



Pilotix T-Antenna

T antenna for ExpressLRS receivers 300–1000 MHz
Tuning, connection and positioning



Read the entire manual before shortening the antenna. This product is not a toy - it is intended for persons aged 14 and over.

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1. Safety instructions

- This product is **not a toy** and is intended for persons aged 14 and over. It contains small parts – keep it out of the reach of small children.
- Always connect and disconnect the antenna with the **model switched off**, when the receiver is not powered.
- **Do not switch on the receiver without an antenna connected.** Many current receivers also transmit (for example telemetry), and operating them without an antenna can damage their transmitting stage.
- Shorten the antenna arms **only according to the table in Chapter 3**. Shortening is irreversible – an antenna that has been cut too short can no longer be tuned to a lower frequency.
- A damaged, disconnected, badly tuned or badly positioned antenna reduces the range of the RC link. This can result in loss of signal (failsafe) and a crash of the model. Therefore check the condition of the antenna before every flight.

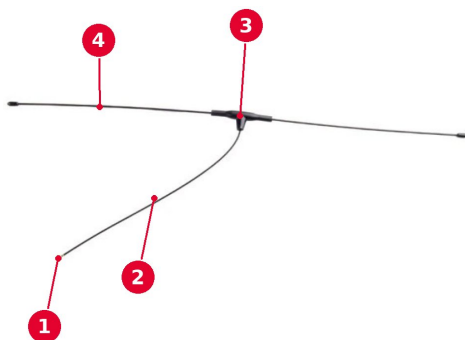
2. Product description

2.1 About the product

The Pilotix T-Antenna is a T-shaped replacement antenna for ExpressLRS receivers in the **300–1000 MHz** range. It connects to the receiver with an **IPEX1** connector, also referred to as **u.FL**.

The antenna is supplied at its base length and is tuned to the specific operating frequency of the receiver by shortening the arms (Chapter 3). The cutting points are marked on the antenna. The antenna is a passive part without electronics – it needs no power supply or setup.

2.2 Parts description



Illustrative photo.

- ① **IPEX1 (u.FL) connector** – snaps into the socket on the receiver.

- ② **Feed cable** – a coaxial cable that carries the signal from the arms to the receiver.
- ③ **Antenna centre** – the point where the cable splits into the arms. The arm length is measured from here.
- ④ **Arms** – the active part of the antenna. Their length determines the frequency the antenna is tuned to.

2.3 Technical data

Type	T antenna
Frequency	300–1000 MHz (tunable by shortening)
Connector	IPEX1 (u.FL)
Polarisation	linear, vertical
Installation	upright
Feed cable length	150 mm
Base antenna length	452 mm
Feed cable material	1.37 mm coax
Package contents	1× antenna

2.4 Compatibility

- The antenna is designed for ExpressLRS receivers operating in the 300–1000 MHz range. Before use, tune it to the operating frequency of the receiver (Chapter 3).
- The receiver must have an **IPEX1 (u.FL)** socket. The smaller **IPEX4** (MHF4) connector is not compatible with it and the two types cannot be connected to each other.
- The antenna is not intended for 2.4 GHz receivers or for video transmitters (VTX).

3. Tuning the antenna by shortening

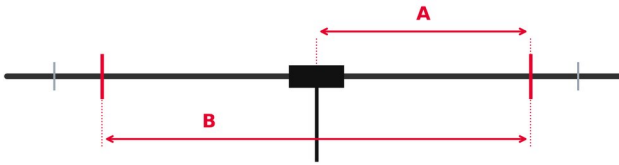
3.1 Length table

The length of the arms determines the frequency the antenna is tuned to. Find the frequency your receiver operates on in the table and read off the required length. Length **A** is the length of one arm measured from the antenna centre, length **B** is the total length of both arms.

Frequency	Arm from centre (A)	Total (B)
309 MHz	226 mm	452 mm
362 MHz	192.5 mm	385 mm
443 MHz	157.5 mm	315 mm
462 MHz	151 mm	302 mm
513 MHz	136 mm	272 mm
572 MHz	122 mm	244 mm
609 MHz	114.5 mm	229 mm
661 MHz	105.5 mm	211 mm
712 MHz	98 mm	196 mm
742 MHz	94 mm	188 mm
793 MHz	88 mm	176 mm
851 MHz	82 mm	164 mm
930 MHz	75 mm	150 mm
996 MHz	70 mm	140 mm
1041 MHz	67 mm	134 mm

If your receiver's frequency is not in the table, use the row with the nearest frequency.

3.2 Shortening procedure



*A – length of one arm from the antenna centre, B – total length.
Grey marks – marked cutting points.*

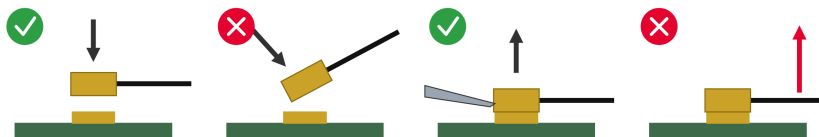
- ① Find out the operating frequency of the receiver and read off length A in the table.
- ② Lay the antenna flat and measure length A on **both arms** from the antenna centre ③.
- ③ Shorten both arms to the same length – at the marked point or according to the measured length. Use sharp scissors or side cutters.
- ④ Check that both arms are equally long and that the total length matches value B.

