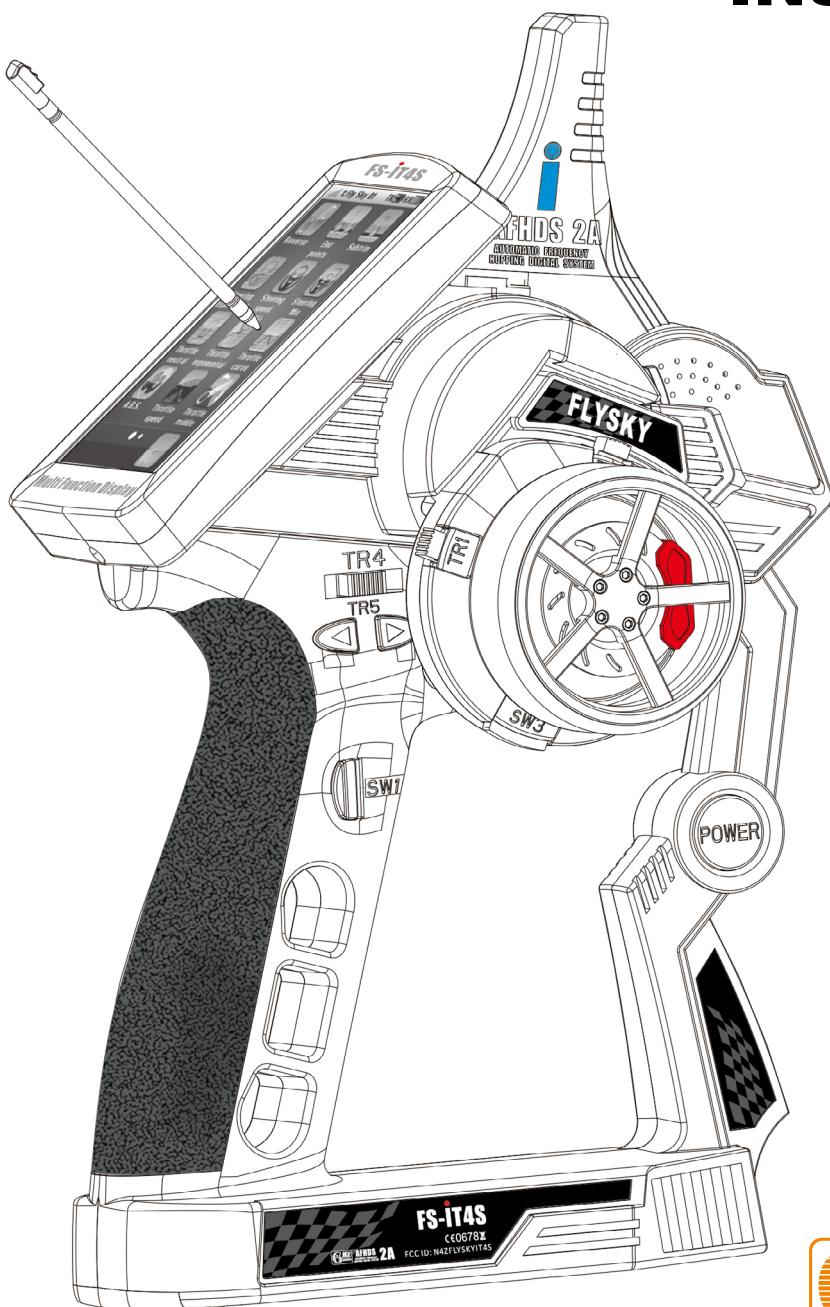




FS-IT4S

Digital proportional radio control system

## INSTRUCTION MANUAL



2.4 Hz  
01010101  
AFHDS  
AUTOMATIC FREQUENCY  
HOPPING DIGITAL SYSTEM  
**2A**

## Digital proportional radio control system

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Flysky RC model technology co., ltd



CE 0678

FCC ID:N4ZFLYSKYIT4S



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:

[www.flsky-cn.com/service.asp](http://www.flsky-cn.com/service.asp)

# Digital proportional radio control system **FS-IT4S**

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## 1. Safety

### 1.1 Safety Symbols

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



**Danger**

- Not following these instructions may lead to serious injuries or death.



**Warning**

- Not following these instructions may lead to major injuries.



**Attention**

- Not following these instructions may lead to minor injuries.

### 1.2 Safety Guide



**Prohibited**



**Mandatory**



- Do not use the product at night or in bad weather like rain or thunderstorm. It can cause erratic operation or loss of control.
- Do not use the product when visibility is limited.
- Do not use the product on rain or snow days. Any exposure to moisture (water or snow) may cause erratic operation or loss of control.
- Interference may cause loss of control. To ensure the safety of you and others, do not operate in the following places:
  - Near any site where other radio control activity may occur
  - Near power lines or communication broadcasting antennas
  - Near people or roads
  - On any pond when passenger boats are present
- Do not use this product when you are tired, uncomfortable, or under the influence of alcohol or drugs. Doing so may cause serious injury to yourself or others.
- The 2.4GHz radio band is limited to line of sight. Always keep your model in sight as a large object can block the RF signal and lead to loss of control.
- Never grip the transmitter antenna during operation. It significantly degrades signal quality and strength and may cause loss of control.
- Do not touch any part of the model that may generate heat during operation, or immediately after use. The engine, motor or speed control, may be very hot and can cause serious burns.

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



## 2 Introduction

The FS-iT4S transmitter and iA4B receiver constitutes a 4-channel 2.4GHz AFHDS 2A digital proportional computerized R/C system, compatible with model cars and boats. This system may also be used with the FS-BS4 receiver to take advantage of Smart Vehicle Control, FLYSKY's state of the art gyro stabilization technology.

### 2.1 System Features

The AFHDS 2A (Automatic Frequency Hopping Digital System Second Generation) developed and patented by FLYSKY is specially developed for all radio control models. Offering superior protection against interference, while maintaining lower power consumption and high reliable receiver sensitivity, FLYSKY's AFHDS technology is considered to be one of the leaders in the RC market today.



#### Bidirectional Communication

Capable of sending and receiving data, each transmitter is capable of receiving data from temperature, voltage and many other types of sensors, servo calibration and i-BUS Support.



#### Multi-channel Hopping Frequency

This systems bandwidth ranges from 2.4055GHz to 2.475GHz. 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.



#### Omni-directional Gain Antenna

The high efficiency Omni-directional high gain antenna cuts down on interference, while using less power and maintaining a strong reliable connection.



#### Unique ID Recognition System

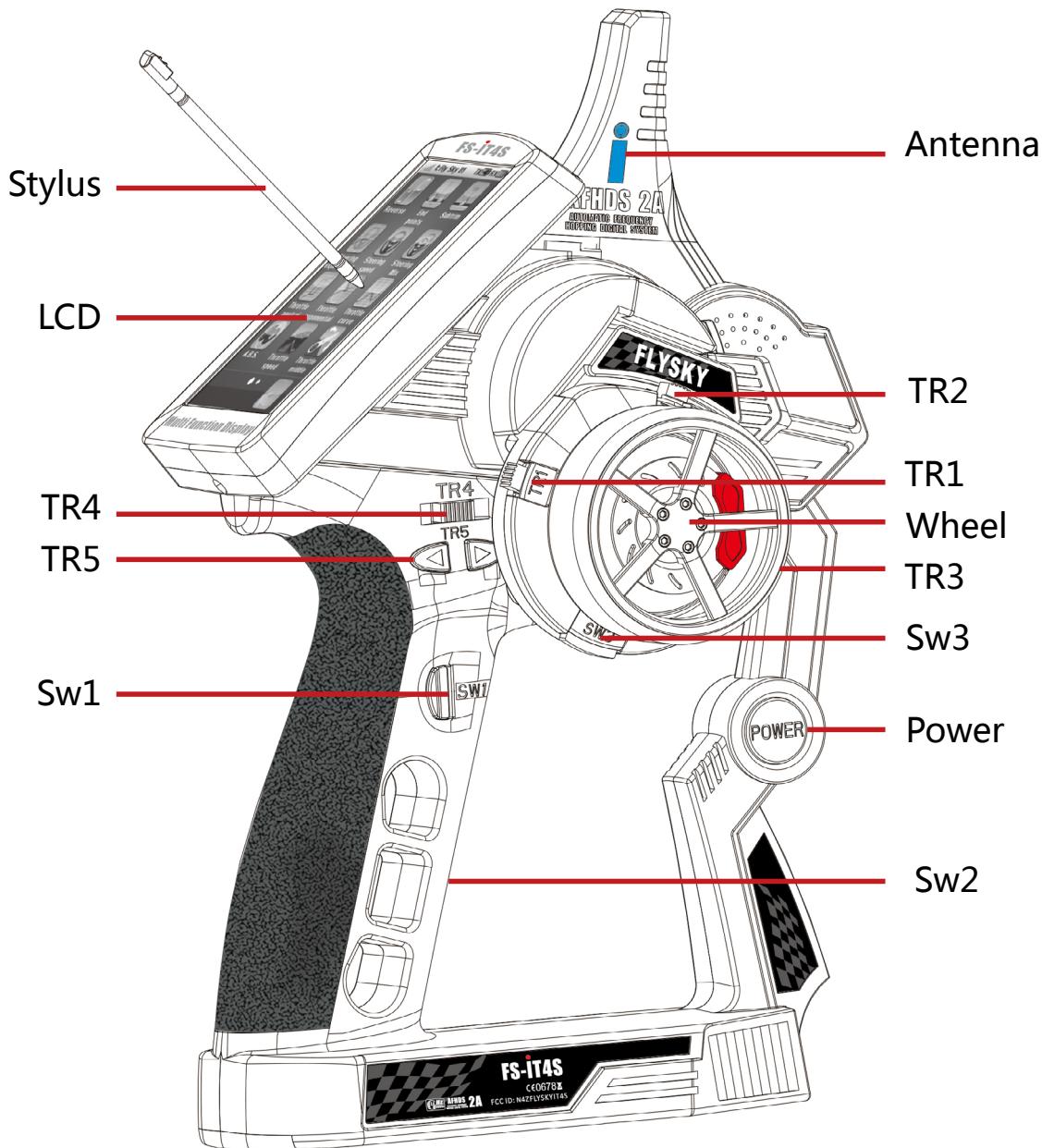
Each transmitter and receiver has it's own unique ID. Once the transmitter and receiver have been paired, they will only communicate with each other, preventing other systems accidentally connecting to or interfering with the systems operation.



