



Headtracker Wireless PPM Module

Wireless PPM module for the XF Headtracker
transmitter and receiver module · 2.4 GHz · range up to
7 m



Before use, update the headtracker firmware to version V2.2 or later (Chapter 4.3). Install the transmitter module on the headtracker exactly as described in Chapter 5.1 - incorrect installation may damage the device.

Manual based on the manufacturer's video tutorial · Rotorama, s.r.o. · www.rotorama.cz

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1. Safety instructions

1.1 Before you start

- Read this entire manual before first use and keep it for future reference. If you pass the product on to another person, hand over this manual as well.
- The product is intended for persons aged 14 and over. It is not a toy.
- The module only transmits the PPM signal from the XF Headtracker to an RC transmitter. **It is not an RC system** – do not use it to control a model.
- Do not use a module that is mechanically damaged, wet or shows signs of overheating. Do not disassemble or modify the modules.

1.2 Connection and transmitter module

- Insert the transmitter module (Tx) into the expansion port of the headtracker **exactly as shown in the figure in Chapter 5.1**. An incorrectly installed module may damage the device.
- Never short-circuit the power output (+) and ground (–) of the headtracker expansion port – this may damage the device.
- Install and remove the transmitter module only with the headtracker switched off.
- Assign the headtracker channels only to camera or gimbal functions – never to flight controls, Arm (motor start) or flight modes.

1.3 Built-in Li-Po battery

The receiver module (Rx) contains a built-in 3.7 V / 300 mAh Li-Po battery.

- Charge it only via the USB-C connector from a 5 V power source. Do not leave it charging unattended.
- Do not expose the module to high temperatures, direct sunlight, moisture or fire, and protect it from drops and impacts.
- Stop using a swollen, deformed or overheating module and dispose of it properly (Chapter 8.3).
- Do not remove or puncture the battery.

1.4 Radio link

- The modules communicate in the 2.4 GHz band over a distance of no more than 7 m. Keep the receiver module at the RC transmitter, not on the model.
- Loss of the link is indicated by slow flashing of the link indicator (Chapter 5.3). Before each use, check on the *CHANNEL MONITOR* page that the headtracker channels respond (Chapter 6.3).
- Do not modify the modules or connect amplifiers or other antennas to them.

2. Product description

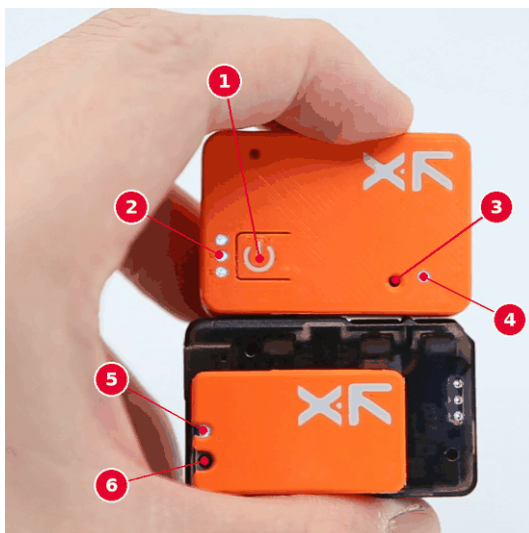
The Headtracker Wireless PPM Module is a set of two modules that wirelessly transmits the PPM control signal from the XF Headtracker to an RC transmitter. This eliminates the trainer cable between the FPV goggles and the RC transmitter. The transmitter module (Tx) plugs into the expansion port of the headtracker and is powered by it. The receiver module (Rx) with its own battery connects to the trainer port of the RC transmitter.

2.1 Package contents

- transmitter module (Tx)
- receiver module (Rx) with built-in battery

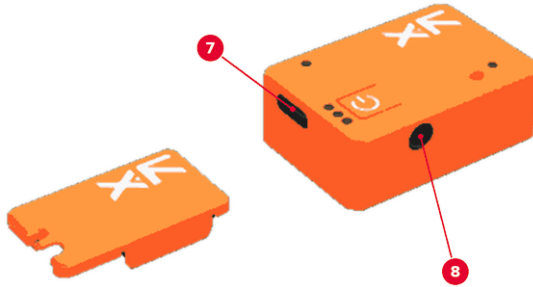
※ The manufacturer does not list a trainer cable, USB-C cable or receiver module holder in the package contents.

