

## Uni-Trend UT3513

# UNI-T UT3513 Micro Ohm Meter User Manual

Digital DC Resistance Tester

## 1. INTRODUCTION

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The UNI-T UT3513 Micro Ohm Meter is a precision instrument designed for accurate DC resistance measurements. Part of the UT3510 series, this device offers a professional sorting function, allowing for HI/IN/LO resistance judgments. Measurement results are displayed on a clear screen, indicated by a buzzer, and can be output via external I/O. It features a 4.3-inch LCD, 0.05% accuracy, and a resistance test range of  $1\mu\Omega$  to  $20k\Omega$ .

This manual provides essential information for the safe and effective operation, setup, and maintenance of your UT3513 Micro Ohm Meter.



Figure 1: Front view of the UT3510 Series Micro Ohm Meter (UT3516 shown, UT3513 is similar).

## 2. SETUP

### 2.1 Unpacking and Inspection

Carefully unpack the instrument and inspect it for any signs of damage. Ensure all accessories listed in the packing list are present. If any damage or missing items are found, contact your supplier immediately.

### 2.2 Power Connection

Connect the provided power cord to the instrument's AC input socket and then to a suitable AC power outlet (100-240V, 50/60Hz). Ensure the power source meets the instrument's requirements.

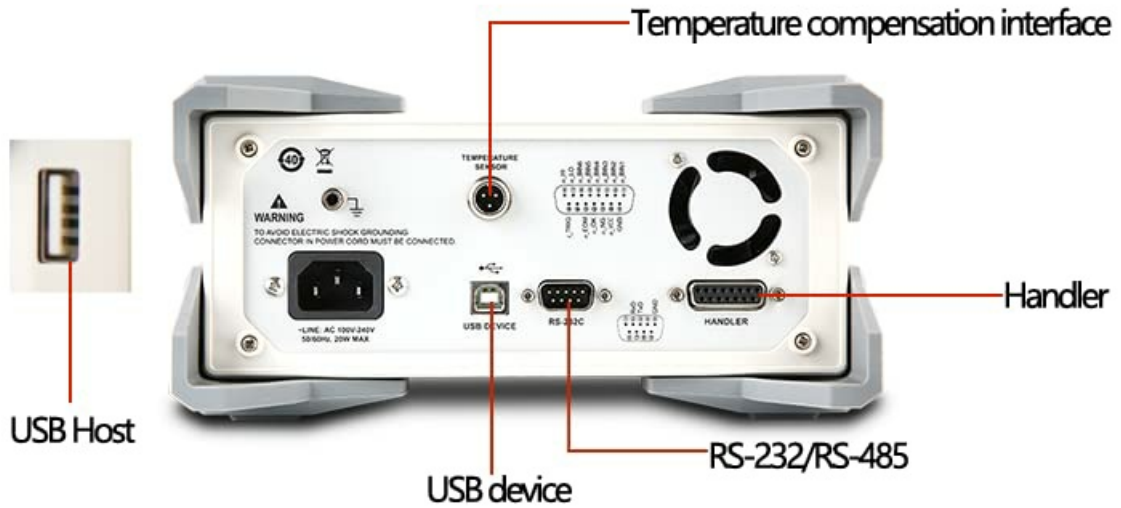


Figure 2: Rear panel connections including power input and communication interfaces.

### 2.3 Connecting Test Leads

The UT3513 uses a four-terminal measurement method for high accuracy. Connect the test leads to the DRIVE (H, L) and SENSE (H, L) terminals on the front panel. Ensure a secure connection for reliable measurements.



Figure 3: Front panel with test lead connection points.

### 2.4 Initial Power-On

Press the power button located on the front panel to turn on the instrument. The 4.3-inch LCD screen will illuminate,

and the device will perform a self-test before displaying the main measurement interface.

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## UT3510 Series Micro Ohm Meters



The UT3510 Series Micro Ohm Meters contain 2 models: UT3513 and UT3516, which can be used in professional sorting function, and can judge HI/IN/LO for resistance. The result can be displayed on screen, indicated by buzzer and external I/O output. With enhanced PC remote-control instruction set and compatible with SCPI, the instrument can efficiently process remote-control and data collection function.

