



Meteor75 Pro II

FPV Kit – ready-to-fly set (RTF)
User Manual



**Read this entire manual before first use, especially Chapters 1, 3 and 6.
This product is not a toy – it is intended for persons aged 14 and over.**

Meteor75 Pro II drone · VR03 FPV goggles · LiteRadio 2 SE radio transmitter

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1. Safety guidelines

1.1 Important notices

- This product is an FPV quadcopter, classified as a multi-rotor model aircraft. **It is NOT a toy** and is not suitable for children under 14 years of age.
- Operating an FPV quadcopter requires basic technical knowledge and practice. Equipped with high-speed motors and sharp propellers, these quadcopters can reach high speeds and pose significant risks. Please familiarize yourself with all functions before operation. Incorrect operation may result in serious injury to yourself or others, as well as damage to the product or property.
- Do not use components not provided or recommended by BETA FPV. All installation and use must strictly follow BETA FPV guidelines. Please keep this manual for future reference as it contains essential safety, operation, and troubleshooting information.

1.2 Flight warnings

- Do not fly in adverse conditions, such as high winds, rain, snow, thunderstorms, or heavy fog. This quadcopter is not waterproof or dustproof; avoid water exposure to prevent short circuits and electronic failure.
- Ensure the flight area is open and safe. Excessive obstacles may interfere with radio and video signals. Stay away from crowds, water, high-voltage power lines, communication base stations, and flammable/explosive materials.
- When flying visually, always keep the quadcopter within your line of sight.
- When flying with goggles, minimize obstacles between the quadcopter and the pilot. Since your surrounding awareness is limited, fly with a spotter to handle emergencies. It is highly recommended to remain seated while flying.
- Do not take off or land on non-fixed platforms, such as your palm, or moving vehicles and boats.
- Never touch spinning propellers, as they can cause severe personal injury or property damage.
- In the event of an emergency during flight, immediately disarm the motors via the transmitter (Disarm).
- Operate the throttle stick gently to maintain stability and avoid sudden, erratic movements.

1.3 LiHV flight batteries

The drone is powered by **LAVA II 1S 580 mAh** batteries of the **LiHV** type (high-voltage lithium polymer) with a BT2.0 connector. Lithium batteries store a large amount of energy and may catch fire if handled improperly.

Battery state	Voltage per cell	1S battery
Fully charged (LiHV)	4.35 V	4.35 V
End the flight	3.5 V	3.5 V
Storage	3.8 V	3.8 V

- Please fully charge a new battery before first use. Always insert a **fully charged battery** into the drone before each flight.
- Only use a charger designed for lithium batteries, and never leave the battery unattended during charging. Keep the battery away from flammable and explosive materials while charging.
- Never overcharge the battery. The maximum voltage is **4.20 V** per cell for LiPo and **4.35 V** per cell for LiHV. The charger included in the kit charges to 4.35 V – use it **for LiHV batteries only**.
- End the flight at a voltage of **3.5 V** per cell at the latest. Deep discharge damages the battery irreversibly.
- Do not store fully charged batteries for more than 3 days. For long-term storage, keep them at **3.8 V** per cell.
- Do not disassemble, crush or short-circuit the battery, and do not expose it to flame or other sources of ignition.
- Do not use deformed, damaged or swollen batteries.
- The radio transmitter and the goggles have built-in batteries – see Chapters 4.5, 4.9, 5.5 and 5.8 for charging and care instructions.

1.4 Disclaimer

Please read this manual and all safety precautions carefully before using this product. BETA FPV and its authorized dealers shall not be held liable for any product malfunction, personal injury, or property damage resulting from failure to comply with the guidelines stipulated in this manual.

Any damages caused by inherent quality defects in the product or its accessories shall be handled in accordance with applicable laws, regulations, and BETA FPV's official warranty policy. If you do not agree to the terms of this user guide, please do not use this product and contact your seller.

By using this product, you are deemed to have understood, acknowledged, and accepted all terms and conditions herein. Users agree to take full responsibility for their own actions and all consequences arising therefrom, and to use this product only for legitimate purposes. This product documentation is subject to change without prior notice. Please visit betafpv.com for the latest information.

❖ **The buyer's rights under Czech law are not affected by this provision – see Chapter 9.**

2. Kit description

The Meteor75 Pro II FPV Kit contains everything you need to start flying FPV: the analog Meteor75 Pro II whoop powered by 1S batteries, the VR03 FPV goggles and the LiteRadio 2 SE radio transmitter with the ExpressLRS 2.4 GHz protocol. The drone is suitable for both indoor and outdoor flying.

2.1 Package contents

Qty	Item
1×	Meteor75 Pro II Brushless Whoop Quadcopter
1×	LiteRadio 2 SE radio transmitter (ExpressLRS 2.4 GHz, Mode 2)
1×	VR03 FPV goggles
2×	LAVA II 1S 580 mAh battery (LiHV, BT2.0 connector)
1×	BT2.0 1S battery charger and voltage tester
1×	USB-C cable
1×	USB-C adapter (for connecting the flight controller to a computer)
1×	4-pin adapter cable
4×	Gemfan 1811 3-blade propellers (1.5 mm shaft)
1×	spare frame
1×	canopy accessories
1×	cross screwdriver
1×	portable storage bag
1×	user manual

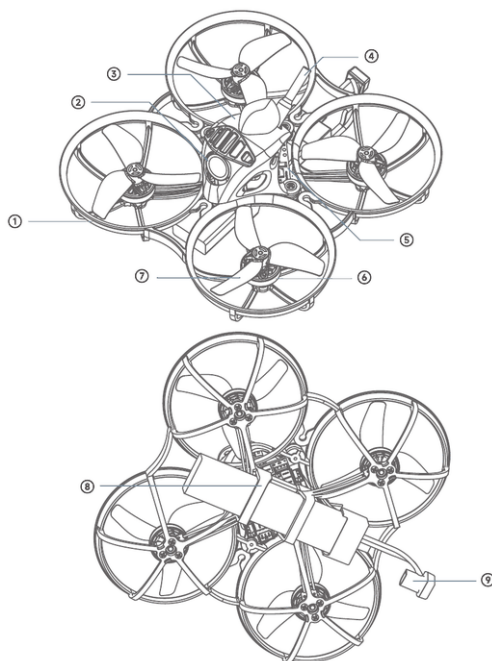
Packaging contents may differ by production batch; please refer to the actual product.