Shorten gradually and rather leave the arm slightly longer. Shortening is irreversible.

4. Connecting to the receiver

4.1 Connecting the antenna

- ① Switch off the model so that the receiver is not powered.
- ② Locate the IPEX1 socket on the receiver. If the receiver is sealed in heat-shrink tubing, open it at the socket so that you can reach it.
- ③ Place the antenna connector exactly above the socket, parallel to the receiver board.
- ④ Press the connector **straight down** – with a fingernail or the flat end of a plastic tool – until it clicks in noticeably.
- ⑤ Check that the connector sits straight in the socket and does not come off. A correctly fitted connector can rotate in the socket, but it must not sit at an angle.



From left: fitting straight ✓, fitting at an angle ✗, removing straight up with a flat tool ✓, pulling on the cable ✗.

Do not press on the connector at an angle and do not use metal tools with sharp edges. You would damage the socket and its connection to the receiver board.

4.2 Disconnecting the antenna

Lever the connector up with a flat plastic tool or use a u.FL connector puller and lift it **straight away from the board**. Never pull on the cable – the cable will tear out of the connector or the socket will be torn off the receiver.

The IPEX1 connector is not designed for frequent connecting and disconnecting. Repeated disconnection loosens the joint.

4.3 Securing the connector

To prevent the connector from coming loose on impact, the best solution after the function check is to seal the whole receiver, including the connected connector, in **heat-shrink tubing**. The tubing holds the connector in the socket and protects the receiver at the same time. Do not overheat the receiver or the cable while shrinking the tubing. The connector can also be secured with a piece of tape.

5. Antenna placement

- The antenna is designed for **upright installation**: position the arms vertically, in one straight line. It has vertical polarisation – the radio's antenna should also be vertical while flying.
- Route the arms **out of the frame** and away from the body of the model. Carbon parts, metal parts, the battery and the electronics all block the signal.
- The arms must not reach into the **path of the propellers**, even when they bend in flight or in a crash.
- Do not insert the arms into metal or carbon tubes, do not bend them sharply, do not coil them and do not cross them over each other.
- Keep as much distance as possible from the video transmitter (VTX) antenna.
- Route the cable without sharp bends, do not pinch it and secure it so that it does not vibrate in flight. It is under the most stress at the antenna centre and at the connector.

6. Function check

- Carry out the check with the propellers removed.
- Switch on the radio, then the model, and check that the link is established.
- In the telemetry of the radio, check the signal strength (RSSI) and link quality (LQ).
- After replacing the antenna, start flying close by and keep watching the telemetry. Only fly further away once the link is reliable.

7. Maintenance and storage

- Before every flight, check that the cable insulation is not cut or chafed, the arms are not broken or torn off and the connector sits firmly in the socket.
- Replace an antenna with a damaged cable, arm or centre.
- Clean the antenna with a dry soft cloth. Do not use solvents.
- Store it in a dry place, loosely and without sharp bends.

Antennas on a model are exposed to impacts and propeller strikes. Damage to the antenna in a crash, collision or propeller strike and incorrect shortening are not product defects.

8. Troubleshooting

Problem	Possible cause and solution
Weak signal, short range or failsafe	The antenna is not tuned to the receiver frequency, the arms are not the same length, the connector is not seated, the antenna is damaged or covered by carbon parts. Check the arm length (Ch. 3), the connection (Ch. 4.1) and the placement (Ch. 5).
The arms have been cut too short	The antenna is tuned to a higher frequency than you need. Shortening cannot be undone - replace the antenna.
The connector cannot be fitted	The receiver has a different type of socket (for example IPEX4), or you are fitting the connector at an angle. Check the socket type (Ch. 2.4) and fit the connector straight.
The connector comes off by itself	The connector or socket is worn from repeated disconnection. Secure the connector (Ch. 4.3) or replace the antenna.

9. Information for the EU and Czech Market

9.1 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	PARTIZAN SECURITY s.r.o.
Registered office	Křesomyslova 384/17, 140 00 Praha 4 – Nusle, Czech Republic
Registration	Commercial Register kept by the Municipal Court in Prague, Section C, File 152541
Company ID (IČO)	289 09 437
VAT ID (DIČ)	CZ28909437
E-mail	support@pilotix.eu

9.2 Product safety and identification

- The product is a passive antenna without electronics. It is not subject to the Radio Equipment Directive (RED) or the Electromagnetic Compatibility Directive (EMC). It is placed on the market in accordance with Regulation (EU) 2023/988 on general product safety (GPSR).
- **Product identification:** the manufacturer and type designation can be found on the product page in the e-shop and, for some versions, also on the packaging.
- This product is **not a toy** and is intended for persons aged 14 and over.

9.3 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.

10. 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 9.1.
- 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.