

mAT-40 HF-SSB Automatic Antenna Tuner

August 29, 2025

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

IMPORTANT

- ◆ **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 antenna before a storm.
- ◆ **NEVER** operate the tuner with its cover removed. Contact with 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.
- ◇ We cannot guarantee that all of your transmitters will be fully compatible with this tuner, especially those transmitters released after the tuner was sold.

INTRODUCTION

The mAT-40 HF-SSB Automatic Antenna Tuner quickly and automatically tunes any unbalanced, or wire antenna to approximately 50 ohms. By selecting an optional adapter cable (compatible with transmitters from ICOM, YAESU, and KENWOOD), the tuner can be used with a wide range of transmitter brands, offering the same ease of operation as tuners designed for their own brands. Its housing is crafted from milled and anodized aluminum alloy, combining aesthetic refinement with a compact and robust structure, ensuring reliable performance even in harsh outdoor environments. With a maximum dimension of just 20 cm, it is currently the smallest outdoor antenna tuner available on the market.

The mAT-40 also features an advanced memory tuning function, offering 16,000 memory channels. When tuning to a frequency close to a previously used one, it recalls the previous settings, enabling near-instantaneous tuning. It learns your preferred frequencies and bands as you use it, making subsequent tuning even faster. You can also manually initiate a tuning cycle when necessary.

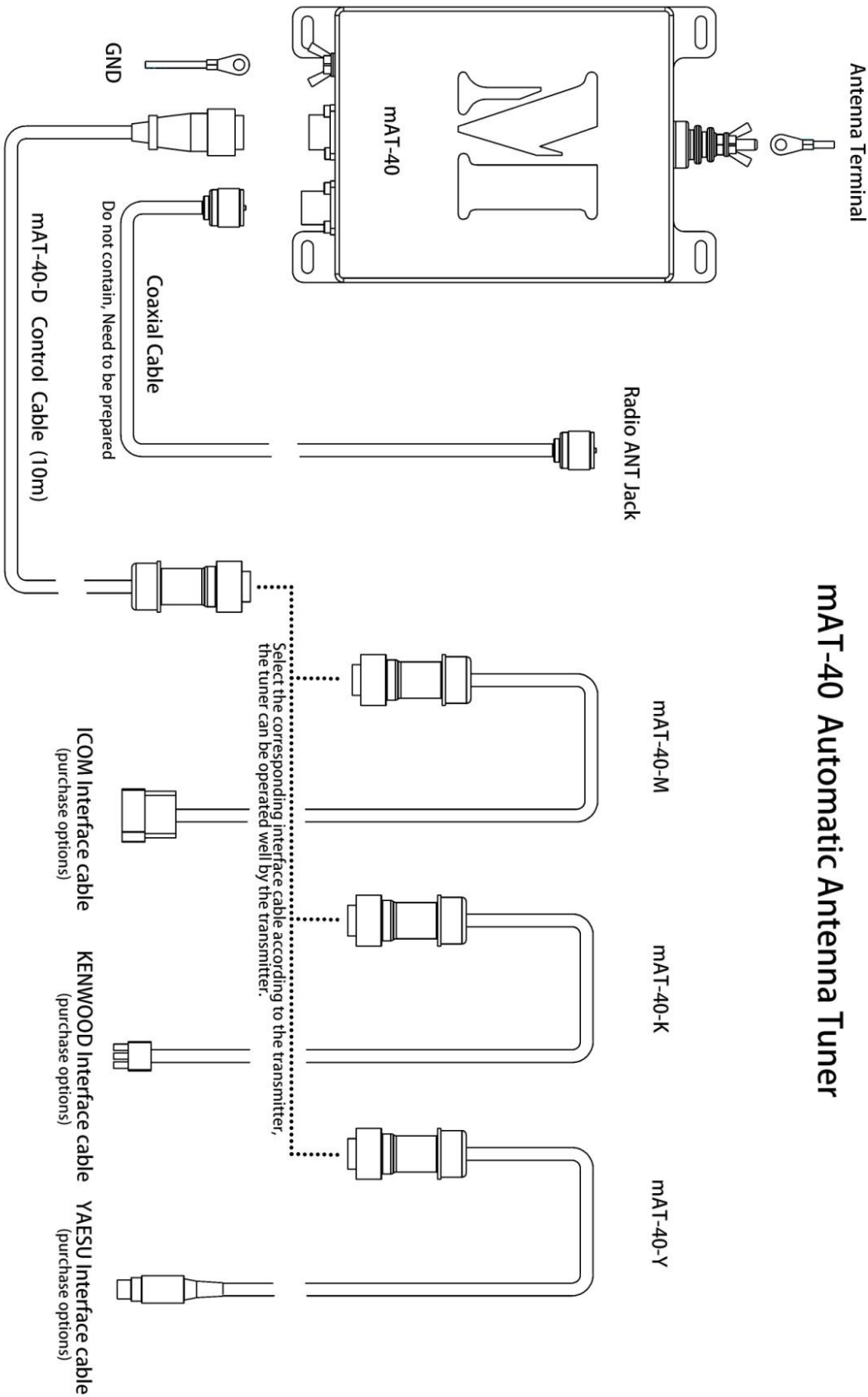
The standard package includes:

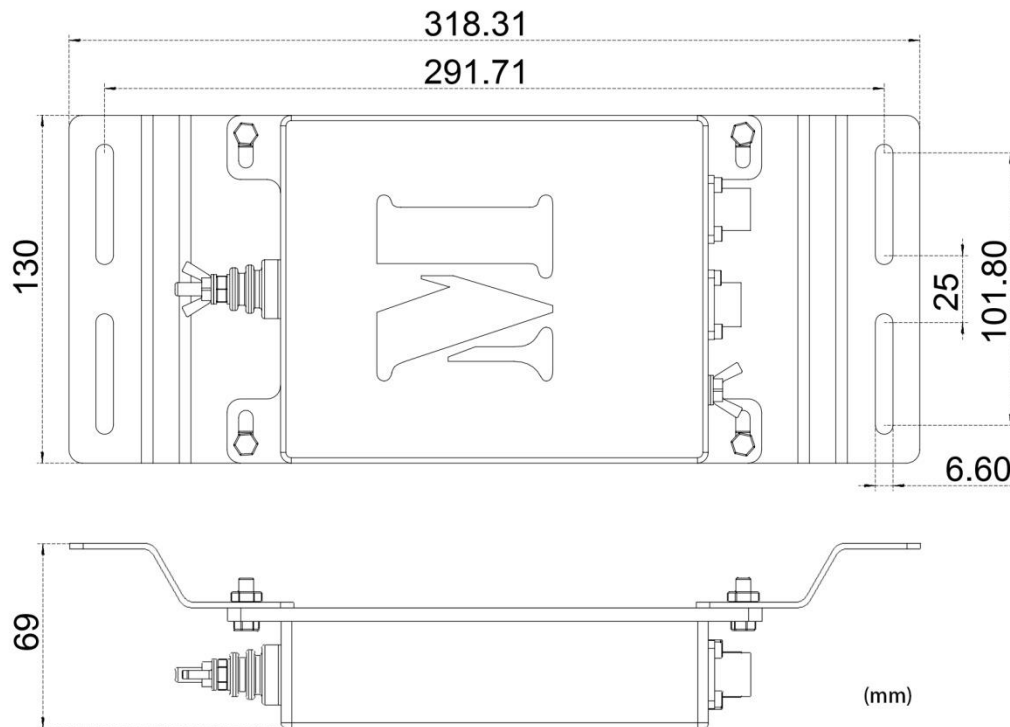
1. T-40 Tuner Main Unit
2. Control Cable (mAT-40-D, 10m length)
3. Optional Accessory: mAT-40-Y (YAESU Adapter Cable)
4. Optional Accessory: mAT-40-M (ICOM Adapter Cable)
5. Optional Accessory: mAT-40-K (KENWOOD Adapter Cable)

Please select the correct adapter cable to ensure full compatibility with your transmitter.

Specifications

- **Maximum Power:**
 - SSB: 120W continuous, 150W short-term
 - Digital Modes (FT8/RTTY/FSK): 30W max
- **Memory Channels:** 16,000
- **Tuning time:** 0.1 – 5s, 0.1s (memory tune)
- **Frequency Range:** 1.8–54 MHz
- **Impedance Matching Range:** 5 to 1500 ohm
- **Dimensions:** 20cm x 13cm x 4.5cm (L x W x H).
- **Weight:** 1.0Kg.





Installation dimensions of tuners after mounting brackets

Install

The mAT-40 consists of three parts: the tuner, a control cable, and adapter cables. With the correct adapter, it works with various brands of radios and allows easy automatic tuning directly from the transmitter--quick and simple.

