Ant Lite

Caddx analog FPV camera
User manual



Read this manual carefully before installation and first use, and keep it for future reference.

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1. Safety instructions

The camera is an electronic component intended to be built into an FPV drone or model. Installation should be carried out by a user with basic experience in soldering and wiring FPV drone electronics.

- Always connect and disconnect the camera **with the power off** – disconnect the drone battery and the USB power supply.
- The supply voltage must be within **DC 5–25 V**. A higher voltage or reversed polarity will permanently damage the camera.
- Before connecting the battery for the first time, check the wiring and make sure that no wire or solder joint causes a short circuit. We recommend using short-circuit protection (smoke stopper).
- Do not expose the camera to water, humidity above 80 %, dust or temperatures outside the range −20 °C to +60 °C.
- Do not touch the lens with your fingers and do not tamper with the image sensor. The electronics are sensitive to static electricity – ground yourself before handling.
- The product contains small parts. Keep it out of the reach of children.
- Do not modify the camera electronics. Damage caused by incorrect wiring, overvoltage, a crash or modification is not a product defect.

2. Product description

2.1 What the camera is for

The Caddx Ant Lite is a miniature analog FPV camera weighing 1.7 g, intended primarily for small tinywhoop-type drones. It has a 1/3" CMOS sensor, 1200 TVL horizontal resolution, a 1.8 mm lens with a 165° field of view, Global WDR and 3D DNR (noise reduction), and supports an OSD menu.

Unlike conventional nano-format cameras, the camera has no mounting holes on its sides – it is installed in the drone in a plastic holder. The camera image (CVBS signal) is fed to the video transmitter (VTX), or via a flight controller (FC) with OSD.

2.2 Package contents



Package contents (illustrative photo by the manufacturer)

Item	Quantity
Caddx Ant Lite camera	1 pc
3-pin silicone cable	1 pc

※ The OSD menu control board (joystick) and the camera holder are not included.

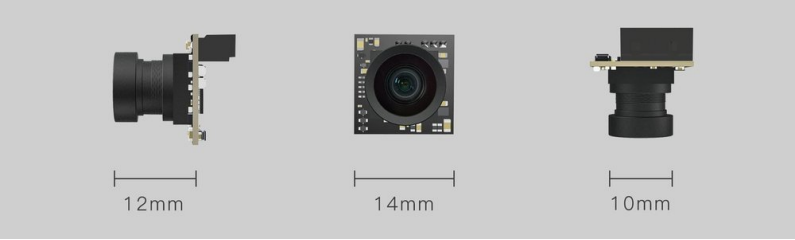
2.3 Specifications

Data provided by the manufacturer.

Parameter	Value
Model	Caddx Ant Lite (FPV Cycle Edition)
Manufacturer code	MN06-20B43 (4:3) MN06-20B69 (16:9)
Image sensor	1/3" CMOS
Horizontal resolution	1200 TVL
Video standard	NTSC and PAL (switchable)
Menu	supported
Image aspect ratio	4:3 or 16:9 (depending on variant)
Synchronization	internal
Electronic shutter	PAL: 1/50 – 1/100,000 s NTSC: 1/60 – 1/100,000 s
Signal-to-noise ratio	> 52 dB (AGC off)
Video output	CVBS
Lens	1.8 mm / F2.5
Field of view (FOV)	165°
Min. illumination	0.001 lux
Automatic gain control (AGC)	yes
Backlight compensation (BLC)	yes
WDR	Global WDR
Noise reduction (DNR)	3D DNR
Dimensions	14 × 14 mm
Supply voltage	DC 5–25 V
Operating temperature	−20 °C to +60 °C
Operating humidity	20–80 %
Weight	1.7 g (net)

3. Installation

The camera has no side mounting holes. It is fitted in a plastic holder (e.g. in the canopy or frame of a tinywhoop-type drone), which is not included. Choose the holder according to the camera dimensions shown in the figure below.

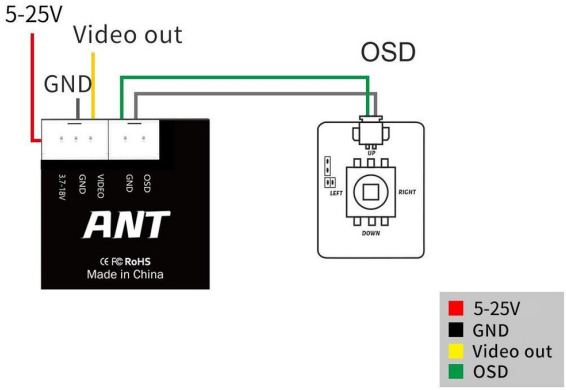


Camera dimensions according to the manufacturer (side, front and top view)

- Insert the camera into the holder without force and do not press on the lens or on the components on the board.
- The camera must sit firmly in the holder – vibration and a loose camera degrade the image.
- Route the wires so that they do not touch the propellers, sharp edges of the frame or hot parts (ESCs, video transmitter).
- Choose the camera tilt angle according to your flying style; a smaller tilt is suitable for the first flights.
- Before inserting the camera into the holder, make sure you can reach the OSD connector if you want to change the camera settings later.

