



Zeus nano VTX

Analog 5.8 GHz video transmitter, 25–350 mW
User manual



Never power the transmitter without an antenna connected. In the Czech Republic, without a special authorisation, a maximum of 25 mW e.i.r.p. in the 5725–5875 MHz band is permitted - see Chapter 3.

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1. Safety instructions

Read this entire manual before installation and first power-up, and keep it for future reference. The manual is part of the product; if you pass the product on to another user, hand over the manual as well.

1.1 Before you start

- The Zeus nano VTX is a component for installation in an FPV drone or model. Installation requires soldering, basic electronics knowledge and the ability to configure a flight controller (FC). If you lack this experience, have the installation done by an experienced person.
- This product is not a toy. Keep it out of the reach of children – small parts and the antenna can be inhaled or swallowed.
- Solder only with the power disconnected and in a well-ventilated workplace. Make sure no solder bridges adjacent pads.
- Before connecting the drone battery, check with a multimeter that there is no short circuit on the power pads.

1.2 Antenna and transmission

- **Never power the transmitter without an antenna connected.** Operating without an antenna or with a damaged antenna can permanently damage the transmitter.
- Do not touch the antenna or hold it close to your body while transmitting.
- The transmitter operates in the 5.8 GHz band, which is also used by other devices (Wi-Fi, other pilots). Agree on channels with other pilots before powering up so that you do not interfere with their video link – interference can cause loss of video and a crash of another drone.
- The user is responsible for setting the frequency and power in compliance with the regulations – see Chapter 3.

1.3 Power supply and heat

- Power the transmitter **only with 5 V DC**. Connecting a higher voltage (e.g. a 9 V output or the battery directly) will destroy the transmitter.
- Make sure the 5 V supply on the flight controller can deliver the current required for the selected power level (up to 400 mA at 350 mW, see Chapter 2.4), with a reserve for other connected devices.
- The transmitter heats up during operation. On the bench and without airflow, operate it only briefly and at the lowest power or in PIT mode. Do not touch hot components.
- Protect the transmitter from moisture, dust and conductive debris (metal filings, carbon dust from the frame).

2. Product description

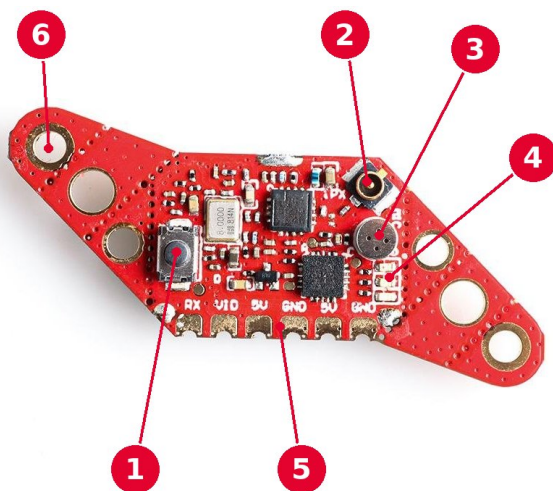
The HGLRC Zeus nano VTX is a miniature analog video transmitter (VTX) for the 5.8 GHz band with selectable output power of 25, 100, 200 and 350 mW and a PIT mode. It has a built-in microphone, so it transmits sound together with the video. The “boomerang” shaped board has mounting holes for 16 × 16, 20 × 20 and 25.5 × 25.5 mm patterns and therefore fits most common stacks. Band, channel and power can be set with the button or via the flight controller using the IRC Tramp protocol.

2.1 Package contents

Qty	Item
1	Zeus nano VTX video transmitter
1	linear brass antenna with IPEX connector
1	IPEX – SMA adapter cable
6	connection cables for the transmitter

※ The package does **not** include a flight controller (FC), camera, FPV goggles or video receiver, screws and standoffs, or other antennas.

2.2 Parts overview



Component side view

- ① Function button – manual setting of the transmitter (Chapter 5.2).
- ② IPEX (u.FL) antenna connector.
- ③ Built-in microphone.

- ④ Indicator LEDs: red = power, blue = band, green = channel (Chapter 5.1).
- ⑤ Solder pads (from left): RX, VID, 5V, GND, 5V, GND (Chapter 4.2).
- ⑥ Mounting holes for 16 × 16, 20 × 20 and 25.5 × 25.5 mm patterns (Chapter 4.1).

