

UNI-T®

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Quick Start Guide

UT3510+ Series Bench Top Micro Ohm Meter

V1.0

2024/08

Foreword

Dear Users,

Hello! Thank you for choosing this brand new UNI-T instrument. In order to use this instrument safely and correctly, please read this manual thoroughly, especially the Safety Requirements part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

Copyright Information

Copyright is owned by Uni-Trend Technology (China) Limited.

UNI-T products are protected by patent rights in China and foreign countries, including issued and pending patents.

UNI-T reserves the rights to any product specification and pricing changes.

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UNI-T is the registered trademark of Uni-Trend Technology (China) Co., Ltd.

UNI-T warrants that the product will be free from defects for three years period. If the

product is re-sold, the warranty period will be from the date of the original purchase from an authorized UNI-T distributor. Probes, other accessories, and fuses are not included in this warranty.

If the product is proved to be defective within the warranty period, UNI-T reserves the rights to either repair the defective product without charging of parts and labor, or exchange the defected product to a working equivalent product. Replacement parts and products may be brand new, or perform at the same specifications as brand new products. All replacement parts, modules, and products become the property of UNI-T.

The "customer" refers to the individual or entity that is declared in the guarantee. In order to obtain the warranty service, "customer" must inform the defects within the applicable warranty period to UNI-T, and to perform appropriate arrangements for the warranty service. The customer shall be responsible for packing and shipping the defective products to the designated maintenance center of UNI-T, pay the shipping cost, and provide a copy of the purchase receipt of the original purchaser. If the product is shipped domestically to the location of the UNI-T service center, UNI-T shall pay the return shipping fee. If the product is sent to any other location, the customer shall be responsible for all shipping, duties, taxes, and any other expenses.

This warranty shall not apply to any defects or damages caused by accidental, machine

parts' wear and tear, improper use, and improper or lack of maintenance. UNI-T under the provisions of this warranty has no obligation to provide the following services:

- a) Any repair damage caused by the installation, repair, or maintenance of the product by non UNI-T service representatives.
- b) Any repair damage caused by improper use or connection to an incompatible device.
- c) Any damage or malfunction caused by the use of a power source which does not conform to the requirements of this manual.
- d) Any maintenance on altered or integrated products (if such alteration or integration leads to an increase in time or difficulty of product maintenance).

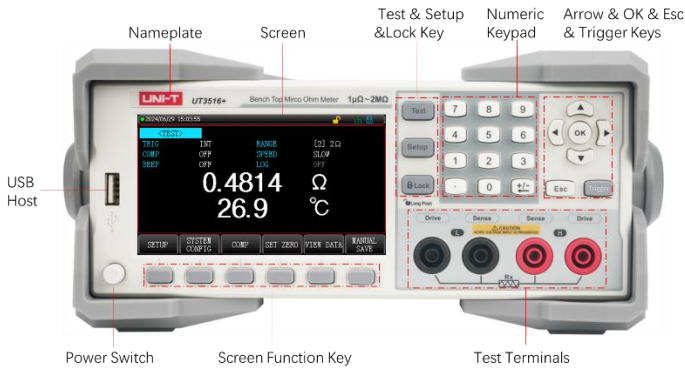
This warranty is written by UNI-T for this product, and it is used to substitute any other express or implied warranties. UNI-T and its distributors do not offer any implied warranties for merchant ability or applicability purposes.

For violation of this guarantee, regardless of whether UNI-T and its distributors are informed that any indirect, special, incidental, or consequential damage may occur, UNI-T and its distributors shall not be responsible for any of the damages

Chapter 1 Panel

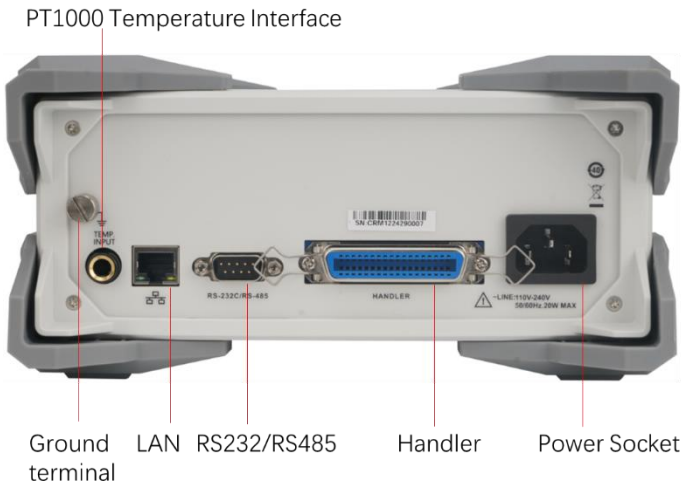
1.1 Front Panel

The product has a simple, intuitive and easy to use front panel, as shown in the following figure.