#### 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.

## 2.3 Transmitter Overview



### 2.3.1 Transmitter Antenna

Precautions:

- For best signal quality, make sure that the antenna is at about a 90 degree angle to the model. Do not point the antenna directly at the receiver.
- Never grip the transmitter antenna during operation. It significantly degrades the RF signal quality and strength and may cause loss of control.

### 2.3.2 Wheel and Trigger

The FS-iT4S has two main control inputs, the wheel and trigger.

- Wheel: Steering, used to control the direction of the model.
- Trigger: Used for acceleration, braking and reverse.

# Digital proportional radio control system FS-IT4S

## 2.3.3 Status Indicator

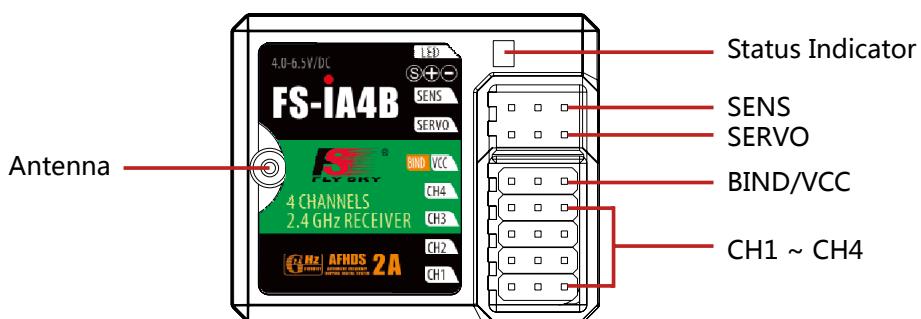
The status indicator is used to indicate the power and working status of the transmitter.

- Off: the transmitter is powered off.
- Blue light: the transmitter is on and working.
- Flashing: low battery or low signal alarm.

## 2.3.4 Trims

There are 5 groups of trim switches affecting surface position. Each time a trim is toggled, the trim will move one step. You can hold the trim in the desired direction to make quicker trim adjustments. When the trim position reaches the middle, the transmitter beeps in a higher tone.

## 2.4 Receiver Overview



### 2.4.1 Receiver Antenna

- ⚠️ Attention** • For best signal quality, ensure that the receiver is mounted away from motors or metal parts.

### 2.4.2 Status Indicator

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

- Off: the power is not connected.
- Lit in red: the receiver is on and working.
- Flashing quickly: the receiver is binding.
- Flashing slowly: the bound transmitter is off or signal is lost.

### 2.4.3 Connectors

The connectors are used to connect the parts of model and the receiver.

- CH1 to CH4: used to connect the servos, power or other parts.
- BIND/VCC: used to connect the bind cable for binding, and the power cable during normal operation.
- SERVO: used to connect i-Bus module and extend channels.
- SENS: used to connect all kinds of sensors.



## 3 Getting Started

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

### 3.1 Transmitter Battery Installation

**Danger** • Only use specified battery.

**Danger** • Do not open, disassemble, or attempt to repair the battery.

**Danger** • Do not crush/puncture the battery, or short the external contacts.

**Danger** • Do not expose to excessive heat or liquids.

**Danger** • Do not drop the battery or expose to strong shocks or vibrations.

**Danger** • Always store the battery in a cool, dry place.

**Danger** • Do not use the battery if damaged.

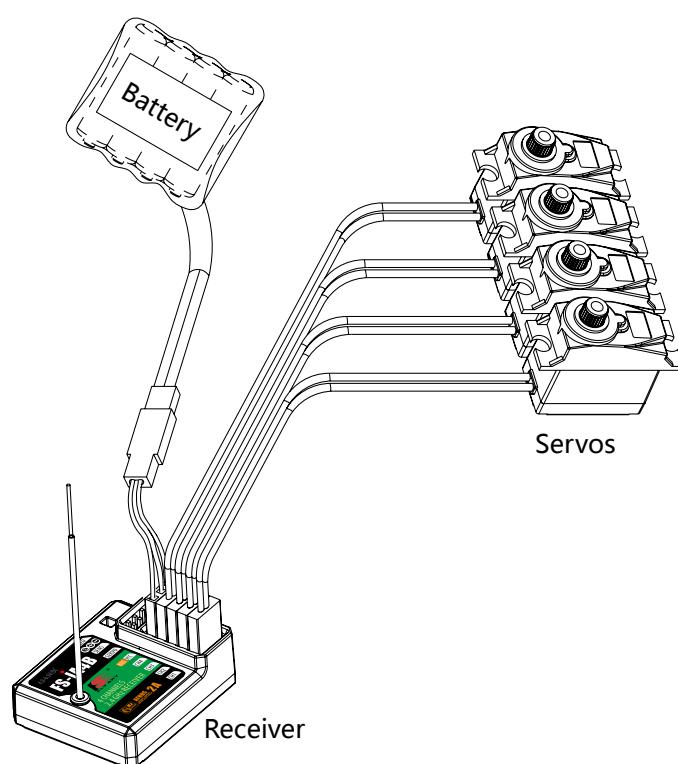
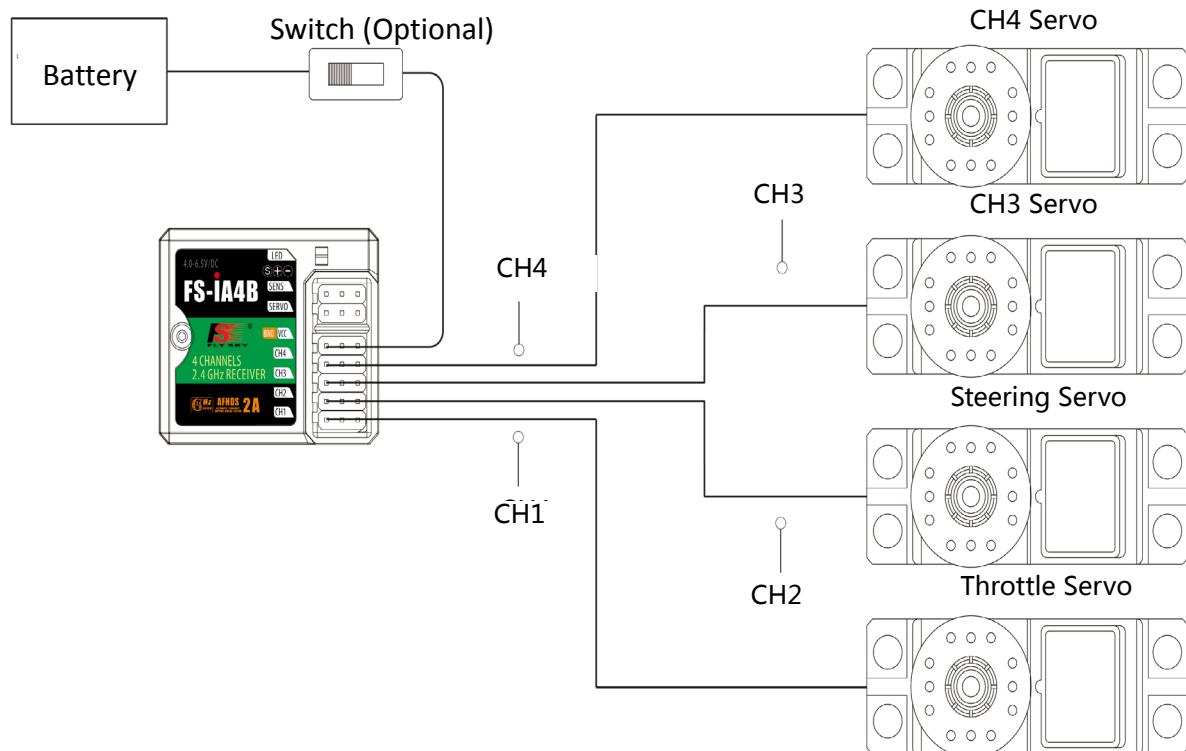
Follow the steps to install the transmitter battery:

1. Open the battery compartment.
2. Insert a fully-charged battery into the compartment. Make sure that the battery makes good contact with the battery compartment's contacts.
3. Replace the battery compartment cover.

