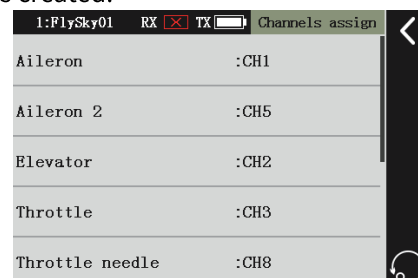


7.14 Channels Assign

This function overrides the default channel assignment set up when a model is created.

Function Settings:

1. Select a channel.
 2. Select the a channel to take over control of that function.
- If the channel is already assigned the system will ask if you are sure.



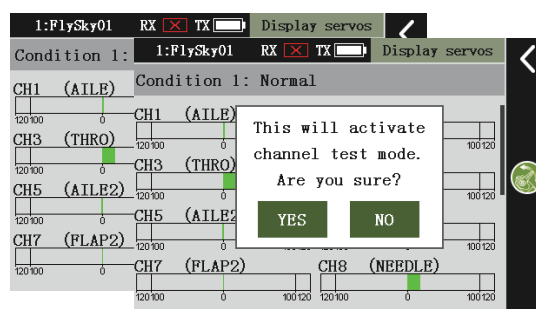
7.15 Display servos

This function will show the channel output with any changes made by other functions such as EXP etc. This function can also go into a test mode to move all the channels through their entire range of motion.

- **WARNING:** Make sure the engine is powered off before entering test mode to avoid loss of control.

Test Mode:

1. Touch the  icon to activate test mode. When test mode is active all channels will slowly move through their entire range of motion.
2. Touch the icon again to exit test mode.



7.16 Models

Through the models function, you can perform operations such as model selection, changing model type, copy models to new save slots, and renaming models.

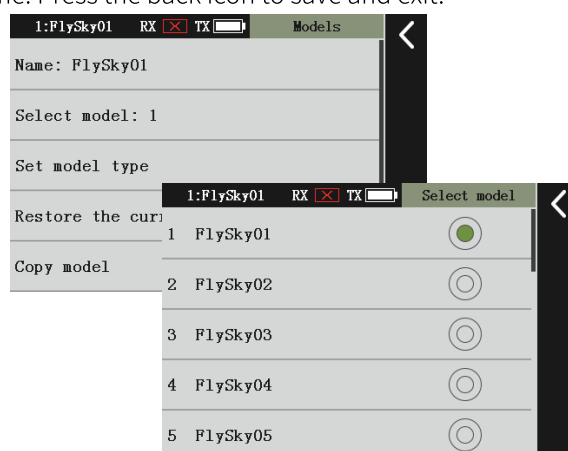
[Name]:

Touch Name then use the onscreen keyboard to change the name. Press the back icon to save and exit.

- A model name can be no longer than 10 characters.

[Select model]:

Selects a stored model preset. The system can store up to 20 different models. The only settings that are not stored in a model are system settings such as brightness etc. The store model name will appear in the model select list.

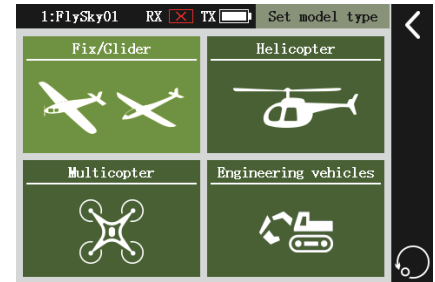


[Set model type]:

Choose between fixed wing / glider, helicopter, multi-axis, excavator model types.

Function Settings:

1. Select Fix/Glider, Helicopter, Multicopter or Engineering vehicles as required.
2. The system will automatically jump into the aircraft structure interface. For details, please refer to [8.3 Aircraft Structure].
 - When a new structure is selected, the currently selected model will be reset to its default settings for that model type.
 - If you want to keep the current model settings remember to select another model before making setup.



[Restore the current model]:

Restores the currently selected model and all its function settings back to the default. This action is permanent and can not be undone. The system will display a prompt asking if you are sure.

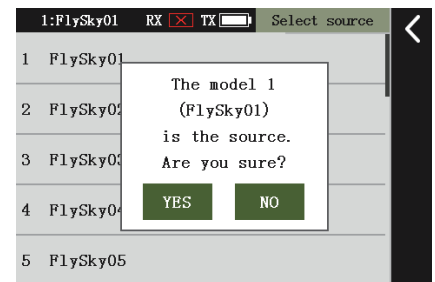
[Copy Model]:

Copy model data from one preset to another.

Use this function to copy model data from one preset to another so that changes can be made to the setup without losing the original data.

Use:

1. Select a model to be copied.
2. Select a save slot/preset to save to.
 - After copying, the destination model data is overwritten by the replicated object model data.
 - Be careful when copying the model. Once the model data is overwritten, it cannot be restored.



7.17 Sensors

This menu is used for managing sensors.

7.17.1 Sensor List

This list shows all sensors connected to the receiver, including sensor type, number and real-time data. This list can also be accessed quickly from the home screen.

[Type] shows the sensor type.

[number] display sensor's number.

- The first sensor in the list by default is the TX Voltage sensor, however receiver, signal strength indication, RSSI, noise, signal to noise ratio can also take this slot.
- No. 2 is the first external sensor connected to the receiver; the receiver supports up to 15 sensors.

This list data is displayed in real time. When the receiver is connected to a sensor, this list will be refreshed to display the new sensor's data.

[Value] displays the data returned by a sensor.

Type	ID	Value
TX voltage	1	3.93V
RX voltage	1	5.15V
Signal strength	1	100
RSSI	1	-29dBm
SNR	1	74dB
Noise	1	-103dBm
Motor speed	2	0rpm
Temperature	3	26.5°C
Motor speed	4	0rpm
Air pressure	5	1001.7hPa
Altitude	5	96m

[Transmitter Voltage]: Displays the voltage for the transmitter's battery.

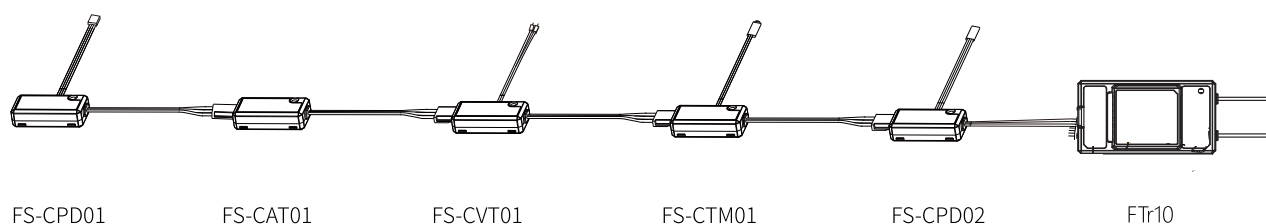
[Internal Voltage]: Displays the power supply voltage for the receiver.

[Signal strength]: refers to the 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 10. If the signal strength drops to 4 or below the system will alert the user.

[Signal to Noise Ratio]: 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 = $RSSI - noise$, 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.

[RSSI]: RSSI is used to measure signal strength between the receiver and the transmitter.

[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 maximum range for a flight.



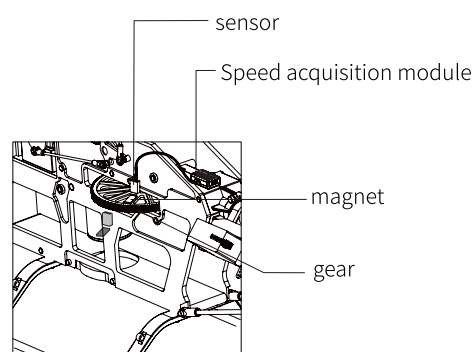
FTr10 sensor connection diagram

FS-CPD01: Magnetic induction speed acquisition module

Used to measure the speed of the motor. To use this sensor connect it through the i-BUS interface or connect to the SENSE port on the receiver directly.

Setup:

1. Connect the FS-CPD01 sensor to the receiver's SENS port.
2. Place the sensor next to the magnet, which is fixed to the spinning part of a model such as the blades of a plane rotor.
 - Make sure that the sensor is within 2mm of the magnet and that the north pole of the magnet is parallel to the sensor.
3. Turn on the transmitter, enter the transmitter [Sensor] menu, select it from the [Sensor List], then turn the rotating element, if the speed value changes then the installation is successful, otherwise repeat the above steps.
 - "Motor speed" is the speed sensors name; "6" is the sensor ID and refers to the sixth sensor. "rpm" is the speed measurement value.



FS-CPD02: Optical Induction Speed Acquisition Module

Used to measure the speed of the motor. To use this sensor connect it through the i-BUS interface or connect to the SENSE port on the receiver directly.

