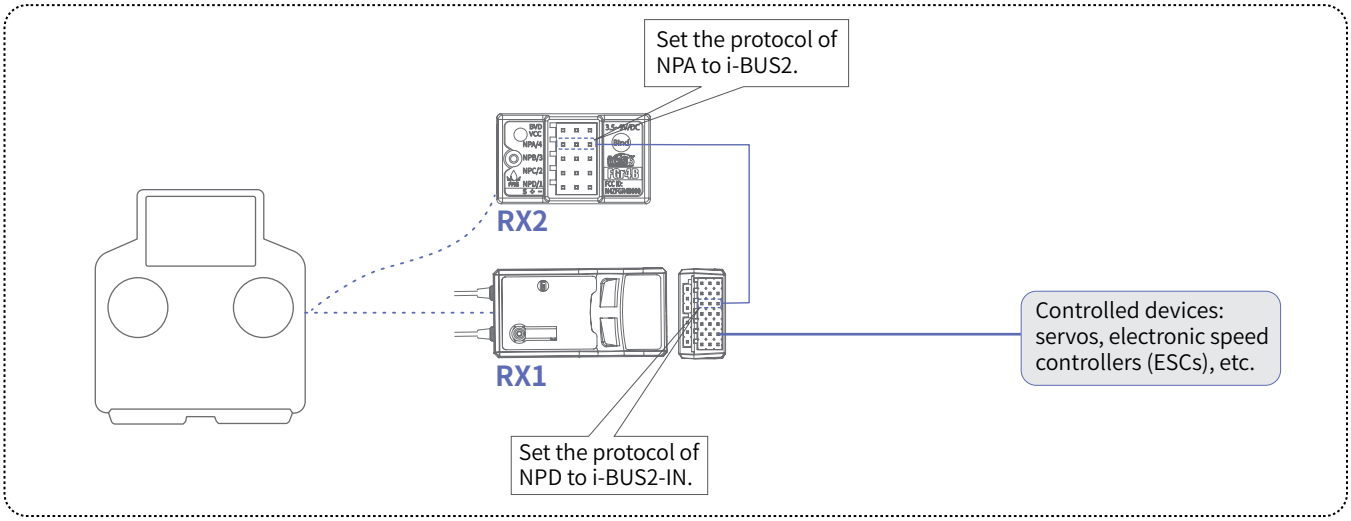
If RX1 and RX2 are in a two-way communication state, and RX2 supports external sensors, these parameters can be viewed in the transmitter's Sensor interface, such as "RSSI-RX2".

When both RX1 and RX2 are judged to be in a out-of-control state, the system will output the corresponding Failsafe value according to RX1's Failsafe settings.

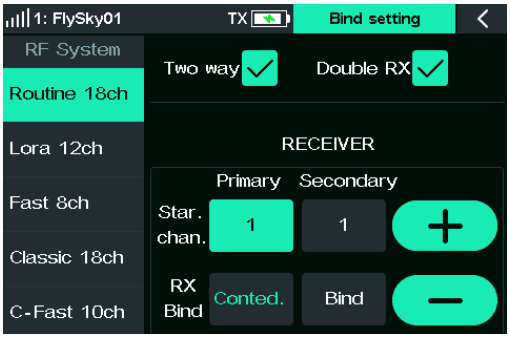
Introduce an application scenario for signal redundancy functionality.

The steps to set up signal redundancy features with RX1 and RX2 bound to a single transmitter are as follows:

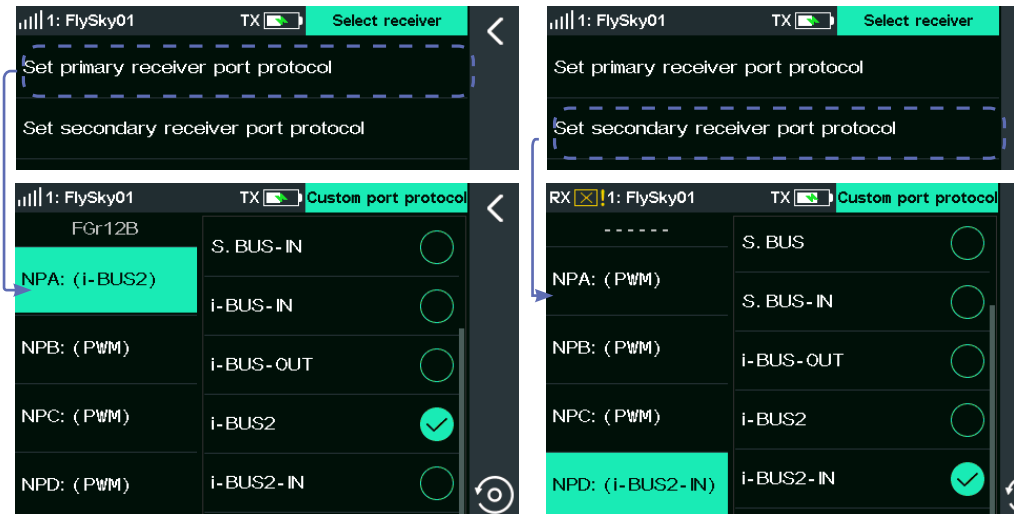
1. Refer to the diagram below to connect RX1 and RX2;
   - Use a double-female header Dupont cable to connect RX1's NPD connector with RX2's NPA connector.
   - Connect the controlled device to the connector of RX1.



2. Bind RX1 and RX2 separately;
   - Select RX setting > Bind setting > Routine 18ch > Double RX to complete the binding of RX2 with the primary receiver.
   - Complete the binding of RX1 with the secondary receiver.



3. Set the Newport connector protocols for RX1 and RX2;
   - Select RX setting > Custom port protocol > Set primary receiver port protocol > NPA, click on i-BUS2, and then click ◁ to return;
   - Select Secondary receiver port protocol > NPD, click on i-BUS2-IN and then click ◁ to return.



4. View the related information in Sensor functionality;
   - Enter the Sensor function interface and scroll up and down to view the related information. If the interface displays information such as 'RX Voltage - RX1', it indicates that the setup is complete, and the signal redundancy feature can be activated.

7.10.3 Failsafe

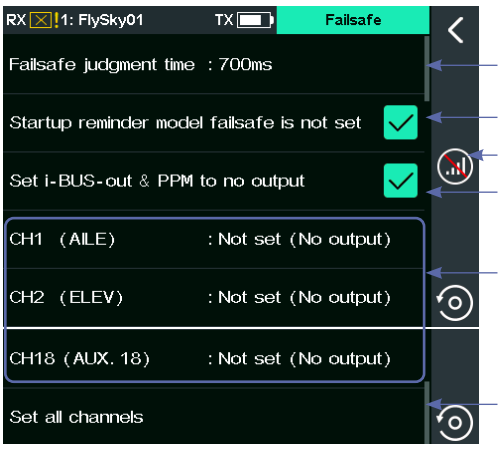
For failsafe, PL18 Ultra transmitter provides the following several settings:

- To set failsafe judgment time. The system supports setting the **failsafe judgment time**, and the default judgment time varies with different RC models.
- You can enable/disable the function of **Startup reminder model failsafe is not set**.
- Set to disable the signal output of i-BUS-out and PPM protocol connectors in case of out-of-control, i.e., no output at i-BUS-out & PPM connectors in case of out-of-control.
- You can set failsafe values channel by channel, there are four modes that can be set: 1) **Not set (No output)**, 2) **No output**(the settings are only for some special models or specific flight control board detection ports)**,** 3) **Hold**, and 4) **Fixed value**.
- To set all channels: With this function, you can set the output value for all channels that have been set to a fixed value in case of out-of-control.
- The failsafe function can be tested. The model can simulate a out-of-control, after which the transmitter will shut down RF output, and the model will enter a failsafe state, with all channels outputting according to the failsafe settings.

Setting Recommendations:

1. Considering that the aircraft/glider can glide down without power, users can set the throttle to the lowest value or low idle speed, and the rest of the channels to smooth flight (or hovering).
2. The helicopter throttle is set to the lowest value, and the rest of the channels is set to smooth flight.
3. For multicopter settings, please refer to the relevant manual.
4. If the device connected to the receiver has requirements on the failsafe state setting, it can be set as required.

Note. The above suggestions are for reference only. The specific settings are subject to the actual flight conditions.



Entry for Failsafe time interface.

Tap to enable or disable Sartup reminder model failsafe is not set.

Failsafe test icon.

Tap to enable or disable Set i-BUS-out &PPM to no output.

Tap to enter the the setting interfae of the corresponding channel.

Set all the output value of all channels that have been set to a fixed value in case of out-of-control.

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Failsafe Judgment Time

Used to set the failsafe judgment time, the setting range is from 250ms to 1000ms.

The default judgment time varies with different RC model. For Airplanes, Gliders, Helicopters and Multicopters, the default failsafe judgment time is 700ms, while for Cars, Ships, and Robots, it is 300ms.

Setup:

1. Tap failsafe judgment time to enter the setting interface.
2. Click +/- to set the appropriate value, then click to return.

Startup Reminder Model Failsafe Is Not Set

Used to check or uncheck the the **Startup reminder model failsafe is not set** option. Note: If the " Startup reminder failsafe is not set" (System> General) function is enabled and all channels are in Not Set (No Output) status, a pop-up window will prompt that failsafe has not been set when the transmitter is turned on.

Setup:

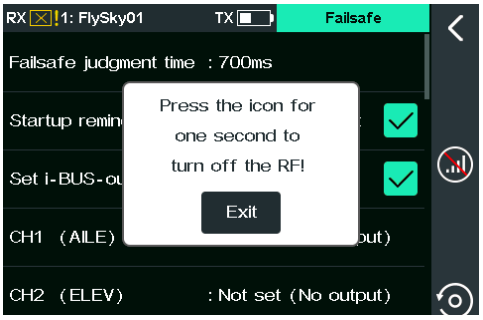
Tap the box next to right of the function, when it is not ticked (√), it indicates that the function is disabled.

Failsafe Test Function

Used to simulate an out-of-control scenario, when the model goes out-of-control, the transmitter will shut down the RF transmission, causing the model to enter an out-of-control state. At this time, all channels will output signals according to their failsafe settings.

Setup:

1. Tap , a popup window will appear. Press and hold for over 1 second, then the system will disabel RF. After that, the receiver will output channel values according to failsafe settings.
2. Release , the RF will be enabled, and the connection will be restored.

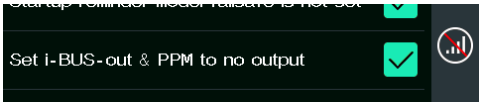


Setting i-BUS-out & PPM to No Output

This function is for i-BUS and PPM signals. After enabling **Set i-BUS-out &PPM to no output**, regardless of the setting of the failsafe, these two types of failsafe signals will always be set to no output. If the function is disabled, after losing control, you can set each channel individually: either to a fixed value or to retain the last output value. By default, this function is enabled.

Setup:

If the check box next to right of the option is not ticked (■), it indicates that the function is disabled. After losing control, output the failsafe value by channel: either a fixed value or maintaining the last output value.



Note: If the Set i-BUS-OUT&PPM signal to no output is not selected and a channel is set to no output, the last value is output in case of out-of-control.

Setting A channel

This function allows you to set the output signal states for channels 1 to 18 individually. The available modes are:

Not set(No output): This indicates that the failsafe of this channel has not been set.

No output: This means that there is no output in case of out-of-control.

Hold: This means the last channel value is kept in case of out-of-control.

Fixed value: This means that you can set the failsafe output value by moving the control, then the value set will output in case of out-of-control.

Setup:

1. Tap to select the channel you desired to be set and enter the next level interface.
2. Tap to select the desired function options. If the fixed value is selected, turn the **Stick**(Switch, Knob or LSW) to the desired position and hold it, then click to return to finish the settings.

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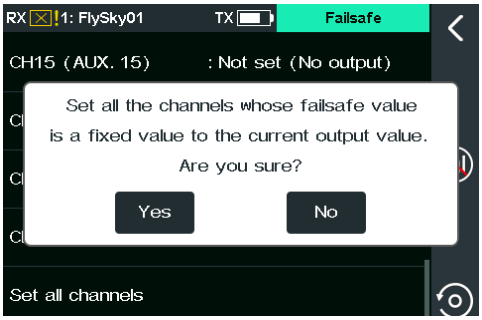
Setting All Fixed Value Channels

Used to set the output values of all channels that have been set to a fixed value in case of out-of-control.

Setup

1. Tap **Set all channels**, a prompt menu will pop up.
2. Move all controls corresponding to channels with fixed values and hold them if needed.
3. Tap **Yes** to finish.

Note: For the channels controlled by a control, please refer to **FUNC. ASSGN** section for detailed.



7.10.4 PWM Frequency

The receiver's output frequency of PWM signals can be regulated. Theoretically, the higher the frequency, the faster the signal is refreshed, and the faster the servo responds to the signal change. However, some servos may not support PWM signals with excessively high frequency. You may need to consider the servo's performance capabilities when making these settings.

The interface of this function may differ depending on bind modes. For enhanced edition receivers, the PWM frequency for each channel can be set separately,with the options including **Analog servo (50 Hz)**, **Digital servo (333 Hz)**, **SR (833 Hz)**, **SFR (1000 Hz)** and **Custom**.

If a classic edition receiver is bound, all channels are set together and cannot be set to **SR (833 Hz)** and **SFR (1000 Hz)**.

PWM Frequency-Enhanced Edition Receiver

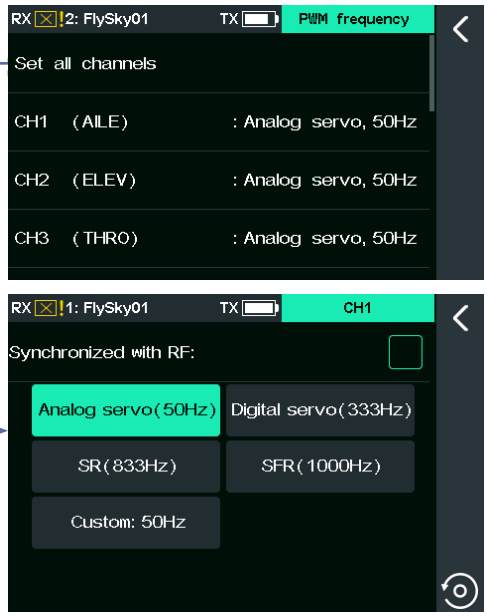
Set PWM frequency after the transmitter is bound to enhanced edition receivers.

Setting A Channel

Set PWM frequency for each channel.

Setup:

1. Tap a channel you desired to enter the setting interface.
2. Tap the appropriate item according to the actrual servo. Then click ◀ to return.
3. For **Custom**, click **+** / **-** to set an appropriate frequency value.
4. For **Synchronized with RF**, click the check box at the right. "√" means the function is activated, the PWM output will be synchronized with the timing of the (RF) radio signal reception.



Set All Channels

Set PWM frequency for all channels.

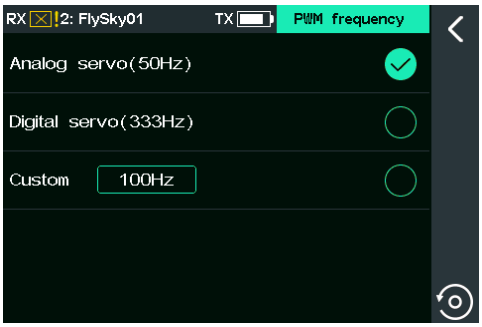
Refer to the descriptions of **Set a channel** for Setup.

⚠ ATTENTION	• **When SR (PWM frequency: 833 Hz) and SFR (PWM frequency: 1000 Hz) are selected, the overall system delay will be decreased, but the pulse range of PWM signals is changed. Please make sure the servo supported the corresponding frequency is a digital servo and the setting is correct. Otherwise the servo may not work properly, or even get damaged.**

PWM Frequency-Classic Edition Receiver

Set PWM frequency after the transmitter is bound to classic edition receivers.

For the setting of PWM frequency, please refer to **Setting A Channel**.



Description on the Duration of PWM Effective Pulse Width

The relevant information provided below includes details such as the duration of the effective PWM pulse width corresponding to different PWM frequencies.

Item	FREQ	Duration of PWM Effective Pulse Width/ Corresponding Channel Rate		
		Min	Max	Neutral
Analog Servo	50Hz	750us/-150%	2250us/150%	1500us/0%
Digital Servo	333Hz	750us/-150%	2250us/150%	1500us/0%
Custom	50~400Hz	750us/-150%	2250us/150%	1500us/0%
SR	833Hz	425us/-130%	1075us/130%	750us/0%
SFR	1000Hz	125us/-150%	875us/150%	500us/0%

Notes:

1. If the Midpoint offset in the RX setting is set to Offset 1520, then the transmitter will output the channel value with an offset of 20us.
2. Although the channel range can be set from -150% to 150%, while SR (833Hz) only supports the range of -130%~130%. Namely, when the transmitter channel output is greater than 130% or less than -130%, the receiver will still output 130% or -130%.

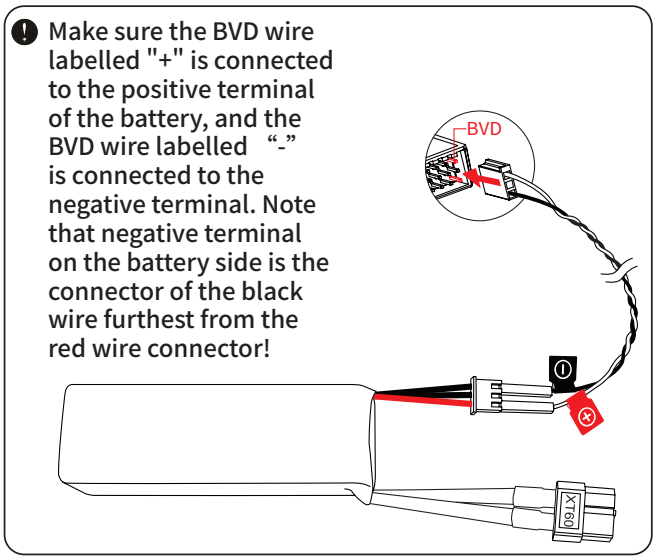
7.10.5 BVD Voltage Calibration

There may be a voltage difference between the voltage detected by the receiver and the actual voltage of the battery. Use this function to set a calibration coefficient for the receiver to make the voltage displayed on the interface is equal to the battery voltage, namely, the sum of the detection voltage and the calibration coefficient is equal to the voltage displayed on the interface.

The BVD voltage detection range is from 0 to 70V.

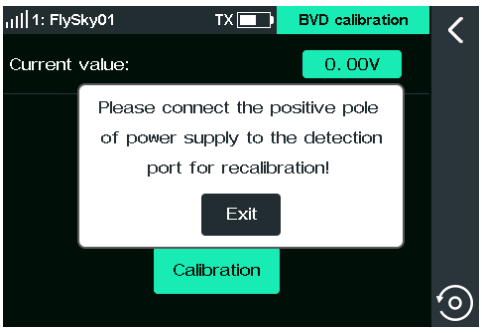
Notes:

1. This function is applicable to enhanced version receivers with BVD function, must be in two-way communication with the transmitter.
2. Pay attention to correctly connecting the BVD cable and the anode and cathode of the battery as shown in right diagram.



Setup:

1. Make sure the transmitter and receiver are bound; Connect the BVD harness to the receiver's BVD interface. Make sure the positive and negative terminals are connected to the positive and negative poles of the battery.
2. Tap **BVD Voltage Calibration** to enter calibration screen.
3. Click **+/-** to tune to the measured voltage of the battery.
4. Click **Calibrate** to calculate the calibration factor by the current value and the sensor measured value, and the result will be sent to the receiver to calibrate the BVD detection function.



Notes:

1. This function calibrates the BVD voltage of primary receiver. To calibrate the secondary receiver (double receivers), you have to calibrate the BVD voltage of this secondary receiver-to-be before you bind it to the transmitter.
2. Make sure the battery is properly connected during calibration. To ensure accurate calibration, the Current Value, in calibration, needs to be set to the battery's measured voltage value. Recalibrate if necessary.

7.10.6 Config RX As A PWM Converter

Note: This function is not available for all receivers. For the classic receiver, only is availabe for the FGr4 and FTr10 receivers.

Set the receiver to function as a PWM converter to achieve PWM channel expansion. Once the setting is successful, the receiver will operate as a PWM converter, with the connect outputting PWM signals.

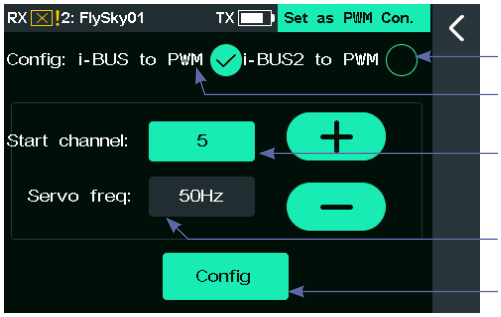
For the classic edition receiver:

- If set as a PWM converter through the i-BUS to PWM setting, its SENS connector should be connected to the receiver's i-BUS-OUT connector.
- If set as a PWM converter through the i-BUS2 to PWM setting, its SENS connector should be connected to the receiver's i-BUS2 connector.

For the enhanced edition receiver:

- If set as a PWM converter through the i-BUS to PWM setting, its NPA connector should be connected to the receiver's i-BUS-OUT connector.
- If set as a PWM converter through the i-BUS2 to PWM setting, its NPA connector should be connected to the receiver's i-BUS2 connector.

A receiver that has been set as a PWM converter can be switched back to a receiver by re-binding with the transmitter. Once the binding with the transmitter is successful, it can be used as a receiver normally.



To configure it as a PWM converter with the i-BUS2 protocol.

To configure it as a PWM converter with the i-BUS protocol.

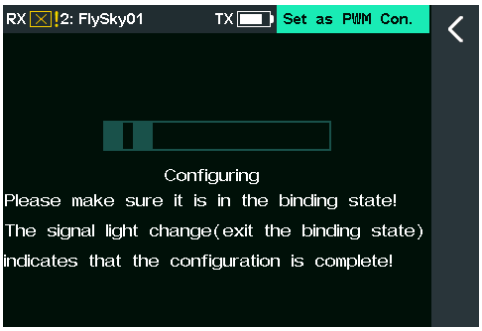
Select the starting channel item. For example, setting it to 5 means that the transmitter's CH5 is output by the PWM converter (receiver) CH1.

To set the PWM frequency for the PWM converter channels.

Tap to enter the configuration interface.

Setup:

1. Enter the interface of **Config RX as a PWM converter**.
2. Tap **Start channel** or **Servo freq**, then click **+** / **-** to set an appropriate value. Then click **Config**, the configuring interface comes along.
3. Put the receiver to enter the bind mode, after the LED status of the receiver changes from fast flash to slow flash, it indicates the configuration is finished. Then click ❮ to return.



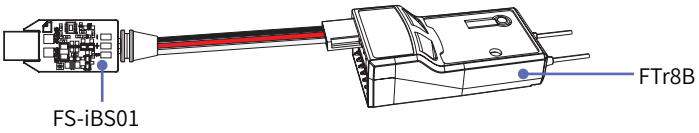
If you want to set the receiver as an i-BUS2 PWM converter, there are no settings such as Starting Channel. The i-BUS2 PWM converter, once set, can be configured through the i-BUS2-PWM Converter Settings menu.

7.10.7 i-BUS2 Device

Preview and set up the i-BUS2 devices detected by the transmitter (in the two-way binding state between the transmitter and the enhanced edition receiver), allowing you to view the names, connection connectors, and numbering information of each i-BUS2 device. Additionally, you can make different settings based on the connected i-BUS2 devices.

For example, when the transmitter detects an i-BUS2 HUB device, this settings interface will be accessed, and at this time, you can set the i-BUS2 HUB device to be used as a PWM converter (with the same functionality as when the receiver is set as a PWM converter). When an i-BUS2 RPM sensor is detected, you can set the number of propellers for the sensor, for details, see the corresponding description.

i-BUS2 Device Connection Diagram:

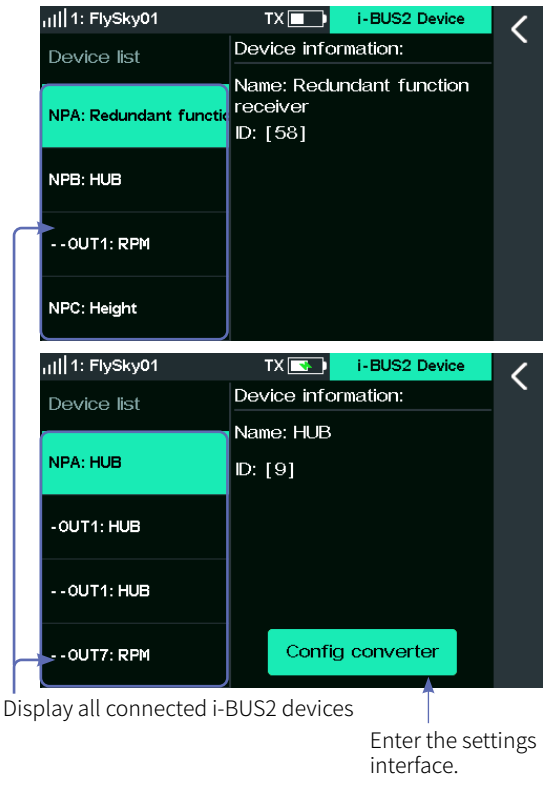


Note:

1. i-BUS2 devices are only compatible with the AFHDS 3 Enhanced Edition receivers. The connection diagram is illustrated using the FS-iBS01 sensor as an example; the connection method for other i-BUS2 devices is the same.
2. The abbreviations for the Newports are for NPA, NPB, NPC and NPD, the enhanced edition receiver supports up to 4 Newports.
3. i-BUS2 devices must be connected to the receiver's Newport connector, and the Newport connector protocol must be set to i-BUS2 through RX Setup > Custom port protocol.
4. For instructions on connecting i-BUS2 devices, please refer to the appropriate manual or documentation.

Setup:

Tap **i-BUS2 device display** to view the related information.

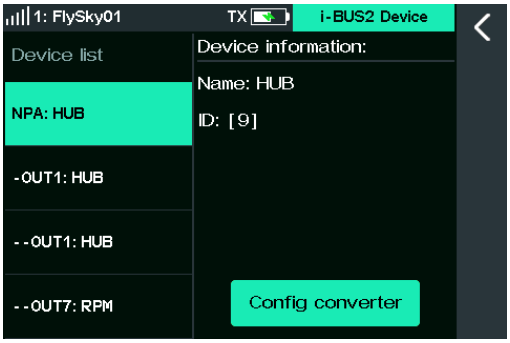


Interface Description:

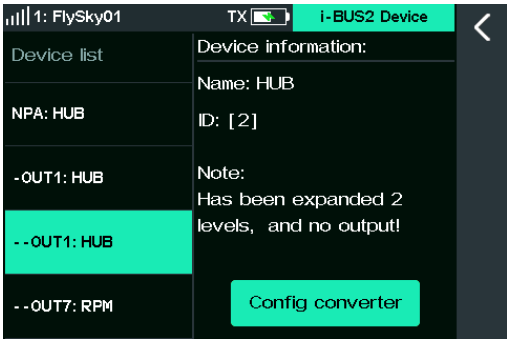
- The interface displays the i-BUS2 devices recognized by the transmitter. (i-BUS2 devices need to be correctly connected to the receiver connector that has been set to the i-BUS2 protocol).
- The i-BUS2 HUB (FS-iBH07) signal only supports two levels of expansion (the connected device connector name is OUT), as detailed below:

  1. When the receiver has only one connector set as i-BUS2 protocol, the i-BUS2 HUB output port connected to this connector can be connected to i-BUS2 HUB again. This HUB connector can still output i-BUS2 signal and can be connected to the i-BUS2 device. For example, "- OUT1：HUB" indicates that the HUB is connected to the connector 1 of the first-level HUB; "- -OUT7: RPM" indicates that RPM sensor is connected to the connector 7 of the second-level HUB.
  2. When the receiver has two or more connectors set to the i-BUS2 protocol, the signal has already been expanded by the receiver once. In this case, the i-BUS2 HUB output connected to the connector cannot be used to connect another HUB for expansion, but it can be used to connect other i-BUS2 devices. For example, " - -OUT1：HUB" indicates that the HUB is connected to the connector 1 of the first-level HUB. " “- -OUT4: RPM" indicates that RPM sensor is connected to the connector 4 of the first-level HUB.

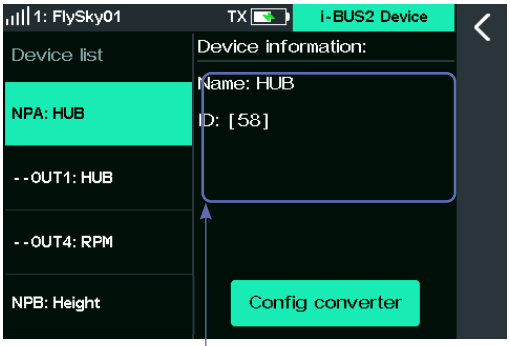
Interface for Connecting Multiple i-BUS2 Devices to a Newport :



i-BUS2 HUB (FS-iBH07) Signal Secondary Expansion Interface:

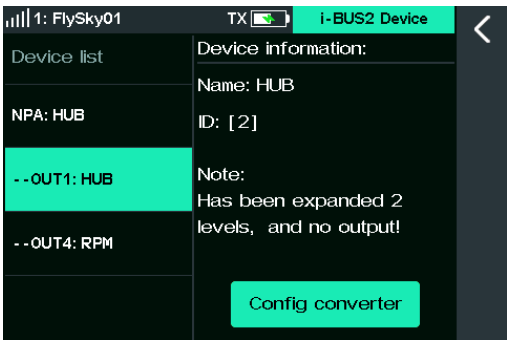


Interface for Connecting Multiple i-BUS2 Devices to Multiple Newports :



Displaying information related to connected i-BUS2 devices.

i-BUS2 HUB (FS-iBH07) Signal Secondary Expansion Interface:



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Setting i-BUS2 HUB As A PWM Converter

When the transmitter detects an i-BUS2 HUB device, it is possible to set the i-BUS2 HUB device to be used as a PWM converter (with the same functionality as when the receiver is set as a PWM converter).

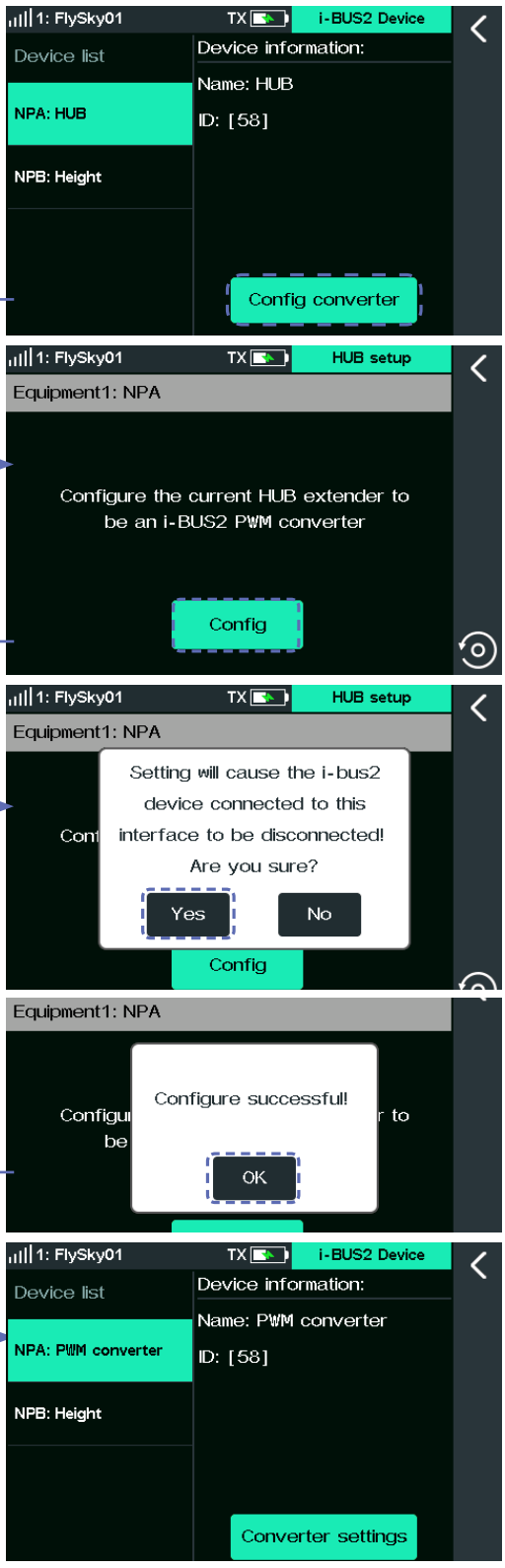
Note: Currently, only FS-iBH07 is supported.

Setup:

1. Tap Config as converter to enter the settings interface.
2. Tap Config, in the pop-up interface click Yes, then tap OK to complete the setup, and the interface will automatically return to the i-BUS2 device settings interface.

