Introduction

The RB-30/RB-40 utilizes all the trusted attributes of the previous Redundancy Bus series along with adding new features to meet the needs of an ever-growing range of users.

The upgraded redundancy hub

Previous redundancy bus models offered a dual-power with a dual-receiver design, the RB-30/RB-40 allows the user to use a triple redundancy by adding a multiplex port (RX3 IN / SBUS Out) and uses a set of standard XT30/XT60 plugs which provides a safe and efficient way to provide power.

Up to 24 PWM channels with overload protection

The RB-30/RB-40 supports connecting up to 24 high-voltage servos with overload protection added to each output channel. Eight of the channels (CH1-8) are equipped with current sensors.

The diversified sensors

The RB-30/RB-40 is an extensive sensor module with a built-in gyroscope that supports model stabilizing functions and includes other diversified telemetry feedback like the voltage, power consumption, altitude, and a lot more. It can be used as an alternative to using a GR or S series receiver.

NFC Switch & Automatic data logging functions

The non-contact NFC switch is an external device that enables the power to be switched on/off on command without the need to plug/unplug the battery connections. Once power is connected, the black-box function is automatically activated and immediately starts recording the data.

Menu scroll button, LCD screen & CNC case (RB-40 Only)

The RB-40 features a display screen that is comparable in size to one found on the X-Lite series radio. Navigating and configuring telemetry data is even more convenient thanks to the scroll button. Even considering all these features while maintaining durability, the RB-40 weighs only 260 grams thanks to the hybrid design of carbon fiber and aluminum materials.

Overview

NON-CONTACT SWITCH

VOLTAGE SUPPLY VOLTAGE SUPPLY

DUAL POWER TRIPLE RECEIVER TRIPLE GUARANTEE

24 CHANNEL SERVO INTERFACE

RX1 IN RX2 IN RX3 IN / SBUS OUT

S.PORT

RX1 S.P RX2 S.P

DUAL POWER TRIPLE RECEIVER TRIPLE GUARANTEE

24 CHANNEL SERVO INTERFACE

VOUT1 VOUT2

Page 1
• RX1 S.P-connect to the S.Port of RX1
• RX2 S.P-connect to the S.Port of RX2
• S.Port-connect to the S.Port of FrSky products with S.Port
• RX1 IN~RX3 IN-connect to the SBUS OUT Port of the receiver.
  * The RX3 IN can be switched to S.BUS OUT by the script or the Scroll button or the Freelink App.
• BATTERY INPUT1&BATTERY INPUT2-connectors for batteries, supply power for RB-30/RB-40 and connected receivers.
• OUTPUT1&OUTPUT2: SBEC OUTPUT, Continuous Current: 2*15A@5~8.4V (RB-30 ) / 2*30A@5~8.4V(RB-40)

Note: Use voltage above 16.8V if you want to reach 30A@8.4V please.

CH1~CH24-connect up to 24 servos (PWM)
*CH24 is used for the external LED when enable the stabilization function.

<table>
<thead>
<tr>
<th>External Blue LED</th>
<th>State (Self-check)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>In process</td>
</tr>
<tr>
<td>OFF</td>
<td>Completing</td>
</tr>
</tbody>
</table>

Specifications
• Dimension: RB-30: 114.4*73.4*18.7mm
  RB-40: 163.2*100*23.5mm
• Weight: RB-30: 100g / RB-40: 260g
• Power connector: RB-30: XT30 / RB-40: XT60

Features
• Dual Power & Triple Receiver Guarantee
• High-voltage Servo Supported (Up to 24 PWM servos)
• Overload Protection on Each Channel
• Channel 1-8 with Current Detection
• Supports Stabilization Function with Built-in Gyroscope Sensor
• Multiple configuration methods (Lua script and FreeLink)
• Compatible with FrSky S.Port products
  * Various S.Port Telemetry Feedbacks (Voltage, Current, Alt, VSpd, Power Consumption, etc.)
  * Black Box Data Record Function
  * Non-contact Switch (Optional)
  * LCD Screen with Menu Scroll Button (Only RB-40)
  * CNC Aluminum & Carbon Fiber Case (Only RB-40)

Dual-Frequency System (2.4GHz ACCESS & R9 SERIES) with RB Device

* User also can replace the R9 SX with the R8 PRO.

