BLITZ Whoop 1.6W VTX

iFlight · 5.8 GHz video transmitter · 25–1600 mW
User manual



Always install the antenna before powering on. The VTX is set to 25 mW by default – higher power may only be used where regulations permit.

www.rotorama.com

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1. Safety instructions

Read this entire manual before installation and first power-up. The video transmitter (VTX) is a radio device with high output power; incorrect wiring or operation without an antenna can permanently damage it.

- **Always install the antenna BEFORE powering on.** Operating without an antenna can damage the VTX; an installed antenna extends the life of the module.
- Before connecting power, check the **input voltage range (7–34 V)** and the **correct polarity**. Reverse polarity or overvoltage will destroy the electronics.
- Read the wiring diagrams in Chapter 3 before wiring.
- The VTX needs **cooling by airflow**. Keep enough free space around the module when installing it. The VTX can be damaged when used without proper cooling; when overheating, it enables overheat protection and reduces the transmission power or switches it off completely.
- During bench tests, do not leave the VTX powered on at high output power for a long time without airflow.
- The VTX is set to **25 mW** by default. Power levels above 25 mW may only be used where regulations permit (see Chapter 6). The operator is responsible for the selected frequency and power.
- Do not touch the antenna or the heatsink during operation – the heatsink can be hot.
- This product is not a toy. Keep it out of the reach of children.

2. Product description

2.1 Intended use

The iFlight BLITZ Whoop 1.6W is an analog 5.8 GHz video transmitter with selectable output power of 25/400/800/1600 mW and PIT mode. It is designed for installation in FPV drones with a 25.5 × 25.5 mm mounting pattern. It can be powered directly from a 2–8S flight battery. Frequency, band and power are set with the buttons on the VTX or from the flight controller (FC) via the IRC Tramp protocol.

- stable output power, built-in output power self-check,
- fast frequency lock, no start-up interference with other pilots,
- VTX telemetry via IRC Tramp (control from Betaflight and OSD).

2.2 Specifications

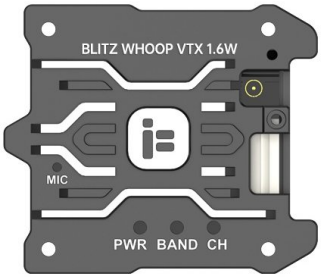
Designation	BLITZ WHOOP VTX 1.6W
Frequency band	5.8 GHz, 48 channels (bands A, B, E, F, R, L) – see Chapter 4.3
Output power	PIT / 25 / 400 / 800 / 1600 mW; default 25 mW
Input voltage	7–34 V DC (2–8S)
Power output	5 V (for the camera)
Antenna connector	IPEX (u.FL)
Input connector	SH1.0, 8-pin with lock catch
VTX telemetry	IRC Tramp
Dimensions	37 × 31.5 × 10 mm
Mounting pattern	25.5 × 25.5 mm, Φ1.6 mm
Weight	16.5 g (±1 g), excluding antenna

2.3 Package contents

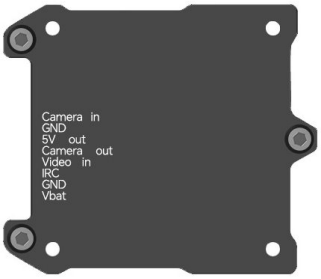
- 1× BLITZ Whoop 1.6W VTX video transmitter
- supplied accessories (connection cable, antenna) are listed on the retailer's product page at www.rotorama.com

※ The camera, the antenna (unless listed in the package contents), the flight controller and the battery are not included.

2.4 Parts overview



Top side: IPEX antenna connector (top right), buttons and LEDs marked PWR, BAND and CH.



Bottom side with connector pin labels.

- **PWR** – power button and LED for output power and PIT mode,
- **BAND / CH** – band and channel button and LEDs,
- **IPEX antenna connector** – for an antenna or SMA pigtail,
- **SH1.0 8-pin connector** – power, video and IRC Tramp control.

