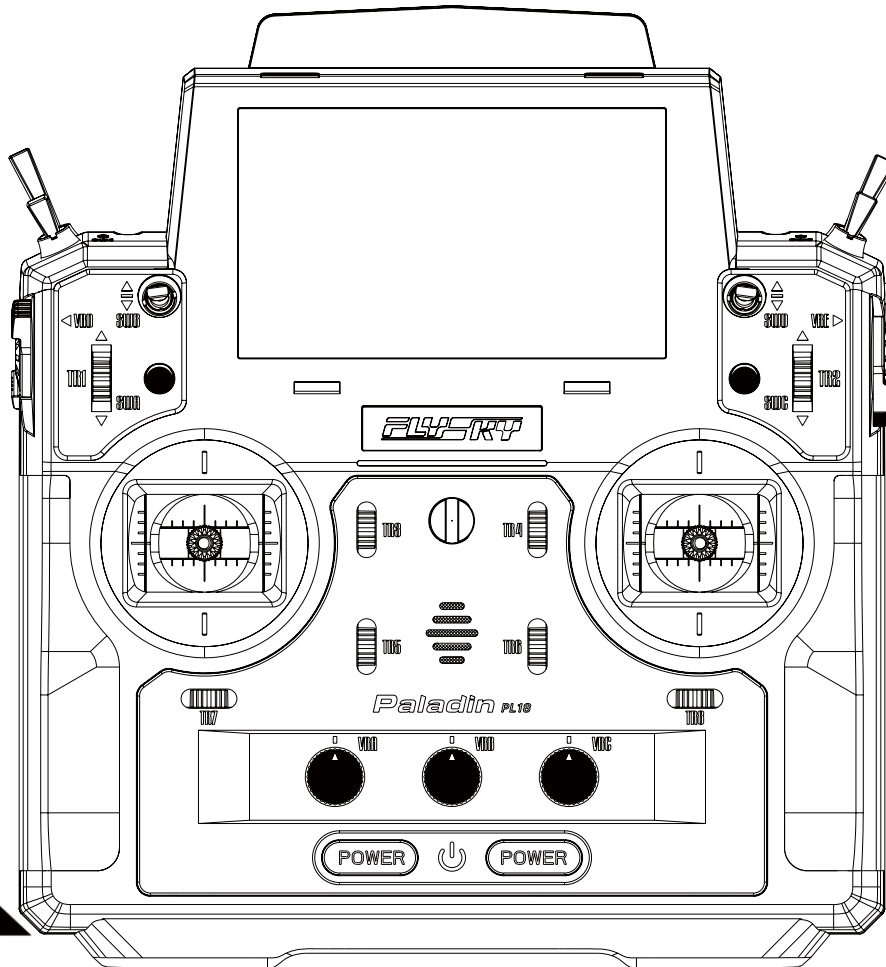


Paladin PL18

User Manual



FLYSKY

Touching Infinity

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WARNING:
This product is only for 15 years
old or above

2.4GHz
AFHDS 3



Thank you for purchasing our product, an ideal radio system for beginners or experienced users alike.

Read this manual carefully before operation in order to ensure your safety, and the safety of others or the safe operation of your system.

If you encounter any problem during use, refer to this manual first. If the problem persists, contact your local dealer or visit our service and support website for help:

<http://www.flysky-cn.com> <http://www.flysky-cn.com>

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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




- 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.





- 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 expose the battery to liquids.
■ Do not use a damp battery. Keep your hands dry during use and do not leave batteries in areas with lots of moisture.

 Do not solder, repair, modify or disassemble the battery.


 Do not charge the battery in direct sunlight, in a hot car or near anything hot such as cookers etc.

 Do not use near flammable liquids or gasses.


WARNING

 Do not touch the charger or battery during charging.


■ May cause burns


 Keep the battery away from any heat source if it is leaking or causing strange smells .


■ May catch fire or explode.


 Do not store the battery in dusty or humid environments.


■ Remove dust from the power connector before plugging in.

 Do not charge batteries that show any evidence of damage, aging, leakage or exposure to liquids.


 Do not touch the positive and negative terminals of the battery together.

 Do not throw the battery into a fire.

 Do not charge without ventilation.

 Charge before use.


■ Failure to charge the battery before use may lead to a crash.

 Do not throw or impact the battery

■ may cause fire or an explosion.

 Put some tape on the battery' s terminals before recycling

■ If the short circuit causes fire, heat, rupture, etc.

 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 .

3. Product Description

The PL18 transmitter and FTr10 receiver are an 18 channel 2.4GHz AFHDS 3 (Third generation automatic frequency hopping digital system) system compatible with fixed-wing, glider, helicopter, quadcopter and various other vehicles.