To use multi ACCESS receivers binding with the same ISRM module, please modify the UID for different receivers.
Introduction about two battery power supply

The RB-30/RB-40 supports DC 11V~26V. When two batteries are inserted at the same time, the higher SBEC output will be selected to power the device. The maximum continuous current is 30A.

Application of batteries with different capacity, number of cells and chemistry type is allowed. Please ensure output power on one of the two power supplies is no less than the maximum operation power of the connected devices (servos, etc.), or insufficient power supply on the connected devices may occur.

The RB-30/RB-40 supports two SBEC outputs, DC 5-8.4V. The output voltage can be adjusted by the script or the Scroll button or the Freelink App. The supply voltage of CH1~CH24 and RX1~RX3 comes from the highest voltage.

StabFunc.  Enable  
RX3 SBUS  IN 
Vout 1  Set  6.6V  
Vout 2  Set  5.0V  
Rx Protocol  ACCESS  

* The Stabilization function can be enabled or disable by the script or the scroll button or Freelink APP.  
* The RX3 SBUS IN can be switched to SBUS OUT by the script or the scroll button or Freelink APP.

Caution: 1. Do not connect power supplies to CH1~CH24, S.PORT, RX1 S.P, RX2 S.P, RX1 IN –RX3 IN.  
2. Select the ACCESS/ACCST Rx Protocol before using it.

Channel Mapping:

1. The RB-30/RB-40 PWM 1 outputs the RX1 CH1 in default, if RX1 CH1 is not normal, it will switch to output the RX2 CH1.  
2. You can set the PWM output of RB-30/RB-40 from which RX channel.

Overcurrent protection and current detection & state monitor

CH1~CH8 is equipped with current detection sensor, which can detect current in real time. CH1~CH24 have overload protection. RB-30/RB-40 also monitors the status of each interface in real time.

Caution: 1. Do not connect power supplies to CH1~CH24, S.PORT, RX1 S.P, RX2 S.P, RX1 IN –RX3 IN.  
2. Select the ACCESS/ACCST Rx Protocol before using it.

Channel Mapping:

1. The RB-30/RB-40 PWM 1 outputs the RX1 CH1 in default, if RX1 CH1 is not normal, it will switch to output the RX2 CH1.  
2. You can set the PWM output of RB-30/RB-40 from which RX channel.
If current overload, the affected servo output will be disconnected from the power supply while remaining servo outputs are still powered.

The allowed continuous current output on CH1~CH24, S.PORT, RX 1IN, RX 2IN, RX3 IN is 5A. When the continuous current is over 10A, the RB-30/RB-40 will activate overload protection immediately 23°C.

Attentions

Current sensors calibration for CH1~CH8 is needed before use. The procedures are as below:

Step1: Make sure no servos are connected to RB-30/RB-40 CH1-CH8.

Step2: Keep the receiver under normal working mode with the radio and being connected to the RB-30/RB-40.

Step3: Put the LUA and image files under the path of SD card:

```
\SCRIPS\TOOLS
```

Step4: Run the LUA script RB30_40 PARAM Set under TOOLS menu, find the Cur Calibr Paw item and set it to 78 (78 is the password to start the calibration process).

Step5: Waiting for the finish of the calibration.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>( I_{\text{max}} ) (A)</th>
<th>( I_{\text{sp}} ) (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23°C</td>
<td>5.00</td>
<td>10.00</td>
</tr>
<tr>
<td>50°C</td>
<td>3.95</td>
<td>7.90</td>
</tr>
<tr>
<td>70°C</td>
<td>3.35</td>
<td>6.70</td>
</tr>
</tbody>
</table>

Note: \( I_{\text{max}} \) means the maximum current passes through the device without tripping under the above three conditions. 
\( I_{\text{sp}} \) means the minimum current passing through the device will cause trip under the above three conditions.