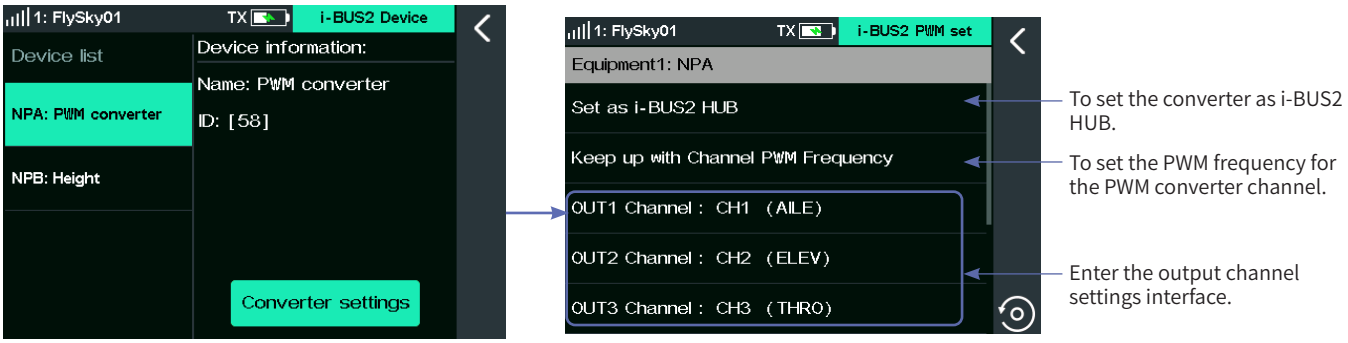
Notes:

1. This feature item is only available when such i-BUS2 devices are connected.
2. The i-BUS2 HUB device connects to any of the NPA~NPD connectors (custom port protocol set to i-BUS2) of the Enhanced Edition receiver and establishes a connection with the transmitter.
3. If the i-BUS2 device connector is already connected to other devices, after being configured as a PWM converter, the i-BUS2 HUB will disconnect from the devices previously connected to it.



i-BUS2 PWM Converter Setting

Set up the i-BUS2 PWM converter's related functions, allowing you to configure the PWM converter as an i-BUS2 expander, set the PWM frequency for the converter connector, and define the channels for output on the converter connector.



Setting As i-BUS2 HUB

To set the PWM converter back to the i-BUS2 HUB.

Setup:

1. Tap **Coverter settings** to enter the setting interface.
2. Tap **Set as i-BUS2 HUB**, so as to set the PWM converter back to the i-BUS2 HUB.

Note: If the converter is configured by a receiver, the setting will prompt a failure. The receiver does not support being used as a HUB.

Synchronous Channel PWM Frequency Settings

To set the output PWM signal frequency of the converter connector.

Setup:

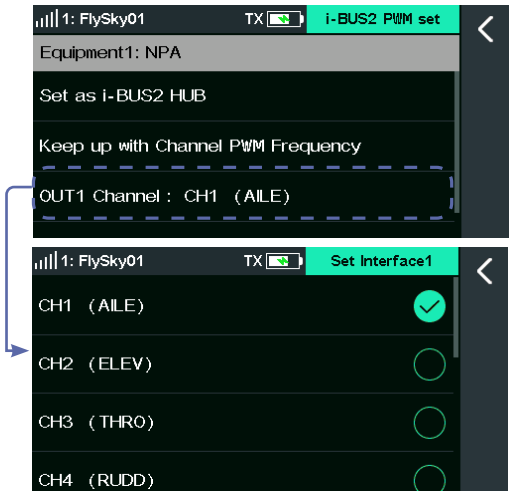
Tap **Keep up the channel PWM frequency**, a pop-up process prompt interface appears, and once completed, the interface displays a completion message.

Setting Output Channel

Configure the output channels for the converter's various connectors.

Setup:

1. Tap the channel you want to set, and enter the settings interface.
2. Tap an appropriate item. Then click ❮ to return.



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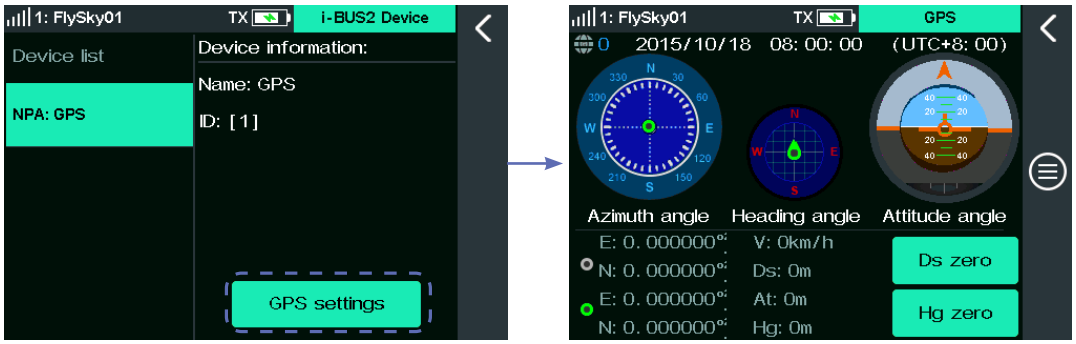
i-BUS2 GPS Sensor Setting

This function is applicable to GPS module of i-BUS2 protocol. Through this function, you can set the standard time zone, perform gyroscope level calibration, and view GPS parameter display interface to get relevant information.

Note: Refer to the FS-iBG01 GPS sensor manual for correct sensor connection.



GPS Display

To display the information returned by the GPS sensor.

Setup:

Tap **GPS settings** to enter, then you can view the related information. Click ◀ to return.

(1) Indicate whether positioning is successful: blue signifies successful positioning, while gray indicates a failure in positioning.

(2) Display the number of satellites reported back by GPS. Note: When the number of displayed satellites beyonds 10, GPS positioning accuracy is high; otherwise, there is a risk of positioning errors.

(3) Azimuth angle: The direction of the model relative to the zero point. The green dot moves on the dial according to the direction, indicating the current model's bearing from the starting point. The center of the bearing angle represents the starting position, and the power-on location is the default starting point.

(4) Display latitude and longitude, distance, altitude, elevation, and speed information. The top shows the latitude and longitude of the position when the distance is zeroed, and the bottom shows the real-time latitude and longitude of the RC model's position. Speed is the model's relative velocity to the ground, altitude is the model's height relative to the ground, and distance is the distance from the model's current position to the starting point.

(5) Tap to set the altitude value to zero, which sets the current location as the reference point for measuring distance.

(6) Click to set the distance value to zero, which sets the current altitude as the reference point for measuring height.

(7) Heading angle: Indicate the real-time heading angle of the model in motion.

(8) Attitude angle: The vertical movement of the center represents the model's pitch angle, while the rotation of the outer ring represents the model's roll angle.

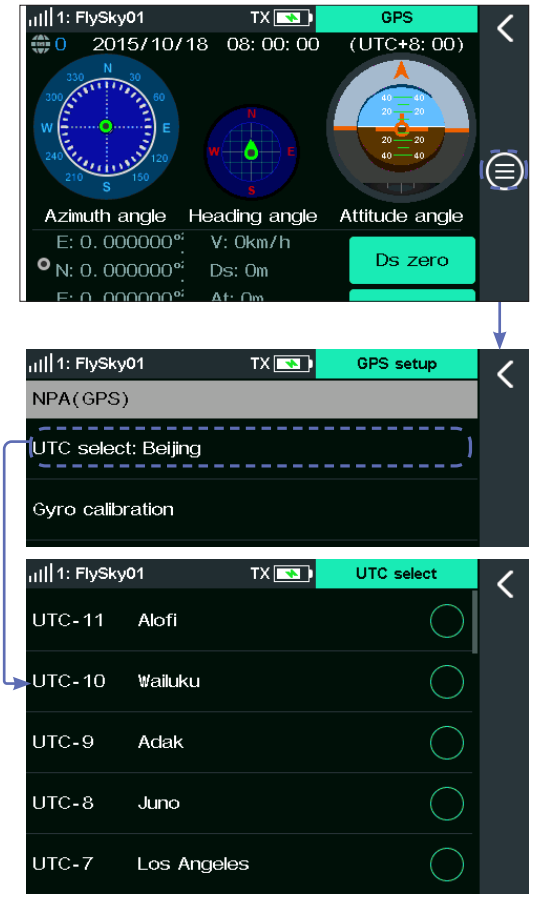
(9) Display the date and time, with the date shown in the format of year/month/day and the time displayed in a 24-hour format.

UTC Selecting

To set UTC.

Setup:

1. Tap **UTC select** to enter the setting interface.
2. Tap an appropriate time zone. Then click ◀ to return.

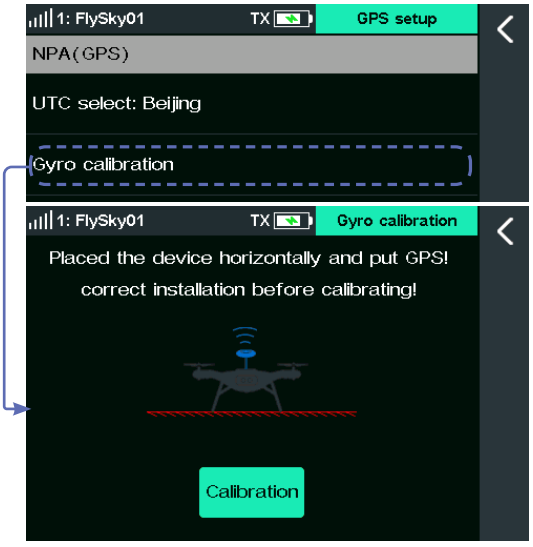


Gyroscope Calibration

Calibrate the gyroscope. Before calibration, please connect the GPS sensor to the device correctly and make sure the device is placed horizontally.

Setup:

1. Tap **Gyro calibration** to enter.
2. Tap **Calibration**. The system will calibrate automatically.
3. When calibration succeeds or fails, the system displays a pop-up screen indicating the success or failure of calibration. Click **OK** on the prompt screen to return to the previous screen.



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i-BUS2 RPM Sensor Setup

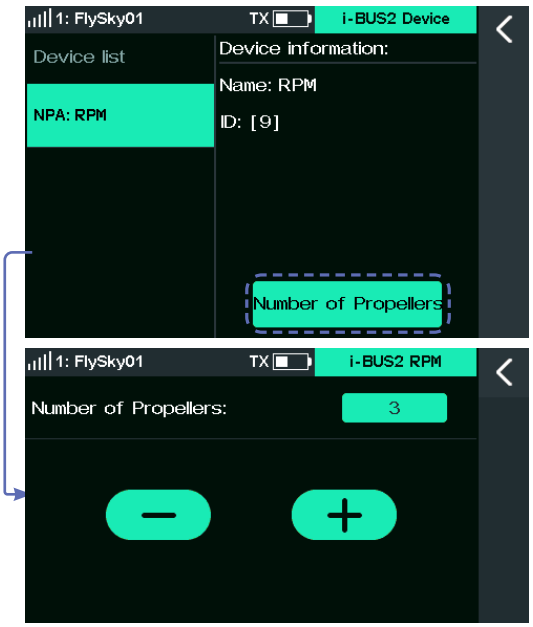
When the transmitter detects the i-BUS2 RPM sensor, the device list will display 'RPM' along with the connected Newport connector. At this time, you can set the number of propellers of the i-BUS2 RPM sensor.

Note: Refer to the FS-iBS01 RPM sensor manual for correct sensor connection.

Setup:

1. Tap **Number of Propellers** to enter the setting interface.
2. Click **+** / **-** to set an appropriate value of propellers. Then click ◀ to return.

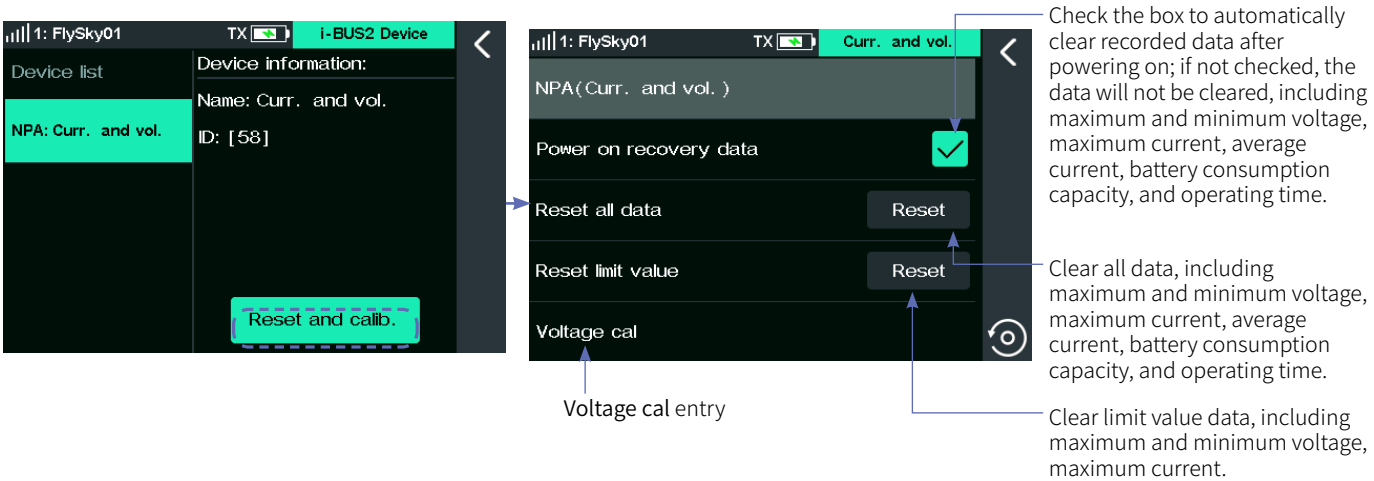
Note: The number of propellers can be set from 1 to 12.



i-BUS2 Current and Volatge Sensor Setup

Used for resetting and calibrating current and voltage sensor-related information.

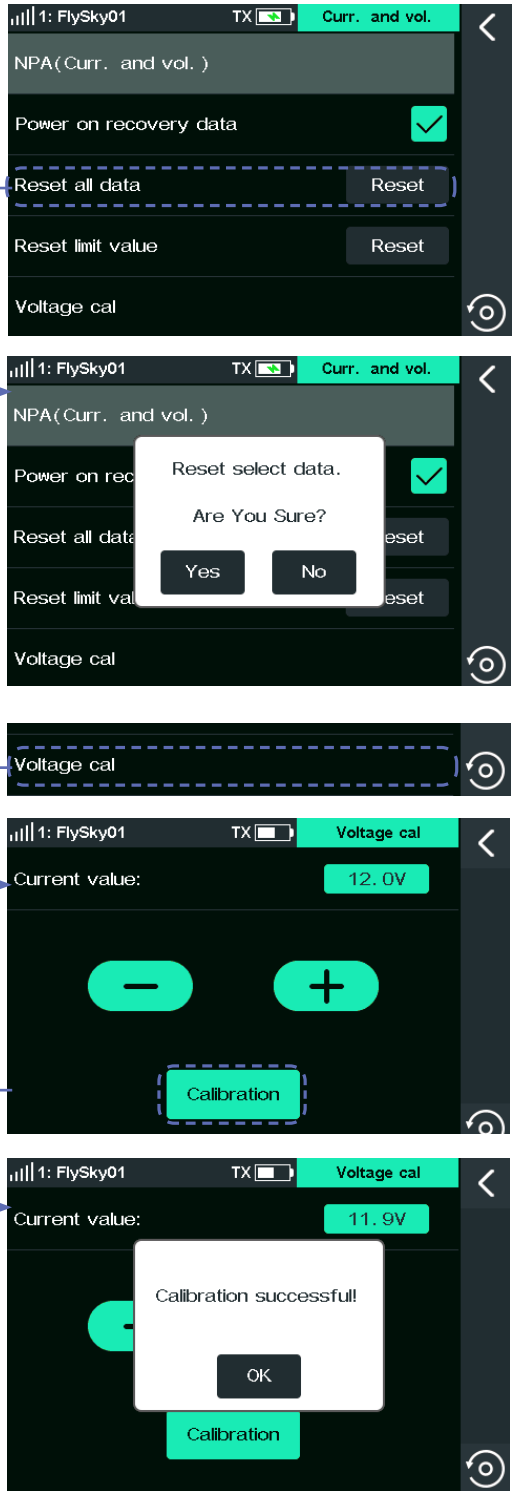
⚠ Warning	• Make sure to refer to the "Installation and Cable Connecting" section of the FS-iBC01 user manual for correct wiring. Otherwise, there may be an explosion or fire.



Note: Please refer to the voltage value measured by the multimeter for calibration.

Setup:

1. Tap **Reset and calib.** to enter the function interface.
2. If you want to prevent recorded data from being automatically cleared after powering on,
   - Tap the box to the right of the function, if it is not checked, the data will not be cleared.
3. If you want to reset all data;
   - Tap **Reset** to the right of **Reset all data**, and then click Yes in the pop-up interface to complete.
4. If you want to reset extreme value data,
   - Tap **Reset** to the right of **Reset limit value data**, and then click **Yes** in the pop-up interface to complete.
5. Voltage calibration,
   - Note that before calibration, connect the sensor's detection line correctly to the device to be tested. Click on **Voltage cal** to enter the calibration interface; click +/- to adjust to the actual measured voltage of the battery; click **Calibration**, the system prompts that the calibration is successful, click **OK** to complete.



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7.10.8 i-BUS Setting

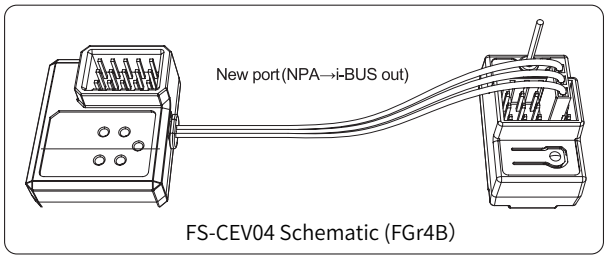
This function is used to set the external device that supports the i-BUS protocol, and it currently enables compatibility with Serial Bus Receivers and Voltage sensors.

Serial Bus Receiver FS-CEV04 Setting

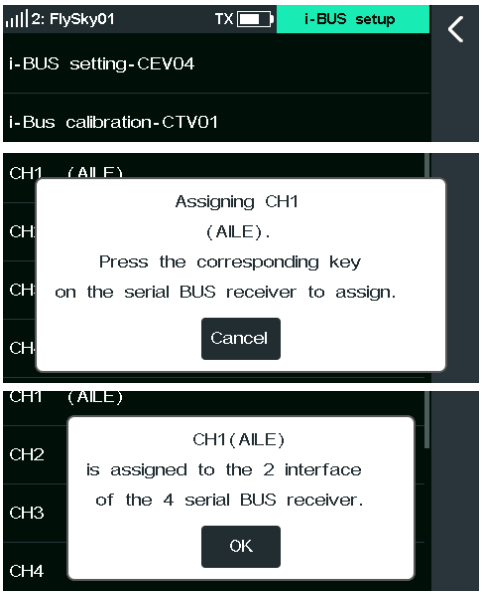
After the setting is completed, FS-CEV04 can convert i-BUS signal to PWM signal and output PWM signal.

Setup:

1. Make sure the transmitter and the receiver are bound.
2. Connect the FS-CEV04 to the SERVO port of the receiver.
3. Connect a servo to one of the C1-C4 ports of the FS-CEV04.
4. At the transmitter side, navigate to the i-BUS setup function, which is located within the RX settings. Select the channel you want to assign. If you click on the wrong channel, click Cancel to undo your selection.
   - The system will display a pop-up window, "Press the corresponding key on the serial bus receiver to assign".
5. Press the corresponding button. Once the channel assignment is successful, a pop-up window will appear.
   - If the assignment is successful, the channel number and interface number will be displayed.
6. Repeat these steps to set up additional channels.
   - If the i-BUS receiver module is overloaded, please power it separately to prevent damage to the wiring due to excessive current.



FS-CEV04 Schematic (FGr4B)

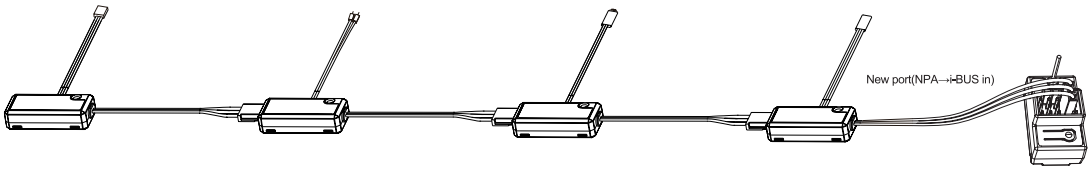


i-BUS FS-CVT01 Voltage Sensor Calibrating

A calibration factor can be set to correct the voltage values reported by the i-BUS voltage sensor FS-CVT01. This calibration factor is stored in the transmitter and should be re-calibrated whenever the battery type is changed.

Refer to the following schematic diagram to connect the i-BUS voltage sensor.

i-BUS Series Sensor Connection Diagram:



FS-CPD01 FS-CVT01 FS-CTM01 FS-CPD02 FGr4B

Notes:

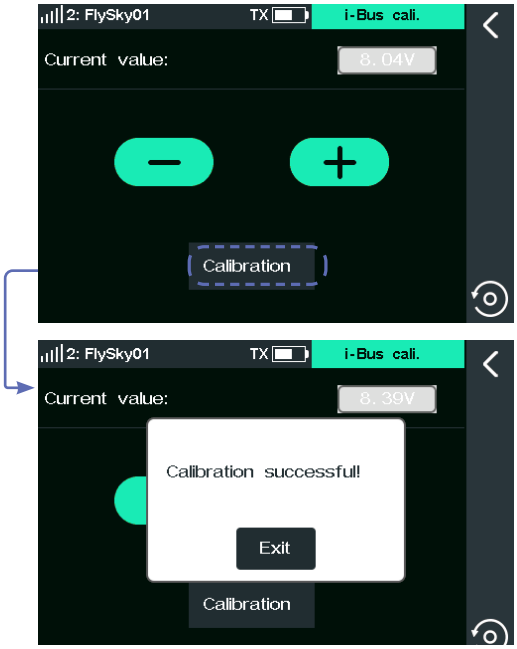
1. For the enhanced edition receiver, before connecting the sensor to the receiver, you need to set the output signal type for NPA

(Newport A) to i-BUS-IN via the function: Basic > RX setting > Custom port protocol.

2. The system only supports one Newport connector set to i-BUS-IN; at the same time, the other Newports cannot be set to i-BUS2.

Setup:

1. Insert the positive and negative wire pins into the plugs of the battery detected respectively. The red wire is the positive pole. Make sure that the positive and negative poles are connected correctly.
2. Tap i-BUS calibration FS-CTV01.
3. According to the voltage value of the actual device, click +/- to set the appropriate voltage value.
4. Click Calibrate and click Exit once calibration is completed.



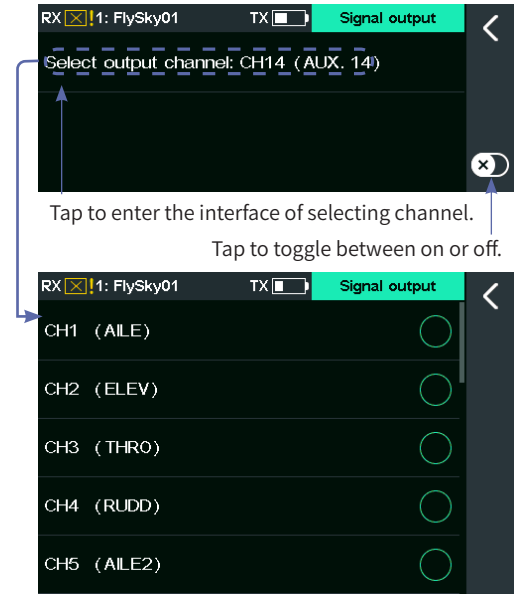
7.10.9 Signal Strength Output Setting

Through this function, you can select a channel to output the signal strength value of the receiver.Once the function is enabled, the selected channel does not perform the output of transmitter's corresponding channel function, instead, it will output the receiver's signal strength value. This function is necessary for users who operate traversers with FPV glasses. We recommend selecting CH14 or any auxiliary channel for this purpose. You can make corresponding adaptations in the flight control settings to view the signal strength information on your FPV glasses.

Setup:

1. Tap **Select output channel** to enter the setting interface.
2. Tap an appropriate channel. And it will automaticlly return.

Note: The function is disabled by default.



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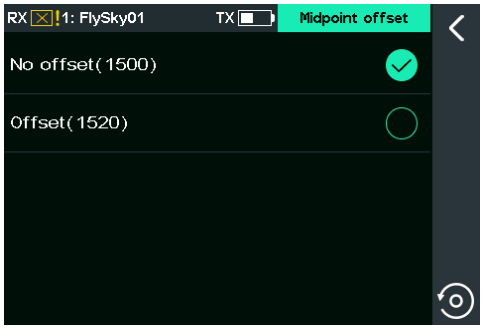
7.10.10 Midpoint Offset

This is designed for some servos with a midpoint value identified as 1520. Usually, the transmitter assigns the channel midpoint value of 1500 to the receiver. After the selection of offset, the transmitter will output the channel value to the servo by superimposing 20. When you use standard S.BUS protocol devices such as Vbar gyroscope flight control, this function can be set as Offset to achieve the midpoint offset for all channels.

Setup:

1. Tap **Midpoint offset**.
2. Tap an appropriate function iteml. And click to return.



7.10.11 Receiver Update

To update the firmware of the receiver. PL18 Ultra transmitter packs the firmware of FTr8B, FTr12B and etc. The packed firmware varies with different version firmware. If the receiver is not compatible with the transmitter or unexpectable error occurs, then it is necessary to upgrade the receiver's firmware. This can also be done via FlyskyAssistant. Please note that this function is applicable for FlyskyAssistant firmware versions 3.0 and later.

Setup:

1. The transmitter and the receiver has bound normally.
2. Tap **Receiver Update** to enter and select the receiver you want to update.
3. Click **Update** , then click **OK** in the pop-up window to put the receiver into updating mode.
4. After the updating is completed, it is will automatically return the previous interface.

Note: If the receiver firmware is the latest version, the system will display a propted reminder and no need to update.

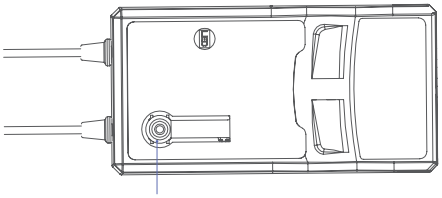
⚠ ATTENTION	• **If the transmitter is unable to bind with the receiver after its firmware is updated, it is required to forced update the firmware of the receiver.**

To put the receiver into forced updating mode first, then follow the steps above to update.

The methods of entering forced mode varied with the models, refer to the manual of the receiver for the datailed.

Take FTr8B receiver as an example to show how put it into forced updating mode.

- Press and hold the Bind key on the receiver over ten seconds while powering on the receiver, then release the Bind key after the receiver LED works in flash-three-one-off state repeatedly.
- Power on the receiver first, then press and hold the BIND button for more than 10 seconds, the LED of the receiver will be in a state of three-flash-one-off, then release the BIND button.



7.10.12 About Receiver

To view the information of the receiver connected.

Setup:
Tap **About Receiver** and view the information.

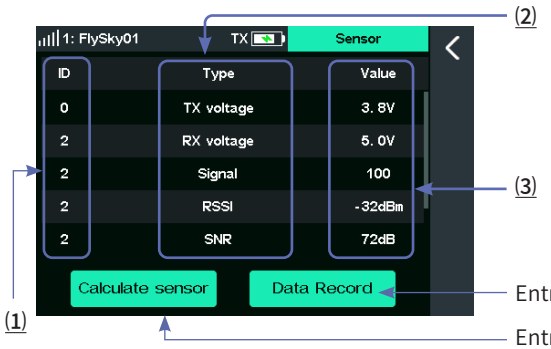
Note: If the double receivers are connected to the transmitter, the information of Primary receiver is displayed.

7.11 Sensors

To set or view the related data of the sensors.

7.11.1 Displaying Sensors

This list displays information for all connected sensors, including their type, number, and real-time readings.



Note: The following sensors can have their function parameters set through this feature:

Altitude sensors: FS-CAT01 (i-BUS), FS-iBA01 (i-BUS2), and the barometric altitude sensor built into the INr6-HS receiver;

Speed sensors: FS-CPD01 (i-BUS), FS-CPD02 (i-BUS), and FS-iBS01 (i-BUS2).

(1) Display Sensor ID

- The ID number 0 represents the transmitter.
- The ID number 1 represents the receiver or the primary receiver (two receivers connected), and its related information, such as signal strength, RSSI, Noise, or SNR.
- The ID number 2 represents the secondary receiver, and its related information, such as signal strength, RSSI, Noise, or SNR.
- The ID number 3 represents the first external sensor connected to the receiver or the primary receiver, and so on. There are up to i-BUS 15 senseors can be connected.

(2) Display Sensor Type

- TX Voltage: To display the voltage for the transmitter's battery.
- RX Voltage: To display the power supply voltage for the receiver.
- Signal strength: To display the signal strength between the transmitter and the receiver. It is calculated by using SNR. The signal strength will be displayed as a value between 0 and 100. In the same environment, the farther the distance, the smaller the value. If the signal strength drops to 30 or below, the system will alert the user.
- RSSI: To indicate the power of the signal received by the receiver. 0 to -40dBm: Indicates that the distance between transmitter and receiver is close and the communication quality is best. -40dBm to -85dBm: The communication quality is good. Less than -85dBm: Indicates that there is an obstacle between the transmitter and receiver or the distance is far. Please shorten the control distance to avoid losing control.
- SNR: The signal-to-noise ratio refers to the decibel difference between the signal and the noise received by the receiver. The signal-to-noise ratio equals the data of RSSI subtract the data of Noise, which is a decisive parameter in the overall quality of the signal. If the SNR drops below 11, reduce the range quickly to prevent loss of control.
- Noise: Noise is generated due to interference from other nearby transmitters such as Wi-Fi. In places where there are too many transmitters, excessive noise will affect the redio-controlled distance.

Note: The suffix '-RX1' in the 'Type' column indicates information related to the redundant function receiver (RX1), which is transmitted back to the transmitter by the other receiver (RX2) that works in conjunction with RX1 to achieve redundancy. The suffix '-RX2' indicates information related to the other receiver (RX2), which is transmitted back to the transmitter by the redundant function receiver (RX1).

(3) Display the data returned by a sensor.

This list displays data in real-time. When a sensor connects to the receiver, the list updates to include the new sensor's type and details. Conversely, when a sensor disconnects, the list removes the type and data associated with that sensor.

Notes:

For the FS-CTM01 temperature sensor (i-BUS):

Attach the FS-CTM01 to an appropriate location (e.g., motor, battery casing) using double-sided sponge tape, ensuring it is in close contact with the surface of the object being tested.

Connect it to the receiver's SENS connector or Newport (i-BUS-IN).

You can then view related information through the Sensor function.

For the FS-iBT01 temperature sensor (i-BUS2):
Please refer to its manual for correct sensor connection.
After connecting the sensor correctly, you can view related information through the Sensor function.

7.11.2 Calculate Sensor Setup

This feature is used to set parameters related to barometric altitude sensors and rotational speed sensors (RPM).

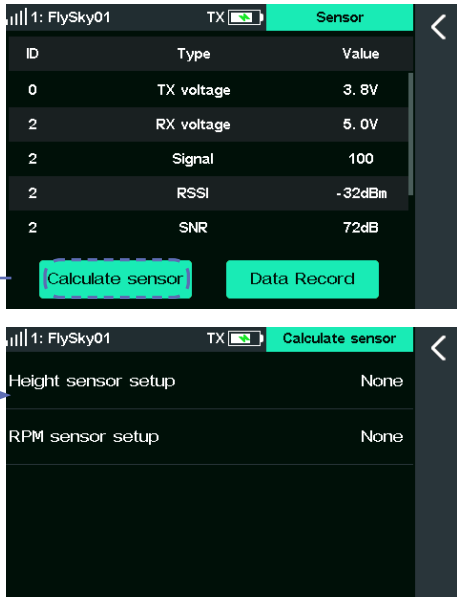
- Altitude sensors can be calibrated to set a zero altitude and support the use of a height zeroing switch for calibration.
- Rotational speed sensors can monitor the motor's RPM and speed.

Height Sensor Setup

Set the parameters for the altitude sensor.

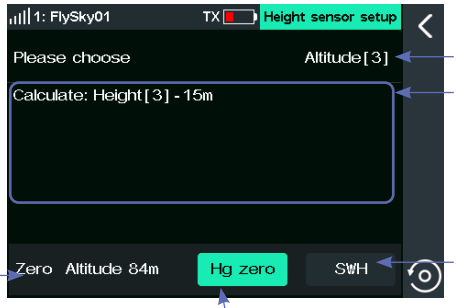
For the FS-iBA01, please refer to the manual for installation before setting up.

For the FS-CAT01, follow the steps provided below for installation.



Installation steps:

1. Securely attach the FS-CAT01 sensor using double-sided soft tape.
2. Connect the FS-CAT01 sensor to the Newport connector of the FTr8B receiver.
3. Go to (Basic)> **RX setting** > **Custom port protocol** to set the Newport connector connected to the sensor as i-BUS-IN.
4. Go to (Basic) > **Sensor**. If the sensor displays **Height** data, then installation is complete. If not, repeat the above steps.



Display the sensor and the sensor entry shown here.

After selecting the sensor, display the relevant sensor information, such as name, serial number, real-time values, etc.

Display the assigned zeroing switch and the switch assignment entry.

Display the altitude value during zero calibration.

Set the current sensor altitude to the height zero point.

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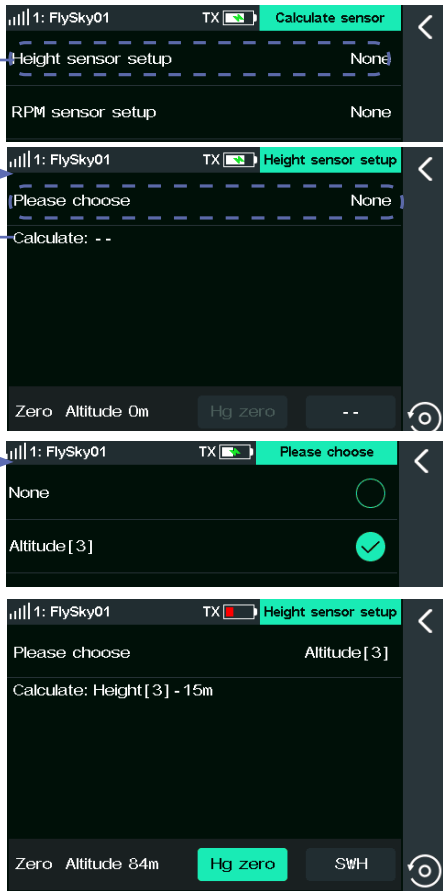
Setup:

1. Tap Choose sensor to enter the next level interface;
   - Tap the appropriate sensor, then click ◁ to return.
2. Tap Hg zero to set the current sensor's elevation as the zero point for height
3. Click on -- to enter the switch assignment interface;
   - Tap the interface switch and select the on or off position, then click ◁ to return.