2.2 Kit specifications

Parameter	Value
Drone	Meteor75 Pro II, analog version, 1S power
Wheelbase	80 mm
Drone weight	27.98 g (without battery)
Take-off weight	45 g (with battery)
Flight controller (FC)	Matrix 1S 5IN1 II – FC, ESCs, OSD, ELRS receiver and video transmitter in one
Motors	Freestyle 1102 (2026)
Propellers	Gemfan 1811, 3-blade
Camera	Air Camera 16:9, 173° field of view, tilt 20° / 30°

Parameter	Value
Receiver	integrated serial ExpressLRS 2.4 GHz
Video transmitter (VTX)	onboard, 5.8 GHz, 48 channels, power 25 / 100 / 200 / 400 mW
Battery	LAVA II 1S 580 mAh, LiHV, BT2.0 connector
Flight time	up to 10 min 30 s (manufacturer's figure)
Goggles	VR03, 4.3" 800×480 display, recording to microSD
Radio transmitter	LiteRadio 2 SE, ExpressLRS 2.4 GHz, Mode 2 (left-stick throttle)
Charger	BT2.0 1S Battery Charger and Voltage Tester V2

2.3 Product appearance

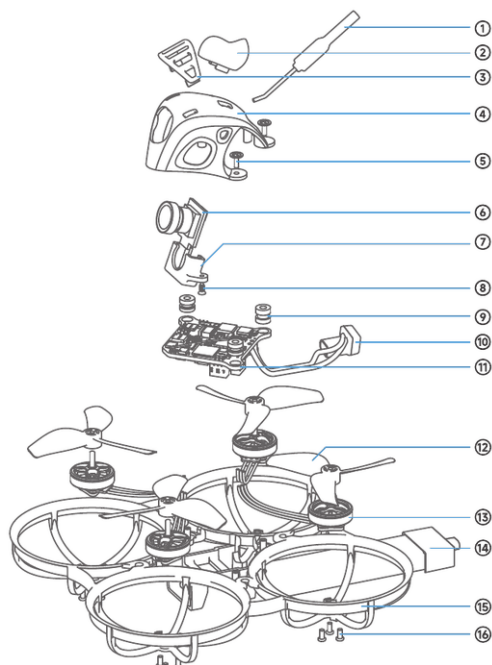


Meteor75 Pro II - top and bottom view

① frame · ② camera · ③ canopy · ④ video transmitter antenna · ⑤ flight controller (FC) · ⑥ motor · ⑦ propellers · ⑧ battery slot · ⑨ power connector

2.4 Assembly diagram

Use the diagram for orientation when replacing parts or repairing the drone. The number states the quantity.



Meteor75 Pro II assembly diagram

1	1× dipole antenna	9	3× shock-absorbing ball
2	1× Knight Crown decoration	10	1× power cable
3	1× Cap Brim decoration	11	1× Matrix 1S brushless flight controller (5IN1)
4	1× Micro Canopy	12	4× 1811-3S propellers
5	3× M1.4×4 self-tapping screw with washer	13	4× 1102 brushless motor
6	1× Air Camera	14	1× battery
7	1× camera mount	15	1× Meteor75 Pro II frame
8	2× M1.4×4 tapping screw	16	12× M1.4×3 flat head machine screw

2.5 Flight controller (FC) and video transmitter

The **Matrix 1S 5IN1 II** flight controller combines the flight controller, four electronic speed controllers (ESC), OSD, a serial ExpressLRS 2.4 GHz receiver and an analog video transmitter (VTX) on a single board.

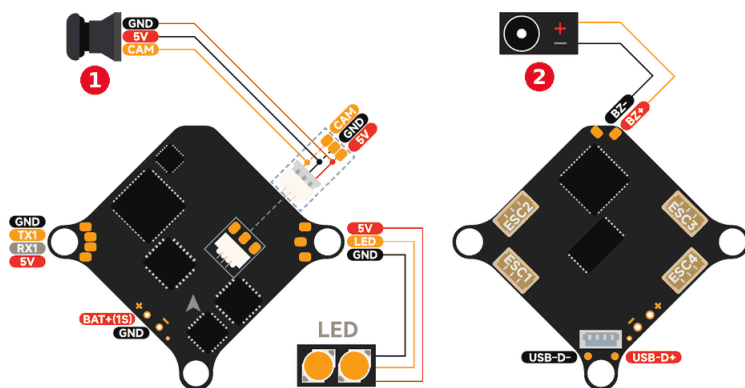
Parameter	Value
Firmware	Betaflight, target BETAFPVG473_V2

Parameter	Value
Power input	1S only, BT2.0 connector
ESC	12 A continuous; Bluejay firmware; DShot300 / DShot600
BEC	5 V, max. 3 A
Serial ports	UART1, UART2 (video transmitter), UART3 (receiver), UART4
Receiver	serial ExpressLRS 2.4 GHz, CRSF protocol
Video transmitter (VTX)	5.8 GHz, 48 channels; power 25 / 100 / 200 / 400 mW / PIT; SmartAudio control
USB port	SH1.0 4-pin connector
Blackbox	16 MB

Always connect and install the video transmitter antenna before powering on the drone. Operating without the antenna may damage the video transmitter.

- Higher VTX power consumes more energy, generates more heat and reduces flight time. For indoor flying, the manufacturer recommends 25-100 mW. **In the Czech Republic, a maximum of 25 mW is permitted without an individual licence** – see Chapter 3.6.
- The flight controller is produced with different types of gyroscope. **Do not flash official Betaflight firmware** downloaded elsewhere – only use the firmware and configuration (CLI) published by the manufacturer for this drone (Chapter 7.5).

2.6 Wiring diagram



Wiring diagram of the Matrix 1S 5IN1 II flight controller

- ① camera (GND, 5V, CAM) · ② buzzer (BZ–, BZ+) · LED: LED lights (5V, LED, GND)
 · BAT+(1S) / GND: power · TX1 / RX1: UART1 · USB-D– / USB-D+: USB ·

ESC1-ESC4: motor outputs.

When setting up the analog VTX, the peripheral of **UART2** must be set to *VTX (TBS SmartAudio)*. For the receiver, **UART3** must be configured as *Serial RX (Ports tab of Betaflight Configurator)*:

Identifier	Configuration/MSP	Serial Rx	*****	Peripherals	
USB VCP	☐ 115200 ▾	☐	*****	Disabled ▾	115200 ▾
UART1	☐ 115200 ▾	☐	*****	Disabled ▾	115200 ▾
UART2	☐ 115200 ▾	☐	*****	VTX(TBS SmartAudio) ▾	115200 ▾
UART3	☐ 115200 ▾	☒	*****	Disabled ▾	115200 ▾
UART4	☐ 115200 ▾	☐	*****	Disabled ▾	115200 ▾

Ports tab – default serial port settings

In the *Configuration (Receiver)* tab, set *Receiver Mode* to **Serial (via UART)** and *Serial Receiver Provider* to **CRSF**:

Receiver

Serial (via UART) ▾

Receiver Mode

- The UART for the receiver must be set to 'Serial Rx' (in the Ports tab)
- Select the correct data format from the drop-down, below:

CRSF ▾

Serial Receiver Provider

Some Receiver Providers are not supported by current Build Configuration.

