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› LDG Electronics AT-600PROII Automatic Antenna Tuner Instruction Manual

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1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your LDG Electronics AT-600PROII Automatic Antenna Tuner. The AT-600PROII is designed to automatically match a wide range of antennas to your transceiver, ensuring optimal power transfer and reducing SWR. It features advanced memory tuning, dual antenna outputs, and comprehensive power and SWR metering.

2. SAFETY INFORMATION

- **Power Limits:** Do not exceed the maximum power ratings: 600 Watts SSB/CW, 250 Watts on 6 meters, and 250 Watts for PSK/digital modes. Tuning at power levels above 150 watts is not recommended; bypass your amplifier or place it in standby during tuning cycles.
- **Power Supply:** Use a stable DC power source between 11V and 16V, capable of supplying up to 750mA. Ensure correct polarity.
- **Antenna Connections:** Always ensure proper antenna connections before applying power to the tuner or transceiver. Disconnect power before making or changing connections.
- **Environment:** Operate the tuner in a dry, well-ventilated area. Avoid exposure to moisture, extreme temperatures, or direct sunlight.
- **Servicing:** Refer all servicing to qualified personnel. Do not open the tuner enclosure.

3. PRODUCT OVERVIEW

The LDG AT-600PROII Automatic Antenna Tuner is a compact unit designed for ease of use and reliable performance. Below is an illustration of the front panel with its controls and indicators, followed by a description of its features.



Image: Front panel of the LDG Electronics AT-600PROII Automatic Antenna Tuner, showing controls, LED bar graphs for PWR and SWR, and dimensions (10.5"L x 8.5"W x 2.5"H).

Front Panel Controls and Indicators:

- **Power Button:** Toggles the tuner power on/off. An adjacent red LED indicates power status.
- **Func Button:** Used to access various tuner functions and settings.
- **C Up / C Dn Buttons:** Manually adjust capacitance up or down during tuning.
- **L Up / L Dn Buttons:** Manually adjust inductance up or down during tuning.
- **Ant Button (Hi/LoZ):** Selects between Antenna 1 and Antenna 2. Also used to toggle high/low impedance modes.
- **Auto Button:** Engages or disengages the automatic tuning mode.
- **Thresh Button:** Adjusts the SWR threshold at which automatic tuning initiates.
- **Tune Button:** Initiates a manual tuning cycle.
- **Store Button:** Saves current tuning settings to memory.
- **PWR Bar Graph:** Displays forward and reverse power in selectable ranges (10, 25, 50, 100, 200, 300, 450, 600 Watts).
- **SWR Bar Graph:** Displays Standing Wave Ratio (SWR) with indicators for 1.1, 1.3, 1.5, 1.7, 2.0, 2.5, 3.0, and 'Over'.
- **Bypass LED:** Illuminates when the tuner is in bypass mode.
- **Ant 2 LED:** Illuminates when Antenna 2 is selected.

Rear Panel Connections:

The rear panel typically includes:

- **RF Input:** SO-239 connector for connecting to your transceiver.
- **Antenna 1 Output:** SO-239 connector for your primary antenna.
- **Antenna 2 Output:** SO-239 connector for your secondary antenna.
- **DC Power Input:** 5.5x2.5mm barrel connector for 11-16V DC power.
- **Control Port:** For interfacing with compatible transceivers (e.g., Icom, Kenwood, Yaesu) to initiate tuning cycles.

4. SETUP

1. **Power Connection:** Connect a suitable 11-16V DC power supply (minimum 750mA) to the DC Power Input on the rear panel. Ensure correct polarity.
2. **Transceiver Connection:** Connect the RF output of your transceiver to the RF Input connector on the AT-600PROII using a high-quality 50-ohm coaxial cable.
3. **Antenna Connection:** Connect your primary antenna to the Antenna 1 Output. If using a second antenna, connect it to the Antenna 2 Output. For longwires or ladder-line fed antennas, an external balun (not included) is required.
4. **Control Cable (Optional):** If your transceiver supports it, connect the appropriate control cable (sold separately) from your transceiver's tuner port to the AT-600PROII's Control Port. This allows the transceiver's TUNE button to initiate tuning.
5. **Initial Power-Up:** Press the **Power** button on the front panel. The power LED should illuminate.