Note: The altitude sensor measures changes in air pressure to map them as changes in elevation. Changes in airflow can cause some errors in the monitoring.



RPM Sensor Setup

Set the parameters for the RPM sensor.

For FS-iBS01, please refer to the manual for installation before setting up; for FS-CPD01 and FS-CPD02, follow the steps below for installation.

FS-CPD01: Magnetic Induction Speed Module Installation

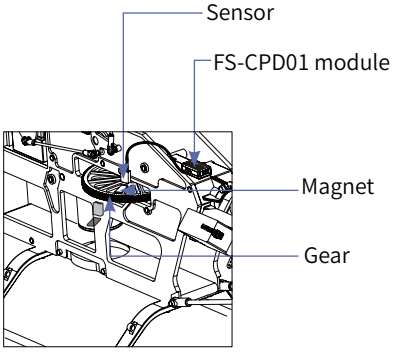
Installation steps:

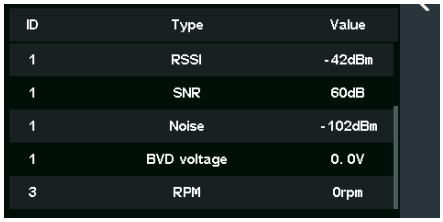
1. Place the sensor next to the magnet, which is fixed to the spinning part of a model such as the gear of a helicopter.

Note: Make sure that the sensor is within 2mm of the magnet and the north pole or south pole of the magnet is parallel to the sensor.

2. Connect the FS-CPD01 sensor to the to the Newport connector of the FTr8B receiver.
3. Go to ⊞ (Basic)> **RX setting** > **Custom port protocol** to set the Newport connector connected to the sensor as i-BUS-IN.
4. Go to ⊞ (Basic) > **Sensor**. Try rotating the gear; if the RPM value changes, it indicates successful installation; otherwise, please reconnect according to the steps mentioned above.

Note: RPM means the sensor is testing the speed of the motor. 0rpm is the speed measurement value.





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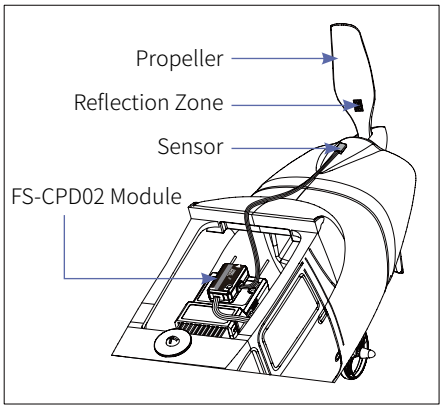
FS-CPD02: Optical Induction Speed Module

Installation steps:

1. Securely attach the sensor and the reflective sticker to the axial rotation position.

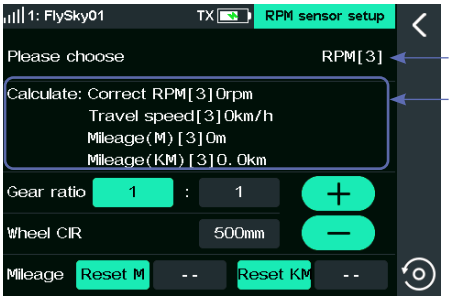
Note: Keep the reflective sticker flat and perpendicular to the sensor, and keep the proper distance between the sensor and the sticker.

2. Connect the FS-CPD02 sensor to the Newport connector of the FTr8B receiver.
3. Go to (Basic)> **RX setting** > **Custom port protocol** to set the Newport connector connected to the sensor as i-BUS-IN.
4. Go to (Basic) > **Sensor**. Try rotating the propeller; if the RPM value changes, it indicates successful installation; otherwise, please reconnect according to the steps mentioned above.



Please notice when you set the gear ration, if you want to detect the propellers, the gear ratio is the ratio of 1 to the number of propellers.

Note: The number of propellers for the FS-iBS01 (i-BUS2) sensor can be set through RX Setting > i-BUS2 Device settings feature.

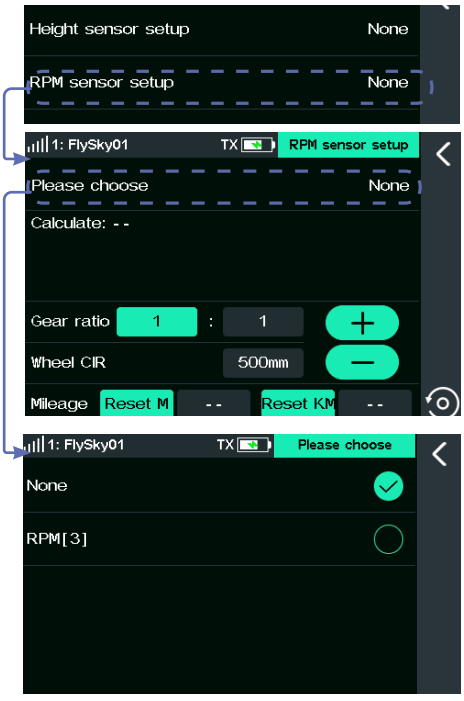


Display the sensor and settings for the sensor entry shown here.

After selecting the sensor, display the relevant information: Correct RPM, Travel speed, and Mileage.

Setup:

1. Tap **Please choose** to enter the next level interface;
   - Tap the appropriate sensor, then click to return.
2. Tap the function box to the right of the Gear ratio, and click +/- to set the appropriate gear ratio.
3. Tap the function box to the right of the Wheel CR, and click +/- to set the appropriate wheel circumference.
4. Click on -- to enter the switch assignment interface;
   - Tap the interface switch and select the on or off position, then click to return.



Notes:

1. The system calculates speed based on the wheel circumference and the monitored rotational speed, and then combines this with time to calculate the distance traveled. Therefore, the settings for gear ratio and circumference will affect both speed and distance.
2. The gear ratio is the ratio of the number of teeth on the gear that is actually being monitored to the number of teeth on the gear that is targeted for monitoring.
3. When it is inconvenient to install a sensor on the device with the desired rotational speed, you can try testing the rotational speed of the transmission parts and setting an appropriate gear ratio to monitor the speed of this device. For example, by monitoring the rotational speed of the propeller blades to monitor the speed of the shaft.
4. For wheeled vehicle models, you can set the wheel circumference and combine it with the rotational speed value of the wheel to determine the vehicle's travel speed.

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7.11.3 Data Record

Used to display and set data recording information.

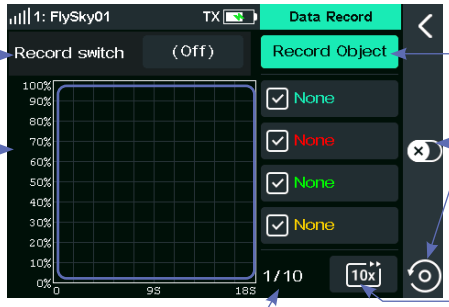
You can define 4 recording objects, which can be set as "sensor data", "output channels", or "stick or knob". After recording is enabled, it can record the value changes of the recording objects over a period of time.

Display the assigned switches; data recording function can be activated through the switches. Entry for the switch assignment interface.

The horizontal axis displays the recording time, and the vertical axis shows the value range of the recorded objects.

Note: When the data recording exceeds one page, after turning off the recording function, you can swipe left or right to view different pages.

Display the total number of pages of recorded data and the current page number.



Entry for the recording object settings interface.

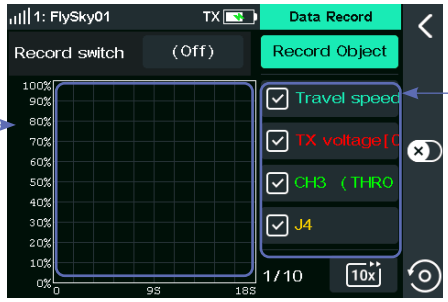
Enable the rtcording function switch

Record Reset Button

Tap to clear all recording data.

Zoom in and zoom out icons. Taping them adjusts the length of the time axis displayed on one page; 1x indicates that the entire duration of the recording is displayed on one page, while 10x indicates that 1/10 of the duration is displayed on one page.

Interface after objects have been set.



Different colored curves represent different recording objects.

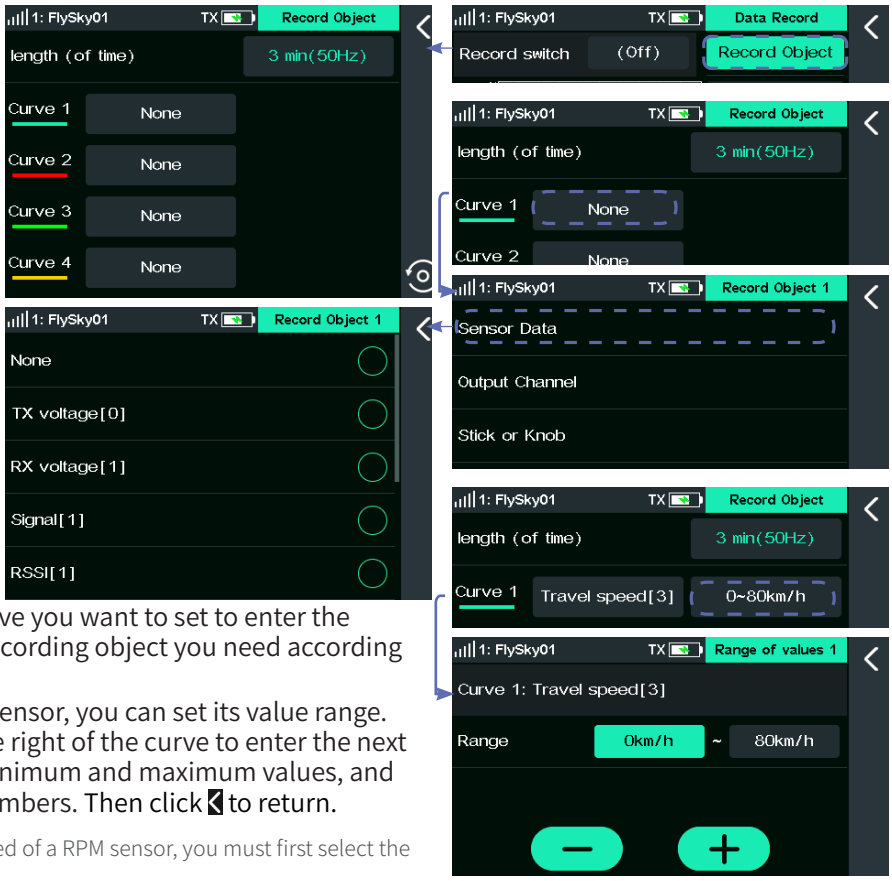
Note: If the recording does not fill a full page, the latest recording position is displayed as a vertical line.

Display the set recording objects; taping can toggle whether this curve is displayed in the coordinate system, with a " √ " indicating that the recording object is shown.

Setup:

1. Tap **Data Record** to enter.
2. To enable/disable the data recording feature, click , or use the assigned switch to enable/ disable the data recording feature.
   - Tap the box to the right of the 'Record switch' to enter the switch assignment interface. Tap the interface switch and select the on or off position, then click to return.
3. Tap **Record Object** to enter the setting interface;
   - To set the length of time, click the box to the right of the length. You can set the duration to **3 minutes (50Hz)** or **30 minutes (5Hz)**.
   - Tap the box to the right of the curve you want to set to enter the settings interface, and click the recording object you need according to your actual requirements.

     If the recording object is set to a sensor, you can set its value range. Click the 'Value Range' area to the right of the curve to enter the next level interface; you can set the minimum and maximum values, and click +/- to set the appropriate numbers. Then click to return.



Note: To record the Correct RPM and Travel speed of a RPM sensor, you must first select the sensor through Calculate sensor.

7.12 GPS

When the transmitter detects a GPS module with the i-BUS2 protocol, you can use this feature to set the standard time zone, perform gyroscope calibration, and view the GPS parameter display interface to obtain relevant information.

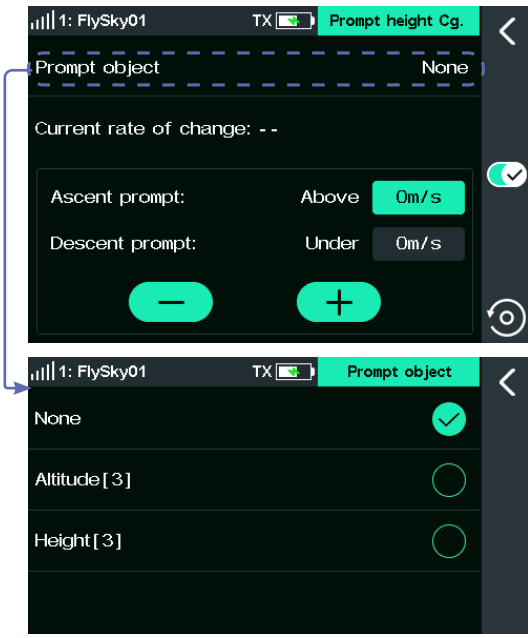
For a detailed introduction, refer to 7.10.7 i-BUS2 Device Settings> i-BUS2 GPS Sensor Settings section.

7.13 Prompt Height Cg.

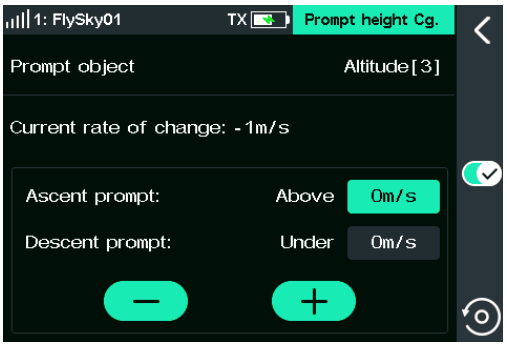
This feature allows you to set the speed change value of the object's ascent or descent enable or disable height change alerts, assisting users in determining whether the glider is in an updraft and the trend of ascent or descent, and adjusting the glider's flight time accordingly.

Setup:

1. Tap **Prompt height Cg.** to enter the setting interface.
2. Tap **Prompt object** to enter the next level interface.
   - Tap the appropriate object and click ◀ to return.
3. To set **Ascent prompt** or **Descent prompt**.
   - Click on the function box to the right of the corresponding feature and click +/- to set the appropriate value; after setting click ◀ to return.
4. If you want to turn off the function, click ☑.



Interface after setting:

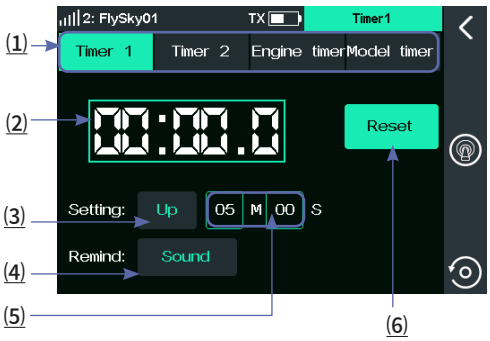


7.14 Timers

This function allows you to set various timers, which are generally used to calculate the total model running time, the time spent in specific competitions, or the transmitter running time, etc.

7.14.1 Timer 1/2

Timer 1 and **Timer 2** have the same function. Only one timer setting method is introduced below.



(1) Tap to select the timer.

(2) Display the current time. Click repeatedly to toggle the start/stop timer.

(3) Tap to select the timing method.

(4) Tap to select the reminder mode.

(5) Tap the box next to **M**(minute) or **S**(second). **+/-** will appear. Then click **+/-** to set the appropriate time.

(6) Tap it to reset the time during the timing process.

Setup:

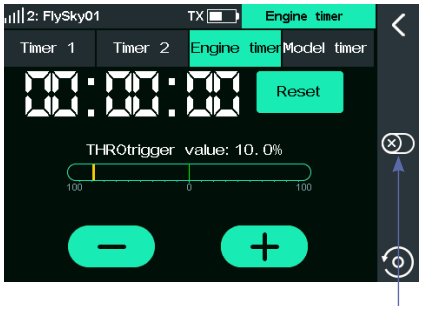
1. Tap **Timer 1**.
2. Tap **Up** to switch the timer type.
3. Tap the function box next to **M** or **S**, **+** or **-** will appear. Then, click **+** / **-** to adjust the value to the desired point.
4. Tap **Sound** to scroll through the reminder mode.
5. Click and set the switches for **Start switch**, **Stop switch** or **Reset switch**. You can start, stop or reset the timer by the switches. Then click to return to the previous interface.

Notes:

1. The timer start/stop switch is an action switch. If no stop switch is assigned, the start switch will act as the timer stop switch from its start to end. If two timers need to start at the same time and stop at different times, you can assign different stop switches to them. You can also switch the start/stop by clicking the display timer area of the interface. This function is very useful for electric glider competitions.
2. When Timer 1 or Timer 2 is set to remind, the system will send out a reminder when it reaches exactly on the minute. It will also send out a countdown reminder 30 seconds before the end of that time period.

7.14.2 Engine Timer

Turn on the timer by setting the throttle trigger value, and then calculate the operating time of the throttle after the trigger value is reached.



Tap to turn on/off the **Engine timer**.

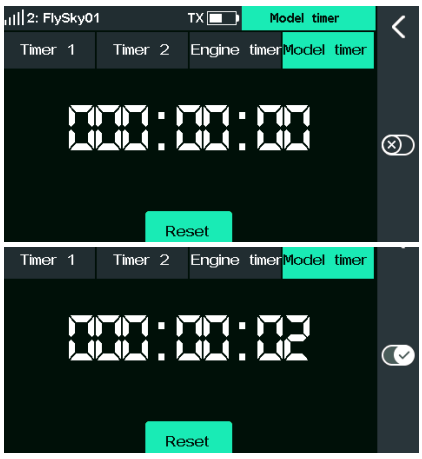
Setup:

1. Tap **Engine timer**.
2. Click **+** / **-** to set an appropriate trigger value. If the throttle exceeds the set value and when this function is activated, the timer will start.
3. Tap **Reset** to reset accumulated time If needed。
4. Tap to enable the function. Then click to return.

Note: You need to activate this function manually, as it is disabled by default.

7.14.3 Model Timer

To calculate the total working time of the model, and it is disabled by default.

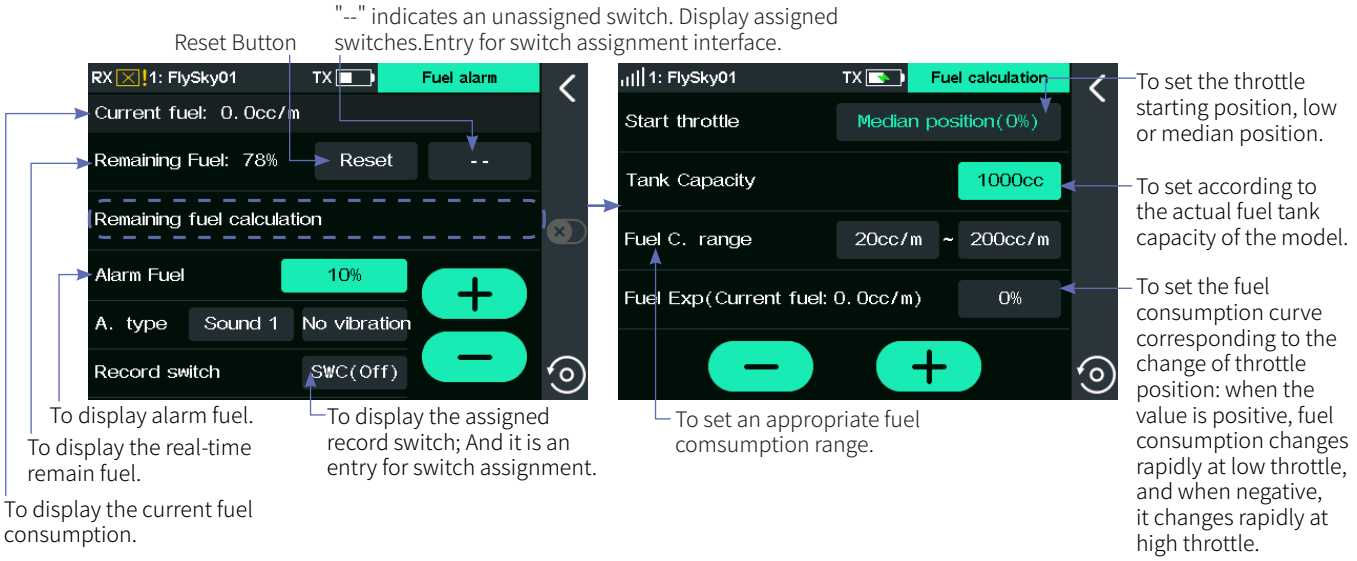


Setup:

1. Tap **Model timer**,
2. Click to enable this function, then click to disable it.
3. Tap **Reset,** and then click **Yes** on the pop-up interface to reset the accumulated time. Then click to return.

7.15 Fuel Alarm

Used to monitor real-time fuel consumption. You can set the ratio between throttle control movement and fuel consumption based on experience. The system achieves fuel consumption display and alarms by monitoring the position of the throttle stick. After this feature is enabled, the fuel consumption icon (/) will be displayed in the top status bar of the main interface.



Setup:

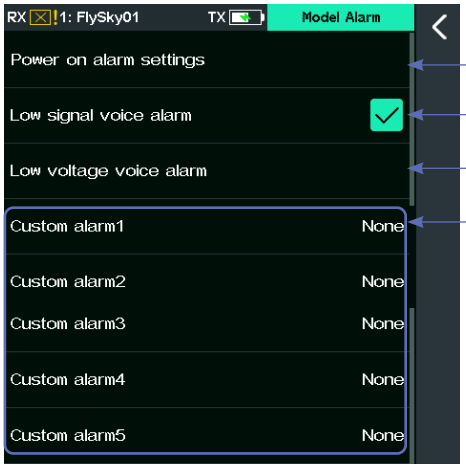
1. Tap **FUEL alarm** to enter.
2. To restart the remaining fuel count:
   - Tap **Reset**.
   - Or reset by assigning switches: Tap -- to enter the switch assignment interface; Tap the interface switch and select the on or off position. Click to return.
3. To set the fuel consumption calculation parameters, tap **Remaining fuel calculation** to enter.
   - Tap the box to the right side of **Start throttle** to set the appropriate start value.
   - Tap the box to the right side of **Tank capacity** first, then click **+** / **-** to set an appropriate capacity.
   - Tap the box to the right side of **Fuel C. range** first, then click **+** / **-** to set an appropriate range.
   - Tap the box to the right side of **Fuel Exp** first, then click **+** / **-** to set an appropriate rate.
4. Tap the box to the right side of 'Alarm Fuel', then click **+** / **-** to set an appropriate fuel value.
5. To set alarm method, tap the corresponding function box to the right of 'A. type' to enter the settings interface for sound or vibration.
   - Tap the appropriate function item for sound or vibration, then click to return.
6. The Fuel alarm function is default to being disabled, you can click to enable it; or set a record switch to turn the function on/off.
   - Tap the box to the right side of 'Record switch', then tap the interface switch and select the on or off position. Then click to return.

Notes:

1. If the system sound and alarm sound are turned off (General>Sound>System sound/ Alarm sound), the alarm will not sound even if it is enabled here.
2. The fuel consumption icon in the status bar at the top of the main interface is red, indicating that the current remaining fuel has reached the set alarm fuel value.
3. If the record switch is set to Off, then the fuel consumption icon will not be displayed in the main interface. And fuel consumption calculation will be paused with no alarm prompts.

7.16 Model Alarm

Set up alarm features, including **Power-on alarm settings**, **Low signal voice alarm**, and **Low voltage voice alarm**, while also allowing users to customize alarm targets.



Power-on alarm settings Entry

To set low signal voice alarm.

To set low voltage voice alarm.

Custom Alarm 1 to Custom Alarm 5 entries

7.16.1 Power on Alarm Settings

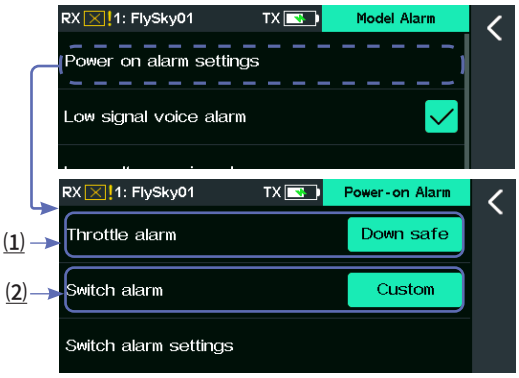
You can set up alarm functions for throttle and switch position, as well as the specific locations for the alarms.

Setup:

1. Tap **Throttle alarm**.
   - You can switch between **Always safe**, **Mid safe**, and **Down safe**.
2. Tap **Switch alarm**.
   - You can switch between **Custom** and **Always safe**. After selecting **Custom**, click on **Switch alarm settings** to enter the next level interface.
   - Click on the appropriate switch. Then click to return.

Notes:

- The throttle alarm function only detects whether the J3 control's position is at the lowest position.
- If J3 is not assigned as a throttle control or is used in a special mode, please consider whether to select the alarm based on its actual use.



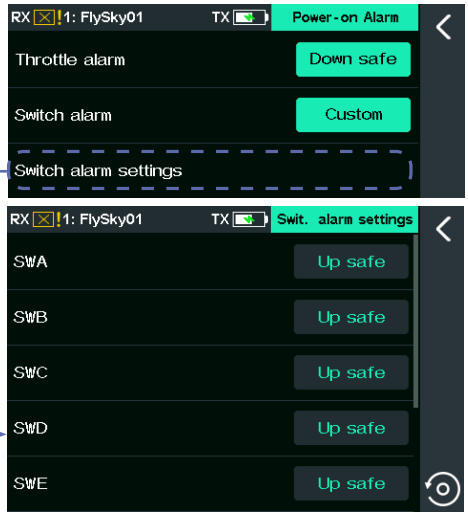
(1) For RF enabling, it is used to set the safety judgment and alarm for the throttle main control (J3) position. The default is down-position safety.

Always safe: No alarm action.

Mid safe: If the J3 position is not at the mid position, execute an alarm.

Down safe: If the J3 position is not at the down position, execute an alarm.

(2) Set the safety judgment and alarm for the switch position when RF is enabled. Default is Custom.



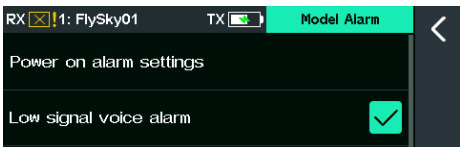
7.16.2 Low Signal Voice Alarm

To enable or disable the Low signal voice alarm feature.

Setup:

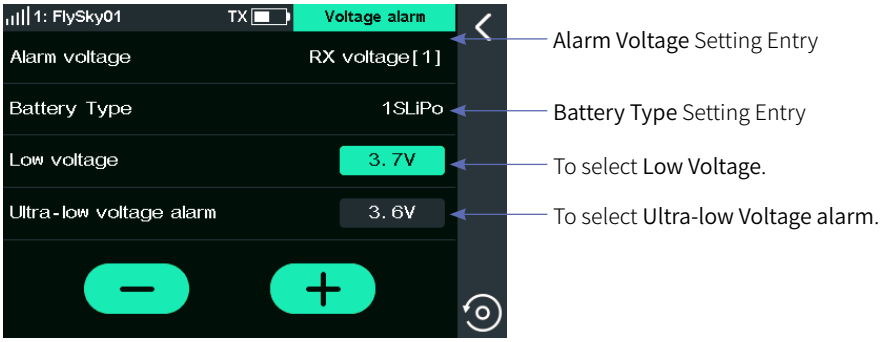
Tap **Low signal voice alarm**, when it is not ticked (√), it indicates that the function is disabled.

With this function checked, the LED of the transmitter flashes and the transmitter gives a voice alarm of 'Low signal' when the RSSI of the receiver is lower than or equal to 30.



7.16.3 Low Voltage Voice Alarm

You can set the Alarm voltage, Battery type, Low voltage alarm value, and ultra-low voltage alarm threshold. Once set, if the battery voltage of the related device drops below the specified alarm voltage, the transmitter will trigger a voice alarm, providing 'Low Voltage' or 'Ultra-Low Voltage' voice prompts to warn the user.



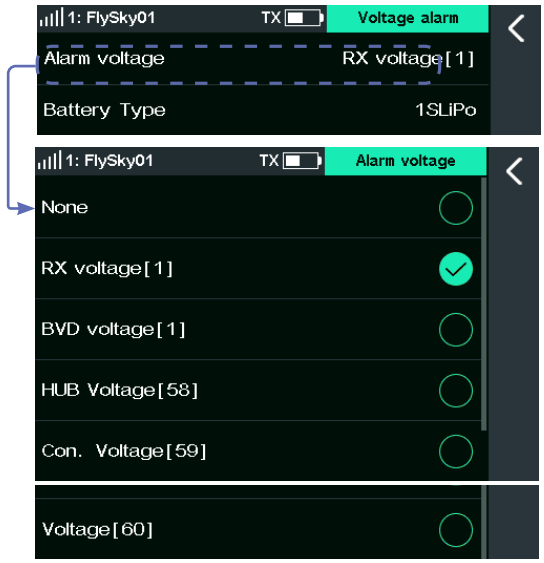
Setup:

1. Tap **Alarm voltage** to enter the next level interface.
   - Set the appropriate function item based on the actual device, then click ◀ to return.
2. Tap **Battery Type** to enter the next level interface.
   - Choose the suitable battery type based on the actual device's voltage type, and then click ◀ to return.
3. Tap **Low voltage** or **Ultra-low voltage alarm** function item.
   - Set the appropriate voltage alarm value based on the actual device's voltage by clicking +/-.

Notes:

1. For enabling and disabling sound function, please refer to 14.1.3 Sound.
2. If selecting BVD voltage, the receiver must have a BVD connector and use the BVD detection line to measure the BVD voltage.

Connecting to i-BUS2 Protocol Device Interface:



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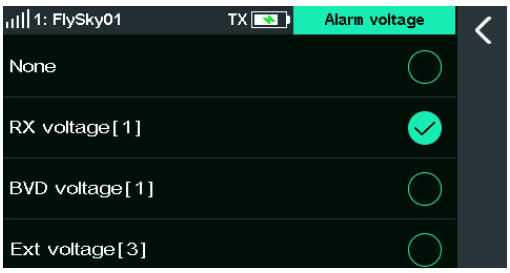
3. If two receivers are bound, the receiver voltage alarm setting is for the voltage of the primary receiver.

Connecting to i-BUS Protocol Device Interface:



7.16.4 Custom Alarm

You can customize alarm targets and their parameters. For example, you can set an alarm to trigger when a 'Sensor Data', 'Output Channel, or 'Stick or Knob' is within a specific range. The system supports setting up to 5 groups of custom alarms.

Alarm object Setting Entry

Alarm Type (Sound or Vibration) Setting Entry

The switch which is used to enable or disable the feature.

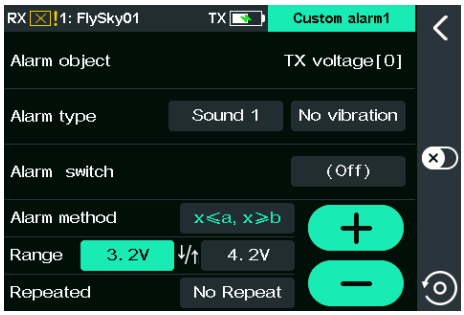
Display assigned switches; entry for assigning alarm enable switches.

To set Alarm method.

To set the range.

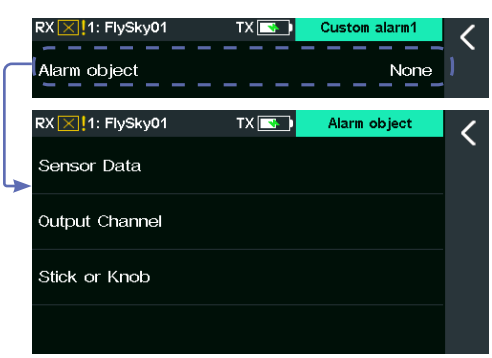
Set whether to repeat alarms and the interval time for repetition.

Interface after setting alarm objects:



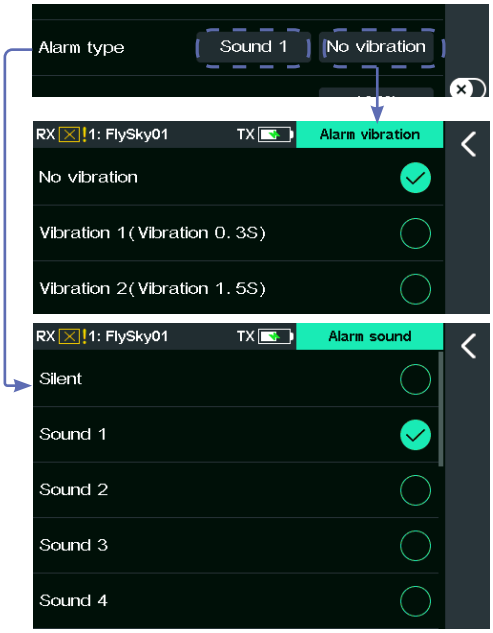
Setup:

1. Tap **Custom alarm1** to enter the next level interface.
2. Tap **Alarm object** to enter the next level interface.
   - Tap **Sensor Data**, **Output Channel**, or **Stick or Knob** to enter the next level interface, and select the appropriate function item.
3. To set the alarm type, tap the corresponding box to the right of 'Alarm Type' to enter the sound or vibration settings interface.
   - Tap the appropriate sound or vibration function item,and then click to return.
4. To set the Alarm method.