CRSF protocol receiver settings

CRSF protocol RX: TBS Nano / ELRS series receivers.

❖ **UART3 is not freely available - in the factory state it is occupied by the onboard receiver. It can only be released by removing a resistor, which disconnects the onboard receiver. Such an intervention in the board is not a product defect.**

3. Legal requirements for operation in the Czech Republic and the EU

3.1 The law of the country where you fly applies

Regulations (EU) 2019/947 and 2019/945 apply in all member states of the European Union, but national implementing rules differ from state to state – registration portals, minimum pilot age, geographical zones, compulsory insurance, permitted frequency bands and maximum transmitting power. The information in this chapter describes the situation in the Czech Republic as of the date of issue of this manual (10/2026). If you operate the drone in another country, you must comply with the regulations of the state in which you fly. Regulations change – current information is available at www.caa.gov.cz (Civil Aviation Authority, ÚCL) and www.ctu.gov.cz (Czech Telecommunication Office, ČTÚ).

3.2 Drone classification and operational category

The Meteor75 Pro II has a take-off weight of 45 g and is equipped with a camera. **It does not bear a C0-C4 class identification label** under Regulation (EU) 2019/945.

Regulation (EU) 2019/947 (Article 4, Article 20 and point UAS.OPEN.020) allows an unmanned aircraft without a class label to be operated in the open category only if it is **privately built** or was **placed on the market before 1 January 2024**. According to EASA guidance, a kit supplied ready to fly is not considered a privately built system. The interpretation of this question is evolving – **before your first outdoor flight, check the current position of the ÚCL** (or the aviation authority of your country).

According to EASA guidance, the EU drone rules do not apply to flights **inside buildings** from which the drone cannot escape into the outdoor airspace. Fly there only with the consent of the owner or manager of the premises and with regard to the persons present.

Outdoors, the drone may be operated, for example:

- within a model aircraft club or association authorised by the ÚCL (Article 16 of Regulation 2019/947), under the conditions of that authorisation,
- on the basis of an operational authorisation in the specific category issued by the ÚCL.

3.3 Operator registration and pilot competency

- The drone is equipped with a camera and is not a toy. Its operator (usually the owner) must therefore **register** with the aviation authority of the state of residence – in the Czech Republic at dron.caa.gov.cz. The registration is valid in all EU states.

- Display the operator registration number on the drone so that it is legible at least when the drone is on the ground. A QR code may also be used; for a small drone, placement in an accessible battery compartment is acceptable.
- The minimum age of a remote pilot in the Czech Republic is **16 years**. The product is intended for persons aged 14 and over – persons under 16 may fly the drone only under the direct supervision of a pilot who meets the age and competency requirements, or under the rules of an authorised club.
- Complete the free online training and test for subcategories A1/A3 at dron.caa.gov.cz. The ÚCL states it as a condition for operation in the open category.

3.4 Operational limits

During operation, observe in particular the following rules:

- Keep the drone no more than **120 m** from the closest point of the surface of the earth.
- Keep the drone in direct visual line of sight at all times; when flying with goggles, within the sight of an observer (Chapter 3.5).
- Never fly over assemblies of people (events, crowded beaches and parks, shopping streets) and avoid overflying uninvolved persons.
- Do not fly close to emergency response operations. Do not carry any objects and do not drop anything.
- At night, the drone must have a green flashing light switched on.
- Before each flight, check the geographical zones on the map at dronemap.gov.cz. Restricted and prohibited areas include, among others, the vicinity of airports, national parks and protected landscape areas, energy and military facilities.
- Land as soon as another aircraft approaches, or if the flight endangers persons, animals or property.

3.5 Flying with FPV goggles

When flying with goggles, you cannot see the drone directly. The rules allow this only if an **observer** stands next to you, watching the drone with the naked eye (without binoculars) and monitoring the surrounding airspace and obstacles. You must be in immediate contact with the observer, and the drone must not fly further than the observer can clearly see it. As the pilot, you are always responsible for flight safety.

3.6 Radio frequencies and transmitting power

The kit contains the following radio transmitters:

Transmitter	Frequencies	Max. power (manufacturer's data)
Drone video transmitter (VTX)	5.8 GHz, 48 channels, 5362–5945 MHz	400 mW (adjustable 25 / 100 / 200 / 400 mW)
Drone ExpressLRS receiver (telemetry)	2.4 GHz	–
LiteRadio 2 SE radio transmitter	2403.8–2479.8 MHz	16.32 dBm; e.i.r.p. < 20 dBm

The VR03 goggles only receive radio signals; they do not transmit.

Operating conditions in the Czech Republic under the general authorisations of the ČTÚ:

Band	Limit in the Czech Republic	Authorisation
2400–2483.5 MHz (radio transmitter and receiver)	100 mW e.i.r.p.	VO-R/12/11.2021-11
5725–5875 MHz (video transmitter)	25 mW e.i.r.p.	VO-R/10/05.2025-5
other video transmitter channels (5362–5705 MHz, 5880–5945 MHz)	only with an individual ČTÚ licence	–

- Without an individual licence, the video transmitter may be used in the Czech Republic only on channels in the 5725–5875 MHz band – **A1-A8, B1-B8, F1-F7 and R3-R6** (shown in bold in the table in Chapter 5.4) – and with a maximum power of **25 mW**.
- Channels A8, B1, R3 (5725–5733 MHz) and A1, B8 (5865–5866 MHz) lie right at the edge of the band and the analog signal may exceed its limit. Preferably choose a channel in the middle of the band, for example the default R6 (5843 MHz).
- The e.i.r.p. limit includes the antenna gain. Operate the equipment only with the antenna specified by the manufacturer, without additional amplifiers and without modifications.
- The user is responsible for the channel and power settings. The setting procedure is described in Chapter 6.4.

Restrictions on putting into service under Article 10(10) of Directive 2014/53/EU: in the Czech Republic, the video transmitter may be operated without an individual licence only in the 5725–5875 MHz band with a power of up to 25 mW e.i.r.p. Similar restrictions apply in other EU states – check them with the national telecommunications authority.

