

LiteRadio 4 Radio Transmitter

Version No.1 2025-03-18

LiteRadio 4 SE is a brand new radio transmitter from BETA FPV, equipped with ExpressLRS 2.4G protocol and the latest version of BETA FPV's LiteRadio operating system. It can control FPV drones equipped with ELRS 2.4G series receivers, and also supports a variety of mainstream FPV simulators including DJI Virtual Flight, meeting the needs of remote control uses from starter to advanced.



1. Product profile

1.1 Feature highlights

- Utilizes BETA FPV's latest LiteRadio radio transmitter system.
- Added 2 new tact switches and upgraded the number of output channels to 10.
- Upgraded signal accuracy and service life of the controller sensor.
- New bluetooth joystick mode for wireless connection to FPV simulators, compatible with computers, cell phones and tablets of various systems.
- New Xbox mode for practicing DJI Virtual Flight, compatible with computers, cell phones and tablets of various systems.
- Built-in 1S 2000mAh high-capacity Li-ion battery, can be used continuously for more than 8 hours.

- Maximum charging power upgraded to 15W, and the battery can be fully charged in 40 minutes at the shortest.

1.2 Specifications

- Model: LiteRadio 4 SE
- Operating Frequency: 2.4000-2.4835GHZ
- Bluetooth Transmit Power(EIRP): 2.4GHz< -0.25dBm
- WiFi Transmit Power(EIRP): 2.4GHz< 18.32dBm
- Operating Temperature: -10°C to 40°C.
- Charging Ambient Temperature: 0°C to 35°C
- Battery capacity: 2000mAh (Li-ion battery)
- USB charging input: 5V, supports up to 3A rapid charging
- Product weight: about 210g
- Product Size: 172.5mm*118.5mm*72.5mm

1.3 Default setting

Radio transmitter mode

- Mode2(throttle is in the left hand i.e.)

RF module configuration

- Built-in RF module: ON
- Built-in RF Module Wireless Protocol: ELRS3 2.4G

ExpressLRS system configuration

- Transmit power: 100mW
- Packet rate: 250HZ
- Telemetry rate: 1:8

Channel configuration

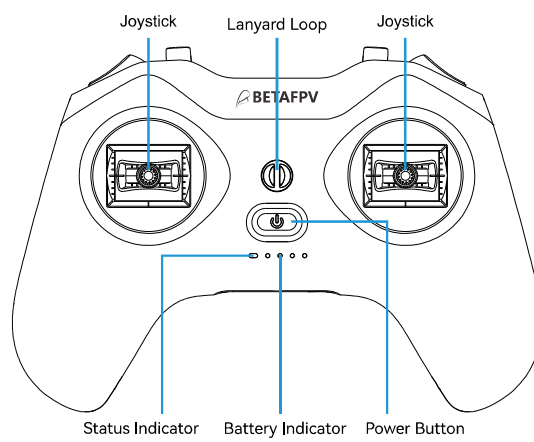
Channel	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10
Input	Roll(A)	Pitch(E)	Throttle(T)	Yaw(R)	SA	SB	SC	SD	SE	SF

Other settings

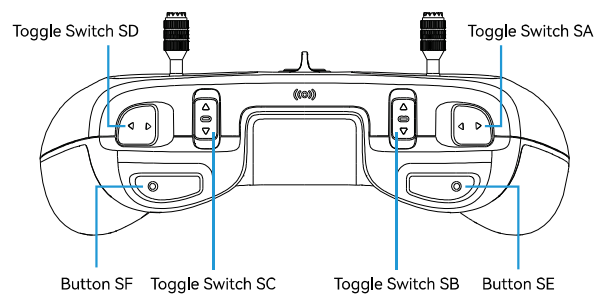
- Buzzer tone switch: ON
- Joystick center dead zone: 1% (Joystick center dead zone does not act on the throttle channel)