For more details, please refer to UT3510+ Series Bench Top Ohm Meter User Manual.

1.2 Rear Panel



For more details, please refer to UT3510+ Series Bench Top Ohm Meter User Manual.

Chapter 2 User's Guide

This manual includes safety requirements and the operation of UT3510+ series Benchtop Ohm Meter, including UT3513+ and UT3516+.

2.1 Inspecting Packaging and List

When you receive the instrument, please make sure to check the packaging and list by the following steps:

- Check whether the packing box and padding material are extruded or teased caused by external forces, and the appearance of the instrument. If you have any questions about the product or need consulting services, please contact the distributor or local office.
- Carefully take out the article and check it with the packing list.

2.2 Safety Requirements

This section contains information and warnings that must be followed to keep the instrument operating under safety conditions. In addition, user should also follow the common safety procedures.

Safety Precautions



Warning	Please follow the following guidelines to avoid possible electric shock and risk to personal safety.
	Users must follow the following conventional safety precautions in operation, service and maintenance of this device. UNI-T will not be liable for any personal safety and property loss caused by the user's failure to follow the following safety precautions. This device is designed for











	professional users and responsible organizations for measurement purposes.
	Do not use this device in any way not specified by the manufacturer. This device is only for indoor use unless otherwise specified in the product manual.




Safety Statements



Warning	“Warning” indicates the presence of a hazard. It reminds users to pay attention to a certain operation process, operation method or similar. Personal injury or death may occur if the rules in the “Warning” statement are not properly executed or observed. Do not proceed to the next step until you fully understand and meet the conditions stated in the “Warning” statement.
Caution	“Caution” indicates the presence of a hazard. It reminds users to pay attention to a certain operation process, operation method or similar. Product damage or loss of important data may occur if the rules in the “Caution” statement are not properly executed or observed. Do not proceed to the next step until you fully understand and meet the conditions stated in the “Caution” statement.
Note	“Note” indicates important information. It reminds users to pay attention to procedures, methods and conditions, etc. The contents of the “Note” should be highlighted if necessary.

Safety Sign

	Danger	It indicates possible danger of electric shock, which may cause personal injury or death.
	Warning	It indicates that you should be careful to avoid personal injury or product damage.

	Caution	It indicates possible danger, which may cause damage to this device or other equipment if you fail to follow a certain procedure or condition. If the "Caution" sign is present, all conditions must be met before you proceed to operation.
	Note	It indicates potential problems, which may cause failure of this device if you fail to follow a certain procedure or condition. If the "Note" sign is present, all conditions must be met before this device will function properly.
	AC	Alternating current of device. Please check the region's voltage range.
	DC	Direct current device. Please check the region's voltage range.
	Grounding	Frame and chassis grounding terminal
	Grounding	Protective grounding terminal
	Grounding	Measurement grounding terminal
	OFF	Main power off
	ON	Main power on
	Power Supply	Standby power supply: when the power switch is turned off, this device is not completely disconnected from the AC power supply.
CAT I		Secondary electrical circuit connected to wall sockets through transformers or similar equipment, such as electronic instruments and electronic equipment; electronic equipment with protective

		measures, and any high-voltage and low-voltage circuits, such as the copier in the office.
CAT II		CATII: Primary electrical circuit of the electrical equipment connected to the indoor socket via the power cord, such as mobile tools, home appliances, etc. Household appliances, portable tools (e.g. electric drill), household sockets, sockets more than 10 meters away from CAT III circuit or sockets more than 20 meters away from CAT IV circuit.
CAT III		Primary circuit of large equipment directly connected to the distribution board and circuit between the distribution board and the socket (three-phase distributor circuit includes a single commercial lighting circuit). Fixed equipment, such as multi-phase motor and multi-phase fuse box; lighting equipment and lines inside large buildings; machine tools and power distribution boards at industrial sites (workshops).
CAT IV		Three-phase public power unit and outdoor power supply line equipment. Equipment designed to "initial connection", such as power distribution system of power station, power instrument, front-end overload protection, and any outdoor transmission line.
	Certification	CE indicates a registered trademark of EU
	Certification	UKCA indicates a registered trademark of UK
	Certification	ETL indicates a registered trademark of Intertek. It conform to UL STD 61010-1 and 61010-2-030, CSA STD C22.2 No.61010-1 and 61010-2-030.