3. Wiring

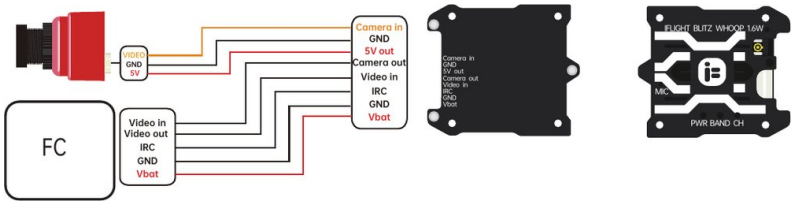
3.1 Ports

Pin	Function
Camera in	camera video input
GND	negative (ground)
5V out	5 V voltage output (camera power)
Camera out	camera video output (to FC)
Video in	video signal input (from FC or camera)
IRC	IRC Tramp signal input (from an FC UART)
GND	negative (ground)
Vbat	7–34 V DC positive input (2–8S)

The VTX can be wired in three ways. In all cases, install the antenna before connecting the battery.

3.2 Connect VTX to FC (camera to VTX)

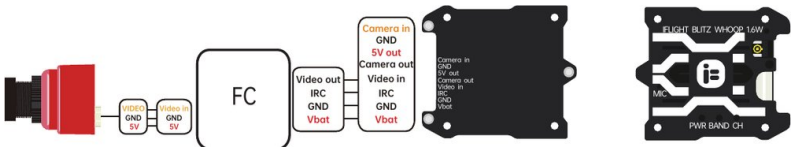
The camera is connected to the VTX (Camera in, powered from 5V out). The VTX passes the camera image to the FC (Camera out → Video in on the FC); the FC adds the OSD and returns it (Video out on the FC → Video in on the VTX). IRC is connected to an FC UART.



Wiring: camera to VTX, VTX to FC.

3.3 Connect VTX to FC (camera to FC)

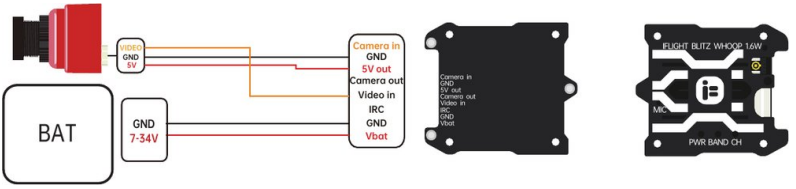
The camera is connected directly to the FC. The VTX receives the image with OSD from the FC Video out (→ Video in); IRC is connected to a UART, power to Vbat and GND.



Wiring: camera to FC.

3.4 Camera to VTX without FC

Without an FC, the VTX is powered directly from the battery (Vbat 7–34 V and GND), the camera is powered from 5V out and its video signal goes to Video in. In this case, settings are changed with the buttons only.



Wiring: camera to VTX without FC.

4. Button operation

4.1 PWR button (power)

Action	Function
Short press	switches to the next output power level
Press and hold 2 s	enters or exits PIT mode; solid green LED = PIT mode

Green LED (output power): the number of flashes indicates the selected output power; 1 flash = 25 mW.

PIT mode: the VTX transmits at minimum power only. Use it when powering up and setting up the drone near other pilots so you do not interfere with their video. Exit PIT mode and check the selected power before flying.

※ The manufacturer's instruction sheet gives 100 mW and 200 mW for 2 and 3 flashes, which does not match the power levels of this VTX (25/400/800/1600 mW). Always verify the actual power setting in the OSD or in Betaflight.

4.2 BAND / CH button (band and channel)

Action	Function
Short press	switches the channel; the number of **red** LED flashes indicates channel 1–8
Press and hold 2 s	switches the band; the number of **blue** LED flashes indicates the band (A–L)

4.3 Frequency table (MHz)

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

Without a special authorisation, the VTX may only be operated in the Czech Republic on frequencies within 5725–5875 MHz (see Chapter 6). Do not use band L or any frequency outside this range.