2.2 Description of parts



Receiver module (top) and transmitter module installed on the headtracker (bottom)

- ① Power button of the receiver module
- ② LED indicators of the receiver module
- ③ Binding button of the receiver module (in the hole)
- ④ Link indicator of the receiver module
- ⑤ Link indicator of the transmitter module
- ⑥ Binding button of the transmitter module (in the hole)



Transmitter module (left) and receiver module (right)

- ⑦ USB-C connector for charging the receiver module
- ⑧ PPM output of the receiver module (3.5 mm jack)

2.3 Specifications

Product	XF Headtracker Wireless PPM Module
Manufacturer	Nanjing Xianfei Robot Technology Co., Ltd. (XF Robot), www.allxf.com
Compatibility	XF Headtracker with firmware V2.2 or later
Frequency band	2.4 GHz
Max. range	7 m
Transmitter module dimensions	32 × 18.8 × 9.8 mm
Transmitter module weight	3.1 g
Transmitter module power supply	from the headtracker via the expansion port
Receiver module dimensions	41.8 × 28.4 × 14.8 mm
Receiver module weight	18.5 g
Receiver module battery	built-in Li-Po, 1.11 Wh (3.7 V, 300 mAh)
Receiver module charging	USB-C, 5 V DC, 1 A
Receiver module operating time	approx. 5 hours
Headtracker operating time with transmitter module	approx. 4.5 hours
Output	PPM, 3.5 mm jack

3. Legal conditions of use in the Czech Republic and the EU

3.1 The law of the country of use applies

Radio equipment is regulated throughout the European Union by Directive 2014/53/EU, but national regulations differ from country to country – in particular the permitted frequency bands and maximum transmit power. The information in this chapter describes the situation in the Czech Republic. If you use the product in another country, you must comply with the regulations of the country in which you use it.

If you use the headtracker to control a camera or gimbal on a drone or another model aircraft, also observe the rules for the operation of unmanned aircraft under Regulation (EU) 2019/947 and the regulations of the country in which you fly.

3.2 Radio frequencies and transmit power

The modules operate in the **2.4 GHz** band (manufacturer's data). The manufacturer does not publish the maximum transmit power on its website. This information is part of the EU declaration of conformity, which is available from the importer (Chapter 8.2).

In the Czech Republic, the operation of equipment in the 2400–2483.5 MHz band is governed by the general authorisations of the Czech Telecommunication Office (www.ctu.cz):

Band	Type of equipment	Regulation
2400–2483.5 MHz	short range devices, max. 25 mW e.i.r.p.	VO-R/10/05.2025-5
2400–2483.5 MHz	wideband data transmission, max. 100 mW e.i.r.p.	VO-R/12/11.2021-11

- Equipment operated under a general authorisation is not entitled to protection against interference and must not cause interference to other equipment.
- Use only the built-in antennas of the modules. Do not modify the modules or connect amplifiers to them.

4. Preparation

4.1 What else you need

- **XF Headtracker** with firmware **V2.2 or later** (Chapter 4.3).
- **RC transmitter** with a trainer port and the *Master/Jack* trainer mode. The manufacturer's video tutorial uses a RadioMaster TX16S RC transmitter running EdgeTX.
- **Trainer cable** with 3.5 mm jack plugs (TRS or TRRS) between the receiver module and the RC transmitter.
- USB-C cable and 5 V power source for charging the receiver module.
- Computer with the **CwHeadTracker** software for updating the headtracker firmware.
- For an XF gimbal: an RC receiver connected to the gimbal, the J1.0 configuration module and the *Gimbal Config* software (Chapter 6.4).

Attach the receiver module to the RC transmitter so that the trainer cable is not under tension and does not get in the way of operation.

4.2 Charging the receiver module

Charge the receiver module with a USB-C cable from a **5 V DC** power source (charging current 1 A) via connector ⑦. A fully charged module operates for approx. 5 hours. The headtracker is charged separately according to its own manual; with the transmitter module installed, it operates for approx. 4.5 hours.

4.3 Updating the headtracker firmware

Before using the wireless module, update the headtracker firmware to version V2.2 or later.

The firmware package and the CwHeadTracker software are available on the manufacturer's product page at www.allxf.com in the *Downloads* section. How to connect the headtracker to a computer is shown in the manufacturer's video tutorial *Headtracker Calibration and Firmware Upgrade*.

- ① Switch on the headtracker and connect it to the computer with a USB-C cable.
- ② Start the CwHeadTracker software, select the COM port of the headtracker and click *Start Debug*.
- ③ Click *Open*, select the firmware file and click *Upgrade*. Then press and hold the mode switching button of the headtracker until the update is complete.
- ④ In the CwHeadTracker software, select *PPM module* and write the parameters (*burn parameters*).

