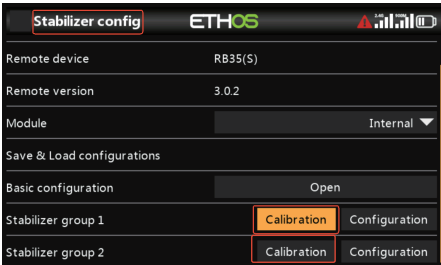


Calibrations after Firmware Update

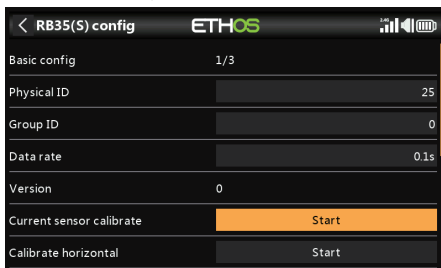
[IMPORTANT]

1. Keep the aircraft level on the ground for approximately 5 seconds after powering on the system.
2. All calibrations (including 6-Side, Level, Stick Center, and Stick Range) should be redone after the firmware update, and the Stab settings must be reconfigured. The center calibrations must also required to be repeated after trimming the center point.



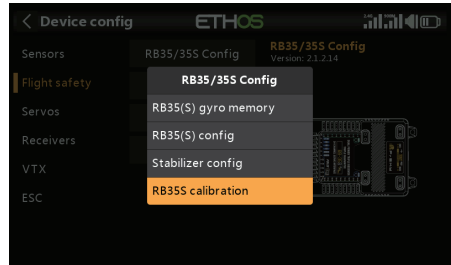
Stick & Level Calibration:

[Device Config]→[Flight Safety]→[RB35/35S Config]
→[Stabilizer Config]→[Stabilizer Group 1/2 Calibration]



Current Sensor Calibraion:

[Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config]

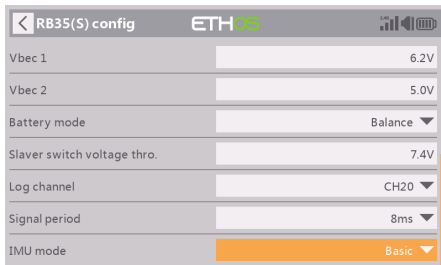


Gyro 6-side Calibration:

[Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35S Calibration]

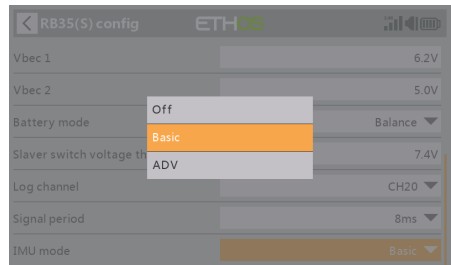
Stabilizer Mode On - Basic Config (RB-35S)

RB-35S supports enabling or disabling the stabilization function module.



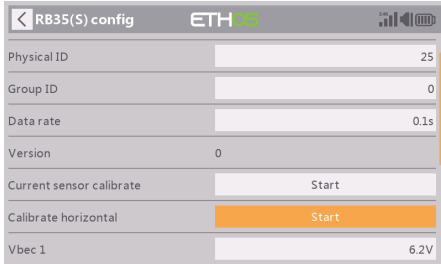
Enter [Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config]→[IMU mode]

- OFF: The stabilization mode cannot be used.
- BASIC: Enable default self-stabilization channels.
- ADV: Editing with RBmixer software is required before use.



Note: Normal usage only requires selecting the BASIC mode. If you need to use the ADV stabilization mode, please edit and enable it using the RBmixer software.

Optional Step: Plane Level Calibration (for ADV mode).



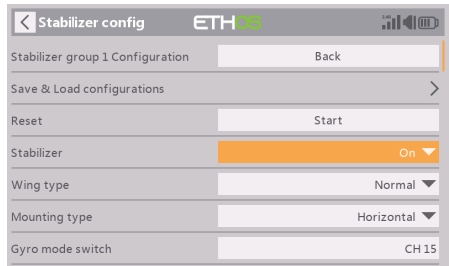
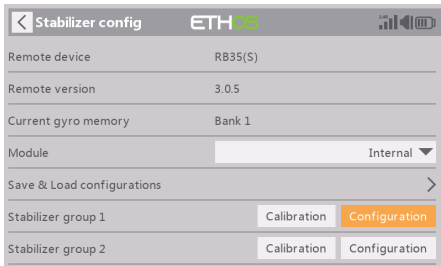
Calibrate horizontal:

[Device Config]→[Flight Safety]→[RB35/35S Config]
→[RB35(S) Config]→[Calibrate horizontal Start]

Note: This calibration option is only required for ADV mode. Users do not need to operate this calibration when using the Basic mode.