- Tap the function box to the right of 'Alarm method' to switch between alarm methods: one triggers an alarm within a set value range (i.e., when [a ⩽ x ⩽ b]); the other triggers an alarm outside the set value range (i.e., when [x ⩽ a, x ⩾ b]).

5. Tap the function box to the right of Range.
   - Tap +/- to set the appropriate alarm value.
6. Tap the function box to the right of 'Repeated'.
   - Tap to toggle whether to repeat and how often to repeat.
7. To enable/disable the alarm function, tap to turn on; or assign a switch to turn on/off it.
   - Tap the box to the right of 'Alarm Switch' to enter the switch settings interface.
   - Tap the interface switch and select the on or off position, and then click to return.



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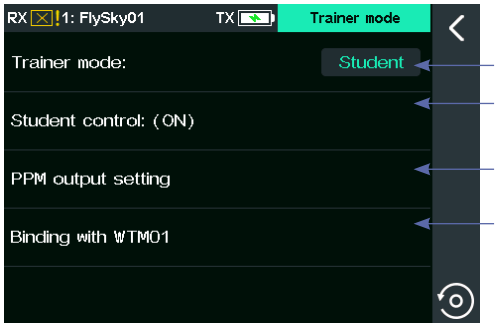
7.17 Trainer Mode

The system supports two functional Trainer Mode and Student Mode. A transmitter set to Trainer Mode can accept external signals to control the model, meaning it has the capability to recognize external PPM signal inputs and can identify a properly connected wireless trainer unit. In contrast, a transmitter set to Student Mode only outputs PPM signals, does not recognize any input signals, and cannot identify connected wireless trainer unit. Two transmitters (one set to Trainer Mode and one set to Student Mode) can be connected either through a trainer cable or via a wireless trainer unit, and both connection methods can be used simultaneously.

Notes:

1. If connecting two transmitters via a trianer cable, ensure that the cable is connected correctly.
2. If connecting via a wireless trainer unit, ensure that the unit is properly connected and communicating normally.
3. The transmitter's Trainer Jack can adaptively recognize incoming PPM signals, so most devices that support PPM output can serve as an external input signal source for trainer mode. However, some devices may not support this feature; in such cases, the PPM output of the Trainer Jack can be configured to match the specific PPM signal recognition requirements of external devices.

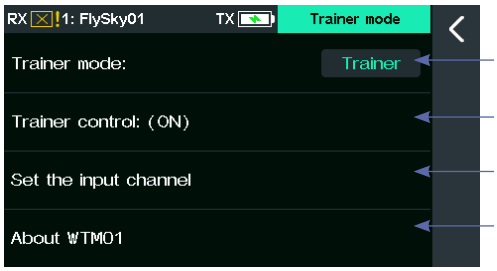


Tap to toggle between **Trainer** or **Student**.

Tap to enter the switch setting interface.

Tap to enter PPM setting interface.

Tap to enter the interface of binding with the wireless trainer unit.



Tap to toggle between **Trainer** or **Student**.

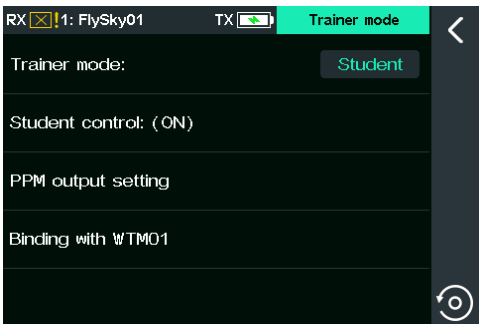
Tap to enter switch setting interface.

Tap to enter input channel setting interface.

Tap to view the information about the wireless trainer unit.

7.17.1 Student Mode

When the transmitter is set to Student, it only supports the functions of Student Mode. At this time, you can match the transmitter in Trainer Mode by setting the student control switches, configuring the PPM output of the Trainer Jack, and binding the wireless trainer unit functions, thereby realizing the application of trainer functions.



Trainer Mode

To switch between the **Trainer mode** or the **Student mode**.

Setup:
Click **Trainer Mode** repeatedly to switch between **Tainer** or **Student**.

Student Control

Toggle the switch for whether the student accepts control. This switch is usually effective only when Trainer control is set to off in trainer mode.

Setup:
Click **Student control** to enter the switch assignment menu and set the appropriate button. Refer to Chapter 16 in this manual.

Note: Under normal circumstances, make sure that the student control switch is enabled. In this case, the student signal can be sent to the trainer transmitter. Usually, the switch can be set to "--" and normally ON. Please refer to chapter 16 for the switch setting. When the trainer uses the student mode to remotely assist the student to practice, the control authority can only be switched through this switch if the control authority needs to be switched. For details of application scenarios, see the later section.

PPM Output Setting

Set the type of PPM signal output from the Trainer Jack, including settings for signal polarity, channel number, period, and start level.

Refer to **7.9.6 PPM setting** section for the description of Setup.

Binding With FS-WTM01

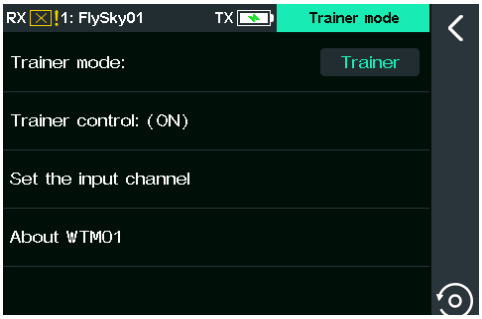
If two transmitters are connected using a wireless trainer unit, the student mode transmitter will establish a connection with the trainer mode transmitter through the Binding with WTM01 feature.

Setup:
1. Tap **Binding with WTM01** to put the transmitter into binding mode.
2. Power on the wireless trainer unit and it will enter binding mode. The LED of the wireless trainer unit is solid on after the binding is successful.

Notes:
1. After switching models, it is necessary to re-bind the wireless trainer unit; the receiver that was bound under the previous model will also need to be re-bound the next time it is used.
2. When binding, ensure that the operating mode of the wireless trainer unit is matched. For specific details, refer to the user manual.

7.17.2 Trainer Mode

When the trainer mode is set to Trainer, it indicates that the transmitter only supports the functions of the trainer mode. At this point, by adjusting the trainer control switch and input channels, etc., the transmitter can be matched with the student mode transmitter to implement the application of trainer functions.



Trainer Mode

Switching between trainer mode and student mode. By default, it sets to student mode.

Setup:
Click **Trainer Mode** to switch between **Tainer** and **Student**.

Trainer Control

The trainer control switch must be **OFF** before the external signals can be used to control the model.

Note: Under normal circumstances, the trainer uses the trainer mode to teach remotely. If you want to use the student mode to teach remotely, the trainer mode control switch must be OFF.

Setup:
Tap **Trainer control** to enter the switch assignment menu and set the appropriate button. Refer to Chapter 16 in this manual.

Setting The Input Channel

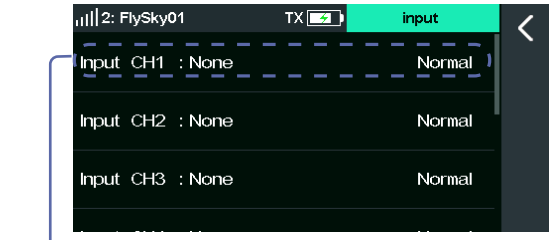
Assign the channel signals from the student transmitter to correspond to the functions of controlling the model.

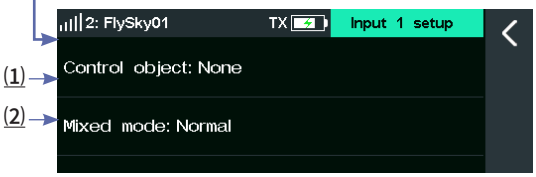
Setup:

1. Tap input **CH1-CH18** channels to enter the corresponding setting screen.
2. Tap **Control object** to enter the control object setting screen.
   - Tap **Stick** or **Knob** to enter the control object setting screen and select the appropriate stick or knob.
   - Tap **Basic Function** to enter the setting screen, and select the appropriate function item. This item is only available for aircraft models.
   - Tap **Output Channel** to enter the setting screen. Select the appropriate function item.
3. Tap **Mix mode** to enter the setting screen. Select **Normal** or **Mixed**.
   Normal means the model is fully controlled by the student transmitter; **Mixed** means the signals from both the student transmitter and the trainer transmitter are combined before outputting. Note that the transmitter not involved in control should ensure that the controls are in the neutral position.

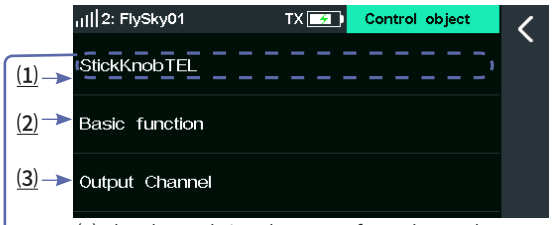
Notes:

1. If the control object is set to a stick/knob, the external input signal will be treated as the stick/knob value and applied in the function that executes control channel changes. For example, when Stick or knob is assigned to J3, if J3 is assigned to the throttle in the function assignment of the trainer mode transmitter, or if other functions are also assigned to J3 as a control, the student mode transmitter can then control the corresponding function.
2. If the control object is assigned to a function, the external input can be used as the primary control value for the function.
3. If the control object is assigned to a channel, the external input signal is used as the channel value, and in this case, the mixing control and trim of the trainer mode transmitter will be ineffective.





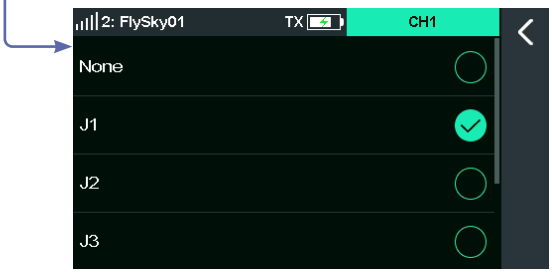
(1) Tap to enter the Control object setting screen.
(2) Tap to enter the Mixed Mode setting screen.



(1) The channel signals output from the student transmitter will be processed by all the functions corresponding to the stick/knob on the trainer transmitter.

(2) The signals output from the student transmitter will be processed by the basic function of the trainer transmitter.

(3) The signals output from the student transmitter will be processed by the output channels of the trainer transmitter.



About FS-WTM01

Used to view the information of the wireless trainer unit which is connected with the transmitter.

Setup:
Click **About WTM01** to view the information.

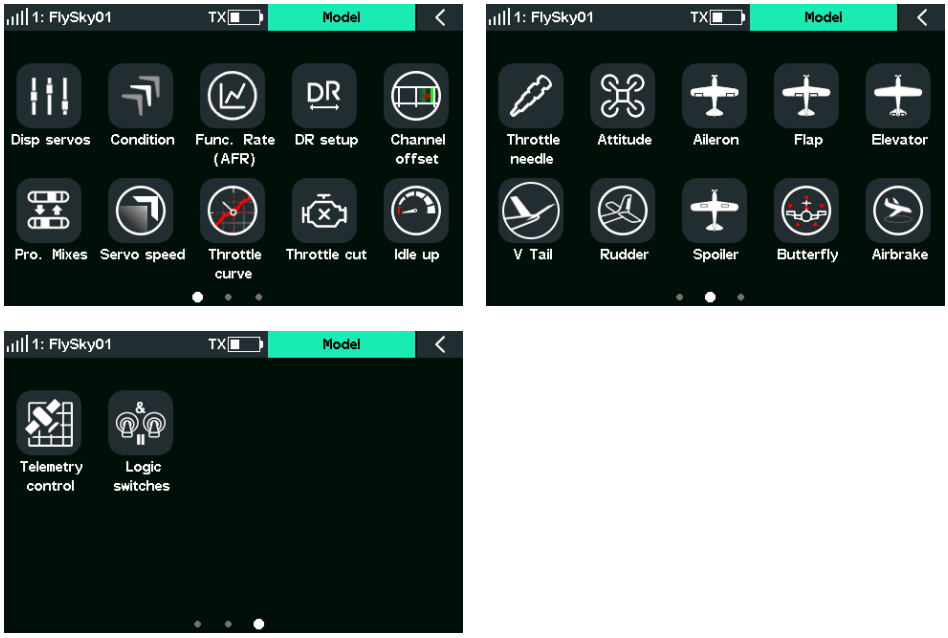
Instructions for trainer-assisted training usage:

1. This transmitter supports the assignment of switches to control whether the student's radio control signals are sent to the trainer mode transmitter when set to student mode. Additionally, the trainer mode transmitter can automatically switch to trainer control based on anomalies in the student's radio control signals (such as signal loss).
2. Based on this principle, when conducting trainer-assisted training, student should set his transmitter to trainer mode and assign the channels corresponding to the trainer control signals, while keeping the trainer control switch in the normally closed position; trainer should set his transmitter to student mode and assign a switch to control the student's signals.
3. During use, trainer can toggle the switch to disable the student's control authority, allowing the student to focus on practicing with the RC model while the trainer observes from the side. When the trainer determines that the student needs assistance, he can take over control by switching the switch.

8. Airplane/Glider Exclusive Function Setting

This chapter introduces the function settings for RC Airplane/Gilder mainly in default condition. Once you have set the related model parameters via (**Basic**) > **Models**, then you can access **Model** to set the related functions of the model via (**Model**).

Note: the function interface may different based on different model configurations.



8.1 Display Servos

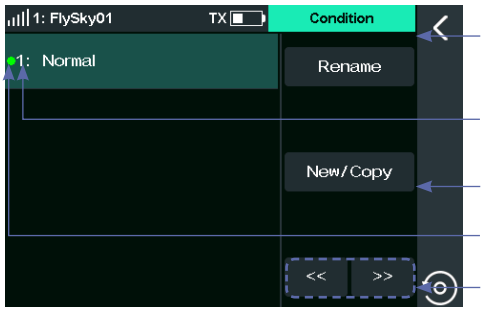
Please refer to **7.1 Display Servos** for this function.

8.2 Condition

You can set the condition selection mode. If you need to achieve different control effects through the switch or stick position, you can set this function. If you do not need to set this function, the transmitter will operate in the default condition, which is Condition 1. Users can add a new condition as needed by duplicating the existing ones. The system supports up to 5 conditions, and all conditions, except for the default, must be assigned a control (such as a switch or stick). Conditions are switched through the control, with later ones having higher priority. When a condition is set to the top of the interface, that condition becomes the default condition. The current condition can be determined by viewing the condition icon displayed on the main interface or the interfaces related to condition settings.

Note: Different parameters can be set for multiple functions of this transmitter by switching between different conditions, to perform control operations in different conditions according to different setting parameters. The details are as follows:

1. Func. assign: Different assignments of control and trim can be set for different conditions, or the same settings can be applied to all conditions.
2. Digital trim (TR1~TR6, KL and KR): Different trim values can be set for different conditions, or the same values can be used for all conditions.
3. DR setting: The effective condition can be selected (multiple choices). The DR effectiveness may vary when switching between different conditions.
4. Other items related to the condition can be set separately by switching between different conditions, and the channel operation can be executed according to this condition. Usually, the serial numbers and names of the current condition are displayed at the top of these function interfaces. These setting items are included in the following function interfaces: Func. assign, Channel offset, Pro.Mixes, Servo speed, Throttle curve, Aileron, Flap, Airbrake, Elevator, Spoiler, Butterfly, V Tail, Pitch curve, Thro mixed, Swashplate, Hover adjust, Gyroscrope, Governor, and Rudd Linkage.



Tap to enter the rename editing interface.

The number 1 is the serial number of the condition, with a total of 5 conditions ranging from 1 to 5. The condition with serial number 5 has the highest priority, while the condition with serial number 1 is the default, having the lowest priority.

Click to create a new condition according to the current condition.

The green dot here indicates that the condition is the current condition in use.

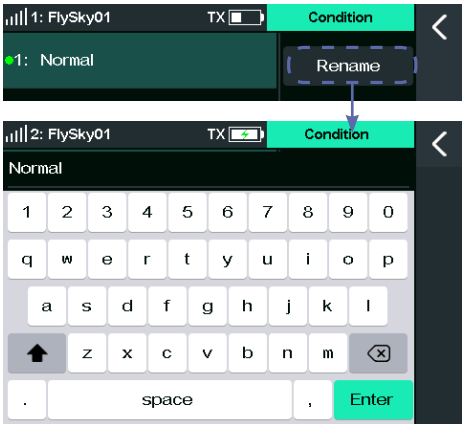
The icon allows you to move the selected condition forward or backward. When there are multiple conditions, click "《" to move the selected condition backward, or click "》"to move it forward.

8.2.1 Rename

To rename the condition selected.

Setup:

1. Tap **Rename** to enter editing interface.
2. Tap the characters that you want to use,the system supports up to ten characters. Then click ◀ or **Enter** to return.



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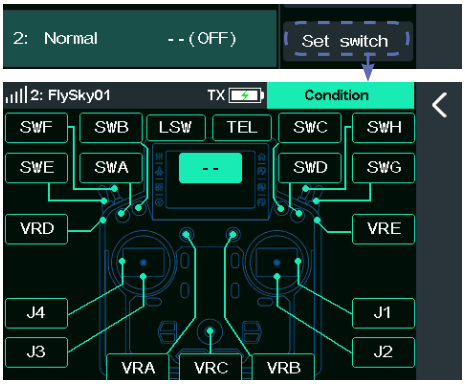
8.2.2 Setting Switch



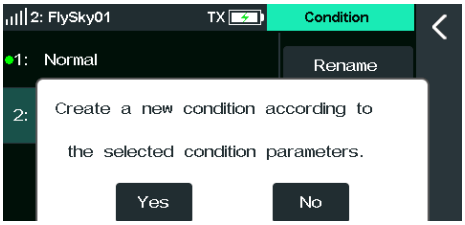
To set a switch to switch among the conditions.

Setup:

Tap **Set switch** to enter switch setting interface.

Tap the related switch and the status. Then click ◀ to return.

8.2.3 Creating/Copying A Condition

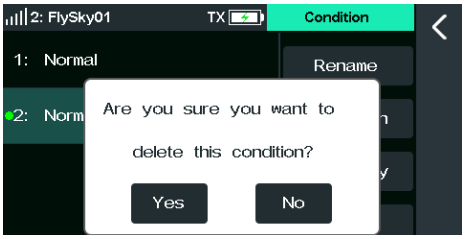


To create a new condition.

Setup:

Tap **New/Copy** and a pop-up screen will appear. Click **Yes** to complete. Then click ◀ to return.

8.2.4 Deleting A Condition



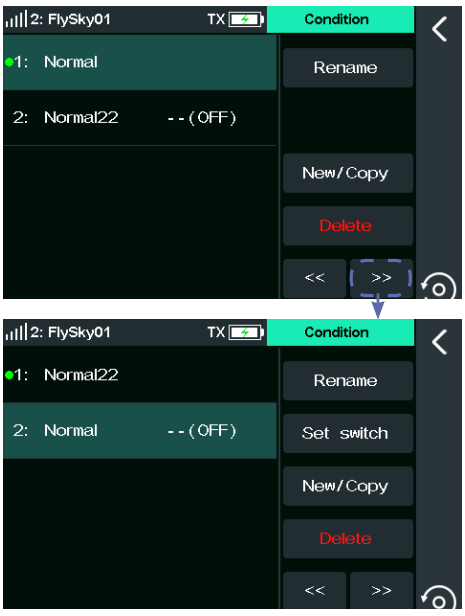
To delete a condition selected.

Setup:

1. Tap a condition you want to delete.
2. Click **Delete** and a pop-up screen will appear. Click **Yes** to complete. Then click ◀ to return to the previous interface.

Note: If there is but one group of condition, you cannot delete it, namely there is no Delete function item.

8.2.5 Changing The Order Of The Conditions



Changes the order of the conditions so as to change the priority. The condition corresponding to the serial number 5 has the highest priority, and the number 4 is the next highest priority. The system works in this way according to this sequence.

Setup:

1. Tap to select a condition.
2. Click 《 to move the condition selected forward. Click 》 to move the condition selected backward.

Notes:

1. Condition 1 is the default condition and does not support switch settings; that is, the serial number of the default condition is 1.
2. After the transmitter is turned on, the system will automatically judge whether the switch for condition 5 is on or off. If it is on, it will operate in the condition 5. If it is not on, the system will judge whether the switch of condition 4 is on or off. If it is on, it will operate in the condition 4. The system continues this process in sequence.

8.3 Func. Rate(AFR)

You can set servo volume change curves of all sticks, knobs, and switches assigned to the channel. You can switch to different conditions to set different curves respectively. The servo volume change curve for the conditions controlled by **DR** is set after enabling the **DR**. Those not supporting the assignment of the master control, such as Flap 2, cannot be set. The allocation of the same function of different channels from any setting entrance into the settings is the same. It is recommended to set the Func. rate after completing the channel travel setting. Any mix source will have the Func. rate function applied.

Note: Functions displayed in grey are not selectable.

Tap to enter the rate setting interface for the corresponding channel.

Display the real-time position of the control that has been assigned to this function.

Display the real-time output rate of this function.

Tap repeatedly to toggle among the curve type.

Tap to select **Rate A**.

Tap to select **Rate B**.

Tap to enter interface for **DR rate**.

Tap to select **EXPB**.

Tap to select **EXPA**.

Tap to select **Offset**.

Display the real-time rate and line type.

Note: **RateA** represents the ratio to the left of the neutral position, and **RateB** represents the ratio to the right. **EXPA** is the curve to the left of the neutral position, and **EXPB** is the curve to the right. The selection of separate or full adjustments depends on the curve type. When the curve type is **EXP1**, **EXP1** can not be adjusted separately,even though it distinguishes between A and B. When the curve type is **EXP2**, **SYMM** (symmetric), the rate and curve are divided into A and B. In this case, A and B must be set in linkage and cannot be adjusted individually. When the curve type is **EXP2**, **LINE**, the rate and curve are divided into A and B, and both A and B can be adjusted separately.

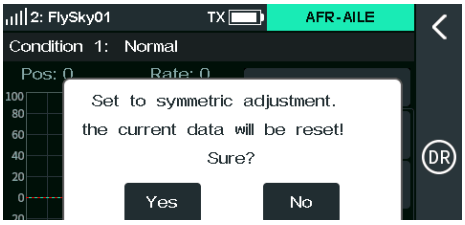
8.3.1 Setting Curve Type

Set the curve type.

Setup:

Enter the rate setting interface. Tap '**EXP**, **SYMM** ' repeatedly to toggle among the selections.

Please note that the data will be reset when the line type is changed.



8.3.2 Setting Rate/EXP/Offset

Set the related **Rate**, **EXP** and **Offset** after a line type has been set. Take Rate setting as an example.

Setup:

1. Enter the setting interface and set to '**EXP2, LINE**'.
2. Tap **Rate A**.
3. Click **+** or **-** to set an appropriate rate value.

For the setting of **EXP** and **Offset,** refer to the setting of **Rate**.

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8.4 DR Setup

Set the function, switch, and effective condition to enable the Dual Rate (DR). The transmitter supports 10 groups of DR settings. When two or more DR setups are assigned to the same function and both are enabled, the one with the higher priority is the one that comes later in the sequence.

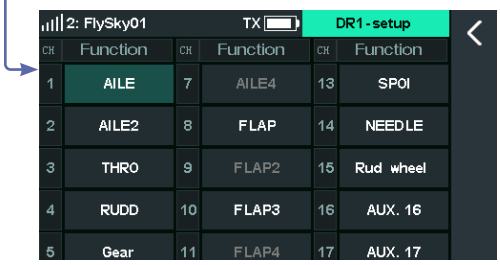
Setup:

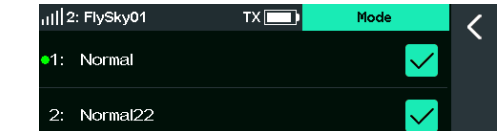
1. Access **DR** setting interface, tap a function box corresponding to a **DR** to enter.
2. Tap an appropriate function, then click to return to the previous interface.
3. Tap the function box corresponding to the **DR** below the **Switch** and set a switch to the function, and tap the interface switch and select the on or off position.
4. . Then click to return to the previous interface.
5. Tap the function box below the **Mode**, then tap the mode which activate **DR** mode. Click to return to the previous interface.

Notes:

1. When all 5 conditions are selected, **All** is displayed.
2. If some conditions are selected, the serial number of the selected condition will be displayed.
3. If there is no condition selected, **Disabled** is displayed.
4. The function of linkage control does not support settings of **DR**.

(1) To enter the function setting interface.
(2) To enter switch assignment interface.
(3) To select the condition which activates DR.



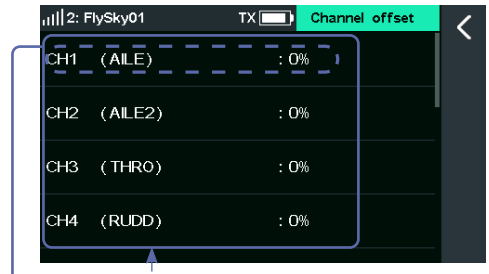


8.5 Channel Offset

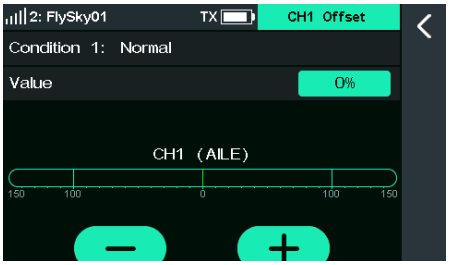
This function allows you to adjust the neutral point offset for each channel and set different offset values for different conditions. For functions that require different neutral point positions in various conditions, this feature enables convenient setup. Excessive offset settings may reduce the control range at one end of the channel; if there are significant structural deviations in the aircraft, it is advisable to calibrate the aircraft properly before proceeding.

Setup:

1. Tap a channel you want to adjust to enter.
2. Click **+** or **-** to change the offset value to the desired point. Then click to return to the previous interface.



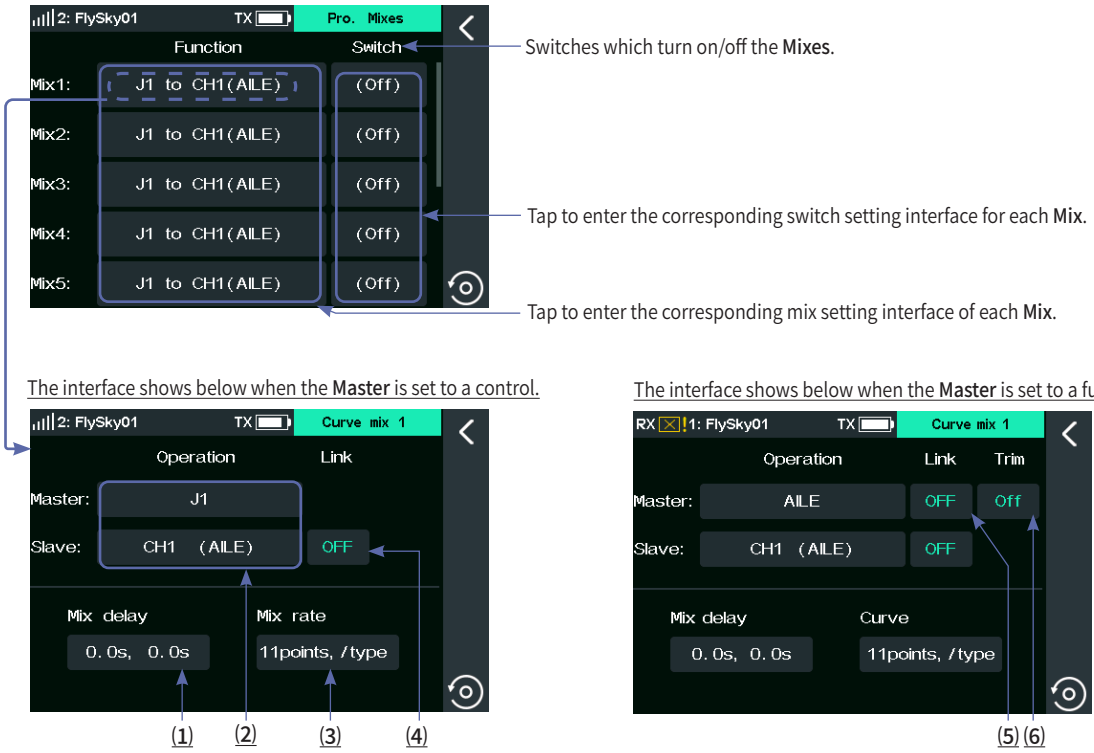
To enter the corresponding screen of channel offset.



8.6 Program Mixes

A new special control combo can be created to address the model's shortcomings. You can select a stick/knob or a function as the **Master**. When selecting a function, you can set whether other mixes associated with the function affect the **Slave** within the same group, as well as whether the trim affects the slave. This function allows you to map the master's servo changes to the slave channel using a custom curve. You can set a switch to enable/disable the **Mix**, and you can also set the delay for enabling or disabling the mix function, if the master's servo speed is set to ease in the function settings, the slave will also follow the master's easing behavior.

This feature can be applied to various scenarios: establishing links with other mixes, setting separate links for the master and slave with the option to reverse the connection direction; enabling or disabling trim mode; and setting curve mixing ratios and mixing delays for each mix group individually.



(1) Tap to enter the interface of **Mix delay**.

(2) Click to enter the corresponding interface of **Master** or **Slave**.

(3) Tap to enter the interface of **Mix rate**.

(4) Tap to set the link mode of **Slave** to **Master**, including **OFF**, **NOR** or **REV**.

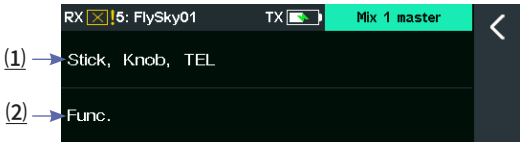
(5) Tap to set the link mode of **Master** to **Slave**, including **OFF**, **NOR** or **REV**.

(6) Tap to set to turn on/off the trim of **Master**.

Note: When the Mix is activated and the trim of its Master is set to On, the trim of the Master will affect its Slave. If the trim is set to Off, the trim of the Master will not affect the Slave.

8.6.1 Setting Master And Slave

Set related settings of **Master** and **Slave**.



(1) Tap to enter the screen of setting **Master**'s control.

(2) Click to enter the screen of setting **Master**'s function.

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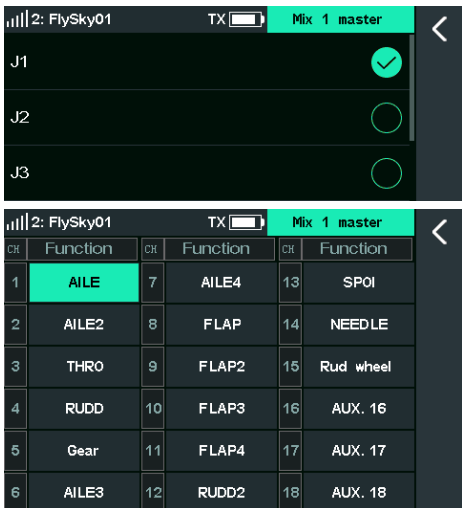
Master Selection

Set related settings of **Master**. **Master** can be set as either a control or a function.



Setup:

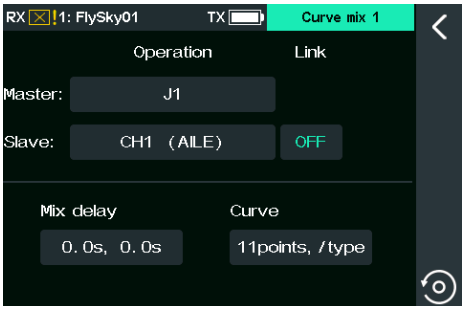
1. Tap the function box next to **Master** to enter.
2. If you want to set **Master** to a control, tap '**Stick, Knob, TEL**' to enter. Then tap the desired contol or knob you want to set. After that, click ◀ to return.
3. If you want to set **Master** to a function, tap **Func.** (function) to enter. Then tap the desired function you want to set. Then click ◀ to go back to the previous interface.

For **Slave**, you can only set it to a function, for the function setting of **Slave**, please refer to the descriptions of **Master** above.

Note: When **Master** is set as a control, the **Link** and **Trim** function are disabled, that is, it will not appear **Link** and **Trim** items.

Master Link/Slave Link

The link can be set for **Master** and **Slave**, when **Master** is set to a specific function. The **Link** is to set whether the master function will affect the slave function when it is affected by other mixes. **Slave Link** is to achieve the result of this group of mixers used as a source of link for other mixes to select this group of slave functions as its master.



Setup:

Tap the function box below **Master Link**. You can repeatedly click to toggle among **NOR**(normal), **REV**(reverse) or **OFF**.

Note: **Nor**(normal) refers to a forward call, and **REV**(reverse) refers to a reverse call. When **Master Link** is set to **OFF**, other function mixing volume will not affect **Slave**.

Take the link setting between **Mix1** and **Mix2** as an example.

Mix1			Mix2		
Master	Func.	ELEV	Master	Func.	AILE
	Link	OFF		Link	NOR/REV
Slave	Func.	AILE	Slave	Func.	THRO
	Link	NOR/REV		Link	OFF

Master Trim

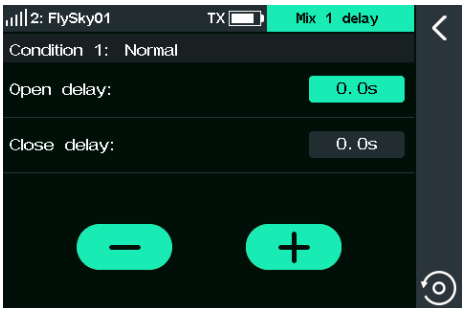
Set related trim settings of **Master**.