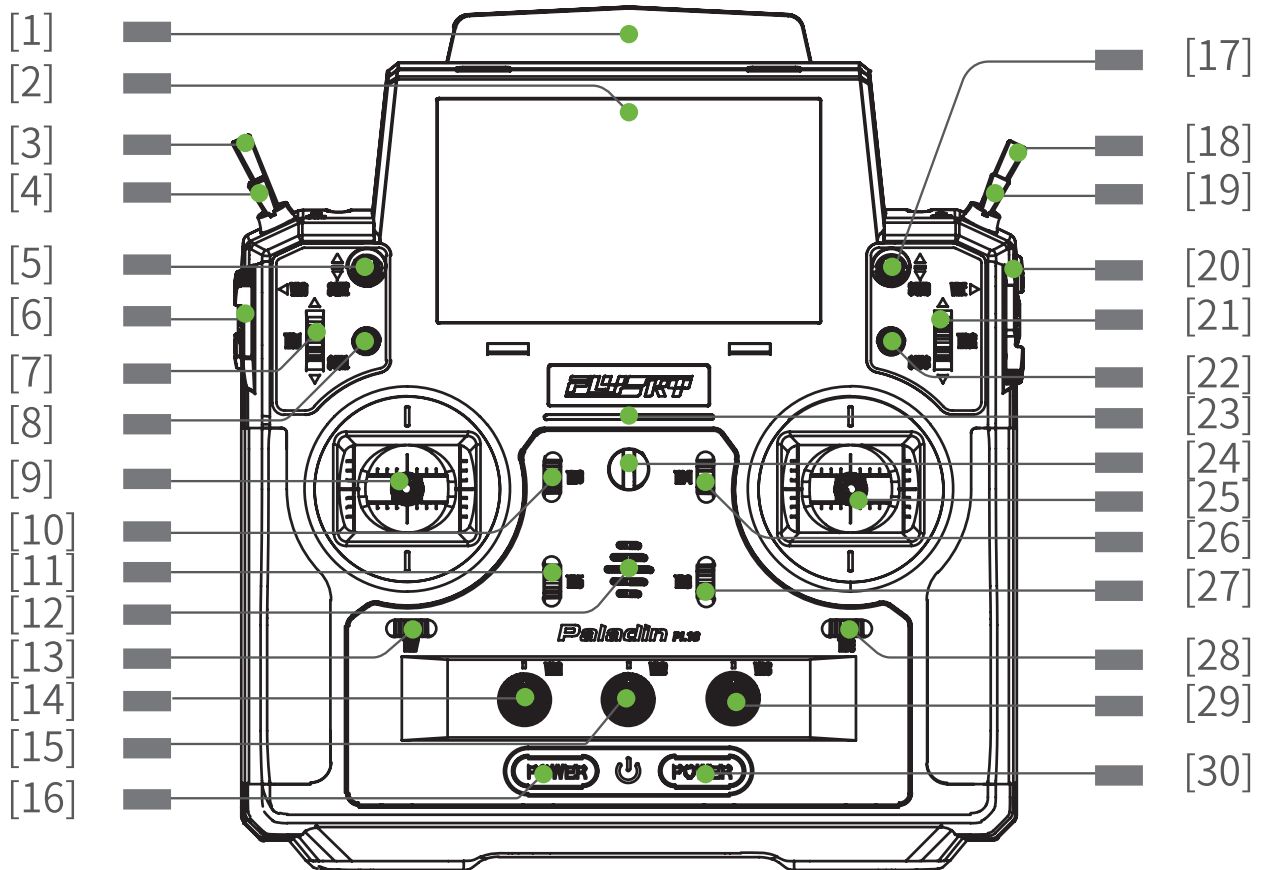
3.1 System Features

AFHDS3 (third-generation automatic frequency hopping digital system) is a newly developed digital wireless system. It is compatible with single antenna bidirectional real-time data packet transmission and data stream transmission. With the advantages that come with the WS2A wireless system and the new 2.4GHz chip, the system can dynamically set: number of channels, channel resolution, range, anti-interference requirements and latency to meet the needs of different users.

Single Antenna Bidirectional Real-time Data Transmission	The receiver can receive data from the transmitter and the transmitter can receive data from the receiver, this includes data from sensors, such as temperature and speed and support the i-BUS. This gives more control over the aircraft and constant information on its current status.
Uncorrected Data Transmission	The independent uncorrected data transmission module is built into RF system; it can send many different types of data including flight control data.
Intelligent RF configuration	Depending on hardware, certification, the amount of data to be transmitted, anti-interference, latency and distance requirements, the system intelligently adapts the corresponding RF configuration to meet the requirements of the user.
Multi-channel Frequency Hopping	This systems bandwidth ranges from 2.402GHz to 2.480GHz. This band is divided in 140 channels. Each transmitter hops between 16 channels (32 for Japanese and Korean versions) in order to reduce interference from other transmitters.
Unique ID Recognition System	Each transmitter and receiver has it's own unique ID. Once the transmitter and receiver have been paired, they will only communicate with each other, preventing other systems accidentally connecting to or interfering with the systems operation.
Low Power Consumption	The system is built using highly sensitive low power consumption components, maintaining high receiver sensitivity, while consuming as little as one tenth the power of a standard FM system, dramatically extending battery life.

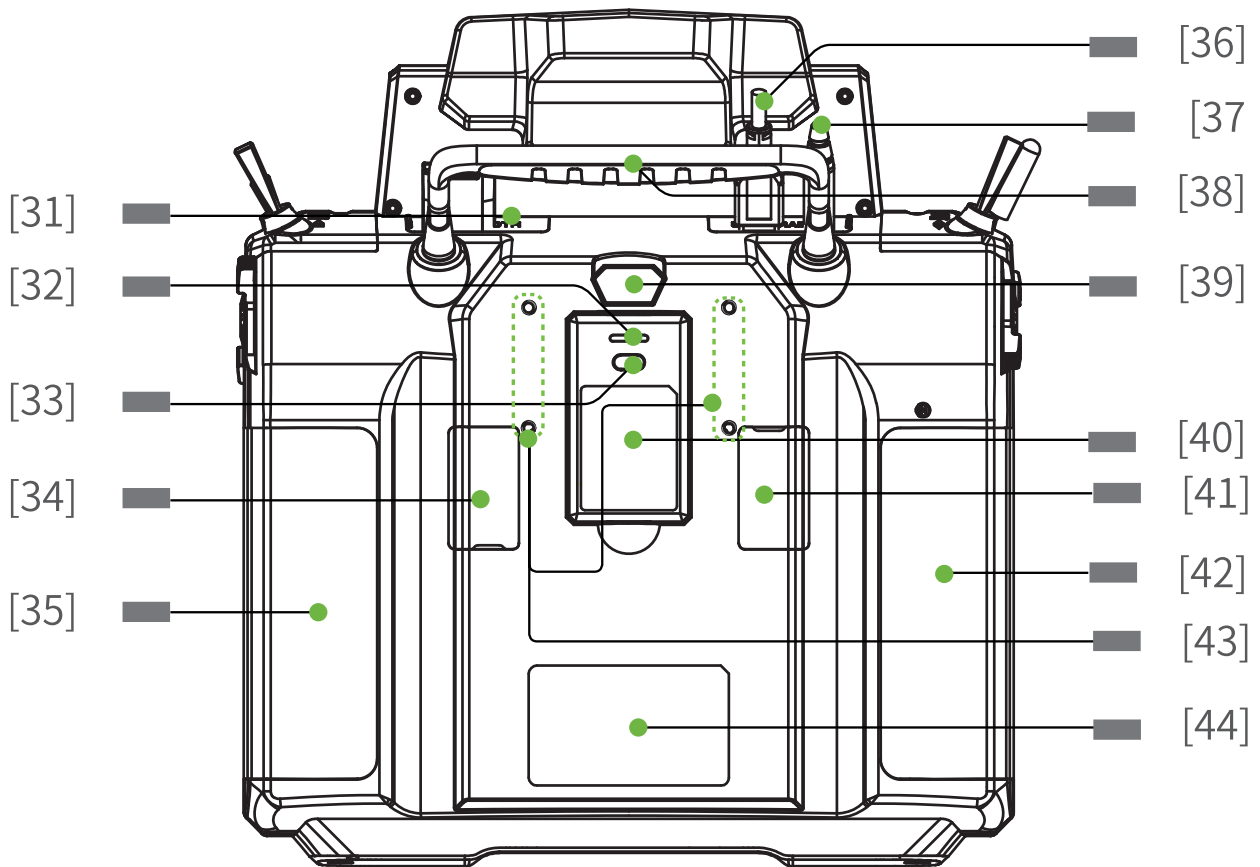
3.2 Transmitter Overview

Front View:



- | | | | |
|------|-----------------------|------|--|
| [1] | Antenna | [13] | TR7 Trim |
| [2] | 320*480px Screen | [14] | VRA Knob |
| [3] | SWF 2 Position Switch | [15] | VRB Knob |
| [4] | SWE 3 position switch | [16] | Power Button |
| [5] | SWB 3 Position Switch | [17] | SWD 3 Position Switch |
| [6] | VRD Knob | [18] | SWH 2 Position Switch with Self-return |
| [7] | TR1 Button | [19] | SWG 2 Position Switch |
| [8] | SWA Button | [20] | VRE Knob |
| [9] | Left Gimbal | [21] | TR2 Button |
| [10] | Button | [22] | SWC Button |
| [11] | TR5 Trim | [23] | Transmitter Status Indicator |
| [12] | Speaker | [24] | Lanyard Eye |

Back View:



- | | | | |
|------|---------------------------|------|--------------------------------|
| [25] | Right Gimbal | [35] | Grip |
| [26] | TR4 Button | [36] | Micro USB Port |
| [27] | TR6 Trim | [37] | Trainer Port |
| [28] | TR8 Trim | [38] | Grip |
| [29] | VRC Knob | [39] | FRM301 Press to release FRM301 |
| [30] | Power Button | [40] | FRM301 RF Module |
| [31] | Bluetooth Module Port | [41] | Gimbal Tension Adjustment |
| [32] | FRM301 Status Indicator | [42] | Grip |
| [33] | FRM301 Button | [43] | RF Module Port |
| [34] | Gimble Tension Adjustment | [44] | Wireless Charging Area |

3.2.1 Transmitter Antenna

The PL18 has a built in antenna with no need for manual adjustment.

