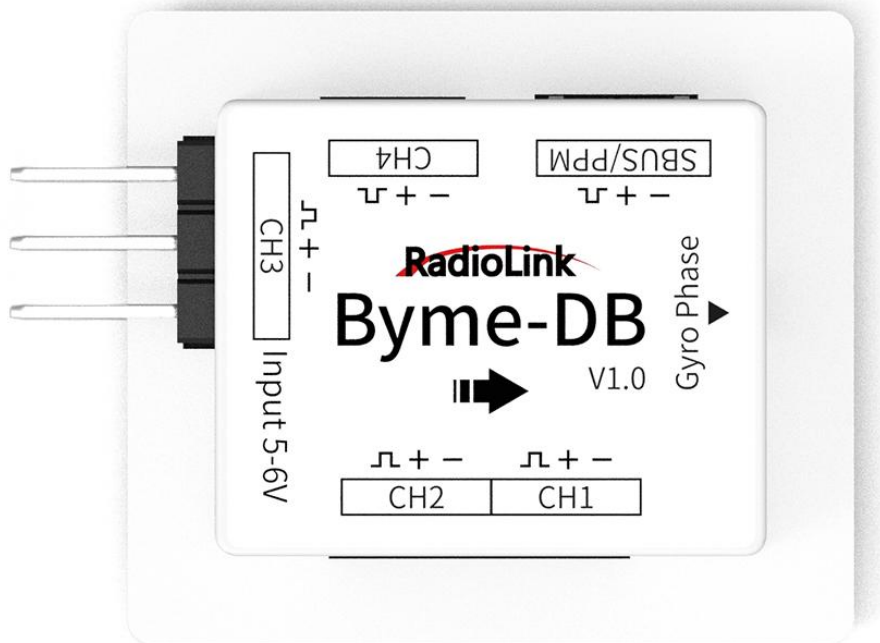




Byme-DB

Instruction Manual

V1.0



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Disclaimer

Thank you for purchasing RadioLink Byme-DB flight controller.

To fully enjoy the benefits of this product and ensure safety, please read the manual carefully and set up the device as instructed steps.

Inappropriate operation may causes property lose or accidental threats to life. Once the RadioLink product is operated, it means the operator understands this limitation of liability and accepts to take responsibility of the operation.

Make sure to follow the local laws and agree to follow the principles that made by RadioLink.

Fully understand that RadioLink cannot analyze the product damage or accident reason and cannot offer after-sales service if no flight record is provided. To the maximum extent permitted by law, RadioLink won't take any responsibility about the lose caused by indirect/consequent/accidental/special/penal damages including the lose by purchase, operation and failure of operation in any instances. Even RadioLink is informed about the possible lose in advance.

Laws in certain countries may prohibit the exemption from the terms of the guarantee. Therefore consumer rights in different countries may vary.

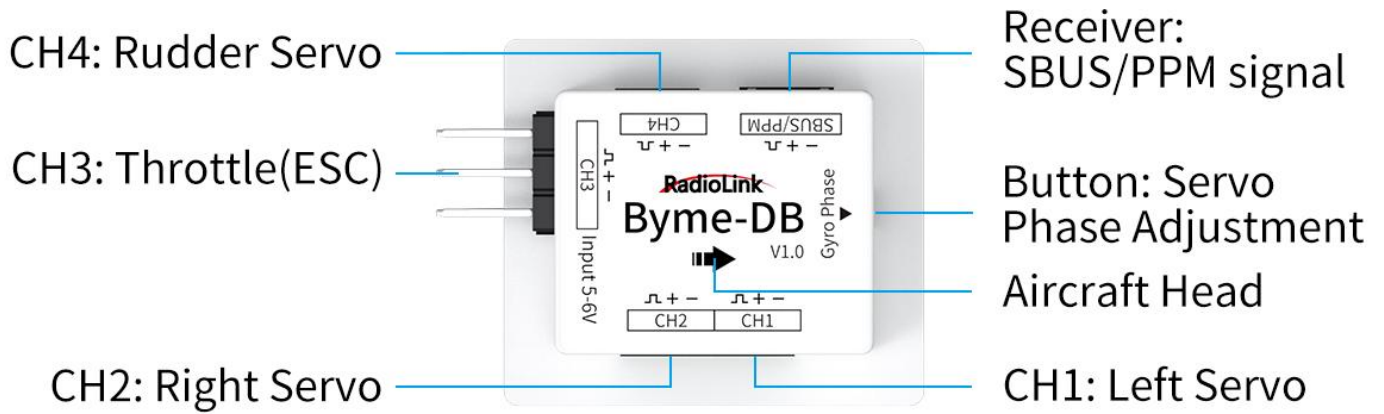
In compliance with laws and regulations, RadioLink reserves the right to interpret the above terms and conditions. RadioLink reserves the right to update, change or terminate these terms without prior notice.

