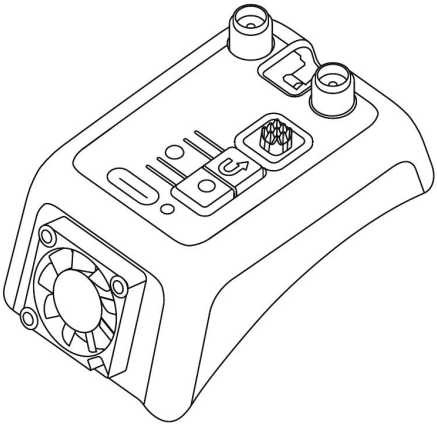
ROTORAMA

P1 HD VRX (Nano)

ArtLynk digital video receiver
for Fat Shark and SKYZONE goggles



This manual applies to both versions – Fat Shark and SKYZONE.

www.rotorama.com

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1. Safety instructions

Read the entire manual before first use and keep it for future reference. If you pass the receiver on to another person, include this manual.

- Always screw on both antennas before powering on. Operating without antennas may damage the radio section of the receiver.
- Power the receiver only within **5.5–26.4 V** (2S to 6S LiPo battery) through the 2-pin PH2.0 port and the supplied power cable. Observe the correct polarity when connecting.
- If the receiver has been modified to be powered from the goggles, **do not connect an external power source at the same time** – this may damage the goggles (see chapter 5).
- Do not cover the cooling fan. The receiver warms up during operation; do not leave it switched on for long periods in a closed case or in direct sunlight.
- Protect the receiver from moisture, dust, drops and impacts. Do not use it if the housing, cable or a connector is damaged.
- Handle LiPo batteries according to their manufacturer's instructions: do not charge them unattended, do not use swollen or mechanically damaged cells, and do not discharge them below 3.5 V per cell.
- The modifications described in chapter 5 (soldering, goggle firmware) are carried out at your own risk; only solder if you are experienced in soldering. Modifying goggles from another manufacturer may affect their warranty.
- When flying with FPV goggles you cannot see your surroundings. Have an observer next to you who keeps the drone and the surroundings in direct sight.
- Operate the receiver only on frequencies and at power levels permitted in the country of use (see chapter 7).

2. Product description

2.1 Introduction

The P1 HD VRX (Nano) is a digital high-definition video receiver (VRX) engineered by BETAFPV. Built for the **ArtLynk** digital ecosystem, it delivers an exceptional long-range, low-latency, crisp HD transmission experience. The video feed is routed via an external mini-HDMI output port, so the receiver turns conventional FPV goggles into digital goggles.

It comes with two optional housing shells: **for Fat Shark goggles** and **for SKYZONE goggles**. Electronics, controls and functions are identical; the versions differ in dimensions, weight and the position of the cooling fan. This manual applies to both versions.

2.2 Specification

Parameter	P1 HD VRX (Nano)
Dimensions (excluding antenna)	For Fat Shark: 39 × 62 × 36 mm For SKYZONE: 32 × 64 × 36 mm
Weight (excluding antenna)	For Fat Shark: 36 g For SKYZONE: 33 g
Frequency	5.3–5.8 GHz
Radiated power (EIRP)	CE: < 14 dBm (FCC: < 23 dBm)
Transmission resolution	1080p@60fps
Bitrate	25 Mbps
Transmission range	> 400 m
Input voltage	5.5–26.4 V (2S–6S LiPo)
Ports	Type-C, mini HDMI, Micro SD card slot (max 1 TB), 2-pin PH2.0 connector
Antenna connector	SMA, external thread

2.3 Package contents

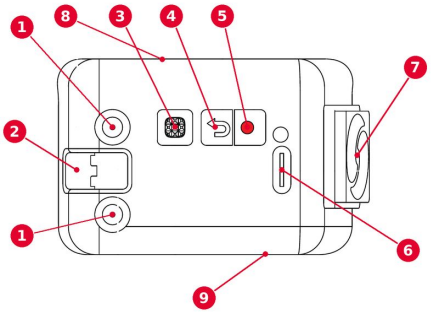
- 1× P1 HD VRX (Nano) – Fat Shark or SKYZONE compatible version
- 2× 5.8G antenna
- 1× power cable
- 1× mini HDMI cable
- 2× cable organizer
- 2× SMA wheel
- 1× outer casing (random color)
- 1× user manual

2.4 Compatible goggles

Version	Compatible goggles
Fat Shark	HDO+, HDO2, HDO, Attitude V6, Dominator HD3, Dominator V3
SKYZONE	SKY04L, SKY04X, SKY04O, SKY04X PRO, SKY04O PRO

※ Fat Shark Dominator HD3 and V3 goggles work at 720p. To switch the resolution, press and hold the 5D and Back buttons simultaneously for 5 seconds and wait for the device to reboot – the resolution will switch automatically.