※ Hold the mode switching button throughout the update; if the update fails, repeat it. If the computer does not detect the headtracker via a USB-C to USB-C cable, use a USB-A to USB-C cable.

5. Getting started

5.1 Installing the transmitter module on the headtracker

The pins of the transmitter module are inserted into the expansion port of the headtracker (pins marked –, +, R, T). The installed module lies flat on the side of the headtracker with the expansion port, with the XF logo facing outwards.



Expansion port of the headtracker (left) and installed transmitter module (right)

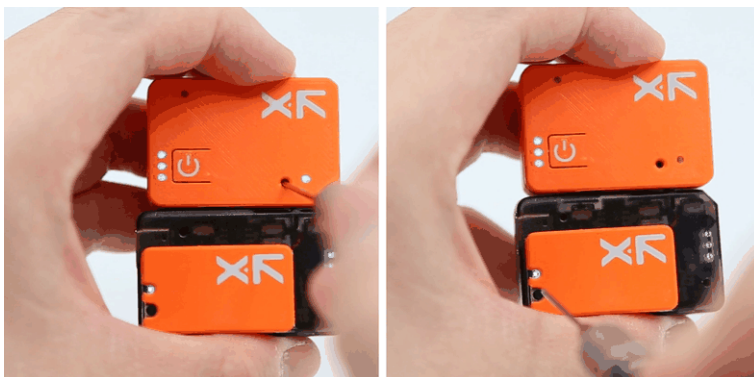
Install the transmitter module exactly as shown in the figure. Otherwise the device may be damaged.

5.2 Switching on and off

- **Headtracker:** briefly press the headtracker button, then press it again and hold it for more than 2 seconds. The transmitter module is powered by the headtracker and switches on with it.
- **Receiver module:** briefly press button ①, then press it again and hold it for more than 2 seconds. Use the same procedure to switch the module off.

5.3 Binding the transmitter and receiver modules

- ① Switch on the headtracker with the transmitter module installed and the receiver module (Chapter 5.2).
- ② Using a thin pin, press and hold binding button ③ of the receiver module, then press and hold binding button ⑥ of the transmitter module.
- ③ The indicators start flashing quickly – the modules are in binding mode.
- ④ As soon as the indicators of both modules are lit continuously, binding is successful.



Binding button of the receiver module (left) and of the transmitter module (right)

Slow flashing of the link indicator means that the link between the modules is interrupted.

5.4 Connecting the receiver module to the RC transmitter

Connect PPM output ⑧ of the receiver module to the trainer port of the RC transmitter with a trainer cable.



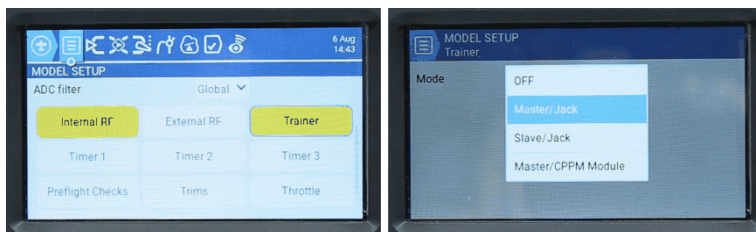
Receiver module connected to the RC transmitter

6. RC transmitter setup

The procedure follows the manufacturer's video tutorial, which uses a RadioMaster TX16S RC transmitter running EdgeTX. Page and item names are given as displayed by the RC transmitter. For other RC transmitters, refer to their manual for the equivalent settings.

6.1 Trainer mode

- ① Switch on the RC transmitter.
- ② On the *MODEL SETUP* page, open the *Trainer* item.
- ③ Select *Master/Jack* as the mode (*Mode*).

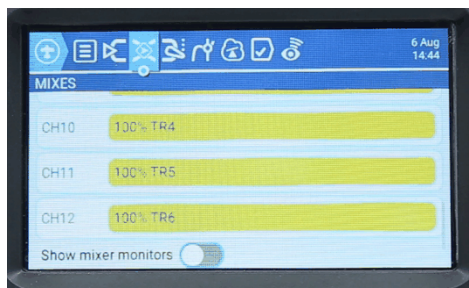


Trainer item on the MODEL SETUP page and selection of the Master/Jack mode

6.2 Assigning the headtracker channels

By default, the headtracker sends channels CH4 = roll, CH5 = pitch and CH6 = yaw in the PPM signal. They are therefore available on the trainer inputs of the RC transmitter as TR4, TR5 and TR6.