Stabilization channels' configurations:

- Stabilizer Group 1 (CH1-CH6)
- Stabilizer Group 2 (CH7-CH11)



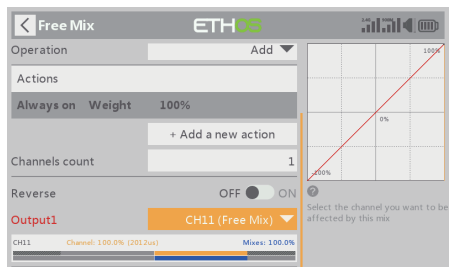
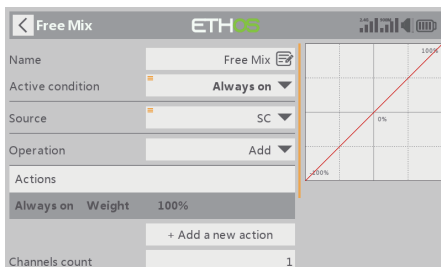
Stabilizer Configurations:

[Device Config]→[Flight Safety]→[RB35/35S Config]
→[RB35(S) Config]→[Stabilizer group 1/2 - Configuration]

Note: Stabilizer Groups 1 and 2 are independent, and therefore require separate calibrations.

Gyro Memory Bank Configurations (RB-35S)

The Gyro Memory Bank configuration allows users to preset, save, and switch between different Stabilizer setting banks in real time. The current memory bank number is displayed in real time on the Stabilizer Config homepage (synchronized with the bank info from the RB35S gyro memory page).



1. First, please create a FreeMix and assign a Bank switch to this mixer (e.g., enable the 3-position SC switch as shown).

2. Select the switch channel used for switching between different banks (e.g., CH11 as shown in the example).

RB35(S) gyro memory ETH05

Current gyro memory	Bank 1
Gyro memory switch CH.	CH 11
G.Mem bank at CH -100%	Bank 1
G.Mem bank at CH 0%	Bank 1
G.Mem bank at CH 100%	Bank 1
Copy bank	▼
From	Bank 1

3. In the RB35(S) gyro memory tool, specify the Gyro Bank number to be configured (e.g., Bank 1 as shown). Ensure that the switch channel selected here matches the one used in the FreeMix setup (e.g. CH11 in the example).

RB35(S) gyro memory ETH05

Current gyro memory	Bank 1
Gyro memory switch CH.	CH 11
G.Mem bank at CH -100%	Bank 1
G.Mem bank at CH 0%	Bank 1
G.Mem bank at CH 100%	Bank 1
Copy bank	▼
From	Bank 1

Stabilizer config ETH05

Remote device	RB35(S)
Remote version	3.0.5
Current gyro memory	Bank 1
Module	Internal ▼
Save & Load configurations >	
Stabilizer group 1	Calibration Configuration
Stabilizer group 2	Calibration Configuration

4. Move to the Stabilizer Config tool script to configure the Current Gyro Memory. Once the Stab configuration is completed, exit the tool to finalize the custom gyro bank setup (e.g., Bank 1 as shown in the example).

5. After completing the configuration of one gyro bank, recalibration of the stick and level is required afterward, then return to the RB35(S) Gyro Memory script, and select another bank for configuration. Once all Gyro banks are configured, you can map and enable the 3-position switch for bank selection.

Note 1: The custom Bank settings must correspond to the selected switch channel, or they will not function properly.

Note 2: Please ensure that the Stabilization Modes of different Gyro Banks assigned to the Bank Switch are appropriate for the same aircraft configuration. This is strongly recommended to prevent accidental misoperation during flight.)