5. Setup via the flight controller (IRC Tramp)

When the IRC pin is connected to a UART of an FC running Betaflight, band, channel and power can be set from Betaflight Configurator, from the OSD or with a switch on the radio.

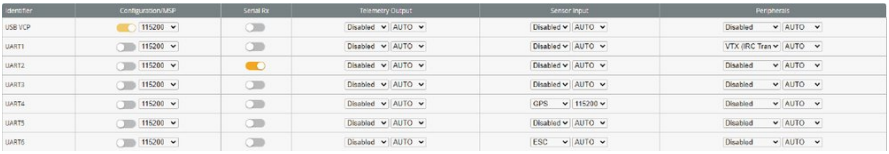
5.1 Enabling the protocol on a UART

① Connect the IRC wire to the TX pad of the selected FC UART.

② In Betaflight Configurator, open the *Ports* tab.

③ For that UART, select *VTX (IRC Tramp)* in the *Peripherals* column.

④ Click *Save and Reboot*.



Example: IRC Tramp enabled on UART1 (Ports tab in Betaflight Configurator).

5.2 Betaflight VTX table

For Betaflight to know the frequencies and power levels of the VTX, load the VTX table into the FC. The manufacturer provides it for download on the product page at shop.iflight.com (*Downloads* tab) in two versions: **EU** and **US**. In Europe, use **only the EU version**, which contains only frequencies within the permitted range.

① In Betaflight Configurator, open the *Video Transmitter* tab.

② Load the table file (JSON format) with *Load from file*.

③ Click *Save*.

④ Select band, channel and power in the same tab or in the OSD.

The table contains the power levels 25 / 400 / 800 / 1600 mW (the highest level is shown as *1K6* in the OSD).

6. Frequencies, power and operation

6.1 The law of the country of use applies

Radio equipment and drone operation are governed by European Union regulations, but national implementing rules differ from country to country – permitted frequency bands, maximum transmission power and drone operating conditions. The information in this chapter describes the situation in the Czech Republic. If you operate the VTX in another country, you must comply with the regulations of the country in which you use it.

6.2 Frequencies and power in the Czech Republic

Band	Max. power	Regulation
5725–5875 MHz	25 mW e.i.r.p.	CTU general authorisation VO-R/10

- Without further authorisation, use only **25 mW** and frequencies within 5725–5875 MHz (EU version of the VTX table).
- According to the manufacturer, power levels above 25 mW require a **HAM licence** or approval by the local authorities. They may only be used under the conditions of such an authorisation.
- The operator is responsible for the frequency and power settings.
- The highest selectable output power of the VTX is 1600 mW.

6.3 Operating an FPV drone

Drone operation is governed by Regulations (EU) 2019/947 and 2019/945 and by national rules. When flying with FPV goggles, an unmanned aircraft observer must stand next to you and keep the drone in visual line of sight. A drone with a camera requires operator registration. Current rules in the Czech Republic are published by the Civil Aviation Authority (www.caa.gov.cz).

7. Maintenance and troubleshooting

7.1 Maintenance

- Check the IPEX antenna connector and the antenna regularly – a loose or damaged connector reduces range and can damage the VTX.
- Protect the VTX from moisture, dust and conductive debris (carbon dust from the frame).
- Check the cable and SH1.0 connector for pinching or chafing.
- Keep the airflow to the heatsink unobstructed.

7.2 Troubleshooting

Problem	Possible cause and solution
No video	Check power (7–34 V, polarity), the video wiring according to Chapter 3 and that band and channel match the goggles.
Weak video, short range	Check the antenna and IPEX connector; make sure PIT mode or low power is not active.
Power or video drops during flight	The VTX is overheating and overheat protection has kicked in. Ensure airflow around the module.
Betaflight cannot control the VTX	Check the IRC connection to the UART TX pin, the *VTX (IRC Tramp)* setting in the *Ports* tab and the loaded VTX table.
No OSD	The video must pass through the FC (wiring 3.2 or 3.3).

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:** the type designation (BLITZ WHOOP VTX 1.6W) is marked directly on the product.

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.