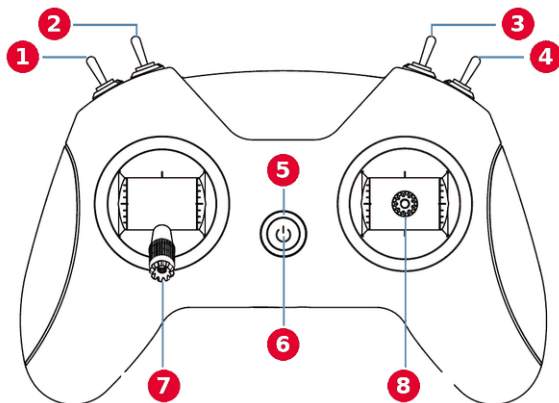
3.7 Personal data protection and insurance

- The drone camera and the goggles' recorder capture images of the surroundings. You may capture and, in particular, publish a person's likeness or expressions of their privacy only with their consent (Sections 84–86 of the Czech Civil Code). The GDPR exemption for purely personal or household activity does not cover publishing footage on the internet – follow the recommendation of the Czech data protection authority (ÚOOÚ) No. 01/2024.
- In the Czech Republic, liability insurance is compulsory by law, among other things, for operation in the specific category (for a drone up to 0.91 kg at least CZK 2,000,000 per insured event); members of an authorised association are exempt from this obligation (Section 54d of Act No. 49/1997 Coll.). Even where insurance is not compulsory, we recommend taking it out. You are liable for damage caused by operating the drone under the Civil Code.

4. LiteRadio 2 SE radio transmitter

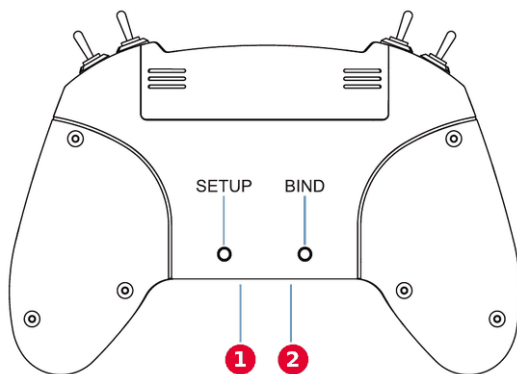
4.1 Transmitter overview

The LiteRadio 2 SE radio transmitter is designed for entry-level RC enthusiasts. Since its debut in 2020, it has earned widespread acclaim as one of the most popular handle-style remote controls among model hobbyists. It supports **BETA FPV Configurator** for updating, configuring and fine-tuning. In this kit it is supplied in the **ExpressLRS 2.4 GHz** version in Mode 2 (the left stick controls the throttle).



Front side of the radio transmitter

①	Switch A	⑤	LED ring
②	Switch B	⑥	power button
③	Switch C	⑦	throttle joystick (left)
④	Switch D	⑧	direction joystick (right)



Back side of the radio transmitter

On the back there are the **SETUP** and **BIND** buttons; at the bottom ① the audio port and ② the USB-C port.

4.2 Button functions

- **Power button:** turns the transmitter on/off.
- **BIND button:** enters binding mode after the radio transmitter is powered on.
- **SETUP button:** enters joystick calibration mode after the radio transmitter is powered on.

❖ **With newer transmitter firmware, binding mode is entered by a long press of the BIND button and calibration by a long press of the SETUP button. If a short press does not respond, hold the button longer.**

4.3 Power on/off

- **Power on:** long press the power button for 3 seconds until it beeps three times (do-re-mi), then release. The LED ring flashes red quickly, then remains blue.
- **Power off:** long press the power button until the transmitter beeps three times (mi-re-do).

4.4 LED indicator and buzzer

The LED ring indicates the working status of the radio transmitter:

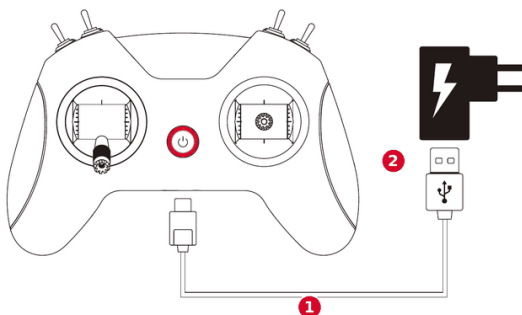
State of the LED ring	Reason	Solution
Red light solid on	The throttle joystick or switches are not in the lowest position	Lower the throttle and switches to the lowest position; the LED turns blue
Red light flashing quickly	The radio transmitter is binding	Wait for binding to complete
Blue light flashing slowly	The battery has reached the low-voltage limit	Charge the transmitter
Red light breathes slowly	Charging	-
Green light breathes slowly	Charge complete	-

The buzzer alarms twice to indicate a low battery that needs to be recharged.

4.5 Charging

The radio transmitter has a built-in 1000 mAh battery. When the red light flashes twice and the buzzer alarms twice, the battery is low and needs to be recharged:

- ① Turn off the radio transmitter.
- ② Connect the transmitter to an adapter with the USB-C cable (an adapter with 5 V output is allowed).
- ③ The LED ring breathes red while charging and green when fully charged.



Charging the transmitter: ① USB-C cable, ② adapter with 5 V output

A fully charged battery provides about 8 hours of continuous operation.

4.6 Joystick calibration

After a period of use, or after a hard physical impact, the joystick data may drift. Re-calibrate the joysticks as follows:

- ① After powering on, press the SETUP button on the back. You hear two beeps and the red LED flashes quickly (two flashes each time) – the transmitter has entered calibration mode.
- ② Move both joysticks to the middle position and press SETUP again. Wait for three beeps; the red LED flashes quickly (two flashes each time) – the centre data has been acquired and the transmitter enters boundary calibration.
- ③ Move the joysticks to the top, bottom, left and right boundaries in turn (do not press too hard, just touch the boundary) and hold each position for 1-2 s. Then press SETUP once more. A long beep (about 3 s) and the red LED stopping flashing indicate that calibration is complete.

4.7 BETA FPV Configurator

BETA FPV Configurator is a utility designed to simplify updating, configuring and tuning the radio transmitter. Download it from github.com/BETA FPV/BETA FPV_Configurator/releases.

- ① Turn off the radio transmitter.
- ② Connect the transmitter to the computer via a USB cable. Wait until the LED ring breathes red or green.
- ③ Open BETA FPV Configurator and switch to the radio transmitter configuration page.
- ④ Click the *Connect Radio Controller* button at the top right of the page.

Do not power on the transmitter before connecting it to the computer - the USB port would not work.

To check whether your transmitter supports BETA FPV Configurator, remove the cover on the back: there is a label reading “BETA FPV Configurator Supported”.

4.8 Connecting to a simulator

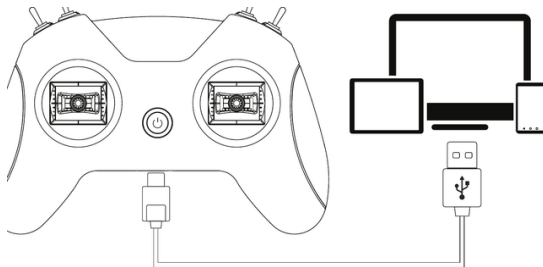
The LiteRadio 2 SE radio transmitter can be connected to computers, mobile phones and tablets to practise in FPV simulators or DJI Virtual Flight.