# Digital proportional radio control system FS-IT4S

## 3.2 Connecting the Receiver and Servos

Connect the receiver and the servos as indicated below:





## 4. Operation Instructions

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

### 4.1 Power On

Follow the steps below to turn on the system:

1. Check the system and make sure that:
  - The battery is fully charged and installed properly.
  - The receiver is off and correctly installed.
2. Hold the power button until screen lights up.
3. Connect the receiver power supply to the **BIND/VCC** port on the receiver.

The system is now powered on. Operate with caution, or serious injury could result.

### 4.2 Binding

The transmitter and receiver have been pre-bound before delivery. If you are using another transmitter or receiver, follow the steps below to bind the transmitter and receiver:

1. Turn the transmitter on, press , and swipe from right to left on the screen and then select [**RX Setup**].
2. Check the current [**RF std**] and receiver type according to the table below. If you need to change the standard, select [**RF std**], and [**Yes**] in the confirmation box, and then the desired standard.

RF Standard	Receiver Type
AFHDS	GR3F, GR3E, R6B, R9B
AFHDS 2	iR4, iR4B, iR6B
AFHDS 2A 1-way	A3, A6
AFHDS 2A 2-way	iA4B, iA6, iA6B, iA10, iA10B, BS4

3. Select [**Bind with a receiver**] and press [**Yes**] to enter bind mode.
4. Connect the bind cable to the **BIND/VCC** port of the receiver.
5. Connect the power to any other port. The indicator will start to flash, indicating that the receiver is in bind mode.
  - For [**AFHDS 2A 2-way**], once binding is complete, the transmitter should exit the bind menu automatically.
  - For other protocols, select  to exit the bind menu.
6. Remove the bind and power cable from the receiver. Then connect the power cable to the **BIND/VCC** port.
7. Check the servos' operation. If anything does not work as expected, restart this procedure from the beginning.

## 4.3 Pre-use Check

Before operation, perform the following steps to check the system:

1. Check to make sure that all servos and motors are working as expected.
2. Check operating distance: one operator holds the transmitter, and another one moves the model away from the transmitter. Check the model and mark the distance from where the model starts to lose control.



**Danger**

- Stop operation if any abnormal activity is observed.



**Danger**

- Make sure the model does not go out of range.



**Attention**

- Sources of interference may affect signal quality.

## 4.4 Adjusting Wheel Position

The position of the wheel can be adjusted to be more comfortable to use.

1. Hold the transmitters handle firmly.
2. Grab the plastic underneath the wheel. Do not pull the wheel itself as this could lead to long term wear and damage.
3. Rotate the wheel out and away from you to the desired position.



**Attention**

- The max rotation is about 45°. Attempting to push beyond the max rotation can cause damage to the transmitter.

## 4.5 Trims

Trims allow you to change the centre point of the steering, throttle, channel 3 and 4. For example, if a model that always turns slightly left, the steering trim can be used to correct the problem. When you press a trim button the system will jump to the trim interface, once 2 seconds have past and no changes have made the system will revert back to the home screen.

The System has 5 groups of trim switches located behind the steering wheel.

## 4.6 Power Off

Follow the steps below to turn off the system:

1. Disconnect the receiver power.
2. Hold the transmitter's power button to turn off the transmitter.

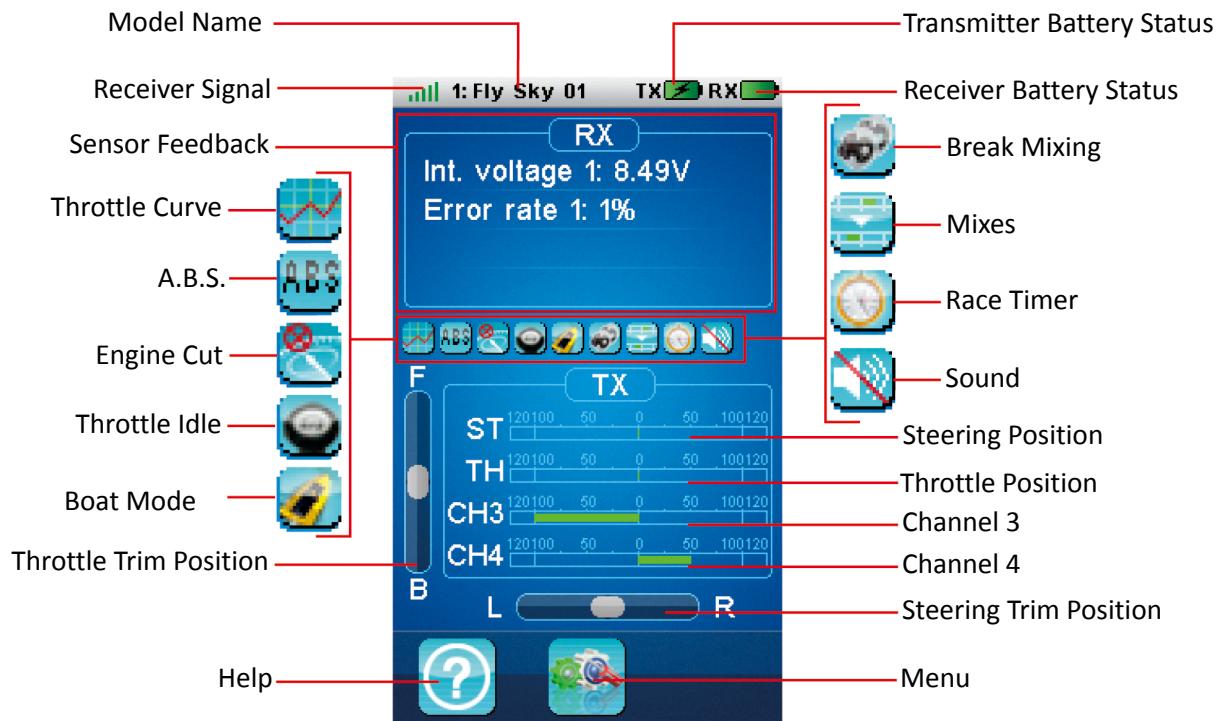


**Danger**

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

## 5. Home Screen

The home screen displays useful information about your model, including sensors and function status etc.



The system's navigation is designed to be easy and quick, using both a stylus and fingers.

- To enter the main menu screen, press the icon. Then use your finger or stylus to swipe left to right on the screen to change page.
- To enter a function touch its corresponding icon. Navigate functions by swiping up and down to navigate lists and press an item on the list to select it.
- To go back to a previous menu press the icon.
- To quickly enter the sensor menu, touch the RX sensor feedback box. For more information see the "7.8 Choose Sensors" section of this manual (Page 30).

## 6 Function Settings

### 6.1 Reverse Function

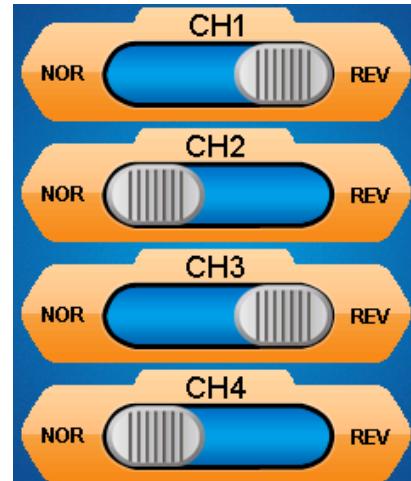
The Reverse function is used to correct a servo or motor's direction in relation to the systems controls. For example, if a steering servo is mounted upside down in order to fit inside a model, when the system's steering wheel is turned, the servo will move in the opposite direction. To fix this, all we need to do is reverse CH1.

To reverse a channel:

Touch the channel in the list. When reversed, the slider will be at the [REV].

Select the icon to return to the previous menu.

Select the icon to reset the function.



### 6.2 End Points Function

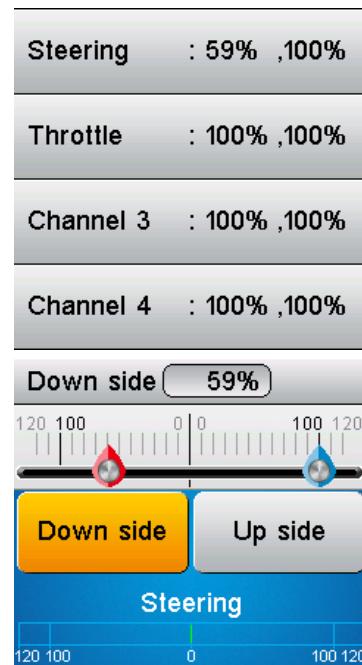
Endpoints are the limits of the channels' range of movement. There are two endpoints, one is the low endpoint and one is the high end point.