2.5 Controls and ports



Top view – Fat Shark version. On the SKYZONE version the cooling fan ⑦ is located on the left side.

No.	Item	Function
①	Antenna connectors	SMA, external thread – for the 5.8G antennas
②	Power port	2-pin PH2.0, voltage 5.5–26.4 V
③	5D button	enter the menu; toggle up / down / left / right to navigate; press to confirm
④	Back button	press to return to the previous menu
⑤	Record button	press to start or stop DVR recording
⑥	Type-C port	access the Micro SD card storage from a computer
⑦	Cooling fan	on the left side on the SKYZONE version
⑧	Micro SD card slot	cards up to 1 TB; V30/U3 or higher SDXC card recommended
⑨	Mini HDMI port	video output to goggles or an external display

3. Getting started

3.1 Connection and power supply

① Screw both antennas onto the SMA connectors (the SMA wheels help to tighten them).

② Connect the mini HDMI port of the receiver to the HDMI input of the goggles (or display) using the supplied mini HDMI cable. Select the HDMI input on the goggles as described in the goggles' manual.

③ Connect the power supply – an external battery through the 2-pin PH2.0 port, or power from the goggles as described in chapter 5.

▶ Low voltage alarm

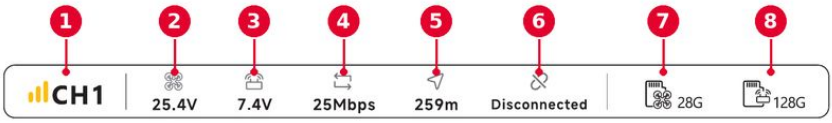
The built-in buzzer will emit a "beep-beep" warning under the following conditions:

- 2S power input: overall voltage falls below 5.5 V,
- 3S, 4S or 6S power input: any individual cell drops below 3.5 V.

※ When powering the receiver with a 2S LiPo battery, closely monitor the voltage to prevent over-discharge. If the low voltage alarm is triggered, charge the battery promptly to prevent a sudden screen shutdown.

3.2 Home screen

Connect an external display (goggles) to the receiver using the mini HDMI port. Upon power-up and boot completion, the main interface will be shown. Important parameter indicators are located at the bottom of the main screen.



Status bar of the home screen

No.	Indicator	Meaning
①	Current channel	currently set channel
②	Air unit voltage	real-time voltage of the air unit (VTX) on the drone
③	Ground control voltage	real-time voltage of the receiver
④	Real-time bitrate	real-time transmission bitrate
⑤	Distance	distance between the drone and the goggles
⑥	Connection status	current connection status
⑦	Air unit SD card status	status and remaining capacity of the air unit's SD card

No.	Indicator	Meaning
⑧	Ground control SD card status	status and remaining capacity of the receiver's SD card

SD card status: **grey** – no SD card; **white** – card detected; **flashing red dot** – recording; no red dot – standby; **Full** – card full.

3.3 Binding

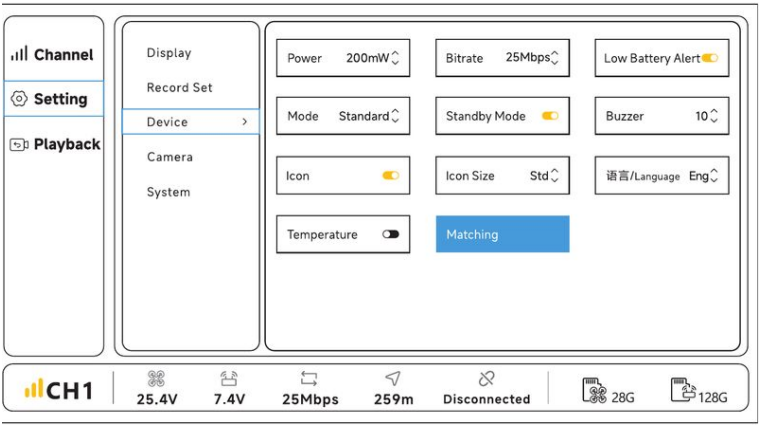
▶ Pre-binding preparation

Power on both the air unit and the ground station equipment. Keep all devices within 2 meters of each other, and ensure that all devices have been updated to the latest firmware version.