Simulator type	Supported systems	Connection
Mainstream FPV simulators	Windows, Android	Method 1: USB cable (JoyStick mode)
FPV simulators supporting Xbox	Windows, Android	Method 2: USB cable (Xbox mode)
DJI Virtual Flight	Windows	Method 2: USB cable (Xbox mode)
	Android	Method 1: USB cable (JoyStick mode)

For DJI Virtual Flight, first update the transmitter firmware to the latest version in BETA FPV Configurator - older versions do not support it.

► Method 1: USB cable (JoyStick mode)

The JoyStick mode connection via a USB cable is compatible with Windows computers and Android phones/tablets.

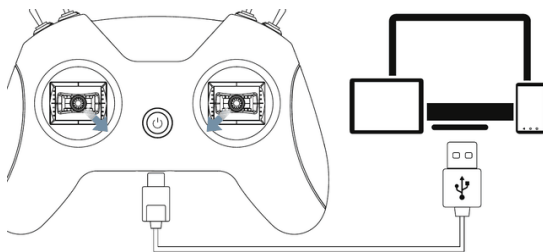


Connecting to a simulator in JoyStick mode

- ① Turn off the radio transmitter.
 - ② Connect the radio transmitter to your computer or Android device using a USB cable.
 - ③ Once connected, the device will recognize the transmitter as “BETAFPV Joystick”.
- ※ When the radio transmitter is powered on, there is no signal output from the USB port, so the JoyStick mode will not function.

► Method 2: USB cable (Xbox mode)

The Xbox mode connection via a USB cable is compatible with Windows computers and Android phones/tablets.



Connecting in Xbox mode - joystick positions while connecting

- ① Turn off the radio transmitter.
- ② Move the left joystick to the lower right corner and the right joystick to the lower left corner simultaneously.
- ③ Holding this position, connect the transmitter to your computer, mobile phone or tablet using a USB cable. The status light flashes white 3 times, indicating that Xbox mode has been enabled.

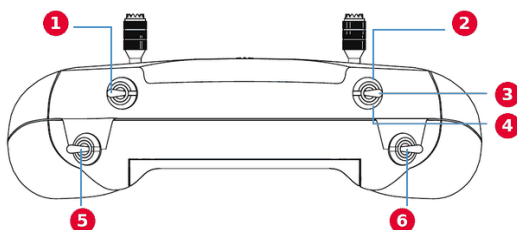
④ Once connected, the device will recognize the transmitter as “BETA FPV Joystick”.

※ When the radio transmitter is powered on, there is no signal output from the USB port, so the Xbox mode will not function.

※ If the cursor moves after connecting on Windows systems, move the three-position switches of the transmitter to the middle position and the two-position switches to the lower position.

► DJI Virtual Flight default button functions

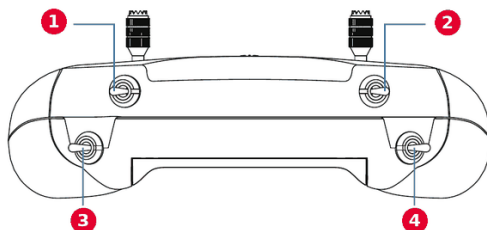
Windows – USB cable (Xbox mode):



DJI Virtual Flight on Windows

① lens angle adjustment · ② upward dialing: S/N/M mode switching · ③ confirm · ④ downward dialing: viewpoint switching · ⑤ start and stop · ⑥ brake

Android – USB cable (JoyStick mode):



DJI Virtual Flight on Android

① lens angle adjustment · ② S/N/M mode switching · ③ start and stop · ④ viewpoint switching

4.9 Radio parameters and compliance

Hereby, Shenzhen Baida Moxing Co., Ltd. declares that the radio equipment type LiteRadio 2 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:

support.betafpv.com/hc/en-us/articles/32438602240793-LiteRadio-2-SE.

Parameter	Value
Frequency band	2403.8–2479.8 MHz
Max. transmitted power	16.32 dBm; e.i.r.p. < 20 dBm
Protocol	ExpressLRS 2.4 GHz
Battery	built-in, 1000 mAh, 1S

Specific Absorption Rate (SAR): the device complies with the EU requirements on exposure to radio waves. The SAR limit in the European Union is 2.0 W/kg averaged over 10 grams of tissue; the device was tested at a distance of 0 mm from the body. The LiteRadio 2 SE ELRS was tested and recorded a maximum SAR value of 0.477 W/kg for the body.

CAUTION: Risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions in Chapter 8.3.

5. VR03 FPV goggles

VR03 is the FPV goggles developed by BETA FPV. It maintains the BETA FPV design philosophy of a minimalist appearance, simple operation and ergonomic design, and adds a DVR recording function.

5.1 Specifications

Group	Parameter	Value
Body	Size	130 × 145 × 90 mm
	Weight	about 300 g
	Camera format	NTSC / PAL
	Supported channels	48
Screen	Size	4.3"
	Resolution	800 × 480
Power	Battery	3.7 V, 2000 mAh
	Normal mode endurance	about 2 hours
	Record mode endurance	about 1 hour 10 minutes
	Max. charging current	1 A
Ports	Antenna port	RP-SMA (whip antenna included)
	Charging port	USB-C
	Card slot	microSD (FAT system, max. 64 GB, C10 recommended)
Record	Resolution	480P
	File format	AVI

5.2 Controls

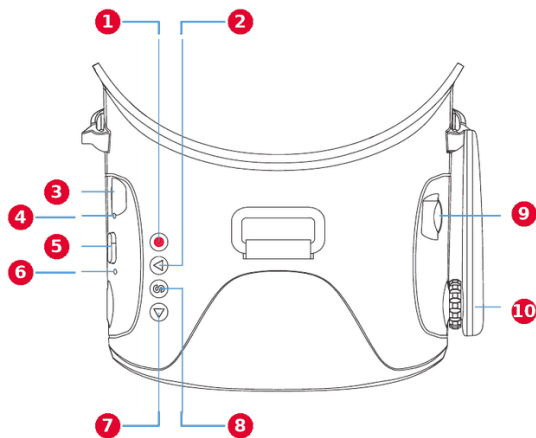
The layout of the controls is shown in the figure; the numbers in the text correspond to the labels.

► Power switch

Turn the power switch ⑤ left and right to turn the goggles off or on. When facing the switch, the left position is off and the right position is on.

► Search button (S)

- **Quick frequency search:** press and hold the search button ⑧ for 2 seconds. After 3 seconds there is a beep and the best available frequency is selected.
- **Frequency scan:** short press the search button once to enter the frequency scan interface.