Setup:

1. Connect the FS-CPD02 sensor to the receiver's SENS port.
2. Mount the sensor with a view of the sticker that has been affixed to the rotating element.
 - Keep the sticker flat and perpendicular to the sensor, and the sensor. Make sure the distance to the sticker is not more than 1 or 2 mm.
3. Turn on the transmitter, enter the transmitter [Sensor] menu, select it from the [Sensor List], then turn the rotating element, if speed value changes then the installation is successful, otherwise repeat the above steps.
 - "Motor speed" is the speed sensors name; "2" is the sensor ID and refers to the sixth sensor. "rpm" is the speed measurement value.

FS-CTM01: Temperature Acquisition Module

This sensor is used to monitor the temperature of a chosen part of the model. To use this sensor connect it through the i-BUS interface or connect to the SENSE port on the receiver directly.

Setup:

1. Connect the FS-CTM01 sensor to the receiver's SENS port.
2. Use soft double-sided tape to attach the FS-CTM01 receiver to element you want to measure (e.g., motor, battery). Make sure the sensor is pressed against the surface snugly for the best readings.
3. Turn on the transmitter, enter the transmitter [Sensor] menu and select it from the [Sensor List].
 - "Temperature" means the sensor is the test temperature; "3" is the receiver ID. "26.4° C" is the measured value.

FS-CVT01 voltage acquisition module

The FS-CVT01 function is used to monitor the model battery voltage. To use this sensor connect it through the i-BUS interface or connect to the SENSE port on the receiver directly.

Setup:

1. Connect the FS-CVT01 sensor to the receiver's SENS port.
2. Turn on the transmitter, enter the transmitter [Sensor] menu and select it from the [Sensor List]. If the sensor displays External Voltage 12.4V then installation is complete.
3. Insert the red and black wire pins into the port on the battery. Red is positive and black is negative.

FS-CAT01 altitude pressure module

The FS-CAT01 detects the altitude of the model using air pressure.

Setup:

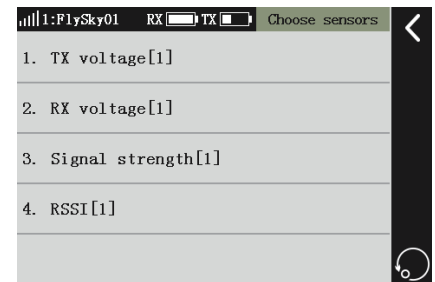
1. Connect the FS-CAT01 sensor to the receivers SENSE port.
2. Use double sided soft tape to snugly fix the FS-CAT01 receiver in place.
3. Turn on the transmitter, enter the transmitter [Sensor] menu and select it from the [Sensor List].
 - "Air pressure" is the name, "height" is the receiver type; "5" is the receiver ID, referring to the fifth receiver; "1001.0hPa", "-14m" is the actual measured height value.
 - The actual air pressure and altitude can be calibrated in the Air pressure sensor] menu.

7.17.2 Choose Sensors

Choose which sensors are to be displayed on the home screen.

Setup:

- The home screen can display up to 4 sensors.
1. Select a slot from the list. The slots will already have sensors assigned to them and will have their names displayed.
 2. [Sensor: name]: name being either non or a sensor name, is the currently selected sensor. To select a sensor touch [Sensor: name] then select a new sensor from the list.
 3. The receivers sensors will also be displayed in the list and can be chosen as needed.

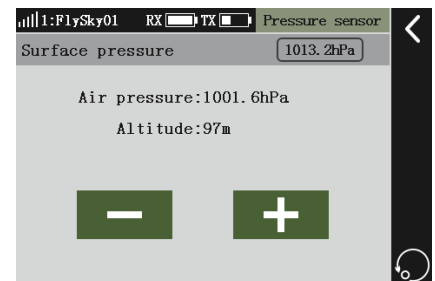


7.17.3 Air Pressure Sensor

Calibrates ground pressure.

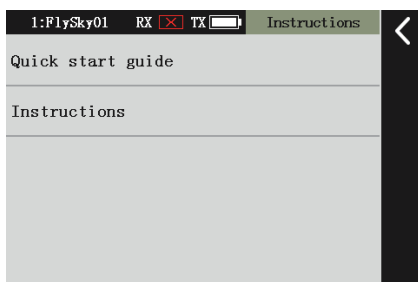
Setup:

1. Connect an altitude pressure module then place the model on the ground.
2. Use the + and – keys to adjust the altitude to 0.
 - Make sure your model is always at a level ground level during setup.



7.18 Ins

This menu will provide QR codes leading to a place to download the quick start guide and user manual for the PL18.



8.Fixed wing / glider exclusive functions

This section is an introduction to functions that are only available when using a fixed wing aircraft.

8.1 Delay

The delay functions have 4 main categories, function delay, channel delay, condition delay and throttle delay.

8.1.1 Function Delay

This function adds a delay to the inputs of the basic functions such as throttle, aileron etc. This is done in order to simulate the reaction speed of real aircraft.

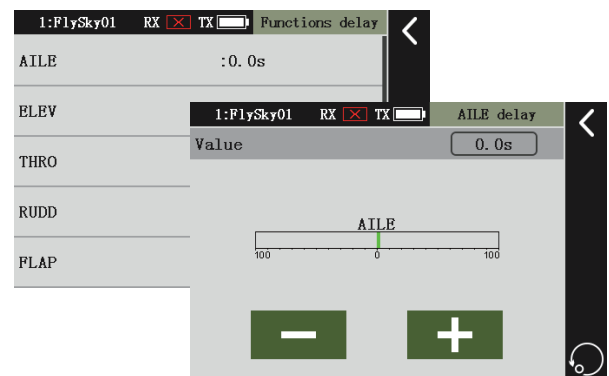
The function delay is different from channel delay, state delay, and throttle delay. Please refer to [8.1.4 Throttle Delay].

Setup:

This function sets the delay time for channels being used for basic functions.

1. Select a channel from the menu.
[Value] is the delay time. The range is between 0-10 seconds (0.1s one unit).
The green bar is the real time position of channel.
2. Use the + and – icons to change the delay time.

- After setting the delay time of the basic function, all the channel output of this basic function will be delayed. For example, the aileron function delay time is set to 2S. When the aircraft's horizontal tail is used as the aileron function, the differential change of the horizontal tail channel will also be Delay 2S.



8.1.2 Channel Delay

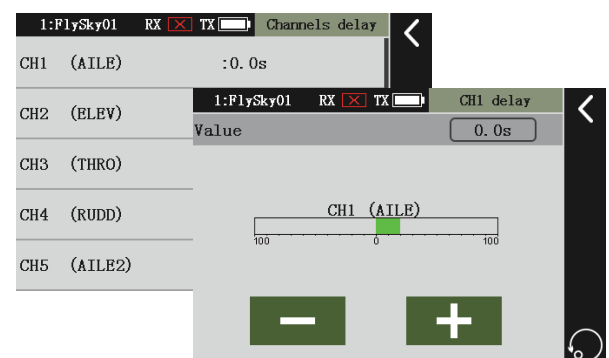
This function sets a delay for each individual channel.

This can be used to simulate the reaction time of real world aircraft.

Setup:

This function can set a delay for all 18 channels.

1. Select a channel.
[Numerical value] indicates the delay time from one state to another. The adjustment range is between 0-10 seconds (0.1s one unit).
The green bar is the channels current real time position.
2. Use the + and – icons to change the delay time.



8.1.3 Conditions delay

Conditions delay adds a delay to response time of a condition. This is used in order to provide more realism in certain models.

Setup:

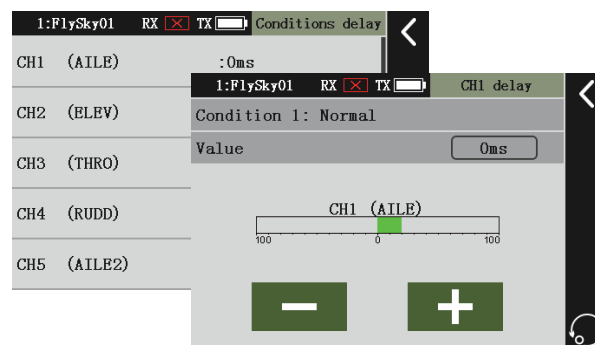
This function can add delay for up to 10 channels

1. Select a channel.

[Numerical value] indicates the delay time from one state to another. The adjustment range is between 0-10 seconds (0.1s one unit).

The green bar is the channels current real time position.

2. Use the + and – icons to change the delay time.



8.1.4 Throttle delay

This throttle adds a delay to the throttle channel.