▶ Binding

① Select *Setting* → *Device* → *Matching* in the receiver menu and press the Bind button on the drone. The LED indicator on the drone's VTX module will flash green, while the receiver's built-in buzzer emits a repeating "beep... beep..." alert.

② Once binding is successful, the LED indicators on both the drone and the receiver will turn solid green, the buzzer will stop sounding after a long "beep", and the video feed will appear on the display.

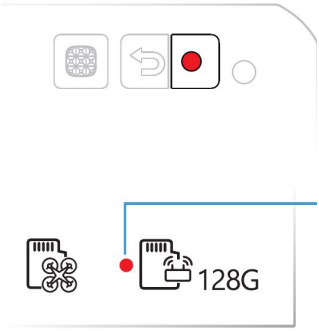


Setting → Device menu, Matching item

3.4 Recording and playback

▶ Recording

The P1 HD VRX (Nano) supports Micro SD card storage. Once a card is inserted, the SD card icon changes from grey to solid white (card detected). After connecting the video feed, press the Record button; a flashing red dot indicates that recording is active.



The red dot flashes to show that recording is active

※ After the flight, press the Record button again to stop recording; failure to do so may result in lost footage.

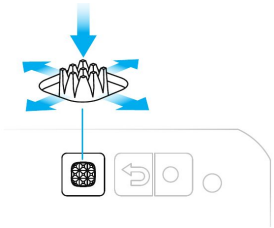
▶ Playback

Enter the *Playback* interface. When the selection box is on the video list, a short press of the 5D button plays the selected recording; a long press deletes the video file. In the playback screen, press the confirm button once to pause or resume playback, and toggle left / right to rewind or fast-forward.

※ When using a Micro SD card on this device for the first time, we recommend formatting the card to ensure more stable performance. Formatting will permanently delete all data on the card and cannot be recovered. Please proceed with caution.

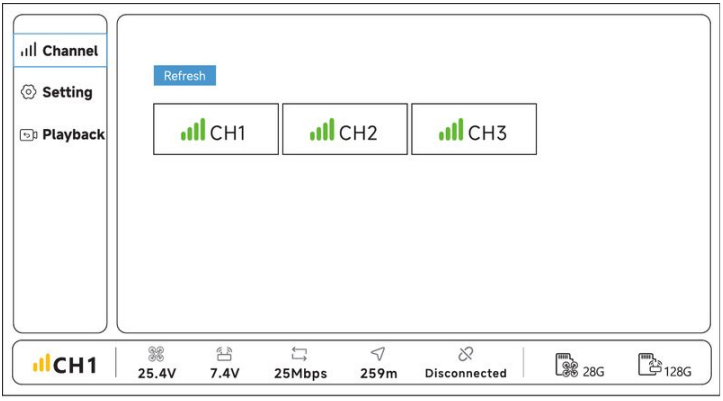
4. Menu settings

On the main interface, a short press of the 5D button opens the menu. Use the 5D button to navigate through the menu items by moving up, down, left or right. Pressing the Back button returns to the previous menu. The menu items are given in this manual exactly as the receiver displays them.



Menu navigation with the 5D button

4.1 Channel interface



Channel menu

In **Standard** mode, 3 channels are available. In **Racing** mode, 16 channels are available. The mode is switched in *Setting* → *Device* → *Mode*. When entering the *Channel* interface, click *Refresh* to refresh the signal strength of all frequency bands.

Mode	Channel	Centre (MHz)	Band (MHz)
Standard	CH1	5758	5753–5763
	CH2	5788	5783–5793
	CH3	5828	5823–5833

Mode	Channel	Centre (MHz)	Band (MHz)
Racing	CH1	5658	5653–5663
	CH2	5695	5690–5700
	CH3	5732	5727–5737
	CH4	5769	5764–5774
	CH5	5806	5801–5811
	CH6	5843	5838–5848
	CH7	5880	5875–5885
	CH8	5917	5912–5922
	CH9	5620	5615–5625
	CH10	5580	5575–5585
	CH11	5540	5535–5545
	CH12	5500	5495–5505
	CH13	5460	5455–5465
	CH14	5420	5415–5425
	CH15	5380	5375–5385
	CH16	5340	5335–5345

❇ Racing mode offers a wider selection of available channels. In indoor Wi-Fi environments (typically operating in the 5.725–5.850 GHz band), video transmission may suffer from reduced range and increased interference – try another channel. For this case the manufacturer recommends Racing channel CH16 (5335–5345 MHz); however, this channel may not be used in the Czech Republic. The permitted channels are listed in chapter 7.3.