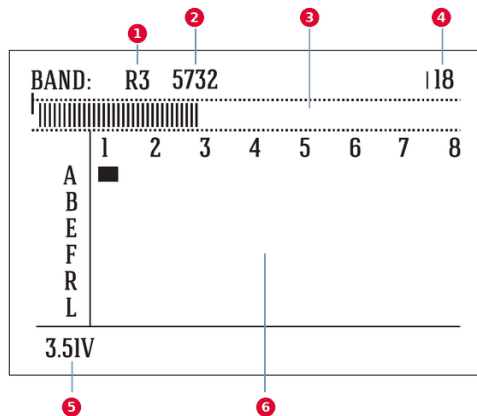


VR03 goggles controls

①	record button	⑥	recording indicator LED
②	channel button	⑦	band button
③	USB-C port	⑧	search button (S)
④	charging indicator LED	⑨	microSD card slot
⑤	power switch	⑩	antenna

5.3 Frequency scan and channel selection

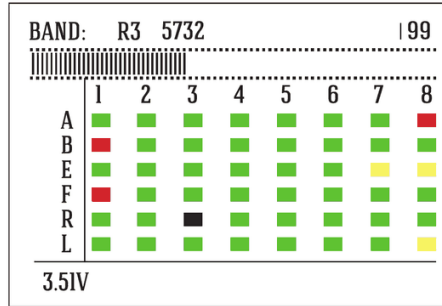
A short press of the search button opens the frequency scan interface:



Frequency scan screen

① frequency position coordinate (band and channel) · ② frequency · ③ RSSI display bar · ④ RSSI value · ⑤ goggles voltage · ⑥ frequency scanning results table

Press and hold the search button for 2 seconds to activate the frequency scan; the result is displayed after 3 seconds. The colours in the table indicate the current status of each frequency:



Scan result

Colour	RSSI	Meaning
green	0 < RSSI < 20	frequency is available
yellow	20 < RSSI < 70	frequency has moderate interference from another transmitter
red	70 < RSSI < 99	frequency is completely in use by a transmitter
white	–	the strongest signal received by the goggles in this scan

► Band and channel buttons

In the frequency scan interface, the band button cycles down through the bands and the channel button cycles right through the channels. For example, select a band and channel with green status, since these frequencies are not occupied and interference is relatively weak. Then set the drone to the corresponding frequency and adjust the goggles to match.

► Record button

In the FPV interface, short press the record button to start or stop recording, and long press it to enter or exit the DVR interface.

Please ensure the battery is fully charged before use; the recommended voltage is above 3.7 V (short press the S button to check). Wear the goggles properly and adjust the headband to a comfortable length.

5.4 Frequency table

The goggles receive the 5.8 GHz spectrum, distributed across 6 bands (A, B, E, F, R and L) of 8 channels. The drone's video transmitter uses the same channel table.

Band	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
A	5865	5845	5825	5805	5785	5765	5745	5725
B	5733	5752	5771	5790	5809	5828	5847	5866
E	5705	5685	5665	5645	5885	5905	5925	5945
F	5740	5760	5780	5800	5820	5840	5860	5880
R	5658	5695	5732	5769	5806	5843	5880	5917
L	5362	5399	5436	5473	5510	5547	5584	5621

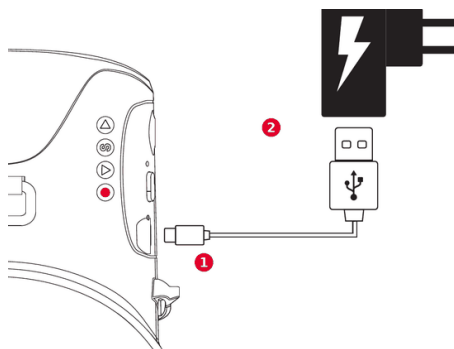
Frequencies in MHz. Bold: channels in the 5725–5875 MHz band that may be used in the Czech Republic without an individual licence (at up to 25 mW e.i.r.p.). Grey: channels outside this band – see Chapter 3.6.

Press and hold the search button for 2 seconds and the goggles automatically search for the frequency with the strongest signal and display the drone's video. You can also set a specific band and channel manually by short presses of the band and channel buttons.

5.5 Charging the goggles

The goggles have a built-in 2000 mAh battery. When the voltage drops below 3.4 V, the goggles beep every 10 seconds – they need to be recharged. You can display the voltage at any time by pressing the S button.

- ① Turn off the goggles.
- ② Connect the goggles to an adapter with the USB-C cable (an adapter with 5 V output, such as a mobile phone charger, is allowed).
- ③ The charging indicator LED is solid blue while charging and turns off when fully charged.



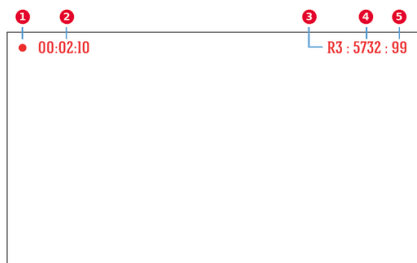
Charging the goggles: ① USB-C port, ② adapter with 5 V output

The goggles do not support fast charging protocols and therefore cannot be fast charged.

5.6 Recording video

Short press the record button to start or stop video recording.

- Insert the microSD card into the slot (only the FAT32 file system and a maximum of 64 GB are supported).
- After a short press of the record button, a red dot appears in the upper left corner of the screen and the goggles beep twice.
- After about 8 seconds, the red dot and the recording indicator LED start flashing, a line of red numbers appears and the timer starts running – recording is in progress.
- Short press the record button. After 2–3 seconds, the red dot in the upper left corner stops flashing, the timer disappears and the red recording indicator LED turns off – recording has stopped.



Screen during recording

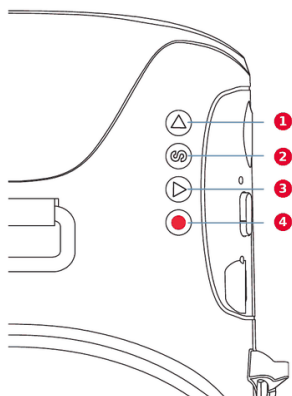
① recording · ② recorded time · ③ frequency position coordinate · ④ frequency · ⑤ RSSI

※ After pressing the record button, the recording function takes about 8–10 seconds to activate; please wait.

※ The maximum duration of each recording is 10 minutes. A longer recording is automatically continued in a new file.