To set an endpoint:

1. Select the the channel you wish to change.
2. Move the channel in the direction you want to change to choose the high or low end point. Alternatively touch "Down side" or "Up side" in the function menu.
  - At the top of the current channel, the selected endpoint and percentage are shown.
  - The endpoints location is shown as a bar and needle.
  - The red needle indicates the current setting for the selected side and channel.
  - A real time readout of the channels position can be seen in this menu as a green bar.
3. Move the wheel at the bottom of the screen left to reduce the value. or right to increase the value.

Select the icon to return to the previous menu.

Select the icon to reset the function.



## 6.3 Subtrim Function

Subtrim changes the center point of the channel. For example, if a car's wheels are slightly out of alignment, the sub trim could be used to fix this.

To set the subtrim function:

1. Select the desired channel from the list. The setup menu for the selected channel displays.
  - At the top of the current channel, the selected channel and percentage are shown.
  - The center point location is shown as a bar and needle.
  - The red needle indicates the current setting for the selected channel.
  - A real time readout of the channels position can be seen in this menu as a green bar.
2. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.
3. Select the  icon to return to the previous menu and save.
  - To restore default settings of a single channel, select the  icon within its subtrim menu.
  - To restore the entire function to default, select the  icon in the channel selection menu.

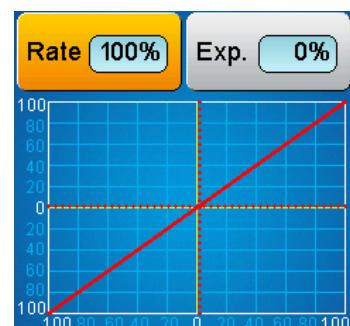


## 6.4 Steering Exponential

This function changes the steering channel's response curve. There are 2 main parameters:

- Rate: Changes the outer limits of the steering, the default is 100%. Rate cannot be more than 100%.
- Exp. (Exponential): Changes the steering curve, which changes the response of the steering wheel. The exp setting can be positive or negative.

Changes to the rate and exponential can be seen on the graph located in the center of the screen. The system also gives a real-time readout of the channel's current position.



### Note:

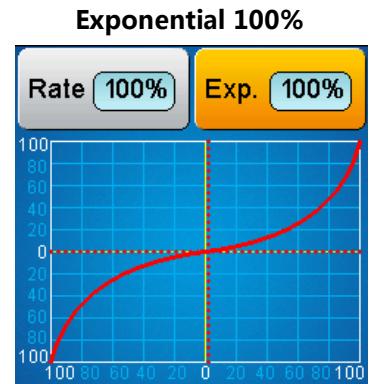
The system gives a real time readout of the transmitter wheel position. Other functions effects are not displayed on this graph.

# Digital proportional radio control system FS-IT4S

By changing the steering curve we can make the wheel more or less sensitive in different areas of its range of movement, for example, reducing sensitivity at the middle for more control when making fine adjustments.

This function must be set as active before use.

To activate the function, make sure that the icon is displayed in the bottom left corner. If not, press the icon to enable.



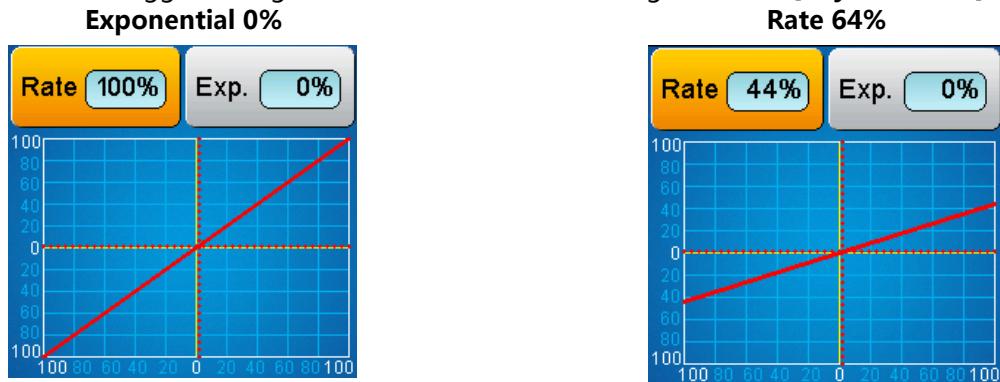
To set the steering exponential/rate:

1. Select the desired parameter, rate or exp.
2. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

Select the icon to reset the function.

Select the icon to return to the previous menu.

This function can be toggled using a switch/button, which is assigned in the [Keys function].



## 6.5 Steering Speed

This function changes the speed in which the steering travels. If the car's wheels are turning too fast, it could lead to loss of control. On the other hand, if they do not change position fast enough, the car will become sluggish and slow to make turns. This function is also used to simulate a realistic for scale models.

There are two variables:

- Turn speed: Sets how quickly the wheels turn from their starting position, to the position the system's control indicates.
- Return speed: Sets how quickly the wheels turn back to their center position.



To set the steering speed:

1. Select a parameter to change, [Turn speed] or [Return speed].
2. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

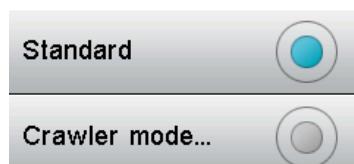
Select the  icon to reset the function.

Select the  icon to return to the previous menu.

## 6.6 Steering Mix

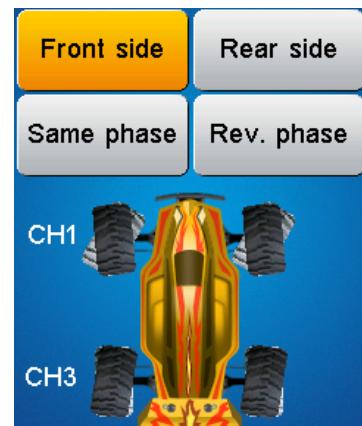
This function changes which wheels are involved in steering, front, rear, or 4 wheel steering. It is set to [Standard] by default, which means front wheel steering. If want to change the steering mode, select [Crawler mode]. Note that in crawler mode, CH3 cannot be controled independently.

To enable this function, select [Crawler mode] from the functions main menu.



There are 4 types of steering control:

- Front side: Front wheel steering.
- Rear side: Rear wheel steering.
- Same phase: Front and rear steering at the same time, when turning a direction all the wheels will turn the same direction.
- Rev. phase (Reverse Phase): The front wheels and back wheels are both involved in the turning process. However, the rear wheels will always turn the opposite direction to the front wheels.



To set the steering mix:

1. Select the desired mode, [Standard] or [Crawler mode].
  - If you select [Standard], it exits the setting and the front wheels will turn for steering.
  - If you select [Crawler mode], refer to step 2.
2. Select the desired method of steering. The system shows a preview of the steering method on the screen in real-time when moving the system wheel.

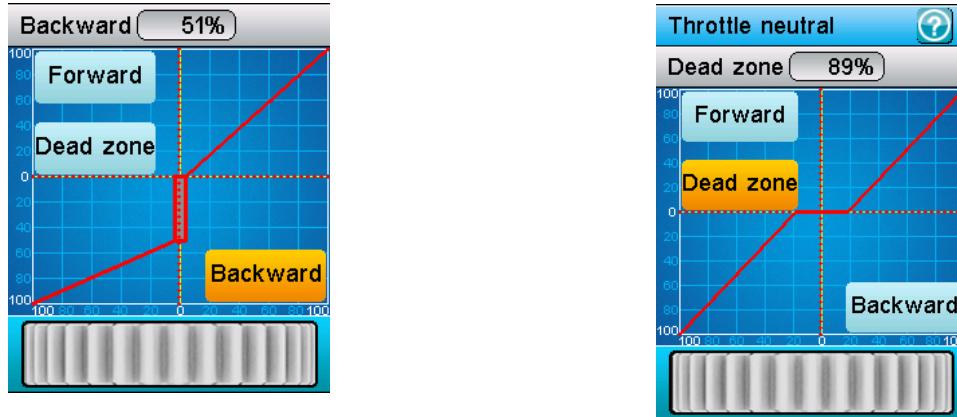
Select the  icon to reset the function.

Select the  icon to return to the previous menu.

This function can be toggled using a switch/button, which is assigned in the [Keys function].

## 6.7 Throttle Neutral

This function sets a "dead zone" for their throttle control, which means that the throttle will not function while still within the dead zone. You can set up the initial amount of throttle that will be applied when the throttle leaves the dead zone, for driving forward and backward separately.