	<p>Waste</p>	<p>This product complies with the marking requirements of WEEE Directive (2002/96/EC). This additional label indicates that this electrical / electronic product must not be discarded in household waste.</p>
	<p>EFUP</p>	<p>This environment-friendly use period (EFUP) mark indicates that dangerous or toxic substances will not leak or cause damage within this indicated time period. The environment-friendly use period of this product is 40 years, during which it can be used safely. Upon expiration of this period, it should enter the recycling system.</p>

Safety Requirements

Warning	
<p>Preparation before use</p>	<p>Please connect this device to AC power supply with the power cable provided;</p> <p>The AC input voltage of the line reaches the rated value of this device. See the product manual for specific rated value.</p> <p>The line voltage switch of this device matches the line voltage;</p> <p>The line voltage of the line fuse of this device is correct.</p> <p>It not used for measuring the main circuit,</p>
<p>Check all terminal rated values</p>	<p>Please check all rated values and marking instructions on the product to avoid fire and impact of excessive current. Please consult the product manual for detailed rated values before connection.</p>

Use the power cord properly	You can only use the special power cord for the instrument approved by the local and state standards. Please check whether the insulation layer of the cord is damaged or the cord is exposed, and test whether the cord is conductive. If the cord is damaged, please replace it before using the instrument.
Instrument Grounding	To avoid electric shock, the grounding conductor must be connected to the ground. This product is grounded through the grounding conductor of the power supply. Please be sure to ground this product before it is powered on.
AC power supply	Please use the AC power supply specified for this device. Please use the power cord approved by your country and confirm that the insulation layer is not damaged.
Electrostatic prevention	This device may be damaged by static electricity, so it should be tested in the anti-static area if possible. Before the power cable is connected to this device, the internal and external conductors should be grounded briefly to release static electricity. The protection grade of this device is 4 kV for contact discharge and 8 kV for air discharge.
Measurement accessories	Measurement accessories are of lower class, which are definitely not applicable to main power supply measurement, CAT II, CAT III or CAT IV circuit measurement. Probe subassemblies and accessories within the range of IEC 61010-031 and current sensor within the range of IEC 61010-2-032 can meet its requirements.

Use the input / output port of this device properly	Please use the input / output ports provided by this device in a properly manner. Do not load any input signal at the output port of this device. Do not load any signal that does not reach the rated value at the input port of this device. The probe or other connection accessories should be effectively grounded to avoid product damage or abnormal function. Please refer to the product manual for the rated value of the input / output port of this device.
Power fuse	Please use power fuse of specified specification. If the fuse needs to be replaced, it must be replaced with another one that meets the specified specifications (Class T, rated current 5A, rated voltage 250V) by the maintenance personnel authorized by UNI-T.
Disassembly and cleaning	There are no components available to operators inside. Do not remove the protective cover. Maintenance must be carried out by qualified personnel.
Service environment	This device should be used indoors in a clean and dry environment with ambient temperature from 10 °C ~+40 °C. Do not use this device in explosive, dusty or humid air.
Do not operate in humid environment	Do not use this device in a humid environment to avoid the risk of internal short circuit or electric shock.
Do not operate in flammable and explosive environment	Do not use this device in a flammable and explosive environment to avoid product damage or personal injury.

Caution	
Abnormality	If this device may be faulty, please contact the authorized maintenance personnel of UNI-T for testing. Any maintenance, adjustment or parts replacement must be done by the relevant personnel of UNI-T.
Cooling	<p>Do not block the ventilation holes at the side and back of this device;</p> <p>Do not allow any external objects to enter this device via ventilation holes;</p> <p>Please ensure adequate ventilation, and leave a gap of at least 15 cm on both sides, front and back of this device.</p>
Safe transportation	Please transport this device safely to prevent it from sliding, which may damage the buttons, knobs or interfaces on the instrument panel.
Proper ventilation	Poor ventilation will cause the device temperature to rise, thus causing damage to this device. Please keep proper ventilation during use, and regularly check the vents and fans.
Keep clean and dry	Please take actions to avoid dust or moisture in the air affecting the performance of this device. Please keep the product surface clean and dry.
Note	
Calibration	The recommended calibration period is one year. Calibration should only be carried out by qualified personnel.