Setup:

Tap the function box below **Master Trim**. You can repeatedly click to toggle between **Off** or **On**.

Note: When the trim is set to **On**, **Master** trim changes will also affect **Slave**. When it is set to **Off**, **Master** trim changes will not affect **Slave**.

8.6.2 Setting Mix Delay

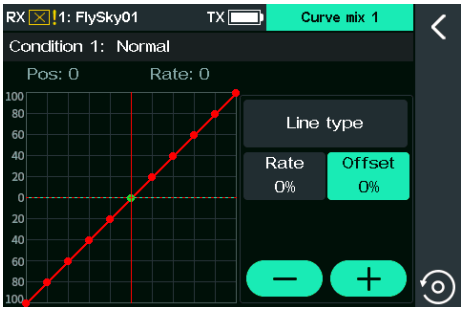


Set the delay time for the current condition from triggering to taking effect for **Open delay** or **Close delay** of the **Mix**. If the **Mix delay** needs to be set for other conditions, switch to other conditions prior to settings.

Setup:

1. Tap **Open delay** or **Close delay**.
2. Click **+** or **-** to set the appropriate value. Then click to return to the previous interface.

8.6.3 Setting Mix Rate



Set the mix rate for the channel for the current condition.

Setup:

1. If you want to change the line type and amount of the dots, tap **Line type** to enter the interface.
2. Tap the appropriate item and click **Yes** in the pop-up menu to complete.
3. Tap **Rate**.
   - Tap 《 or 》 to select a dot.
   - Click **+** or **-** to set the appropriate value.
4. Tap **Offset**.
   - Click **+** or **-** to set the appropriate value. Then click to return to the previous interface.

Note: Refer to the introduction in Chapter 16 for Line type settings.

If the models are the multi-aileron, multi-elevation or multi-flap structure, you can set the mix through the aileron, flap and elevation mix function when the mixes are required for aileron, elevation and flap.

8.7 Servo Speed

This section introduces the settings of the **Servo speed** function. Typically, this function can be used to simulate the movements of a real aircraft, and it can also be used for situations where some control surfaces require gradual changes.

Set by Function

Configure the easing for the model's main functions, and once set, all channel values related to the function will execute the easing.

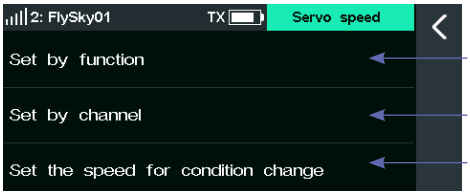
Set by Channel

All output from this channel will be eased.

Servo speed setting when switching conditions

Refer to the easing being applied to the relevant channel values when change from one condition to another.

Note: The corresponding function interfaces vary with model structures (for example, an aircraft with or without a tail).



Tap to enter the interface of **Set by function**.

Tap to enter the interface of **Set by channel**.

Tap to enter the interface of **Set the speed for condition change**.

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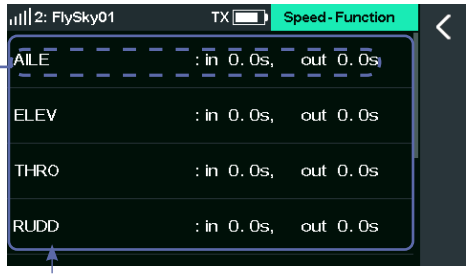
8.7.1 Servo Speed- Set By Function

This feature can reduce the output speed of some main functions (such as aileron, throttle, rudder, spoiler, etc.). The easing times for start(**In speed**) and recovery(**Out speed**) can be set separately, achieving variations in the duration of the easing by having different speeds for start and recovery speeds.

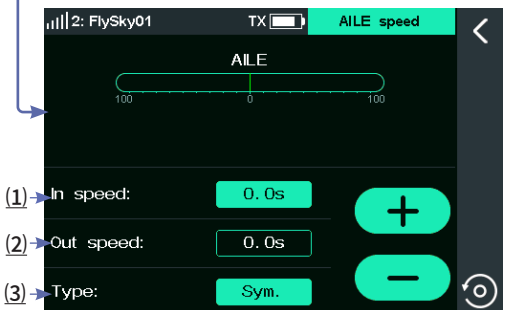
After setting the delay for the master function, all channel outputs associated with this function will be eased. If the **Pro. Mixes** use this main function as the master, the slave in the same group will also be eased. For example, if you set the aileron function delay time to 2 seconds, the corresponding slave outputs for the aileron functions such as **Aileron to Elevator**, **Aileron to Rudder** and other mix functions will also change gradually.

Setup:

1. Tap item you want to set to enter.
2. Tap the function box next to **In speed**, then click **+** or **-** to set the time.
3. Tap the function box next to **Out speed**, then tap **+** or **-** to set the time.
4. Tap the function box next to **Type.** You can repeatedly click to toggle between the items. Then, click ◁ to return to the previous interface.



Tap to enter the corresponding speed setting interface.



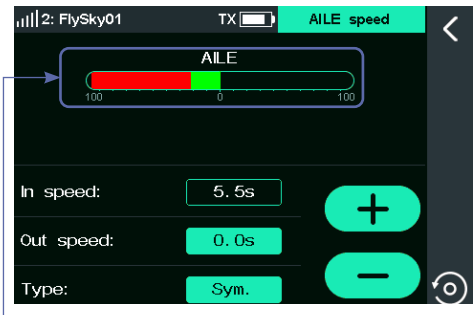
(1) Tap to select **In speed**, the shorter time is, the faster speed is.

(2) Tap to select **Out speed**, the shorter time is, the faster speed is.

(3) Tap to toggle between **Line** and **Sym.**(symmetry). **Sym.** means the neutral (ratio: 0%) is the reference point. **Line** means the low end (ratio: smallest value) is the reference point.

Note: Recovery refers to the value change from far from the reference point to close to the reference point, which is output by **Out speed**. Start refers to the value change from close to the reference point to far from the reference point, which is output by In speed.

After setting, the interface shows below when push/pull the **control** which is assigned to the channel.



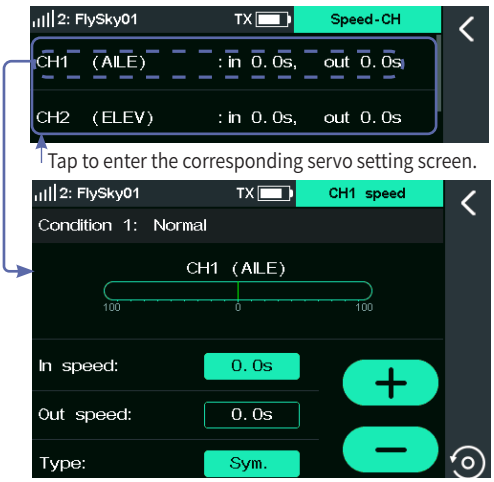
The red bar shows the set input value, the green shows the output value.

8.7.2 Servo Speed- Set By Channel

This can reduce the output speed of channels (such as CH1, CH2, etc.). The easing for start and recovery can be set separately, that is, the easing time can be changed by different start and recovery speeds.

You can use this function if you want to simulate the movement of a real aircraft or make up the mechanical virtual position of the servo.

After setting the easing time, all the volumes output from this channel execute the easing.



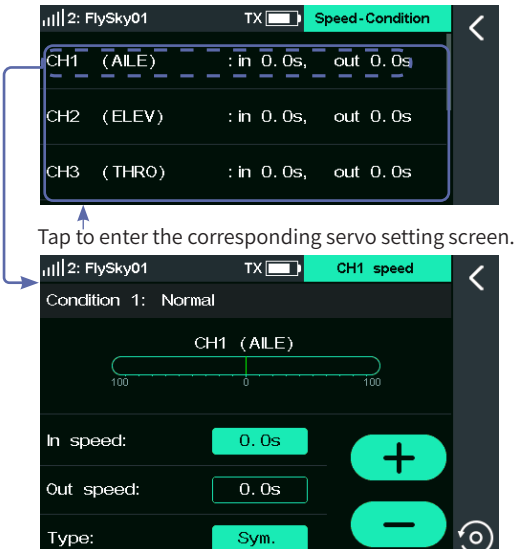
Setup:

1. Tap item you want to set to enter.
2. Tap **In speed**, then click **+** or **-** to set the appropriate time.
3. Tap **Out speed**, then click **+** or **-** to set the appropriate time.
4. Tap the function box next to **Type.** You can repeatedly click to toggle between the items. Then, click ◀ to return to the previous interface.

8.7.3 Servo Speed- Set By Condition

This can reduce the output speed of channels which is changed caused by condition switching.

You can use this function for some speical flight which is in smooth transition. For example, when changing the model from NOR mode (Normal Mode) to 3D mode (Aerobatic Mode) the aircraft attitude must be switched by a smooth transition.

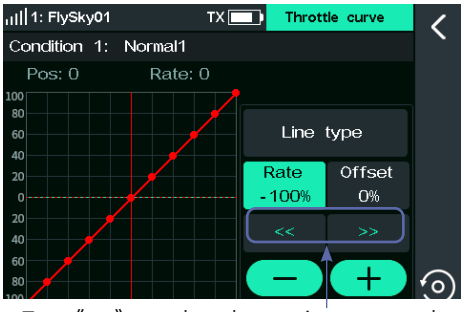


Setup:

1. Tap item you want to set to enter.
2. Tap **In speed**, then click **+** or **-** to set the appropriate time.
3. Tap **Out speed**, then click **+** or **-** to set the appropriate time.
4. Tap the function box next to **Type**, then click ◀ to return to the previous interface.

8.8 Throttle Curve

This function allows the throttle control to respond to engine speed changes more as expected to achieve the best results in the control of the engine. Different input and output rate factors (up to 11 points) are set through multi-point curves. The throttle curve will operate on input values of all control levers assigned to the throttle function before the next step (**Func. rate**). The multi-engine model throttle curve will operate for all throttle controls. This setting is for the current condition. For the settings of other conditions, switch to other conditions prior to carry out the settings.



Tap 《 or 》 to select the previous or next dot.

Note: The horizontal axis represents the input value of the throttle stick. The vertical axis represents the output value of the throttle after caculation.

Setup:

1. If you want to change the line type and amount of the dots, tap **Line type** to enter the interface.
2. Tap the appropriate item and click **Yes** in the pop-up menu to complete.
3. Tap **Rate**.
   - Tap 《 or 》 to select a dot.
   - Click **+** or **-** to set the appropriate value.
4. Tap **Offset**.
   - Click **+** or **-** to set the appropriate value. Then click ◀ to return to the previous interface.

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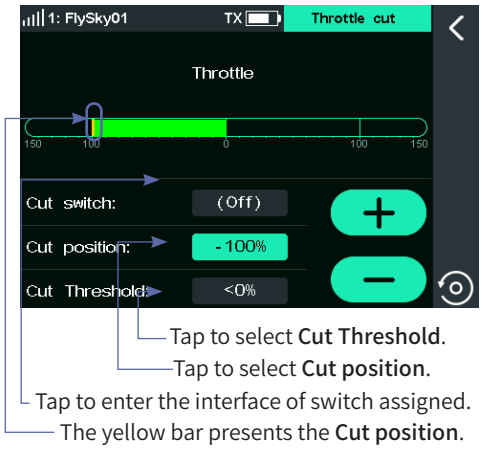
8.9 Throttle Cut

This function is a special setting for oil-operated engine. You can set the **Cut switch**, **Cut position** and **Cut Threshold**. When the throttle control is within the throttle cut threshold, toggling the throttle cut switch will turn off the engine. The output value of the throttle function when the throttle cut is activated is the throttle cut position value. This value will be limited by the channel reverse function and the channel range function, and all other volumes operated to the channel corresponding to this throttle are invalid. However, other functions of throttle mixing continue to operate.

For multi-engine models, the throttle cut can be set separately for Throttle 1, Throttle 2, Throttle 3, and Throttle 4.

Setup:

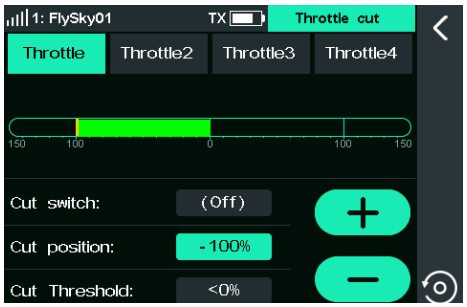
1. Tap the function box next to **Cut switch** to enter.
2. Set a switch to turn on or off the **Throttle cut**. Tap the interface switch and select the on or off position. Then tap ◁ to return to the previous interface.
3. Tap the function box next to **Cut position**, then click **+** or **-** to set the appropriate value.
4. Tap the function box next to **Cut Threshold**, then click **+** or **-** to set the appropriate value. Click ◁ to return to the previous interface.
5. Toggle the switch to confirm whether it works properly.



Notes:

1. When setting multiple throttles, tap ⊞ (Basic)>**Models > Type > Optional**, then click **Throttle**, to select the appropriate number of throttles. Once the setting is complete, this interface will display multiple throttles. Click the corresponding throttle to set. Refer to the above for settings.
2. For settings of switch, refer to the descriptions in chapter 16.

The interface for multiple throttle



8.10 Idle Up

This function can be used to set the throttle idle position, which can prevent the engine from shutting down when the throttle control is in a lower position. The minimum throttle position is defined by setting the offset value. Once this function is activated, the minimum throttle setting (idle point) will be determined by the offset value showed as a percentage. For safety reasons, this function will work only when the throttle control is below the lower position (-20%). The idle speed offset values of -100-0-100 correspond to a ratio factor of 80%-100-120%. The throttle control ratio will be multiplied with the ratio factor corresponding to the offset when the idle speed is enabled for the subsequent operation (throttle curve). When the throttle cut is enabled, the throttle hold and this function are not valid.
In multi-engine model, the idle switch is recognized only in the "throttle" control position (below -20%), and the throttle, throttle 2, throttle 3 and throttle 4 will be calculated when the idle is enabled.

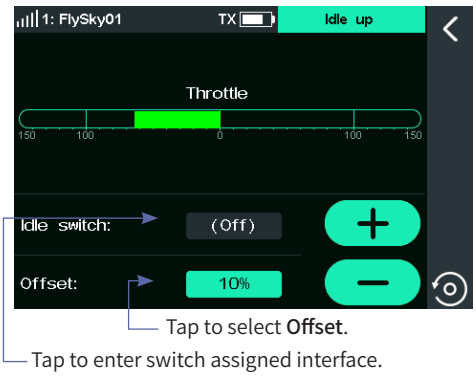
Setup:

1. Tap the function box next to **Idle switch** to enter.
2. Set a switch to turn on or off the **Idle up**. Then click ◁ to

return to the previous interface.

3. Tap the function box next to **Offset**, then click **+** or **-** to set the appropriate value. Click ◀ to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.



Note: If the offset value is negative, it means the idle speed is rising. When the offset value is maximum, it indicates that the throttle stick is close to the minimum throttle position.

8.11 Throttle Needle

The throttle needle function is designed for models equipped with a throttle needle. This function allows you to set the output rate of the throttle needle master control using a multi-point curve method.

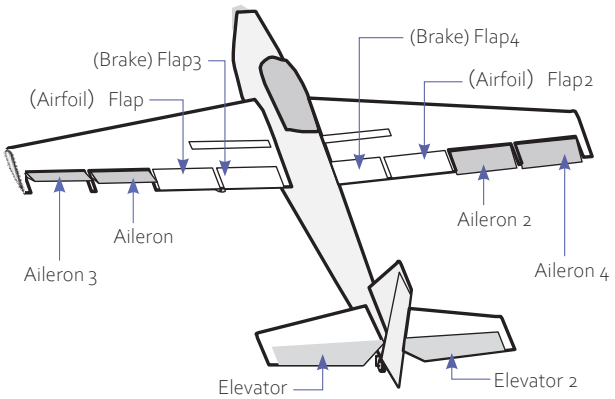
For example, if you need to link a throttle to a needle, you can assign the throttle needle controlled by the throttle stick, and achieve control of the needle through the throttle stick by adjusting the curve.

The setup steps for the throttle needle are similar to those for the throttle curve. Please refer to the related settings for the throttle curve.

8.12 Aileron

This section introduces the settings of the aileron and its mixes function. The parameter settings for this function apply to the current condition. To configure settings for a different condition, you must switch to that condition before making the changes.

Note: Due to varying model structures, such as differing numbers of ailerons and flaps, the corresponding function interface may vary. Usually, examples in this context describe up to four ailerons.



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8.12.1 Aileron Differential

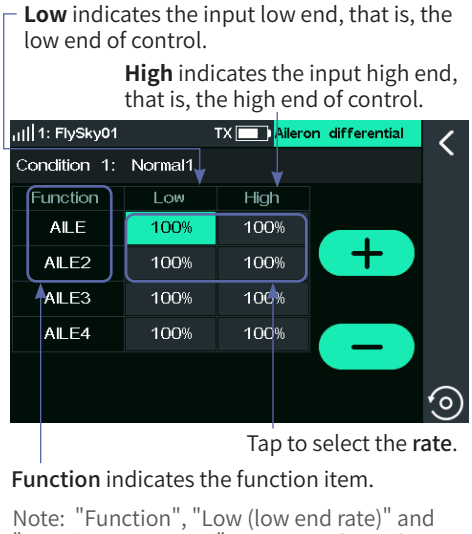
The left and right ailerons of the aircraft or glider can be adjusted independently. Differential aileron adjustment can be achieved by setting different high and low rate values for each aileron.

Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◁ to return to the previous interface.

For the setting of **High**, refer to the setting of **Low**.



Low indicates the input low end, that is, the low end of control.

High indicates the input high end, that is, the high end of control.

Tap to select the **rate**.

Function indicates the function item.

Note: "Function", "Low (low end rate)" and "High (high end rate)" in the interface of the Aileron, Flap, Elevation, Spoiler, and Rudder functions have similar meanings.

8.12.2 Aileron Elevator

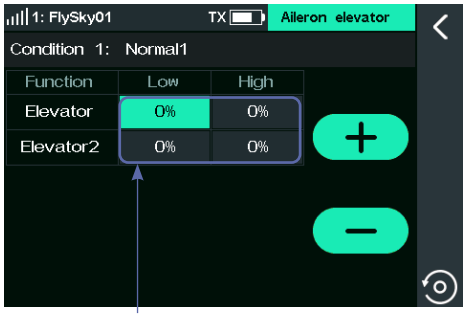
Set the elevator with the aileron function to improve the model's roll performance. Only the aircraft with the two elevator tails supports this function. You can set the high and low rate values of the two elevators to move with the aileron function.

Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◁ to return to the previous interface.

For the setting of **High**, refer to the setting of **Low**.



Tap to select the **rate**.

8.12.3 Aileron Camber Flap

This mixing function is used to set the linkage between the camber flap and the aileron allowing the flap to operate in conjunction with the aileron and thereby enhancing the maneuvering characteristics around the longitudinal axis.

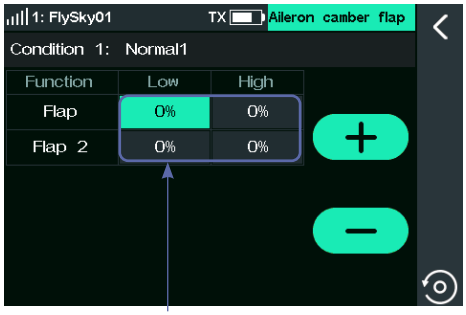
Note: This function is only available for the model with 2 or 4 flaps.

Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◁ to return to the previous interface.

For the setting of **High**, refer to the setting of **Low**.



Tap to select the **rate**.

8.12.4 Aileron Brake Flap

This mixing function is used to set the linkage between the brake flap and the aileron so that the flap can work together with the aileron, thus improving the maneuvering characteristics around the longitudinal axis.

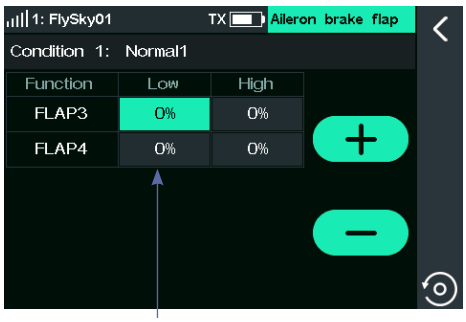
Note: This function is only available with 4 flaps.

Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◀ to return to the previous interface.

For the setting of **High**, refer to the setting of **Low**.



Tap to select the **rate**.

8.12.5 Aileron To Elevator

Usually, more lift is needed on ailerons when turning or rolling. This function allows you to set the compensation rate for the elevator during aileron movement. As a result, the elevator will undergo a compensatory trim according to the set rate during aileron movement, thereby preventing the aircraft from nosing down.

Note: If the model structure is a tailless (flying wing) aircraft, the aileron can be used as an elevator. This setting will affect all elevator surfaces, and even the aileron surfaces in case of a tailless aircraft.

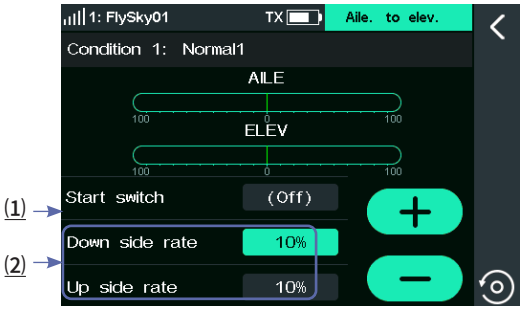
Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interface, and configure a switch to enable. Then click ◀ to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

For the setting of **High**, refer to the setting of **Low**.



(1) Tap to enter the switch assigning interface.
(2) Tap to select the **rate**.

8.12.6 Aileron To Rudder

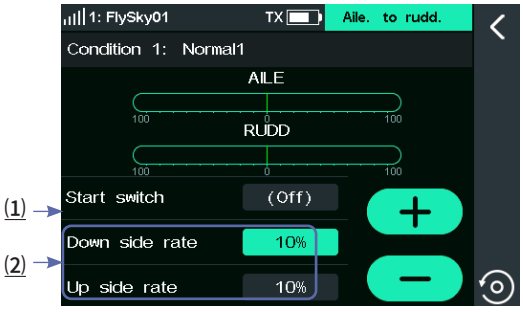
This mixes function is used to set the linkage between the rudder and the aileron. This function can be set to achieve the more coordinated and flexible steering and roll through the compensatory trim of the rudder during the aileron movement.

Note: When there are two rudders, rudder 1 and 2 will both be affected.

Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.



(1) Tap to enter the switch assigning interface.
(2) Tap to select the **rate**.

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2. Click **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interface, and configure a switch to enable. Then click ◀ to return to the previous interface.

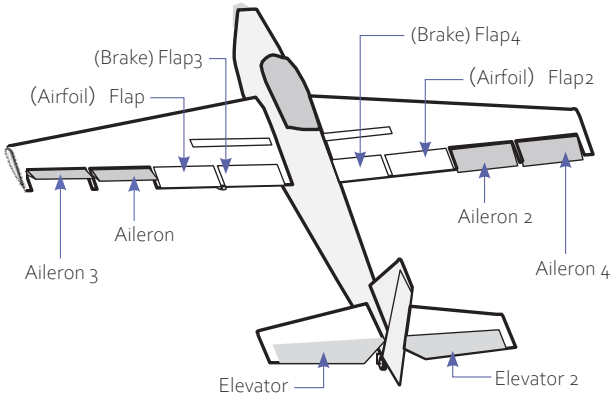
Note: For settings of switch, refer to the descriptions in chapter 16.

For the setting of **High**, refer to the setting of **Low**.

8.13 Flap

This section introduces the settings for the flap and its mixing function. The parameter settings of this function are for the current condition. To set in another condition, you need to switch the condition first.

Note: Due to the different model structures (for example, different number of ailerons and flaps), the corresponding function interface may be different. Usually, up to four flaps are described as an example.



8.13.1 Flap Setting

This function is used to set the high and low end rates and offset of flaps separately, for a model with multiple flaps, the upward and downward travel and neutral position of each flap can be adjusted independently.

The number of flap function items in the interface is related to the Wing set in Model, as shown in the diagram with an example of 4 flaps.

Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◀ to return to the previous interface.

For the setting of **High** and **Offset**, refer to the setting of **Low**.

Offset indicates the input which centers on the neutral position will move lower or higher according to the offset value.

(1) Tap to select the rate.

Note: The Offset setting in the Flap and Airbrake interface has similar meanings.

8.13.2 Brake To Airfoil

This mixing function is used to set the high and low rates for the brake flap to the airfoil flap. It is used to independently adjust the up and down travel of multiple flap servos.

Note: This function is only available for the model with 4 flaps.

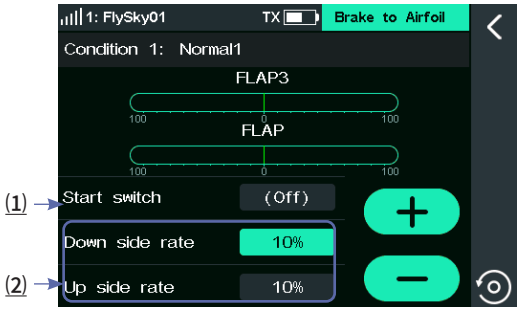
Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interfac, and configure a switch to enable. Then click ◀ to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

For the setting of **High**, refer to the setting of **Low**.



(1) Tap to enter the switch assigning interface.

(2) Tap to select the **rate**.

8.13.3 Airfoil To Elevator

This mixing function is used to establish the linkage between the airfoil flap and the elevator. It allows you to set a compensatory trim for the elevator to prevent the aircraft from diving when the airfoil flap is used for deceleration.

Note: For model with normal tail/V tail/Ailvator(double elevator) tails, the function item is only Elevator/Elevator 2. For those having aileron but without tail (There is no elevator function item, the number of aileron function items are subject to the actual number of ailerons), set the aileron as the elevator, so as to use the Airfoil to Elevator function.

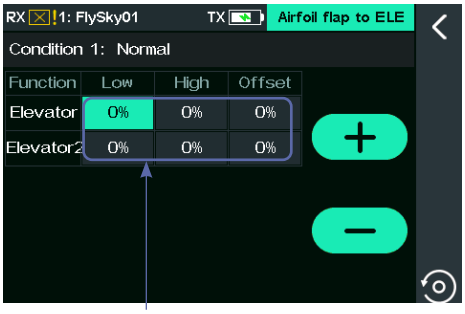
Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◀ to return to the previous interface.

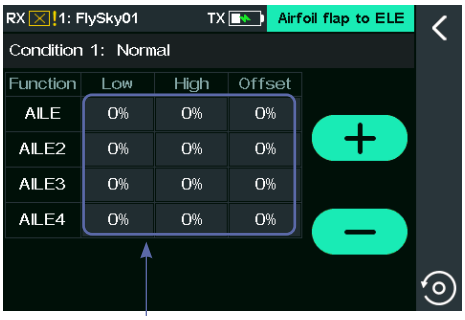
For the setting of **High**, refer to the setting of **Low**.

The interface is for the model with elevators.



Tap the output rate item for each elevator linked with the airfoil flaps.

The interface is for the model without elevators.



Tap the output rate item for each aileron linked with the airfoil flaps.

8.13.4 Brake Flap To Elevator

This mixing function is used to set the linkage between the brake flap and elevator. You can set a compensatory trim for the elevator to prevent the aircraft from diving using the brake flap for deceleration.

Note: This function is only available for the model with 4 flaps.

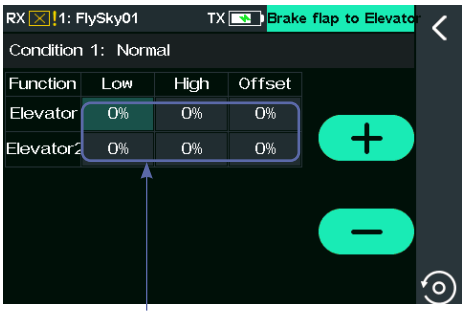
Take the setting of **Low** as an example.

Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click to return to the previous interface.

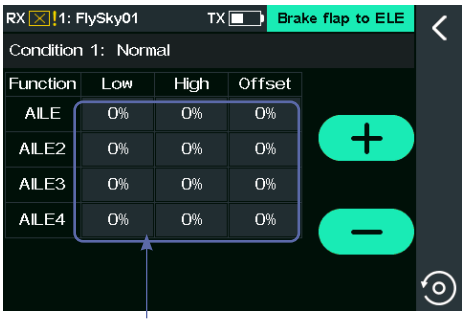
For the setting of **High** and **Offset**, refer to the setting of **Low**.

The interface is for the model with elevators.



Tap the output rate item for each elevator linked with the brake flaps.

The interface is for the model without elevators.



Tap the output rate item for each aileron linked with the brake flaps.

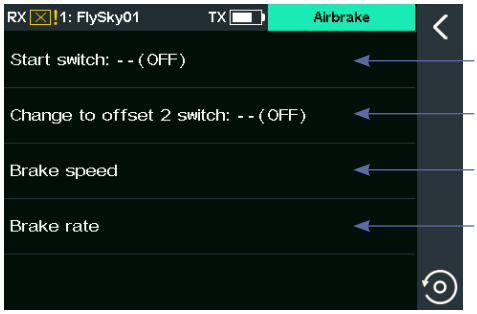
8.14 Airbrake

When the model is ready to descend or land, the air brake function can be used to help decelerate. This function is achieved by setting the offset values of ailerons, spoilers and elevators.

The offset values of ailerons, flaps, spoilers and elevators can be set in two sets. Enable/disable the Airbrake and switch between different offsets by assigning switches.

Notes:

1. Due to the different model structures (for example, different number of ailerons), the corresponding function menu may be different. Usually, up to four ailerons are described as an example.
2. Two brake rates can be realized by setting a three-position switch with two positions corresponding to offset 1/offset 2 respectively.



Tap to enter switch assignment interface of enabling/disabling the **Airbrake**.

Tap to enter switch assignment interface of switching bwtween **Offset1** and **Offset2**.

Tap to enter the interface of setting **Brake speed**.

Tap to enter the interface of setting **Brake rate**.

Note: For settings of switch, refer to the descriptions in chapter 16.

8.14.1 Brake Speed

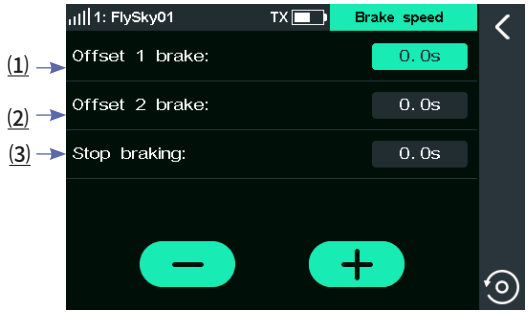
Set the parameters related to the brake speed function. You can set the time to complete the action when the brake is enabled and disabled. The longer the time, the slower the speed.

Take the setting of **Offset 1 brake** as an example.

Setup:

1. Tap **Offset 1 brake**.
2. Click **+** or **-** to set the appropriate value. Then click ◁ to return to the previous interface.

For the setting of **Offset 2 brake** and **Stop braking**, refer to the setting of **Offset 1 brake**.



(1) Tap to select **Offset 1 brake**.
(2) Tap to select **Offset 2 brake**.
(3) Tap to select **Stop braking**.

8.14.2 Brake Rate

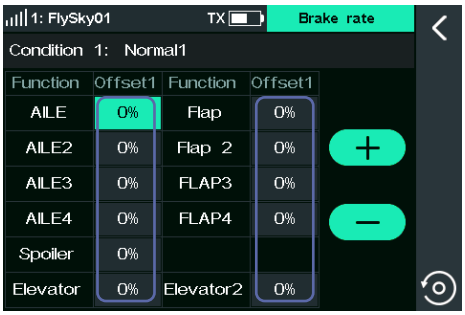
Set the offsets of **AILE**, **Flap**, **Spoiler** and **Elevator** for the current condition. To set in another condition, you need to switch the condition first.

Take the setting of **Offset 1** brake of **AILE** as an example.

Setup:

1. Tap the function box corresponding to **AILE**.
2. Click **+** or **-** to set the appropriate value. Then click ◁ to return to the previous interface.

For the setting of offset value of other function, refer to the description above.



Tap to select **Offset** for the corresponding function.

8.15 Spoiler

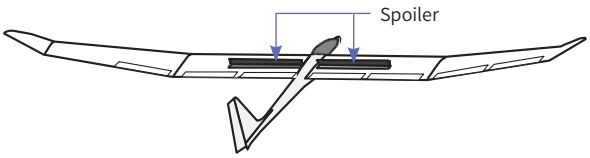
Spoiler, also called deceleration flap, can achieve fast braking by increasing the aircraft pressure on the ground when the aircraft is descending. Meanwhile, the use of spoiler in flight can also achieve the effect of aircraft deceleration. This function can be used to set the upward and downward movements of each spoiler and the linkage between spoiler and elevator. If the spoiler is used during deceleration, the aircraft will tend to dive. If the elevator linkage is set, the flight attitude can be controlled through the compensatory trim of the elevator.

The function parameter setting is for the current condition. To set in another condition, you need to switch the condition first.

Notes:

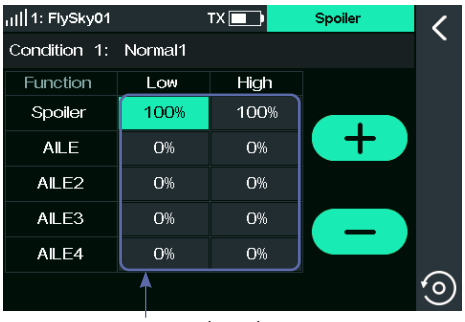
1. Due to the different model structures (for example, different number of ailerons), the corresponding function menu may be different. Usually, up to four ailerons are described as an example.
2. If it is a flying wing type aircraft, the elevation setting item is aileron; or, use the flap function to add setting interfaces for the aircraft.

Take the setting of **Low** as an example.