- ① On the *MIXES* page, assign the trainer signals TR4, TR5 and TR6 to free channels – in the video tutorial to channels CH10, CH11 and CH12 (100% TR4, 100% TR5, 100% TR6).
- ② Assign a 3-position switch and a dial to two other channels. In the video tutorial, channel CH8 switches the gimbal mode (MODE) and CH9 sets the sensitivity (SENS).



MIXES page – channels CH10 to CH12

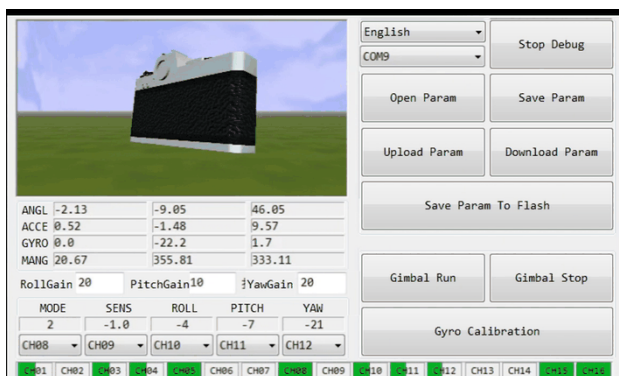
※ Reverse, mapping, range and sub-trim of the PPM channels can be set in the CwHeadTracker software or in the RC transmitter.

6.3 Checking the signal

On the *CHANNEL MONITOR* page, check that the values of channels CH10 to CH12 change when you move your head with the FPV goggles and headtracker.

6.4 Example: controlling an XF gimbal

- ① Connect an RC receiver to the gimbal, e.g. PWM, SBUS or ELRS.
- ② Connect the update port of the gimbal to the computer via the J1.0 configuration module and power up the gimbal.
- ③ Start the *Gimbal Config* software.
- ④ Assign the 3-position switch channel to the MODE function, the dial channel to the SENS function and channels CH10, CH11 and CH12 to the ROLL, PITCH and YAW functions.
- ⑤ Check that the gimbal follows the movement of your head.



Gimbal Config software – assignment of the MODE, SENS, ROLL, PITCH and YAW channels

※ For the detailed procedure for setting and saving the gimbal parameters, refer to the manual of the gimbal used.

7. Maintenance and troubleshooting

7.1 Maintenance and storage

- Keep the modules dry and clean. Wipe off dirt with a dry soft cloth; do not use solvents.
- Protect the holes with the binding buttons from dust and moisture. Press the buttons only with a thin non-conductive pin and without force.
- Before longer storage, partially charge the receiver module and store it in a dry place, away from heat and flammable materials. During long-term storage, recharge it occasionally so that the battery does not become fully discharged.
- Remove the transmitter module from the headtracker for transport so that its pins do not bend.

7.2 Troubleshooting

Problem	Possible cause and solution
Link indicator flashes slowly	The link is interrupted. Check that the headtracker is switched on and charged, the transmitter module is installed correctly (Chapter 5.1) and the distance does not exceed 7 m. If the link is not established, bind the modules again (Chapter 5.3).
Binding fails	Switch on both modules, press and hold the binding button of the receiver module first and then that of the transmitter module. Check that the headtracker firmware is version V2.2 or later.
Channels do not respond in CHANNEL MONITOR	Check the <i>Master/Jack</i> trainer mode (Chapter 6.1), the TR4-TR6 mixes (Chapter 6.2) and that the trainer cable is plugged in. In the CwHeadTracker software, check that <i>PPM module</i> is selected (Chapter 4.3).
Gimbal turns the wrong way	Reverse the channel in the RC transmitter or in the CwHeadTracker software (Chapter 6.2).
Receiver module does not switch on	The battery is flat – charge the module (Chapter 4.2). When switching on, hold the button for more than 2 seconds after the second press.

8. Information for the EU and Czech Market

8.1 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@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.cz

8.2 Product conformity



- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorاما.cz.
- **Product identification:** the type designation (Headtracker Wireless PPM Module) is given on the product packaging.

8.3 Disposal of electrical equipment and batteries



- 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 product contains a built-in rechargeable battery. Where possible, hand it over together with the device – do not dispose of the battery in mixed waste or in fire.
- 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>.

9. Warranty and rights arising from defective performance

Rights of the buyer under Czech law

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 8.1.
- 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.