2. Appearance

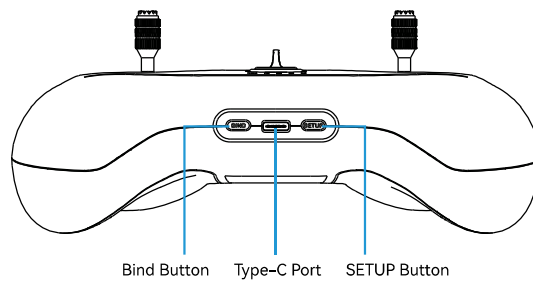
Front view



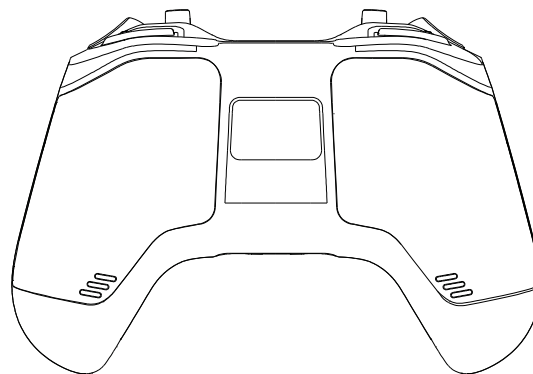
Top view



Bottom view



Back view



3. Basic operation manual

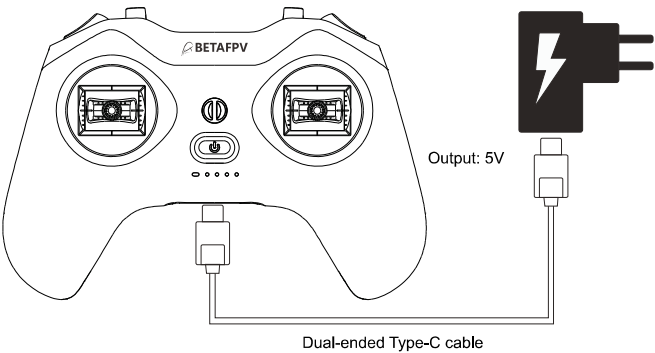
3.1 Power on/off

- Short press and then long press the power button, wait for the indicator lights to light up one by one and accompanied by the “beep beep beep” sound, the radio transmitter will be turned on.
- Short press and then long press the power button again, when the indicator lights turn off one by one and accompanied by “beep beep beep” sound, the radio transmitter will turn off the power.
- Short press the power button to display the current battery.
- Fully charged LiteRadio 4 SE radio transmitter can be used continuously for about 8 hours.

Mode	LED Indicator	Buzzers	Description
Working	Blue light solid on	No	Working
Bluetooth	Purple light solid on	No	Bluetooth
Wi-Fi	Green light solid on	No	Wi-Fi
Throttle position warning	Red light solid on	No	The throttle joystick is not in the lowest position, please dial the throttle joystick to the lowest position

3.2 Charging

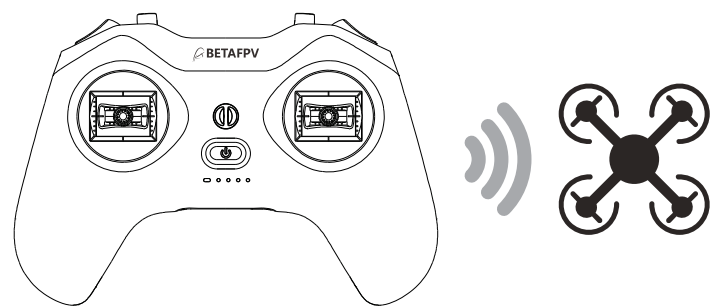
To ensure safety during storage and transportation, the lithium batteries are shipped with about 80% charge. When getting your new LiteRadio 4 SE radio transmitter, please fully charge the batteries before using it.



- Turning off the radio transmitter.
- Use the USB cable to connect the radio transmitter to the 5V adapter.
- Disconnect the adapter as soon as possible after charging is complete.
- When using the 3A@5V rapid charge adapter, the LiteRadio 4 SE radio transmitter takes only about 40 minutes from low battery warning to full battery.