2.3 Technical data

Model	HGLRC Zeus nano VTX
Type	analog 5.8 GHz video transmitter
Supply voltage	5 V DC
Output power	PIT / 25 / 100 / 200 / 350 mW
Channels	40 channels, bands A, B, E, F, R
Frequencies (per manufacturer's table)	5658–5917 MHz
Control	function button; IRC Tramp via flight controller
Audio	built-in microphone
Antenna connector	IPEX (u.FL)
Mounting holes	16 × 16 mm and 25.5 × 25.5 mm (M2), 20 × 20 mm (M3)
Dimensions	18.6 × 13.6 × 6 mm
Weight	2.4 g
Marking	CE

2.4 Power levels

Current draw at the individual power levels according to the manufacturer:

Power	PIT	25 mW	100 mW	200 mW	350 mW
Current at 5 V	75 mA	180 mA	280 mA	330 mA	400 mA

3. Legal conditions of use

3.1 The law of the country of use applies

Radio equipment is placed on the market in the European Union under common rules, but the permitted frequency bands and maximum transmit powers are set by each country and 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**. Operation of the drone in which the transmitter is installed is additionally governed by Regulation (EU) 2019/947 and national aviation regulations.

3.2 Frequencies and transmit power in the Czech Republic

The transmitter can be set to frequencies and power levels that are **not** permitted in the Czech Republic without a special authorisation. Without an authorisation, the transmitter may be operated under the Czech Telecommunication Office (ČTÚ) general authorisation No. VO-R/10 (short-range devices) only under the following conditions:

Band	Max. power	Regulation
5725–5875 MHz	25 mW e.i.r.p.	VO-R/10, Art. 3(2)(k)

- In the Czech Republic, without an authorisation, use **only 25 mW** (or PIT mode) and **only channels with a centre frequency in the 5725–5875 MHz band**. The limit applies to radiated power (e.i.r.p.), i.e. including antenna gain; with a gain antenna, 25 mW output may exceed the limit.
- Under VO-R/10, only a built-in antenna or an antenna specified by the manufacturer may be used; additional RF amplifiers are prohibited.
- Power levels of 100, 200 and 350 mW and channels outside the 5725–5875 MHz band may be used in the Czech Republic only within the amateur radio service – with a certificate of competence, a ČTÚ licence to operate the station, and only on frequencies allocated to that service.
- The user is responsible for setting the frequency and power. Outside the Czech Republic, the limits of the respective country apply.

3.3 Frequency table

Channel frequencies in MHz according to the manufacturer's table. Channels marked with an asterisk (*) lie outside the 5725–5875 MHz band and may not be used in the Czech Republic without an authorisation.

Band	1	2	3	4	5	6	7	8
A	5865	5845	5825	5805	5785	5765	5745	5725
B	5733	5752	5771	5790	5809	5828	5847	5866
F	5740	5760	5780	5800	5820	5840	5860	5880*
R	5658*	5695*	5732	5769	5806	5843	5880*	5917*

※ Channel A8 (5725 MHz) lies exactly at the lower band edge; given the bandwidth of the analog signal, part of the emission extends below it. We recommend not using it.

※ Band E: the manufacturer's table for band E contains repeated values that cannot be unambiguously assigned to channels, so it is not reproduced here. Do not use band E in the Czech Republic without an authorisation.

4. Installation

4.1 Mounting

The mounting holes at both ends of the board allow the transmitter to be fitted in a stack with a 16 × 16 mm or 25.5 × 25.5 mm pattern (M2 screws) or 20 × 20 mm (M3 screws). Place the transmitter on the stack standoffs and secure it so that the board does not touch any conductive parts of the frame or neighbouring boards.

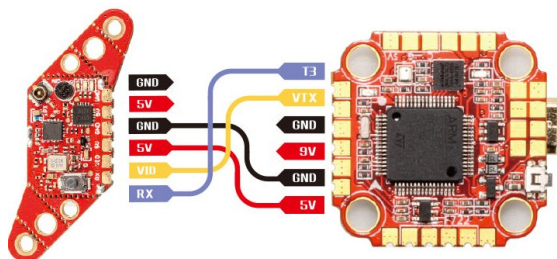


Mounting holes and corresponding patterns

- Use insulating washers or standoffs between the transmitter and neighbouring boards; a short circuit on the underside of the board can destroy both the transmitter and the flight controller.
- Position the transmitter so that air can flow around it and so that the function button and LEDs remain accessible where possible.

4.2 Wiring to the flight controller (FC)

Connect the transmitter to the flight controller according to the manufacturer's diagram. The analog camera signal goes to the flight controller (for the OSD) and from its VTX output to the VID pad of the transmitter.



Manufacturer's wiring diagram (transmitter on the left, example flight controller on the right)

VTX pad	Function	Connect to FC
RX	IRC Tramp control	TX of a free UART (T3 in the diagram)
VID	video input	VTX video output
5V	5 V supply	5V
GND	ground	GND

- The board has two pairs of 5V/GND pads. One of them is connected in the manufacturer's diagram; one pair is sufficient to power the transmitter.
- **Never connect a higher voltage to the 5V pad** (e.g. the 9 V output of the flight controller).
- After soldering, inspect the joints with a magnifier and use a multimeter to verify there is no short circuit between 5V and GND.

