BabyApe V2

DarwinFPV · carbon frame for a 3" FPV drone
Assembly and user manual



Read the entire manual before assembly and 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. Assembly and use

2.1 Safety during assembly

2.2 What else you need

2.3 Assembly procedure

2.4 Replacing the arms

3. Operating and maintaining the assembled drone

3.1 The law of the country where you fly applies

3.2 Basic rules in the Czech Republic

3.3 Flight safety

3.4 Maintenance and storage

4. Information for the EU and Czech Market

4.1 Importer and responsible person in the EU

4.2 Disposal

5. Warranty and rights arising from defective performance

1. Product description

1.1 Intended use

DarwinFPV BabyApe V2 is a lightweight carbon frame for building an FPV drone with **3" propellers**. It uses a **True X** layout which, according to the manufacturer, provides stable and balanced flight behaviour and good handling even in tight spaces. The frame is designed for AIO flight controllers with a 25.5 × 25.5 mm mounting hole pattern; a video transmitter (VTX) with a 20 × 20 mm pattern can be mounted on the top plate.

Compared to the first version, V2 has, according to the manufacturer, **aluminium standoffs** instead of nylon ones, an added receiver mounting bracket and, instead of four individual 2.5 mm arms, **two integrated arms** 3 mm thick. The arms are held by only four screws and one arm is replaced by loosening two screws. The frame is sold as a kit – you choose the electronics and power system yourself.



Assembled BabyApe V2 frame – side view (illustrative manufacturer photo)

1.2 Technical data and package contents

Parameter	Value
Product designation	DarwinFPV BabyApe V2 (Baby Ape V2 frame), manufacturer code 05.01.001
Frame type	True X
Arm structure	2 in 1 (two integrated arms)
Wheelbase (diagonal motor distance)	143 mm
Dimensions	124 × 124 × 23 mm
Arm thickness	3 mm
Top, middle and bottom plate thickness	1.5 mm
Camera side plate thickness	1.5 mm
AIO mounting holes	25.5 × 25.5 mm, M2
VTX mounting holes	20 × 20 mm, M2
Motor mounting holes	8.5 × 8.5 mm, M1.4
Camera mounting size	16 mm
Space height for AIO / VTX	15 mm
Propeller size	3"
3D printed parts	antenna mount
Frame weight	23.2 g ± 2 g

Data provided by the manufacturer DarwinFPV; the M2 and M1.4 thread sizes are stated by Rotorama.



Kit parts according to the manufacturer's photo

The manufacturer's photo shows: two integrated arms, top and bottom plate, X-shaped middle plate, two camera side plates, a bag of screws and standoffs, a 3D printed antenna mount, a battery strap, an anti-slip pad, cable ties, rubber rings and DarwinFPV stickers. The actual package contents may vary slightly depending on the production batch.

NOT included in the package: flight controller (FC) / AIO board, electronic speed controllers (ESC), motors, propellers, camera, video transmitter (VTX), receiver, antenna, battery or tools.

2. Assembly and use

2.1 Safety during assembly

- Carbon fibre is **electrically conductive**. Cables, solder joints and circuit boards must not rest directly on the edges of carbon plates – there is a risk of a short circuit and damage to the electronics or battery. Route wires so that they do not rub against the edges.
- The edges of carbon parts may be sharp. If you want to sand them, do it wet, wearing a respirator and gloves – carbon dust is harmful to health.
- Tighten screws gently. Overtightened M1.4 and M2 screws strip easily; motor screws that are too long can damage the motor windings.
- Solder away from the frame or protect it from heat; do not solder near a connected battery.
- Connect the battery only after checking the entire assembly and **without propellers fitted**.

2.2 What else you need

- an **AIO-type flight controller (FC)** with a 25.5 × 25.5 mm mounting hole pattern (M2),
- optionally a **video transmitter (VTX)** with a 20 × 20 mm pattern (M2) if it is not part of the AIO,
- four **motors** with an 8.5 × 8.5 mm mounting hole pattern (M1.4) and screws of a suitable length,
- **3" propellers**, a camera matching the 16 mm mounting size, a receiver and an antenna,
- a battery and charger, a radio transmitter (RC system) and FPV goggles,
- tools: hex screwdrivers, soldering iron, tweezers and, if required, medium-strength thread-locking compound.

※ When choosing components, check that the AIO board and VTX fit into the internal space with a height of 15 mm.

