



Mikro 3"

AlfaRC

Frame for a 3" FPV drone – user manual



Read this manual carefully before building and before the first flight, and keep it for future reference.

www.rotorama.com

Contents

1. Product description

1.1 Intended use

1.2 Technical data and package contents

2. Use

2.1 What you need for the build

2.2 Build procedure

2.3 Safety

2.4 Operating the finished drone

2.5 Maintenance

3. Information for the EU and Czech Market

3.1 Importer and responsible person in the EU

3.2 Disposal

4. Warranty and rights arising from defective performance

1. Product description

1.1 Intended use

The AlfaRC Mikro 3" is a small freestyle frame for building an FPV drone with propellers up to 3" in diameter. It is suitable for both analogue and digital video transmission. The arms are made of 4 mm thick carbon fibre composite; the front section is a 3D printed pod for a Nano size (14 mm) FPV camera with an integrated mount for an external HD camera.

The frame is supplied without electronics. It accepts motors with 9 mm and 12 mm mounting hole spacing, a flight controller (FC) and ESC stack with 20×20 mm or 25.5×25.5 mm hole spacing and, in the rear section, an additional board with 20×20 mm hole spacing, for example a Caddx Vista digital video transmitter. Thanks to the 3D printed front section, the frame can also be adapted for DJI O3 digital video transmission.



AlfaRC Mikro 3" – assembled frame

1.2 Technical data and package contents

Product designation	AlfaRC Mikro 3" (manufacturer AlfaRC)
Type	frame for an FPV drone (quadcopter)
Diagonal motor spacing	140 mm
Maximum propeller size	3"
Stack mounting holes	20×20 mm M2 / 25.5×25.5 mm M2
Motor mounting holes	9 mm / 12 mm M2 (3 screws)
Arm thickness	4 mm
FPV camera size	14 mm (Nano)
Rear mounting position	board with 20×20 mm hole spacing (e.g. Caddx Vista)
Weight	45 g (including 3D printed parts)
Package contents	1× frame

Not included

motors, flight controller (FC), ESCs, FPV camera, video transmitter (VTX), receiver, external HD camera, propellers, battery

2. Use

2.1 What you need for the build

- 4 brushless motors with **9 mm or 12 mm** mounting hole spacing and **M2** threads (3-screw mounting),
- a flight controller (FC) and ESC stack or an AIO board with **20×20 mm or 25.5×25.5 mm** hole spacing (M2),
- a **Nano (14 mm)** FPV camera,
- a video transmitter (VTX) – analogue or digital (e.g. Caddx Vista in the rear 20×20 mm mounting position),
- a radio receiver, propellers of **max. 3"** diameter, a battery and a battery strap,
- M2 screws and nuts of suitable length, cable ties, heat-shrink tubing, a soldering iron and basic tools (hex keys, pliers).

❖ **The manufacturer does not specify screw lengths. Choose motor screws so that, when tightened, they do not reach the motor windings - a screw that is too long will damage the windings and cause a short circuit.**

2.2 Build procedure

The manufacturer has not published detailed assembly instructions for the frame. The following procedure describes the usual build order of a small FPV drone; adapt it to the components used and their manuals.

- ① **Check the parts.** Lay out the frame and check that neither the carbon plates nor the 3D printed parts are cracked. You may lightly sand the edges of carbon plates over which cables will run (see Chapter 2.3).
- ② **Motors.** Attach the motors to the ends of the arms with three M2 screws, using the holes whose spacing matches your motors (9 mm or 12 mm). Route the motor wires along the arms and secure them so that they cannot get into the propeller.
- ③ **Stack (FC and ESC).** Mount the boards in the centre section of the frame using the 20×20 mm or 25.5×25.5 mm holes. Use the silicone grommets supplied with the stack and make sure the flight controller is oriented correctly (arrow pointing forward).
- ④ **FPV camera.** Insert the Nano (14 mm) camera into the front 3D printed pod and fix it with the camera screws. Set the camera tilt to suit your flying style.
- ⑤ **Video transmitter and receiver.** Mount the digital video transmitter or another 20×20 mm board in the rear mounting position. Route the antennas away from the propellers and do not let them lie on the carbon plates.

- ⑥ **External HD camera.** If you use one, attach it to the integrated mount on the 3D printed pod.
- ⑦ **Final check.** Check that all screws are tight and that joints are insulated and cables properly routed. Only then connect the battery (ideally through a fuse) and continue with setting up the electronics.

*** Adapting the frame for DJI O3 requires a modified 3D printed front section; the manufacturer has not published a detailed procedure. Before buying, make sure the part you choose fits this frame.**

2.3 Safety

- **Carbon fibre composite is electrically conductive.** No wire or solder joint may touch the carbon plates – there is a risk of a short circuit and a battery fire. Route cables with slack and insulate them.
- Sanding or drilling carbon produces fine dust that irritates the skin and respiratory tract. Work with a respirator, wet or with extraction, and do not inhale the dust.
- Fit the propellers only after the electronics have been set up. When working on the drone with a battery connected, always keep the propellers removed.
- Spinning propellers can cause serious injury. Do not operate the drone near people, animals or property.
- The frame is not a toy and is not intended for children. Keep small parts out of the reach of children.

2.4 Operating the finished drone

A finished drone with a camera is subject to the rules for operating unmanned aircraft. 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 transmit power. **The law of the country in which you fly always prevails.** In the Czech Republic, operating a drone with a camera requires operator registration with the Civil Aviation Authority (www.caa.gov.cz).

2.5 Maintenance

- After every crash, check the arms and plates – replace a cracked or delaminated arm, do not glue it.
- Check that the motor and frame screws are tight; vibration can gradually loosen them.
- The 3D printed parts are consumables. Replace a damaged camera pod or mount.
- Clean the frame with a dry brush or cloth; do not use solvents that could damage the 3D printed parts.

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@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.com

3.2 Disposal

- The frame contains no electrical or electronic components and no batteries. It is made of carbon fibre composite, 3D printed plastic and metal fasteners.
- Take an unwanted or damaged frame to a municipal collection site or dispose of it in accordance with your local waste rules. Put metal parts in metal waste.
- Do not burn the carbon fibre composite – burning releases harmful fumes.
- Sort the packaging by material (paper, plastic).
- The electronics you build into the frame and the batteries are subject to take-back of electrical equipment and batteries – dispose of them according to their manuals, never in mixed household waste.

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.