4.3 Antenna

- Fit the antenna or the IPEX – SMA adapter cable onto connector ② by pressing straight down until it clicks. The IPEX connector is fragile – do not attach it at an angle and do not remove it by pulling the cable.
- Secure the antenna and cable to the frame (cable tie, holder) so that they do not put force on the connector in flight or in a crash. A loose or torn-off antenna can damage the transmitter.
- Route the antenna away from the propellers and as far as possible from carbon frame parts, which block the signal.
- If you use a different antenna, remember that the 25 mW e.i.r.p. limit includes the antenna gain (Chapter 3.2).

5. Settings

Band, channel and power of the transmitter can be set with the function button directly on the board or, more conveniently, from the flight controller via the IRC Tramp protocol (in the OSD using the radio transmitter or in the configuration software). We recommend setting it via the flight controller.

5.1 LED indication

The board has three LEDs: **red** shows the power level, **blue** the band and **green** the channel. The red LED indicates the power as follows:

Red LED	Power
solid on	PIT
1 flash and pause	25 mW
2 flashes and pause	100 mW
3 flashes and pause	200 mW
4 flashes and pause	350 mW

5.2 Function button

Function button ① is used to set the transmitter manually without a flight controller. The manufacturer has not published the button operating procedure (press lengths and their functions). For reliable setting, therefore, use the flight controller (Chapter 5.3) and always verify the current band, channel and power in the goggles or in the OSD.

5.3 Control via the flight controller (IRC Tramp)

Procedure in Betaflight Configurator (similar in other firmwares):

- ① Connect the RX pad of the transmitter to the TX of a free UART on the flight controller (Chapter 4.2).
 - ② On the *Ports* tab, set the *Peripherals* column of this UART to *VTX (IRC Tramp)* and save.
 - ③ On the *Video Transmitter* tab, load or fill in a VTX table matching this transmitter – bands and frequencies according to Chapter 3.3 and power levels 25 / 100 / 200 / 350 mW. Disable channels not permitted in the country of use (frequency 0).
 - ④ Select band, channel and power and save. Verify the change using the LEDs (Chapter 5.1) and in the goggles.
 - ⑤ Band, channel and power can then also be changed from the OSD using the radio transmitter (VTX menu).
- ※ The flight controller firmware stores the VTX table settings; check them again after a firmware update or a settings reset.

5.4 PIT mode

In PIT mode the transmitter transmits only at minimum power (the red LED is solid on). The mode is used for setting up and checking the drone on the bench or in the pits without interfering with pilots who are currently flying. Switch PIT mode off and set the flight power before take-off.

6. Operation

6.1 Pre-flight check

- The antenna is connected, undamaged and secured to the frame.
- Band, channel and power comply with the regulations of the country of use and the agreement with other pilots.
- The goggles or video receiver are tuned to the same frequency; the image is clear and without dropouts.
- PIT mode is switched off before take-off.
- Cables and the antenna cannot get into the propellers.

6.2 During and after the flight

- If the image deteriorates, fly closer and land. Obstacles, buildings and vegetation strongly attenuate the 5.8 GHz signal.
- After landing, disconnect the battery as soon as possible – on the ground without airflow the transmitter heats up quickly.
- After a crash, check the antenna, the IPEX connector and the solder joints before powering the transmitter again.

7. Maintenance and troubleshooting

7.1 Maintenance and storage

- Clean the transmitter with a dry soft brush; do not use water or solvents.
- Regularly check the IPEX connector, the antenna cable and the solder joints.
- Replace a damaged antenna immediately; do not power the transmitter with a damaged antenna.
- Store in a dry place at room temperature, protected from mechanical damage.

7.2 Troubleshooting

Problem	Possible cause and solution
No LEDs light up	The transmitter has no power – check the 5V and GND joints and the 5 V supply on the flight controller.
LEDs on, no image in the goggles	The goggles are tuned to a different channel; check band and channel. Verify the VID connection and the camera connection to the flight controller.
Image present, but no OSD	The camera is connected directly to the transmitter instead of the flight controller, or the OSD is disabled in the configuration.
Setting from the OSD does not work	Check the RX → TX connection to the flight controller, the VTX (<i>IRC Tramp</i>) setting on the correct UART and the VTX table.
Short range, interference	Check the antenna and connector, antenna placement away from carbon parts, the power (still in PIT?) and other pilots' channels.
The transmitter is very hot	Heating on the ground without airflow is normal; limit bench operation time or use PIT mode.
Image drops out after increasing power	The 5 V supply may be insufficient – check the current draw of other devices on the same 5 V rail (Chapter 2.4).

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.com

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 manufacturer and type designation (HGLRC ZEUS 5.8GHz VTX NANO) is printed on the shielding cover of the transmitter.

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

Rights of the buyer under Czech law

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.