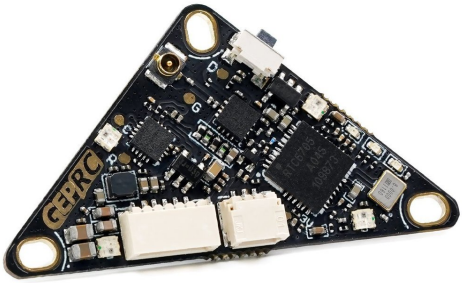
RAD Whoop 5.8G VTX

GEPRC – 5.8 GHz analog video transmitter
PitMode / 25 / 200 / 400 mW · IRC Tramp · user manual



Always install the antenna before powering on. Before use, read Chapter 3 on permitted frequencies and output power.

Importer: Rotorama, s.r.o. · www.rotorama.com

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1. Safety instructions

1.1 Before you start

- Read the entire manual before installation and first power-up, and keep it for future reference.
- The video transmitter (VTX) is an electronic component intended to be built into an FPV drone or model aircraft. Installation requires basic knowledge of electronics and soldering.
- Always carry out all wiring **with the flight battery disconnected** and the USB cable unplugged.
- Before powering up for the first time, check the wiring and polarity of all wires. Incorrect wiring can permanently damage the transmitter and the connected devices.
- Protect the board from static electricity, moisture, dust and conductive debris (e.g. metal shavings, carbon dust).
- This product is not a toy. Keep it out of the reach of children.

1.2 Antenna and overheating

① It is important for the service life of the VTX to install the antenna first and only then connect power. Never power the transmitter without an antenna connected.

- In case of overheating, the **temperature control protection** is activated and the power is automatically reduced. Please ensure good ventilation and heat dissipation during use.
- When the installation space is limited, you can install a cooling fan for the VTX.
- The transmitter gets hot during operation. After switching off, do not touch its surface until it has cooled down.
- When powered on the bench for a longer time (without airflow), use PitMode or the lowest power level.

1.3 Power supply

- The transmitter is powered with **5 V** DC (5V IN input), e.g. directly from the 5 V output of the flight controller (FC).
- The **5V OUT** port of the VTX is **only used to power the camera or a cooling fan**.
- **It is forbidden to connect 5V OUT to the 5 V output of another device** (e.g. the flight controller) – otherwise the VTX will be damaged.

2. Product description

The GEPRC RAD Whoop 5.8G VTX is a 5.8 GHz analog video transmitter for small FPV drones (whoops and cinewhoops). It offers four power levels (PitMode, 25, 200 and 400 mW), 40 channels, control via the IRC Tramp protocol from the flight controller or with the button on the board, temperature control protection and RGB LEDs whose colour can be set by the flight controller. The mounting holes are compatible with 25.5–26.5 mm spacing.

2.1 Specifications

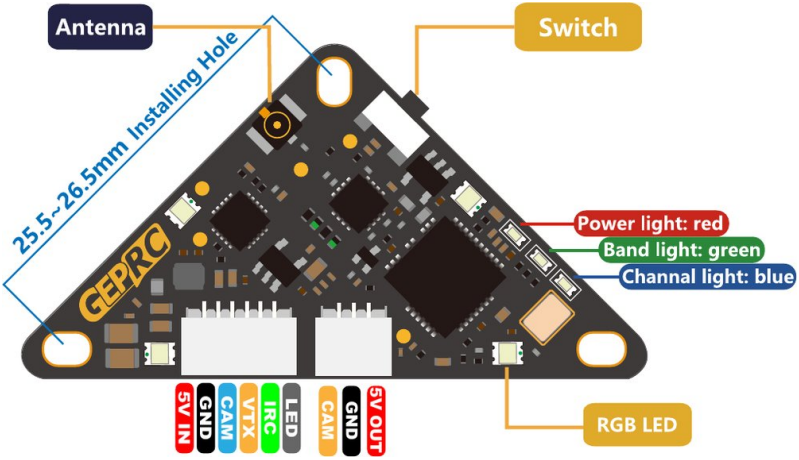
Model	RAD Whoop 5.8G VTX
Manufacturer	GEPRC
Frequency	5.8 GHz – 40 channels (5 bands × 8 channels), 5645–5945 MHz, see Chapter 5.4
Output power	PitMode / 25 mW / 200 mW / 400 mW (switchable)
Input voltage	DC 5 V
Current	max. 400 mA at 5 V
Camera output	5 V, 500 mA (5V OUT)
Video input impedance	75 Ω
Video format	PAL / NTSC
Microphone	none
Control protocol	IRC Tramp
Antenna connector	u.FL (UFL)
Cable connectors	SH1.0
Mounting holes	25.5–26.5 mm spacing, M2 screws
Weight	2 g (without cables)
Protection	temperature control protection (automatic power reduction)