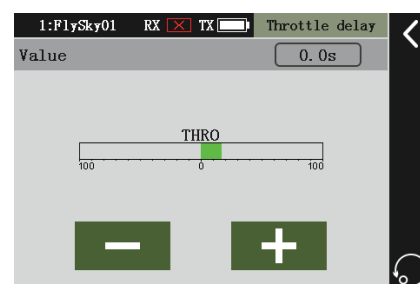
- Throttle delay is only for use with the throttle and throttle needle.

Setup:

[Value]: indicates the delay time of the throttle stick from the lowest to the highest. The adjustment range is between 0-10 seconds (0.1s one unit).

The red bar is the real time position of the stick.

Use the + and – icons to change the delay value.



8.2 Mixes

There are 5 different types of mix in the mixes menu, Linear mixes, Cure mixes, aileron to rudder, rudder to aileron and aileron to elevator.

8.2.1 Linear Mixs

This function creates a linear mix between a master and slave channel.

Setup:

This function can be used with conditions. The mix can be different depending on which direction the channel is moving.

[Master]: Channel that will influence the slave channel.

[Slave]: Channel being influenced by the master channel.

[Down side]: Influence of the master channel on the slave channel when the master channel moves down.

[Up side]: Influence of the master channel on the slave channel when the master channel moves up.

[Offset] is the offset of the slave channel. Range is between -100% and 100%.

This function can be used with conditions. on the  icon to assign a switch.

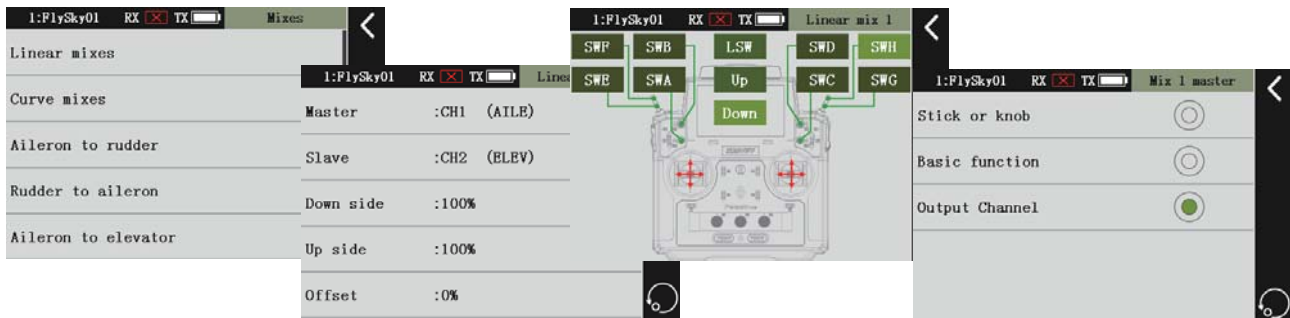
Note: Enter the corresponding interface and the screen “+” “-” to adjust the scale.

Before setting up the function touch the  icon to activate the function, or touch the  icon to assign a switch to turn the function on and off.

1. Touch master, then select a channel type.
2. Select a channel form the list and touch the back icon twice to save and exit.
3. Touch slave, then select a channel type.
4. Select a channel from the list and touch the back icon twice to save and exit.
5. Select down side or upside as needed, then use the + and – icons to increase or decrease the value. This value is how much influence the master channel will have on the slave channel.

Note: A value of 100 percent means that for every movement the master channel makes, the slave channel will follow exactly, however a value of 50 percent means that for every movement the master channel makes the slave channel will only move to 50 percent of that the master's current value.

6. If needed touch offset and use the + and – icons to change the slave channels offset in relation to the master channel.



8.2.2 Curve Mixes

This function uses a curve to create a mix between a master and slave channel. This type of mix is different from the linear mixes and allows for much more complex relationships between the master and slave channels.

Setup:

This function can be used with conditions.
 [Master]: Channel that will influence the slave channel.
 [Slave]: Channel being influenced by the master channel.

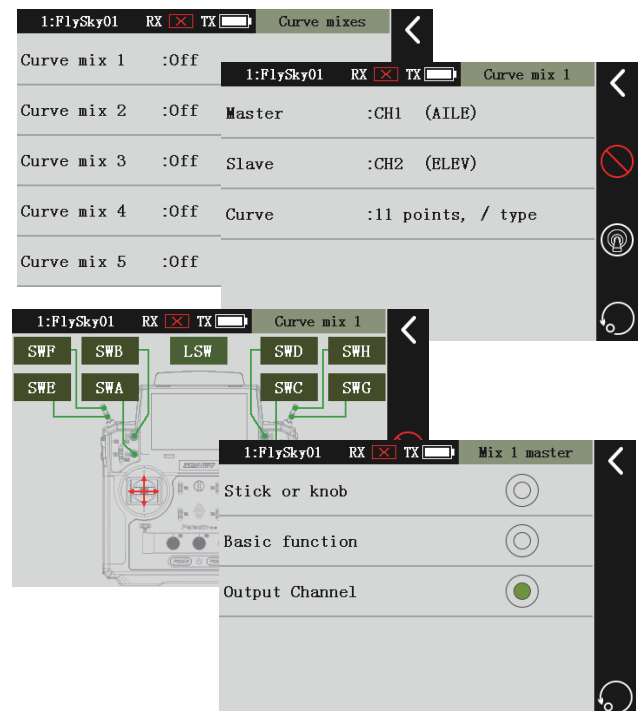
1. Select a mix.
2. Select a master and slave channel.
3. Touch curve to enter the curve menu.

The horizontal axis of the chart represents the input value of the mixing channel;
 The vertical axis of the chart represents the output value of the mixed channel.

The red line is the linear relationship between the mixed control channel and the mixed channel.

The box highlighted in light green is the currently selected setting. The [L] icon below the coordinates indicates the first point on the curve, and the adjustment range of each point is between -100%-0.

- a. Touch the icon.
 - When the curve type is changed, the previous data is automatically deleted.
- b. After selecting the desired curve type in the list, the menu automatically returns to graph.
- c. Select points as needed and use the + and – icons to adjust the point value.



8.2.3 Aileron to rudder

This function creates a mix between the aileron channel and the rudder channel. This can be used to help turning.

Setup:

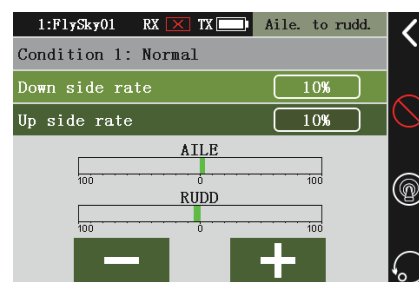
This function adjusts the mixing ratio of the aileron to the rudder, which can be set separately in different states, and the ratio ranges from -100% to 100%.

[Down side]: Influence of the master channel on the slave channel when the master channel moves down.

[Up side]: Influence of the master channel on the slave channel when the master channel moves up.

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

1. Click the icon to select [Down side] or [up side];
2. Click on the screen "+" "-" to modify the mixing ratio.



8.2.4 Rudder to Aileron

Setup:

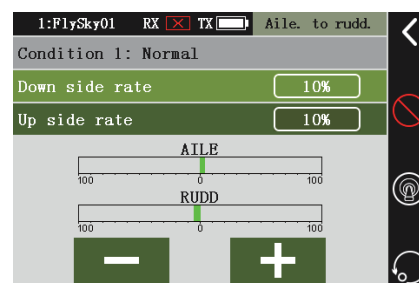
This function creates a mix between the rudder and aileron channels ranging from -100% to 100%.

[Down side]: Influence of the master channel on the slave channel when the master channel moves down.

[Up side]: Influence of the master channel on the slave channel when the master channel moves up.

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

1. Click the icon to select [Down side] or [up side];
2. Click on the screen "+" "-" to modify the mixing ratio.



8.2.5 Aileron to elevator

Setup:

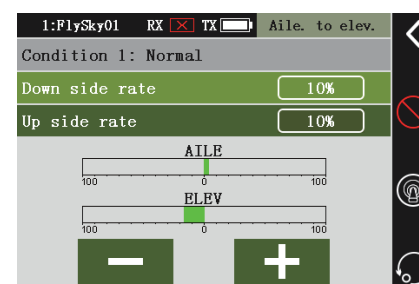
This function creates a mix between the rudder and aileron channels ranging from -100% to 100%.

[Down side]: Influence of the master channel on the slave channel when the master channel moves down.

[Up side]: Influence of the master channel on the slave channel when the master channel moves up.