Attention: This product is not a toy and is NOT suitable for children under the age of 14. Adults should keep the product out of the reach of children and exercise caution when operating this product in the presence of children.

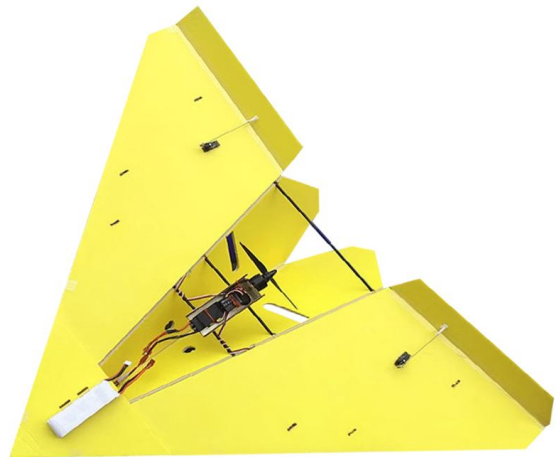
Safety Precautions

1. Please do not fly in the rain! Rain or moisture may cause flight instability or even loss of control. Never fly if there is lightning. It is recommended to fly in conditions with good weather (No rain, fog, lightning, wind).
2. When flying, you must strictly abide by local laws and regulations and fly safely! Do not fly in no-fly areas such as airports, military bases, etc.
3. Please fly in an open field away from crowds and buildings.
4. Do not perform any operation under the condition of drinking, fatigue or other poor mental state. Please operate in strict accordance with the product manual.
5. Please be cautious when flying near electromagnetic interference sources, including but not limited to: high-voltage power lines, high-voltage transmission stations, mobile phone base stations and TV broadcast signal towers. When flying in the above-mentioned places, the wireless transmission performance of the remote control may be affected by interference. If there is too much interference, the signal transmission of the remote control and the receiver may be interrupted, resulting in a crash.

Byme-DB Introduction



Byme-DB is applicable to all model airplanes with mixed elevator and aileron controls including delta wing, paper plane, J10, traditional SU27, the SU27 with rudder servo, and F22, etc.



Specifications

Dimension: 29*25.1*9.1mm

Weight (With wires): 4.5g

Channel Quantity: 7 channels

Integrated Sensor: Three-axis gyroscope and three-axis acceleration sensor

Signal Supported: SBUS/PPM

Input Voltage: 5-6V

Operating Current: $25 \pm 2\text{mA}$

Flight Modes: Stabilize Mode, Gyro Mode and Manual Mode

Flight Modes Switch Channel: Channel 5 (CH5)

Motor Lock Channel: Channel 7 (CH7)

