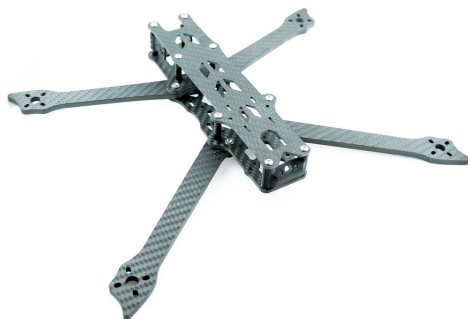




# Buddy 7"

Long-range carbon FPV quadcopter frame  
User Manual



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

[www.rotorama.com](http://www.rotorama.com)

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# 1. Product description

## 1.1 Intended use

Rotorama Buddy 7" is a carbon **long-range frame** for building an FPV quadcopter designed for longer-distance flights. It takes propellers up to **7"**. It is designed to be very durable, practical and to fly great. The front and rear arms are different – this keeps the propellers as far out of the FPV camera view as possible.

The frame is intended for building your own quadcopter: you choose and purchase the motors, flight controller (FC), electronic speed controllers (ESC), receiver, camera, video transmitter (VTX) and battery separately. On the Buddy, the stack is not mounted in the rear section but between the front and rear arms, directly on the bottom plate. This makes the frame lower and brings its centre of gravity closer to the propeller plane, while the battery stays high enough that the propellers will not cut into it if it shifts in a crash.



*Rotorama Buddy 7" – top view*

## 1.2 Specifications and package contents

|                                     |                                                                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Product designation                 | Rotorama Buddy 7"                                                                                                              |
| Max. propeller size                 | 7"                                                                                                                             |
| Motor spacing                       | 190 × 250 mm (Wide X)                                                                                                          |
| Weight                              | 158 g (including 3D-printed parts)                                                                                             |
| Arms                                | 15 mm wide at the narrowest point, 5 mm thick carbon; front and rear arms differ, each is mounted separately with three screws |
| Bottom / top plate                  | 3 mm carbon / 2 mm carbon                                                                                                      |
| Stack space                         | distance between front and rear arms 55 mm                                                                                     |
| Height between bottom and top plate | 28 mm                                                                                                                          |
| Stack mounting                      | 20 × 20 mm (M3), 30.5 × 30.5 mm (M3, slots)                                                                                    |
| VTX mounting (rear section)         | 20 × 20 mm M2, 25.5 × 25.5 mm M2, 30.5 × 30.5 mm M3                                                                            |
| Holes in top plate                  | 20 × 20 mm and 25.5 × 25.5 mm M2                                                                                               |
| Camera size                         | Mini (with the supplied mount)                                                                                                 |
| Digital video                       | Caddx Vista, Walksnail Avatar; DJI Air Unit and DJI O3 with a different set of 3D-printed parts                                |

| Package contents (set composition) | Qty   |
|------------------------------------|-------|
| Arm 7" - front                     | 2×    |
| Arm 7" - rear                      | 2×    |
| Bottom plate                       | 1×    |
| Middle plate                       | 1×    |
| Rear plate                         | 1×    |
| Top plate                          | 1×    |
| Hardware                           | 1 set |
| SMA antenna mount (3D print)       | 1×    |
| Camera mount - Mini (3D print)     | 1×    |

**Not included:** motors, flight controller (FC) and ESC, receiver, camera, video transmitter, antenna, propellers, battery, battery strap, cables and connectors. 3D-printed part sets for DJI O3, DJI FPV (Air Unit) and DJI O4 Pro, the Micro camera mount and the GoPro mount are sold separately as Rotorama Buddy - Parts.