4. Wiring

4.1 Wiring diagram and wires



Wiring diagram according to the manufacturer. Left: camera, right: OSD control board (not included).

The camera has two connectors: a 3-pin connector for power and video and a 2-pin connector for the OSD control board. The supplied cable connects to the 3-pin connector.

Wire colour	Signal	Connection
red	5–25 V	power supply (positive)
black	GND	ground (negative)
yellow	Video out	video input of the video transmitter (VTX) or flight controller (FC)
green	OSD	OSD control board (2-pin connector)

4.2 Power supply

- Connect the power to an output whose voltage is within **DC 5–25 V** – typically the 5 V (BEC) output of the flight controller or video transmitter.
- **Do not connect the camera directly to a 1S battery**: the voltage of a single cell (max. 4.20 V, LiHV 4.35 V) is lower than the minimum supply voltage of the camera.
- **Do not connect the camera directly to a 6S battery**: a fully charged 6S LiPo has 25.2 V (6 × 4.20 V), i.e. more than 25 V.
- Connect the camera ground (GND) to the ground of the device that receives the video signal. A common ground reduces image interference.

※ The board may show a different printed voltage; the DC 5–25 V range from the specifications is binding.

5. Commissioning and settings

5.1 First power-up

① Check the wiring according to Chapter 4 – power polarity and the video wire connection.

② Remove the protective film from the lens, if present.

③ Switch on the FPV goggles or monitor and set them to the video transmitter channel.

④ Connect the drone power (preferably via short-circuit protection) and check that the camera image is displayed.

⑤ If there is no image, or it is black and white or rolling, proceed according to Chapter 7.2.

5.2 OSD menu

The camera supports a menu in which the image settings can be changed. An OSD control board (joystick), which is **not included**, is required to operate it.

① With the power off, connect the OSD control board to the camera's 2-pin connector (GND and OSD).

② Switch on the power and watch the image in the goggles or on the monitor.

③ **Press the middle button** of the control board to enter the menu.

④ The UP, DOWN, LEFT and RIGHT directions are used to move through the menu and change values.

The manufacturer does not describe the individual menu items. Change the settings one at a time and check the result in the image after each change. Disconnect the control board when you have finished.

5.3 Video standard and aspect ratio

- The camera supports the **PAL** and **NTSC** video standards (switchable). Select the standard supported by your goggles or monitor. An incorrect standard may result in a black-and-white, rolling or missing image.
- The image aspect ratio is determined by the **purchased variant**: 4:3 (code MN06-20B43) or 16:9 (code MN06-20B69). For correct display, set the same aspect ratio in the goggles or on the monitor.

6. Use on a drone – legal notes

6.1 The law of the country of operation applies

Regulations (EU) 2019/947 and 2019/945 apply in all member states of the European Union, but national implementing rules differ from country to country – registration portals, minimum pilot age, geographical zones, compulsory insurance, permitted frequency bands and maximum transmission power. The information in this chapter describes the situation in the Czech Republic. If you operate a drone in another country, you must comply with the regulations of the country in which you fly.

6.2 Operator registration and privacy

- A drone equipped with a camera carries a sensor capable of capturing personal data. Its operator must therefore **register** under Article 14(5) of Regulation (EU) 2019/947, **even for a drone weighing less than 250 g**. In the Czech Republic, registration is handled by the Civil Aviation Authority (ÚCL). The registration number must be displayed on the drone.
- In the open category, flying with FPV goggles is only possible with an observer who watches the drone by direct sight.
- Respect the privacy of other people when flying and filming. Recording and publishing footage showing identifiable persons is subject to data protection rules (GDPR).

7. Maintenance and troubleshooting

7.1 Camera care

- Clean the lens with a soft optical cloth, without solvents or abrasives.
- After a crash, check the lens, the camera mounting in the holder, the connectors and the wires.
- Store the camera in a dry place, away from direct sunlight, ideally in its original box.

7.2 Troubleshooting

Problem	Possible cause and solution
No image	Check the power supply (5–25 V, polarity), the yellow video wire connection and the common ground. Make sure the goggles are on the video transmitter channel.
Black-and-white or rolling image	The PAL/NTSC video standard does not match the goggles or monitor – make them the same (Chapter 5.3).
Interference and stripes in the image	Interference from the power supply or motors. Power the camera from a regulated output (BEC), shorten and twist the wires, check the ground.
Image distorted or cropped	The aspect ratio in the goggles does not match the camera variant (4:3 / 16:9).
Blurred image	Dirty or damaged lens. Clean it (Chapter 7.1).
Cannot enter the menu	Check the connection of the OSD control board to the GND/OSD connector and press the middle button.

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 (Caddx Ant Lite) is given on the product packaging; the variant code (MN06-20B43 or MN06-20B69) is given in Chapter 2.3.

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.