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

1. Click the icon to select [Down side] or [up side];
2. Click on the screen "+" "-" to modify the mixing ratio.



8.2.6 Elevator to flap

Setup:

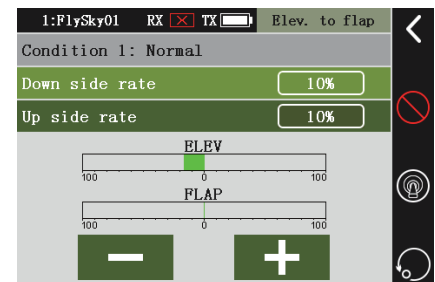
This function creates a mix between the elevators and flap channels ranging from -100% to 100%.

[Down side]: Influence of the master channel on the slave channel when the master channel moves down.

[Up side]: Influence of the master channel on the slave channel when the master channel moves up.

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

1. Click the icon to select [Down side] or [up side];
2. Click on the screen "+" "-" to modify the mixing ratio.



8.2.7 Flap to elevator

Setup:

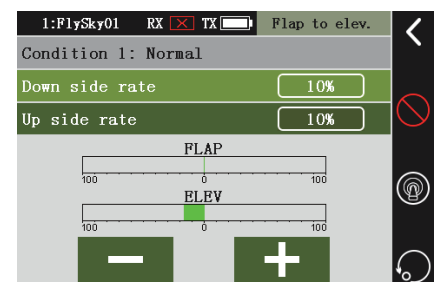
This function creates a mix between the flaps and elevator channels ranging from -100% to 100%.

[Down side]: Influence of the master channel on the slave channel when the master channel moves down.

[Up side]: Influence of the master channel on the slave channel when the master channel moves up.

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

1. Click the icon to select [Down side] or [up side];
2. Click on the screen "+" "-" to modify the mixing ratio.



8.3 Airplane Structure

This section covers the options in the Airplane Structure menu that are only available when Fix wing/glider is selected.

Setup:

The default model has an engine, an aileron, a elevator, and a rudder.

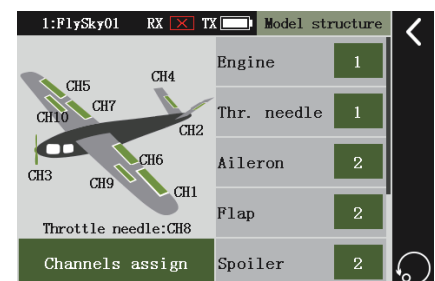
- This function can be accessed quickly from the home screen. For details, please refer to [Quick Access Interface].

Touch the green box to the right side of the part name to add and remove parts from the model. The diagram will change accordingly.

2. Enabling certain parts can unlock certain parts and in some cases 2 of a part may be added.

- This system can control up to 18 different servos.

3. Check to make sure the virtual model structure matches the structure of your real world model.



Once an aircraft structure has been completed the system will add and remove functions from the function menu so that only the ones you need are available.

- If the user wants to use a function, but does not find it in the function menu check the aircraft structure to make sure it is correct.
- Please note that in the following description, there is a difference between [Aileron] and [Aileron (two)]. [Aileron] means that the aircraft has two ailerons, but is controlled by the same channel; [Aileron (two)] indicates that the aircraft has two ailerons, but is controlled by different channels.

Basic Function Explanation:

The following sections describe the [Basic Functions] that appear in the [Function Delay], [Linear Mix Control] [Curve Mix Control] and [Coach Function].

The basic functions are listed below:

- If the user does not know the structure and channel of the aircraft associated with a basic function you can view the following table. However, the structure listed in the table is all structures related to it. When the aircraft does not have a part, this item is automatically hidden in the menu interface. For example, there are no flaps (two) in the structure of the aircraft. In this case, only the ailerons (two) and the lifts (two) are displayed in the aileron function.

Basic function	Aircraft structure
Aileron function	aileron (two), flap (two), elevator (two)
Elevator function	Aileron (two), lifting (two)
Throttle function	throttle
Rudder control	rudder
Throttle needle function	controls the throttle needle
Flap function	flaps (two), ailerons (two)
Spoiler function	spoiler (two)

8.4 Aileron function

Sets the range of movement for the ailerons and can create a mix so the ailerons can send movement data to the flaps.

Setup:

The settings range is from 0-100%.The settings range is from 0-100%.

[Aileron]: Changes the mix between the aileron stick input and ailerons channel movement on the left side.

[Aileron 2]: Creates a mix between the aileron stick input and the ailerons movement on the right side.

- When the aircraft has 2 ailerons, the system automatically assigns 2 ailerons to the default channel. See [8.3 Aircraft Structure].

(See 8.5 [Flap function] in the flaps, see 8.7 [lift function] in the lift)

[Down]: Adjusts the mix for down side channel movement.

[Up]: Adjusts the mix for up side channel movement.

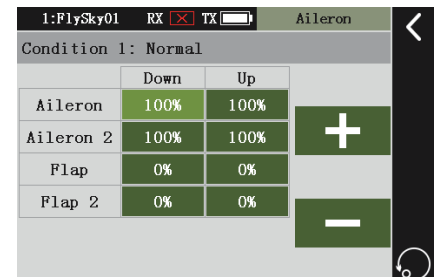
The percentage indicates the strength of the mix.

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

1. Select a setting.

2. Use the + and – icons to change the value.

- The sum of the ratios of the upper and lower sides of each aileron, flap and lifting function must not exceed 100%.



8.5 Flap function

Sets the range of movement for the flaps and can create a mix so the flaps can send movement data to the aileron.

Setup:

The settings range is from 0-100%.

Changes the mix between the flap input and flap channel movement on the left side.

Changes the mix between the flap input and flap channel movement on the right side.

- When the aircraft has 2 flaps, the system automatically assigns 2 flaps to the default channel. See [8.3 Aircraft Structure].

(See 8.4 [Aileron function] in the ailerons)

[Down]: Adjusts the mix for down side channel movement.

[Up]: Adjusts the mix for up side channel movement.

Changes the mix between the Flap stick input and flap channel movement on the right side.

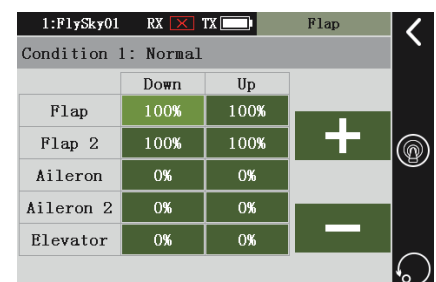
The percentage indicates the strength of the mix.

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

1. Select a setting.

2. Use the + and – icons to change the value.

- The sum of the ratios of the upper and lower sides of each aileron, flap and lifting function must not exceed 100%.



8.6 Spoiler function

Sets the range of movement for the spoiler.

Setup:

The settings range is from 0-100%.

[Spoiler]: Changes the mix between the spoiler stick input and spoiler channel movement on the left side.

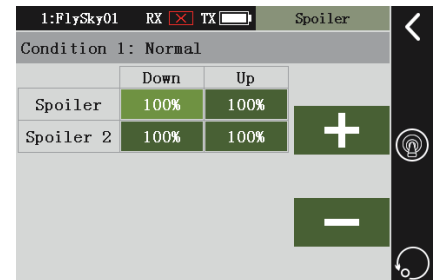
[Spoiler]: Changes the mix between the spoiler stick input and spoiler channel movement on the right side.

[Down]: Adjusts the mix for down side channel movement.

[Up]: Adjusts the mix for up side channel movement.

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

1. Select a setting.
2. Use the + and – icons to change the value.
3. Touch the  icon to choose another input to control the spoiler amount.



8.7 Elevator

Sets the range of movement for the elevator.

Setup:

The settings range is from 0-100%.

[Elevator]: Changes the mix between the elevator stick input and elevator channel movement on the left side.

[Elevator 2]: Changes the mix between the elevator stick input and elevator channel movement on the left side.

- When the aircraft has 2 lifts, the system automatically assigns 2 lifts to the default channel.

(See 8.4 [Aileron Function] for the ailerons)

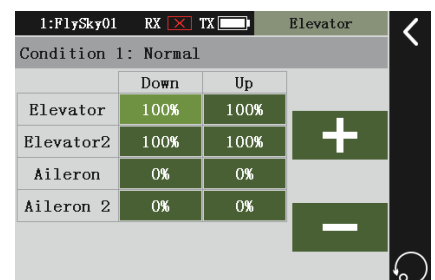
[Down]: Adjusts the mix for down side channel movement.

[Up]: Adjusts the mix for up side channel movement.

The percentage indicates the strength of the mix.

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

1. Select a setting.
2. Use the + and – icons to change the value.



8.8 Rudder function

Sets the range of movement for the rudder.

Setup:

The settings range is from 0-100%.

[rudder]: Changes the mix between the rudder stick input and rudder channel movement on the left side.

[rudder 2]: Changes the mix between the rudder stick input and rudder channel movement on the left side.