2.3 Assembly procedure

The manufacturer has not published a separate assembly guide. Follow the photos in this manual and the general procedure below; adapt the exact order of steps to the components you have chosen.

① **Check the parts** – lay out the parts and check that they are not damaged and that you have all screws and standoffs.

② **Arms** – place both integrated arms on the bottom plate and secure them with the X-shaped middle plate and four screws. Tighten the screws only lightly for now.

③ **Standoffs** – screw in the aluminium standoffs that will hold the top plate.

④ **Motors** – attach the motors to the ends of the arms with M1.4 screws. Make sure the screw does not protrude into the motor windings. Route the motor wires along the arms and secure them.

⑤ **AIO board** – mount the flight controller in the centre of the frame (25.5 × 25.5 mm pattern) with the arrow pointing forward. Use the rubber dampers supplied with the board. Solder the motors and the power lead.

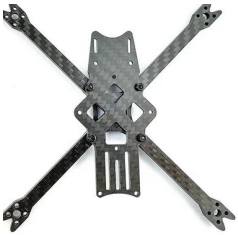
⑥ **Camera and VTX** – fix the camera between the camera side plates and, if applicable, the VTX on the top plate (20 × 20 mm pattern). Attach the antenna mount.

⑦ **Top plate** – fit the top plate on the standoffs and tighten all screws. Place the battery strap and anti-slip pad on the plate on which the battery will sit.

⑧ **Check** – make sure no wire touches the carbon edges or the propellers; only then connect the battery (without propellers) and configure the flight controller.

2.4 Replacing the arms

There are two arms, each carrying two motors. According to the manufacturer, an arm is replaced by loosening **two screws**; the whole arm assembly is held by four screws. Before replacing, disconnect the battery, remove the propellers and unscrew the motors from the damaged arm. The manufacturer offers replacement arms (Baby Ape V2 Arm, 2 pcs) and plates separately.



Integrated arms attached to the frame centre (manufacturer photo)

3. Operating and maintaining the assembled drone

3.1 The law of the country where you fly 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 transmitting power. The information in this chapter describes the situation in the Czech Republic. If you operate the drone in another country, you must comply with the regulations of the country in which you fly.

3.2 Basic rules in the Czech Republic

- A drone built from this frame has no C0–C4 class. It is operated as a **privately built UAS** in the open category: in subcategory **A1** if its take-off mass is less than 250 g and its maximum speed is below 19 m/s, otherwise in subcategory **A3** (at least 150 m from residential, commercial, industrial and recreational areas). Weigh the actual take-off mass including the battery.
- If the drone has a camera, **operator registration** is required regardless of weight; the registration number must be displayed on the drone.
- Fly no higher than 120 m above ground, within visual line of sight and never over assemblies of people. Respect geographical zones.
- When flying with FPV goggles, an **observer** must stand next to the pilot and watch the drone directly.
- Liability insurance is not compulsory for a small drone, but we recommend it.
- The operator is responsible for the VTX and receiver power settings; observe local limits.

3.3 Flight safety

- Before every flight, check the screws, arms, propellers and battery mounting. Insert a **fully charged** battery and end the flight at 3.5 V per cell.
- After a crash, always check whether the arms and plates are cracked or delaminated. Replace a damaged part – a cracked arm can break off in flight.
- Propellers rotate at high speed and can cause serious injury. Handle propellers only with the battery disconnected.

3.4 Maintenance and storage

- Regularly tighten frame and motor screws – vibration loosens them. Clean carbon with a dry or damp cloth, no solvents.
- Replace cracked or delaminated parts and stripped screws immediately. Store the frame dry and out of reach of children; batteries separately at 3.8 V per cell.

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 itself contains no electronics or batteries and **is not electrical equipment**. Dispose of the carbon plates, aluminium standoffs, screws and plastic parts as sorted waste according to your local rules (metals with metals, plastics with plastics, carbon parts with mixed waste or at a recycling centre).
- Do not burn carbon parts – burning and sanding produce harmful dust and smoke.



- An assembled drone with electronics (flight controller, motors, camera, video transmitter, receiver) is **electrical equipment** and at the end of its service life **must not be disposed of with mixed municipal waste**. Hand it over at a take-back point for electrical equipment; hand over batteries separately at a battery take-back point. Take-back is free of charge for the end user.

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.

5. 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 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.