- Maximum reading: 22000
- Range mode: Auto/Manual
- Short-circuit full range zeroing calibration
- Sorting functions: 3 types of resistance and voltage input: exceeds upper limit/exceeds lower limit/within the range, 2 types of sorting result output: PASS/FAIL
- Comparing method: absolute tolerance, percentage tolerance, direct-reading comparison
- Button functions: Lock -- keyboard lock, OK -- screenshot
- Interfaces and protocol: handler interface, RS-232, USB Device and USB Host communication interface, SCPI and Modbus protocol



- Automatic, manual, nominal range switching test

No.	R (Ω)	UNIT	DATE-TIME	AUTO
001	456.44 k		2020-10-30 14:02:55	PAGE 1
002	444.46 k		2020-10-30 14:03:32	
→ 003	440.70 k		2020-10-30 14:03:40	
004	050.74 k		2020-05-14 16:20:54	
005	084.30 k		2020-05-14 16:20:55	
006	920.96 k		2020-05-14 16:20:57	
007	993.79 k		2020-05-14 16:20:58	
008	1035.5 k		2020-05-14 16:20:59	
009	1000.5 k		2020-05-14 16:29:01	
010	1096.7 k		2020-05-14 16:29:02	

- File management, saving and browsing data



- Three test speeds can be selected Rapid: 60 times/s

COMP	MODE	BIN	SEQ	NOMINAL	UPPER	LOWER	BEEP
6-BIN				0.0000 mΩ			FAIL
		01		11.000 Ω	500.00 Ω		
		02		0.0000 mΩ	0.0000 mΩ		
		03		0.0000 mΩ	0.0000 mΩ		
		04		0.0000 mΩ	0.0000 mΩ		
		05		0.0000 mΩ	0.0000 mΩ		
		06		0.0000 mΩ	0.0000 mΩ		

- Comparator function buzzer selection method

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Figure 4: UT3510 Series Micro Ohm Meter with standard accessories.

### 3. OPERATING INSTRUCTIONS

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### 3.1 Basic Resistance Measurement

1. Ensure the test leads are correctly connected to the instrument and the component under test.
2. Power on the instrument.
3. Select the desired range mode (Automatic, Manual, or Nominal) using the 'RANGE' setting. Automatic mode is recommended for general use.
4. Press the 'TEST' button to initiate a measurement. The resistance value will be displayed on the LCD.



Figure 5: Display interface showing measurement and settings.

### 3.2 Test Speed Selection

The UT3513 offers three test speeds:

- **Slow:** 3 times/second
- **Medium:** 18 times/second





Figure 7: Comparator function settings.

### 3.4 File Management

The instrument allows for saving and browsing measured data. You can manually save display values and quickly review them on the screen. File management also enables saving up to 10 sets of instrument settings, which can be easily recalled when starting up or changing test specifications.



Figure 8: File management interface for saving and browsing data.

### 3.5 PC Connectivity

The UT3513 features RS-232/RS-485 and USB Device interfaces. It supports SCPI and Modbus RTU protocols for communication with computers, PLCs, or WINCE devices. This allows for remote control and efficient data acquisition.

## 4. MAINTENANCE

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### 4.1 Cleaning

To clean the instrument, use a soft, dry cloth. For stubborn dirt, a cloth lightly dampened with water or a mild detergent may be used. Do not use abrasive cleaners, solvents, or immerse the instrument in water.

### 4.2 Battery Information

The UT3513 requires 1 Lithium Metal battery (included). Refer to the battery compartment for replacement instructions if necessary. Ensure proper polarity when replacing batteries.

### 4.3 Storage

When not in use for extended periods, store the instrument in a dry, dust-free environment away from direct sunlight and extreme temperatures. Disconnect the power cord and remove batteries if storing for very long durations.

## 5. TROUBLESHOOTING

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If the instrument does not function as expected, consider the following basic troubleshooting steps:

- **No Power:** Check the power cord connection to both the instrument and the AC outlet. Ensure the power switch is in the 'ON' position.
- **Incorrect Readings:** Verify that the test leads are securely connected to both the instrument and the component. Ensure the component is clean and free of oxidation. Check the selected range mode.
- **Communication Issues:** For PC connectivity, ensure the correct drivers are installed and the communication settings (baud rate, parity, etc.) match between the instrument and the computer.

For persistent issues, consult the full product manual or contact Uni-Trend customer support.

## 6. SPECIFICATIONS (UT3513)

Feature	Specification
Resistance Range	1 $\mu\Omega$ ~ 20k $\Omega$
Basic Accuracy	0.05%
Max. Reading	20000 counts
Range Mode	Automatic, Manual, Nominal
Test Speed	Slow (3/s), Medium (18/s), Fast (60/s)
Display	4.3 inch LCD
Interfaces	RS-232/RS-485, USB Device, USB Host
Power Supply	AC 100-240V, 50/60Hz
Product Dimensions (L x W x H)	16.5 x 11 x 12 cm
Product Weight	2 kg
Certifications	CE, ISO 9001, RoHS, UKCA



Figure 9: Technical Specifications for UT3513 and UT3516.

## 7. WARRANTY AND SUPPORT

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### 7.1 Warranty Information

For detailed warranty information, please refer to the warranty card included with your product or contact your point

of purchase. Warranty terms typically cover manufacturing defects for a specified period.

## 7.2 Customer Support

For technical assistance, service, or inquiries, please contact Uni-Trend customer support or visit their official website. You can find more information at [www.uni-trend.com](http://www.uni-trend.com).



Figure 10: Uni-Trend contact information.

