

General Automatic Antenna Tuner
Operating Manual

Safety Warnings

- Do not touch the antenna or connectors while transmitting. Doing so may result in RF burns.
- Do not use the tuner during thunderstorms. Always disconnect the antenna before a storm approaches.
- Never operate the tuner with the enclosure open. Contact with internal components during transmission may cause severe burns.

Operational Precautions

- Always turn off the transceiver before connecting or disconnecting any cables.
- This product is not waterproof. Provide adequate rain and moisture protection when used outdoors.

Product Overview

The mAT-125S is a general-purpose automatic antenna tuner with a maximum power rating of 120 W (SSB/CW, 30 W Digital Modes). It is compatible with nearly all brands and models of HF transceivers.

Technical Specifications

Specification	Details
Frequency Range	1.8 – 54 MHz
RF Power	120 W (30 W digital modes)
Tuning Power	5–15 W
Antenna Connector	UHF (SO-239 / SL16)

Specification	Details
Tuning Time	Less than 5 seconds (full tune)
Operating Temperature	-10 °C to +60 °C
Dimensions / Weight	200 × 130 × 40 mm, 800 g

Front Panel Description



Label	Type	Function
1.5-3.0	LED	Displays current SWR
PWR	LED	Power status indicator
TUNE/BYPASS	Switch	Online / Tune / Bypass
ON/OFF	Switch	Power switch

Rear Panel Description



Label	Type	Function
ANT	UHF socket	Antenna connection
RF IN	UHF socket	RF input from transceiver
GND	Ground terminal	Connect to ground
DC	Power jack	12–14 V DC, max 1 A

Note: The tuner is supplied with a DC power cable only. RF coaxial cables are not included and must be provided by the user.

Installation

Warning: Always turn off the transceiver before installation.

1. Connect the antenna feed line to the “**ANT**” connector on the rear panel of the tuner.
 2. Use another coaxial cable to connect the transceiver antenna connector to the “**RF IN**” connector on the tuner.
 3. Use the supplied DC power cable to connect the tuner to a DC power source or lithium battery. Observe correct polarity; reversing the polarity will damage the tuner.
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Operating Modes

1. Fully Automatic

When the “**TUNE/BYPASS**” switch is set to **TUNE**, the tuner will automatically start tuning whenever the detected SWR exceeds 2.0. When the tuner is powered on, the “**1.5**” indicator LED flashes twice, indicating that this mode is active.

2. Semi-Automatic

Tuning starts only when the “**TUNE/BYPASS**” switch is manually moved from **BYPASS** to **TUNE**. When the tuner is powered on, the “**1.5**” indicator LED flashes once, indicating that this mode is active.

3. Mode Switching

To switch to **Fully Automatic Mode**: With the power off, set the “**TUNE/BYPASS**” switch to **BYPASS**. Turn on the power, then within 2 seconds move the switch to **TUNE**.

To switch to **Semi-Automatic Mode**: With the power off, set

the “**TUNE/BYPASS**” switch to **TUNE**. Turn on the power, then within 2 seconds move the switch to **BYPASS**.

Tuning Procedure

When the SWR of the connected antenna is too high, tuning can be initiated as follows.

• Tuning in Semi-Automatic Mode:

1. Set the transceiver to FM, CW, or FSK mode.
2. Transmitter RF output: 5–15 W.
3. Press and hold the PTT to transmit a steady carrier.
4. Move the “**TUNE/BYPASS**” switch from **BYPASS** to **TUNE** to start tuning.
5. When tuning is complete, release the PTT to stop transmission. Restore the transceiver to the desired operating mode and power level. Tuning is complete.

• Tuning in Fully Automatic Mode:

First, ensure that the “**TUNE/BYPASS**” switch is in the **TUNE** position. Then follow steps 1, 2, 3, and 5 described above for semi-automatic mode. In fully automatic mode, when the SWR exceeds 2.0, the tuner will automatically initiate tuning without manual operation of the “**TUNE/BYPASS**” switch, provided the switch remains in the **TUNE** position.

WARNING: Always set transceiver output power to 15 W or less before tuning. Exceeding this level can permanently damage the tuner.

Notes:

- When the “**TUNE/BYPASS**” switch is set to **BYPASS**, the tuner is offline.
- In semi-automatic mode, moving the “**TUNE/BYPASS**” switch from **BYPASS** to **TUNE** initiates tuning.
- In fully automatic mode, simply leave the “**TUNE/BYPASS**” switch in the **TUNE** position.

Accessories

Standard accessories:

- mAT-125S Operating Manual
 - DC Power Cable
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Technical Support

Visit <http://www.mat-tuner.com> for product info, manuals, images, and demonstration videos.

Purchase Notice

Please purchase products through authorized dealers and retain your proof of purchase to ensure warranty and technical support. Products purchased through unauthorized channels may not be eligible for after-sales service or technical support. Our website lists authorized dealers in major countries and regions.

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