Battery	Led Indicator	Buzzers	Description
Low Battery Warning	Orange light flashes four times and battery indicator will all off	With the sound of "beep beep beep"	Batteries are too low, need to charge the radio transmitter
Charging	Red light flashing and battery indicator are lit one by one	No	Charging
Charging Complete	Green light flashing and battery indicator is solid on	No	Charging complete

3.3 Frequency binding with receivers



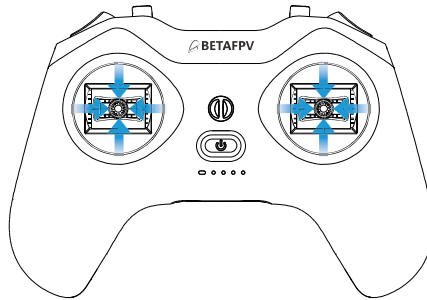
- Turn on the radio transmitter.
- Put the receiver into the binding state. The ELRS receivers usually power on and off in a quickly 3 times. For more details, please refer to the receiver's instruction manual.
- Long press the BIND button at the bottom of the radio transmitter to enter the binding state. This state lasts for up to 8 seconds.
- After the binding is successful, the remote control will emit a successful connection tone and automatically exit the binding state.
- If the binding is not successful within 8 seconds, please repeat the above operation.
- If you need to exit the binding state, please short press the BIND button.
- After the receiver is successfully bound, it will automatically connect the next time it is turned on, and there is no need to repeat the binding.

Bind Status	Led Indicator	Buzzer	Description
Binding	Status indicator flashes red quickly 2 times	Accompanied by the sound of "beep beep"	Binding
Binding complete	No	Beep sound (One short and one long)	Binding complete
Disconnection warning	No	Beep sound (One long and one short)	The receiver connection is interrupted and needs to be reconnected/bind

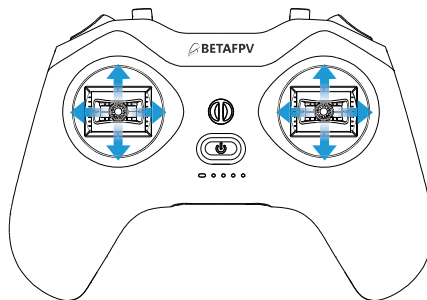
3.4 Calibrating the joystick

Joystick calibration consists of two stages, the first stage is to calibrate the joystick center position and the second stage is to calibrate the joystick boundaries.

- Turn on the radio transmitter.
- Long press the SETUP button on the bottom of the radio transmitter to enter the first stage of the joystick calibration state.
- Move all joysticks to the middle position.



- Press the setup button briefly, the radio transmitter will record the center point of the joysticks and enter the second stage.
- Toggle the joysticks, gently touch the four boundaries: up, down, left and right.



- Short press the SETUP button again, the radio transmitter will record the joystick boundaries and complete the calibration.
- The joystick of the LiteRadio 4 SE radio transmitter is calibrated at the factory, and needs to be re-calibrated only if the remote control is subjected to violent impacts, or if you notice a significant shift in the joysticks signal after prolonged use.

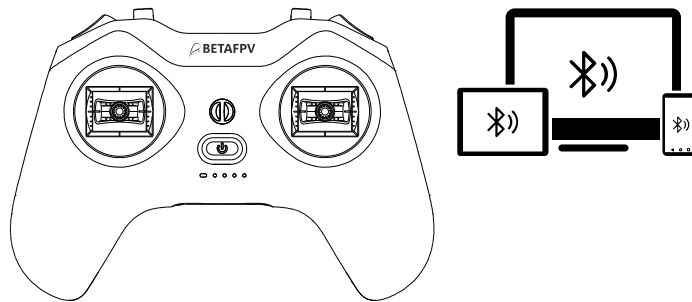
Calibration	Led Indicator	Buzzer	Description
Calibration center	Red lights flash three times	Accompanied by the sound of "beep beep"	Enter the joystick calibration state and move all joysticks to the middle position to set the midpoint
Calibration boundary	Red lights flash three times	Accompanied by the sound of "beep beep"	Gently move the joystick to the four boundaries of up, down, left, and right to set the maximum range of the joystick
Calibration complete	Red lights flash three times	Beep sound (One short and one long)	Calibration complete

4. Connecting to a Simulator

The LiteRadio 4 SE radio transmitter can be connected to computers, phones and tablets for practicing FPV simulator or DJI Virtual Flight.

