RunCam Nano 4

800TVL analogue FPV camera · NTSC
User manual



Read this manual before installation. Power the camera only with 3.3–5.5 V and make sure the polarity is correct.

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

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1. Product description

1.1 Intended use

RunCam Nano 4 is a miniature analogue FPV camera with a 1/3" CMOS sensor and a horizontal resolution of 800TVL. It is designed to be installed in small FPV drones, typically whoops and micro drones. It captures the image that an analogue video transmitter (VTX) sends to the pilot's FPV goggles or monitor.

The camera measures 14 × 14 × 14 mm and weighs 2.9 g. The 2.1 mm lens with M8 thread has a field of view of 155°. The camera works exclusively in the **NTSC** video standard. Electronic shutter, gain (AGC) and dynamic range (D-WDR) are controlled automatically.



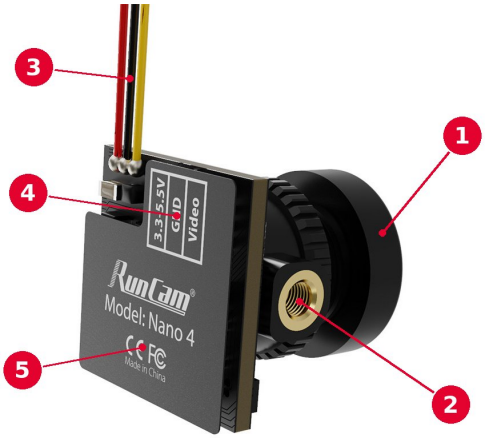
RunCam Nano 4 with connection cable

1.2 Specifications and package contents

Model	RunCam Nano 4 (NTSC), manufacturer code NANO4-N
Image sensor	1/3" CMOS
Horizontal resolution	800TVL
Lens	2.1 mm, M8 thread, field of view 155°
Video standard	NTSC
S/N ratio	> 50 dB
Electronic shutter	automatic
Auto gain control (AGC)	automatic
D-WDR	automatic
Min. illumination	0.01 lux at F1.2
Day / night	colour image
Power supply	DC 3.3–5.5 V
Current draw	160 mA at 5 V; 180 mA at 3.3 V

Housing material	ABS
Weight	2.9 g
Dimensions	14 × 14 × 14 mm
Package contents	1× RunCam Nano 4 camera
Not included	video transmitter (VTX), flight controller (FC), FPV goggles or monitor, mounting screws and camera mount
Product marking	Model: Nano 4 (label on the back of the camera)

1.3 Parts, wiring and dimensions



Back view of the camera

① 2.1 mm lens with M8 thread

② Threaded hole for an M2 screw (on both sides of the camera)

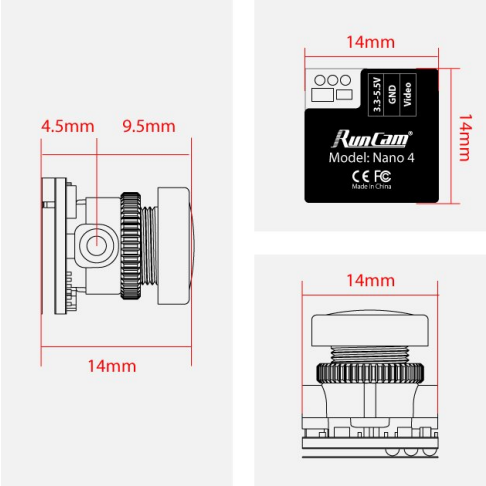
③ Connection wires – power, GND and video

④ Pad marking: 3.3-5.5V, GND, Video

⑤ Label with model designation and CE marking

Pad	Wire colour	Connect to
3.3-5.5V	red	the camera power output (3.3–5.5 V) on the flight controller or VTX
GND	black	ground (GND)
Video	yellow	the camera input (CAM / VIN) on the flight controller or VTX

※ The wire colours correspond to the manufacturer's photos. The pad marking on the back of the camera is always decisive.



Camera dimensions (in mm)

The camera is fixed with two M2 screws in the threaded holes on its sides. The axis of the mounting holes is 4.5 mm from the back of the camera (see figure).

2. Use

2.1 What you will need

- a drone or frame with a camera slot 14 mm wide and a matching mount,
- an analogue video transmitter (VTX) or a flight controller (FC) with a camera input and a 3.3–5.5 V power output,
- analogue FPV goggles or a monitor that can display an NTSC image,
- two M2 screws of suitable length and a small screwdriver,
- depending on the connector on the flight controller or VTX, possibly a soldering iron.

2.2 Mounting and wiring

① Disconnect the drone battery. Always wire the camera with the power off.

② Check which voltage the camera power output on the flight controller or VTX supplies. It must be within **3.3–5.5 V**. Do not connect the camera directly to the battery or to an output with a higher voltage.

③ Wire the camera according to the table in chapter 1.3: **3.3-5.5V** to the power output, **GND** to ground, **Video** to the camera input. If the cable connector does not fit the mating connector, solder the wires directly to the pads.

④ Place the camera in the mount and fix it with two M2 screws in the threaded side holes. Do not overtighten the screws so as not to damage the thread or the housing.

⑤ Set the camera tilt and check that no propellers, frame parts or cables protrude into its field of view.

⑥ Connect the battery, switch on the goggles or monitor on the VTX channel and check the image.

Check the polarity before switching on for the first time. Reversing power and GND or a voltage higher than 5.5 V can permanently damage the camera.

2.3 NTSC video standard

The camera outputs an image in the NTSC standard only. Most analogue FPV goggles and monitors detect the standard automatically. If there is no image, or it is black and white or “rolling”, switch the display device to NTSC or to automatic selection.

If a flight controller running Betaflight overlays an OSD on the image, set *Video Format* on the *OSD* tab of Betaflight Configurator to *NTSC* or *Auto*.

2.4 Troubleshooting

Problem	Possible cause and solution
No image	Check the camera power supply (3.3–5.5 V), the GND and Video connections, that the VTX is switched on and that the VTX and goggles are on the same channel.
Black-and-white, flickering or rolling image	The goggles, monitor or flight controller OSD are set to PAL. Set NTSC or Auto.
Lines and interference when throttling up	Interference from the motor power supply. Power the camera from a filtered output of the flight controller or VTX and route the camera wires away from the power cables and electronic speed controllers (ESC).
Blurry image	Clean the lens. If the lens has turned after an impact, carefully turn it back to the position with a sharp image.

2.5 Safety and care

- Connect and disconnect the camera only with the power disconnected. Do not exceed 5.5 V and make sure the polarity is correct.
- Protect the camera from moisture, dust and impacts. After a crash, check the lens, the cable and the solder joints.
- Clean the lens only with a dry soft cloth or a lens cleaning wipe.
- The pilot is responsible for operating a drone with the camera. The law of the country in which you operate the drone is decisive – including operator registration, privacy protection and operating limits.
- The product contains small parts. Keep it out of the reach of small children.
- The product is intended for persons aged 14 and over.

3. Information for the EU and Czech Market

3.1 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.cz

3.2 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 (Nano 4) is given on the label on the back of the camera.

3.3 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.

4. 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 3.1.
- 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.