4.2 Settings

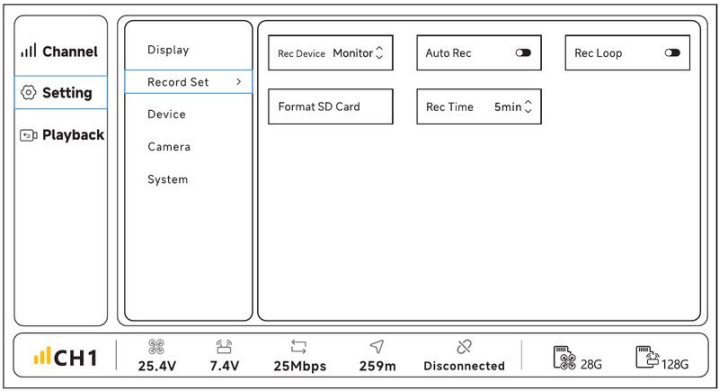
▶ Display



Setting → Display menu

The Display interface allows you to adjust screen brightness (*Brightness*), enable *Focus Mode*, reposition the flight controller (FC) OSD (*OSD Position*), and customize the framing box settings (*Viewfinder*, *Viewfinder Edit*).

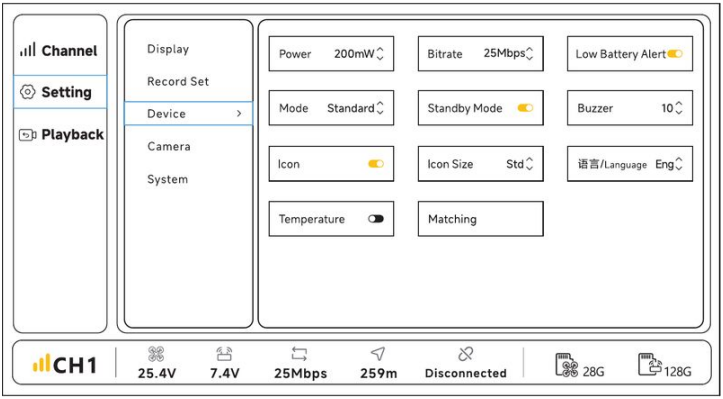
▶ Record Set



Setting → Record Set menu

The Recording interface allows you to adjust both video recording and SD card settings – recording device (*Rec Device*), automatic recording (*Auto Rec*), loop recording (*Rec Loop*), file length (*Rec Time*) and card formatting (*Format SD Card*).

▶ Device



Setting → Device menu

The Device interface provides access to all configurable device parameters – among others power (*Power*), bitrate (*Bitrate*), low voltage alarm (*Low Battery Alert*), channel mode (*Mode*), *Standby Mode*, buzzer volume (*Buzzer*), language (*Language*) and binding (*Matching*).

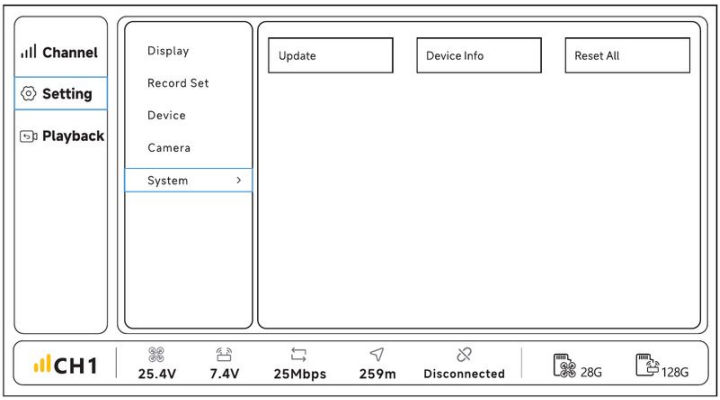
▶ Camera



Setting → Camera menu

Press *Camera* to access the Camera Settings interface. From this interface you can adjust all image-related parameters – exposure (*EV*), *Saturation*, *Sharpness*, white balance (*WB*), *Rotate*, aspect ratio (*Ratio*), noise reduction (*3D DNR*) and *Zoom*.