	Note	• To ensure a good signal do not cover or block the antenna.
---	-------------	---

3.2.2 Stick/Knob/Switch/Button

The PL18 has 2 sticks, 6 switches, 5 knobs and 2 buttons.

- Gimbal: used to control the aileron (also known as roll), lift (also known as pitch), throttle and rudder.
- Switch: Used to control the auxiliary channels or to switch control states.
- Knob: Used to control the auxiliary channels.
- Button: Used to control the auxiliary channels or to switch control states.

3.2.3 Status Indicator

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

- Off: The transmitter power is off.
- Color (blue, yellow, pink, green): The transmitter power is on and is in normal working condition.
- Flashing red: Low voltage alarm.



3.2.4 Trim Switch

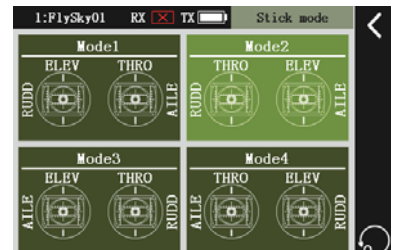
The transmitter has a total of 8 sets of trim switches that can be used to adjust the center point of each channel. You can set how much the trim changes the center point per press, the default is 5 units. If you press and hold the trim button down it will cause rapid changes to the value.

3.2.5 Gimbal Mode

This system supports four control modes, which assigns which stick and direction controls throttle, rudder etc. Select [Mode 1], [Mode 2], [Mode 3] or [Mode 4] as desired. The green icon indicates the currently selected mode (system default [Mode 2]), then adjust the gimbals as needed to match the mode.

Mode Selection:

Touch the main interface icon  — [System Settings] — [Stick Mode] — then select a mode from those presented (as shown on the right). Touch the back icon  to save and exit.



Function Settings:

By adjusting the tension screws on the back of the radio, gimbal stick can be either self-centering or non self-centering, as well as changing stick tension preference.

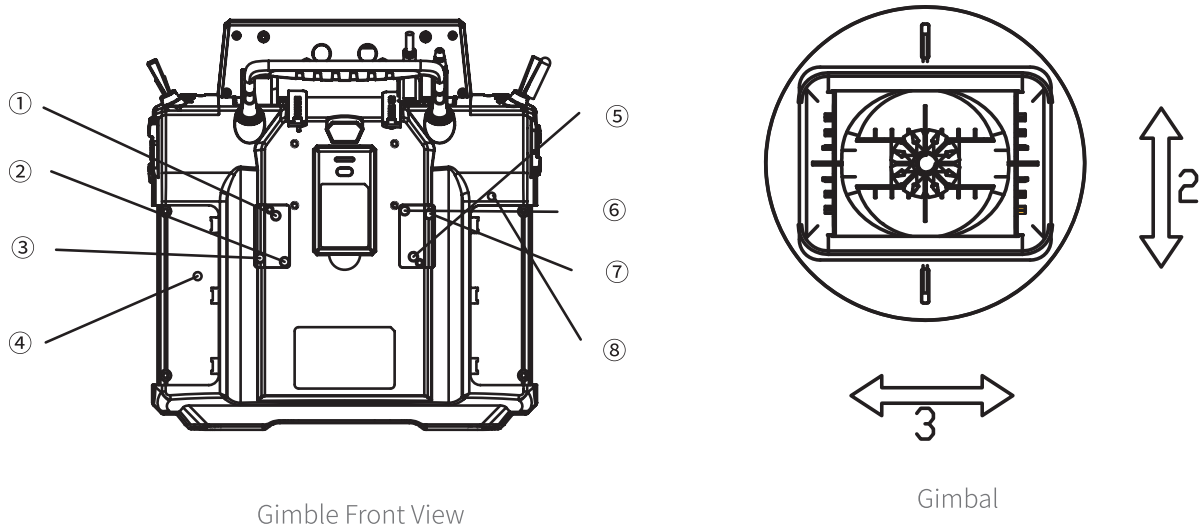
Available options:	① . ⑤	left & right side gimbal sticks automatic self centering	② . ⑥	left & right side gimbal stick vertical tension
	③ . ⑦	left & right side gimbal stick horizontal tension	④ . ⑧	throttle stick vertical friction

Left gimbal as example:

- Non Self-returning**
1. Use a Phillips screwdriver to adjust the screw ① counterclockwise until the gimbal reaches its center point.
 2. Adjust screw ④ counterclockwise to adjust the Frictional strength.
 3. If you need to adjust the strength of the return, adjust screw ② to the middle, and strengthen the clockwise force, and vice versa as needed.

- Self-return and Non self-return**
1. Use a Phillips screwdriver to adjust the screw ① clockwise so that the gimbal is no longer at its center point.
 2. Adjust the screw ④ clockwise to strengthen or reduce the Frictional strength..
 3. If you need to adjust the strength of the return, adjust screw ② to the middle, and strengthen the clockwise force, and vice versa as needed.

- When the counterclockwise adjustment is made, entire range of movement of the screw is about 3mm. Be cautious not to adjust it too far or the screw will fall out.

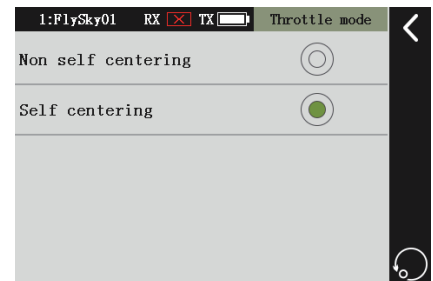


3.2.6 Throttle Mode

You can select [Non Self-returning] or [Self-return and Non self-return], the system defaults [Non Self-returning], then adjust the gimbals as needed to match the mode.

Mode Selection:

Touch the main interface icon — [System Settings] — [Throttle Mode] — then select a mode from those presented (as shown on the right).
完 Touch the back icon to save and exit.



Function Settings:

By adjusting the tension screws on the back of the radio, gimbal stick can be either self-centering or non self-centering, as well as changing stick tension preference.

Available options:	① . ⑤	left & right side gimbal sticks automatic self centering	② . ⑥	left & right side gimbal stick vertical tension
	③ . ⑦	left & right side gimbal stick horizontal tension	④ . ⑧	throttle stick vertical friction

Left gimbal as example:

Non Self-returning

- Use a Phillips screwdriver to adjust the screw ① counterclockwise until the gimbal reaches its center point.
- Adjust screw ④ counterclockwise to adjust the Frictional strength.
- If you need to adjust the strength of the return, adjust screw ② to the middle, and strengthen the clockwise force, and vice versa as needed.