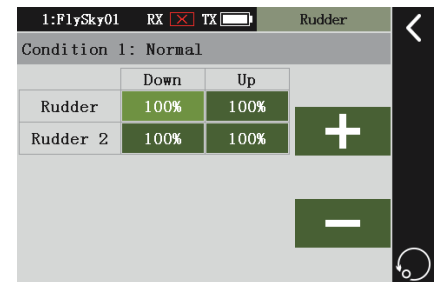
[Down]: Adjusts the mix for down side channel movement.

[Up]: Adjusts the mix for up side channel movement.

The percentage indicates the strength of the mix.

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

1. Select a setting.
2. Use the + and – icons to change the value.



8.9 Throttle needle

This function adjusts the curve of the throttle stick's effect on the throttle needle. It is used to control the mixing ratio of fuel and air in a gas engine.

Setup:

The system supports 10 curve types, with 5 "/" and 5 V-shaped curves, each with an adjustment range of 0-100%.

The horizontal axis of the graph represents the input value of the throttle channel.

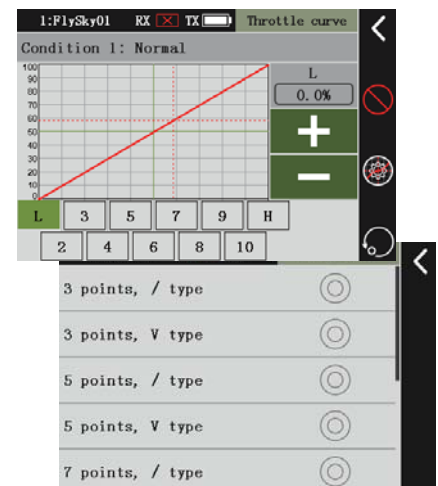
The vertical axis of the graph represents the output value of the oil needle channel.

The red line is the linear graph between the input value and the output value.

The "L" icon below the graph indicates the first point on the curve.

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

1. Touch the  icon then select a curve type.
 - When the curve type is changed, the previous data is lost.
2. Once a curve has been selected the system will return to the graph.
3. Touch points to select them, then use the + and – icons to change the value.



8.10 Butterfly

This function reduces lift by controlling a mix to the aileron, flap, spoiler and rudder to cause the aircraft to reduce in height. The mix can be assigned to another control surface on the PL18 such as a knob.

Settings

The settings range is from 0-100%. The settings range is from 0-100%.

[Aileron]: amount of mix being sent to the left side ailerons.

[Aileron 2]: mixed amount being sent to the right side ailerons.

[Flap]: amount of mix being sent to the left side flap.

[Flap 2]: amount of mix being sent to the right side flap.

[Spoiler]: amount of mix being sent to the left side spoiler.

[Spoiler 2]: amount of mix being sent to the right side spoiler.

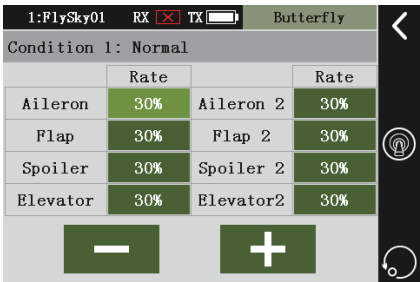
[Elevator]: amount of mix being sent to the left side elevator.

[Elevator 2]: amount of mix being sent to the right side elevator.

[Rate]: indicates the rudder ratio of each channel;

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

1. Select a setting.
2. Use the + and – icons to change the value.
 - The sum of the ratios of the upper and lower sides must not exceed 100%.



8.11 V Tail

Creates a mix between the left and right rudders in order to control a V-tail configuration. By default the left tail is channel 2 and the right tail is channel 4.

Setup:

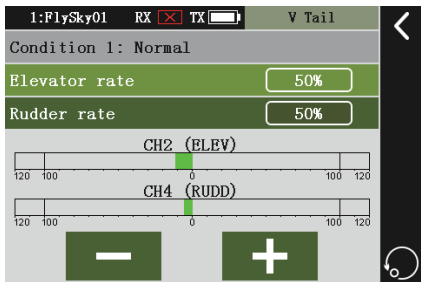
This function can be used with conditions.

[Lifting ratio]: shows the rudder ratio of the 2nd channel to the 4th channel;

[Direction Ratio]: shows the rudder ratio of the 4th channel to the 2nd channel.

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

1. Select the elevators rate then use the + and – icons to adjust the mix.
2. Select the rudder rate then use the + and – icons to adjust the mix.



9. Helicopter Exclusive Functions

This section goes over functions that are only available when a helicopter structure is selected.

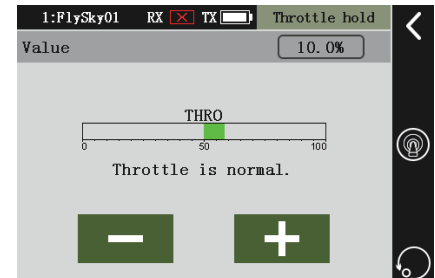
9.1 Throttle hold

Locks the throttle channel to a predefined value until switch is toggled again.

Setup:

The range for this function is between 0 and 100% [Value]: The position the throttle will be held at when the function is active.
[Throttle is normal]: The throttle is not restricted and can be used normally. [Throttle held]: Throttle is being restricted and will no longer respond to stick input. The green bar is the throttles current position.

1. Use the + and – icons to set the throttle hold value.
2. Touch the  icon and assign a switch to control the function.



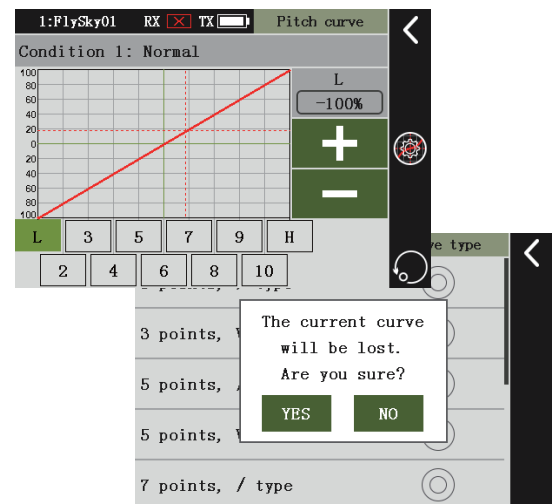
9.2 Pitch Curve

This function creates a curve between the throttle channel input and output to control the pitch of the helicopters blades in order to decrease or increase altitude.

Setup:

This function supports 10 curves, 5 V curves and 5 / curves.
The horizontal axis of the graph represents the input value of the throttle channel;
The vertical axis of the graph represents the output value of the pitch channel;
The red line is the linear relationship between the input value and the output value;
The [L] icon below the graph 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 menu and select a curve type.
2. After selecting the desired curve type from the list, the menu will automatically return to the graph.
3. Select points and change their values using the + and – keys.



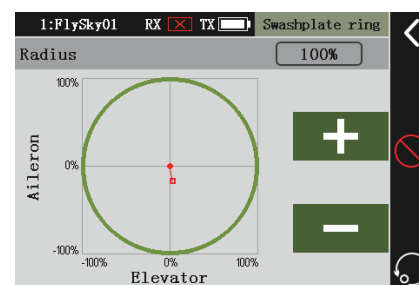
9.3 Swashplate

This function limits the amount of movement available to the swash plate, there for reducing the movement sensitivity of the entire aircraft as well as limiting the swash plates movement as to not damage the helicopter.

This is an advanced function, if the settings are wrong it is possible that the helicopters swash plate will move too far and cause damage.

Setup:

This function can be adjusted from 0-100%.
 [Radius]: the maximum distance the swashplate can move.
 [Aileron]: the maximum distance the swashplate can move during aileron movement.
 [Elevator]: maximum amount of movement that the swashplate can move during elevator movement.
 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.
 Use the + and – icons to change the settings as needed.

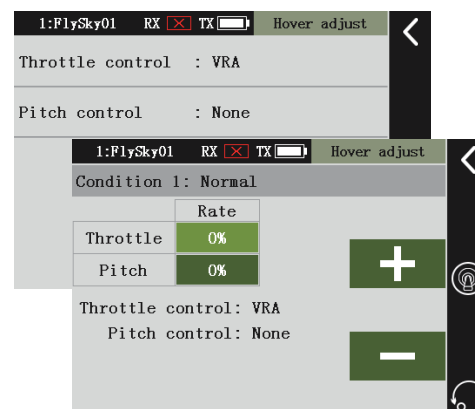


9.4 Hover Adjust

Allows fine adjustment of the throttle and pitch channels in order to allow the helicopter to hover easily.