5.7 Playing back recordings (DVR)

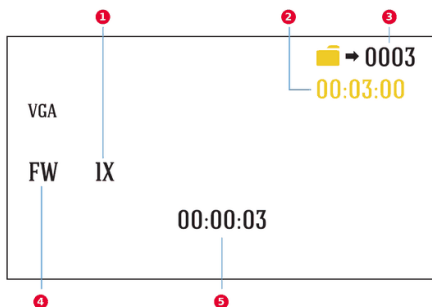
- Make sure a microSD card with recordings is inserted in the slot.
- Press and hold the record button for 2–3 seconds. You hear three beeps and “LOADING DVR...” appears on the screen.
- Wait about 8–10 seconds, depending on the file size, until the DVR interface loads.
- In the DVR interface the buttons have different functions – see the figure.
- Press and hold the record button for 2–3 seconds again to exit the DVR interface.



Button functions in the DVR interface

① play next video / fast forward (while playing) · ② start / pause / confirm · ③ play previous video / fast backward (while playing) · ④ enter / switch menu

Use the buttons on the goggles to switch videos, play or pause, and fast forward or backward.



Playback screen

① video play speed · ② total video duration · ③ file sequence · ④ forward / backward · ⑤ video progress

5.8 Goggles care

- Turn off the goggles after use. If they are left unused for a long time, recharge them at least every three months; otherwise the battery will be damaged.
- As soon as you hear the low-battery alarm, stop using the goggles and recharge them as soon as possible. Otherwise they may shut down suddenly and the battery may be damaged.

6. Getting started and flying

6.1 Charging the flight batteries

The LAVA II batteries are charged with the included **BT2.0 1S Battery Charger and Voltage Tester V2**. The charger can charge two batteries at the same time and also works as a voltage tester.

Parameter	Value
Input	USB-C, 5 V / 2 A
Output	4.35 V / 1 A, two outputs OUT1 and OUT2
Battery connector	BT2.0
Display	white, shows the voltage

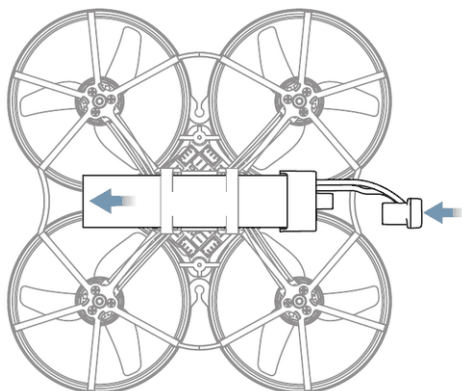
- ① Connect the charger with a USB-C cable to an adapter with 5 V / 2 A output.
- ② Plug the batteries into the OUT1 and OUT2 outputs. Both can be charged simultaneously.
- ③ The red light indicates charging, the green light indicates fully charged. Disconnect the battery once it is charged.

Voltage measurement: without USB power connected, output OUT1 can be used as a battery tester – after plugging in a battery, the display shows its voltage. Output OUT2 has no function in this state.

The charger charges to 4.35 V - use it for LiHV batteries only. Do not charge LiPo batteries (4.20 V) with it. Never leave charging unattended.

6.2 Battery installation

Insert a **fully charged** battery (4.35 V) into the battery slot on the bottom of the quadcopter and connect the power connector. Before powering on, check that the video transmitter antenna is connected.



Inserting the battery into the slot and connecting the connector

6.3 Binding the drone to the radio transmitter

If the receiver LED on the drone is solid green after switching on the transmitter and connecting the drone battery, the devices are already bound and binding is not required. Once bound, the quadcopter and the radio transmitter connect automatically upon every power-up.

- ① Power on the radio transmitter and wait until its system has loaded completely and the LED ring is solid blue.
 - ② Power cycle the quadcopter 3 times rapidly (within 5 seconds) by connecting and disconnecting the battery, and leave it connected. The receiver LED flashes green twice repeatedly – the receiver is in binding mode.
 - ③ Press the BIND button on the back of the transmitter (hold it with newer firmware). The LED ring flashes red quickly.
 - ④ The receiver LED turns solid green – binding was successful. About 5 seconds later the transmitter exits binding mode and the LED ring turns solid blue.
 - ⑤ If binding is not successful within 8 seconds, repeat the steps above.
- ※ Before binding, ensure that the protocol configured on your radio transmitter matches that of the quadcopter (ExpressLRS 2.4 GHz) and that the channel mapping is configured correctly (Chapter 6.5).

6.4 Tuning the goggles to the video transmitter

- ① Connect the drone battery, then turn on the goggles.
- ② Hold the search button on the goggles for 2 seconds (automatic search), or set the drone's frequency manually with the band and channel buttons.
- ③ Once the drone's camera image appears in the goggles, the VTX connection is successful.

According to the configuration published by the manufacturer, the drone transmits from the factory on channel **R6 (5843 MHz)** at **25 mW**. After first power-up, verify the setting in the OSD or in Betaflight Configurator.

You can change the video transmitter channel and power in Betaflight Configurator on the *Video Transmitter* tab (or in the OSD menu). **In the Czech Republic, use only the channels listed in Chapter 3.6 and a power of 25 mW**. The PIT level is a minimum-power mode, for example for working on the drone at the bench.

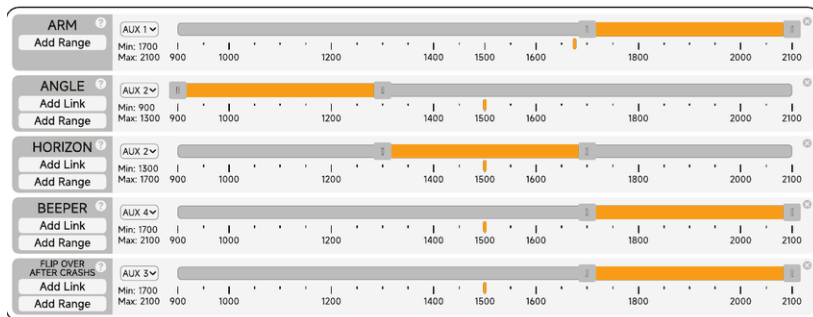
6.5 Betaflight settings

The drone is pre-configured with optimized factory settings for channel mapping, switch functions, motor direction and OSD. No further configuration is required before flight.

Connect the drone to a computer via the USB connector (SH1.0 4-pin) on the flight controller using the included 4-pin adapter cable and the USB-C adapter. The manufacturer recommends the web-based Betaflight Configurator at app.betaflight.com.

► Channel mapping (factory defaults)

- **ARM** – controls the arming status of the motors (Arm / Disarm): **AUX1**; low position = Disarmed, high position = Armed.
- **ANGLE** – self-levelling mode: **AUX2**, low position.
- **HORIZON**: **AUX2**, mid position.
- **AIR MODE**: enabled by default in the firmware; no AUX setting required.
- **BEEPER** – buzzer switch for locating the drone: **AUX4**.
- **FLIP OVER AFTER CRASH** – Turtle mode, allows the quadcopter to flip itself over after a crash: **AUX3**.