Setup:

1. Tap the item corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◀ to return to the previous interface.



Tap to select the **rate**.

For the setting of **High**, refer to the setting of **Low**.

8.16 Elevator

This section introduces the settings of the elevator and its mixing function.

The parameter settings for this function apply to the current condition. To configure settings for a different condition, you must first switch to that condition.

Notes:

1. Due to the different model structures (for example, different number of ailerons and flaps), the corresponding function menu may be different.
2. The aileron movement mode is not restricted in the mixing linkage of the elevator and aileron.

8.16.1 Elev Linkage

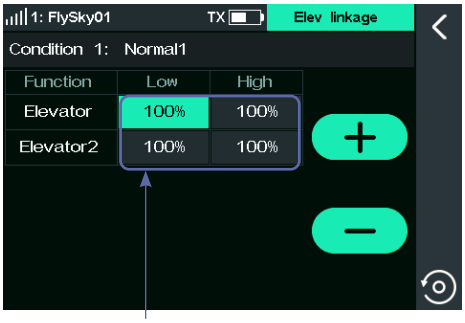
This mixing function is used to adjust the rise and fall rates of left and right elevators separately.

Take the setting of Low as an example.

Setup:

1. Tap the function box corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ◀ to return to the previous interface.

For the setting of **High**, refer to the description above.



Tap to select the **rate**.

8.16.2 Elev Aileron

This mixing function is used to set the linkage between the elevator and aileron. For the models with elevator, the elevator be linked to the aileron to move homodromously, thereby increasing lift. For the models without tail, the ALE2 (aileron 2) master control can be used to link the aileron to move homodromously, achieving the rise and fall function.

Note: This function item is not available for single aileron models. For multi-aileron models, the number of aileron function items are subject to the actual number of ailerons.

Take the setting of **Low** as an example.

Setup:

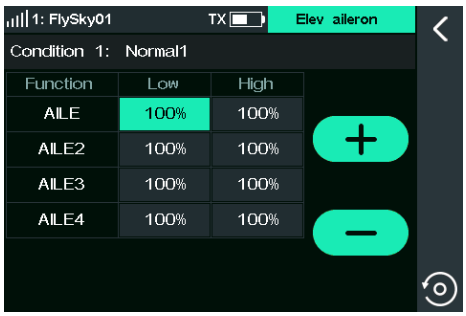
1. Tap the function box corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click to return to the previous interface.

For the setting of **High**, refer to the setting of **Low**.

The interface is for the model with tail wings.

Tap to select the **rate**.

The interface is for the model without tail wings.



8.16.3 Elev To Airfoil Flap

This mixing function is used to set the linkage between the elevator and airfoil flap. When this function is enabled, the elevator or ALE2 (aileron 2) master control of the model will affect the airfoil flap proportionally, thus increasing the lift of the model.

Note: For tail-less aircraft, aileron 2 is used instead of elevator.

Take the setting of **Low** as an example.

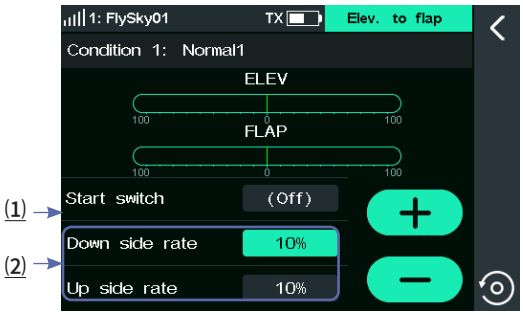
Setup:

1. Tap the function box corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interface, and configure a switch to enable. Then click to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

For the setting of **High**, refer to the setting of **Low**.

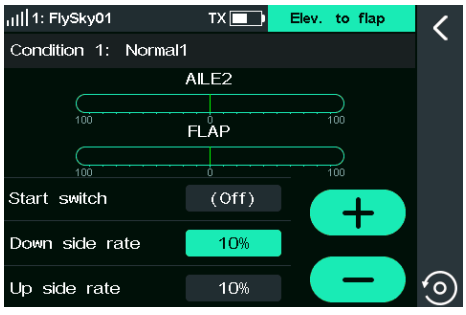
The interface is for the model with tail wings.



(1) Tap to enter the switch assigning interface.

(2) Tap the output rate item for airfoil flap linked with the elevator.

The interface is for the model without tail wings.



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8.16.4 Elev To Brake Flap

This mixING function is used to set the linkage between the elevator and brake flap. When this function is enabled, the elevator/aileron 2 master control of the aircraft model affects the brake flaps in set rate, thus increasing the lift of the aircraft model.

Note: This function is only available for model with 4 flaps. For tail-less aircraft, aileron 2 is used instead of elevator.

Take the setting of **Low** as an example.

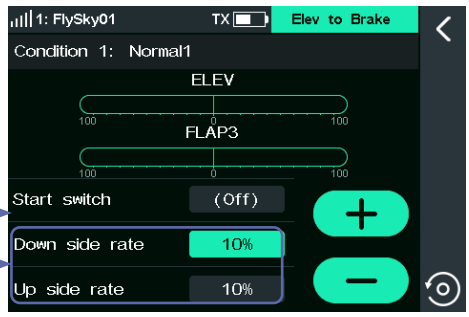
Setup:

1. Tap the function box corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interface, and configure a switch to enable. Then click ❮ to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

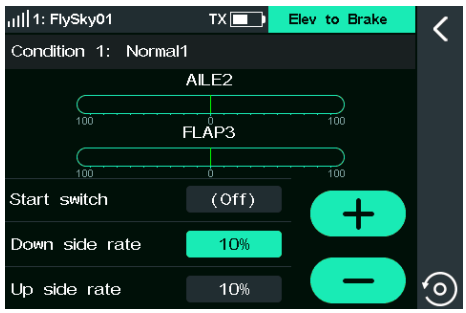
For the setting of **High**, refer to the setting of **Low**.

The interface is for the model with tail wings.



(1) Tap to enter the switch assigning interface.
(2) Tap to select the **rate**.

The interface is for the model without tail wings.



8.17 Rudder

This section introduces the settings for the rudder and its mixing function. The parameter settings of this function are for the current condition. To configure settings for a different condition, you must first switch to that condition.

Notes: Due to the different model structures (for example, different number of ailerons and flaps), the corresponding function menu may be different. When the model type is set to tailness, this function is not available.

8.17.1 Rudd Linkage

This function is applicable to the model with winglets, and is used to adjust the winglet rudder angle. The winglets are used to solve the wingtip vortex problem, thus reducing the induced drag and improve efficiency. The winglets are usually symmetrically erected vertically at both wingtips or extended outward at a certain angle.

Winglets increase the effective aspect ratio without significantly increasing the wing load and weight. Although the induced drag can be effectively reduced by extending the wing, this will also increase the parasitic drag and wing load strength at the same time, resulting in an insignificant gain. The winglets can effectively increase the aspect ratio without increasing the wingspan.

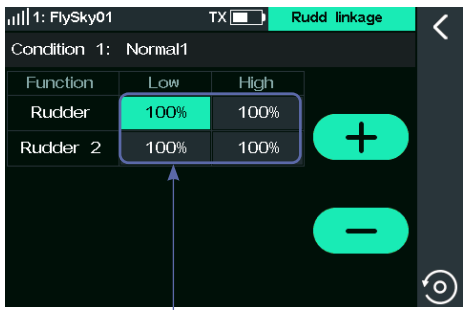
Note: This function is available for the model with Tailless-2RUD.

Take the setting of **Low** as an example.

Setup:

1. Tap the function box corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value. Then click ❮ to return.

For the setting of **High**, refer to the description above.



Tap to select the **rate item of each rudder**.

8.17.2 Rudd To Aileron

This mixing function is used to set the linkage between the rudder and the aileron. It is used to adjust the rate that all control surfaces affecting the airfoil changes according to the airfoil. You can adjust with the two sides(Up/Down), and meanwhile you can correct the effect of these control surfaces on the direction of flight.

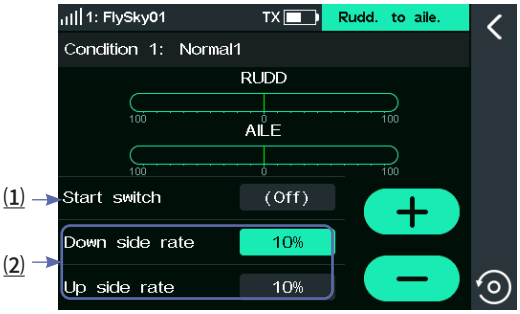
Take the setting of **Low** as an example.

Setup:

1. Tap the function box corresponding to **Low** you want to set.
2. Click **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interface, and configure a switch to enable. Then click to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

For the setting of **High**, refer to the description above.



(1) Tap to enter the switch assigning interface.
(2) Tap to select the output rate item for aileron linked with the rudder.

8.17.3 Rudd To Elev

This mixing function is used to set the linkage between the rudder to elevator. This function is used when it is necessary to realize the linkage between the elevator and rudder, correcting the offset in the pitching direction when the aerobatic model aircraft is turning and flying laterally. For tailless aircraft, AILE2 (aileron 2) is used to replace the elevator to achieve the elevation function.

Take the setting of **Low** as an example.

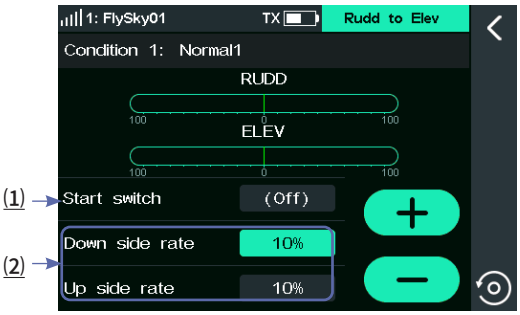
Setup:

1. Tap the function box corresponding to **Low** you want to set.
2. Tap **+** or **-** to set the appropriate value.
3. Set a switch to enable this function. Tap the box next to **Start switch** to enter switch assigning interface, and configure a switch to enable. Then click to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

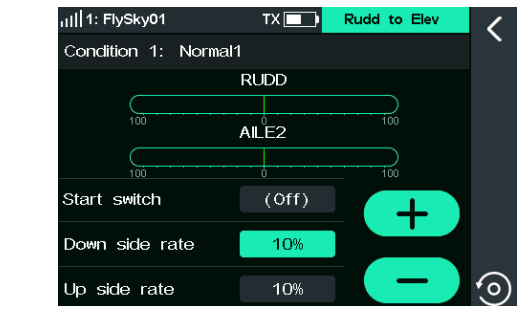
For the setting of **High**, refer to the description above.

The interface is for the models with tail.



(1) Tap to enter the switch assigning interface.
(2) Tap to select the output rate item for elevator linked with the rudder.

The interface is for the model with tailness.



8.18 Butterfly

This function realizes deceleration by adjusting the rates of ailerons, flaps, spoilers and elevator, i.e., ailerons are raised and flaps are lowered at the same time. This function is very effective when the model is landing, i.e., reducing the speed of the model, more stall margin is provided at the wingtip, thus less risk of wingtip stall. And more lift is generated at the root of the wing, allowing less gliding speed.

The parameter settings of this function are for the current condition. To configure settings for a different condition, you must first switch to that condition.

Note: This function is available for multi-flap airplane.

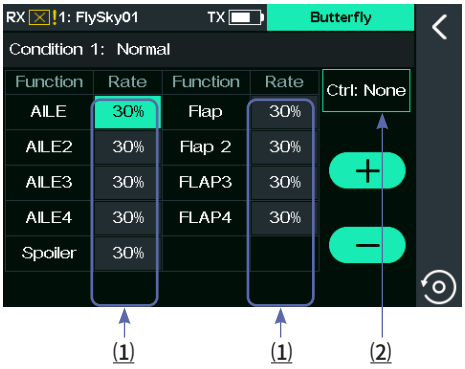
Take the setting of **AILE** as an example.

Setup:

1. Tap the function box corresponding to **AILE** you want to set.
2. Click **+** or **-** to set the appropriate value.
3. Click **Ctrl:** to enter control assigning interface, and configure a control to control the output. Then click ◀ to return to the previous interface.

Note: For settings of control, refer to the descriptions in 7.7 Func assign.

For the setting of other function, refer to the description above.



(1) Tap to select the **rate**.

(2) Tap to enter the control assigning interface.

Note: The number of ailerons displayed is based on the settings of wing layout.

8.19 V Tail

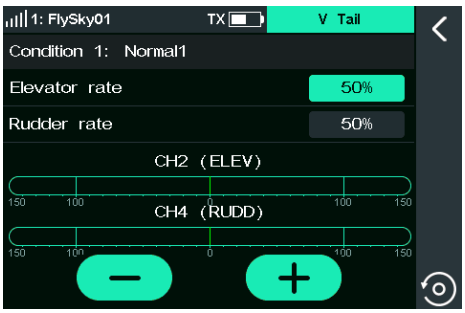
This function is used to adjust the rate of the V-shaped tail's 2 tail fins in steering and pitching. The V-shaped tail aircraft performs the rudder and elevator movements via 2 servos. In this system, one of the tail implements the rudder function and the other performs the elevator function, corresponding to two channels respectively. When the rudder function is implemented, the two control surfaces move in opposite directions. When the elevator function is implemented, the two control surfaces move in the same direction. This interface allows you to set the elevator rate and rudder rate, i.e., the rate of the elevator is for realizing the elevator function and the rate of the rudder is for realizing the rudder function.

The parameter settings of this function are for the current condition. To configure settings for a different condition, you must first switch to that condition.

Note: This function is available for models with V Tail.

Setup:

1. Tap **V Tail** to enter the setting interface.
2. Tap **Elevator rate**, then click **+** or **-** to set an appropriate value.
3. Tap **Rudder rate**, then click **+** or **-** to set an appropriate value. Click ◀ to return to the previous interface.



8.20 Logic Switches

A logic switch is a virtual switch consisted of 2 to 4 switches which activates or deactivates according to a mathematical relationship. The system supports to set four groups of logic switches in total. There are three logic difinations between the switches: **AND**, **OR** and **XOR**.

If there is any mathematical logic relationship between certain switch controls and the other two switch controls, this function can be used to express this logic and use it as a logic switch in control. The logic switch can be selected in any menu where switches can be assigned.

Setup:

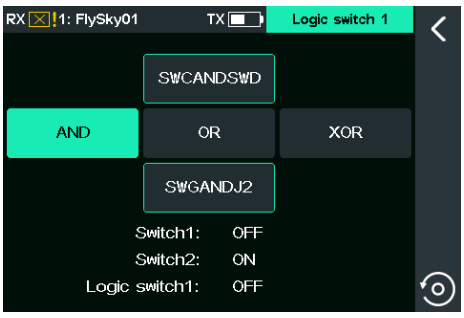
1. Tap a logic switch and enter the settings interface.
2. Tap the -- at the top of the interface,
   - Choose **One** to enter the switch interface to select the switch and its state, then click ❮ to return and complete the setting for the -- at the top.
   - Or choose **Double** to enter the next level interface;

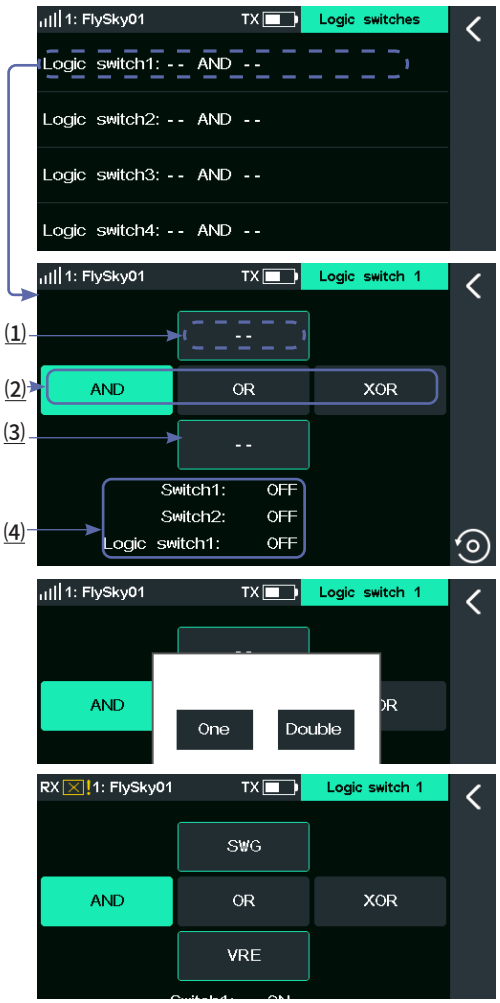
     First, click on the -- at the top of this interface to enter the switch interface and select the switch and its state. Then click on the -- at the bottom of this interface to enter the switch interface again and select another switch and its state. Click ❮ to return and complete the setting for the -- at the top.
3. Tap the -- at the bottom of the interface.
   - Follow step 2 to choose **One** or **Double** to complete the setting for the -- at the bottom.
4. Tap **AND**, **OR** or **XOR** to select the logical operation relationship (for detailed information on logical operation relationships, please refer to the table below).
5. Test the switches by toggling them and check if the settings meet the requirements through the switch state display on the interface.

Note: The setting of a logic switch makes sense only if it is composed of 2 other different switches.

Refer to the following table for more information on logic difinition and state.

Switch		Logic Switch		
Switch 1	Switch 2	AND	OR	XOR
OFF	OFF	OFF	OFF	OFF
OFF	ON	OFF	ON	ON
ON	OFF	OFF	ON	ON
ON	ON	ON	ON	OFF





(1) and (3) Tap here to enter switch assignment menu.

(2) Tap here repeatedly to select among **AND**,**OR** or **XOR**.

AND: where the logical switch is activated only when both physical switches are open; if one or both physical switches are closed, the logical switch is deactivated.

OR: where the logical switch is activated if at least one of the two sets of physical switches is open or both are open; if both sets of physical switches are closed, the logical switch is deactivated.

XOR: where the logical switch is activated when one set of physical switches is closed and the other is open; if both sets of physical switches are either closed or open simultaneously, the logical switch is deactivated.

(4) Display the status of two sets of switches and the status of the logical switch after logical operation.

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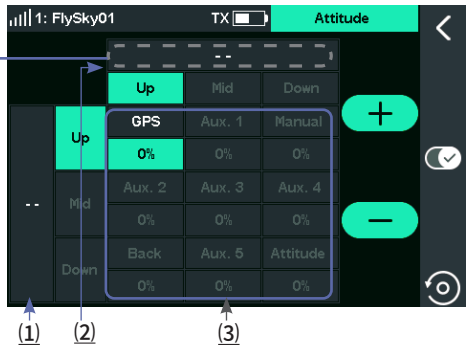
8.21 Attitude

This function allows the setting up to 9 output values for channels assigned with attitude functions. The output value of the channel can be switched via the set combo switch.

Setup:

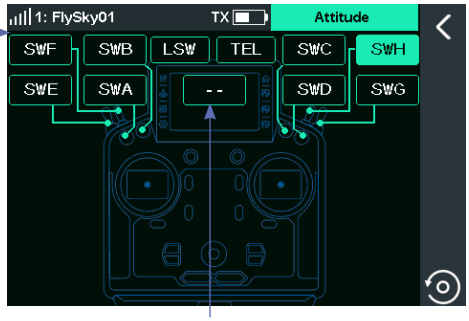
1. Tap **Attitude** to enter the setting interface.
2. Tap the function box with "--" to enter the switch assignment interface.
   - Tap a switch you want to set. Click to return to the previous interface. Once these two switches are assigned, the function and its output value will be controlled by the combo switch.
3. Change the names of the presets by tapping the dark green function box you want to change. A pop-up menu will appear; you can tap the appropriate character, then press **Enter** to complete.
4. Click **+** or **-** to set the appropriate value. Use the combo switch to swith the function. Click to return to the previous interface.



(1) / (2) Tap to enter the switch assignment interface. "--" indicates that the switch is unassigned.

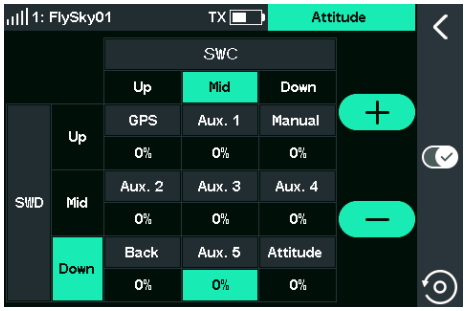
(3) Tap the area, you can set the output names of the nine channels.

The switch assignment interface



Tap to cancel the assigned switch.

The interface of the switch assigned



Notes:

1. The rate value indicates the output in percentage of a channel.
2. The combo switch needs to be set before other rate functions can be selected. You can switch 9 output values via this combo switch after the setting is completed.
3. This function is not avilable for glider model.

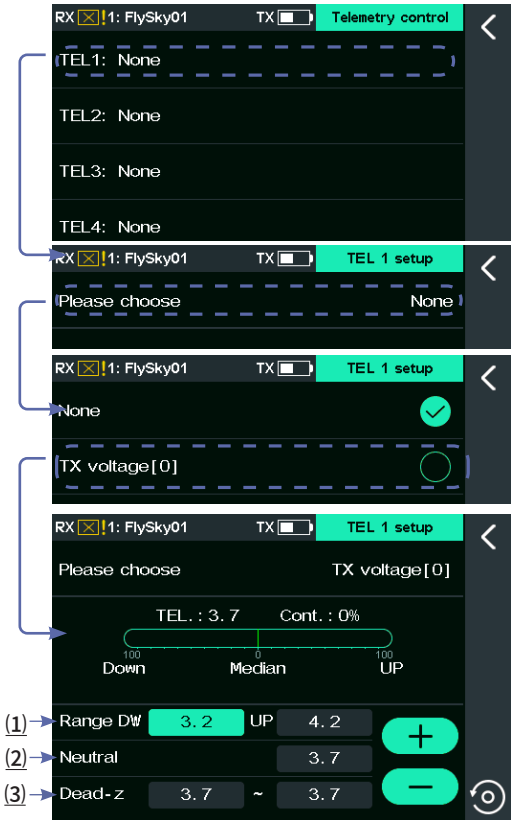
8.22 Telemetry Control

This function can convert the transfer-back data into control variable values, you can choose any 4 return values to convert into "TEL1" to "TEL4", and then assign these as a controls in **Function Assignment**, Switch Assignment, Mixes and other functions. For example, you can use a temperature sensor to activate a heat sink for cooling.

Setup:

1. Tap **Telemetry control**.
2. Tap the TEL you want to set to enter the setting interface.
3. Select an appropriate sensor, then click ◀ to return to the parameter setting interface.
4. Tap the parameter, then click **+** or **-** to set an appropriate value. Click ◀ to return.

Note: You can set the telemetry as a switch, a control or Master of a Mix to achieve a smart control via the sensor's variable data.



(1) **Down**: The sensor data set here will be converted to a control value of -100%; **UP**: the sensor data set here will be converted to a control value of 100%.

After setting the data: **Down** value to **UP** value corresponding to the control value range of -100% (min.) to 100% (max.)

(2) **Neutral**: Based on the set UP and Down end values, the neutral value is automatically generated, with the corresponding output control value being 0% (neutral value).

If the control area corresponding to the required data is not symmetrical, this value can be adjusted to set the desired neutral value. The setting range will be limited to between the **UP** and **Down** values.

(3) The default neutral has no Dead-zone. This item can be set if you want a small range of values fluctuating around the neutral (this will not affect the control value). Within this range, the output control value is always 0% (neutral value). The access to the Dead-zone setting is limited to both sides of the neutral and the middle of the **UP** and **Down** end values.

Application Example:

Use the temperature sensor data to enable the heat sink through the telemetry function. When the temperature exceeds 30° C, the heat sink is enabled.

The preparation process is as follows: Install the temperature sensor and connect to the receiver > Install the servo

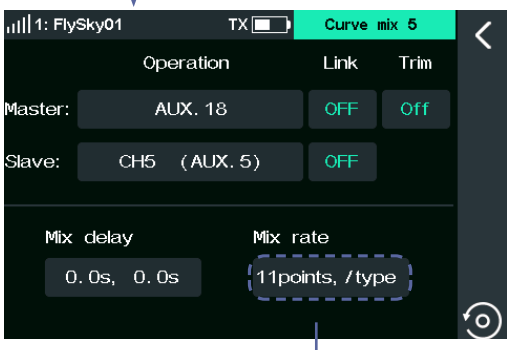
for controlling the heat sink and connect to the receiver >The transmitter and receiver have bound in two-way.

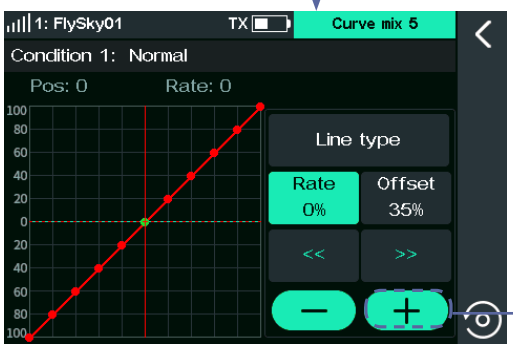
At the transmitter side, it is necessary to use the program mixes function to achieve this. The steps are as follows:

1. Enter the **Program Mixes** interface and complete the following settings.
   - Select an auxiliary channel as the Master, for example, auxiliary channel 18.
   - Set the servo channel that controls the heat sink to Slave, for example, auxiliary channel 5.
   - Click **Mix rate**. Select the line type and select the point at the middle position and set its rate to the appropriate value, for example, 100%.
   - Assign TEL1 as the switch to control the mix.
2. Enter the **Telemetry Control** interface.
   - Set TEL1 to the temperature sensor and set natural value to 30.

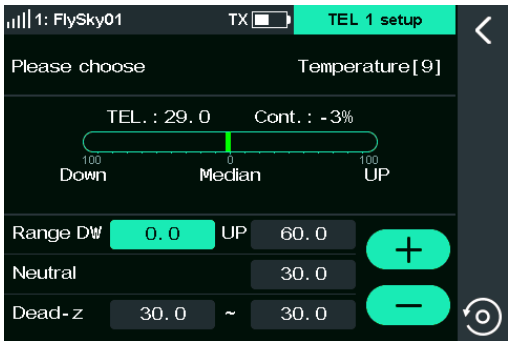
When the temperature exceeds 30° C, the TEL1 switch turns ON, and Mix 5 is activated. When the temperature is below 30° C, the switch turns OFF, the operation ceases, and the channel stops outputting.

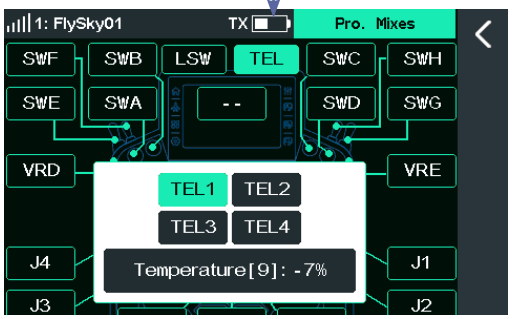
The setting interface of Mix

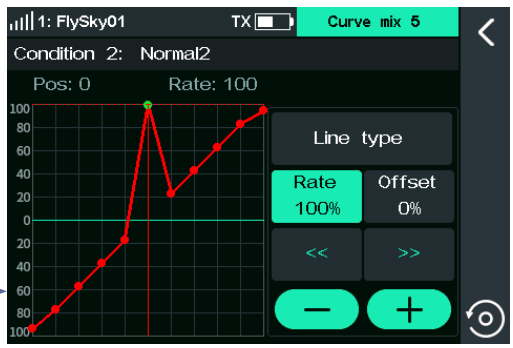




The setting interface of Telemetry Control





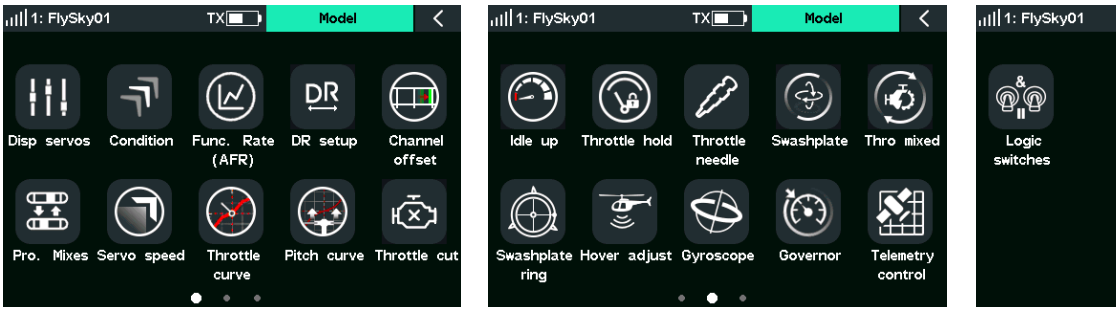


For different models, the telemetry function needs to be set accordingly to achieve specific control effects. To achieve better control effect, the joint debugging can be performed with using the functions such as Mixes, DR, and Function Assignment (AFR).

9. Helicopter Exclusive Function Setting

This chapter introduces the function settings of Helicopter mainly in default condition. After you can set the related model parameters via (Basic) > **Models**, then you can access **Model** to set the related functions of model via (Model).

Note: the function interface may different based on different model configurations.



9.1 Display Servos

Please refer to **7.1 Display Servos** for this function.

9.2 Condition

Please refer to **8.2 Condition** for this function.

9.3 Func. Rate (AFR)

Please refer to **8.3 Func. Rate(AFR)** for this function.

9.4 DR Setup

Please refer to **8.4 DR setup** for this function.

9.5 Channel Offset

Please refer to **8.5 Channel offset** for this function.

9.6 Pro. Mixes

Please refer to **8.6 Pro. Mixes** for this function.

9.7 Servo Speed

Please refer to **8.7 Servo speed** for this function.

9.8 Throttle Curve

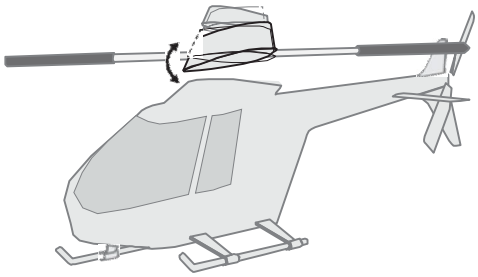
Please refer to **8.8 Throttle Curve** for this function.

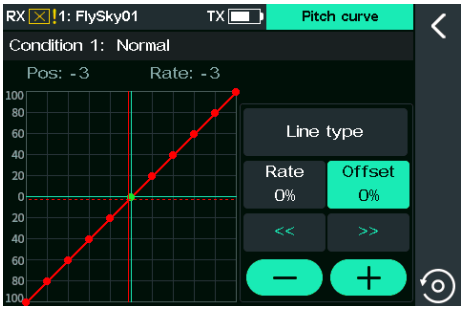
9.9 Pitch Curve

In the current condition, adjust the motion curve of the helicopter's pitch to match the throttle output to achieve the best flight status. To set in another condition, you need to switch the condition first. Different output rate can be obtained through multi-point linear settings (up to 11 points).

Setup:

Note: For the setting of **Rate**/ **Offset**, refer to the description in **Throttle curve** above. For the Line type, please refer to the descriptions in chapter 16.





9.10 Throttle Cut

Please refer to **8.9 Throttle Cut** for this function.

9.11 Idle Up

Please refer to **8.10 Idle Up** for this function.

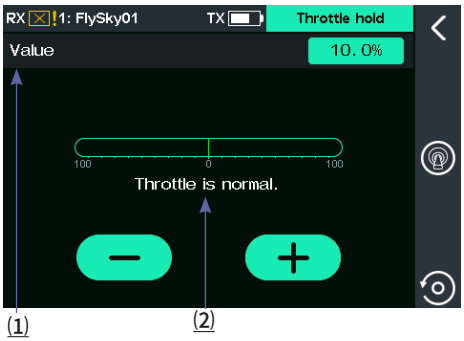
9.12 Throttle Hold

Quickly locking the throttle channel output value at a preset value using a single switch can assist with spin landings or serve as a throttle lock switch to secure the throttle position in a safe place during commissioning. This function is not valid when the throttle cut switch is on. When the throttle hold is on, the mixes of the throttle from other functions is invalid. The throttle function is output after channel operations (End, Range, Normal and Reverse and channel delay) with the set hold values. The throttle function's mixes on other functions is also brought into operation using the hold value.

Setup:

1. Tap **Throttle hold** to enter the setting interface.
2. Click **+** or **-** to set an appropriate value.
3. Click to set the switch to enable/disable the function.

Note: For settings of switch, refer to the descriptions in chapter 16.



(1) Display the value of the throttle hold when the throttle hold function enables.

(2) "**Throttle is normal!**" indicates the throttle hold function is disabled and the throttle status is normal. If the throttle hold function is enabled, the prompt changes to "**Throttle held.**" in red.

9.13 Throttle Needle

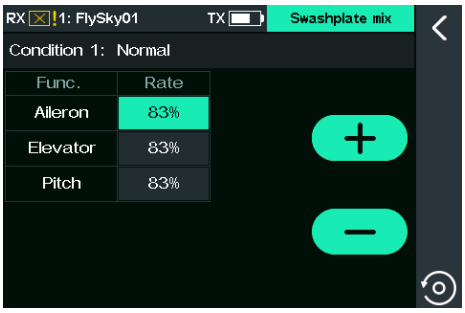
Please refer to **8.11 Throttle Needle** for this function.

9.14 Swashplate

In the current condition, correspond the helicopter's ailerons, elevation and pitch to the mixes of the servos to achieve the best flight effect.

Setup:

1. Tap **Swashplate** to enter the setting interface.
2. Tap item you want to set.
3. Click **+** or **-** to set the appropriate value. Click to return to the previous interface.