Setup:

This function can hold 2 settings in memory which can be switched between with the flick of a switch. The adjustment range is between -30% and 30%.
 [Throttle] amount of adjustment made to the throttle channel.
 [Pitch]: amount of adjustment made to the throttle channel.
 [Throttle]: VrA indicates that the throttle fine adjustment is controlled by VrA at this time. When VrA rotates clockwise to the maximum, the throttle value increases by 30%; when it rotates counterclockwise to the maximum, the throttle value decreases by 30%.
 [Pitch: None]: indicates that the pitch fine adjustment is not available because a knob is not assigned.
 The box highlighted in light green is the currently selected setting.
 1. Select a setting and use the + and – icons to adjust as needed.
 2. Touch the Ⓐ icon, then choose a setting to assign a knob to. Use the back icon to save and exit.

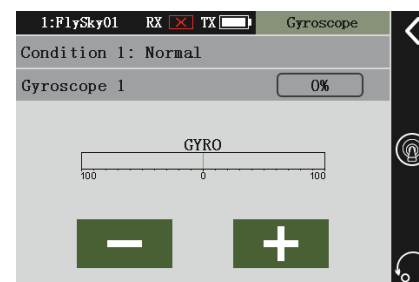


9.5 Gyroscope

Adjusts the sensitive of the gyro and how much it affects the helicopters flight. Not enough and the helicopter will be sluggish and too much will cause the helicopter to vibrate side to side.

Setup:

The adjustment range is between -100% and 100%.
 [Gyro 1] sensitivity of gyroscope 1.
 1. Touch the Ⓐ icon and assign a switch to control this function.
 2. Move the switch to the up position and use the + and – keys to change the gyro sensitivity.
 3. Set the switch to the down position and use the + and – keys to set the second gyro sensitivity.



9.6 Throttle Needle

Refer to [8.9 Throttle Needle].

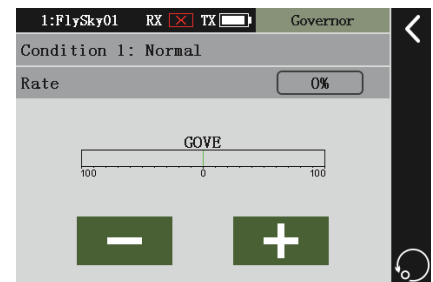
9.7 Governor

Adjusts the speed of the helicopters blades.

If the blades are not moving fast enough the helicopter will react more slowly, however if they are going too fast the helicopter may be to oscillate.

Setup:

The adjustment range is between -100% and 100%.
[Rate]: Propeller speed.
Use the + and – icons to adjust the speed.



9.8 Delay

The helicopter delay setting function has three refinement functions, function delay, channel delay, and conditions delay.

9.8.1 Function Delay

Please refer to [8.1.1 Function Delay] for this function.

9.8.2 Channel Delay

Please refer to [8.1.2 Channel Delay] for this function.

9.8.3 Conditions Delay

Please refer to [8.1.3 Conditions Delay] for this function.

9.9 Mixes

9.9.1 Linear Mixs

Please refer to [8.2.1 Linear Mixs] for this function.

9.9.2 Curve Mixes

Please refer to [8.2.2 Curve Mixes] for this function.

9.9.3 Throttle mix

Sets the helicopter's aileron, lift and roll to a throttle mixing. It is used to coordinate the front, rear, left and right flight movements of the helicopter to compensate for the impact of the slanting disc action on the engine when operating the ailerons, lifting and direction.

Settings:

This function can be set separately in different states, and the adjustment range is between -100% and 100%.

[Aileron]: shows the mixing ratio of the aileron passage to the throttle.

[lifting]: shows the mixing ratio of the hoistway to the throttle.

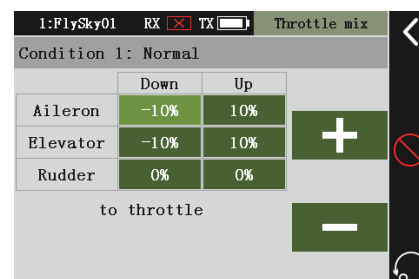
[Direction]: shows the mixing ratio of the direction channel to the throttle.

[Up]: indicates the high-end mixing ratio.

[Down]: indicates the low-end mixing ratio.

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

1. Select a value.
2. Use the + and – keys to change the value.



9.9.4 Swash Plate mix

Controls the mix controlling the helicopters altitude, pitch and roll.

Setup:

This function can be set separately in different states, and the adjustment range is between -100% and 100%.

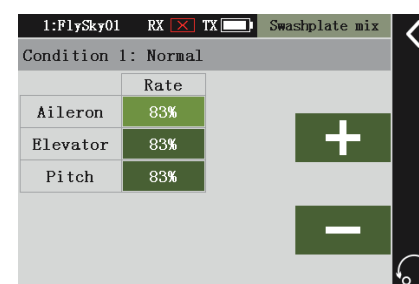
[Aileron]: amount of aileron movement.

[lifting]: amount of lift.

[Direction]: amount of rudder control.

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

1. Select a value.
2. Use the + and – icons to edit.



9.10 Helicopter Structure

Setup:

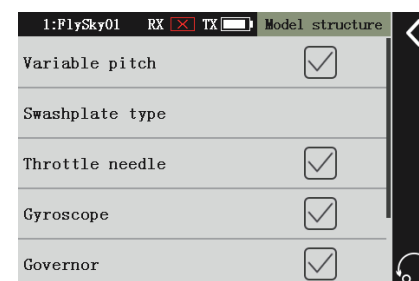
- This function can be accessed quickly on the home screen. For details, please refer to [6.1.2 Quick Access Screen].

Set the structure of the helicopter.

1.Touch the box to the right of the parts in the list as needed.

2.If variable pitch is choose then a swashplate type will need to be selected in the [Swashplate type] menu. For details, please refer to [9.11 Swashplate Type].

3.Check to make sure everything is working as expected.



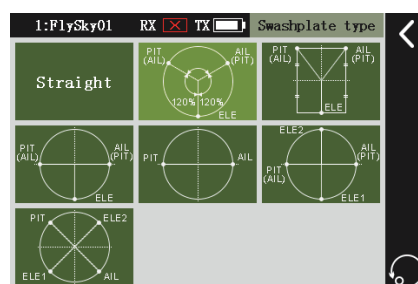
- For different models, check the 3D throttle, the fine adjustment effect is “adjust the middle” , if not, the fine adjustment effect is “adjust the low end” . The fine adjustment effect can be confirmed on the channel display interface.

Functions only available when the helicopter model type is selected.

Helicopter function	
Variable pitch	pitch curve、swashplate、swashplate ring
Throttle oil needle	Oil needle curve
Gyro gyroscope	Gyro gyroscope
Fixed speed setting	Fixed speed setting

9.11 Swashplate type

Choose the swashplate type as indicated in your helicopter's user manual. Once you have selected a swashplate type touch the back icon to save and exit.



10.Quadcopter excusive functions

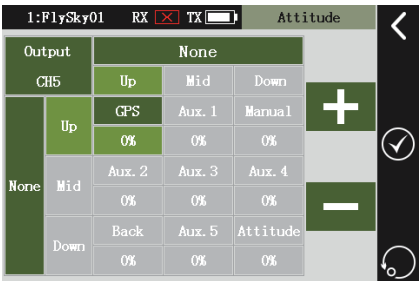
10.1 Attitude

The flight attitude function can set up to 9 flight modes and change between them on the fly using switches.

Setup:

- a. Set a channel for mode control. The system defaults to channel 5).
 - Touch the bar at the top right of the graph and choose a switch.
- b. Touch the bar at the left side of the graph and choose a switch.
- c. Using the 2 switches select different settings and use the + and – keys to change the value.
- d. Change the names of the presets by touching their name, such as "GPS".

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



11. Quad expert mode exclusive functions

11.1 Throttle hold

Please refer to [9.1 Throttle hold] for this function.

11.2 Attitude

Please refer to [10.1 Attitude] for this function.

11.3 Delay

11.3.1 Function Delay

Please refer to [8.1.1 Function Delay] for this function.

11.3.2 Channel Delay

Please refer to [8.1.2 Channel Delay] for this function.

11.3.3 Conditions delay

Please refer to [8.1.3 Conditions delay] for this function.

11.4 Mixes

11.4.1 Linear Mixs

Please refer to [8.2.1 Linear Mixs] for this function.

11.4.2 Curve Mixes

Please refer to [8.2.2 Curve Mixes] for this function.

11.5 Conditions

Please refer to [7.9 Conditions] for this function.

12.Engineering vehicle exclusive functions.