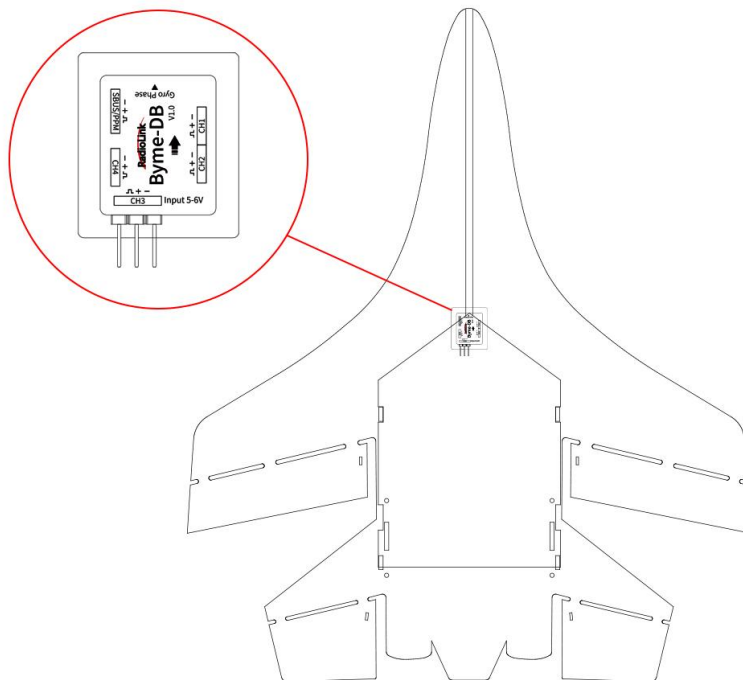
Socket Specifications: CH1, CH2 and CH4 are with 3P SH1.00 sockets; The receiver connect socket is 3P PH1.25 socket; CH3 is with a 3P 2.54mm Dupont Head

Transmitters Compatible: All the transmitters with SBUS/PPM signal output

Models Compatible: All model airplanes with mixed elevator and aileron controls including delta wing, paper plane, J10, traditional SU27, the SU27 with rudder servo, and F22, etc.

Installation

Make sure the arrow on Byme-DB points to the aircraft head. Use 3M glue to flatly attach Byme-DB to the fuselage. It is recommended to install it near the center of gravity of the aircraft. Byme-DB comes with a receiver connect cable which is used to connect the receiver to Byme-DB. When connecting the servo cable and ESC cable to Byme-DB, please check whether the servo cable and ESC cable match the sockets/head of Byme-DB. If they do not match, the user needs to modify the servo cable and ESC cable, and then connect the cables to Byme-DB.






Flight Modes Setup

Flight modes can be set channel 5 (CH5) (a 3 way switch) in the transmitter with 3 modes: Stabilize Mode, Gyro Mode and Manual Mode. Take RadioLink T8FB/T8S transmitters as examples:






CH5

-  Stabilize Mode
-  Gyro Mode
-  Manual Mode

CH5



CH5

-  Stabilize Mode
DOWN
-  Gyro Mode
CENTER
-  Manual Mode
UP

Note: When using other brand transmitters, please refer to the following picture to switch the flight modes. The value range of channel 5 (CH5) corresponding to the flight mode is as shown below:

CH5

- Switch UP
CH5 value range: 1000~ 1300 → Stabilize Mode
- Switch CENTER
CH5 value range: 1300~ 1700 → Gyro Mode
- Switch DOWN
CH5 value range: 1700~ 2125 → Manual Mode

Motor Safety Lock

The motor can be locked/unlocked by Channel 7 (CH7) in the transmitter.

When the motor is locked, the motor will not rotate even if the throttle stick is in the highest position. Please put the throttle to the lowest position, and toggle the switch of channel 7 (CH7) to unlock the motor. The motor emits two long beeps means the unlocking is successful. When the motor is locked, the gyro of Byme-DB is automatically turned off; When the motor is unlocked, the gyro of Byme-DB is automatically turned on.

Note:

If the motor only beeps once when toggle the switch of channel 7 (CH7) to the unlock position, the unlocking fails. Please follow the methods below to troubleshoot it.

1. Check whether the throttle is at the lowest position. If not, please push the throttle to the lowest position until the motor emits a second long beep, which means the unlocking is successful.
2. Since the PWM value width of each transmitter may be different, when using other transmitters except RadioLink T8FB/T8S, if the unlocking still fails even though the throttle is at the lowest position, you need to increase the throttle travel in the transmitter. You can toggle the switch of channel 7 (CH7) to the motor unlocking position, and then adjust the throttle travel from 100 to 101, 102, 103... until you hear the second long beep from the motor, which means the unlocking is successful. During the process of adjusting the throttle travel, be sure to stabilize the fuselage to avoid injuries caused by blade rotation.