Self-return and Non self-return

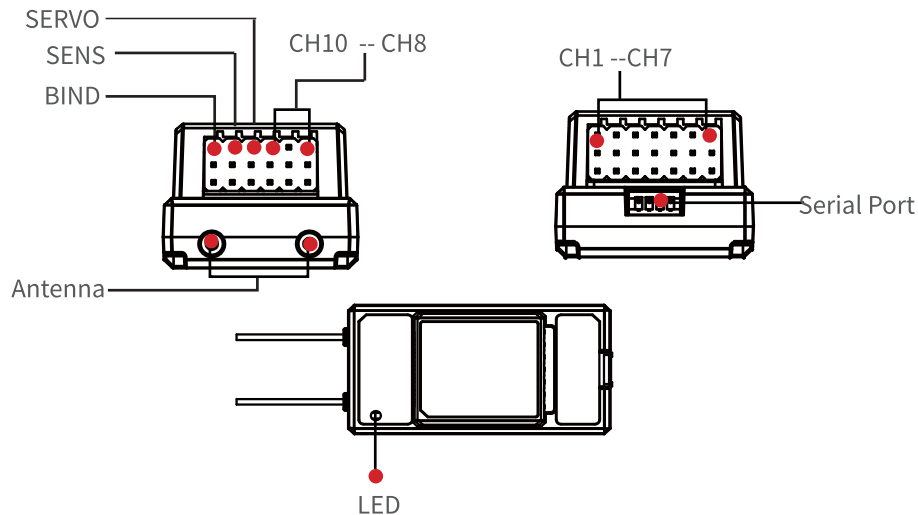
- Use a Phillips screwdriver to adjust the screw ① clockwise so that the gimbal is no longer at its center point.
- Adjust the screw ④ clockwise to strengthen or reduce the Frictional strength..
- If you need to adjust the strength of the return, adjust screw ② to the middle, and strengthen the clockwise force, and vice versa as needed.

- When the counterclockwise adjustment is made, entire range of movement of the screw is about 3mm. Be cautious not to adjust it too far or the screw will fall out.

3.2.7 Power Buttons




To prevent the system from being powered on or off by mistake the PL18 uses a dual power button system. Press and hold both power buttons to power on the transmitter.

3.3 Receiver Overview



3.3.1 Receiver Antenna

The FTr10 uses AFHDS 3 (3rd Generation Automatic Frequency Hopping Digital System) with dual antenna bidirectional transmission.

 CAUTION	<ul style="list-style-type: none"> Do not pull, bend or tie the receivers antenna or connect it to a servo.
 CAUTION	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Ensure that the two antennas are mounted at 90 degrees to each other, as shown below.

3.3.2 Status Indicator

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

- Off: The receiver power is not connected.
- Steady red: The receiver is connected to the power supply and is working properly.
- Fast flashing: The receiver is in bind mode.
- Slow flashing: The paired transmitter is powered off or signal is lost.

3.3.3 Ports

These ports are used to connect the receiver to the various components of the model.

- PPM/CH1: Can be connected to a servo or output PPM signal.
- CH 1 - CH 10: CH 1 - CH 10: Can be connected to servos or act as a power supply or for other components.
- B/VCC: Used to connect the bind cable when activating bind mode and connect the power during normal operation.
- i-BUS sensor interface (SENS): used to connect compatible sensors.
- SENVO: expands the number of channels and outputs for i-BUS or S-BUS signals.

4. Preflight 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 receiver's 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.
3. Ensure that the two antennas are mounted at 90 degrees to each other, as shown below.



Note

- **To prevent damage do not power on the receiver during installation.**



5. Operation Guidelines

Once the model is set up follow these guidelines to set up the transmitter and receiver.

5.1 Power On

Follow the steps below to power on:

1. Check to make sure the receiver is installed correctly and that the receiver is powered off.
2. Press and hold both power buttons until the screen lights up.
3. Power on the receiver.

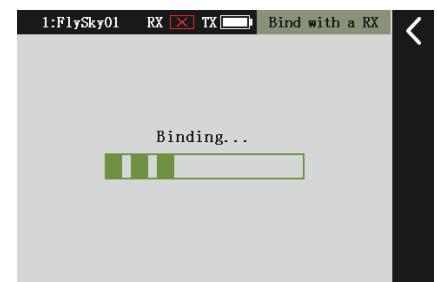
- | | |
|---|--|
|  Note | <ul style="list-style-type: none">• The system is now active, be cautious to not cause damage or personal injury. |
|  Note | <ul style="list-style-type: none">• For your safety, all switches must be set to their highest position, and the throttle to its lowest position before the transmitter will power on. |

5.2 Binding

The transmitter and receiver have been pre-bound at the factory.

If you need to rebind or bind a new receiver follow the steps below:

1. Power on the transmitter, touch the function menu icon then enter the RX setup menu.
2. If required, the RF standard can be changed from AFHDS 2-way and AFHDS 1-way. To do this select RF standard located in the RF setup menu, then select 1-way or 2-way as needed. Touch the back icon to save and exit.
3. Touch [Bind with a receiver], then touch [yes] when prompted, to enter bind mode.
4. Insert the bind cable into the receiver's BIND port.
5. Power on the receiver. The receiver's status indicator will start flashing to indicate that it has entered bind mode.
6. When the receiver's status indicator stops flashing then binding has been successful. Power of the receiver then remove the bind cable and power it back on again.
 - If [AFHDS3 2-way] is selected, the transmitter automatically exits the code interface once the binding process is complete.
 - If [AFHDS3 1-way] is selected, manually touch the back icon to exit bind mode.
7. Check that the transmitter, receiver and model are all working as expected. If there are any abnormal movements, repeat the steps above.




5.3 Preflight Checks

Always perform the following steps before each flight:

1. Inspect the entire system to make sure that everything is working as expected.
2. Perform a range test as outlined in the [13.3 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	• Ambient interference caused by other signal sources may cause interference.
--	---

5.4 Model Settings

This system supports five types of models: fixed wing/glider, helicopter, quad and excavator. Follow the steps below to set up the system for each model type:

1. Select model type: Touch the function menu icon  — enter the [Models] menu — touch [select model type], Select the desired model type from the list shown on screen.

- Once a model type is selected the system will automatically go to that model types [Model structure] page.
- Fixed wing/gliders are both the same option.

2. Setting up the model structure:

For information on setting up Fixed-wing/glider refer to section 8.3 of this user manual.

For information on setting up Helicopters refer to section 9 of this user manual.

For drone setup select newbie or expert according to your level of expertise.

- Once the model setup has been completed the system will assign channels to each function. Use the onscreen diagram to help set up your model or select [Channels assign] to manually assign each function to a channel.

 DANGER	• When connecting the receiver to the model make sure that each channel is in a safe position in order to avoid damage to the aircraft.
---	---

5.5 Power Off

Follow these steps to power off the system.

