

## mAT-600A Universal Automatic Antenna Tuner Operation Manual

Please **READ ALL INSTRUCTIONS** carefully and completely before using this tuner.

### ■ WARNING

- ◆ **WARNING! NEVER** touch the antenna or antenna connector with your hand when the transmitter is transmitting, it will cause burns!
- ◆ **WARNING! NEVER** use the antenna tuner during a lightning storm. It may result in an electric shock, cause a fire or damage the tuner. Always disconnect the power source and antenna before a storm.
- ◆ **WARNING! NEVER** operate the tuner with its cover removed. Touching the components inside the tuner while transmitting will result in painful RF burns.
- ◇ Always turn your transmitter off before plugging or unplugging anything, otherwise it would be damaged.
- ◇ The tuner is designed for indoor operation only, it is not waterproof. If you use it outdoors, you must protect it from rain, dew and steam.

### ■ INTRODUCTION

The mAT-600A is a universal high-power automatic antenna tuner compatible with nearly all transceivers and linear amplifiers. It supports a maximum RF power of 600 watts (SSB) and operates across a frequency range of 1.8-54MHz. Featuring an extremely simple operation, the tuner's front panel contains just one button and three indicator lights.

The unit is constructed with a full aluminum enclosure and CNC-machined panel, combining an aesthetically pleasing rugged design with relatively lightweight portability.

### ■ Front

The tuner's front panel features three status indicators and a multi-function TUNE button (which also serves as the power indicator). Refer to the diagram.



## Status Indicators

1. **TUNING** (Lit)
  - Indicates the tuner is actively tuning.
2. **ONLINE** (Lit/Unlit)
  - **Lit**: Tuner is online (normal operation).
  - **Unlit**: Tuner is bypass (RF input/output are directly connected, bypassing tuning).
3. **WARN** (Lit only during tuning),
  - Indicates excessive or insufficient RF input power during tuning.

## Button [TUNE]

- **Function**: Press to initiate tuning.
- **Power Indicator**: Lights up when the tuner is powered on.

## ■ Rear:



1. **RF-IN (Max 600W)**: RF input socket. Connect to the antenna socket of your transceiver or linear amplifier. This socket receives the RF power signal for the antenna tuner.
2. **ANTENNA**: Antenna output socket.
3. **GND**: Ground terminal. For optimal transmission and reception efficiency, connect this terminal to a properly grounded earth connection.
4. **DC 12-15V 1A**: Power supply socket. Use the included DC power cable to connect to a 12-15V DC power source capable of providing at least 1.0A current. **Warning**: Operating outside this voltage range (below 12V or above 15V) may cause malfunctions or permanent damage to the tuner.

## ■ Power On/Off and Tuning Operation

The mAT-600A tuner has no physical power switch. It automatically powers on when connected to a DC power source (the **TUNE** button illuminates), and shuts down when disconnected.

## Tuning Procedure

1. Configure Your Transceiver:
  - Set to desired frequency
  - Adjust power output to 10W
  - Select FM, FSK, or RTTY mode
2. Bypass Linear Amplifier (if used):
  - Switch amplifier to THRU (bypass) mode to disable amplification
3. Activate Transmitter:
  - Press and hold the microphone's PTT button to transmit a stable carrier signal
4. Initiate Tuning:
  - Press and hold the tuner's [TUNE] button for 1 second to start tuning
    - The TUNING indicator will illuminate
    - Loud operational noise during tuning is normal
  - If the WARN light activates:
    - Immediately release PTT to stop transmission
    - Verify transceiver/amplifier settings (excessive/low RF power detected)
5. Tuning Completion:
  - When TUNING light turns off and noise stops:
    - ONLINE lit: Tuning successful
    - ONLINE unlit: Tuning failed
6. Post-Tuning Setup:
  - Restore transceiver to desired power/output mode
  - Re-enable amplifier (if applicable)
7. Frequency Change Requirement:
  - Repeat Steps 1–6 before first transmission if frequency is altered

## IMPORTANT NOTICE

Before initiating tuning:

1. **MANDATORY** Verify your transceiver's output power is set to **≤10W**.
2. **MANDATORY** Ensure linear amplifiers are switched to **BYPASS** (non-amplification) mode.

**WARNING:** Exposing the tuner to excessive RF power during tuning may cause **irreversible damage**.

## ■ ACCESSORY

5.5mm DC power line (intermediate contact diameter 2mm)

Standard

## ■ ELECTRICAL

- Frequency Range: 1.8 ~ 54 MHz
- Input Power Capability: 600W(SSB)
- Tuning Power: 5-15W
- Tuning time: ≤ 8 S(Programmed), 0.1S (From pre-saved frequencies in memory)
- Operating Temperature: -10°C ~ +60°C, 14°F ~ 140°F
- Channel: 16000

- Power Requirements: DC 12-14V, 1.0A
- Dimensions (H x W x L): 92 x 75 x 193mm
- Weight:1.9Kg, Gross weight: 2.5Kg

## ■ TECHNICAL SUPPORT

Visit the web: <http://www.mat-tuner.com/> for more information and operation manual. In order for you to get better service, we recommend you to buy our products from your local distributor.

*To reduce paper waste, the operation manual is now available for download on our website.*

### **HENGSHUI MAT-TUNER LLC**

No.28 Ronghuabei ST, Hengshui, CHINA

<http://www.mat-tuner.com>

E\_mail: [bg3mzu@gmail.com](mailto:bg3mzu@gmail.com), [mail@mat-tuner.com](mailto:mail@mat-tuner.com)