Temperature

<table>
<thead>
<tr>
<th>Value</th>
<th>( I_{\text{hold}} ) (A)</th>
<th>( I_{\text{trip}} ) (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10℃</td>
<td>10.00</td>
<td>5.00</td>
</tr>
<tr>
<td>30℃</td>
<td>3.95</td>
<td>3.35</td>
</tr>
<tr>
<td>50℃</td>
<td>7.90</td>
<td>6.70</td>
</tr>
</tbody>
</table>

All values above will be transmitted to FrSky radio system in real time.

AccX/Y/Z—Accelerometer triaxial parameter

CH1A~CH8A—The current telemetry of CH1 ~CH8

RBnC: total power usage of battery n

RBnV: the voltage of battery n

RBnA: the current of battery n

RBCS:

1. Display | Definition for Value
OK | normal
CHn / RXn_IN / SBUS_OUT / RX3_IN | CHn / RXn_IN / SBUS_OUT / RX3_IN overload

2. When using SD logs function, if the RBCS has a non-zero value, such as 64, Convert 64 to binary 10000000. As you can see from the table, the channel 7 overload or Voltage less than 4V.

| BitX | Definition for Value
|------|----------------|
| 0: channel n+1 normal | 1: channel n+1 overload or Voltage less than 4V

RBES: indication of CHn status.

| Display | Definition for Value
OK | normal
CHn | CHn (n:17~24) overload
Gyro gain adjustment of CH9: When the value of CH9 is in the center, the gain is zero. The gain increases as the value gets bigger. Until the value is ±100%, the gain reaches maximum.

**Attentions**

CH1~CH8 should be connected to the corresponding servos.

Set up your model and receiver

You also need to calibrate numbers of the CH1~CH8 to 0 before first flight. And when above channels vacant are not zero, repeat the following steps.

**Step 1:** Connect RB-30/RB-40 to Receiver keeping CH1~CH8 vacant.

**Step 2:** Enter the lua setting interface, choose RB30_40 RARAM Set.

**Step 3:** Choose Cur Calibr pass, set the number 78, then begin calibration. The process lasts about 1 second.

You also need to calibrate numbers of the CH1~CH8 to 0 before first flight. By the same way, if the vacant current of above channels being vacant are not zero, repeat the following steps.

**Step 1:** Connect RB-30/RB-40 to Receiver keeping CH1~CH8 vacant.

**Step 2:** Enter the lua setting interface, choose RB30_40 RARAM Set.

**Step 3:** Choose Cur Calibr pass, set the number 78, then begin calibration. The process lasts about 1 second.

About the Stabilization function

**Channels**

**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

**Number of channel** | **Corresponding parts on the model** | **Full name**
--- | --- | ---
CH7 | User-defined | Gyro gain adjustment
CH8 | User-defined | Flight modes
CH9 | No mark | No mark
CH10 & CH11 | No mark | Self-check activation switch

About the Stabilization function

3. When using SD logs function, if the RBS has a non-zero value, such as 256, convert to bin 100000000, means Rx2 Physical connect break off. (0 is normal)

<table>
<thead>
<tr>
<th>Bit 0</th>
<th>Bit 1</th>
<th>Bit 2</th>
<th>Bit 3</th>
<th>Bit 4</th>
<th>Bit 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rx1 overloader</td>
<td>Rx2 overloader</td>
<td>Rx3 SBUS overloader</td>
<td>Rx1 failsafe</td>
<td>Rx1 framelist</td>
<td>Rx2 failsafe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit 6</th>
<th>Bit 7</th>
<th>Bit 8</th>
<th>Bit 9</th>
<th>Bit 10</th>
<th>* Bit 11</th>
<th>* Bit 12</th>
<th>* Bit 13</th>
<th>* Bit 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rx2 framelist</td>
<td>Rx1 Physical connected break off</td>
<td>Rx2 Physical connected break off</td>
<td>Rx1 No signal input</td>
<td>Rx2 No signal input</td>
<td>Rx3 failsafe</td>
<td>framelist</td>
<td>Rx3 Physical connected break off</td>
<td>Rx3 No signal input</td>
</tr>
</tbody>
</table>

**Attention:**

1. Make sure both of the receivers output the same signal. For example, when S8R and X8R are used together, disable Stab function on S8R, or they will output different signals.

