ROTORAMA

Singularity u.FL

5.8 GHz circularly polarized antenna, LHCP
U.FL connector · 45 mm tube version



Read this manual before use. Never power on the video transmitter without the antenna connected.

User manual · www.rotorama.com

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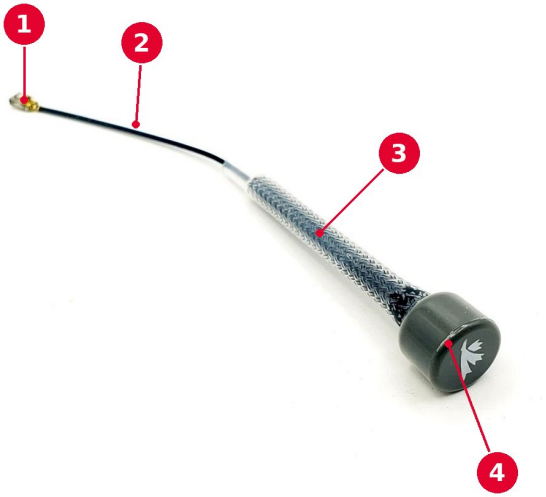
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1. Product description

1.1 Intended use

The **TrueRC Singularity 5.8 U.FL** is a miniature omnidirectional circularly polarized antenna for the 5.8 GHz band, designed for video transmission on FPV drones. The manufacturer describes it as the smallest and lightest 5.8 GHz circularly polarized antenna ever made. This version has **left-hand circular polarization (LHCP)** and a **U.FL** connector that plugs directly into the video transmitter (VTX).

Near the radiator, the antenna cable is reinforced with a **braided tube 45 mm long**. This section is stiff yet flexible, so it holds the radiator in the desired position above the frame; the coaxial cable that follows is soft and flexible. The antenna is particularly suitable for 3–4" drones, cinewhoops and freestyle drones with digital video transmission.



① U.FL connector · ② coaxial cable · ③ braided tube 45 mm · ④ antenna head with radiator

1.2 Specifications and package contents

Product designation	TrueRC Singularity 5.8 U.FL, LHCP, U.FL w/tube 45mm
Manufacturer	TrueRC Canada, 410 Av. Murdoch, Rouyn-Noranda, QC J9X 1G8, Canada · contact@truerc.com
Frequency band	5.6–6.0 GHz
Gain	1.9 dBic
Polarization	circular, left-hand (LHCP)

Cross-polar rejection	−15 to −30 dB (1.9 %)
Radiation efficiency	99 %
SWR	≤ 1.5 : 1
Antenna head dimensions	11.8 mm diameter × 8.2 mm height
Tube length	45 mm
Connector	U.FL
Compatibility according to the manufacturer	Caddx Vista / RunCam Link, DJI O3 Air Unit, DJI O4 Air Unit, Walksnail Avatar HD VTX
Package contents	1× antenna
Not included	video transmitter (VTX), antenna mount, connector adapters, cable ties and heat-shrink tubing

※ The antenna is a passive component – it has no power supply, no electronics and no battery, and does not transmit anything by itself. It always works as part of the video transmitter it is connected to.

2. Use

2.1 Choosing the polarization

Circularly polarized antennas on the transmitter side (drone) and the receiver side (goggles, monitor) must have the **same sense of polarization**. This antenna is **LHCP**, so combine it with LHCP antennas on your goggles or receiver.

- Neither polarization is better – what matters is that both sides match.
- According to the manufacturer, only about 3 % of the signal passes through when LHCP is combined with RHCP. You will usually still get video, but with significantly worse quality and range.
- Check which polarization the antennas on your goggles have. Some digital systems are supplied with LHCP antennas – in that case this version is the right choice.

2.2 Connecting the U.FL connector

① Disconnect the drone's power supply (unplug the battery).

② Position the antenna connector squarely and exactly above its mating socket on the video transmitter.

③ Press it down evenly – with a fingernail or a flat tool – until it audibly and noticeably **snaps in**. The connector must not sit at an angle.

④ Check visually that the connector is seated straight and flush. Do not tension or pull on the cable.

When disconnecting, **do not pull the connector out by the cable**. Lift it from under the connector body with a suitable tool (U.FL removal tool, tweezers) straight upwards. Hirose rates the U.FL for 30 mating cycles; according to TrueRC's experience the connectors usually last longer, as long as they still snap in reliably.

2.3 Mounting on the drone

- Place the antenna head as high as possible and as far as possible from the carbon frame, metal parts and the battery – carbon and metal block the signal.
- Secure the tube in an antenna mount (e.g. printed in TPU). On its product page the manufacturer offers printable mount models for the Rotor Riot HD1, iFlight Nazgul XL5V5, Lumenier QAV-S Mini, Carnage/Venom and AlphaRC Fi-115 frames.
- Neither the antenna head nor the cable may reach into the propeller area – check this also with the propeller guard (duct) compressed or after a crash.
- Route the coaxial cable without sharp bends, especially right at the connector, and secure it against vibration (tape, cable tie, heat-shrink) so that it does not pull on the connector.
- Do not repeatedly bend the tube to a sharp angle at the same spot.

※ According to the manufacturer, a properly designed antenna is independent of its cable length, and the cable can be shortened or the connector replaced. Only carry out such modifications if you are experienced in soldering coaxial cables, and at your own risk.

2.4 Operation and radio regulations

Permitted frequency bands and maximum transmit power differ from country to country. The information below describes the situation in the Czech Republic. **If you operate the product in another country, you must comply with the regulations of the country in which you operate it.**

- In the Czech Republic, the band **5725–5875 MHz** may be used for this purpose with a maximum power of **25 mW e.i.r.p.** (CTU general authorization No. VO-R/10).
- The antenna's operating band of 5.6–6.0 GHz is wider than the permitted band. Do not use video transmitter channels outside the permitted band.
- The antenna gain counts towards the radiated power (e.i.r.p.). The user is responsible for setting the power and channel of the video transmitter.
- **Never power on the video transmitter without the antenna connected** – it may be damaged.

3. Care and troubleshooting

3.1 Maintenance and storage

- After every flight, and especially after a crash, inspect the antenna head, tube, cable and connector. If the head is cracked, the cable is cut or pinched, or the connector is loose, replace the antenna.
- Clean the antenna with a dry or slightly damp cloth, without solvents.
- Store it in a dry place, without kinking the cable and without strain on the connector.

3.2 Troubleshooting

Problem	Possible cause and solution
Very short range, video lost at a short distance	The antenna is not connected properly or the wrong channel is selected. Check that the U.FL connector is snapped in and that the transmitter and receiver channels match.
Video is grainy or noisy even at close range	The antenna polarizations do not match (LHCP × RHCP). Use LHCP antennas on the receiver.
Video dropouts in certain drone attitudes	The antenna is shielded by the frame, battery or camera. Move the antenna head higher and further from carbon and metal parts.
Connector does not hold or does not snap in	Worn or damaged connector on the antenna or the transmitter. Replace the antenna, or have the transmitter connector checked.
Video suddenly worse after a crash	Mechanical damage to the antenna head or cable. Inspect the antenna and replace it if damaged.

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 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.

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.