1. Power off the receiver.
2. Press and hold both of the transmitters power buttons until the screen powers off.

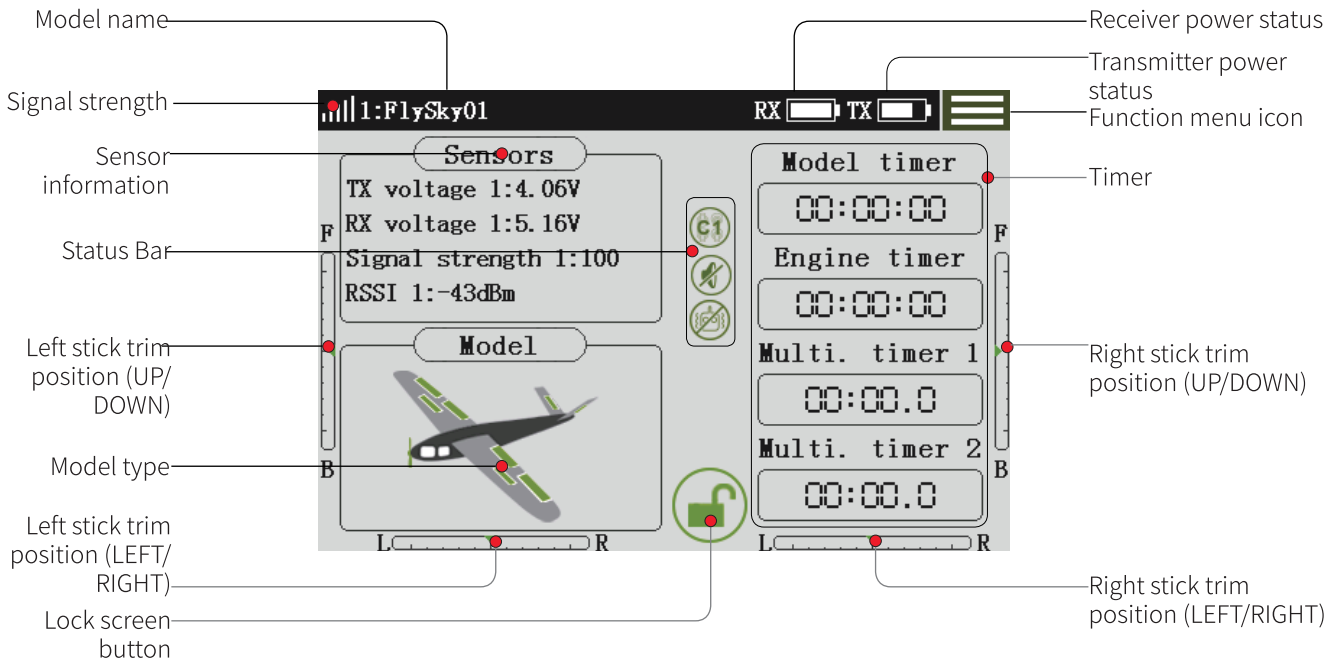
 DANGER	• To avoid any risk of losing control of the model, always power off the receiver before powering off the transmitter.
---	--

6. UI

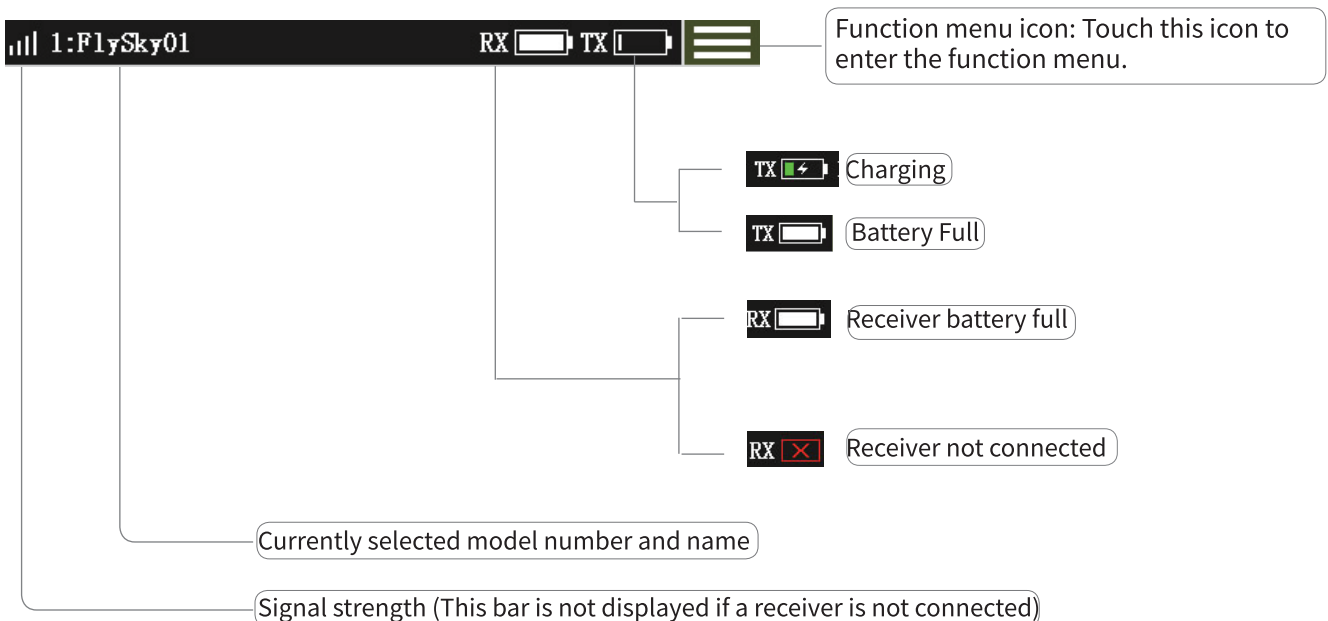
This is an interdiction to the transmitter' s UI.

6.1 UI Overview

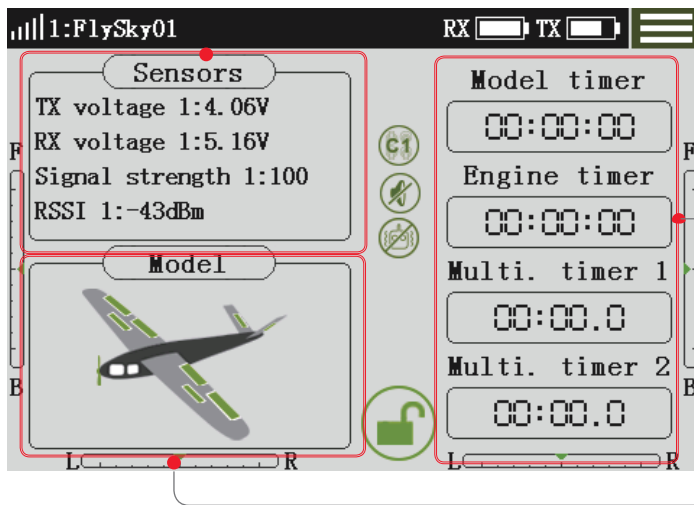
The main interface displays information related to the model such as sensor information and function status.



6.1.1 Status Bar (Top)



6.1.2 Quick Access



Touch this area to access the [Sensor selection menu]
Up to 4 sensors can be displayed.
For more information refer to section [7.17] of this manual.

Touch this area to access the [Timer] settings menu.
For more information refer to section [7.11] of this manual.

Touch this are to access the [Aircraft Structure] menu.
For more information refer to section [7.16] of this manual.

6.2 Menu UI

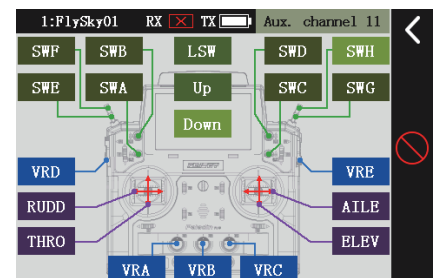
This section is a quick introduction on how to use the UI.

6.2.1 Function Icons

	Screen Lock		Screen unlocked
	Function Disabled		Function active
	Restore to default		Function select
	Assign switches		Set curve type

6.3 Gimbal, Knob and Switch Assignment

- The system has both 2-way and 3-way switches, when at bottom/middle position the switch is active.
- The sticks are by default assigned to aileron, elevator and throttle.
- Knobs (VrA-VrE) can be assigned to control some function parameters in real time.
- Switches can also be assigned to logic switches to control conditions.



7. General Function Settings

This chapter introduces the main system functions.

7.1 Reverse Function

This function reverses the direction of motion for each channel.