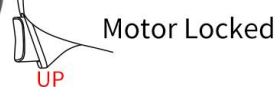
Take RadioLink T8FB/T8S transmitters as examples:



CH7



CH7



Note: When using other brand transmitters, please refer to the following picture to locked/unlock the motor. The value range of channel 7 (CH7) is as shown below:

CH7

Switch UP
CH7 value range: 1000~ 1300 → Motor Unlocked

Switch DOWN
CH7 value range: 1700~ 2125 → Motor Locked

Transmitter Setup

1. Do not set any mixing in the transmitter when Byme-DB is mounted on the aircraft. Because there is already the mixing in Byme-DB. The mix control will automatically take effects according to the flight mode of the aircraft. If the mixing function is set in the transmitter, there will be conflicts of mixing and affect the flight.

2. If RadioLink transmitter is used, set transmitter phase:

Channel 3 (CH3) - Throttle: Reversed

Other channels: Normal

Note: When using a non-RadioLink transmitter, there is no need to set the transmitter phase.

Power-on and Gyro Self-test

Each time the flight controller is powered on, the gyro of the flight controller will perform self-test. The gyro self-test can only be complete when the aircraft is stationary. It is recommended to install the battery first, then power up the aircraft and keep the aircraft in a stationary state. After the aircraft is powered on, the green indicator light on channel 3 will be always on. When the gyro self-test passes, the control surfaces of the aircraft will shake slightly, and the green indicator lights of other channels such as channel 1 or channel 2 will also turn solid.

Note:

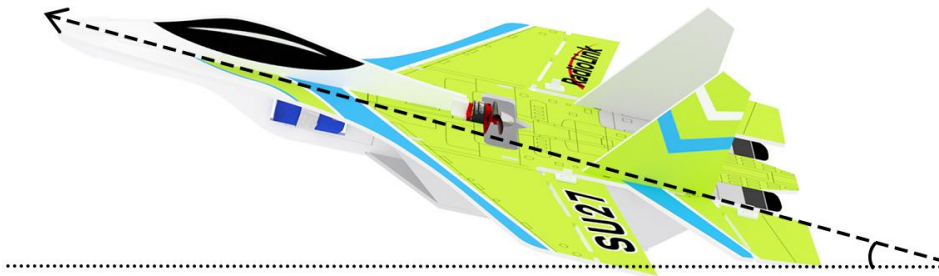
1. Due to differences in aircraft, transmitters and other equipment, it is possible that the green indicators of other channels (such as channel 1 and channel 2) will not be on after the gyro self-test of Byme-DB is complete. Please judge whether the self-test is complete by checking whether the control surfaces of the aircraft shake slightly.

2. Push the throttle stick of the transmitter to the lowest position first, and then power on the aircraft. If the throttle stick is pushed to the highest position and then power on the aircraft, the ESC will enter the calibration mode.

Attitude Calibration

Flight controller Byme-DB needs to calibrate the attitudes/level to ensure the balance status.

The aircraft can be placed flat on the ground when performing attitude calibration. It is advised to lift the model head with a certain angle(20 degree is advised) for beginner to ensure smooth flight and attitude calibration will be recorded by flight controller once the it is complete with success.

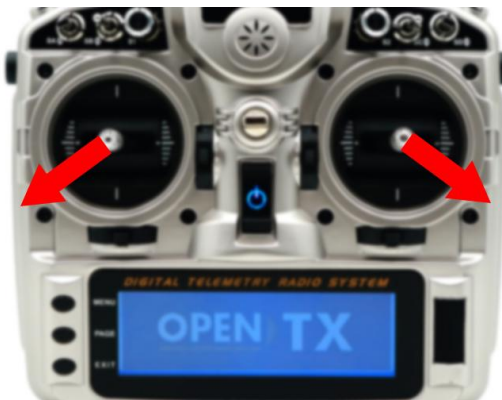


Push the left stick (left and down) and the right stick (right and down) as below and hold more than 3 seconds. The green LED flashes once mean the calibration completed.