4.1 Solution 1: Bluetooth joystick mode

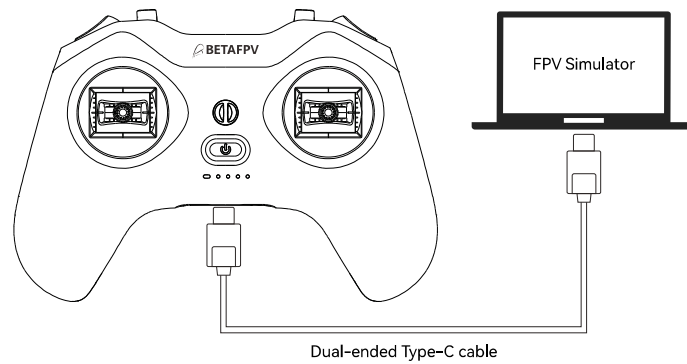
The Bluetooth joystick mode is compatible with Windows and macOS computers, as well as Android phones and tablets, and supports all major FPV simulators except DJI Virtual Flight.



- While pressing the BIND button, short press and then long press the power button to turn on the device and enter the Bluetooth working mode.
- Turn on the Bluetooth function of your computer, cell phone or tablet to search for a new Bluetooth device.
- Select the device with the name "BETAFPV Joystick" to complete the connection.

4.2 Solution 2: Data cable joystick mode

The joystick mode with data cable connection is compatible with Windows and macOS computers and supports all major FPV simulators except DJI Virtual Flight.

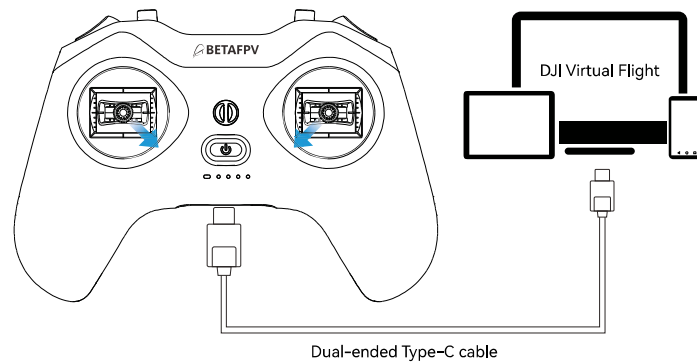


- Turn off the radio transmitter.
- Use a USB data cable to connect the radio transmitter and computer.
- At this time, the LiteRadio 4 SE radio transmitter can be identified as a "BETA FPV Joystick".

Note: In the power-on state, there is no signal output from the USB of the remote control radio transmitter, and the joystick mode can't be used.

4.3 Solution 3: Data cable Xbox mode

Xbox mode can only be connected by data cable, and can be used to practice DJI Virtual Flight or other FPV simulators that support Xbox mode, which is compatible with Windows and macOS computers, as well as Android phones and tablets.



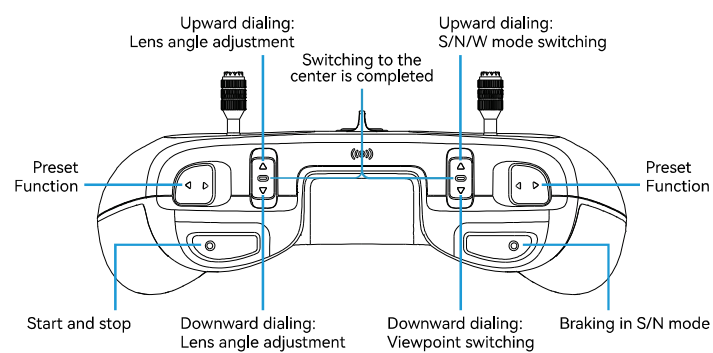
- Turn off the radio transmitter.
- At the same time, turn the left joystick to the lower right corner and the right joystick to the lower left corner, at this time, use the USB cable to connect the radio transmitter to the computer, cell phone or tablet, the status indicator will flash white lights 3 times, indicating that it has successfully entered the Xbox mode.
- At this time, the LiteRadio 4 SE radio transmitter can be recognized as "BETA FPV Joystick".