2. RB-30/RB-40 will manage the telemetry of the two receivers automatically after connecting the devices.
Quick Mode

It supports stabilization mode and manual (six-axis off) mode and configured through CH10. What's more, an urgent mode is added to configure automatic level mode default through CH12. The precise configuration is given below.

<table>
<thead>
<tr>
<th>Channel</th>
<th>Position</th>
<th>Flight Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH10</td>
<td>SW Down</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>SW Mid</td>
<td>Stabilization Mode</td>
</tr>
<tr>
<td></td>
<td>SW Up</td>
<td>Automatic Level Mode</td>
</tr>
<tr>
<td>CH12</td>
<td>SW Down</td>
<td>Urgent Mode (Automatic Level Mode)</td>
</tr>
</tbody>
</table>

Note: The default mode of RB-30/RB-40 is Quick Mode. When re-flashing firmware of RB-30/RB-40 or replacing with a new one, the preset mode will be erased.
- If Quick mode is applied, there is no Knife Edge or (3D) Hover mode.
- CH11 is not used when using Quick Mode.

Modes

- Conventional Model
  - Stabilization
  - Automatic level
  - Knife-edge

- Delta Wing
  - stabilization
  - automatic level

- Flying Wing
  - stabilization
  - automatic level

- V-tail

The available flight modes can be assigned to CH10 and CH11 with three-position switches.

<table>
<thead>
<tr>
<th>Flight mode</th>
<th>Stabilization</th>
<th>Automatic level</th>
<th>Hover</th>
<th>Knife-Edge</th>
<th>Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH10 (3 pos SW)</td>
<td>CH10&gt;M+H (CH10 SW Down)</td>
<td>CH10&gt;M+H (CH10 SW Down)</td>
<td>CH10&gt;M+H (CH10 SW Down)</td>
<td>CH10&gt;M+H (CH10 SW Up)</td>
<td></td>
</tr>
<tr>
<td>CH11 (3 pos SW)</td>
<td>M+H&gt;CH11&gt;M+H (CH11 SW Mid)</td>
<td>CH11&gt;M+H (CH11 SW Down)</td>
<td>CH11&gt;M+H (CH11 SW Up)</td>
<td>M+H&gt;CH11&gt;M+H (CH11 SW Mid)</td>
<td></td>
</tr>
</tbody>
</table>

Note: The default mode of RB-30/RB-40 is Quick Mode. When re-flashing firmware of RB-30/RB-40 or replacing with a new one, the preset mode will be erased.
- If Quick mode is applied, there is no Knife Edge or (3D) Hover mode.
- CH11 is not used when using Quick Mode.

The available flight modes can be assigned to CH10 with a three-position switch.

<table>
<thead>
<tr>
<th>Flight mode</th>
<th>Stabilization</th>
<th>Auto Level</th>
<th>Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH10</td>
<td>CH10&gt;M+H (CH10 SW Down)</td>
<td>CH10&gt;M-H (CH10 SW Up)</td>
<td>CH10 SW-mid</td>
</tr>
</tbody>
</table>

The Model types could be enabled via RB-30/RB-40.Lua or Freeline APP.
When Delta wing/Flying wing/V-tail is selected, the signal produced by the transmitter should be without active mixes on the channels related to AIL and ELE. RB-30/RB-40 will mix the AIL(CH1) and ELE(CH2) input signal with a fixed mix percentage automatically. Signals on CH4~CH8 then behave as required by user.

M: represents a neutral signal period (1500μs)
H: represents the time of required signal change to activate the mode (50μs). When the factory settings are selected, the switch position shown above represents the required modes.

Off: When the mode is activated, RB-30/RB-40 will transmit the received commands produced by the transmitter to the model without compensating.

Flight mode:
Stabilization: When the model is activated, RB-30/RB-40 will compensate with external forces (wind) as soon as receiving commands from the transmitter. This function is used to enhance the stability of the model on three axis (Pitch, Roll, Yaw). CH9 could be used to adjust gyro gain by assigning a knob or a slider, changing the sensitivity of the counteracting signal produced by the internal three-axis gyroscope.