Overwrite Function for Gyro Banks (RB-35S)

RB35(S) gyro memory ETH05

G.Mem bank at CH -100%	Bank 1
G.Mem bank at CH 0%	Bank 1
G.Mem bank at CH 100%	Bank 1
Copy bank	▼
From	Bank 1
To	Bank 1
Copy cfg. bank	

FROM: The currently configured Gyro Bank (Preset bank or other banks).
TO: The target bank to be overwritten.

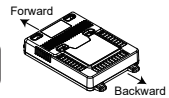
Basic Step Guides-Stabilization Function (RB-35S)

- Model Creation & Make sure the connected receiver is bound to the radio;
- Ensure stabilization is enabled & Calibrate the gyroscope sensor of the device;
- Servo connection & Build the stabilization device to the model;
- Set up the mixer channel and radio switches;
- Determine the [Wing Type] & [Mounting Type];
- Check the stabilized channel outputs of the receiver in the Auto-Level mode;
- Check the stick control of the transmitter in the manual mode;
- Failsafe setting.

Note: Please move to the [Lua Library] section from the ETHOS Suite to download and install the latest Lua scripts.

Servo connection & Build the device to the model (RB-35S)

Connect the servos to the ports of the stabilization device according to the Channel List.



Note: Please make sure the side with the External Switch Port forwards the nose direction of airplane model.

Number of Channel	Corresponding parts on the model	Full name
CH1	AIL 1	Aileron
CH2	ELE 1	Elevator
CH3	THR	Throttle
CH4	RUD	Rudder
CH5	AIL 2	Aileron
CH6	ELE 2	Elevator
CH7	AIL 3	Aileron
CH8	ELE 3	Elevator
CH9	RUD 2	Rudder
CH10	AIL 4	Aileron
CH11	ELE 4	Elevator
CH12	User-defined	

Attentions: CH1~CH12 should be connected to the corresponding servos.

Set up the mixer channel and radio switches

Name	Channels	Source
Ailerons	1, 5, 7, 10	Aileron
Elevators	2, 6, 8, 11	Elevator
Throttle	3	Throttle
Rudders	4, 9	Rudder
Gain	13	Pot1
Gyro Mode	14	SG

Refer to the Channel List to set the channel and switches.

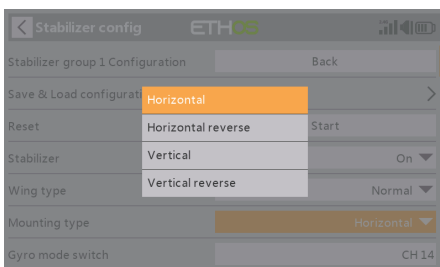
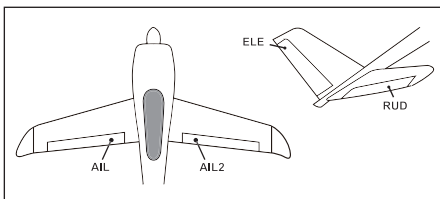
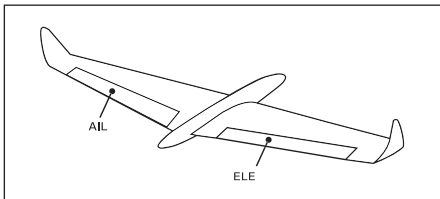
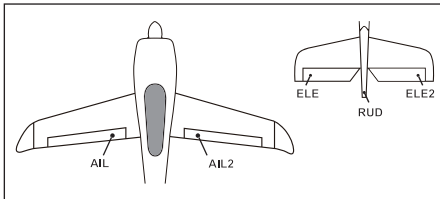
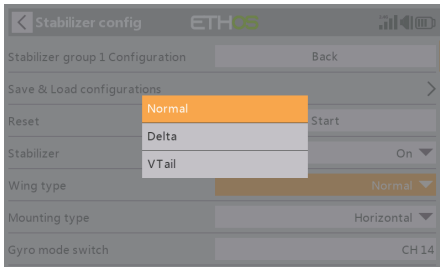
Users can customize the control surfaces of the stabilizer channels. It is recommended to configure them based on the channel list.

