

## 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
- Impedance matching range: 5 to 1000 ohms
- Input Power Capability: 600W(SSB)
- Tuning Power: 5-15W
- Tuning time: Maximum: 8Sec. From memory: Less than 100 msec.
- 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): 76 x 192 x 205mm
- Weight:1.9Kg, Gross weight: 2.2Kg

## ■ 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.

You can watch an operational video demo of this tuner on our website (<http://www.mat-tuner.com>), which will help you get more comfortable with using it.

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