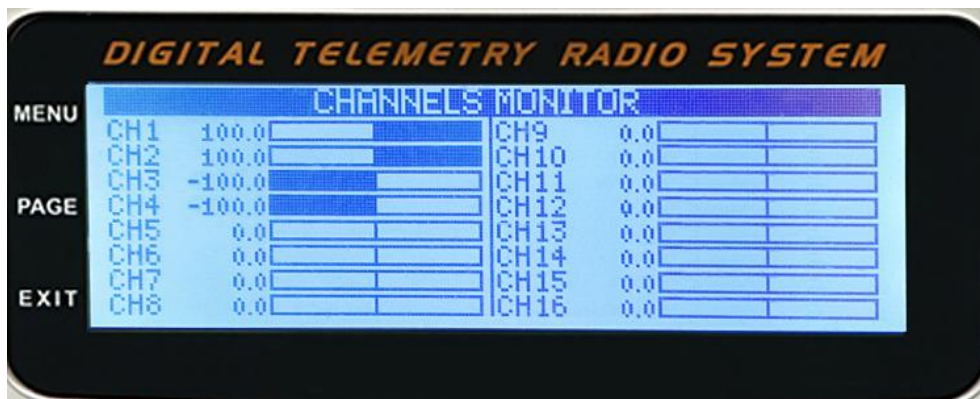


Note: When using a non-RadioLink transmitter, if the attitude calibration is unsuccessful when pushing the left stick (left and down) and the right stick (right and down), please change the direction of the channel in the transmitter. Make sure when pushing the joystick as above, the value range of channel 1 to channel 4 is:

CH1 2000 μ s, CH2 2000 μ s, CH3 1000 μ s, CH4 1000 μ s



Take an open source transmitter as example. The servo display of channel 1 to channel 4 when calibrating the attitude successfully is as shown below:



CH1 2000 μ s (opentx +100), CH2 2000 μ s (opentx +100)

CH3 1000 μ s (opentx -100), CH4 1000 μ s (opentx -100)

Servo Phase

Servo Phase Test

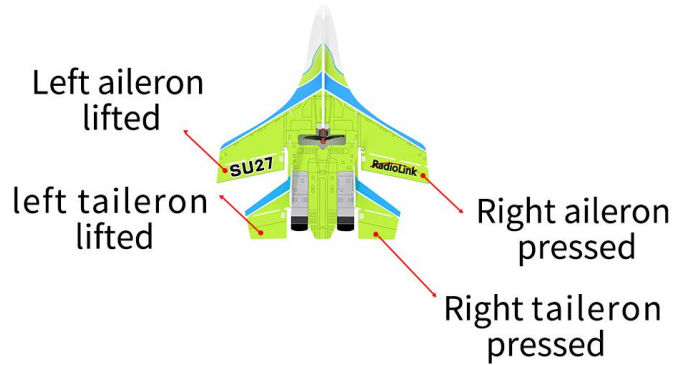
Please complete the attitude calibration first. After the attitude calibration is completed, you can test the servo phase. Otherwise, the control surface may swing abnormally.

Switch to **Manual mode**. Check whether the movement of the joysticks matches that of the corresponding control surface.

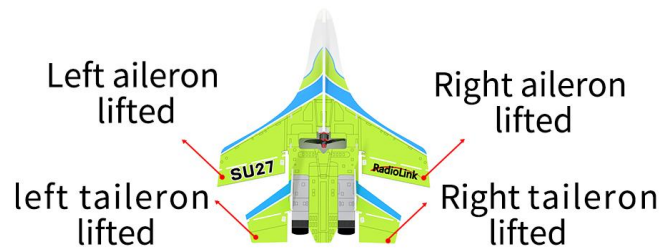
Take Mode 2 for transmitter as an example.



Move the aileron stick to the left

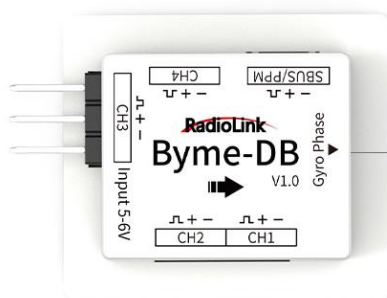


Move the elevator stick down



Servo Phase Adjustment

When the movement direction of the ailerons is inconsistent with the joystick movement, please adjust the servo phase by pressing the buttons on the front of the Byme-DB.