Function Settings:

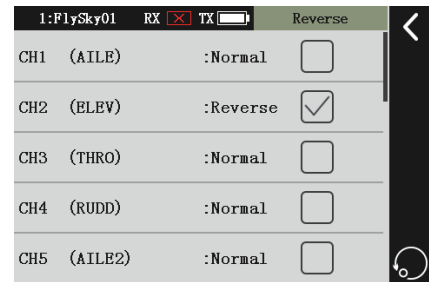
This function can reverse the direction of travel for all 18 channels.

[Normal]: indicates that this channel output is the default direction;

[Reverse]: indicates that the channel's direction of travel has been reversed.

- If a new model is connected make sure that all the servos are moving in the right direction.
- Move each stick to make sure that the control surfaces are moving in the correct directions.

Touch the box to 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.



7.2 End Points

This function changes the max range of movement for each channel.

Every model is different, as such many have different requirements when it comes to how far a control surface should move, if a control surface moves too far it may damage the model. The End points function limits the range of movement for each channel to prevent this.

Note: If the channels center point is not in the right position it will be impossible to set the outer limits of the channel movement properly. If this is an issue use the Subtrim function to move the center point first.

Function Settings:

This function adjusts the maximum range of movement for the channels up and down sides independently by between 0 and 120%.

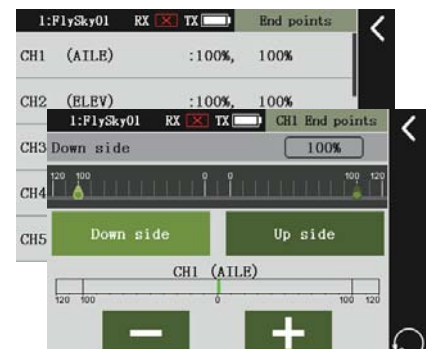
[Up side]: range of movement above the channel center point.

[Down side]: range of movement below the channel center point.

The currently selected side will be highlighted in light green.

The green bar is the current position of the channel.

1. Select a channel.
2. Select the Up or Down side as needed.
3. Use the + and - keys to change the end point position.
4. Repeat with other side as needed.
5. Touch the back icon to save and exit.



7.3 Subtrim

This function is used to adjust the center point of each channel.

Due to the structure of some models the servos center point may need to be adjusted so that when at rest all the control surfaces line up properly.

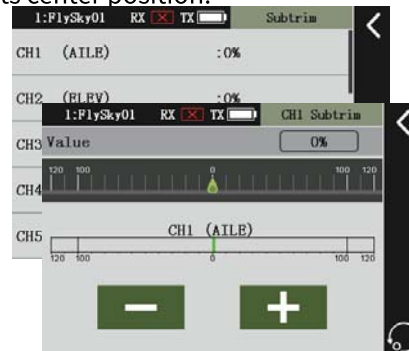
When using this function make sure that the stick, knob etc. is at its center position.

Function Settings:

This function adjusts the Subtrim of all 18 channels within a range of -120% to 120%.

Steps:

1. Select a channel.
2. Use the + and - icons to adjust the channels center point.



7.4 Trims

The trims function adjusts throttle, pitch, roll and rudder channel's center points using the built in trim buttons on the PL18.

During use a models control surfaces may move out of alignment because of the stresses they are experiencing and as such will need to be adjusted during flight.

This function should not be used to fix issues with control surface alignment except as a last resort. When possible make changes to the model to fix these errors before flight.

Function Settings:

This function can be set to a max of 120 and a minimum of -120. The amount that the function steps with each button press can be customized between 1 and 10, the default step size is 5.

1. This function is always active, however when a trim switch is used the current value will be displayed in the center of the screen for a few seconds.
2. To adjust the trim of a channel move it's corresponding trim switch up to increase and down to decrease. If you toggle and hold the trim switch the function will move through steps faster.
 - This function should only be used during flight and is not a long term fix for alignment problems.



7.5 EXP (Exponential Function)

This function changes the relationship between input and output.

An example of this would be for every 1 step the input moves, the channel will move 2 steps. This can also be set in a certain range, so for example if it is required that the aileron be more responsive towards the middle of the stick's range of movement, but less responsive on the outer limits of stick's movement.

Function Settings:

[Ratio]: Clamps the maximum and minimum value and as a result reduces the steepness of the curve.


[EXP]: How much curve is added to the line. It can be adjusted between -100% and +100%.

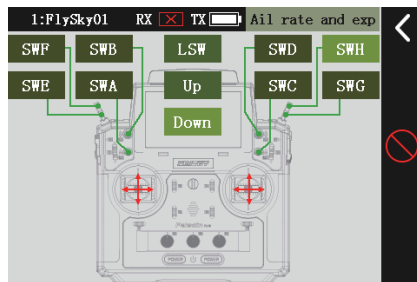
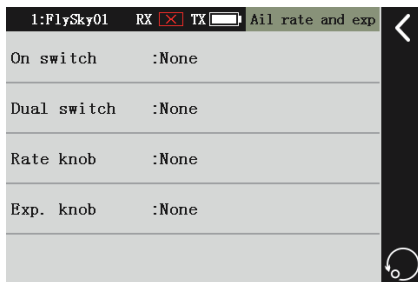
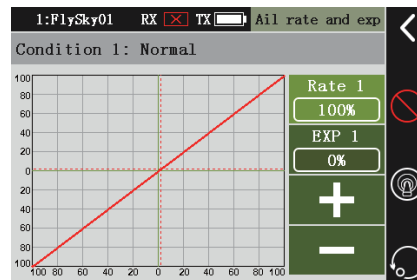
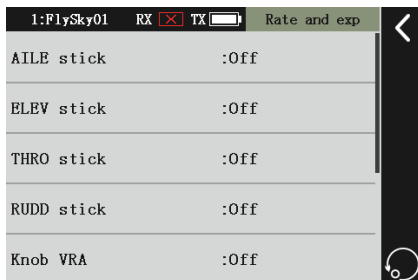
The box highlighted in light green is the currently selected setting.

The horizontal axis on the graph is the stick/knob/input's true position.

The vertical axis on the graph is the adjusted output.




The red line is the current relationship between input and output.

1. Select a channel and touch the  icon to activate the function.
2. Touch [Rate] or [EXP] as needed.
3. Use the + and – keys to change the setting's value.




Switches, knobs etc. can be assigned to control the function by touching the  icon.


[On switch]: Toggle the function on and off using a switch or logic switch.

- a. Touch the  icon to enable. Then select a switch from the chart.
- b. Select the desired on position from the options for that switch or move the switch to that position.
- c. Press the back icon twice to return to the main function menu. The function can now be toggled on and off using the assigned switch.
 - When a switch is assigned to [On switch] the function can no longer be toggled on and off by touching the  or  icon.

[Dual switch]: A switch can or logic switch can be used to switch between 2 different stored settings for Rate and EXP.

- a. Touch the  icon to enable. Then select a switch and switch position.
- b. Use the back icon to go back to the functions Rate and EXP menu and set the parameters as needed.
- c. Toggle the assigned switch, then set up the second set of parameters as needed.
- d. Now when the switch is toggled the function will jump between the 2 saved presets.

[Rate knob] Assign a knob to control the Rate parameter.

- a. Select a knob from the chart.
- b. Use the  icon to go back to the rate and exp menu and turn the selected knob to make sure it is functioning as expected
 - When a knob is selected the + and – icons will no longer be able to change the rate value.

[EXP knob]: Follow the same steps as for [Rate knob].

7.6 Throttle Curve

This function changes the output curve for the throttle channel. A curve can be created using 3 – 11 different points so that the user has much better control of the aircraft's engine. A curve can also be set in the EXP function.