12.1 Multiplex sticks

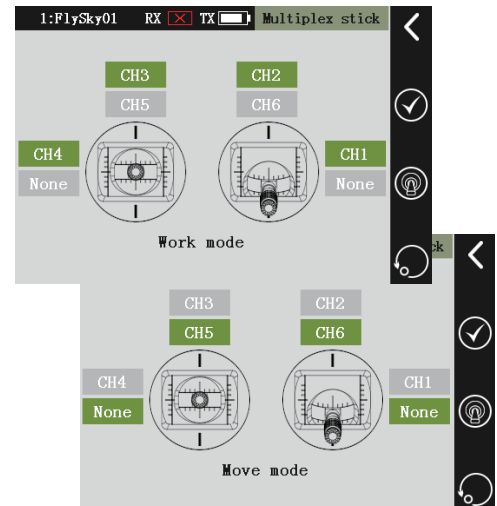
This function allows the user to change the sticks outputs at the flick of a switch. In many models this would switch between those needed for driving and movement and controls for controlling an arm or a crane.

Setup:

Function allows for switching between [Job mode] and [Mobile mode]:

- Touch the  icon and assign a switch.
- Use the switch to select a mode. Once a mode is selected touch the green boxes to change the channel assignments as needed.

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



13.Receiver Settings

This section is an introduction to receiver functions.

13.1 Binding with receiver

This function is for binding with a new receiver.
For specific binding instructions, please refer to [5.2 Binding].

13.2 Failsafe

This function sets a preset for each channel to move to in the case of signal loss.
Once the failsafe is set, if the receiver loses signal with the transmitter it will immediately set selected channels to that setting.

Setting:

a.Failsafe time:

How long it takes the failsafe to kick in after loosing signal.
The range is 100-1000ms

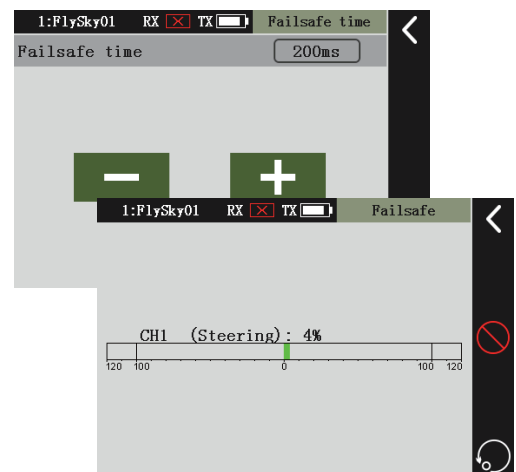
b.Failsafe value

[Channel 1 Aileron: Off]: indicates that the first channel will remain in its last known position after loosing signal.

[Channel 2 Lift: -100%]: means that the second channel servo will output -100% after the receiver loses signal.

1. Select a channel (1-18).
2. Touch the  icon to turn on the function. Then move and hold that channel at the desired failsafe value, and without moving the channel touch the back icon to save and exit.

To set all channels at the same time scroll to the bottom of the list and select [Set all channels], then move and hold all the channels to their desired positions, then hit the back icon to save and exit.



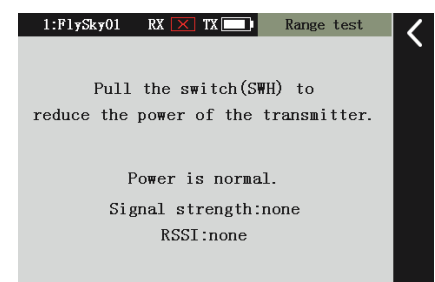
13.3 Range Test

The function tests the range of the system.

Since the actual range for the transmitter and the receiver is too large of a distance, it is difficult to take the transmitter and receiver to that range. During the test the range will be reduced to 60-80 meters, making it is possible to test whether the transmitter and the receiver are working as expected at all ranges.

Setup:

1. Make sure the transmitter and receiver are bound.
2. When in the Range test menu press and hold SwH.
3. Have one person hold the transmitter and have another person carry the model gradually moving to 60-80 meters away.
 - Keep the transmitters antenna unobstructed and make sure that the receiver antenna is at 90 degrees to the transmitter.
4. Observe the signal strength of the transmitter. If the signal strength is high and stable, it means that everything is functioning normally.

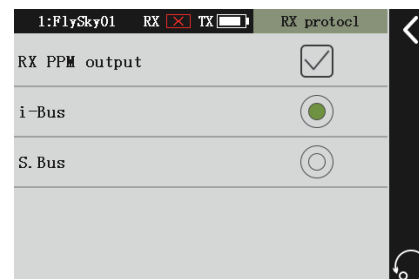


13.4 Receiver Protocol

Set the receiver PPM output, select i-Bus or S.Bus (for specific i-Bus settings, please see [13.5.i-Bus Settings]). When the "Receiver PPM Output" is checked, the receiver's first channel outputs a PPM signal. If this option is not checked, the default receiver CH1 outputs a PWM signal.

Setup:

- Touch RX protocol in the RX setup menu.
- Touch RX PPM output to check or uncheck the box.
- When this function is checked, the receiver CH1 outputs the PPM signal, and the other channels have no output.



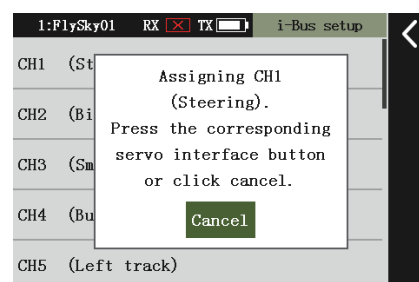
13.5 i-BUS settings

This feature sets up the i-BUS interface.

i-BUS is usually used for expanding the number of outputs that the receiver has, so for example if the receiver needs 10 channels the i-BUS can add them. I-BUS requires a separate power supply when using more than 1 or 2 servos.

Setup:

1. Make sure the transmitter and receiver are bound.
2. Connect the i-BUS module to the SERVO port on the receiver.
3. Connect the servos to the C1-C4 ports on the i-BUS module..
4. Power on the transmitter and navigate to the i-BUS setup menu located in the RX setup function.
5. Select a channel, then press the corresponding port's button on the i-BUS module to assign that channel to it.
 - If the channel assignment is successful the new assignment should be confirmed on the PL18's screen.
6. Repeat the above steps for all channels as needed.
 - If there are too many peripherals attached to the i-BUS module power it separately.



13.6 RX Battery Monitor

This function is used to monitor the voltage status of the receiver battery, to view the current receiver voltage condition, and to set the low voltage alarm.

Setup:

[External Sensor]: An external sensor can be used to detect the voltage status of the battery.

[Low Voltage]: Sets the low voltage value of the battery. The system defaults to 4.0V.

[Alarm Voltage]: Set the low voltage alarm's trigger voltage. The system defaults to 4.2V.

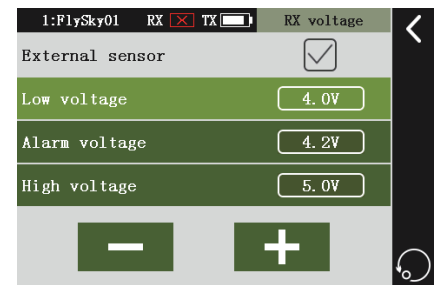
[High Voltage]: Sets the maximum voltage at which the battery is fully charged. The default high voltage is 5.0V.

1. If an external sensor is being used touch the box to put a check in it.

2. Select voltages for each setting by touching on it then using the + and – keys to change the value.

- Check the battery's user manual for the correct settings.

3. After setting the alarm voltage, if the battery voltage drops below that value the system will alert the user.



13.7 Low Signal Alarm

Plays an alarm sound through the speakers when the signal is too low.

Setup:

Touch the box to enable and disable the low signal alarm.

- When this function is active and the receiver voltage drops to or below 4, the transmitter's status indicator will flash and alert the user with an alarm.

13.8 Servo Frequency

The function changes the frequency used to control the servos.

Some servos may operate at different than the default frequency.

- In order for the servos to operate smoothly check the servos user manual for the correct frequency.

Setup:

The default servo frequency is 50Hz and can be adjusted between 50-400Hz.

1. Check the servo's user manual for the correct frequency.

2. Use the + and – icons to set the frequency. Use the back icon to save and exit.



13.9 Servos midpoint

This function sets the value of the servos center point. The default is 1500, which is suitable for most servos. When using standard S-BUS with a device such as the Vbar gyro flight controller it can be set to 1520.



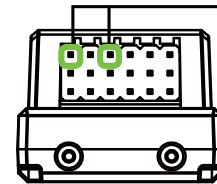
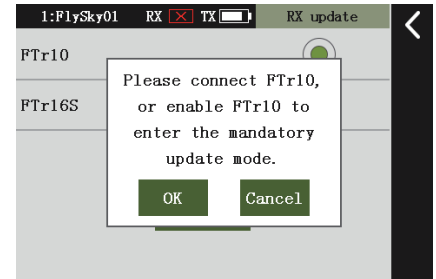
13.10 RX Firmware Update

Setting:

- a. How to update:
 1. Make sure the TX and RX are bound.
 2. Touch RX update in the RX setup menu.
 3. If the receiver's firmware is already up to date the system will show you the version it is running. If the receiver is not up to date the system will start the update. The screen will display a progress bar and once the update is complete it will exit the menu automatically.