2.2 Package contents

- 1 × GEPRC RAD Whoop 5.8G VTX
- 1 × antenna with u.FL connector
- 1 × SH1.0 6-pin cable, 100 mm (to the flight controller)
- 1 × SH1.0 to SH1.25 3-pin cable (to the camera)
- 1 × manufacturer's manual

※ Camera, flight controller, cooling fan, screws and radio transmitter are **not** included.

2.3 Parts and connectors



Parts overview (manufacturer's drawing)

Label	Meaning
Antenna	u.FL antenna connector
Switch	button for manual setting (Chapter 5)
Power light: red	red LED – power level
Band light: green	green LED – band
Channal light: blue	blue LED – channel (CH)
RGB LED	RGB LED, colour set by the flight controller
25.5~26.5mm Installing Hole	mounting holes, 25.5–26.5 mm spacing

▶ 6-pin connector – to the flight controller

Pin	Function
5V IN	5 V power supply for the VTX from the flight controller
GND	ground
CAM	camera video signal routed to the flight controller (FC video input)
VTX	video signal from the flight controller (FC video output with OSD) transmitted by the VTX
IRC	IRC Tramp control line – connects to the TX pin of a flight controller UART
LED	RGB LED data input – connects to the LED pin of the flight controller

▶ 3-pin connector – to the camera

Pin	Function
CAM	camera video signal
GND	ground
5V OUT	5 V camera power (max. 500 mA) – only for the camera or a fan

3. Radio frequencies and output power

3.1 The law of the country of use applies

Throughout the European Union, radio equipment is subject to Directive 2014/53/EU (RED), but the permitted frequency bands and maximum transmit power are set by national regulations, which differ from country to country. The information in this chapter describes the situation in the Czech Republic. If you operate the transmitter in another country, **you must comply with the regulations of the country in which you operate it**.

3.2 Frequency bands and maximum power

Frequency range	Maximum output power (manufacturer's data)
5645–5945 MHz (40 channels, Chapter 5.4)	400 mW

Power is switchable in the levels PitMode / 25 / 200 / 400 mW. PitMode is used to power the transmitter at minimum output, e.g. when setting up on the bench.

3.3 Operation in the Czech Republic

Without an individual authorisation, the transmitter may be operated in the Czech Republic under ČTÚ General Authorisation No. **VO-R/10/05.2025-5**, Art. 3(2)(k), in the **5725–5875 MHz** band with a radiated power of no more than **25 mW e.i.r.p.**

- Use only the **25 mW** power level or PitMode. The 25 mW e.i.r.p. limit includes the antenna gain.
- Use only channels whose frequency lies within the 5725–5875 MHz band: **A1–A8, B1–B8, F1–F7, R3–R6**. Band E channels, F8 and R1, R2, R7, R8 lie outside this band.
- Channels at the edge of the band (e.g. A8 – 5725 MHz) may extend beyond the permitted band due to the signal bandwidth.
- In the Czech Republic, the 200 mW and 400 mW levels and channels outside the 5725–5875 MHz band may only be used by the holder of an appropriate individual authorisation (e.g. a radio amateur licensed by ČTÚ under Decree No. 156/2005 Coll.).
- The user is responsible for the frequency and power settings. The transmitter must not interfere with other radio services.

4. Installation and wiring

4.1 Mounting

① First connect the antenna to the u.FL connector (Chapter 1.2). The u.FL connector is fragile – press it on straight, without levering.

