MAT-TUNER®

mAT-10R Universal QRP Remote Antenna Tuner

Operating Manual V1.0 (Simplified Edition)

⚠ Safety Precautions

⚠ Do not touch the antenna or connectors during transmission to avoid RF burns.

⚡ Disconnect the antenna during thunderstorms to prevent electric shock or equipment damage.

⚙ Do not operate the tuner with its cover removed.

🔌 Always turn off the transceiver before connecting or disconnecting cables.

☔ This product is not waterproof; protect it from rain and moisture when used outdoors.

📶 The maximum input power must not exceed 10 W.

📘 Product Overview

The mAT-10R is a universal QRP remote automatic antenna tuner designed for a QRP HF transceivers.

The tuner is powered through its coaxial feedline. It must be used with a Bias-Tee unit (such as **mAT-4117** or **mAT-BT1**), but other brands of bias-tees are also compatible.

Main Features

- Maximum power: 10 W (SSB / Digital modes)
- Memory: 16 000 memory locations
- Frequency range: 1.8 – 54 MHz
- BNC coaxial and wire antennas
- Latching relays

🔌 Connector Description

Top Panel

Label	Function
COAX	BNC coaxial antenna connector
WIRE	Red banana jack for wire antenna

Label	Function
GND	Black banana jack for ground connection

⚠ **Do not use the BNC and banana antenna connectors at the same time.**

Bottom Panel

Label	Function
RF-IN&DC	RF and DC input (on a single feedline)

🛠 Installation Steps

1 Secure the tuner in place with cable ties or Velcro. If used long-term outdoors, apply waterproofing.

2 Connect the antenna in one of the following ways:
- Option A: **COAX** antenna connection
- Option B: **WIRE** antenna connection.

⚠ **Only one connection method can be used at a time**.

💡 Tip: When using a wire antenna, a good ground connection to "GND" is strongly recommended.

3 Connect the Bias-Tee:
Tuner's "**RF-IN & DC**" -> Bias-Tee's "**RF OUT & DC**".

4 Connect the transceiver:
Transceiver ANT socket -> Bias-Tee RF input (**RF IN**).

5 Connect power:
Bias-Tee DC input -> DC or battery (DC 7–14 V).

6 If using an SWR meter:
Transceiver -> SWR meter -> Bias-Tee.

🚫 **Do not insert an SWR meter, balun, or power meter between the Bias-Tee and the tuner. This may cause a DC short and damage the equipment.**

⚠ Be sure not to reverse the RF input and output ports on the Bias-Tee.

⚙ Grounding Recommendations

If using a coax-fed antenna, no additional ground is required.

When using a wire antenna, a proper ground connection to the “GND” terminal is strongly recommended. A good ground significantly improves transmission efficiency and reduces interference.

Operating Instructions

1. Turn on the transceiver and Bias-Tee.
2. Set the transceiver to FM, FSK, or RTTY mode for a continuous carrier.
3. Set RF power to 3–6 W.
4. Press and hold the PTT to transmit.
5. Turn the Bias-Tee off for a few seconds, then on to start tuning.
6. When the SWR drops and stabilizes, tuning is complete.
7. Turn off the Bias-Tee and restore the desired transceiver settings.

Tuning Tips

- Tip1: During transmission, switching on the Bias-Tee immediately initiates tuning.
- Tip2: Repeating tuning at the same frequency may yield a lower SWR.
- Tip3: After tuning, turn off the Bias-Tee to save power.

Technical Specifications

Frequency Range:	1.8 – 54 MHz
Maximum Power:	10 W (SSB / Digital Modes)
Tuning Power:	3 – 6 W
Tuning Time:	0.1 s (Memory), ≤ 10 s (Full)
Memory Channels:	16 000
Power Supply:	DC 7 – 14 V / 0.1 A max
Temperature:	−10 °C to +60 °C
Dimensions / Weight:	142×67×28 mm / 200 g

Technical Support & Purchase Information

Website: http://www.mat-tuner.com – for product details and manual downloads.

Please purchase only from authorized dealers to ensure warranty and technical support. Products from unauthorized sources may not be eligible for after-sales service. Authorized dealer list: http://www.mat-tuner.com/buy.com