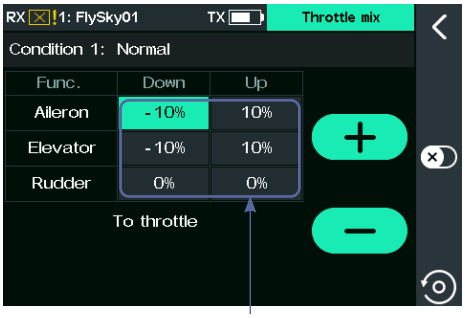


9.15 Thro Mixed

In the current condition, set the helicopter's ailerons, elevation and rudder to the throttle's mixing rate. It is used to coordinate the flight movements of the helicopter in all directions (forward, backward, left and right) to compensate for the effect of swashplate manipulation on the engine when operating ailerons, elevation and rudder. The default setting for this feature is disabled. To configure other conditions, switch to the desired condition first before making adjustments.

Setup:

1. Tap **Thro mixed** to enter the setting interface.
2. Tap item you want to set.
3. Click **+** or **-** to set the appropriate value. Click to return to the previous interface.



Tap the output rate item for throttle linked with the aileron, elevator or rudder.

9.16 Swashplate Ring

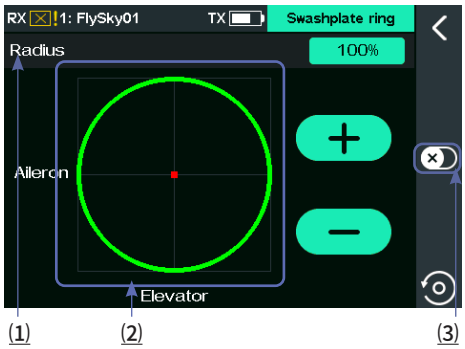
Limit the angle of swashplate movement. Change the helicopter's cycle pitch by adjusting the travel range of ailerons and elevation channels to control the helicopter's movements in all directions (forward, backward, left and right). If the ailerons and elevation travel range change too much, and the helicopter's swashplate angle exceeds the limit of the mechanical structure, the helicopter might be seriously damaged. Therefore, this function can protect the helicopter's mechanical structure.

This is a swashplate related advanced function. If you protect the mechanical structure by limiting the aileron and elevation movements via maximum travel range, the swashplate movements will be greatly restrained. But this function allows users to obtain more operation room while ensuring performance of the function.

Setup:

1. Tap **Swashplate ring** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value.
3. Click to eable the function. Click to return to the previous interface.

Note: The green circle is the maximum range of the swashplate. The length of the line indicates the angle of the current swashplate. When the angle of the swashplate exceeds the radius, it will be limited to the radius value.



(1) Display the tilt disc ring movement angle in numerical form.

(2) Display the tilt disc ring movement angle in diagram form.

(3) Tap repeatedly to toggle the funtion on or off.

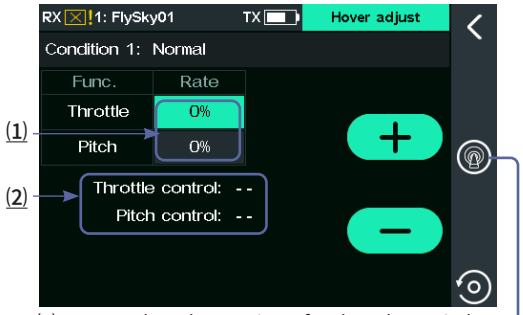
9.17 Hover Adjust

In the current condition, to allow the helicopter to hover easily, you should adjust the rates of **Throttle** and **Pitch**. To set up another condition, you need to switch to that condition first.

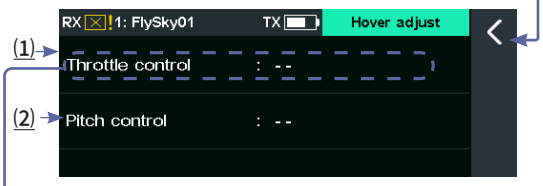
Setup:

1. Tap **Hover adjust** to enter the setting interface.
2. Tap the function you want to set.
3. Click **+** or **-** to set the appropriate value.
4. Click to enter, and click **Throttle control** to enter the control assign interface. Afterwards, click a knob you want to set for throttle control or turn the physial knob on the transmitter. Then click to return to the previous interface.
5. Tap **Pitch control** to enter the control assign interface. Click a knob you want to set for throttle control or turn the physial knob on the transmitter.

Note: For the control of the function, you can only set a knob.



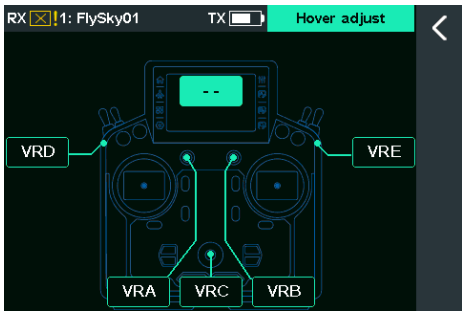
(1) Tap to select the rate item for throttle or pitch.
(2) "--" indicates the control is unassigned. After the control is assigned, the control name is displayed here.



(1) Tap to enter the interface that can assign a control for Throttle.

(2) Tap to enter the interface that can assign a control for Pitch.

The switch assignment interface



9.18 Gyroscope

Set the output value of gyroscope channel.

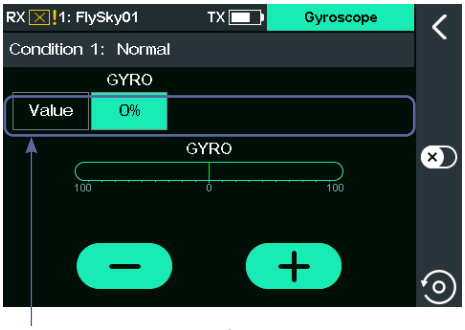
The system has two preset gyroscope functions (you can set the number of gyroscopes in (Basic) > Model > Optional. In this interface, you can adjust the gyroscope channel output sensitivity.

The parameter settings of this function are for the current condition. To configure settings for a different condition, you must first switch to that condition.

Setup:

1. Tap **Gyroscope** to enter.
2. Tap the box to the corresponding GYRO, then use **+** or **–** to change the sensitivity value of **Gyroscope**.
3. Click to eable the function. Click to return to the previous interface.

Note: For settings of switch, refer to the descriptions in chapter 16.



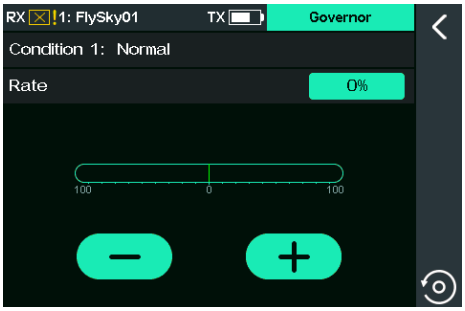
The sensitivity value of the gyroscope displays in numerical form.

9.19 Governor

Set the output value of **Governor** channel to adjust the RPM of the helicopter propeller to make the helicopter fly more stable. The function parameter setting is for the current condition. The parameter settings of this function are for the current condition. To configure settings for a different condition, you must first switch to that condition.

Setup:

1. Tap **Governor** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value. Click to return to the previous interface.



9.20 Logic Switches

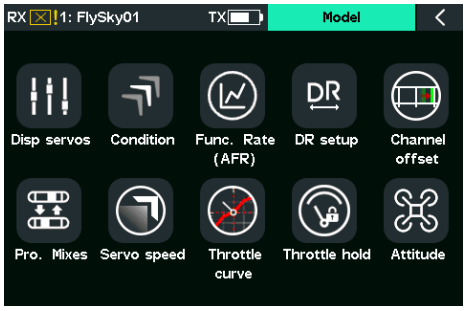
Please refer to **8.20 Logic Switches** for this function.

9.21 Telemetry Control

Please refer to **8.22 Telemetry Control** for this function.

10. Multicopter Exclusive Function Setting

This chapter introduces the function settings of Multicopter mainly in default condition. After you can set the related model parameters via (Basic) > **Models**, then you can access **Model** to set the related functions of model via (Model).



10.1 Display Servos

Please refer to **7.1 Display Servos** for this function.

10.2 Condition

Please refer to **8.2 Condition** for this function.

10.3 Func. Rate (AFR)

Please refer to **8.3 Func. Rate(AFR)** for this function.

10.4 DR Setup

Please refer to **8.4 DR Setup** for this function.

10.5 Channel Offset

Please refer to **8.5 Channel Offset** for this function.

10.6 Pro. Mixes

Please refer to **8.6 Pro. Mixes** for this function.

10.7 Servo Speed

Please refer to **8.7 Servo Speed** for this function.

10.8 Throttle Curve

Please refer to **8.8 Throttle Curve** for this function.

10.9 Throttle Hold

Please refer to **9.12 Throttle Hold** for this function.

10.10 Attitude

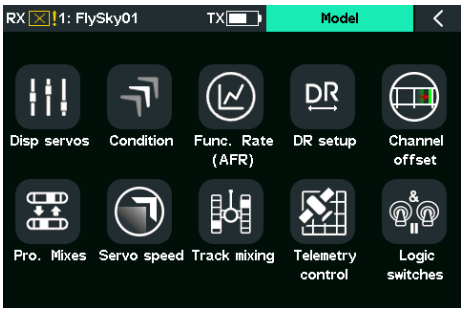
Please refer to **8.21 Attitude** for this function.

11. Car Exclusive Function Setting

This chapter introduces the function settings of **Car** mainly in default condition. After you can set the related model parameters via (Basic) > **Models**, then you can access **Model** to set the related functions of model via (Model).

The interface for car model with humvees

The interface for car model with track



11.1 Display Servos

Please refer to **7.1 Display Servos** for this function.

11.2 Condition

Please refer to **8.2 Condition** for this function.

11.3 Func. Rate (AFR)

Please refer to **8.3 Func. Rate(AFR)** for this function.

11.4 DR Setup

Please refer to **8.4 DR Setup** for this function.

11.5 Channel Offset

Please refer to **8.5 Channel Offset** for this function.

11.6 Pro. Mixes

Please refer to **8.6 Pro. Mixes** for this function.

11.7 Servo Speed

Please refer to **8.7 Servo Speed** for this function.

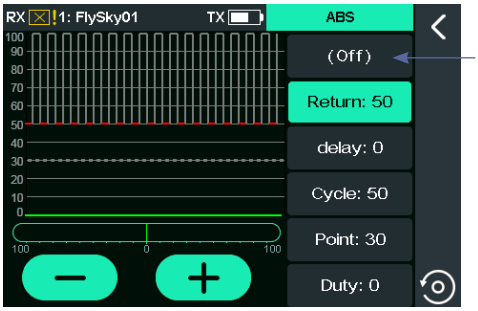
11.8 Throttle Curve

Please refer to **8.8 Throttle Curve** for this function.

11.9 ABS

This function can be used to set pulse braking, , which periodically releases the brakes when braking is triggered, to prevent skidding, drifting, or under-turning due to locked wheels.

Note: This function is available for humvees model.

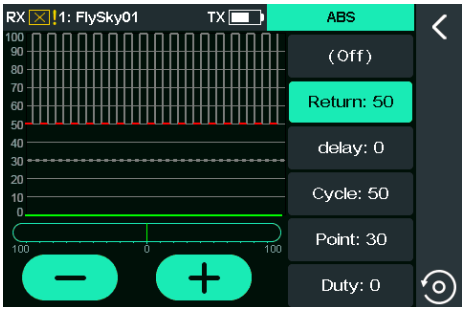


Tap to enter the switch assignment interface.

Note: For settings of switch, refer to the descriptions in chapter 16.

Return

To set the reduction of braking pressure at each pulse between 0% and 100%. The default value is 50%. When the value is set to 60%, the system will reduce the braking pressure by 60% from each pulse in real-time when braking is triggered.

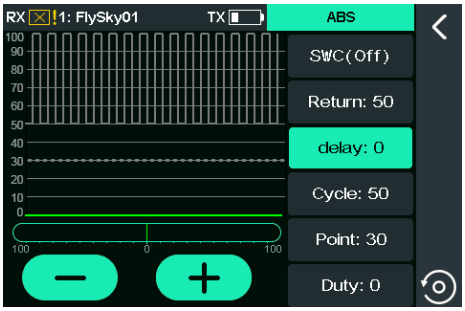


Setup:

1. Tap **Return** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value.
   Click ◁ to return to the previous interface.

Delay

To set the time from trigger the pulse brake to actually pulse brake between 0% to 100%. The default value is 0%. The higher the value, the slower the pluse brake function will take effect. When the value is set to 0%, there is no delay, i.e. the pulse brake function takes effect immediately when the brake is triggered. When the value is set to 100%, the delay is 2S.

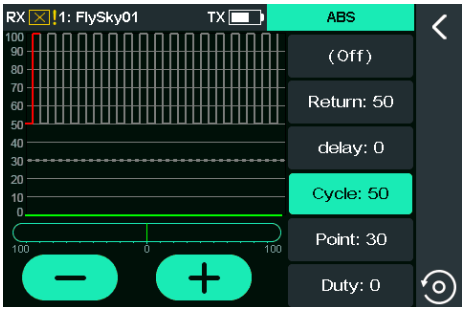


Setup:

1. Tap **Delay** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value.
   Click ◁ to return to the previous interface.

Cycle

It is used to set the interval between pulses. The setting range is 20% to 100%. The default value is 50%. The larger the value, the longer the interval time between pulses. The value 100% indicates the interval is 0.5S.

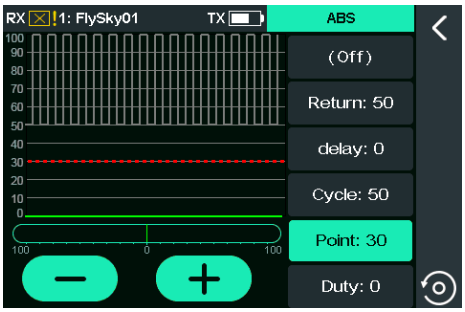


Setup:

1. Tap **Cycle** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value.
   Click to return to the previous interface.

Point

It is used to set the start position of pulse brake function. The setting range is 20% to 100%. The default value is 30%. The higher the value, the closer the stick position that triggers the pulse brake function is to the full brake position. 0%-100% is the entire travel movement amount of the throttle control brake end.

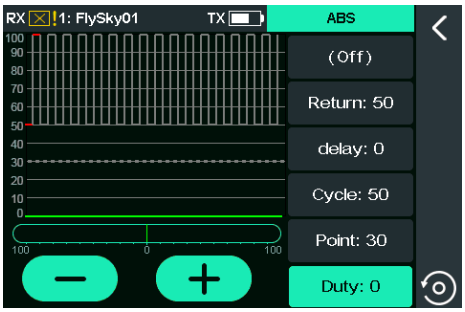


Setup:

1. Tap **Cycle** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value.
   Click to return to the previous interface.

Duty

To set the braking - release cycle length in pulse braking between -4 and +4. Default: 0. When the value is changed, the peak and trough lengths of the brake pulse's square wave change accordingly. You can adjust the ratio between braking and release. The rate is 1:1 when the cycle length is set to "0". The rate is 1:2 when the cycle length is set to "1". And the rate is 2:1 when the cycle length is set to "-1".



Setup:

1. Tap **Cycle** to enter the setting interface.
2. Click **+** or **-** to set the appropriate value.
   Click to return to the previous interface.

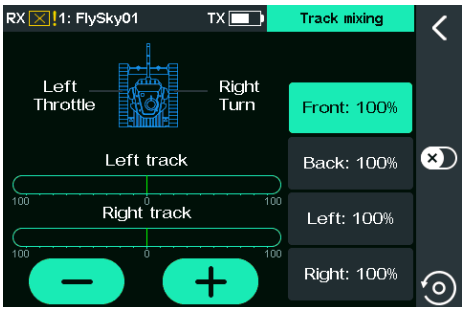
11.10 Track Mixing

When this function is enabled, the control corresponding to the left track can control the changes of the left and right tracks in same rate to move forward and backward, and the control corresponding to the right track can control the changes of the left and right tracks in reverse-rate to turn left and right. The forward, backward, left and right rates can be set in the function menu.

Note: This function is available for track model.

Setup:

1. Tap **Delay** to enter the setting interface.
2. Tap the function item you want to set.
3. Click **+** or **-** to set an appropriate value.
4. Tap to enable the function, then click to return to the previous interface.



11.11 Logic Switches

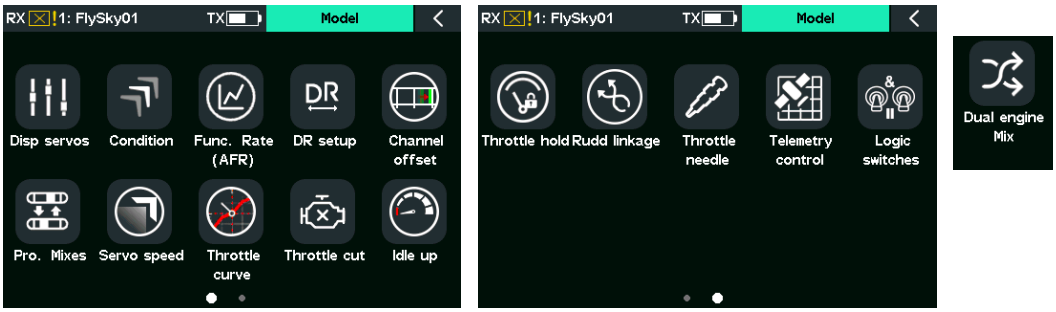
Please refer to **8.20 Logic Switches** for this function.

11.12 Telemetry Control

Please refer to **8.22 Telemetry Control** for this function.

12. Boat Exclusive Function Setting

This chapter introduces the function settings of **Boat** mainly in default condition. After you can set the related model parameters via (Basic) > **Models**, then you can access **Model** to set the related functions of model via (Model).



12.1 Display servos

Please refer to **7.1 Display Servos** for this function.

12.2 Condition

Please refer to **8.2 Condition** for this function.

12.3 Func. Rate (AFR)

Please refer to **8.3 Func. Rate(AFR)** for this function.

12.4 DR Setup

Please refer to **8.4 DR Setup** for this function.

12.5 Channel Offset

Please refer to **8.5 Channel Offset** for this function.

12.6 Pro. Mixes

Please refer to **8.6 Pro. Mixes** for this function.

12.7 Servo Speed

Please refer to **8.7 Servo Speed** for this function.

12.8 Throttle Curve

Please refer to **8.8 Throttle Curve** for this function.

12.9 Logic Switches

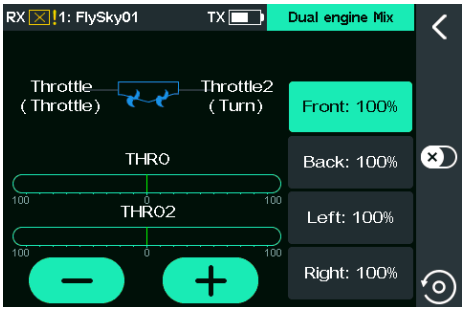
Please refer to **8.20 Logic Switches** for this function.

12.10 Dual Engine Mix

This function is enabled when the ship model has dual engines without rudders. It uses a dual engine mix function to control the ship's movement in forward/backward and left/right directions.

Setup:

1. Tap **Dual enigne Mix**.
2. Tap the function item you want to set.
3. Click **+** or **-** to set an appropriate value.
4. Tap to enable the function, then click to return to the previous interface.

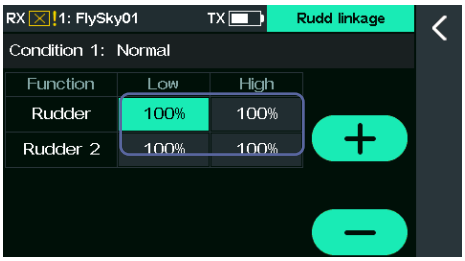


12.11 Rudd Linkage

This function enables when the ship model has dual engines with two rudders to realize the rudder linkage output. The function parameter setting is for the current condition. The parameter settings of this function are for the current condition. To configure settings for a different condition, you must first switch to that condition.

Setup:

1. Tap **Rudd Linkage**.
2. Tap the function item you want to set.
3. Click **+** or **-** to set an appropriate value.
4. Tap to enable the function, then click to return to the previous interface.



12.12 Telemetry Control

Please refer to **8.22 Telemetry Control** for this function.

12.13 Throttle Hold

Please refer to **9.13 Throttle Hold** for this function.

12.14 Throttle Needle

Please refer to **8.11 Throttle Needle** for this function.

12.15 Throttle Curve

Please refer to **8.8 Throttle Curve** for this function.

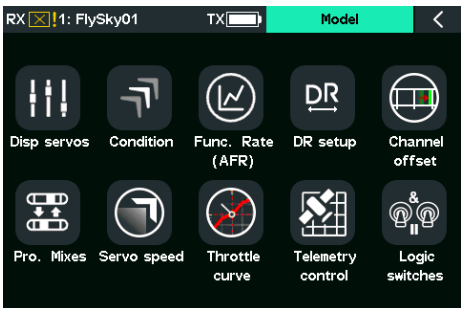
12.16 Idle Up

Please refer to **8.10 Idle Up** for this function.

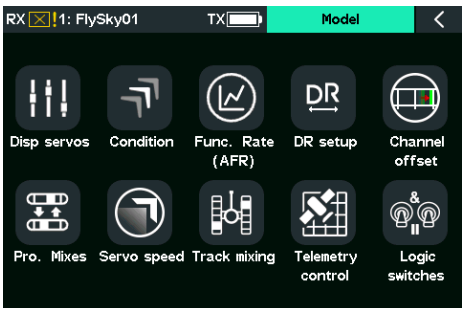
13. Robot Exclusive Function Setting

This chapter introduces the function settings of **Robot** mainly in default condition. After you can set the related model parameters via (Basic) > **Models**, then you can access **Model** to set the related functions of model via (Model).

The interface for robot model with humvees



The interface for robot model with track



13.1 Display Servos

Please refer to **7.1 Display Servos** for this function.

13.2 Condition

Please refer to **8.2 Condition** for this function.

13.3 Func. Rate (AFR)

Please refer to **8.3 Func. Rate(AFR)** for this function.

13.4 DR Setup

Please refer to **8.4 DR Setup** for this function.

13.5 Channel Offset

Please refer to **8.5 Channel Offset** for this function.

13.6 Pro. Mixes

Please refer to **8.6 Pro. Mixes** for this function.

13.7 Servo Speed

Please refer to **8.7 Servo Speed** for this function.

13.8 Telemetry Control

Please refer to **8.22 Telemetry Control** for this function.

13.9 Track Mixing

Please refer to **11.10 Track Mixing** for this function.

13.10 Logic Switches

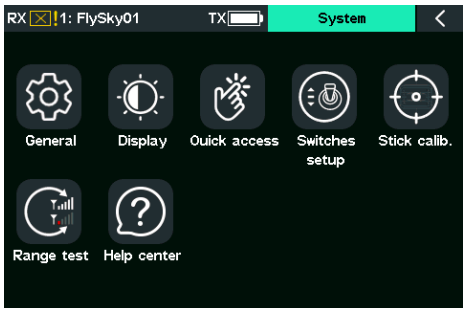
Please refer to **8.20 Logic Switches** for this function.

13.11 Throttle Curve

Please refer to **8.8 Throttle curve** for this function.

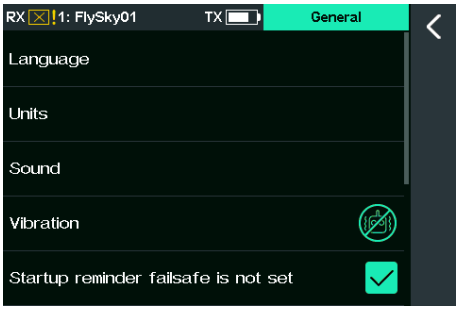
14. System Setting

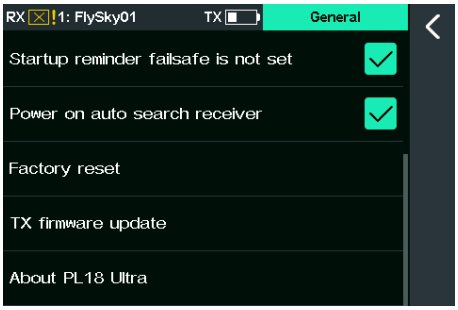
The system menu content is mainly used to set various system functions of the transmitter, such as screen display settings, sound settings, and so on. Access system functions via ⚙ (System).



14.1 General Function Setting

This section describes the setting on the General function. To access the General function via ⚙ (System) > **General**.



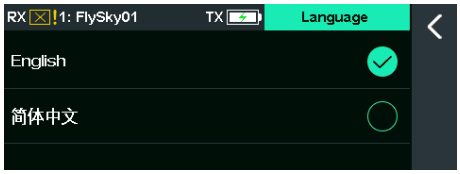


14.1.1 Language Setting

You can choose the language from **English** and **Chinese**.

Setup:

1. Tap **Language** to enter.
2. Tap an appropriate language. Then click ◀ to return.



14.1.2 Units

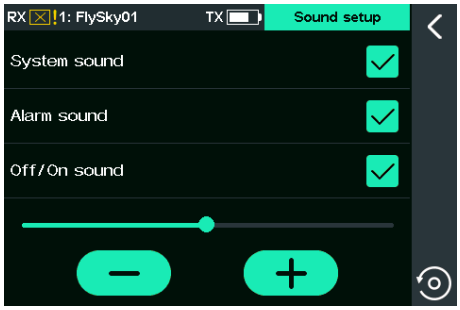
Choose the units to use for length and temperature. For **Length**, you can select between the metric and imperial systems, with the default being **Metric**. For temperature, you can choose between **Celsius** and **Fahrenheit**, with the default being **Celsius**.

Setup:

Tap **Units** to enter and click an appropriate item. Then click ◀ to return.

14.1.3 Sound

Turn on or off the System sound, the Alarm sound, or the ON/OFF sound.



Setup:

1. Tap **Sound** to enter.
2. Tap an appropriate item you want to set. "√" appears and indicates to turn on the sound.
3. Click +/- to change the volume of the sound. Then click to return.

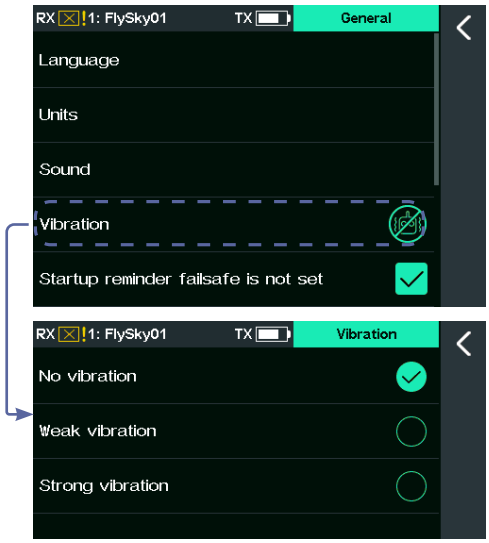
14.1.4 Vibration

Set whether the vibration function is enabled and the level of the vibration intensity.

Setup:

1. Tap **Vibration** to enter.
2. Tap an appropriate item you want to set. Then click to return.

Note: The vibration status and the intensity of the vibration will be displayed synchronously on the General interface.

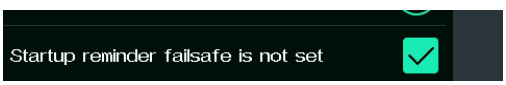


14.1.5 Startup Reminder Failsafe is not Set

Set to check or uncheck the Startup reminder failsafe is not set.

Setup:

Tap the box next to right of the function, when it is not ticked, it indicates that the function is disabled.



Note: Turn off the function, and the 'Startup reminder model is not set' function is unchecked and all channels are not in Not Set (No Output) status, then a pop-up window will not prompt that failsafe has not been set when the transmitter is turned on.

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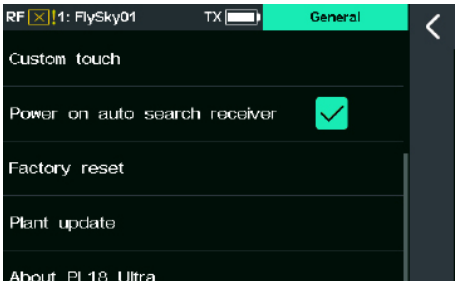
14.1.6 Auto Search For Receiver

When the Power on auto search receiver is checked and the RF is turned on, you can make settings to automatically switch to the model corresponding to the currently powered-on receiver. This is same as the Searching for the receiver function in Model Select.

Setup:

Tap **Power on auto search receiver**, a "√" will appear, indicating that the feature is turned on.

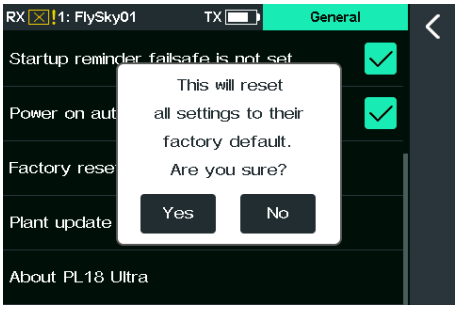


14.1.7 Factory Reset

Reset the transmitter to its factory default state, and all data, including model data and system settings, will be reset.

Setup:

1. Tap **Factory reset** and click **Yes** on the pop-up screen to enter the Wizard screen.
2. Follow the following to finish setting for these functions, then the transmitter will reset to its factory default mode.
   - After completing the **Stick Mode**, **ST Cal**, and **Update RF** functions in sequence, you can simply click **Start using**.



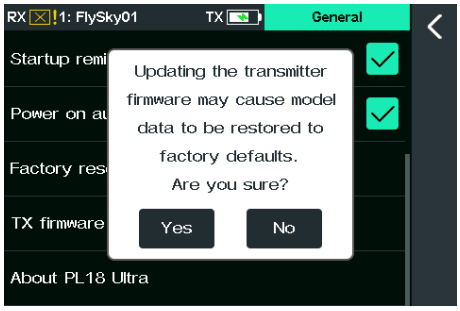
14.1.8 Transmitter Firmware Update

Update the transmitters firmware. In case of updating the firmware of the transmitter, use this function to put the transmitter to enter updating mode first, then upgrade the transmitter's firmware.

⚠ WARNING	• **Use the USB Type-C cable shipped with the transmitter.** • **Do not unplug the USB Type-C cable while the firmware is updating.**

Setup:

1. Download the latest firmware, then open it.
2. Connect the PC and PL18 Ultra transmitter via USB Type-C cable.
3. Tap **TX firmware update** via ⚙ (System) > **General**, a pop-up screen will appear. After that, click Yes to put the transmitter into the updating mode.
4. On PC side, click Update to start.
5. The tranmitter will power on again when the updating process is completed. Then remove the USB cable and close the firmware.



Notes:

1. The firmware of the transmitter can also be updated by FlyskyAssistant. In such case, make sure the transmitter is connected to the PC only.
2. If more than one firmware are opened at the same time, only one firmware can be recognized by the transmitter.

14.1.9 About PL18 Ultra

To view system information, including product model, firmware version, firmware release date, and hardware version, etc.

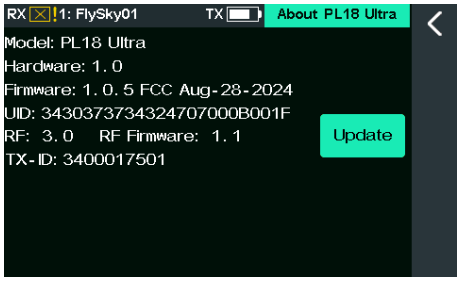
The internal RF firmware can be updated via Update on this interface.

Setup:

Tap **About PL18 Ultra** to view.

If the RF firmware version is mismatched due to reasons such as disassembly for repair, you can use this feature to update it. Here are the steps for the update:

Click **Update**, and the system will pop up a prompt window. Then click **Yes**, and the transmitter will enter the RF module firmware update interface. After the update is complete, the system will automatically exit the update interface.



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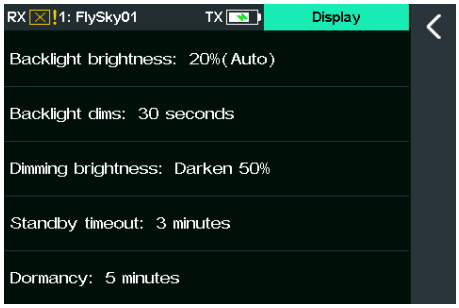
14.2 Display Setting

This section describes the setting on the Display function. To access the Display function via ⚙ (**System**) > **Display.**



14.2.1 Backlight Brightness

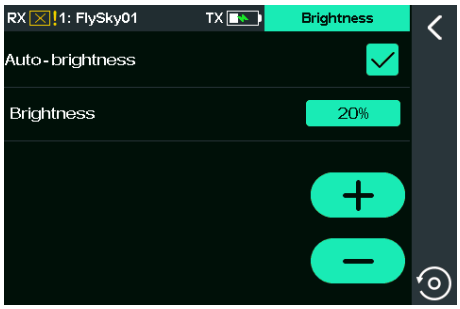
Adjust the brightness of the screens backlight.

Auto-brightness: Once the Auto-brightness function is enabled, the ambient light brightness will affect the screen backlight brightness.

Brightness: This indicates the current screen brightness level and allows for brightness adjustment.

Setup:

1. Tap **Backlight brightness** to enter.
2. Tap +/- to set the appropriate value, and long press +/- to quickly adjust the screen brightness (brightness setting range: 1%-100%).
3. After checking **Auto-brightness**, a " √ " will appear, and the ambient light will affect the screen brightness. If not checked, ambient light will not affect the screen brightness. Then click ◀ to return.



Note: The backlight brightness affects the battery's endurance time; the higher the brightness, the shorter the standby time of the transmitter.