Function settings:

This function supports two different types of curve, a / curve and a V curve. Each curve type can be set to have between 3 and 11 points.


The horizontal axis represents the input value of the throttle stick;

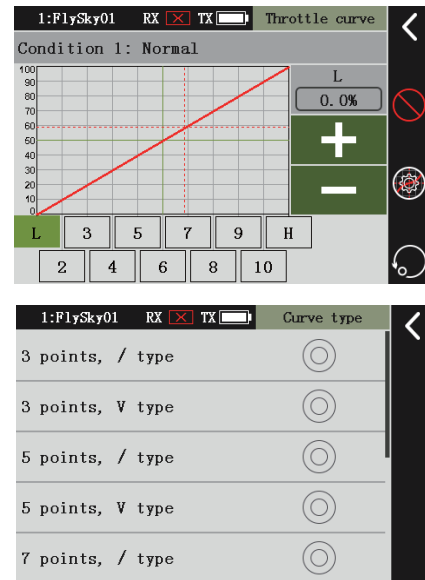
The vertical axis represents the output value of the throttle after adjustment;

The red line is the linear relationship between the input value and the output value;

The "L" icon below the coordinates indicates the first point on the curve;

The box highlighted in light green is the currently selected setting.

1. Touch the  icon to enter the curve selection
 - Every time the curve type is changed the previous curve settings will be lost. The system will ask for conformation before changing the curve type.
2. Choose a curve type from the list. Once a curve is selected the system will automatically return to the curve chart.
3. Touch a point to select it, then use the + and – icons to change the points value. Repeat with other points as needed.

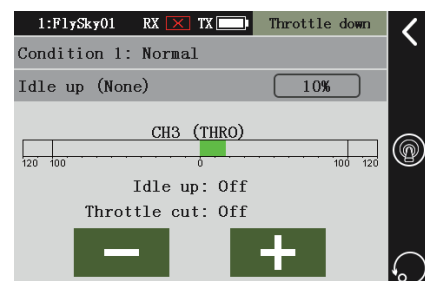


7.7 Throttle Down

This function has allows the throttle channel to hold 2 different positions, one to cut the engine and one to keep the engine idling.

[Idle up]: Keeps the throttle from dropping below a minimum set value to stop the engine from stalling.

[Throttle cut]: Reduces the throttle to 0 in order to turn off the engine. Once this function is active the throttle will can no longer be controlled by the stick. For safety reasons this function will not activate unless the throttle channel is below 30 percent. If the throttle is above 30 percent when this function is activated, then it will take effect as soon as the throttle drops below that threshold.





Function Settings:

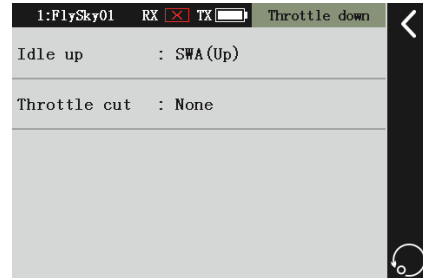
Idle up can be set to a value between 0 and 100%.

[Idle up (none)]: means that no switch is assigned to the Idle up function and as such is not active. When a switch is assigned to it will be shown in the brackets, for example [Idle up (SwA)]: The percentage to the right of the switch notification indicates the channel position when the function is active.

[Off]: located below the channel bar, indicates which function is active and inactive.

[On]: indicates which function is active.

1. Touch the  icon to enter the switch selection menu.
2. Touch Idle up or Throttle cut, then select a switch and switch position from the chart. The switch position can also be selected by moving the desired switch to the desired position.
3. Use the  icon to return to the functions main menu and toggle the switch to test.



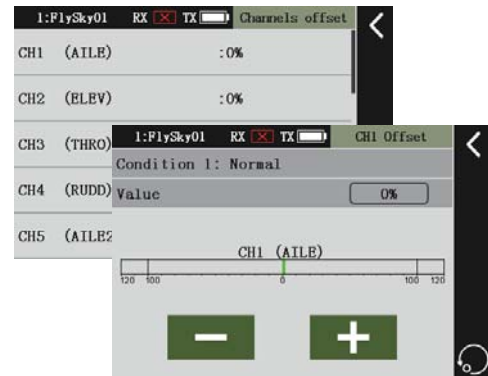
7.8 Channel offset

This function will offset the channel to one side or the other, this can be used to fix issues with an aircraft's control surfaces not lining up correctly, however, the channel will also lose some range on one side or the other, and as such should only be used as a last resort.

Function Settings

This function can be used for all 18 channels and has a range of + and - 50%.

1. Select a channel.
2. Use the + and - icons to adjust the offset.



7.9 Conditions




Conditions can store settings for many different functions at the same time. If different setups are needed for different situations, like take off, flight and landing, conditions can, at the flick of a switch, change settings across several supported functions at the same time.

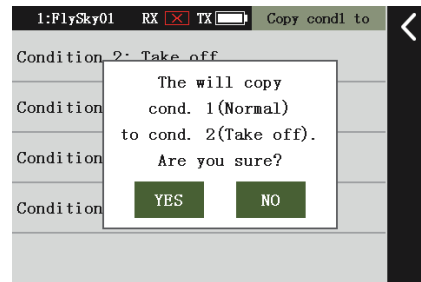
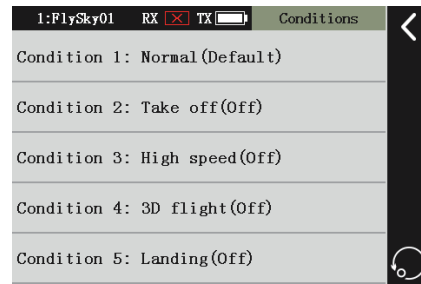
- Example: If for takeoff the user requires a different throttle curve and a mix which is more sensitive for rudder and pitch but not for roll, then once the aircraft is in the air needs a completely different set of curves for those controls.
- Not all functions can be used with conditions however, any function that can be used will have [Condition x: name], where x is the condition number and name is the currently active conditions name.
- Conditions have different priorities, condition 5 being the highest and condition 1 being the lowest. This means that if conditions 1, 2 and 3 are all toggled on at the same time, only condition 3 will be active. If all conditions are toggled off then the default condition, condition 1, will be active.

Function settings:

The conditions function can hold up to 5 different data sets, each of which can be copied, pasted and renamed. In order to activate a condition it must be assigned to a switch.

- The currently selected condition can be seen at the home screen. See [6.1] for more details.

- Select a condition.
- [Name]: Displays the conditions name.
- [Copy]: Copies the conditions settings to another condition.
- Touch [Name] and use the on-screen keyboard to enter a new name. When finished touch the  icon to save and exit.
- Touch [Copy], then select a condition to overwrite from the list.
- Touch the  icon to enter the switch assign menu, select a switch and position from the diagram or move a switch to the desired position. Press the  icon to save and exit.
 - The first condition is the default condition and as such cannot have a switch assigned to it.



7.10 Logic switches

A logic switch is a virtual switch connected to 2 physical switches which activates or deactivates according to a mathematical relationship between the two.

Example: Logic switch, “and” gate. If only switch one or switch 2 is active, the logic switch will remain off, however if switches 1 and 2 are active at the same time, then the logic switch will activate.

A logic switch can be used in any function that can assign switches.

Function Settings

There are 3 logic switches.

[Select Sw]: Touch here to select a switch from the switch selection menu.

AND: If switches 1 and 2 are active, then the logic switch will be on.