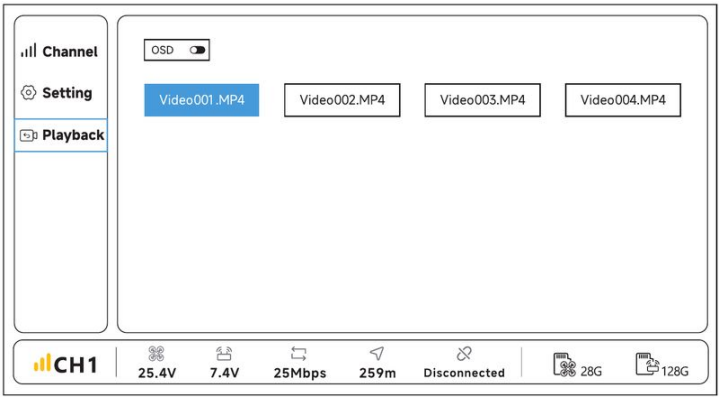
▶ **System**



Setting → System menu

The System interface provides access to device information (*Device Info*), as well as options for system updates (*Update*) and factory reset (*Reset All*).

4.3 Playback interface



Playback menu

On the *Playback* interface, you can review recorded videos. The *OSD* toggle allows you to show or hide the air unit information overlaid on the playback footage.

5. Powering from the goggles

Instead of an external battery, the receiver can draw power directly from the goggles, eliminating the need for a separate power cable. What is required depends on the goggle model:

※ All modifications described in this chapter – soldering on the receiver, disassembling and soldering the goggles, and flashing modified firmware to the goggles – are carried out at your own risk and responsibility. Defects and damage caused by a modification are not product defects and are not covered by rights arising from defective performance; the intervention may also void the goggle manufacturer's warranty. Soldering modifications are moreover interventions in a radio device – see chapter 7.4.

Goggles	What you need to do
SKYZONE SKY04X PRO, SKY04O PRO	firmware update of the goggles only (chapter 5.4), no disassembly needed
SKYZONE SKY04O, SKY04L V2, SKY04X V2	disassemble the goggles and add a jumper on the HDMI board (chapter 5.5)
Fat Shark Attitude V6, HDO2, HDO+, HDO, Dominator HD3	disassemble the goggles and modify the boards (chapter 5.6)

※ The manufacturer does not list goggle-powered operation for Fat Shark Dominator V3 goggles.

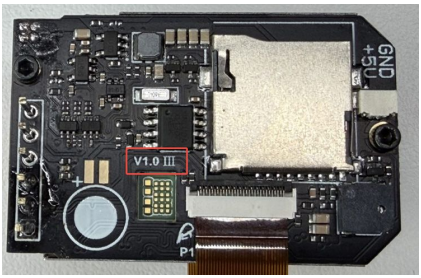
5.1 Precautions when using the internal power supply

- After converting to goggle-side power supply, **do not connect an external power source**. Using an external power source after the jumper connection may damage the goggles.
- **Low Voltage Alert must be disabled** in the receiver settings (chapter 5.3). This will not affect normal operation. If left enabled, the device will beep with a low voltage warning.
- SKYZONE goggles require a corresponding firmware update (chapter 5.4).
- Please operate carefully when modifying goggles, as such modifications may affect the warranty.

5.2 Modifying a receiver with a V1.0 III board

※ At your own risk – see the introduction to chapter 5.

The jumper modification of the receiver is required **only for a receiver with a board marked V1.0 III** (Beta Test version). No change is needed for the official release version – continue with chapter 5.3.

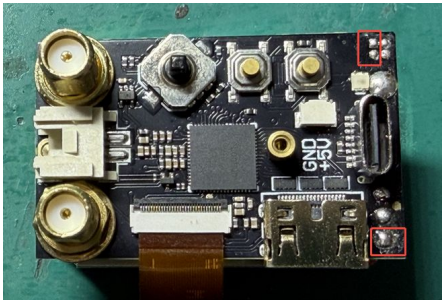


Board version marking V1.0 III

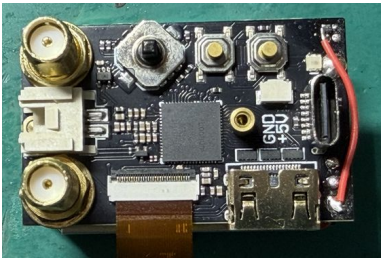
Required materials: 1× P1 HD VRX (Nano) V1.0 III (complete set) and 1× jumper wire.