Modes tab in Betaflight Configurator – default ranges

※ Which transmitter switches correspond to channels AUX1-AUX4 can be checked on the *Modes* tab: when you flip a switch, the yellow marker of the respective channel moves. If any settings are modified, remember to click *Save* to apply the

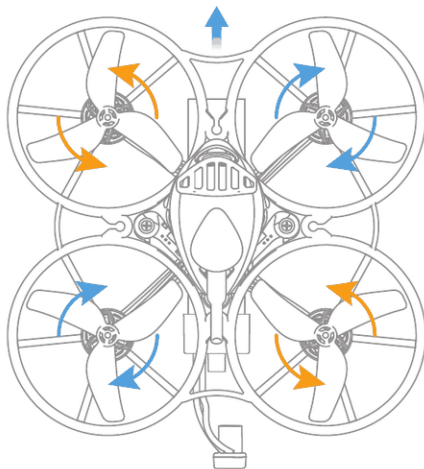
changes.

6.6 Arm, Disarm and failsafe

- **Arm (motors on):** place the drone on a flat surface, step away from it and make sure the propellers can rotate freely. Set the throttle stick to minimum and flip the ARM switch (AUX1) up. The motors spin at idle.
- **Disarm (motors off):** flip the ARM switch down – the motors stop immediately. In an emergency, disarm at once.
- **Flight modes:** as a beginner, use ANGLE mode (AUX2 low), in which the drone levels itself when you release the right stick.
- **Turtle:** if the drone lands upside down after a crash, disarm, flip AUX3 up, arm again and flip the drone over with the right stick. Then disarm again, flip AUX3 down and only then arm for flight.
- **Failsafe:** if the signal from the radio transmitter is lost, the drone stops the motors and falls. Only fly within signal range.
- **Locating the drone:** the buzzer is activated by the BEEPER switch (AUX4) and also automatically when the signal is lost.

6.7 Motor direction and propeller installation

The default motor direction is set to “Props in” (inward rotation). Install the propellers following the diagram below.



Motor direction and propeller installation (the blue arrow at the top shows the forward flight direction)

6.8 Pre-flight check

- Inspect all motors and propellers to ensure they are installed securely. Check for any looseness, deformation or damage.
- Confirm that a **fully charged** battery (4.35 V) is securely seated in the slot and firmly connected. Ensure the quadcopter powers on and all status LEDs function normally.
- Verify that the radio transmitter, goggles and other equipment are fully charged and that the connection is stable.
- Check that the video transmitter antenna is connected and that the channel and power are set according to Chapter 3.6.
- Check the geographical zones, display the operator registration number on the drone and, when flying with goggles, have an observer.
- Ensure all flights comply with local laws and regulations, as well as the safety precautions and flight warnings in Chapters 1 and 3.

6.9 Voltage monitoring and ending the flight

The battery voltage is shown in the OSD in the goggles. End the flight and land at a voltage of **3.5 V** (1S battery) at the latest – that is, before the low-voltage warning appears in the OSD (factory setting 3.45 V per cell). After landing, first disarm, then disconnect the battery, and only then turn off the goggles and the radio transmitter.

7. Maintenance, troubleshooting and support

7.1 After each flight

- Disconnect the battery and let it cool down before charging it.
- Check the propellers, frame, canopy, antenna and camera. Replace damaged propellers – even a small crack causes vibrations.
- Remove hair, dust and dirt from the motors.
- If the drone has landed in a wet place, do not power it on until it is completely dry.

7.2 Replacing propellers

The Gemfan 1811 propellers fit motor shafts with a diameter of 1.5 mm. When replacing them, observe the rotation direction shown in Chapter 6.7; a reversed propeller will prevent the drone from taking off or make it flip over after arming. Always replace propellers with the battery disconnected.

7.3 Storage

- Store the flight batteries at **3.8 V** per cell, in a dry place, out of the reach of children and away from flammable materials. Do not store them fully charged for more than 3 days.
- If the radio transmitter and goggles are not used for a long time, recharge them at least every three months.
- Carry the kit in the included bag; do not store the drone with the battery connected.

7.4 Troubleshooting

Problem	Cause and solution
The transmitter LED ring is solid red after power-on	The throttle stick or switches are not in the lowest position. Move them down.
The transmitter flashes blue slowly, the buzzer beeps twice	The transmitter battery is low – charge it (Chapter 4.5).
The drone does not respond to the transmitter, the receiver LED is not solid green	The drone is not bound. Bind it (Chapter 6.3); if not successful within 8 s, repeat.
The motors do not start (Arm)	The throttle is not at minimum or there is no link to the transmitter. Check the AUX1 assignment on the Modes tab (Chapter 6.5).
No image in the goggles	The goggles are not tuned to the drone's channel – use the automatic search (Chapter 6.4). Check the antennas of the drone and the goggles.

Problem	Cause and solution
The goggles beep every 10 s	The goggles battery voltage has dropped below 3.4 V - charge them (Chapter 5.5).
Recording does not start	No microSD card, card not in FAT32 format or larger than 64 GB. Wait 8–10 s after pressing the button.
The computer does not recognise the transmitter	The transmitter was powered on before connecting. Turn it off and reconnect the cable.
The cursor moves in Windows in Xbox mode	Move the three-position switches to the middle position and the two-position switches down.
Short flight time	The battery is not fully charged or a high video transmitter power is set. Charge the battery to 4.35 V and use 25 mW.

7.5 Manufacturer and technical support

For questions and claims, please contact your retailer or the importer (Chapter 8.1). The manufacturer provides technical support, firmware and further documentation in English on its website.

Manufacturer	Shenzhen Baida Moxing Co., Ltd. (BETAFPV)
Address	Room 1103, Honghua Center, No. 52, Heping Road, Qinghua Community, Longhua Street, Longhua District, Shenzhen, Guangdong, China
Website	betafpv.com
Technical support	support.betafpv.com – Technical Support
Quadcopter manuals	support.betafpv.com – Quadcopter
Drone firmware and CLI	CLI for Meteor75 Pro II Analog Version
BETAFPV Configurator	github.com/BETAFPV/BETAFPV_Configurator

8. Information for the EU and Czech Market

8.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.cz

8.2 Product conformity



- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorاما.cz.
- **Product identification:** the type designations (Meteor75 Pro II, LiteRadio 2 SE, VR03) and the serial or batch number are given on the products or on their packaging.

8.3 Disposal of electrical equipment and batteries



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The product contains a built-in rechargeable battery. Where possible, hand it over together with the device – do not dispose of the battery in mixed waste or in fire.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also <https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu>.

9. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection. Any warranty terms of the manufacturer **do not in any way limit** the buyer's rights arising from these regulations.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 8.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.