2.3 Environmental Requirements

This instrument is suitable for the following environment:

Operating Environment	Requirements
Operating temperature	0℃~40℃
Operating humidity	20%~80% (non-condensation)
Storage temperature	-10℃~70℃
Altitude	≤2000 meters
Pollution degree	2

To prevent excessive dust, users could clean the instrument housing regularly. The housing is not waterproof, please disconnect the power supply first and then wipe the housing with a dry cloth or a slightly moistened soft cloth.

2.4 Connect Power Supply

The specification of input AC power:

Voltage Range	Frequency
100-240VAC	50/60Hz

Please use the attached power lead to connect to the power port.

Connecting to service cable

The supplied power lead has good performance in terms of case ground. This spectrum analyzer is equipped with a three-prong power cable that meets international safety standards. It provides good case grounding performance for the specification of your country or region.

Please install AC power cable as follow,

- Ensure the power cable is in a good condition.

- Leave enough space for connecting the power cord.
- Plug the attached three-prong power cable into a well-grounded power socket.

2.5 Electrostatic Protection

Electrostatic discharge may cause damage to component. Components can be damaged invisibly by electrostatic discharge during transportation, storage and use.


The following measure can reduce the damage of electrostatic discharge.

- Testing in anti-static area as far as possible
- Before connecting the power cable to the instrument, inner and outer conductors of the instrument should be briefly grounded to discharge static electricity;
- Ensure all the instruments are properly grounded to prevent the accumulation of static.

2.6 Preparation

1. Connect the power supply wire; plug the power socket into the protective grounding socket;

According to your view to adjust the alignment jig.

2. Press the switch  on the front panel, the instrument is booting-up.

2.7 Remote Control

UT3510+ Series Bench Top Ohm Meter supports communication with the computer via RS232/RS485/LAN interface. Users can use programming language SCPI or Modbus via RS232/RS485/LAN interface to remote control the instrument.

The detailed information about programming, please refer to UT3510+ Series Programming Manual at the official website [http:// www.uni-trend.com](http://www.uni-trend.com)

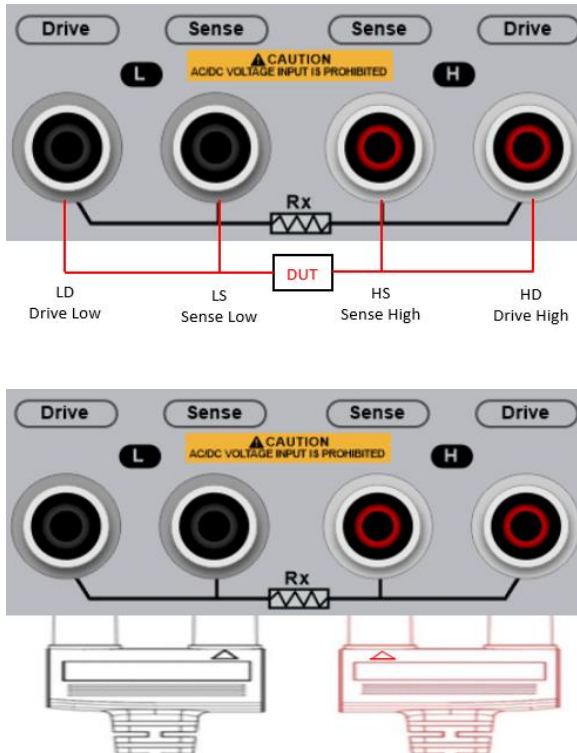
Chapter 3 Quick Start

3.1 Zero Setting

3.1.1 Connect the test line to the instrument.

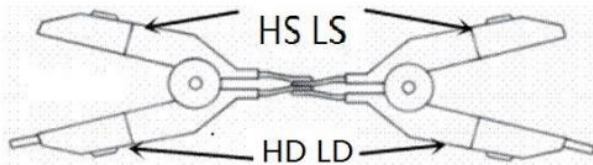
Align test line head and insert into instrument test port. The connection mode is as follows:

When inserting the test line, be sure to match the black test line ▲ end with the black SENSE hole on the front panel of the instrument, and be sure to match the red test line ▲ end with the red SENSE hole on the front panel of the instrument.