① Use the jumper wire to connect the 3 solder pads marked in red in the image.

② Don't allow solder to bridge to adjacent pads.



Solder pads for the jumper



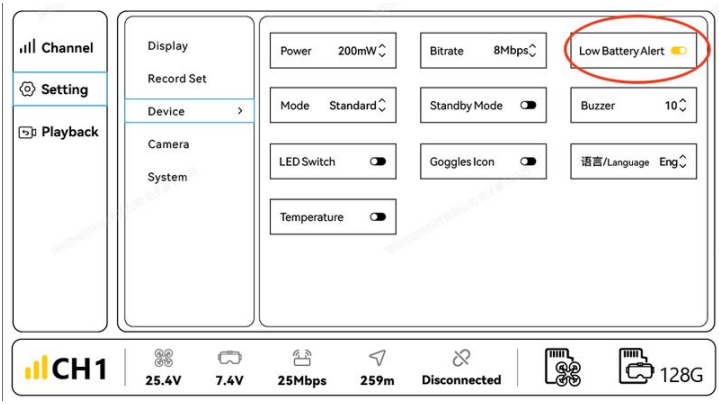
Finished jumper

Modifying a receiver with a V1.0 III board

support.betafpv.com – P1 HD VRX V1.0.3

5.3 Disabling the low voltage alert

Go to *Setting* → *Device* → *Low Battery Alert* and toggle the switch to off.



Low Battery Alert item in the Setting → Device menu

5.4 Firmware for SKYZONE SKY04X PRO and SKY04O PRO goggles

※ At your own risk – see the introduction to chapter 5.

The internal power supply can only function properly with the goggle firmware files provided by BETAFPV for this purpose. Download the firmware files from the BETAFPV support page (QR code below).

① Connect the USB-C cable to the goggles.

② Press and hold the left slider on the goggles while pressing the power button to turn the goggles on.

③ When the goggles appear as a removable disk on your computer, copy the corresponding firmware file into the disk – both files for SKY04X PRO, one file for SKY04O PRO.

④ When copying is finished, the upgrade is complete.



Connecting the USB-C cable to the goggles



Left slider (left) and power button (right)

Tutorial for **SKYZONE** goggles (including firmware files for SKY04X PRO and SKY04O PRO)

support.betafpv.com – SKYZONE

5.5 Modifying SKYZONE SKY04O, SKY04L V2 and SKY04X V2 goggles

※ At your own risk – see the introduction to chapter 5.

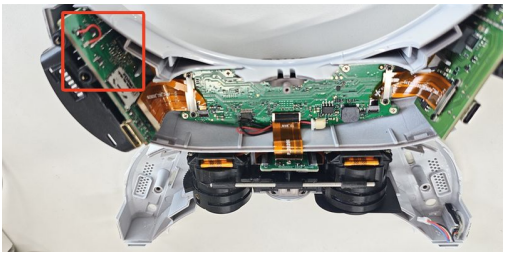
These three goggles have the same modification procedure. You will need a jumper wire, a soldering iron and a Phillips screwdriver.

① Remove the three screws marked in the image and take the case off gently.

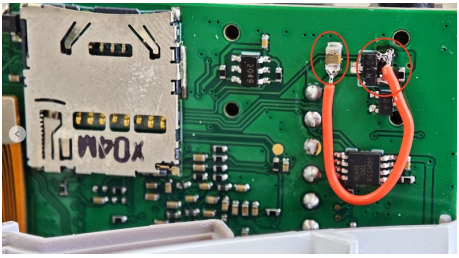


The three case screws

② Solder a jumper wire to the target components on the HDMI board as shown in the photos to achieve the power supply. Ensure the solder joints are smooth and well-formed, and do not bridge other solder pads, which would cause a short circuit.



Location of the HDMI board in the goggles



Jumper wire on the HDMI board

5.6 Modifying Fat Shark goggles

❊ At your own risk – see the introduction to chapter 5.