② Fix the transmitter with M2 screws in the 25.5–26.5 mm mounting holes, e.g. in the stack above the flight controller.

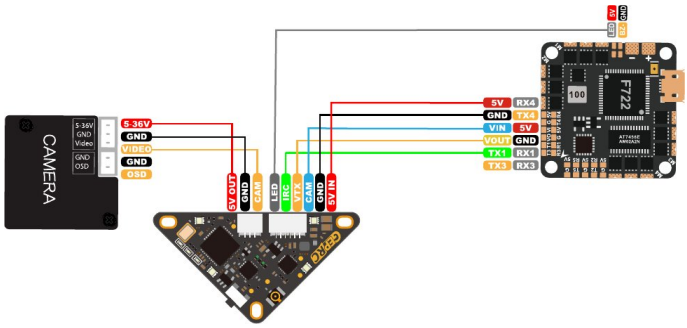
③ Place the antenna as far as possible from propellers, carbon parts and wires, and secure it against coming loose.

④ Ensure airflow around the transmitter; in a confined space you can add a cooling fan powered from 5V OUT.

4.2 Wiring

The drawing shows the manufacturer's connection sample with an F722 flight controller and an analog camera. Pad labels differ between flight controllers – always follow the manual of your flight controller.

❉ The camera in the connection sample accepts a 5–36 V supply. Make sure that your camera can be powered from 5 V.



Connection sample (manufacturer's drawing)

VTX pin	Connect to
5V IN	5V – 5 V output of the flight controller
GND	flight controller GND
CAM (6-pin)	VIN – flight controller video input
VTX	VOUT – flight controller video output
IRC	TX of a free UART (in the sample TX1 = UART1)
LED	LED – flight controller LED strip output
3-pin connector	camera: 5V OUT – power, GND – ground, CAM – video

5. Setting with the button

Channel, band and power can be set with the button on the board (Switch). The current mode is indicated by the coloured LEDs: blue – channel, green – band, red – power.

5.1 Channel (CH)

Press and hold the button for **2 seconds** – the blue light flashes and the VTX enters the frequency adjustment mode. Click quickly to switch the channel.

Channel	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Blue light	1×	2×	3×	4×	5×	6×	7×	8×

5.2 Band

After switching the channel, press and hold the button for **2 seconds** again within five seconds – the green light flashes and the VTX enters the band adjustment mode. Click quickly to switch the band.

Band	Band A	Band B	Band E	Band F	Band R
Green light	1×	2×	3×	4×	5×

5.3 Power

After switching the band, press and hold the button for **2 seconds** again within five seconds – the red light flashes and the VTX enters the power adjustment mode. Click quickly to adjust the power.

Power	25 mW	200 mW	400 mW	PitMode
Red light	1×	2×	3×	steady on

※ When operating in the Czech Republic, observe the frequency and power restrictions in Chapter 3.3.

5.4 Frequency table (MHz)

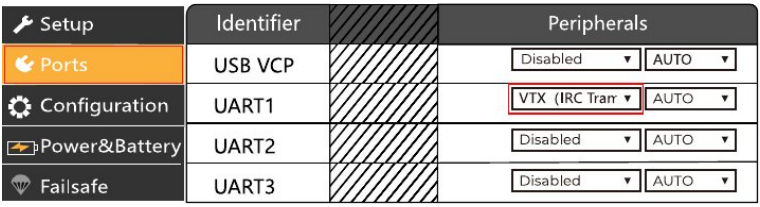
	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Band A	5865	5845	5825	5806	5785	5765	5745	5725
Band B	5733	5752	5771	5790	5809	5828	5847	5866
Band E	5705	5685	5665	5645	5885	5905	5925	5945
Band F	5740	5760	5780	5800	5820	5840	5860	5880
Band R	5658	5695	5732	5769	5806	5843	5880	5917

6. Setting via the flight controller (IRC Tramp)

When the IRC pin is connected to a flight controller running Betaflight, channel, band and power can be set from the OSD menu using the radio transmitter, or in Betaflight Configurator.