Note: If the transmitter is unable to bind after the update the receiver will need a forced update.

- Once in forced update mode select [Receiver Firmware Update] in the RX Setup menu. Select the type of receiver from the list and clock [Update] to update the receiver.



To enter forced update mode used the bind cable to cause a short across channels.

13.11 About receiver

View system information, including product name, software version, and receiver ID.

14.RF Protocl

This section is used to set and display some parameters and information related to high frequency, such as RF standard, high frequency module firmware upgrade, high frequency module version information related content.

Setup:

a.RF Standard

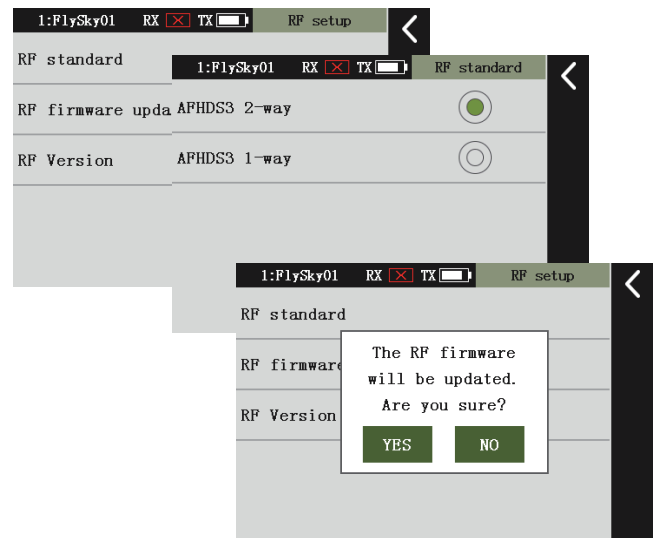
This receiver has two RF standards: AFHDS3 2-way, AFHDS3 1-way. Users can select RF standards according to their needs and click to select.

b.The TX RF module can be upgraded.

1. Install the RF module as normal.
2. Enter the [High Frequency Settings] menu, click on the frequency module firmware upgrade, the system will automatically pop up a confirmation box, select [Yes] to update immediately.
3. If the high-frequency module firmware is the latest version, the system will prompt [current firmware is the latest version]; if the high-frequency module firmware is not the latest version, the system will start to update and display the update progress bar. After the update is complete, the system exits the menu directly.

c.High frequency module version information

Go to the [High Frequency Settings] menu and click [High Frequency Module Version Information] to bring up the high frequency version of the device connection.



15. System Settings

The system menu content is mainly used to set various functions of the transmitter, such as screen settings, sound settings, and so on.

15.1 Language

The system can display both [English] and [Chinese].

To change the system language go to language menu in the System menu.

- The system defaults to the official language of the target sales area.

15.2 Units

Choose what units to use for length and temperature.

[Length] can select metric and imperial system. The default is metric.

[Temperature] can be selected in Celsius and Fahrenheit. The default is Celsius.

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

15.3 Sounds

Turn on or off system sounds.

- This function is enabled by default. If it is enabled the box will have a check in it, to disable it touch it.
- Use the + and – icons to change the volume.

15.4 Vibration

This function enables or disables vibration for various actions.

Status or function that can be set for vibration: power on, power off, power on, standby timeout, voltage alarm, weak signal, receiver connection, receiver disconnection, timer countdown, timer timing end, sensor.

The settable states is are: no vibration, weak vibration, strong vibration, the system default is off.

15.5 Backlight timeout

Changes how long the screen takes to turn off when not in use. The default is 30 seconds. Touch a time from the selection and press the back icon to save and exit.

- Leaving the screen on for longer will use more power and as such may lead to reduced battery time.

15.6 Backlight brightness

Adjusts the brightness of the screens backlight. The default is 50%.

- Turning the brightness up will use more power and as such will lead to reduced battery life.

15.7 Auto shutdown

Turns the transmitter off if not connected to a receiver and is not in use.

This function is enabled by default. To disable the function touch the box and make sure there is no check in it.

Touch auto shutdown to go into the time select menu. The default is 5 min. Use the + and – keys to change the time and press the back icon to save and exit. The time can be set up to 60 min.

15.8 Gimbal Mode

Please refer to [3.2.5 Gimbal Mode] for this function.

15.9 Throttle Mode

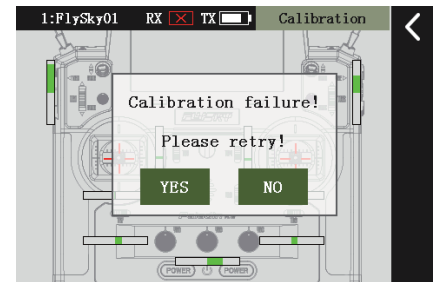
Please refer to [3.2.6 Throttle Mode] for this function.

15.10 Calibration

Calibrate the sticks and knobs.

Setup:

- Enter the function, then put all stick and knobs to their centermost positions. Press ok when ready.
- Move every stick and knob to its full range of motion in every direction.
- If the calibration fails the system will ask if you want to calibrate again.
- Press the back icon to save and exit.



15.11 Factory Reset

Resets the transmitter to its factory default state. This deletes all data including all model data and system settings.

15.12 Firmware update

Updates the transmitters firmware

How to update:

- 1.Touch TX firmware update in the System menu.
 - 2.Connect the transmitter to a computer using a USB wire. Then open the flysky PL18 update software and click update.
 - 3.The transmitter will show a progress bar. Once the update is complete it will restart automatically.
- If you need to cancel the update cancel it from the computer.

15.13 About Paladin PL18

View system information, including product name, software version, software release date, and hardware version.

16.Product Specification

This chapter contains the Paladin PL18 transmitter, FTr10 receiver and sensor type receiver.

16.1 Transmitter Specifications (PL18)

Model Type	PL 18
Channels	18
RF Range	2.402GHz--2.480GHz
RF Power	< 20dBm (EU)
RF Standard	AFHDS 3
Low Voltage Alarm	< 3.7V
Data Output	Micro USB
Charging Port	Micro USB
Antenna Type	Built-in Antenna
Power Input	1S (3.7V) *4300mAh
Online Update	Yes
Dimensions:	214*865*192 mm
Weight	946g
Certification	CE, FCC ID:N4ZFT1800

16.2 Receiver Specifications (FTr10)

Model Type	FTr10
Channels	10
RF Range	2.402GHz--2.480GHz
RF Power	15.5dBm-17.5dBm
RF Standard	AFHDS 3
Low Voltage Alarm	NO
Data Output	i.bus/S.bus/PPM/PWM
Antenna Length	103mm*2
Weight	30g
Power Input	3.5V-18V
Display	LED
Emission distance	>500m
Current	100mA (5V)
working environment	temperatur:-15°C—+60°C /humidity:20 ~ 95%
Dimensions	52*28*22mm
Color	Black
Certification	CE, FCC ID:N4ZFTR1000

17.Package Contents

number	name	Quantity	Configuration
1	PL18 Transmitter	1	Standard
2	FTR10 Receiver	1	Standard
3	FTr16S Receiver	1	Standard
4	FRM301 RF Module	1	Standard
5	Sun cover	1	Standard
6	Gimbal	2	Standard
7	JR module adapter	1	optional
8	Charging base	1	Standard
9	Grip	2	Standard
10	Quick Start Guide	1	Standard
11	Micro USB line	1	Standard
12	FS-CPD01/02、FS-CTM01、FS-CVT01、FS-CAT01、FS-CEV01/02/04	1	optional
13	FS-CBT01	1	optional
14	Trainer line	1	optional

18. 认证相关

18.1 DoC 自我说明

Hereby, [Flysky Technology co., ltd] declares that the Radio Equipment [Paladin(PL18),FT18] is in compliance with RED 2014/53/EU.

The full text of the EU DoC is available at the following internet address: www.flysky-cn.com

18.2 CE Warning

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance

18.3 Appendix 1 FCC Statement

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.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example use only shielded interface cables when connecting to computer or peripheral devices).

This equipment 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.

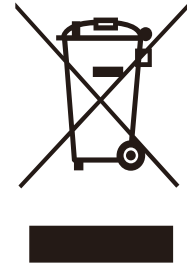
Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

1. Move all your channels to the desired position.
2. Select [All channels] and then [Yes] in the confirmation box.

19.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.





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

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