Fat Shark goggles must be disassembled and modified by soldering. You will need a jumper wire, a soldering iron, a heat gun and a Phillips screwdriver. Overview of the modifications:

Goggles	Modification
Fat Shark Attitude V6	connect the GND of the main board and the HDMI board
Fat Shark HDO2, HDO+, HDO	connect the GND of the main board and the HDMI board, remove resistor R29 on the HDMI board
Fat Shark Dominator HD3	connect the main board with the HDMI board, jumper on the power board, set the RX switch to 0 and solder-bridge its pins

Detailed instructions with photos of the soldering points are available on the BETAFPV support page:

Tutorial for **Fat Shark** goggles

support.betafpv.com – Fat Shark

6. Firmware update

① Copy the air unit and ground unit firmware files to the SD card, then insert the SD card into the receiver.

② Power on the air unit and the receiver, and ensure they are successfully connected.

③ Click *Setting* → *System* → *Update* and start the upgrade. Both the air unit and the receiver are upgraded.

④ After the upgrade is successful, restart the air unit and the receiver.

※ Make sure to follow the steps to upgrade the firmware, otherwise the upgrade may fail. The entire upgrade process will take some time – please wait patiently until it is complete. Make sure the device is fully charged before upgrading and do not turn off the power during the upgrade process.

- After the firmware upgrade, the setting parameters will be reset. Please reconfigure your preferences afterwards.
- If you want to upgrade only the air unit or only the receiver, simply copy the corresponding firmware.

Release notes with information on all firmware versions:

flowus.cn/betafpv – firmware P1 HD VRX

6.1 Care and maintenance

- Upon receiving the low battery warning, cease operation immediately. Continued use may lead to unexpected shutdown or permanent battery damage.
- It is recommended to gently wipe the housing with a soft, dry cloth. Rough materials such as paper towels or coarse cloth may cause scratches.
- Do not store the device together with hard objects such as keys, tools or gravel. Avoid crushing, dropping, or scratching by sharp objects.

6.2 Manufacturer

Shenzhen Baida Moxing Co., Ltd.
Room 2005-2, Building 6, Phase II (Lot 02-07), Tian'an Cloud Park, Gangtou Community, Bantian Street, Longgang District, Shenzhen, Guangdong, China
Web: betafpv.com · E-mail: support@betafpv.com

7. Frequencies and regulations

7.1 The law of the country of use applies

Radio equipment is subject to Directive 2014/53/EU (RED) throughout the EU, but permitted frequency bands and maximum transmit power differ between countries. This chapter describes the situation in the Czech Republic; in another country, comply with the regulations of that country.

7.2 Frequency bands and transmit power

The receiver maintains a bidirectional link with the video transmitter and therefore also transmits.

Frequency band	Max. radiated power (e.i.r.p.)
5.3–5.8 GHz (channels 5335–5922 MHz)	< 14 dBm (CE)

7.3 Permitted channels in the Czech Republic

Under general authorization No. **VO-R/10/05.2025-5** of the Czech Telecommunication Office (Art. 3(k)), short-range devices may be operated in the **5725–5875 MHz** band at no more than **25 mW e.i.r.p.** This corresponds to the following channels:

Mode	Channels permitted in the Czech Republic
Standard	CH1 (5758 MHz), CH2 (5788 MHz), CH3 (5828 MHz)
Racing	CH3 (5732 MHz), CH4 (5769 MHz), CH5 (5806 MHz), CH6 (5843 MHz)

- The other Racing channels (CH1, CH2 and CH7 to CH16) lie outside the 5725–5875 MHz band and **may not be used in the Czech Republic**.
- Racing channel CH5 overlaps the 5795–5815 MHz segment shared with electronic toll systems – interference may occur.
- Use only the antennas specified by the manufacturer, without amplifiers. The user is responsible for the choice of channel and power setting.
- Current general authorizations: ctu.gov.cz.

7.4 Modifications of the device

The modifications in chapter 5 are interventions in a radio device. The general authorization of the Czech Telecommunication Office stipulates that the device must not be electrically or mechanically altered; a modified device may no longer correspond to the EU declaration of conformity. Modifications are at your own responsibility – resulting defects are not product defects, and modifying the goggles may void their warranty.

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@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

8.2 Product conformity

CE

- 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@rotorama.cz.
- **Product identification:** type designation P1 HD VRX (Nano), version for Fat Shark or SKYZONE goggles. Device information and the firmware version are shown in *Setting → System → Device Info*.

8.3 Disposal of electrical equipment



- 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 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 manufacturer's warranty terms **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.