6.1 Port setup

Connect the flight controller to the computer and open the *Ports* tab in Betaflight Configurator. For the UART whose TX pin is connected to the IRC pin (UART1 in the sample), select *VTX (IRC Tramp)* in the *Peripherals* column and save the settings (*Save and Reboot*).



UART1 set to VTX (IRC Tramp) on the Ports tab

6.2 Loading the VTX table

① Scan the QR code or open the link geprc.com/rad-400mw-irc-tramp in a browser and copy the CLI dump's VTX table code.

② Open Betaflight Configurator, click on the *CLI* tab, paste the copied code and press Enter on the keyboard.

VTX table

※ The manufacturer's file lists different frequencies for channel A4 and for band E than the table in Chapter 5.4. After loading, verify the actual frequency with your receiver (goggles).

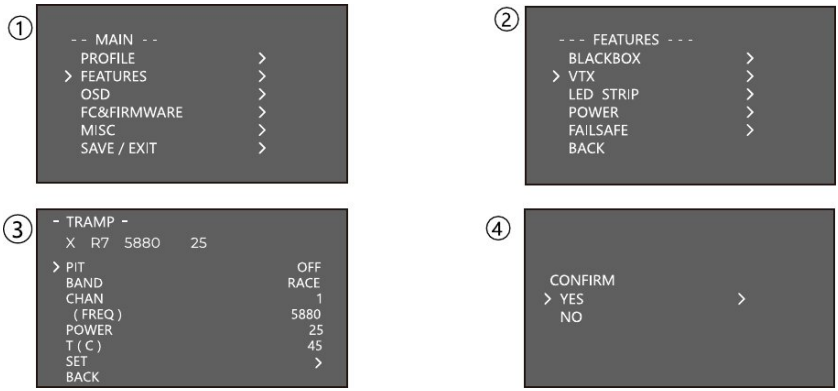
6.3 Setting from the OSD menu

① Turn on the radio transmitter and the drone (motors disarmed). Move THR to the middle, YAW left and PITCH up to enter the OSD menu.

② PITCH moves the cursor up and down; moving the stick to the right ("ELE right" in the original) enters the next item.

③ Menu path: *MAIN* → *FEATURES* → *VTX*. In the *TRAMP* menu you set *BAND*, *CHAN* (channel), *POWER* and *PIT* (PitMode).

④ Send the settings with *SET* and confirm with *CONFIRM* → *YES*. Finally, save and exit (*SAVE / EXIT*).



① main menu, ② FEATURES, ③ TRAMP, ④ confirmation

6.4 RGB LED

The colour of the RGB LEDs on the VTX is controlled by the flight controller. Connect the LED pin of the VTX to the LED pin of the flight controller and set the colours on the *LED Strip* tab in Betaflight Configurator.

7. Maintenance and troubleshooting

7.1 Maintenance and storage

- After every flight, check the antenna mounting and the condition of the u.FL connector. Replace a damaged antenna immediately.
- Keep the transmitter clean and dry; remove dirt with a dry soft brush.
- Do not connect and disconnect the u.FL connector unnecessarily – it is designed for a limited number of mating cycles.
- Store in a dry place at room temperature, away from direct sunlight.

7.2 Troubleshooting

Problem	Possible cause and solution
No image in the goggles	Check the 5 V and GND supply, the antenna and the CAM/VTX wires. Make sure the goggles and the VTX are on the same frequency and the VTX is not in PitMode.
Image without OSD	The VTX wire must come from the flight controller video output (VOUT) and the camera must go to its video input (VIN).
Short range, interference	Check the antenna and u.FL connector, the antenna position away from carbon parts and the power setting. The VTX may have reduced power due to temperature protection.
VTX reduces power	The temperature protection has been activated. Ensure airflow or add a fan.
OSD setting does not work	Check that the IRC pin goes to the TX of the selected UART, the port is set to *VTX (IRC Tramp)* and the VTX table is loaded (Chapter 6.2).
RGB LED does not light	Check the connection of the LED pin to the flight controller and the settings on the *LED Strip* tab.

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 RAD Whoop 5.8G VTX, manufacturer GEPRC (www.geprc.com, info@geprc.com).

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.

- 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.