Automatic level: When the mode is activated, RB-30/RB-40 will make the model return to level orientation with internal three-axis accelerometer and three-axis gyroscope on AIL and ELE channels after the sticks being released to neutral. RUD channel works in stabilization mode only.

Hover: When the mode is activated, RB-30/RB-40 will make the nose of the model straight up with internal three-axis accelerometer and three-axis gyroscope on RUD and ELE channels. Under this mode, AIL is used to control the rotation of the model and THR adjust the altitude, AIL channel works in stabilization mode only.

Knife-edge mode: When the mode is activated, RB-30/RB-40 will roll the plane on a certain side (wing points up) with internal three-axis accelerometer and three-axis gyroscope on RUD and AIL channels. While the mode steering is done with ELE, altitude will be maintained with THR/RUD. ELE channel operates in stabilization mode only.

Configuration
Methods: APP configuration
FrSky radio LUA configuration
Parameters configuration: Wing type, mounting type, gain setting, offset angle setting, accelerometer calibration.

APP(iOS/Android) configuration
Connect the RB-30/RB-40 to the App with AirLink S.
The menu screen on the home page is displayed below:

RB30/RB40 STAB Set
FrSky radio LUA configuration (take RB-40 for example):
• Copy the RB30/RB40.Lua files to the SD card of the transmitter
• Bind the RX to the transmitter and run the files
• RB30/40 STAB Set

RB30/40 STAB Set

Select the RB30/40’s direction you want to calibrate. Press the ‘CALIBRATION’ button. Then place your RB30/40 as shown above and hold on for a few seconds. The calibration will finish after the light flashes several times.
RB30/40 Calibration:
Step 1. [Front side up]
Open the script, follow the instructions, place RB30/40 on the front, and click OK. When the LED lights are flashing and the calibration is completed, click next step.

RB30/40 PARAM Set

<table>
<thead>
<tr>
<th>Stab function</th>
<th>RX3 sbus</th>
<th>VOut1(V)</th>
<th>VOut2(V)</th>
<th>Rx protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disable</td>
<td>OUT</td>
<td>5.0</td>
<td>5.0</td>
<td>ACCESS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quick Mode</th>
<th>CH5 mode</th>
<th>CH6 mode</th>
<th>AIL direction</th>
<th>ELE direction</th>
<th>RUD direction</th>
<th>AIL2 direction</th>
<th>ELE2 direction</th>
<th>AIL stab gain</th>
<th>ELE stab gain</th>
<th>RUD stab gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable</td>
<td>AIL2</td>
<td>ELE2</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>50</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>CH</td>
<td>failsafe</td>
<td>2/4</td>
<td></td>
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</tr>
<tr>
<td>CH1</td>
<td>failsafe</td>
<td>800</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CH2</td>
<td>failsafe</td>
<td>900</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CH3</td>
<td>failsafe</td>
<td>1000</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CH4</td>
<td>failsafe</td>
<td>1100</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>CH5</td>
<td>failsafe</td>
<td>1200</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CH6</td>
<td>failsafe</td>
<td>1300</td>
<td></td>
<td></td>
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<td>CH7</td>
<td>failsafe</td>
<td>1400</td>
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<tr>
<td>CH8</td>
<td>failsafe</td>
<td>1500</td>
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<td></td>
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<tr>
<td>CH9</td>
<td>failsafe</td>
<td>1600</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CH10</td>
<td>failsafe</td>
<td>1700</td>
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<tr>
<td>CH11</td>
<td>failsafe</td>
<td>1800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CH12</td>
<td>failsafe</td>
<td>1900</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CH</th>
<th>RX1 map</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH2</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH3</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH4</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH5</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH6</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH7</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH8</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH9</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH10</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH11</td>
<td>RX1 map</td>
</tr>
<tr>
<td>CH12</td>
<td>RX1 map</td>
</tr>
</tbody>
</table>
Place the RB30/40 in the following position

X::-0.03
Y::-0.01
Z::1.07

Press [Enter] when ready
Step 2. [Front side down]

**Place the RB30/40 in the following position**

- X: 0.01
- Y: 0.00
- Z: 1.06

Press [Enter] when ready

---

Step 3. [Top side down]