To set the throttle neutral:

1. Select [Forward], [Dead zone] or [Backward].
2. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

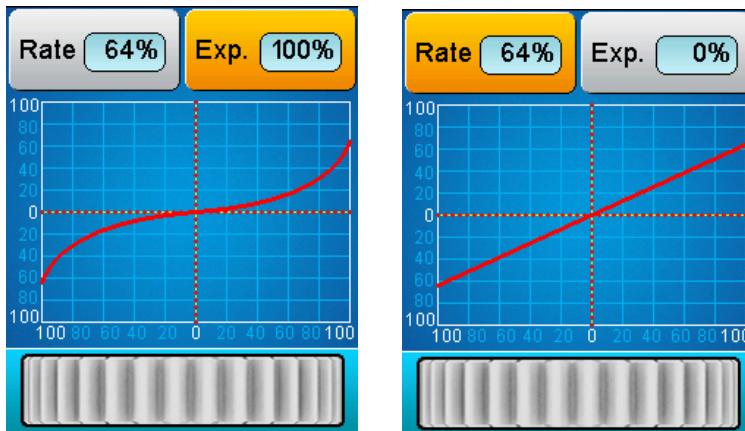
Select the icon to reset the function.

Select the icon to return to the previous menu.

## 6.8 Throttle Exponential

This function has two variables:

- Rate: Reducing the rate shrinks the outer limits of the curve. As the rate drops below 100%, the graph will update in real-time. The maximum is 100%.
- Exp. (Exponential): Exponential adds curve. It is possible to move to +-100% creating opposite curves.



Select the icon to reset the function.

Select the icon to return to the previous menu.

This function can be toggled using a switch/button, this is assigned in the [Keys function].

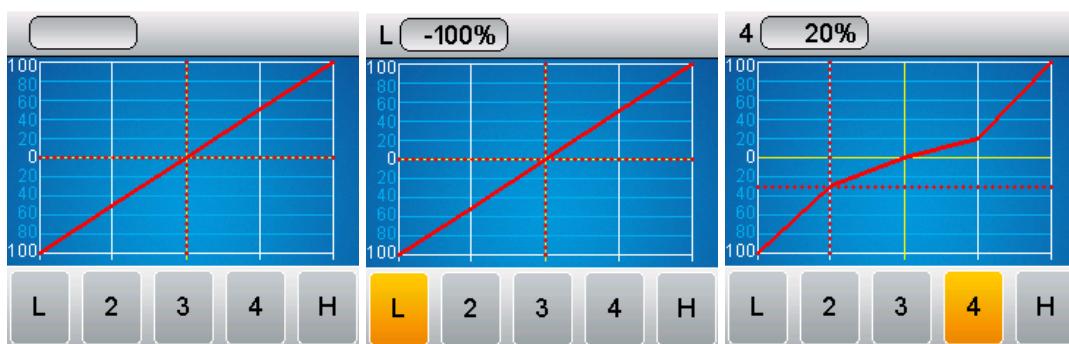
## 6.9 Throttle Curve

This function is used to add a curve to the throttle response so that the throttle will respond differently throughout its range of movement.

This function must be activated and can be assigned to a button (See [Keys Function]).

To set the throttle curve:

1. Activate the function. Make sure that the  icon is displayed in the bottom left corner. If not, press the  icon to enable.
2. Select an adjustment point, [L], [2], [3], [4] or [H].
3. Move the wheel at the bottom to change the curve. All changes will be shown in real-time on the graph. If the trigger is moved, the graph will show the current throttle position.



Select the  icon to reset the function.

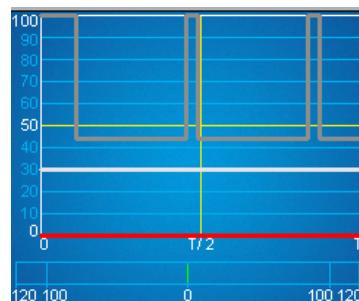
Select the  icon to return to the previous menu.

## 6.10 A.B.S.

A.B.S. stands for auto breaking system. This function is used to stop the wheels from locking which can lead to loss of control or a skid. A.B.S. manages this by regulating the amount of pressure the breaks use, which is done by pumping the breaks on and off rather than a constant force.

There are six sub menus for A.B.S. function setting, [Brake return], [Delay], [Cycle length], [Trigger point], [Duty cycle], and [Steering mix].

In the submenus, pulses are shown as a square wave, the peaks indicating brake on, and troughs indicating reduction in braking. As the value changes, the square wave will change to represent the function's current settings.



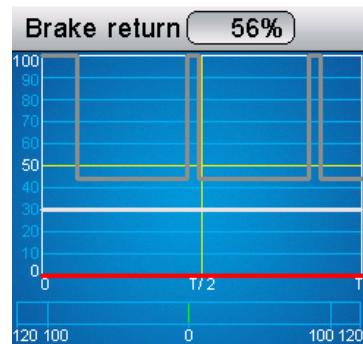
The trigger point is represented as a white line on the graph.

Below the graph is a bar that shows the real-time braking position. When this function is active and the brake is applied, the green bar will oscillate in real time showing the A.B.S. in action.

# Digital proportional radio control system FS-IT4S

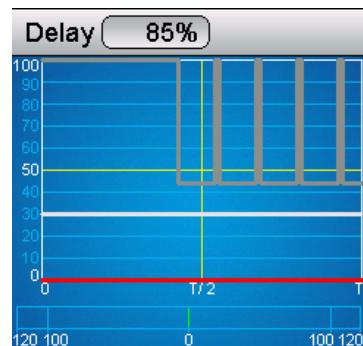
## Break return

Controls the reduction of braking during each pulse. If set to 60%, when the brakes are active, the system will remove 60% of the brakes strength on each pulse.



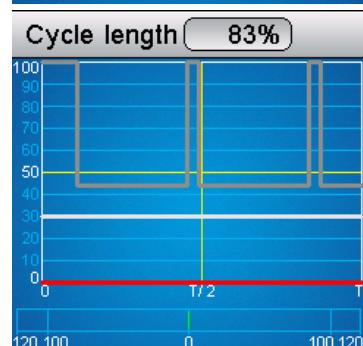
## Delay

Determines how long it takes for the A.B.S. system to take effect. At a setting of 0%, the A.B.S. system will take effect as soon as the brake is applied. The higher the value, the longer it will take for the A.B.S. to function.



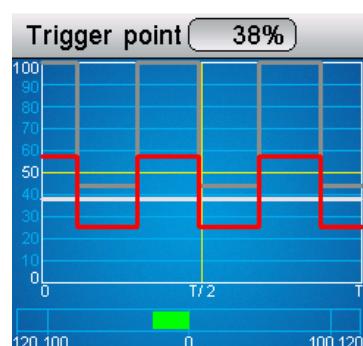
## Cycle length

Increases or decreases the time between pulses. The higher the value, the longer the pulse



## Trigger point

Configures the point at which the A.B.S. starts to function. The higher the percentage, the further the trigger has to be moved to activate the A.B.S.



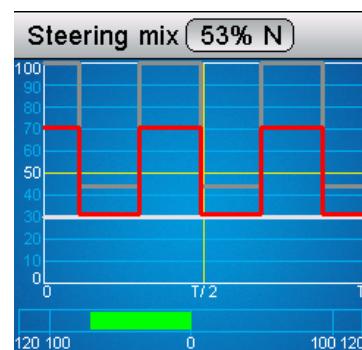
## Duty cycle

Changes the length of each pulse and the gap between them. As the value changes, the length of the braking waves peaks and troughs will change independently of each other and will no longer be symmetrical.



### Steering mix

A.B.S. can be reduced automatically while turning. This function mixes braking and steering to turn reduce the A.B.S. or replace it with a constant braking pressure.



To have constant braking unless turning simply move the wheel the opposite direction so that the header shows %E.

To set the functions:

1. Select the desired submenu.
2. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

Select the  icon to reset the function.

Select the  icon to return to the previous menu.

### 6.11 Throttle Speed

This function changes how quickly the throttle will react, both when pressed and released. This is useful to emulate different models such as big trucks, which in real life take longer to get up to speed and slow down.

There are 2 main settings in this function:

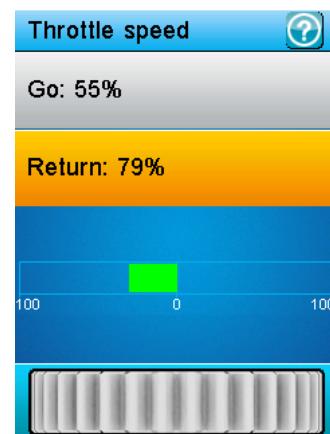
- Go: Sets how quickly the throttle applies acceleration.
- Return: Sets how quickly the throttle backs off.

To adjust these settings:

1. Select the desired setting, [Go] or [Return].
2. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

The lower the percentage the longer it will take for the throttle to catch up with the trigger movement.

The bar in the middle of the screen will show the throttle's current position in real time. When the bar is red, it is showing the triggers' position on the throttle position. When the function is active, the red line will move first, followed by the green line as it catches up with the trigger position.



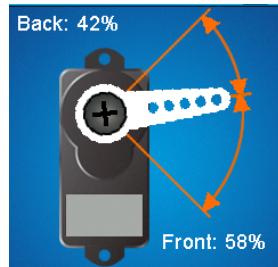
Select the  icon to reset the function.