5. OPERATING INSTRUCTIONS

Automatic Tuning:

1. Ensure the tuner is powered on.
2. Select the desired antenna using the **Ant** button.
3. Press the **Auto** button to enable automatic tuning. The tuner will automatically initiate a tuning cycle if the SWR exceeds a preset threshold.
4. Transmit a low-power carrier (typically 5-10 watts) from your transceiver. The tuner will begin a tuning cycle, indicated by clicking sounds.
5. Once tuning is complete, the SWR bar graph should indicate a low SWR (e.g., 1.1 to 1.5). Tuning time is typically 0.5 to 6 seconds.

Manual Tuning:

In situations where automatic tuning does not achieve an optimal match, or for fine-tuning, manual adjustments can be made:

1. Press the **Tune** button to initiate a tuning cycle.
2. While transmitting a low-power carrier, use the **C Up/Dn** and **L Up/Dn** buttons to manually adjust capacitance and inductance until the lowest possible SWR is achieved on the SWR bar graph.
3. Press the **Store** button to save the manual settings for the current frequency.

Memory Tuning:

The AT-600PROII stores up to 2,000 memories per antenna. When operating near a previously tuned frequency, the tuner will recall stored settings for nearly instant tuning (under 0.2 seconds).

- Simply transmit on a frequency. If a memory exists for that frequency, the tuner will instantly recall the settings.
- If no memory exists, a full tuning cycle will be performed, and the new settings will be stored.

Antenna Selection:

Press the **Ant** button to toggle between Antenna 1 and Antenna 2. The **Ant 2** LED will illuminate when Antenna 2 is active.

Power and SWR Metering:

The LED bar graphs provide real-time indication of forward power (PWR) and SWR. The PWR meter has selectable ranges up to 600 watts, and the SWR meter indicates ratios from 1.1 to 'Over'.

6. MAINTENANCE

- **Cleaning:** Clean the tuner's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically inspect all cables and connectors for signs of wear or damage.
- **Storage:** If storing the tuner for an extended period, disconnect it from power and store it in a dry, dust-free environment.

7. TROUBLESHOOTING

- **Tuner does not power on:** Check DC power supply connection and voltage. Ensure the power supply is capable of providing sufficient current (750mA).
- **Tuner does not tune:**
 - Ensure the transceiver is transmitting a low-power carrier during the tuning cycle.
 - Verify antenna connections are secure and correct.
 - Check if the antenna system itself is severely mismatched or open/shorted.
 - Ensure power levels are within the tuner's limits (do not tune above 150 watts).
- **High SWR after tuning:**
 - The antenna may be outside the tuner's matching range for the current frequency.
 - Try a manual tuning cycle using the C Up/Dn and L Up/Dn buttons for fine adjustment.
 - For longwires or ladder-line antennas, ensure an external balun is used.
- **Intermittent operation:** Check all coaxial cable connections for tightness and integrity. Inspect the DC power cable.

8. SPECIFICATIONS

Model	AT-600PROII
Power Handling	600 Watts SSB/CW, 250 Watts 6M, 250 Watts PSK/Digital
Frequency Coverage	1.8 to 54.0 MHz continuous
Impedance Matching Range	6 to 1000 ohms (16 to 150 ohms on 6M)
Memory Locations	4,000 (2,000 per antenna)
Tuning Time	0.5 to 6 seconds (full tune), <0.2 seconds (memory tune)
Power Input	11-16 V DC, 750mA max
Dimensions (L x W x H)	10.5" x 8.5" x 2.5"
Weight	3 pounds
Antenna Outputs	Two SO-239 connectors

9. WARRANTY AND SUPPORT

The LDG Electronics AT-600PROII Automatic Antenna Tuner comes with a **2-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. For technical support, warranty claims, or service, please contact LDG Electronics directly through their official website or authorized service centers. Please have your product model and purchase information available when contacting support.

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