**Place the RB30/40 in the following position**

- X: 0.98
- Y: 0.01
- Z: 0.00

Press [Enter] when ready
Step 4. [Top side up]

Place the RB30/40 in the following position

X:: 1.00  
Y:: 0.02  
Z:: 0.01

Press [Enter] when ready

Step 5. [Right side up]

Place the RB30/40 in the following position

X:: 0.00  
Y:: 1.00  
Z:: 0.01

Press [Enter] when ready
The LED should be plugged into CH24 port before calibration. The positive and negative values related to three-axis gyroscope and accelerometer make a total of six values that need to be acquired.
Please follow the on-screen instructions.
• Click the “Calibration” button and wait until the BLUE LED flashing, indicating the calibration on this orientation has been completed.
• Repeat the above step five times (remaining 5 dimensions). Placing RB-30/RB-40 in the required orientation, ensure all values (X, Y, Z, Mod) are 1.000 with the deviation of ±0.1.
• Press “Write” to save the data on RB-30/RB-40 when done.

Inspection of flight attitude

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 above.

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

When the plane is rotated to left or right (Yaw), rudders should have the correcting actions as illustrated above.
After changing the compensation direction, make sure to check it again on the actual model.

Note: If the compensation direction is incorrect, you can reverse the corresponding channel with the Lua Script (RB30/40 STAB Set 2/2) / FreeLink.

Self-check

Attention:
- Before self-check, please place the model on the ground (level surface).
- When the model is flying, aerodynamic balance is more important than level altitude, which results in that the model flies at a constant altitude with the nose slightly pointing up at low speed. To avoid the nose-diving of the model at high air speed, the user must ensure that the model is placed at a level or slightly-nose-up attitude during self-check.
- Always install RB-30/RB-40 straight and level in the model. If required, PC software could be used to adjust the angle of attack with the purpose of realizing the required setting. If the values set by the user is bigger than average ones, we advise to recheck the installation orientation of RB-30/RB-40.

Steps
- Turn on the transmitter and ensure that Ail (CH1), ELE (CH2), RUD (CH4), AIL 2(CH5) and ELE (CH6) are in the neutral position.
- Power on the model and start self-check. Ensure the auto level angle of the gyro and the neutral position of gimbal. Please don’t touch/move the model until self-check finishes, or it may corrupt the calibration settings created during the procedure.
- Move the three-position sticks bound to CH12 three times in 3 seconds (up, mid, down). Then the BLUE LED will turn on, indicating self-check procedure is initiated. After that, the corresponding parts on the model will move. At last, the BLUE LED will turn off, indicating self-check has completed.
- Move the sticks bound to CH1~CH6 (except the stick related to Thr) and check the channel output limits, ensuring that the signal outputs of RB-30/RB-40 will not damage the corresponding parts on the model. In the end, RB-30/RB-40 will save the zero points of the gyro, auto level angle, gimbal neutral position and servo channel limits.

Never operate the stick bound to CH12 during flight session or it will trigger self-check and may cause the crash of the model.

Setup
- Calibrate RB-30/RB-40 with the Lua or Freeslink App and install it into the model. Ensure the settings of wing type and mounting type are identical to the intended model installation.
- Turn on the transmitter and reduce the value of servo endpoint setting. Ensure self-check mode will not damage the corresponding parts on the model.
- Assign a knob/slider to CH9, then real-time gain adjustment capabilities of RB-30/RB-40 will be activated.
- Assign three-position switches to CH10 and CH11 with the purpose of switching available flight modes.
- Power on the model and check the deflection direction of each related parts on the model. Make sure the switch assigned to flight modes is correct and the compensation direction of the gyro is set as intended on AIL, RUD and ELE.
- Make a self-check for RB-30/RB-40 if necessary. Disconnecting the power on RB-30/RB-40 will not lose the set parameters.

Under identical operating conditions, the value of each channel is produced by the assigned switch in FrOS are opposite to that in OpenTX. For example, SW Up in FrOS is equal to SW Down in OpenTX.

FrSky is continuously adding features and improvements to our products. To get the most from your product, please check the download section of the FrSky website www.frsky-zc.com for the latest update firmware and manuals.