CH1 mode	AIL1
CH2 mode	ELE1
CH4 mode	RUD
CH5 mode	AIL2
CH6 mode	ELE2

[Device Config]→[Flight Safety]→[RB35/35S Config]→
[RB35(S) Config]→[Stabilizer group 1/2 - Configuration]

Wing Type & Mounting Type Setup

[Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config]→[Stabilizer group 1/2 - Configuration]→[WingType]/[MountingType]



Wing Type Setup

- ① Normal
- ② Delta
- ③ VTail

Conventional(Normal) Type

- ① Stabilization Mode
- ② Auto Level Mode
- ③ Hover Mode
- ④ Knife-Edge Mode
- ⑤ Heading Hold Mode
- ⑥ Off

Delta-Wing & Flying-Wing

When Delta-Wing/Flying-Wing is selected, the signal outputs from the transmitter should be without active mixes on the channels related to AIL and ELE. RB-35S will mix the AIL (CH1) and ELE (CH2) input signal with a fixed mix percentage automatically.

- ① Stabilization Mode
- ② Auto Level Mode
- ③ Off

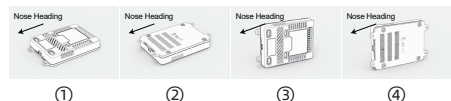
V-Tail Type

When V-tail type is selected, the signal outputs from the transmitter should be without active mixes on the channels related to ELE and RUD. RB-35S will mix the ELE (CH2) and RUD (CH4) input signal with a fixed mix percentage automatically.

- ① Stabilization Mode
- ② Auto Level Mode
- ③ Off

Mounting Type Setup

- ① Horizontal
- ② Horizontal reverse
- ③ Vertical
- ④ Vertical reverse



Gyro Gain, Offset & Direction Setup

Navigate to [Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config]→[Stabilizer group 1/2 - Configuration]

Gyro Gain Setup

Stabilizer config		ETHOS	Signal
AIL3-4 knife gain	<input type="range" value="50"/>	50%	
RUD2 knife gain	<input type="range" value="100"/>	100%	
Heading hold gain roll	<input type="range" value="100"/>	100%	
Heading hold gain pitch	<input type="range" value="100"/>	100%	
Heading hold gain yaw	<input type="range" value="100"/>	100%	
AIL3-4 auto lvl offset	<input type="range" value="0"/>	0%	
ELE3-4 auto lvl offset	<input type="range" value="0"/>	0%	

- ① Stab Mode (AIL ELE RUD)
- ② Auto Level Mode (AIL ELE)
- ③ Hover Mode (ELE RUD)
- ④ Knife-Edge Mode (AIL RUD)
- ⑤ Heading Hold Mode (Roll Pitch Yaw)

Gyro Offset Setup

Stabilizer config		ETHOS	Signal
AIL3-4 auto lvl offset	<input type="range" value="0"/>	0%	
ELE3-4 auto lvl offset	<input type="range" value="0"/>	0%	
ELE3-4 hover offset	<input type="range" value="0"/>	0%	
RUD2 hover offset	<input type="range" value="0"/>	0%	
AIL3-4 knife offset	<input type="range" value="0"/>	0%	
RUD2 knife offset	<input type="range" value="0"/>	0%	
Roll degree	<input type="range" value="0"/>	0°	

- ① Auto Level Mode (AIL ELE)
- ② Hove Mode (ELE RUD)
- ③ Knife-Edge Mode (AIL RUD)

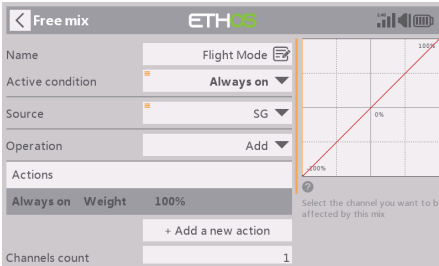
Gyro Direction Setup

Stabilizer config		ETHOS	Signal
AIL inverted	<input type="checkbox"/>	On	
ELE inverted	<input type="checkbox"/>	On	
RUD inverted	<input type="checkbox"/>	On	
AIL2 inverted	<input type="checkbox"/>	On	
ELE2 inverted	<input type="checkbox"/>	On	
Stab & auto lvl gain adj, CH	<input type="range" value="13"/>	CH 13	
AIL stab gain	<input type="range" value="50"/>	50%	

