TBS Airscrew

5.8 GHz band antenna, RHCP, SMA connector
User manual



Never power on a video transmitter without an antenna connected.

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1. Product description

1.1 Intended use

The **TBS Airscrew** is an omnidirectional, circularly polarized antenna for FPV video transmission in the 5 GHz band. It is suitable for a video transmitter (VTX) on a drone or aircraft as well as for a video receiver, for example in FPV goggles. With its long cable, the manufacturer recommends it especially for long-range transmission and for mounting on goggles' receiver modules for good omnidirectional reception.

The antenna was designed by IBCrazy and is manufactured by Team BlackSheep (TBS) as a licensed interpretation of the VAS Airscrew. Five multi-phase elements create a circular radiation pattern that rejects cross-polarized signals while covering an extremely wide frequency range. An ultrasonically welded plastic case protects the elements; the semi-rigid cable has a double jacket for impact resistance.



TBS Airscrew – radiating head, semi-rigid cable and SMA connector

1.2 Specifications and package contents

Product designation	TBS Airscrew (RHCP SMA)
Frequency range	4900–6100 MHz
Polarization	RHCP (right-hand circular)
Gain	1.3 dBic
Axial ratio	0.95
Weight	20 g
Height	130 mm
Connector	SMA
Package contents	1× TBS Airscrew SMA antenna
Not included	VTX, video receiver, adapters, pigtails, mounts

※ Specifications as stated by the manufacturer Team BlackSheep.

2. Use

2.1 Compatibility and polarization

- **Connector:** the antenna has an **SMA** connector. Make sure the VTX or receiver has a matching SMA port. **RP-SMA** connectors look similar but are not compatible with SMA; in that case use a suitable adapter (not included).
- **Frequency:** the antenna is designed for the 5 GHz band (4900–6100 MHz). It is not suitable for the 1.2 GHz, 2.4 GHz or any other band.
- **Polarization:** the antenna is right-hand circularly polarized (**RHCP**). Use antennas with the **same polarization** (RHCP with RHCP) on both the transmitting and receiving side of the link. Combining RHCP and LHCP causes a significant loss of signal and range.

2.2 Connection and mounting

① Switch off the video transmitter, or disconnect the model's battery or the goggles' power.

② Fit the antenna connector onto the connector of the transmitter or receiver and **tighten the coupling nut by hand**. Do not use a wrench or pliers – overtightening can damage the connector or the board.

③ On the model, mount the antenna so that the head points away from the frame, is not covered by carbon parts, the battery or cables, and cannot reach the propellers. Secure the cable with a mount or a cable tie.

④ On the receiver (goggles), point the antenna head upwards, away from your head and metal objects.

※ Never power on a video transmitter without an antenna connected – it can be permanently damaged.

2.3 Operation, care and maintenance

- Use of the 5 GHz band and the maximum permitted radiated power are governed by national regulations that differ between countries. In the Czech Republic, the general authorisations of the Czech Telecommunication Office (ČTÚ) apply. **The law of the country in which you operate the product always prevails.** The antenna gain counts towards the radiated power (e.i.r.p.) of the whole setup.
- The semi-rigid cable can be shaped, but do not bend it repeatedly at one point or sharply right at the connector or the head.
- After a crash, check the head case for cracks, the cable for kinks and the connector for looseness. Replace a damaged antenna – it reduces range and may harm the transmitter.
- Keep the connector clean and dry. Store the antenna unloaded, without permanent cable bends.

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

3.2 Disposal



- 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.

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.