OR: If switches 1 or 2 are active, or switches 1 and 2 are both on, the logic switch will be on.

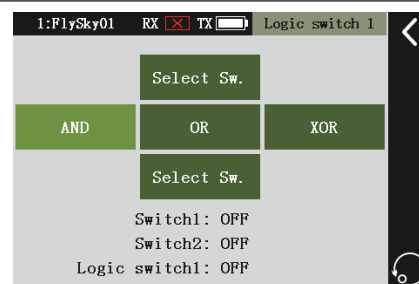
XOR: If switches 1 or 2 are active, then the logic switch will be on, but if switches 1 and 2 are both active the logic switch will be off.

[Switch1]: Displays the status of switch 1.

[Switch2]: Displays the status of switch 2.

[Logic switch1]: Shows the status of logic switch.

- Select a logic switch.
- Touch the top Select Sw., then select a switch and position.
- Touch the bottom Select Sw., then select a switch and position.
 - The logic switch will not function without 2 physical switches assigned.
- Select a logic gate, AND, OR or XOR as needed
 - Refer to the table below for more information on logic gates and their function.
- Toggle the switches to make sure everything is working as expected.




Switch		Gate		
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

7.11 Timer

Select from a variety of timers to keep tracking of things such as, flight time, lap time etc.

[Model/Engine timer]: Used to keep track of flight time.

Function Settings:

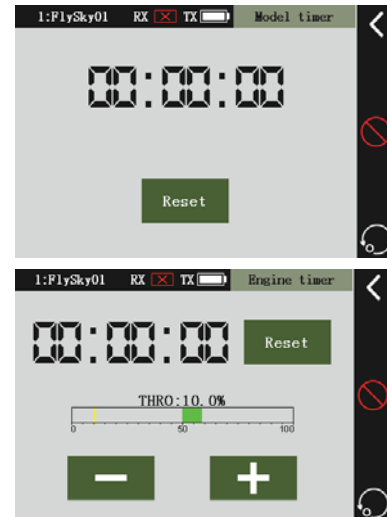
1. Touch Model or Engine timer, then touch the  icon to activate the timer.
2. For the engine timer, use the + and – keys to set the trigger point on the throttle channel. This trigger point will start and stop the timer.

[Model Timer]: shows the cumulative time that the throttle exceeds the alarm value, in hours, to the nearest minute;

[Engine Timer]: shows the cumulative time that the throttle exceeds the alarm value, in minutes, to the nearest second;

[Reset]: Resets the timers to 0.


Note: The engine timer will not work unless the transmitter is connected to a receiver.



[Multipurpose timer]: The system has 2 multipurpose timers. Both of these timers are identical.

Function Settings:

1. Select [Multipurpose Timer 1/2].
2. Select the timer type.
3. If you select [down timing] or [down then up], you need to use the “+” “-” to set the timer, the system defaults to 5 minutes; if you select [up timing], you can omit this step;
4. Touch [Start] to start the timer.
Touch [Stop], to pause the timer.
Touch [Reset] to reset the timer.

Touch the  icon to assign a switch to control the timer.



[Voice prompts]

This function can be selected according to the needs of the voice prompt [multipurpose timer 1] or [multipurpose timer 2].

7.12 Trainer Mode


This function is used so that a coach may teach a student but remain in control when needed.

In the PL18 coaching system, you can select the channel that the coach transmitter is used for guidance and the channel data input by the student machine for [Joystick or Knob], [Basic Function], [Output Channel]. Take full control of the student's actions and complete the coaching settings you want according to your habits.


This system supports any transmitter that uses standard PPM signals as the output.

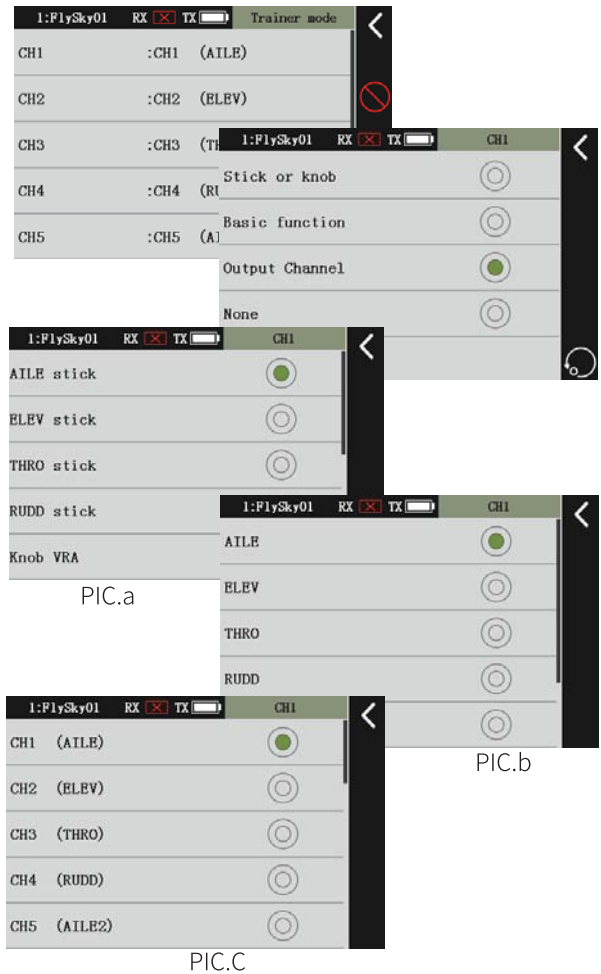
Function Settings:

This function can be used for channels 1 to 8.

1. Touch the  icon to activate the function then select a channel.
2. Select [Stick or Knob], [Basic Function], [Output Channel] or [None] in the list; [Joystick/Knob] means that the channel signal output from the student's radio will be processed by all functions of the trainer's radio. Sticks, knobs, VrA-VrG (PIC.a) can be selected. [Basic function] means that the signal output from the student's radio will be processed by the trainer's radio. Basic functions such as optional aileron, lift, throttle, and direction, such as function delay (PIC.b). [Output channel] means that the signal output from the student's radio will only be processed by the output of the transmitter, such as linear mixing. Choice of 1-18 channels (PIC.C). [None] means that after entering the coaching function, this channel is not controlled by the student's radio.

Steps:

1. Power on the trainer's radio and enter [Trainer mode].
2. Power on the student's radio.
3. Connect the two radios using the training wire. If the student's radio is not a PL18 make sure that the connector is compatible, if not it may be possible to purchase an adapter.
4. To give the student control hold down the SwH switch or touch the  icon to assign a new switch.



7.13 Aux. Channels

This function enables control of channels outside of the default channels assigned to the model. Depending on the model type and aircraft structure, more or less channels will be available. Examples of channels that will be in use could be, aileron, throttle etc. The default channels can be changed in the [Channels assign] function.

- An example of an aux channel would be using aux 5 to control landing gear.

功能设置:

[Channel 5 (Auxiliary Channel 5)]: [SwF (up)] indicates that the 5th channel is named [Auxiliary Channel 5], controlled by SwF. When SwF is up, the channel value is 2000, SwF is downward, and the channel value is 1000. ; [Channel 6 (Auxiliary Channel 6)] indicates that the default name of the 6th channel is [Channel 6 (Auxiliary Channel 6)]: None, and there is no control.

1. Select a channel.
2. Touch [name] and use the on screen keyboard to name the channel. Touch the back icon to save and exit.
3. Touch control and select an element to control the channel. If using a logic switch physical switches will need to be assigned in the logic switch menu.