Note:

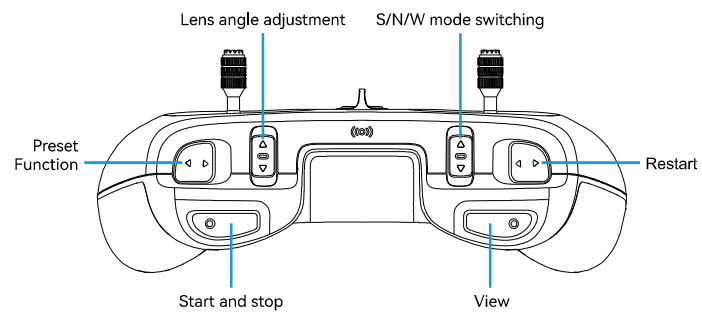
- There is no signal output from the USB of the remote control in the power-on state, and Xbox mode cannot be used.
- After connecting to Xbox mode under Windows system, if you find that the cursor moves, please move the joystick and three-position switch of the remote control to the middle position, and move the two-position switch to the left and right.

DJI Virtual Flight default button functions

- Windows operating system



- Android operating system



5. Configure radio transmitter

BETAFPV Configurator is a ground station application independently developed by BETAFPV. It can configure specifications or upgrade firmware for LiteRadio series radio transmitter. It is compatible with computers running Windows, Linux and macOS. Download: https://github.com/BETAFPV/BETAFPV_Configurator/releases

5.1 Connecting BETAFPV configurator

- Turn off the radio transmitter.
- Connect the radio transmitter and computer by the USB cable.
- Open the BETAFPV Configurator application and switch to the radio transmitter configuration program.
- Click the "connect radio transmitter" button on the upper right corner of the interface to enter the setup interface.

Note: In the power-on state, there is no signal output from the USB of the remote control, so you can't use BETAFPV Configurator. Please do remember turn off the radio transmitter.

5.2 Upgrading the radio transmitter firmware

- Turn off the radio transmitter and disconnect the USB connection.
- Press and hold the power button while holding down the SETUP button, the status indicator will light up in blue light with "beep beep" sound, and enter the radio transmitter firmware flash mode.
- Use the USB cable to connect the radio transmitter and computer.
- Open the BETAFPV Configurator application and switch to the radio transmitter configuration program
- Click the "Firmware Flasher" button on the upper left of the interface to enter the firmware flash interface.
- Follow the "Steps of How to flasher" at the bottom of the firmware programming interface to complete the programming.

Note: When the radio transmitter is turned on, there is no signal output from the USB port, so it is impossible to upgrade the firmware of the radio transmitter. Please do remember turn off the radio transmitter.

It is recommended to visit the support page on the official website for detailed tutorials on using the BETAFPV Configurator or to download the latest version of the firmware. Support page link: <https://support.betafpv.com/hc/en-us/articles/40274282610329-Manual-for-LiteRadio-4>

6. Compliance Information

Model: LiteRadio 4 SE
FCC ID: 2AT6X-LITERADIO4SE

6.1 FCC statements

This device 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.

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

NOTE: 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.

Radiation Exposure Statement

The device has been tested and comply with FCC SAR limits.

6.2 EU Declaration of Conformity

Hereby, Shenzhen Baida Moxing Co.,Ltd. declares that the radio equipment type LiteRadio 4 SE is in compliance with directive 2014/53/EU.



The full text of the EU declaration of conformity is available at the following internet address: <https://support.betafpv.com/hc/en-us>

Specific Absorption Rate (SAR)

- Your device is tested to comply with applicable requirements and regulations of the European Union of human exposure to radio wave.
- Specific Absorption Rate (SAR) is used to measure radio waves absorbed by human. The device complies with RF specifications when the device is used at a distance of 0mm from your limbs. The SAR limit is 4.0 W/kg averaged over 10 gram of tissue in the European Union.
- LiteRadio 4 SE was tested and recorded the maximum SAR value was 1.78W/kg for the limbs.

CAUTION RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

7. Disclaimer

Before using this product, please read and comply with the operating guidelines in this manual carefully. If the product malfunctions or becomes unusable due to irregular operation, BETAFPV may not be able to provide you with the corresponding warranty measures and other after-sales services.

By using this product, you are deemed to have read and accepted all the terms and conditions associated with this product.

The wireless operating frequency bands and their corresponding available ranges vary from country to country, please refer to the local laws and regulations for details.

The documentation for this product is subject to change without notice, please visit www.betafpv.com for the latest information.