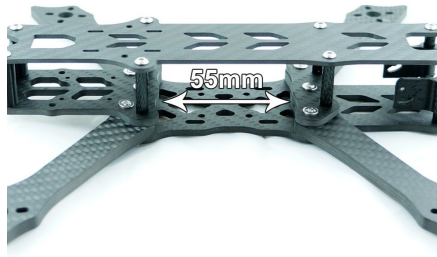
## 2. Building the quadcopter

### 2.1 Before you start

- Before building, plan the layout of the electronics and the cable lengths. The stack, VTX, receiver and camera are installed in the frame step by step, and some parts are later covered by the top plate.
- Prepare suitable tools (hex keys or screwdrivers matching the supplied screws, a soldering iron) and work on a clean, non-conductive surface.

### 2.2 Stack - flight controller (FC) and ESC

The stack is mounted on the bottom plate between the front and rear arms. The distance between the arms is **55 mm**, so most available stacks fit here. The frame supports mounting hole spacing of 20 × 20 mm (M3) and 30.5 × 30.5 mm (M3). For larger stacks the frame has **slots** instead of holes – you can shift the stack slightly to one side or the other to gain space, for example for a capacitor or the power lead.



*Stack space between the front and rear arms  
(55 mm)*

- Mount the stack on flexible damping grommets if the manufacturer supplies them, and do not tighten the nuts all the way – the grommets would lose their damping effect.
- Check that no component or solder pad of the stack touches the carbon plate or the screws.
- The height between the bottom and top plate is 28 mm. Before fitting the top plate, make sure the stack including connectors and cables fits underneath.

### 2.3 Video transmitter (VTX) and receiver

The rear section of the frame is intended for additional electronics, typically the video transmitter. Mounting holes 20 × 20 mm M2, 25.5 × 25.5 mm M2 and 30.5 × 30.5 mm M3 are provided; the top plate has holes with 20 × 20 mm and 25.5 × 25.5 mm M2 spacing.

- For digital video, a Caddx Vista or Walksnail Avatar unit can be installed in the 20 × 20 mm holes or slots.
  - DJI Air Unit (DJI FPV) and DJI O3 fit in the frame using the corresponding set of 3D-printed parts; a separate set is available for DJI O4 Pro. The sets are available as Rotorama Buddy – Parts.
  - The antenna is secured with a 3D-printed mount; an SMA connector mount is supplied with the frame as standard.
  - Never power the VTX without an antenna connected – it may be damaged.
- ※ Since 11 January 2023 the rear and top plates have been modified – holes for Walksnail Avatar were added and the space for the DJI O3 camera was enlarged.



*Rear section of the frame*

## 2.4 Camera and 3D-printed accessories

The camera is secured with a 3D-printed mount. A mount for a Mini-size camera is supplied with the frame as standard; a mount for a Micro camera is sold separately. The front of the frame around the camera is reinforced, as it takes the most stress in a crash.

The Buddy has the same spacing of the four front standoffs as the widespread Alien freestyle frame. HD camera mounts designed for the Alien can therefore also be used – not only at the front, but also at the rear or underneath, so you can place an action camera anywhere. 3D models of the printed parts for the Buddy frame are available at [www.thingiverse.com/thing:5205381](https://www.thingiverse.com/thing:5205381).

## 2.5 Motors and propellers

- The frame takes propellers up to 7". With common 2807 motors, the propeller is usually level with the top plate.
- Motor screws must not be so long that they touch the motor windings. After tightening, check that the motor turns freely and smoothly.
- Route the motor wires along the arms and secure them (e.g. with heat-shrink tubing or a cable tie) so they cannot get into the propeller and are not chafed by the carbon edges.
- Fit the propellers only after the build, setup and motor direction check are complete – always in the correct direction of rotation.

## 2.6 Battery and power lead

At the rear of the top plate there is an opening through which the power lead with the XT60 connector can be routed. The top plate can then easily be removed and the cable pulled out, which makes servicing the quadcopter more convenient. A cable routed through the top plate is also less likely to get caught in the propellers in flight.



