RP-SMA Set for GX12

RP-SMA 90° – IPEX1 cable set
for the RadioMaster GX12 radio · user manual



Read the entire manual before installation. Never switch on the radio without antennas connected.

Rotorama, s.r.o. · www.rotorama.com

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1. Product description

1.1 Purpose

The **RadioMaster RP-SMA Set for GX12** (designated by the manufacturer as *DIY 90 Degree RP-SMA Cable for GX12 & TX16S MK3*) is a set of two short antenna cables. At one end they have an angled (90°) RP-SMA connector with a thread and nut for mounting in a hole in the housing, at the other end a miniature IPEX1 connector. They are used to route the antenna outputs of the RadioMaster GX12 radio to the prepared **DIY SMA** holes on its rear side.

The cables replace the built-in folding antennas of the radio and allow you to connect any antenna with an RP-SMA connector designed for the band in use – for example a higher-gain antenna for long-range flights or an antenna tuned to a specific frequency. According to the manufacturer, the set is also intended for the RadioMaster TX16S MK3 radio.



Cable ends: ① RP-SMA 90° connector for the antenna, ② IPEX1 connector for connection inside the radio

1.2 Specifications and package contents

Product designation	RadioMaster DIY 90 Degree RP-SMA Cable for GX12 & TX16S MK3
Manufacturer code	HP0157.0095
Antenna-side connector	RP-SMA, angled 90°, with thread and nut for mounting in the housing
Radio-side connector	IPEX1
Intended for	RadioMaster GX12; according to the manufacturer also RadioMaster TX16S MK3
Package contents	2 × RP-SMA 90° – IPEX1 cable

Not included in the package:

- antennas with RP-SMA connector,
- tools needed to open the radio,
- the radio.

※ The manufacturer does not state the cable length or its electrical parameters (impedance, attenuation).

2. Installation and use

2.1 Before you start

- Installation requires **opening the radio housing**. Work in a clean, well-lit place with a suitable screwdriver and carry out the modification only if you are confident about it. Damage to the radio caused by incorrect installation is not a defect of this product.
- **Switch off** the radio, disconnect the USB-C cable and **remove the batteries**.
- Before touching the electronics, touch a grounded metal object to discharge static electricity.
- IPEX connectors are miniature and fragile. They are pressed on vertically from above until they click into place and are removed by pulling vertically upwards on the connector itself – **never by the cable**. Each disconnection wears the connector slightly, so do not reconnect it unnecessarily.

2.2 Installation in the GX12 radio

The manufacturer has not published a detailed disassembly procedure for the radio. The following steps describe a general procedure – proceed carefully when opening the radio and never use force.

① Loosen the screws of the rear part of the housing and carefully open the housing. Watch out for the internal cables connecting both parts of the housing – do not pull on them.

② Locate the IPEX connectors to which the built-in antennas are connected and carefully disconnect them.

③ Expose the DIY SMA holes on the rear side of the housing (if they are covered).

④ Push the RP-SMA connector ① through the DIY SMA hole from the inside, screw on the nut from the outside and tighten it gently. Turn the angled connector so that the cable runs freely and is not sharply bent.

⑤ Press the IPEX1 connector ② onto the connector from which you disconnected the built-in antenna until it clicks into place. Connect the second cable in the same way.

⑥ Stow the disconnected leads of the built-in antennas so that they do not touch the electronics and are not in the way (e.g. secure them with insulating tape).

⑦ Check that no cable will be pinched, then close the housing and screw it together.

⑧ Before switching on the radio, screw antennas onto **both** RP-SMA connectors.

Never switch on the radio without antennas connected. Transmitting without an antenna can damage the RF module.

2.3 Choosing an antenna and operation

- The antenna must have an **RP-SMA** connector and must be designed for the band in which the radio transmits – 2.4 GHz, Sub-G 900 MHz, or both bands (dual-band).
- Always fit **both** connectors, using antennas of the same type.
- Tighten the antennas by hand only, without tools.
- Directional antennas (e.g. Moxon or patch) have higher gain in one direction only – point them towards the model during flight.
- After changing the antennas, carry out a range check on the ground before the first flight.

▶ Radiated power and the law of the country of use

Radiated power (e.i.r.p.) is determined by the transmitter output power and the antenna gain – a higher-gain antenna increases it. Set the output power of the radio so that the radiated power does not exceed the limit for the band concerned. The law of the country in which you operate the radio is decisive. In the Czech Republic the conditions are laid down in General Authorisation No. VO-R/10 of the Czech Telecommunication Office (ČTÚ). In the Sub-G range, the 868 MHz band is permitted in the European Union; the 915 MHz band must not be used here.

2.4 Troubleshooting

Problem	Cause and solution
Weak signal or short range after installation	The IPEX1 connector is not seated – open the radio and press the connector until it clicks. Check that the cable is not pinched, that the antennas are tightened and that they are designed for the band in use.
The RP-SMA connector rotates in the hole	Loose nut – hold the connector and gently tighten the nut.
The antenna is screwed on but there is no signal	The antenna has an SMA connector instead of RP-SMA – the thread fits, but the centre contact does not connect. Use an antenna with an RP-SMA connector.

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 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.

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.