Select the  icon to return to the previous menu.

## 6.12 Throttle Middle

This function changes the midpoint of the throttle, and could be used to correct the servo position. If the servo position is wrong, the model may move as soon as it's turned on.

To change the midpoint, move the wheel at the bottom of the screen, and the current position will change in real time on the screen.



Select the icon to reset the function.

Select the icon to return to the previous menu.

## 6.13 Throttle Idle Up

This function is used for models that use a fuel based engine that will stall if left at 0 throttle. Idle up makes sure that the engine always has some throttle in order to keep it from stalling.

This function must be assigned to a switch/button in order to be activated (See [**Keys Function**]). If not, the function cannot be activated.

When finished using this mode, you can press the assigned button to bring the throttle to 0, effectively cutting the engine, although this is usually done using the engine cut function.



To set this function:

1. Assign this function to a switch/button in the [**Keys function**] menu.
2. Press the assigned button to activate the function. Make sure that the icon is displayed in the bottom left corner.
3. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

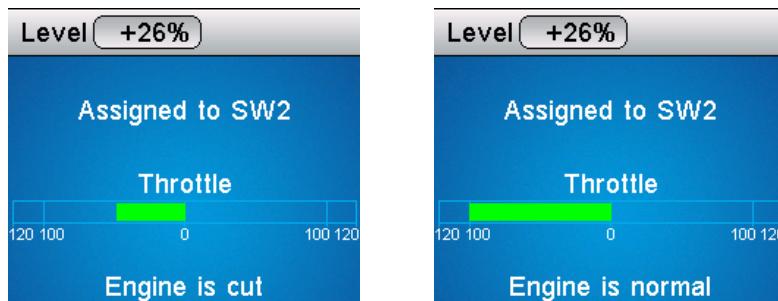
Select the icon to reset the function.

Select the icon to return to the previous menu.

## 6.14 Engine Cut

Throttle cut is used for fuel based models and is used to cut the throttle, essentially cutting the engine. To edit the settings move the wheel at the bottom of the screen. When active the function will stop the throttle dropping below the defined point. For help setting up your model's engine consult the model's user manual.

This function must be assigned to a switch/button to be activated. If not, the function cannot be activated.



To set this function:

1. Assign this function to a switch/button in the [Keys function] menu.
2. Press the assigned button to activate the function. Make sure that the  icon is displayed in the bottom left corner.
3. Move the wheel at the bottom of the screen left to reduce the value or right to increase the value.

Select the  icon to reset the function.

Select the  icon to return to the previous menu.

## 6.15 Boat Mode

This function is used only when you are using a model boat. When this function is active, the throttle channel is set to its lowest position and the brake functionality is disabled.

To toggle this function, select the box beside [Normal mode]. When the function is active, the text beside the box will change to [Boat mode].

## 6.16 Brake Mixing

This function enables you to use models that require more than one braking channel, for example a model that has separate brakes for front and back braking.

If your model uses extra channels for braking, each channel can be controlled separately and are slaves of the throttle channel.

CH3	CH4
Exponential	Exponential
A.B.S.	A.B.S.

To set the function:

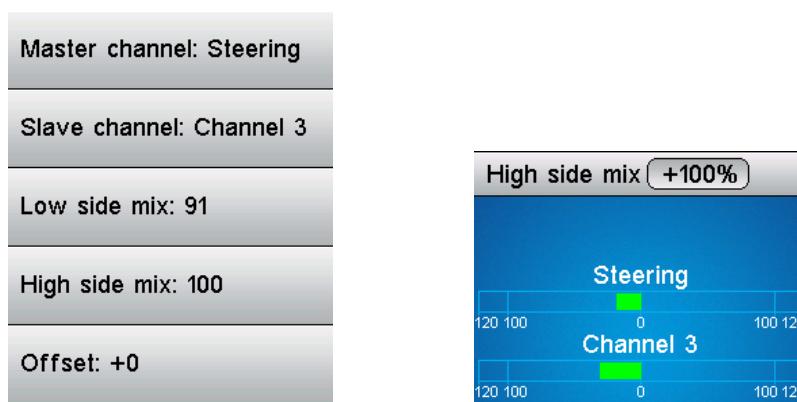
1. Select [CH3] or [CH4] for braking.
2. Set the [Exponential] and [A.B.S.] functions as described earlier.

## 6.17 Mixes

This function is used to create a mix between channels and control methods. For example, if you wish to light up the turn signal lamp which is assigned to CH3 whenever steering left or right, you can create a mix to do this.

You can set up to 4 mixes. To set a mix:

1. Select a mix you want to set, [Mix 1], [Mix 2], [Mix 3] or [Mix 4].
2. Select the bottom left icon to activate the mix. Make sure that the  icon is displayed.
3. Select [Master channel] and then choose the master channel to designate the slaves output.
4. Select [Slave channel] and then choose a slave.
5. Select [Low side mix] or [High side mix] as desired and move the wheel to change the value.
6. Select [Offset] to offset the channel in relation to the master.



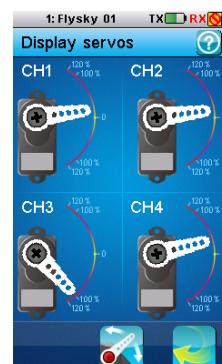
## 6.18 Display Servos

This function displays the model's channel output and can be used to test output and servo range.

Press the  icon and the servos will move slowly though their entire range. Press the icon again to toggle the function.

### WARNING

Make sure the model engine is powered off while the test function is activated. If powered on, it will rev up and cause unexpected results.



Select the  icon to return to the previous menu.

## 6.19 Race Timer

The race timer has 4 modes:

- Up timer: Counts up.
- Down timer: Counts down from the set time.
- Lap timer: Keeps track time for each individual lap.
- Lap memory: Records the results from the lap timer.



Touch [Start] to start the timer, [Stop] to stop, and [Reset] to reset the function.

Select the icon to reset the function.

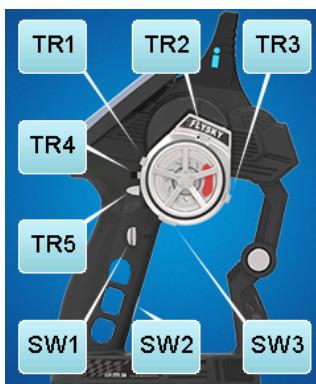


## 6.20 Keys Function

This function assigns the system's physical buttons to different functions for quick control.

To set the keys function:

1. Touch one of the trim or switches shown on the diagram. The function list for this trim or switch is displayed.
2. Scroll down the list until you find the function you wish to assign and select it.  
Then the function will automatically return to the previous menu.



Select the icon to reset the function.

Select the icon to return to the previous menu.

## 6.21 Models

This function is used to change, reset, rename or copy model setups. The FS-iT4S can store up to 20 different models in the internal memory.

**[Select model]:** Changes the current model.

Touch **[Select model]** and then choose the name of the model to load it.

**[Reset model]:** Changes the current model settings to the factory default.

To reset a model:

1. Make sure the current model is the one you want to reset. If not, select the desired model as described above.
2. Select **[Reset model]** and then **[Yes]** in the confirmation box. The model will be reset to the factory default.

**Reset to default.**

**Are you sure?**

**Yes**

**No**

**[Name]:** Renames the current model.

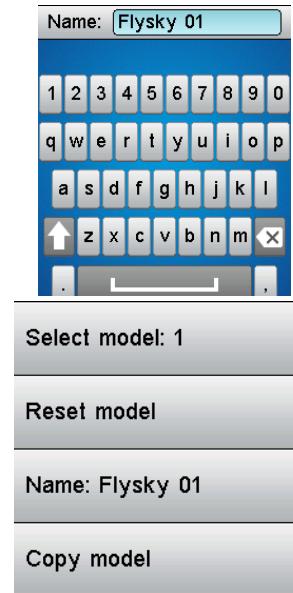
To name a model:

1. Make sure the current model is the one you want to rename. If not, select the desired model as described above.
2. Touch **[Name]** and a keyboard is displayed.
3. Enter the name using the keyboard. Then press the  icon to save.

**[Copy model]:** Copies the settings of a model to overwrite another model.

To copy a model:

1. Select **[Copy model]**.
2. Select a copy source the setting of which will be copied.
3. Select a target model that you wish to overwrite.
4. Select **[Yes]** in the confirmation box and the target model will be overwritten by the copied model.



### WARNING

Be carefull when overwriting a model. Once a model has been overwritten, it is impossible to recover.

## 6.22 S.V.C.(Smart Vehicle Control) Function

Smart Cehicle Control is only available for use with the FS-BS4 receiver and supported transmitter. The Smart Vehicle Control fuction uses the receivers' built in gyroscope, and automatic throttle attenuation to keep the vehicle traveling in the desired direction. Even during sharp turns tje S.V.C. function is capable of keeping the vehicle traveling in the correct direction at maximum speed.