The mAT-40 is a wire antenna tuner. A wire length of 12 meters is recommended for optimal tuning performance and transceiver efficiency. The minimum supported antenna length is 2.5 meters. If the antenna is shorter than 2.5 meters, good tuning performance cannot be guaranteed at lower frequencies. Shorter antennas also have lower transmission efficiency, which may cause communication difficulties. This is especially true for whip antennas, which are typically used for short-range communication.

When installing the antenna, pay special attention to personal and equipment safety. Avoid proximity to power lines and the highest points of structures to prevent electric shock and lightning strikes. The antenna should be placed in an open area, kept away from buildings, trees, and other installations—especially other electronic devices.

All tuners using long-wire antennas must be connected to a ground network or grounding wire. Otherwise, tuning may become difficult. Vehicles and ship hulls can serve as effective ground networks. Do not use gas pipes for grounding, as this is highly dangerous.

The mAT-40 is designed for outdoor use. It offers robust mechanical strength and reliable waterproof performance. During installation, waterproof tape should be applied to the connectors of the RF cable and control cable to prevent moisture ingress. Regularly inspect the waterproof integrity of these connections in use to ensure they remain sealed. Address any damage promptly.

The bracket features two rectangular mounting holes, each with a diameter of 6.6 mm. The tuner can be mounted on a wall or antenna mast using M6 bolts or U-bolts (not included; must be supplied by the user). The distance between two bolts or the width of the U-bolt should range from 25 mm to 100 mm, and the mast diameter can be between 1 and 4 inches. Ensure the installation is secure and avoid contact between the antenna and nuts, bolts, or the mast. The bracket is made of stainless steel, offering corrosion and salt-alkali resistance, making it suitable for field and marine use.

Radio Configuration and Operation

Since the mAT-40 tuner is fully compatible with various brands' original tuners, it can be used exactly like a native tuner when connected with the corresponding adapter cable. Radio settings and operation remain identical.

Different brands and models may have different function menu configurations. Please refer to your radio's manual for necessary settings to operate an external tuner.

For ICOM radios:

Use the mAT-40-M adapter cable. Most ICOM radios require no additional settings. You may refer to the operation method of original tuners such as AT-120, AT-130, or AH-4.

For YAESU radios:

Use the mAT-40-Y adapter cable. Tuner-related options must be configured in the radio's function menu. Refer to the radio manual for details. Settings are similar to those used with original tuners like FC-30, FC-40, or FC-50.

For KENWOOD radios:

Use the mAT-40-K adapter cable. Menu configuration should follow the radio's instruction manual. Operation is the same as with original tuners such as the AT-300.

Note: Some transceivers with built-in tuners and multiple antenna ports may have the internal tuner fixed to a specific antenna socket, which cannot be used for an external tuner. For such devices, be sure to connect the mAT-40 to the correct ANT port.

IMPORTANT

The mAT-40 supports a maximum continuous power of 120W in SSB mode, with a short-term tolerance of up to 150W. For prolonged transmissions in digital modes such as FT8, RTTY, or FSK, do not exceed 30W. Excess RF power may damage the tuner. When using manual tuning mode, a tuning power between 5–10W is recommended, with a minimum of 0.5W. The maximum tuning power should not exceed 20W, as higher levels may shorten the tuner's lifespan or cause permanent damage.

Retuning

When using an ICOM or KENWOOD transceiver, the tuner will automatically retrieve data from memory and configure itself during the first tuning after a frequency change. For subsequent tuning on the same or a closely related frequency, it will initiate a full tuning cycle.

If you are using a YAESU transceiver, the tuner automatically recalls stored LC network settings

based on the current frequency when it is changed. To perform a full tuning cycle—such as when operating on a significantly different frequency or when prompted—press the tuner button on the transceiver to start complete retuning.

Technical Support

Visit our Support Center at: <http://www.mat-tuner.com>

You can download product manuals and find detailed specifications and images of all MAT-TUNER products to help you make informed purchasing decisions. The site also provides a list of authorized MAT-TUNER dealers ready to assist you.

Purchase Advisory

To ensure access to reliable after-sales service and technical support, we strongly recommend purchasing our products exclusively through our authorized dealers. A detailed list of authorized distributors across major countries and regions is available on our official website: <http://www.mat-tuner.com/buy.php>. Please note that products purchased through unauthorized channels may not be eligible for after-sales service or technical support.

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