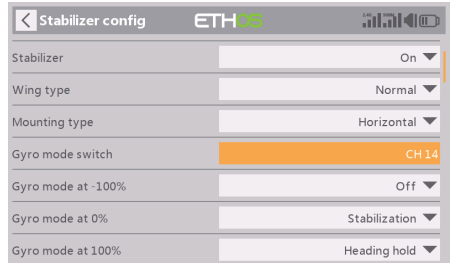
- ① AIL
- ② ELE
- ③ RUD

How to set up a Gyro Mode (Flight Mode) switch (RB-35S)

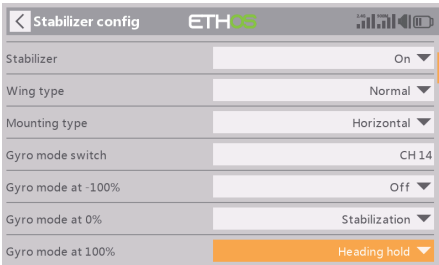
Ensure the stabilization function is working properly, then enter the [Device Config]→[Flight Safety]→[RB35/35S Config]→[Stabilizer Config]



1. Create a Gyro Mode freemix firstly.
[Mixes]→[+]→[Free Mix]



2. Select the same channel for Gyro Mode switch accordingly.
[Device Config]→[Flight Safety]→[RB35/35S Config]→[Stabilizer Config]→[Stabilizer Group 1/2 Configuration]

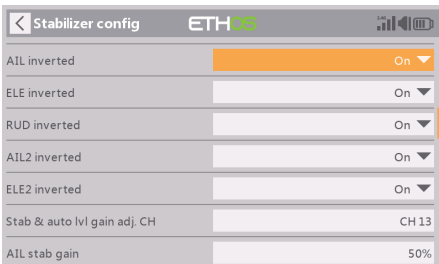


3. Assign the Gyro Mode to a switch position.

Note: To activate Heading Hold mode after completing the settings, move the gimbal sticks so that both pass through their center points.

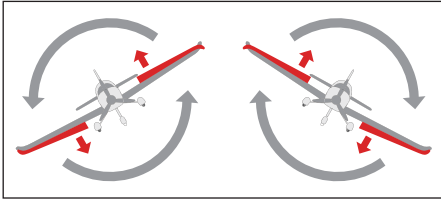
Stabilizer Channel Output Verification (Auto-Level Mode)

Check whether the reaction of the wing servo is in line with the flight attitude caption below in the [Auto-Level] mode. If not, please try to invert the corresponding channel output.

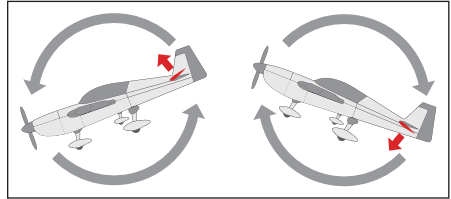


[Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config]→[Stabilizer group 1/2 - Configuration].

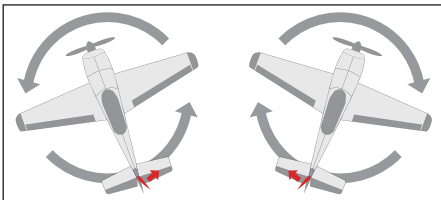
Note: To ensure flight safety, checking the compensation direction of the model is strongly recommended. Activating auto level mode will produce a strong deflection on AIL and ELE, which is used to check the response of aileron and elevator. Also, activating Knife-edge and Hover mode will have the same reaction on the rudder.



When the plane is rotated left or right (Roll), ailerons should have the correcting actions as illustrated.



When the plane is rotated up or down (Pitch), elevators should have the correcting actions as illustrated.



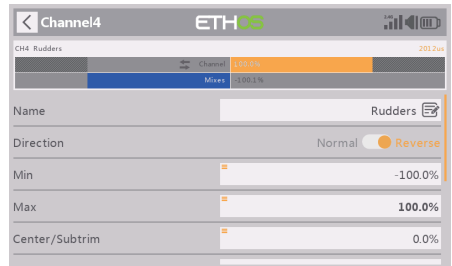
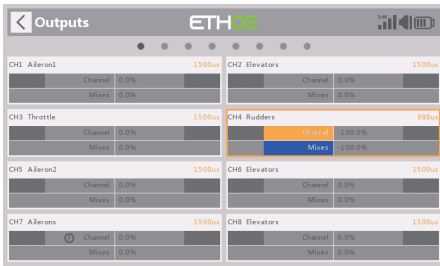
When the plane is rotated to left or right (Yaw), rudders should have the correcting actions as illustrated.