The following parameters can be set for the S.V.C. function:



## Neutral Calibration

Calibrates the S.V.C.functions neutral position. To calibrate touch this option and wait 2.5 seconds.

## Reverse: Nor/Rev

Reverse is used to flip the direction of the correction. After installing the receiver, rotate the car to check if the wheels turn to the correct direction. If you rotate the car to the left, the wheels turn right, and if you rotate the car to the right, the wheels turn left.

## Steering Gain

Steering gain is how much the system will automatically correct the steering to bring the vehicle back into a straight line. Adjusting the value changes the amount of correction applied by the system, 0% being the minimum and 100% being the maximum.

## Throttle Gain

Throttle gain changes how much the throttle is reduced during cornering, acting much like traction control in a full sized car. Once the car begins to drive, the throttle instantly adjusts to prevent spinout, which means less wheel spin on slippery surfaces and faster acceleration out of corners.

## Priority

The priority setting controls how much correction will be applied when steering left or right. The higher the value, the larger the correction.

Select the "Reset" button to restore the setting to the factory default.

Select the "Return" icon located in the bottom right corner of the screen to return to the previous menu.

You can assign the function to a switch in the "Keys function" menu

## 7 RX Setup

### 7.1 Bind with a receiver

This function enables you to bind the receiver and transmitter so that no other system may interfere with your model's operation.

To bind the transmitter with a receiver, refer to section "[4.2 Binding](#)".

### 7.2 RF std.: ADHDS 2A 2-way

This menu allows you to change the communication protocol for the transmitter. The available protocols are:

- AFHDS
- AFHDS 2
- AFHDS 2A 1-Way
- AFHDS 2A 2-Way



Select the protocol according to the table below.

RF Standard	Receiver Type
AFHDS	GR3F, GR3E, R6B, R9B
AFHDS 2	iR4, iR4B, iR6B
AFHDS 2A 1-way	A3, A6
AFHDS 2A 2-way	iA4B, iA6, iA6B, iA10, iA10B, BS4

#### Note

AFHDS 2A 2-Way is the latest, most stable and advanced communication protocol.

This will change  
the AFHDS mode.

Are you sure?

When changing mode, a confirmation message will display.

Yes     No

### 7.3 Receiver PPM Output

PPM is capable of transferring all channels through one physical output. When [**RX PPM output**] is checked, the receiver outputs PPM on CH1 output and the other outputs are disabled.

To enable PPM output, touch [**RX PPM output**] in this menu. When the box is checked, the PPM is active.

### 7.4 RX Battery Monitor

This function is used to monitor the receiver battery voltage. Use the supplied battery's user manual to set the lower and higher voltages, so that the system can monitor battery level effectively.

Setting the voltage alarm sets a custom low battery level alarm.



You can set the following parameters in this menu:

- External sensor: Enables monitoring battery status using an external sensor.
- Low voltage: Sets your battery's low voltage value which is 4.00V by default.
- Alarm voltage: Sets the low voltage alarm limit.
- High voltage: Set the maximum voltage when the battery is full. The default high voltage is 5.00V (Check your battery specifications).

External sensor	<input type="checkbox"/>
Low voltage:	4.00V
Alarm voltage:	4.20V
High voltage:	5.00V

To change settings, touch the desired item and move the wheel to set the new value.

Select the icon to reset the function.

## 7.5 Low Signal Alarm

This function is used to enable and disable the low signal alarm. When [Low signal alarm] is checked, an alarm will be triggered if the receiver's signal strength drops below 5.

## 7.6 FailSafe

This function is used to protect the models and users if the receiver loses signal and therefore is no longer controllable.

All 4 channels are listed in the failsafe menu. [Off] means that in case of a loss of signal, the corresponding servo will keep its last received position. If it displays a percentage, the servo will instead move to the selected position.

To set a failsafe position:

1. Select a channel.
2. Activate the function. Make sure that the icon is displayed in the bottom left corner. If not, press the icon to enable.
3. Move your channel to the desired position and select the icon to return to the failsafe channel list. Make sure the percentage of the position is displayed.

Steering	: -57%
Throttle	: Off
Channel 3	: Off
Channel 4	: Off

For example, to cut the throttle when signal is lost, enter the throttle channel and move the stick to the bottom (-100%). Then select the icon to return to the failsafe channel list. Make sure -100% is displayed for the throttle channel.

You can set the failsafe position for all channels with the [All channels] button at once. To do so,

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

## 7.7 Display Sensors

This function is used to display information from the current active sensors.

The type of sensor is displayed on the left hand side under [Type], the numerical ID of each sensor is in the middle under [ID] and the sensor's output is on the right under [Value].

Type	ID	Value
TX voltage	1	4.11V

At the bottom of the list this menu has an error rate display, which is a good indicator of signal quality.

### Types of sensors:

#### TX Voltage

Displays the transmitter's voltage supply.

#### RX Voltage

Displays the receiver's voltage supply.

#### Signal Strength

Displays how strong the signal is between the transmitter and receiver. This is measured on a scale of 0 to 10, 10 being the best and 0 being the worst signal strength. When the signal drops to 4 or below the system will alert the user via an alarm. The signal strength is calculated using the SNR (Signal To Noise Ratio) etc.

#### SNR (Signal To Noise Ratio)

The SNR gives an indication of how much signal noise in comparison to clean signal. The more noise there is in the signal, the more likely you will have problems, like losing connection with the receiver.

Noise is usually created by other nearby transmitters, such as WI-FI, as such in an area that has a lot of transmitters will have a higher SNR. The SNR is calculated as  $\text{SNR} = \text{RSSI} - \text{Noise}$ , if the SNR drops to 4 or below, bring the model closer to you in order to avoid unintended operation.

#### RSSI (Receiver Signal Strength Indication)

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

#### Noise

Noise is caused by other transmitter's, such as wifi. If there is too much noise in an area, this will affect the transmitters maximum range.



## 7.8 Choose Sensors

The main screen can display the value of up to 4 sensors. This function is used to select which sensors to display. Note: When no sensors are added the system will display TX/RX voltage and signal strength by default.

To choose a sensor:

1. Select a slot, 1, 2, 3 or 4. Any sensors that are connected will automatically populate this list.
2. Select the desired sensor and exit the function.

To set the alarm limits for a sensor:

1. Activate the function. Make sure that the icon is displayed in the bottom left corner. If not, press the icon to enable.
2. Select [**Low alarm**] or [**High alarm**] and then move the wheel to adjust the value.
3. Select the icon to return to the previous menu.

There are 2 types of sensors, basic and advanced. A basic sensor only reports back 1 value, but an advanced sensor is able to monitor several things at once, for example altitude, temperature and speed.

## 7.9 Speed and Distance

This function is used to monitor the model's RPM (Revolutions Per Minute) and how far it has traveled.

You can set the following parameter in this menu:

- **[Speed sensor]:** Selects the desired sensor. If a sensor is connected, it will display in the menu.
- **[Set rotation length]:** When attaching a speed sensor to a wheel etc, it is important that the sensor knows exactly how far out from the sensor it is. The system uses this distance to calculate distance traveled.
- Reset odometer 1  
Resets odometer 1 to 0. Odometer 1 records the distance traveled during a session. Note that restarting the system will also reset odometer 1.  
This will reset the odometer 1.
- Reset odometer 2  
Resets odometer 2 to 0. Odometer 2 records the total distance traveled since last reset. This means that the distance over several sessions will be added together.  
Are you sure?

**Yes**

**No**

## 7.10 i-Bus Setup

This function is used to assign a channel to the i-Bus connected servos.

Follow the procedure below to set the i-Bus:

1. Connecting the i-Bus module to your receiver and servos.
2. Select [**Steering**], [**Throttle**], [**Channel 3**] or [**Channel 4**]. The system will display a prompt message "Press the corresponding servo interface button or touch cancel.".
3. Locate the desired servo, and use the tool provided to push the channels button on the i-Bus module. Then the selected channel will be assigned to the assigned port.

## 7.11 Servos frequency

This function is used to change the frequency for some types of servos that require a different frequency to function properly. To change this value, move the wheel at the bottom of the screen. Consult your servos user manual to find out the correct frequency.

Note:

The most common frequency is 50Hz.

Value **50Hz**

## 7.12 Range Test

This function is used to test the range of the transmitter and receiver. By pressing SW2 the transmitter power is reduced, this means that instead of having to walk up to 180 - 220 meters away from your model, you can walk to about 40 - 60 meters away.

To perform a range test:

1. Bind the receiver and transmitter.
2. Enter this menu, press SW2 and walk slowly away from your model.

## 7.13 Update Receiver

This function is used to update the firmware of the receiver.

After selecting [**Update receiver**], the iT4S will ask for a confirmation. Select [**Yes**].

- If the iT4S has an update for the receiver, the update will be displayed as a percentage. When the update is complete the function will exit automatically.
- If no updates are available, the iT4S will display [**Receivers firmware is already up to date**].