Button to change FC servo phase

Servo phase adjustment methods:

Servo phase test result	Reason	Solution	LED
Move the aileron stick to the left, the movement direction of the ailerons and tailerons is reversed	Aileron mix control reversed	Short press the button once	Green LED of CH1 on/off
Move the elevator stick down, the movement direction of the ailerons and tailerons is reversed	Elevator mix control reversed	Short press the button twice	Green LED of CH2 on/off
Move the rudder joystick, the movement direction of rudder servo is reversed	Channel 4 reversed	Short press the button four times	Green LED of CH4 on/off

Note:

1. Green LED of CH3 is always on.
2. Neither the always-on nor off green LED means reversed phase. Only toggle the joysticks can check if the corresponding servo phases are reversed. If the servo phase of the flight controller is reversed, adjust the servo phase by pressing the buttons on the flight controller. No need to adjust it in the transmitter.

Three Flight Modes

Flight modes can be set channel 5 (CH5) in the transmitter with 3 modes: Stabilize Mode, Gyro Mode and Manual Mode. Here is the introduction of the three flight modes. Take Mode 2 for transmitter as examples.

Stabilize Mode

Stabilize Mode with flight controller balancing, is suitable for beginners to practice level flight.

The model attitude (inclination angles) is controlled by joysticks. When the joystick is back to central point, the aircraft will level. The max inclination angle is 70° for rolling while that for pitching is 45° .



Move the aileron stick to the left



Model leans to left



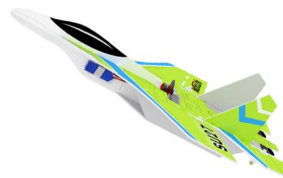
Move the aileron stick to the right



Model leans to right



Move the elevator stick down



Model nose lifts



Move the elevator stick up



Model nose pressed



Stick centered



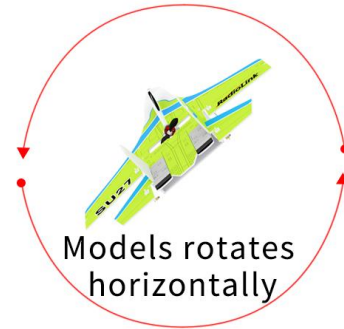
Model levels

Gyro Mode

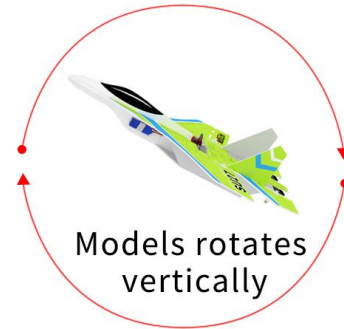
The joystick control the rotation (angle speed) of the aircraft. The integrated three-axis gyro assists to increase the stability. (Gyro mode is the advanced flight mode. The aircraft won't level even the joystick is back to central point.)



Move the aileron stick to the left



Move the elevator stick down



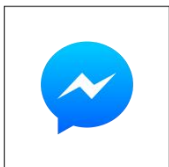
Manual Mode

No assistance from flight controller algorithm or gyro, all flight movements are realized manually, which requires the most advanced skills. In Manual mode, it is normal that there is no movement of the control surface without any operation on the transmitter because there is no gyroscope involved in stabilize mode.

Gyro Sensitivity

There is certain stability margin for the PID control of Byme-DB. For aircraft or models of different sizes, if the gyro correction is insufficient or the gyro correction is too strong, pilots can try adjusting the rudder angle to adjust the gyro sensitivity.

Technical Support Here



Contact RadioLink RL
via Facebook Messenger



Byme-DB User Manual



Byme-DB Tutorials

If the above information cannot solve your problem, you can also send emails to our technical support:
after_service@radiolink.com.cn

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Thank you again for choosing RadioLink product.