*Rear part of the top plate*

- The battery is placed on the top plate. Secure it firmly with a strap (not included) and use an anti-slip pad for better grip.
- Always fit a **fully charged** battery before flight and follow the instructions of the battery and charger manufacturers.

## 3. Safety, maintenance and operation

### 3.1 Safety instructions

- Carbon is electrically conductive. Make sure that cable insulation cannot chafe against carbon parts and that no exposed solder pads can touch them – there is a risk of short circuit and battery fire.
- Do not drill, grind or cut carbon parts without protection. Fine dust is produced that irritates the skin and respiratory tract; wear a respirator and do not inhale the dust.
- The edges of carbon parts may be sharp – handle them with care.
- Spinning propellers can cause serious injury. Disconnect the battery or remove the propellers whenever you work on the quadcopter.
- Neither the frame nor the finished quadcopter is a toy. Keep them out of reach of children; small parts and screws present a choking hazard.

### 3.2 Inspection and maintenance

- After every crash, inspect the arms and plates. Replace any part with a crack, a chipped or delaminated edge – it may fail in flight.
- Regularly check that all frame screws are tight, especially the three screws of each arm and the motor screws.
- Check that cables are not chafed on carbon edges and that the 3D-printed mounts are intact and firmly seated.

### 3.3 Replacing an arm

Each arm is attached to the frame separately with three screws, so you can replace a damaged arm without disassembling the whole quadcopter. The front and rear arms differ – replacement arms are sold as Rotorama Buddy – Parts, type **Arm 7" - front** and **Arm 7" - rear**.

- ① Disconnect the battery and remove the propeller from the motor on the damaged arm.
- ② Loosen the motor screws and remove the motor from the arm. You do not need to desolder the motor wires if the motor can be set aside next to the frame without straining the wires.
- ③ Loosen the three screws holding the arm to the frame and remove the arm.
- ④ Insert a new arm of the same type (front / rear) in the same place and secure it with all three screws.
- ⑤ Refit the motor and check that it turns freely and smoothly.
- ⑥ Fit the propeller in the correct direction of rotation and carry out a pre-flight check before flying.

### 3.4 Operating the finished quadcopter

Regulations (EU) 2019/947 and 2019/945 apply in all EU member states, 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 information in this chapter describes the situation in the Czech Republic. **If you operate the drone in another country, you must follow the regulations of the country in which you fly.**

- A quadcopter built from this frame and separately purchased components has no class marking (C0-C4) and is operated as a privately built UAS in the open category – in subcategory A1 with a take-off mass below 250 g, otherwise in subcategory A3. Weigh the actual take-off mass including the battery and accessories.
- Operator registration is mandatory if the drone weighs 250 g or more or is equipped with a camera. Display the registration number on the drone. In the Czech Republic, registration is done with the Civil Aviation Authority (ÚCL).
- In the open category the drone must remain within visual line of sight (VLOS) and no more than 120 m above the ground. Flying with FPV goggles is only possible with an observer who keeps the drone in direct sight. This also applies to flights with a long-range quadcopter.
- The user is responsible for complying with the frequencies and transmit power of the receiver and video transmitter used – follow their manufacturers' instructions and the regulations of the country of operation.

## 4. Information for the EU and Czech Market

### 4.1 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                             |

### 4.2 Disposal

- The frame is not electrical equipment and contains no batteries or accumulators, so the take-back of electrical equipment does not apply to it.
- Dispose of unwanted or damaged parts according to your municipality's waste system: carbon and plastic (3D-printed) parts in mixed municipal waste, metal hardware in metal collection. Do not burn carbon parts.
- Hand in the electronics built into the finished quadcopter and the batteries separately at a take-back point for electrical equipment and batteries.
- Sort the packaging by material (paper, plastic).
- Outside the Czech Republic, follow the waste regulations of the country in which you use the product.

## 5. Warranty and rights arising from defective performance

### 5.1 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 4.1.
- 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](http://www.coi.cz).