

[Manuals.plus](#) /

> [NICGQMQR](#) /

> TOOLTOP ET2010A Digital Oscilloscope Multimeter User Manual

NICGQMQR ET2010A

User Manual

TOOLTOP ET2010A Digital Oscilloscope Multimeter

Model: ET2010A | Brand: NICGQMQR

1. INTRODUCTION

The TOOLTOP ET2010A is a versatile handheld device combining the functionalities of a digital oscilloscope and a multimeter. It is designed for electronic DIY enthusiasts and professionals, offering high-speed sampling, a wide analog bandwidth, and comprehensive multimeter functions. This manual provides detailed instructions for the proper setup, operation, and maintenance of your ET2010A device.

2. PRODUCT OVERVIEW

Familiarize yourself with the components of your ET2010A device:





Figure 1: Front view of the ET2010A Digital Oscilloscope Multimeter.

The image displays the TOOLTOP ET2010A device, a compact handheld unit. The top portion features a color display screen showing an oscilloscope waveform (sine wave) with measurement parameters like VP-P, Vavg, Vrms, and frequency. Below the screen are four function buttons labeled F1, F2, F3, and F4. To the left, there's an "AUTO" button and an "OSC" selector. To the right, a "SAVE" button. The central part of the device is dominated by a large rotary switch with various measurement modes including voltage (AC/DC), resistance, capacitance (Cx), diode, continuity, and current (10A). The switch also has "OFF" positions on both ends. At the bottom, there are three input jacks: "10A" for high current measurements, "COM" for common ground, and "VΩCx" for voltage, resistance, and capacitance measurements. Probe leads are shown connected to the COM and VΩCx jacks.

Key Components:

- **Color Display Screen:** 240x320 resolution for clear waveform and data display.
- **Function Buttons (F1-F4):** Context-sensitive buttons for various operations.
- **AUTO Button:** For automatic waveform configuration in oscilloscope mode.
- **OSC Selector:** Toggles between oscilloscope and multimeter modes.
- **SAVE Button:** Saves measurement data and waveforms.
- **Rotary Switch:** Selects different measurement functions (Voltage, Resistance, Capacitance, Diode, Continuity, Current).
- **Input Jacks (10A, COM, VΩCx):** Connect test leads for measurements.

3. SETUP

3.1 Battery Installation

1. Locate the battery compartment on the back of the device.
2. Open the battery compartment cover.
3. Insert three (3) AA batteries, ensuring correct polarity (+/-). *Batteries are not included.*
4. Close the battery compartment cover securely.

3.2 Initial Power On

After installing batteries, turn the rotary switch from the "OFF" position to any desired measurement function (e.g., Voltage or OSC). The device will power on and display the selected mode.

4. OPERATING INSTRUCTIONS

4.1 General Operation

- **Power On/Off:** Rotate the central dial to any function to power on. Rotate to "OFF" to power off. The device also features an automatic shutdown after 15 minutes of inactivity.
- **Navigation:** Use the F1-F4 buttons for menu navigation and function selection as indicated on the screen. The rotary switch selects the primary measurement mode.
- **Saving Data/Waveforms:** Press the "SAVE" button to store up to 100 sets of data and 10 waveforms.

4.2 Oscilloscope Mode

To enter oscilloscope mode, turn the rotary switch to the "OSC" position.

- **Sampling Rate & Bandwidth:** Features 2.5Msps high-speed sampling and 1MHz analog bandwidth.
- **Waveform Scanning Modes:**
 - **Automatic:** Automatically adjusts settings for a stable waveform display.
 - **Conventional:** Standard continuous scanning.
 - **Single:** Captures a single waveform event.
- **Parameter Adjustment:** When measuring waveforms, you can independently set parameters such as time base and vertical amplitude using the function buttons.
- **Auto Configuration:** Use the "AUTO" button for automatic setting of time base and vertical amplitude.

4.3 Multimeter Mode

Turn the rotary switch to the desired measurement function (e.g., V, A, Ω, F, Diode, Capacitance) to enter multimeter mode.

- **Functions:** Measures DC/AC voltage, DC/AC current, resistance, capacitance, frequency, duty cycle, and

performs diode and continuity tests.

- **REL Function:** The REL (Relative) function effectively eliminates lead resistance, distributed capacitance, and interference signals for more accurate measurements.
- **Range Switching:** Supports both automatic and manual switching for measuring ranges. Measurement data and historic data can be displayed on the same screen.
- **Overload Protection:** Equipped with 10A double protective tube for dual protection of the instrument.

5. SPECIFICATIONS

Category	Specification
Display	240x320 Color screen
Backlight	Constantly on
Battery	AA batteries*3 (Not included)
Working Current	About 65mA
Usage Time	More than 10 hours
Dimensions	77 mm x 157 mm x 25.5 mm
Observation Area	49.0 mm x 36.7 mm
Input Resistance	About 10M Ω
Auto Shutdown	15 minutes or disabled
Sleep Current	About 35uA
Storage Capacity	100 data sets, 10 waveforms
Weight	About 135g
Analog Bandwidth	1MHz
Channel	1
Scan Mode	Auto/Normal/Single
Vertical Sensitivity Range	300mV ~100V per grid
Vertical Amplitude Accuracy	$\pm(5\%+ 0.2\text{div})$
Max Real-time Sampling Rate	2.5Msps

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace batteries when the low battery indicator appears on the screen to ensure accurate measurements.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures. Remove batteries if storing for extended periods.
- **Calibration:** The device is designed for higher reliability with no potentiometer adjustment required for panel or internal storage calibration.

7. TROUBLESHOOTING

If you encounter issues with your ET2010A, consider the following common solutions:

- **Device does not power on:** Check battery installation and ensure batteries are not depleted.
- **Inaccurate readings:** Ensure test leads are properly connected. Check for lead resistance using the REL function in multimeter mode. Verify the correct measurement function is selected.
- **Unstable waveform:** Use the "AUTO" button in oscilloscope mode to automatically adjust settings. Check probe connections.
- **Screen is dim:** The backlight is constantly on. If the screen is dim, check battery level.

For persistent issues, please refer to the support section.

8. WARRANTY AND SUPPORT

This product is covered by a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation provided at the time of purchase or contact the seller directly.

For technical support, troubleshooting assistance beyond this manual, or warranty claims, please contact the manufacturer or your point of purchase. Keep your purchase receipt or order details handy for faster service.

Manufacturer: NICGQMQR