⚠ After changing the compensation direction, make sure to check it again on the actual model.

Note: If the compensation direction is incorrect, please reverse the corresponding channel as illustrated above through the RB35S Stab tool.

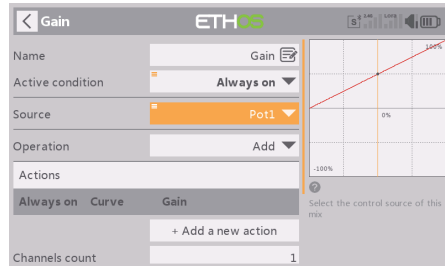
Stick Control Output Verification (Manual Mode)

Check whether the reaction of the wing servo is in line with the radio stick operation in the [Manual] mode. If not, please try to invert the corresponding channel output by pressing the channel bar in the [Output] tool.

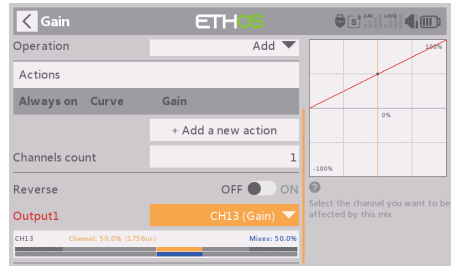


Navigate to [Model]→[Output]

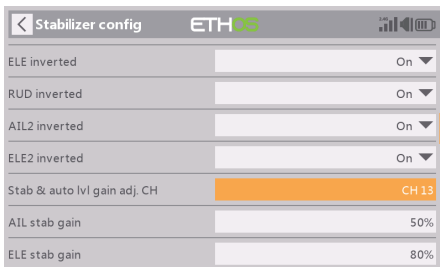
Gyro Gain Adjustment Setup (for Stab & Autolevel Modes) (RB-35S)



1. Create a FreeMix and assign a potentiometer (POT) to control the gyro gain adjustment.



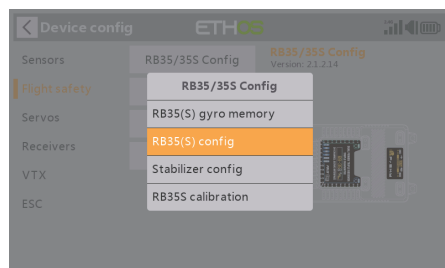
2. Select a channel to be used for gyro gain adjustment (e.g., CH13 in this example).



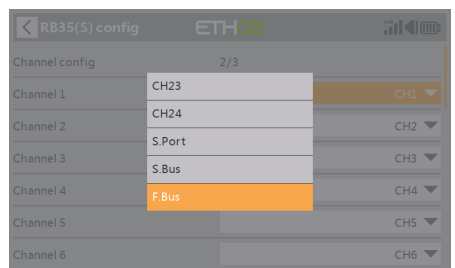
3. Assign the same channel here to complete the setup for the gyro gain adjustment.

[Device Config]→[Flight Safety]→[RB35/35S Config]→[Stabilizer config]→[Stabilizer group 1/2 Configuration]→[Stab & auto lvl gain adj. CH]

How to switch the S.Port/SBUS/FBUS

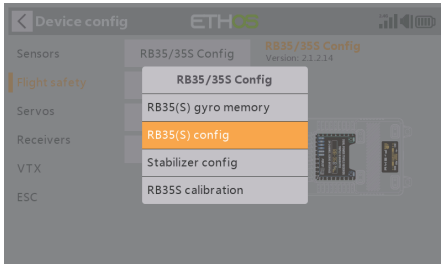


Enter [Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config] and turn to [2/3 Channel Config] page.



Select the FBUS/S.Port/SBUS for the channel ports.

How to set Failsafe



Enter [Device Config]→[Flight Safety]→[RB35/35S Config]→[RB35(S) Config] and turn to [3/3 Failsafe Config] page.



The programmed channel will output the setted Failsafe value before losing the control link.