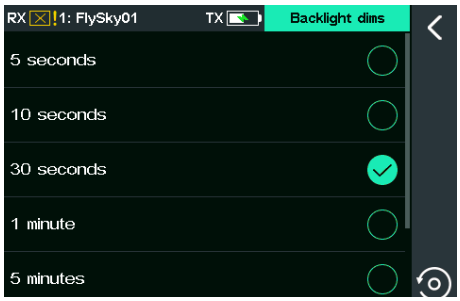
14.2.2 Backlight Dims

Change how long the screen takes to turn off when not in use. The default is 30 seconds. If the display exceeds the set time, it will enter the backlight dimming state. You can set an appropriate time as your desired.

Setup:

1. Tap **Backlight dims** to enter.
2. Tap an appropriate item. Then click ◀ to return.

Note: The longer the backlight dims, the longer the battery's endurance will be, and correspondingly, the longer the transmitter's standby time will be.



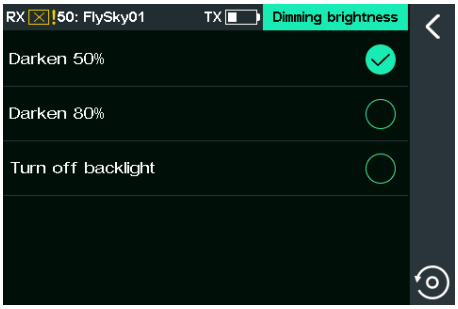
14.2.3 Dimming Brightness

Adjust the screen brightness to darken it based on the original brightness level; or turn off the backlight.

Note: The backlight dims state depends on this function.

Setup:

1. Tap **Dimming brightness** to enter.
2. Tap an appropriate item. Then click ◀ to return.



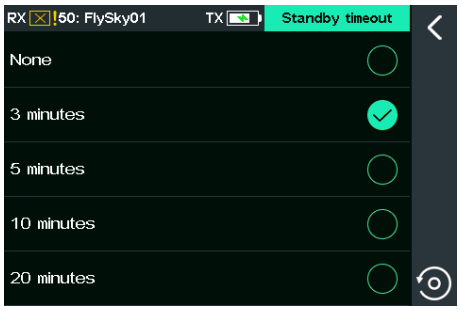
14.2.4 Standby Timeout

Set whether to enable the idle alarm function and set the alarm time.

Setup:

1. Tap **Standby timeout** to enter.
2. Tap an appropriate item. If you do not want to set alarm time, click None. Then click ◀ to return.

Note: If the transmitter is in dormancy mode, there will be no idle alarm.



14.2.5 Dormancy

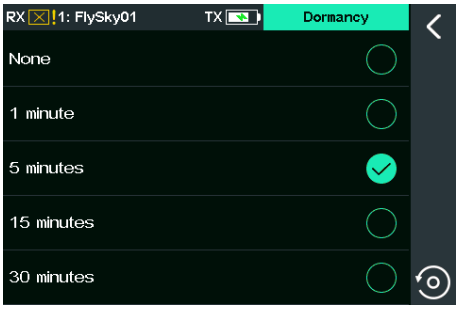
You can set whether to enable or disable the dormancy function, as well as the duration time for dormancy. The transmitter will automatically enter dormancy mode when the following conditions are met:

1. The **RF working status** is set to **Built-in RF**;
2. "Two-way" is checked in the **Bind setting** interface.;
3. The transmitter is not connected to a receiver;
4. No clicks on the transmitter display screen or operation of controls are made within the set "Dormancy" time;
5. The transmitter is not in '**Online**' state.

Setup:

1. Tap **Dormancy** to enter.
2. Tap an appropriate item. If you do not want to set it, click None. Then click to return.

Note: If the transmitter remains idle for the set dormancy time duration, the transmitter will display a pop-up warning that it is about to enter dormancy mode. After three beeps and an audio prompt saying "Enter dormancy", it will then enter domancy mode.



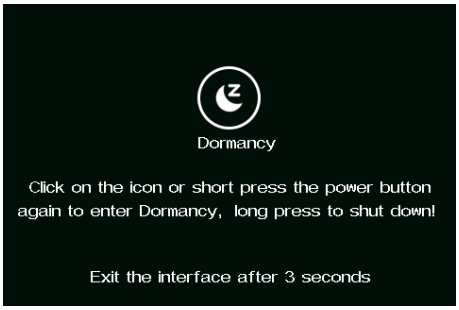
Manually Entering Dormancy Mode

The system supports manually entering dormancy mode.

Setup:

1. Press both power switches on the transmitter simultaneously until the prompt "Click on the icon or short press the power button again to enter Dormancy, long press to shut down!" appears, then release the power switches;
2. Tap or press both power switches again (and release within 3 seconds), and the transmitter will enter dormancy mode.

Note: If the transmitter is communicating normally with the receiver at this time, clicking will prompt a dialog box asking, "This action will cause the receiver to lose control, confirm?"



Here is an introduction to the transmitter's dormancy mode status and how to exit dormancy mode.

Dormancy State

Control State:

Stick, switch, dial, trim, and knob operations are ineffective.

RF State:

RF not working: Built-in RF module is off, and there is no signal or power on the external RF module connector.

Notes:

1. In dormancy mode, devices connected to the data connectors do not operate, thereby reducing power consumption.

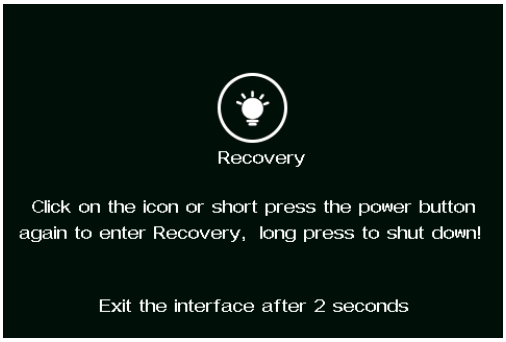
2. After the transmitter enters dormancy mode, the transmittter LED is in a slow flashing state. For details, refer to 3.2.3 Status Indicator.
3. It is recommended to use dormancy mode during training or competition instead of turning off the transmitter's power.

Exiting Dormancy Mode

To wake the transmitter from dormancy mode.

Setup:

1. Tap the screen or press both power switches on the transmitter simultaneously until the prompt "Click on the icon or short press the power button again to enter Recovery, long press to shut down!" appears, then release the power switchs.
2. Tap or press the power switches (release within 3 seconds), and the transmitter will exit dormancy mode.



Note: If you press and hold both power switches (without releasing it within 3 seconds), the transmitter will power off.

The transmitter will automatically exit dormancy mode under certain special circumstances.

- When the transmitter is in a low battery state, it will automatically power off.
- After staying in dormancy mode for 6 hours, the transmitter will automatically power off, which also exits dormancy mode.

14.3 C-touch Menu

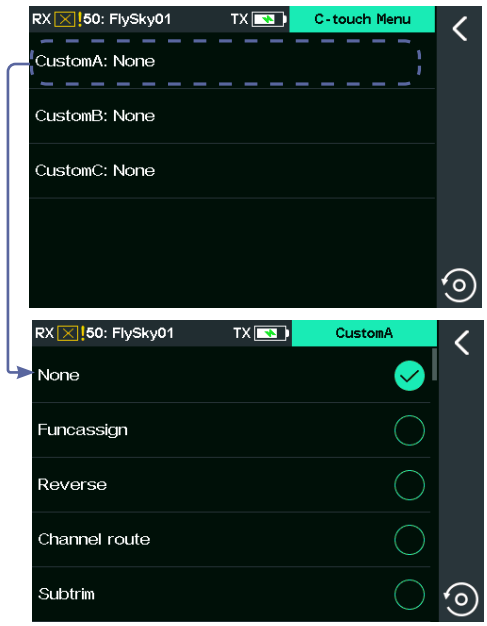
You can customize the touch shortcut keys. After setting, you can quickly access the function interface by tapping A, B, C areas on the left side of the screen.

Setup:

1. Tap **C-touch** menu to enter the next level interface.
2. Tap the function item you want to set to enter the custom function interface.
3. Click the appropriate custom function. Then click ◀ to return.

Note: The shortcut keys will not work under the following circumstances:

- If the current interface is the function corresponding to the shortcut key;
- In screen lock status, USB connection prompt interface, firmware update interface, in the process of binding, and in the process of configuring PWM converters, etc.

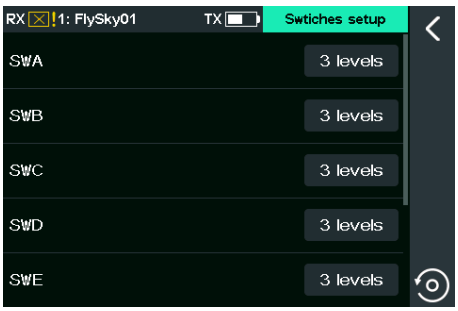


14.4 Position-switch Setup

This function is used to set whether SWA-SWH will be set up as two-position switches or three-position switches. If you wish to replace the switch among these eight, you can use this function to set the switch positions after replacement.

Setup:

1. Tap **Switches setup** to enter.
2. Tap the switch you want to set repeatedly to toggle between 3 levels or 2 levels. Then click ◀ to return.

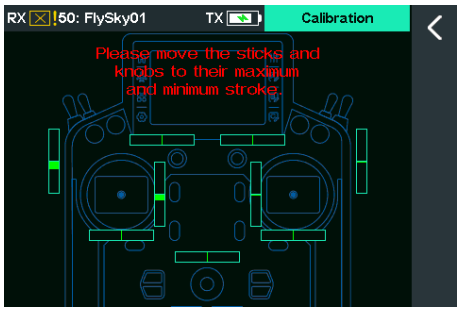


14.5 Stick Calibration

When the sticks (J1-J4), knobs (VRA-VRC), and dials (VRD and VRE) experience mechanical deviation, such as misalignment in centering or maximum/minimum travel, use this function to correct the deviation.

Setup:

1. Tap **Stick Calib.** to enter the calibration interface. Place the sticks and knobs displayed on the interface in the central position.
2. After you click **CAL**, the system will pop up "Please move the sticks and knobs to their maximum and minimum travel".
3. Push all the sticks J1-J4 along the direction of left/right/forward/backward to the maximum or minimum travel.
4. Turn all knobs VRA-VRC in the direction of clockwise/counterclockwise to maximum or minimum travel. Turn the dials VRD and VRE to the left or right to their maximum or minimum travel.
5. Click to return.
   - If the "Calibration successful" pop-up screen will appear, click **Exit**.
   - If the calibration fails, tap **Yes** to recalibrate. To exit the calibration interface automatically, tap **No**.



14.6 Range Test

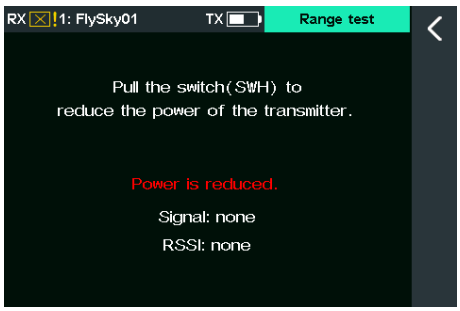
Used to test whether wireless communication between the transmitter and the receiver is normal and the ambient radio interference.

As the actual remote control distance between transmitter and receiver is far away, it is difficult to make the transmitter and receiver apart to several hundred meters to verify whether the RF module works normally. By using this function, the theoretical remote control distance can be reduced to 30-40 meters. When this function is enabled, it can test whether the transmitter and receiver are normal in a close distance, so as to save the test time.

Note: This function is only applicable to RF FRM301.

Setup:

1. Make sure the transmitter and the receiver are bound normally.
2. Enter the Range Test interface and pull down the SWH switch
3. One person stands in place with the model in hand, and the other person holds the transmitter and gradually moves away to 30-40 meters and walks around with this distance as a radius centered on this model.
4. Make sure that the transmitter antenna is not blocked, and there is no interference between the transmitter and the receiver in the open area.
5. Observe the signal strength of the transmitter. If the signal strength is high and stable, it means that the radio frequency of this system works normally.



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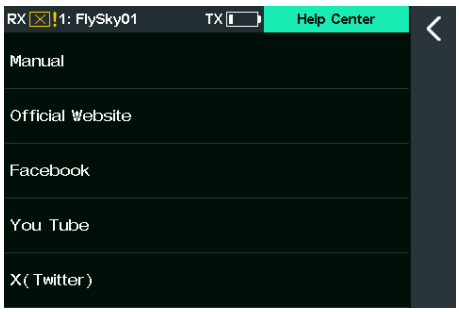
14.7 Help Center

To obtain the user manual via this function. Users can contact us through social accounts listed on the interface.

Setup:

1. Tap **Help center** to enter.
2. Tap the item you want to view, then the corresponding QR code will be displayed.
3. Scan the QR code to obtain the related information. Then click ❮ to return to the previous interface.



15. Custom Menu Setting

This function allows you to customize the menu item sorting and hiding in the menu area. You can prioritize to list some frequently used function compared to those seldom used function, and hide some less used function items. By default, all function items are visible.

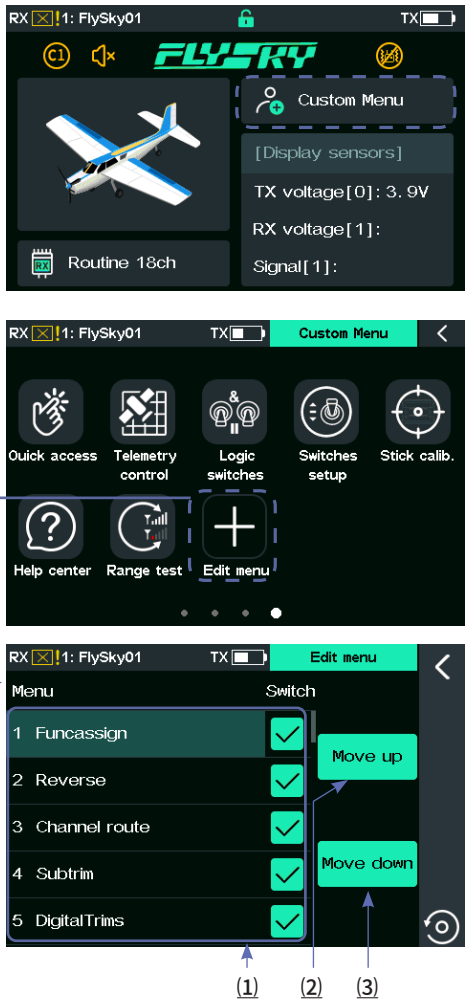
Setup:

1. Tap Custom Menu to enter the custom menu interface.
2. Tap Edit menu.
3. Tap the item you want to move, namely the item in highlight color is selected. Click Move up or Move down to change its order in the list.

Note: There is a function box on the right. If you select the checkbox(" √ "), it means that the function item is displayed. If you do not select it, it means that the function item is hidden.

For example, move **Func. assign** to the second position:

1. Tap Edit menu.
2. Click Func. asssign.
3. Click Move down once to finish.



(1) In the function items area, if you tap it and a '√' will appear, it means that the function is displayed. If not, it means that the function is hidden.

(2) Tap to move the selected item up.

(3) Tap to move the selected item down.

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16. Same Common Operation Items Setting

This section describes the setting steps for some common operation items within the function settings.

16.1 Switch assignment

How to set a switch which is for certain functions.

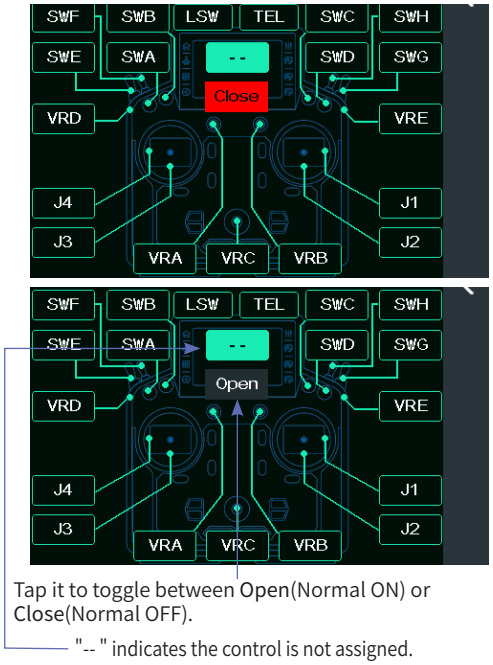
16.1.1 Normal ON/OFF Switches

If the function does not require switch control, it can be set to '--' with the state being set to either Open or Close. At this time, the function will be disabled or enabled. During the execution of the trainer function, the switch state of the student's transmitter can be adjusted through this feature.

Setup:

1. Enter the switch assignment interface.
2. Click **Open** to toggle between **Open** or **Close**.
3. Click **--** to cancel the switch if a control on the transmitter is assigned.

Note: Action switch does not support the setting of Normal ON or Normal OFF. On such switch assignment interface, you can tap -- to only disable the switch assignment function, switches such as altitude zeroing in sensors, timer start/stop switches, etc.



Tap it to toggle between Open(Normal ON) or Close(Normal OFF).

"-- " indicates the control is not assigned.

16.1.2 Position-switches

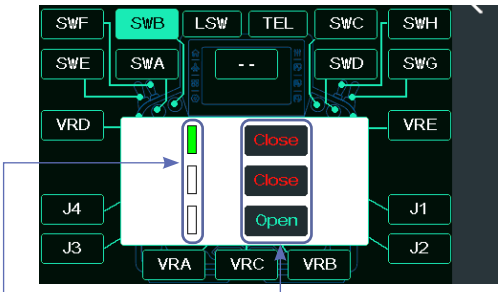
For two-position and three-position switches, you can set any position to **Open** or **Close**.

Setup:

1. Enter the switch assignment interface.
2. Tap the control name in the interface to select the switch, for example, **SWD**.
3. Tap **Open** or **Close** of any position to set the appropriate on or off status of this position.

Notes:

1. Except for SWH, all switches that start with 'SW' are position switches. SWH is a spring return switch. It is recommended to set other position switches as either the ON or OFF switch for functions.
2. The switch assignment operations for the Timer and Sensor are the same as above. However, this switch function is an 'Action Switch'. That is, the action of switching from the 'OFF' position to the 'ON' position is a valid action, and this function operates as a one-time switch.

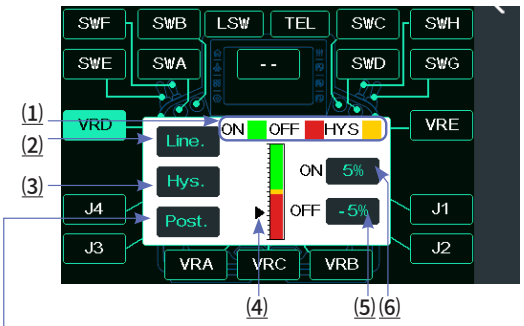


Tap on Open or Close to toggle the switch state.

To display the present position of the physical control.

16.1.3 Continuous Switches

For continuous controls such as stick or knob, the ON or OFF position can be set more flexibly according to different setting types.



Tap to switch between **Post.**(Positive) and **Nega.**(Negative) directions.

(1) To display the switch state in this area: green indicates ON, red indicates OFF, and yellow indicates HYS(hysteretic).

(2) Tap repeatedly to toggle between **Line.**(linear) and **Symm.**(symmetric).

(3) Tap repeatedly to toggle between **Hys.**(Hysteresis) and Box.

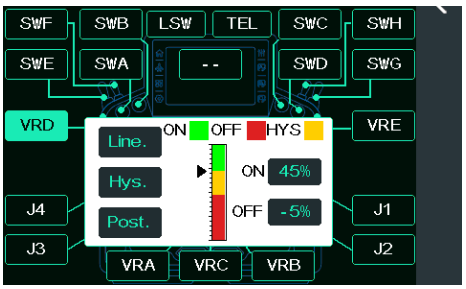
(4) Triangle means the present position of the control.

(5) To display the position value of OFF. Tap to set the present position of the control to OFF.

(6) To display the position value of ON. Tap to set the present position of the control to ON.

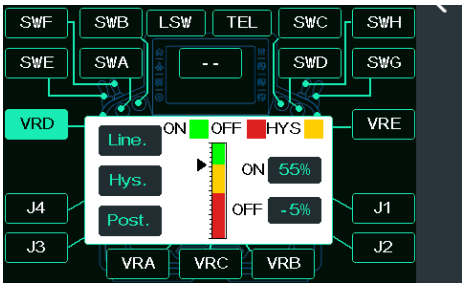
Linear/Symmetric Mode

Line. means the setting of **ON** or **OFF** position separately for the whole control travel. Symmetric means the setting of **ON** or **OFF** position symmetrically for the upper part or the lower part with the neutral point as the reference. You can switch the **ON** or **OFF** position by **Posit.** (Positive)or **Reve.**(Reverse).



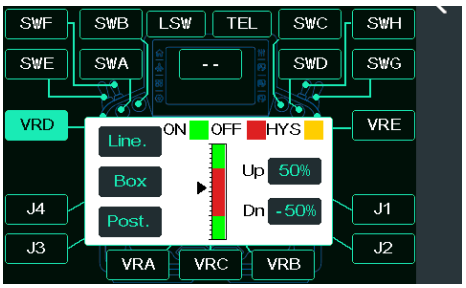
Setup:

1. Enter the switch assignment interface.
2. Tap the control name in the interface to select the switch, for example, VRD.
3. Switch the type mode by tapping **Line**.
4. Turn the VRD to a suitable position, and tap the green function box to the right of "ON" to set this position to ON.
5. Turn the VRD to another suitable position, and tap the green function box to the right of "OFF" to set this position to OFF.
6. Click Posit. to reverse the switch status.



Hysteresis/Box Mode

Hys. means the setting of border for ON or OFF only. You can set the hysteresis interval yellow for the border. When the control position is in the hysteresis interval, the previous state is kept. Box has no hysteresis interval. You can set 2 border values for on/off area. When the switch is outside this area, the switch state is opposite to the state inside this area. You can switch the ON or OFF position by 'Posit.' or 'Reve.'.



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Setup:

1. Enter the switch assignment interface.
2. Tap the control name in the interface to select the switch, for example, VRD.
3. Switch the type mode by tapping '**HYS.**'.
4. Turn the VRD to a suitable position, and tap the green function box to the right of "ON" to set this position to ON.
5. Turn the VRD to another suitable position, and tap the green function box to the right of "OFF" to set this position to OFF.
6. Click '**Posit.**' to reverse the switch status.

Note: If the mode is set to 'Box', the interface will display 'Up'/'DW'. The area between 'Up' and 'DW' is in the off state, while all other areas are in the on state."

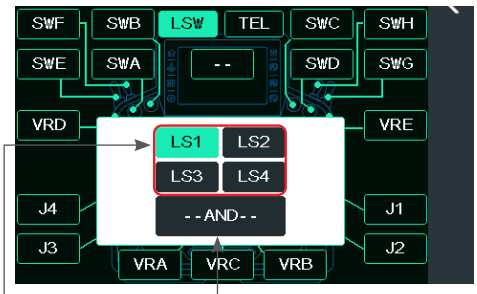
16.1.4 Logic Switches

Provide an interface for selecting logic switches. Users can preview the corresponding component switches and logical relations of logic switches, and by clicking the preview box, they can enter the logical switch settings interface to reset the logical switches.

Setup:

1. Enter the switch assignment interface.
2. Click **LSW** and a pop-up screen will appear. Click the logic switch you want to set, then tap the area to enter the setting interface. Then you can set a new logic switch.

Note: The on/off of Logic switch is to enable or disable a function.



To display the consisted switches of a LSW. Tap to enter the LSW setting interface.

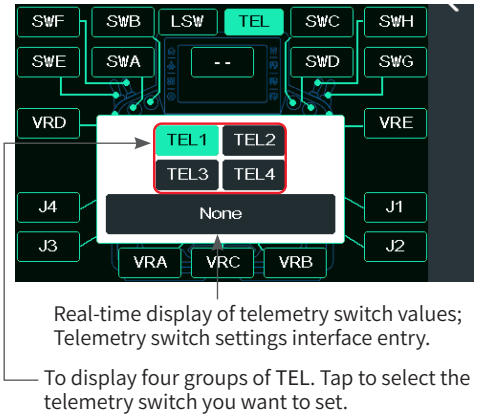
To display four groups of LSW. Tap to select it.

16.1.5 Telemetry Switches

Provide an interface for selecting telemetry switches, with the ability to preview telemetry switch control values in real-time, and the option to tap the preview box to enter the telemetry switch settings interface to reset the telemetry switches.

Setup:

1. Enter the switch assignment interface.
2. Click **TEL** and a pop-up screen will appear. Click the telemetry switch you want to set, then tap the area to enter the setting interface. Then you can set a new telemetry switch.



16.2 Linear Setting

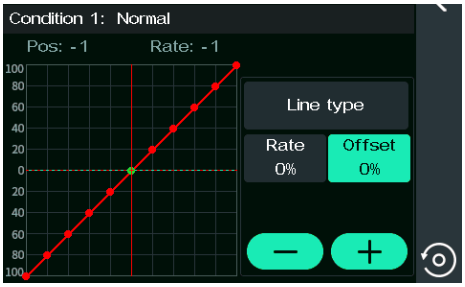
This section describes the linear settings of throttle curve and each mixes function. Such as **linear type** or **curve type** setting (**Throttle cut**, **Pitch curve**, **Throttle needle** and **Pro. mixes)**.

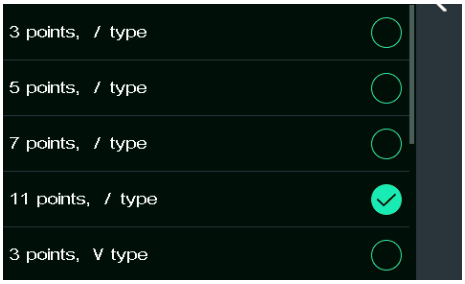
Setup:

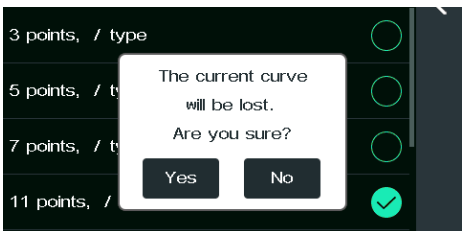
1. Click **Linear type** to enter the setting interface.
2. Click the appropriate linear type and points. Then click ◀ to return.
   - Click **<</>>** to select the point. The current selected point is shown in green.
   - Click **+/-** to change the values of **Rate** and **Offset**.

Notes:

1. After the linear type changes, the linear parameters before the change are overwritten.
2. The line can be shifted along the Y axis by offset value set.







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17. How Transmitter Output Functions Are Processed

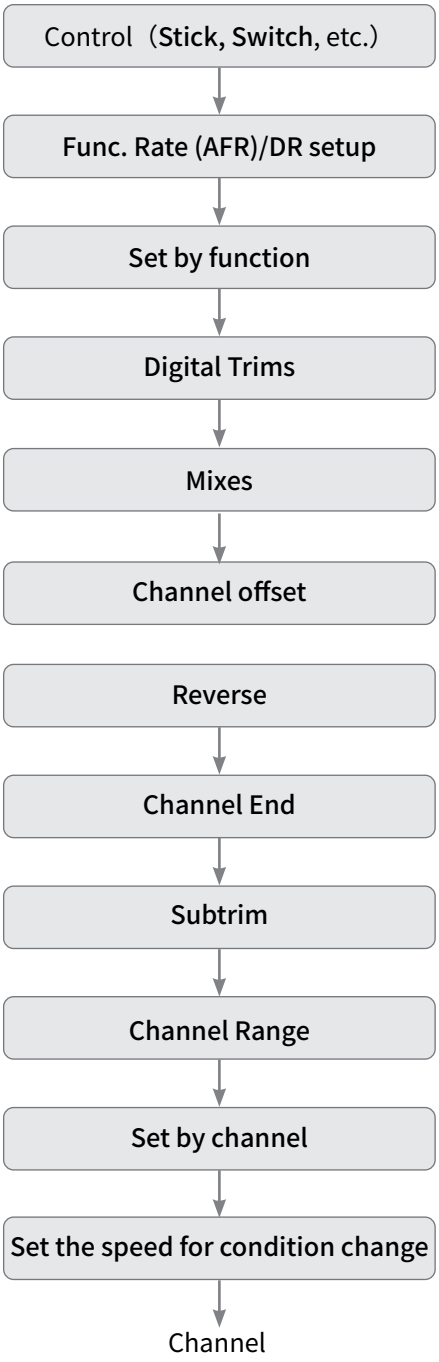
This section contains the Paladin PL18 Ultra functional arithmetic logic content.

This figure shows how the system handles the transmitter output function and how the various configuration choices/settings affect the output function.

When you move a transmitter control, such as a stick or switch, the final output value of the channel will be calculated and output in the order shown according to the setup function: Func. Rate（AFR)/ DR setup > Set by function > Digital Trims > Mixes> Channel offset > Reverse > Channel End > Subtrim> Channel Range > Set by channel> Set the speed for condition change.

Notes:

1. The Mixes includes the function mixing such as Aileron to Rudder and Programming mixes. The operation results will be output via Reverse, Channel End, which is superimposed with other operation results of the channel within the Channel Range operation, and Set by channel and Set the speed for condition change function operation.
2. When the Master of Programming mixes is set to a function, the Slave will experience a delay if Set by Function is enabled for this function.
3. After the value of the trim control is calculated by Trim Rate and Trim Mode, then it will be superimposed with other values of this channel, such as Subtrim, before Channel Range calculation.



18. Product Specifications

This section describes the specifications for Paladin PL18 Ultra transmitter.

Product Model	PL18 Ultra
Compatible Receivers	Receiver with AFHDS 3 protocol, such as FTr12B, FTr8B, Tr8B, FTr10, FTr16S, FTr4, INr6-HS and TMr for RC air models, FGr8B, FGr4B, FGr12B, FGr4P, FGr4S, FGr4 and GMr for RC cars, FBr12 for RC boats, etc.
Number of Channels	18
Number of Bands	171
Compatible RC Models	Airplanes, gliders,helicopters, multicomputers, cars, boats or robots
RF	2402.15MMHz-2479.85MMHz
Maximum Power	< 20 dBm (e.i.r.p.) (EU)
RF Protocol	AFHDS 3
Distance	>3500m (Air distance without interference)
Resolution	4096
Input Power	1S (3.6V)*8700mAh
Charging Jack	USB Type-C/Wireless charging
Low Voltage Alarm	Yes
Antenna	Two built-in antennas (FPC antenna)
Display	320*480 resolution IPS touch color screen
Language	Chinese or English
Simulator	USB Simulator
Data Connector	USB Type-C, TEI expansion connector, DSC 3.5mm trainer Jack (PPM), SD card slot
Operating Temperature	-10°C ~ +60°C
Charging Temperature	0~45°C
Humidity Range	20% ~ 95%
Online Update	Yes
Weight	1005g
Color	Black
Dimensions	212.5*86.7*191mm
Certifications	SRRC, CE, FCC ID: 2A2UNPL18ULTRA

19. Package Contents

The chapter contains the information related to package. Please consult the local dealer for detailed configuration due to different version of transmitter.

Number	Name	Quantity
1	Paladin PL18 Ultra Transmitter	1
2	Quick Start Guide	1
3	FTr8B Receiver	1
4	FS-XC101 BVD Voltage Detection Cable	1
5	FS-XC201 USB Type-C Cable	1
6	FWC03 Wireless Charger	1
7	FS-YGT01 Metal Stick End	One Set
8	Orange Cover for 3-Position/2-Position Switch	4
9	Orange Cover for 3-Position/2-Position Switch	6
10	Black Cover for 3-Position/2-Position Switch	4
11	Black Cover for 3-Position/2-Position Switch	6
12	Black Inner Aluminium Alloy Sleeve for mounting 3-Position/2-Position Switch	8
13	Black Outer Rubber Sleeve for mounting 3-Position/2-Position Switch	8
14	FS-QSJ01 Larger Grip	2
15	Screen Protector	1
16	SWE 2-position Switch (With PCB)	1
17	SWG 2-position Switch (With PCB)	1
18	Metric 1.5mm Allen Wrench	1
19	Metric 2.5mm Allen Wrench	1
20	Center of Gravity Regulator	1
21	FS-BKTH-14T Gimbal Spring 1	One Set
22	FS-BKTH-13T Gimbal Spring 2	One Set
23	LOGO Sticker	1

20. Certifications

20.1 DoC

Hereby, [ShenZhen FLYSKY Technology Co., Ltd.] declares that the radio equipment type [Paladin PL18 Ultra] 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

20.2 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.

20.3 FCC Compliance Statements

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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user’ s authority to operate the

equipment.

Note: 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.

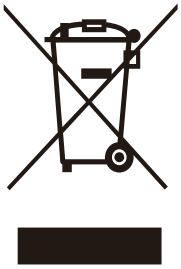
-- Increase the separation between the equipment and receiver.

-- 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.

20.4 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.

CAUTION

Risk of explosion if the battery is replaced an incorrect 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; battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas

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.

20.5 CE SAR statement

This equipment complies with Directive 2014/53/EU radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance.

This transmitter must not be colocated or operating in conjunction with any other antenna or transmitter.

The portable device is designed to meet the requirements for exposure to radio waves established by European Union market(France). These requirements set a SAR limit of 2W/kg averaged over ten gram of tissue.

The highest SAR value 0.021W/kg reported under this standard during product certification for use when properly worn on the body.

20.6 FCC SAR statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The portable device is designed to meet the requirements for exposure to radio waves established by the Federal Communications Commission (USA). These requirements set a SAR limit of 1.6 W/kg averaged over one gram of tissue. The highest SAR value reported under this standard during product certification for use when properly worn on the body.

For body worn operation, this model has been tested and meets the FCC RF exposure,Guidelines when used with an accessory desionated fo this product or when used with an accessory that Contains no metal and that positions the handset a minimum of 25mm from the body.The maximum SAR value is 0.033W/kg when the model used 25mm close to user.

微信公众号 Bilibili Website Facebook

CE, FCC ID：2A2UNPL18ULTRA

http://www.flysky-cn.com

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