

Jieotwice mAT-600A

Jieotwice mAT-600A Automatic Antenna Tuner User Manual

Model: mAT-600A

1. INTRODUCTION

This manual provides instructions for the proper installation, operation, and maintenance of the Jieotwice mAT-600A Automatic Antenna Tuner. The mAT-600A is designed to automatically match the impedance of your antenna system to your transceiver, ensuring efficient power transfer across a wide frequency range for amateur radio applications.

2. KEY FEATURES

- **Universal Compatibility:** Operates with most HF radios without requiring dedicated data cables.
- **High Power Handling:** Supports up to 600W PEP (SSB) for various HF station configurations.
- **Wide Frequency Coverage:** Tunes from 1.8 MHz to 54 MHz, encompassing all HF bands and the 6-meter band.
- **Fast Tuning:** A full tuning cycle completes in approximately 8 seconds, with memory recall in 0.1 seconds.
- **Extensive Memory:** Stores up to 16,000 tuning profiles, beneficial for multi-antenna setups or frequent band changes.
- **Simple Operation:** Features a single button for initiating the tuning process.

3. SPECIFICATIONS

Parameter	Value
Model	mAT-600A
Tuning Power	5–15W
Max. RF Power	600W PEP (SSB)
Frequency Range	1.8–54 MHz

Full Tuning Time	≤ 8 seconds
Memory Recall Time	0.1 second
Memory Channels	16,000 stored
Power Supply	DC 12–14V, ≥1A
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Dimensions (LxWxH)	192 x 75 x 193 mm
Weight	1.9 kg (4.2 lbs)



Image: The mAT-600A tuner with its physical dimensions labeled.

4. PACKAGE CONTENTS

The package includes the following items:

- 1 x Jieotwice mAT-600A Automatic Antenna Tuner
- 1 x DC Power Cable



Image: The mAT-600A tuner unit shown alongside its included DC power cable.

5. SETUP

5.1 Physical Connections

1. **Antenna Connection:** Connect your antenna's coaxial cable to the "ANTENNA" SO-239 connector on the rear panel of the mAT-600A.
2. **Transceiver Connection:** Connect a coaxial cable from your transceiver's antenna output to the "RF-IN (Max 600W)" SO-239 connector on the rear panel of the mAT-600A.

3. **Ground Connection:** For optimal performance and safety, connect a good quality ground wire from the "GND" terminal on the rear panel to an earth ground.
4. **Power Connection:** Connect the supplied DC power cable to the "DC 12-14V 1A" input on the rear panel. Ensure the power supply provides 12-14V DC at a minimum of 1A.



Image: Rear view of the mAT-600A tuner, highlighting the antenna, ground, RF-IN, and DC power input ports.

5.2 Initial Power On

Once all connections are secure, apply power to the mAT-600A. The unit will perform a brief self-test upon startup.

6. OPERATION

6.1 Tuning Process

The mAT-600A features a single "TUNE" button for initiating the tuning process.

1. Set your transceiver to a low power output, typically between 5W and 15W. This is the recommended power for the tuning cycle.
2. Select the desired operating frequency on your transceiver.
3. Press and hold the "TUNE" button on the front panel of the mAT-600A for approximately 1 second.
4. While holding the "TUNE" button, transmit a continuous carrier (e.g., CW or FM mode) from your transceiver. The tuner will begin its automatic tuning cycle.
5. Release the "TUNE" button once the tuning cycle is complete, indicated by the "TUNING" LED turning off and the "ONLINE" LED illuminating.



Image: A hand pressing the "TUNE" button on the front panel of the mAT-600A automatic antenna tuner.

6.2 Indicator Lights

- **TUNING:** This LED illuminates during the active tuning process.
- **ONLINE:** This LED illuminates when the tuner has successfully matched the antenna impedance and is ready for operation.
- **WARN:** This LED illuminates to indicate a warning condition, such as an antenna mismatch that cannot be tuned, or an internal error. Refer to the Troubleshooting section if this light appears.

6.3 Memory Recall

The mAT-600A automatically stores tuning settings for each frequency. When you return to a previously tuned frequency, the tuner will recall the stored settings in approximately 0.1 seconds, significantly speeding up the tuning process and reducing the need for a full re-tune.

7. MAINTENANCE

- Keep the tuner clean and free from dust. Use a soft, dry cloth for cleaning.
- Ensure proper ventilation around the unit to prevent overheating during operation.
- Regularly check all cable connections for tightness and signs of corrosion.
- Do not expose the unit to excessive moisture, rain, or extreme temperatures.
- Do not attempt to open the casing or service the unit yourself. Refer all servicing to qualified personnel.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Tuner does not power on.	No power supply, incorrect voltage, or faulty power cable.	Check DC power cable connection. Verify power supply output (12-14V DC, $\geq 1A$).
"TUNING" LED stays on, "ONLINE" LED does not light.	Insufficient RF power for tuning, antenna mismatch too severe, or faulty antenna/cable.	Ensure transceiver is transmitting 5-15W. Check antenna and coaxial cable for faults. Try a different frequency or antenna.
"WARN" LED illuminates.	High SWR detected that cannot be tuned, or an internal fault.	Reduce transmit power. Check antenna system for severe mismatch or short/open circuits. If the problem persists, contact support.
Poor tuning performance or high SWR after tuning.	Improper ground connection, faulty coaxial cables, or antenna issues.	Ensure a good earth ground connection. Inspect all coaxial cables and connectors. Verify antenna integrity and proper installation.

9. SAFETY INFORMATION

- Always operate the tuner within its specified power limits (Max 600W PEP SSB). Exceeding these limits can damage the unit and your transceiver.
- Ensure proper grounding of the tuner and your radio equipment to prevent electrical shock and reduce RF interference.
- Do not operate the tuner in wet or damp conditions.
- Keep the unit away from strong magnetic fields.
- Disconnect power before making or changing any connections to prevent accidental damage or injury.

10. WARRANTY AND SUPPORT

Information regarding warranty coverage and technical support for the Jieotwice mAT-600A Automatic Antenna Tuner is typically provided with your purchase documentation or available on the manufacturer's official website. Please refer to those resources for details on warranty periods, service procedures, and contact information for technical assistance.

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