## 8 Spectrum Analyzer

The spectral analyzer function is used to monitor other devices that are emitting radio signals and at what frequency. This is useful as it is possible to find out if there is likely to be any interference from other sources such as WIFI. Because it is only useful to know about frequencies that may interfere with the function of the system, this function is limited to 2.400GHz to 2.480GHz.

### Interference

Interference from other devices may prevent the TX and RX communicating effectively and may lead to loss of control or erratic operation. The reason this happens is that when a device emits a frequency matching the transmitter, the systems frequency is drowned out or becomes masked, meaning the receiver won't receive the instructions sent by the transmitter. This can be caused by other systems in the area, but also WIFI and other radio frequencies in the 2.4GHz range.

This function mitigates this problem by allowing the user to see if there are any sources with a signal strong enough to cause problems with their system.

The image below shows a real world example. The system uses color to describe how often the signal is present. Blue being no signal at all, to red meaning the signal is there very often. The more often the signal is present in the environment the more likely it is to drown out the systems signal.

On the graph from left to right is frequency, ranging from 2.400GHz to 2.480GHz, which is the frequency range of the system. These are the only frequencies that need to be monitored, because these are the frequencies that can cause interference with the system.

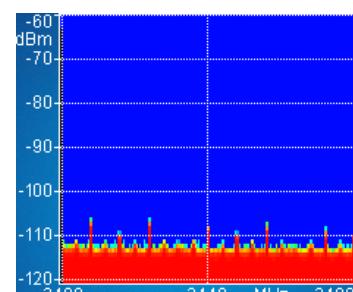
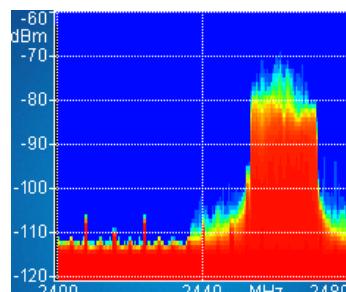
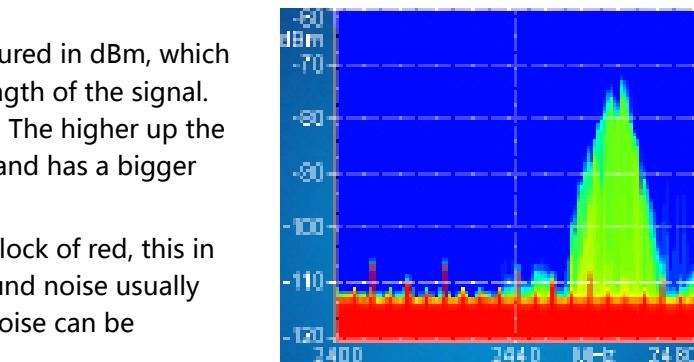
From bottom to top of this graph is measured in dBm, which is a measurement of the "loudness" or strength of the signal. This is measured from -120dBm to -60dBm. The higher up the graph the signal appears the stronger it is, and has a bigger chance of causing interference.

Along the bottom of the graph is a solid block of red, this in this case is just background noise. Background noise usually isn't a problem and a level of background noise can be expected everywhere.

Along the graph at different frequencies red spikes can be seen. Each of these spikes is a signal which is almost constant, hence their red color, and most likely is another ADFHS system communicating with a receiver. Each of these red spikes is the result of the transmitter and receiver hopping between different frequencies in an attempt to reduce interference, by moving around different parts of the frequency band. This reduces the risk of losing control due to the signal being masked, or drowned out by another signal that is static.

The first picture shows potential interference caused by Wi-Fi or something similar.

The second shows an ideal environment for using your model.



## **9 System Settings**

### **9.1 Blacklight Timeout: (Time)**

The blacklight timeout function controls how long the system will wait before turning off screens backlight.

Note

Backlight time can affect the battery life of your system, the longer the time, the shorter the battery will last.

To change the backlight time enter the function and select the desired time from the list.

### **9.2 Backlight: (%)**

This function controls the backlight brightness. Note that increasing the brightness will reduce battery life.

To change the backlight brightness, move the wheel at the bottom of the screen to change the percentage.

### **9.3 System Sound**

This function is used to toggle all system sounds, including power-on/power-off sounds, key sounds and so on. The alarm sound is not included.

To disable the system sounds, uncheck the box by touching it.

### **9.4 Alarm Sound**

This function is used to toggle all alarm sounds.

To disable the alarm sounds, uncheck the box by touching it.

### **9.5 Auto Power Off**

This function powers off the system automatically after 5 minutes, unless a receiver is connected.

To enable this function, check the box by touching it.

### **9.6 Screen Calibration**

If the touch screen is not functioning correctly, use this function to recalibrate.

To recalibrate once inside the function touch the centre of the crosses as they appear on the screen. The system will exit the function once calibration is complete.



Note

It is recommended that you use the supplied stylus to calibrate the screen.



## 9.7 Units

This function is used to change between Metric and Imperial measurement systems.

## 9.8 USB Function

The system can be used with various computer based simulators via USB.

- To enable the simulator function select [**FS-iT4S emulator**] from the menu.
- To disable this function select [**None**].

Note:

When the emulator mode is active, the system cannot transmit data wirelessly.

## 9.9 Language

To change the system language simply touch the language in this menu.

## 9.10 Themes

The themes function enables you to change the appearance of the interface. There are currently 3 different themes to choose from, each which may be better under different conditions. To select a theme touch the desired theme in the menu. The system will automatically return to the system menu.

## 9.11 Firmware Update

The internal software of the transmitter can be updated using the USB interface connected via a PC computer. Once this function is activated, all functions of the transmitter stop. To avoid any loss of control of the vehicle, turn its receiver off before entering this mode. A confirmation is requested.

When the firmware is updating, never disconnect the USB cable or remove the battery or the transmitter will become unusable.

This function can be helpful only when connected with computer. Follow the steps as shown below:

1. Download and open the newest official software.
2. Connect a transmitter with a computer by USB cable.
3. Enter transmitter firmware upgrade menu and press OK to complete.

## 9.12 Factory Reset

This function resets the entire system back to factory default.

## 9.13 About iT4S

Contains information about the system, hardware and software versions.

## 10 Product Specification

### 10.1 Transmitter Specification (FS-iT4S)

Channels	4
Model type	Car/Boat
RF range	2.4055 ~ 2.475GHz
Bandwidth	500 KHz
Band	140
RF power	Less than 20 dBm
2.4G system	AFHDS , AFHDS 2 , AFHDS 2A
Code type	GFSK
Sensitivity	1024
Low voltage alarm	Yes (lower than 3.7V)
DSC port	Yes (USB HID)
ST range	90°
TH range	45° (F:22.5° ; B: 12.5° )
Power input	3.7 V
Antenna length	26 mm
Weight	398 g
Dimension (Length x Width x Height)	157 x 116 x 258 mm
Color	Silver and black
Certificate	CE0678, FCC ID:N4ZFLYSKYIT4S

### 10.2 Receiver Specification (FS-iA4B)

Channels	4
Model type	Car/Boat
RF range	2.4055-2.475 GHz
Band	140
RF power	Less than 20 dBm
2.4G system	AFHDS 2A
Code type	GFSK
Power input	4.0 to 6.5 V DC
Weight	10 g
Antenna length	26 mm
Dimension (Length x Width x Height)	35.4 x 29.6 x 13 mm
Color	Black
Certificate	CE0678, FCC ID:N4ZFLYSKYIA4B
RX sensitivity	-105dBm
i-Bus port	Yes
Data acquisition port	Yes



## 10.3 Sensor Specification

### 9.3.1 RPM Telemetry Module (Magnetic, FS-CPD01)

Model type	Car/Boat
Speed range	0 to 60000 rpm
Power input	4.0 to 6.5 V DC
Weight	6.6 g
Dimension (Length x Width x Height)	31 x 15 x 8.5 mm
Color	Black

### 10.3.2 RPM Telemetry Module (Optical, FS-CPD02)

Model type	Car/Boat
Speed range	0 to 60000 rpm
Power input	4.0 to 6.5 V DC
Weight	6.8 g
Dimension (Length x Width x Height)	31 x 15 x 8.5 mm
Color	Black

### 10.3.3 Temperature Acquisition Module (FS-CTM01)

Model type	Car/Boat
Temperature range	-40 to 250 °C
Power input	4.0 ~ 6.5 V DC
Weight	5.9 g
Dimension (Length x Width x Height)	31 x 15 x 8.5 mm
Color	Black

### 10.3.4 Voltage Acquisition Module (FS-CVT01)

Model type	Car/Boat
Voltage range	0 to 100 VDC
Power input	4.0 to 6.5 V DC
Weight	6 g
Dimension (Length x Width x Height)	31 x 15 x 8.5 mm
Color	Black

### 10.3.5 i-Bus Module (FS-CEV04)

Model type	Car/Boat
Power input	4.0 to 6.5 V DC
Weight	8.1 g
Dimension (Length x Width x Height)	30 x 25.6 x 13 mm
Color	Black
i-Bus port	Yes

## **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.



## Digital proportional radio control system

CE0678

FCC ID:N4ZFLYSKYIT4S

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