Singularity u.FL 40mm

TrueRC — circularly polarized 5.8 GHz antenna with u.FL connector

User manual



Never power on the video transmitter (VTX) without an antenna connected – it may be damaged.

Importer: Rotorama, s.r.o. · www.rotorama.com

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1. Product Description

1.1 Intended use

TrueRC Singularity u.FL 40mm is a miniature omnidirectional antenna for the 5.8 GHz band with right-hand circular polarization (RHCP), designed for the video transmitter (VTX) of an FPV drone. The manufacturer, the Canadian company TrueRC, describes it as its most advanced antenna – despite its small size and low weight it retains good performance.

The antenna connects directly to the u.FL connector on the video transmitter. Thanks to its short, flexible and slightly bendable cable it is suitable for the smallest tinywhoop-type drones, 2–3" drones and racing drones, where every gram counts.



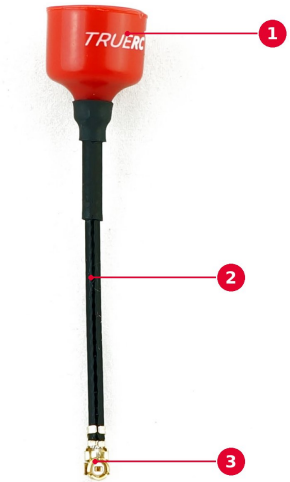
TrueRC Singularity u.FL 40mm antenna

1.2 Technical data and package contents

Parameter	Value
Frequency band	5.6–6.0 GHz
Gain	1.9 dBic
Polarization	RHCP (right-hand circular)
Cross-polar rejection	−15 to −30 dB
Radiation efficiency	99%
SWR	≤ 1.5:1
Radiator (head) dimensions	11.8 mm diameter × 8.2 mm height
Length	40 mm
Weight	1.3 g
Connector	u.FL

- **Package contents:** 1× TrueRC Singularity u.FL 40mm antenna.
- **Not included:** video transmitter, antenna mount, adapter or pigtail to another connector type (SMA, RP-SMA, MMCX) and fastening material.
- **Product identification:** TrueRC Singularity 5.8 U.FL, RHCP polarization, short-cable version ("U.FL short" at the manufacturer), EAN 0608597252033. Manufacturer: TrueRC Canada.

1.3 Parts description



Antenna parts

① **Radiator (antenna head)** – the radiating element itself in a protective housing.

② **Coaxial cable** – flexible and slightly bendable, reinforced with heat-shrink tubing at the head.

③ **u.FL connector** – connects to the u.FL connector on the video transmitter.

2. Use

2.1 Polarization and compatibility

Circularly polarized antennas are made in right-hand (RHCP) and left-hand (LHCP) versions. Neither is better – what matters is that **the antenna on the drone and the antennas on the receiver (goggles) have the same polarization**. This antenna is RHCP, so use it with RHCP antennas on the receiver side.

※ With an RHCP/LHCP combination, according to the manufacturer only about 3% of the signal gets through – you will still see video, but it will be noticeably worse and the range will be shorter.

The antenna is intended for video transmitters with a u.FL connector operating in the 5.8 GHz band. For the Singularity 5.8 U.FL series, the manufacturer lists compatibility with the digital systems Caddx Vista / RunCam Link, DJI O3 Air Unit, DJI O4 Air Unit and Walksnail Avatar HD VTX. Before purchase, always check that your video transmitter has a u.FL connector and operates in the 5.8 GHz band.

The manufacturer deliberately designs omnidirectional antennas with low gain: the radiation pattern is not "flattened", so the signal does not drop out when banking, climbing or diving. It is better to add gain for longer range on the receiver side.

2.2 Connecting the u.FL connector

① Disconnect the flight battery from the drone. Never connect or disconnect the antenna while the video transmitter is powered.

② Place the antenna's u.FL connector perpendicularly above its counterpart on the video transmitter so that both connectors are aligned.

③ Press straight down from above (e.g. with a flat fingernail or a flat tool without sharp edges) until the connector audibly and noticeably clicks in. Do not press at an angle or with force.

④ Gently turn the head to check that the connector holds and does not pop off.

⑤ When disconnecting, lift the connector straight up by its body (ideally with a tool intended for this purpose). **Never pull on the cable** – you will tear it out of the connector.

The connector manufacturer (Hirose) rates the u.FL connector at 30 mating cycles. According to TrueRC's testing, the connectors last longer; if the connector "snaps in" properly, there is nothing to worry about. Nevertheless, avoid unnecessary repeated disconnection.

2.3 Positioning and mounting on the drone

- Place the antenna head ① as far away from the drone's structure as possible – away from the carbon frame, battery and other parts that shield the signal.

- The antenna must not reach into the propeller area or the ducts. During installation, turn the propellers by hand and check that they never touch the antenna.
- Secure the cable ② to the frame or in an antenna mount (e.g. with a cable tie or heat-shrink tubing) so that crash forces do not act directly on the connector ③.
- Do not bend the cable sharply near the connector or the antenna head and do not pinch it between frame parts.
- Do not glue the antenna head directly onto metal or carbon parts.

According to the manufacturer, a properly designed antenna is independent of its coaxial cable length, so the cable can be shortened or the connector replaced. This work requires experience with soldering miniature coaxial connectors; an improperly performed modification will ruin the antenna and is not a product defect.

3. Safety, Care and Troubleshooting

3.1 Safe use

- **Never power on the video transmitter without an antenna connected.** A transmitter without an antenna may overheat or be permanently damaged.
- The antenna is a passive part – the frequency and transmit power are set by the video transmitter, not by the antenna. The user is responsible for the channel and power settings.
- The law of the country in which you operate the product is decisive. Permitted frequency bands and maximum transmit powers vary by country – follow the rules of the country where you fly.
- The product contains small parts. Keep it out of the reach of children and animals.
- Do not use the antenna as a handle or subject it to pulling or bending loads.

3.2 Care and inspection

- After every crash, check that the head is not cracked, the cable is not cut or broken and the connector still holds firmly.
- Replace a damaged antenna – a damaged cable or connector will significantly degrade video quality.
- Protect the antenna from moisture and dirt; wipe a dirty housing with a dry cloth.
- Store it in a dry place without kinking the cable, ideally in the original packaging.

3.3 Troubleshooting

Problem	Possible cause and solution
Very short range or noisy video at a few metres	The antenna is not connected properly, or the VTX is on a different channel than the receiver. Check the u.FL connection and the channel.
Video is consistently worse than with another antenna	Polarization mismatch – there is an LHCP antenna on the receiver. Use RHCP on both sides.
Video drops out only in certain drone attitudes	The antenna head is shielded by the frame or battery. Adjust the position as described in Chapter 2.3.
Connector comes loose	The connector is not clicked in or is worn. Reconnect it (Chapter 2.2); if it does not hold, replace the antenna.
Video got worse after a crash	Damaged cable, connector or antenna head. Inspect as described in Chapter 3.2.

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.