

## **mAT-10 INSTRUCTIONS**

### Automatic antenna tuner

#### **Product Overview**

The mAT-10 is a compact QRP automatic antenna tuner. It is designed mainly for the YAESU FT-817 and FT-818 transceivers. It can also be used with other QRP transceivers.

When connected to an FT-817 or FT-818 using the dedicated mAT-CY control cable, the mAT-10 works as a dedicated automatic tuner. It supports simple one-touch tuning.

When used with other QRP transceivers, no control cable is required. In this case, the mAT-10 operates as a universal QRP automatic antenna tuner.

The mAT-10 supports a frequency range from 1.8 to 54 MHz. The maximum RF power is 20 W.

The tuner has two built-in 10440 lithium batteries. No external power supply is required. A standard USB Type-C jack is provided for charging. Common phone chargers or USB power sources can be used.

#### **Front Panel**

The front panel has six indicator LEDs and one multi-function key.

- **SWR & Battery Indicator** Shows SWR during tuning. Shows battery level when the tuner is powered off.
- **Online/Bypass Indicator** Lights on in Online mode. Turns off in Bypass mode.
- **Tuning Indicator** Lights on during tuning. Turns off when tuning is finished.
- **Power Indicator:**
  - ♦ Lights green when the tuner is powered on.
  - ♦ Flashes green when the battery is low.
  - ♦ Lights red while charging. Turns off when charging is complete.
- **Multi-function key:** Used to power on or off, switch between Online and Bypass modes, start tuning, and check battery level.

#### **Top Panel**

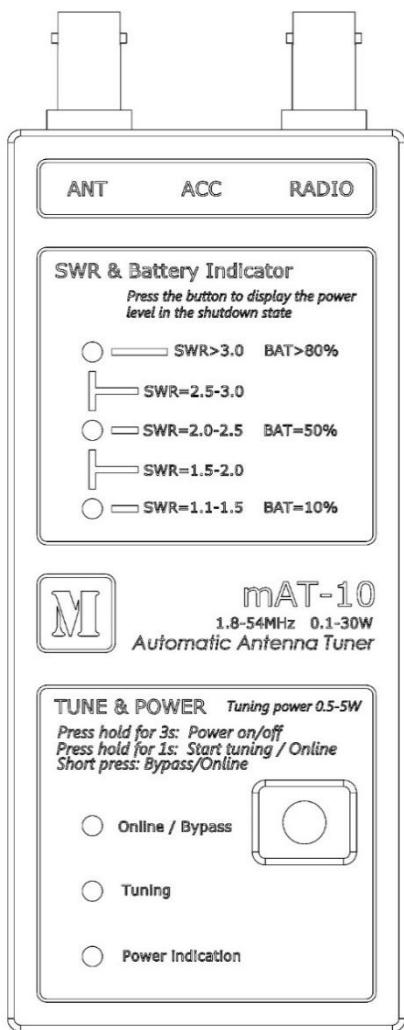
**ANT:** BNC connector for the antenna feedline.

**RADIO:** BNC connector for the transceiver antenna jack.

**ACC:** Control cable connector for the FT-817/818 ACC jack.

## Bottom Panel

Type-C USB charging jack (4.5-5.5V, max. 1A).



## Installation and Connection

### For YAESU FT-817/818 Transceivers

1. Connect the FT-817/818 “**HF/50MHz**” antenna jack to the tuner “**RADIO**” jack using a coaxial cable.
2. Connect the antenna to the tuner “**ANT**” jack.
3. Connect the FT-817/818 “**ACC**” jack to the tuner “**ACC**” jack using the mAT-CY control cable.

### For Other QRP Transceivers

1. Connect the transceiver antenna jack to the tuner “**RADIO**” jack using a coaxial cable.
2. Connect the antenna to the tuner “**ANT**” jack.

## Operation Instructions

**Battery Level Display** When the tuner is powered off, briefly press the multi-function key to show the battery level.

### Power On and Power Off

- ♦ To power on, press and hold the multi-function key until the “**Power Indicator**” lights up.
- ♦ To power off, press and hold the multi-function key until the “**Power Indicator**” turns off.

**Online and Bypass Mode** Briefly press the multi-function key to switch between Online and Bypass modes.

- ♦ The **Online/Bypass** indicator lights on in Online mode.
- ♦ The **Online/Bypass** indicator is off in Bypass mode.

### Tuning

**For FT-817/818** Press and hold the multi-function key until the **Tuning** indicator lights up, then release the key. The tuner starts tuning automatically. Wait until the **Tuning** indicator turns off. Tuning is complete.

### For Other Transceivers:

1. Set the transceiver to FM, FSK, RTTY, or a similar constant-carrier mode.

2. Reduce the RF output power to about 5 W.
3. While holding PTT, press and hold the tuner multi-function key until the **Tuning** indicator lights up, then release the key. The tuner starts tuning.
4. Wait until the **Tuning** indicator turns off. Tuning is complete. Release the PTT key. Restore the original operating mode and power level.

## **Battery and Charging**

The tuner uses two built-in 10440 lithium batteries. Each battery has a nominal voltage of 3.7 V and a capacity of 350 mAh.

Charging is done through the USB Type-C jack. The tuner uses magnetic latching relays. This design provides low power consumption and long operating time on a full charge.

During charging, the **Power Indicator** lights red. When charging is complete, the red light turns off. Typical charging time is about 2 hours.

**Note 1:** If the **Power Indicator** flashes during charging, a battery fault is indicated. Remove the rear cover and check whether the batteries are loose. If the batteries are installed correctly, replace them with two new batteries of the same type.

**Note 2:** Before first use, or after replacing the batteries, connect a charger to activate the battery protection circuit before powering on the tuner.

## **Included Accessories**

- mAT-CY control cable.
- Type-C charging cable.

## **Technical Specifications**

- Construction: CNC-machined metal enclosure.
- Frequency Range: 1.8 - 54 MHz
- Maximum Power: 20W
- Tuning Power: 0.5 - 5W
- Tuning Time:  $\leq 5$  s (full tuning), 0.1 s (memory tuning)
- Memory Channels: 16,000
- Operating Temperature: -10°C to +60°C
- Dimensions: 151 × 61 × 23 mm

- Weight: 300g

## **Technical Support**

For more information, product manuals, and demonstration videos, please visit the official website: <http://www.mat-tuner.com/>.