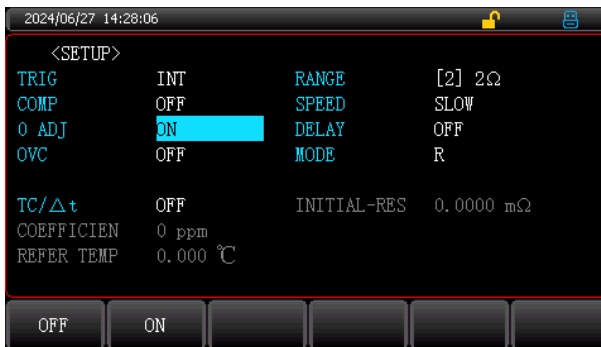
3.1.2 Short-circuit the test clip

Short-circuit the test clip as shown below;



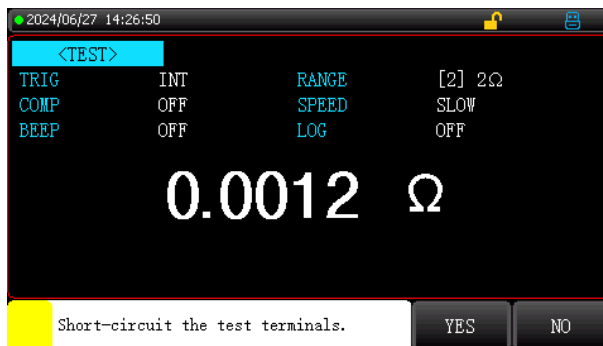
3.1.3 0 ADJ ON

Press **[Setup]**, use the arrow keys to move the cursor over **[0 ADJ]** and set 0 ADJ to ON



3.1.4 Zero Setting

Return to <TEST> screen, press **[SET ZERO]**, and press **[Yes]** to start zero setting.



When < Zero setting successfully!> pop up, the zero setting completed.

3.2 Resistance Test

Clamping both ends of the resistor with a Kelvin test clip, then we can test the resistance of the resistor.



Chapter 4 Troubleshooting

Possible faults in use of UT3510+ series and troubleshooting methods are listed below.

Please handle fault as the corresponding steps. If it cannot be handled, please contact with the distributor or local office and provide the model information (press **Setup**

→ **System Config** → **System Info** to check).

4.1 No Display on Screen

If the Ohm Meter is blank screen when press the power switch on the front panel.

- 1) Inspect whether power source is connected well.
- 2) Inspect whether power button is pressed.
- 3) Restart the instrument.
- 4) If the instrument still can't work, please contact with the distributor or local office for product maintenance service.

4.2 The resistance value displayed is negative

In correct setting but the resistance value is negative.

- 1) Inspect whether Kelvin test clip Sense terminal is connected correctly.
- 2) Do the short-circuit zero setting correctly, please refer to 3.1
- 3) If the resistance value is still abnormal, please contact with the distributor or local office for product maintenance service.

4.2 Screen display OL

That means the resistance value is out of range, please select the proper range and test again.

Chapter 5 Appendix

5.1 Maintenance and Cleaning

(1) General Maintenance

Keep the instrument away from the direct sunlight.

Caution

Keep sprays, liquids and solvents away from the instrument or probe to avoid damaging the instrument or probe.

(2) Cleaning

Check the instrument frequently according to the operating condition. Follow these steps to clean the

external surface of the instrument:

Please use a soft cloth to wipe the dust outside the instrument.

When cleaning the LCD screen, please pay attention and protect the transparent LCD screen.

Please disconnect the power supply, then wipe the instrument with a damp but not dripping soft cloth. Do

not use any abrasive chemical cleaning agent on the instrument or probes.

Warning

Please confirm that the instrument is completely dry before use, to avoid electrical shorts or even personal injury caused by moisture.

5.2 Warranty

UNI-T (UNI-TREND TECHNOLOGY (CHINA) CO., LTD.) ensures the production and sale of products, from authorized dealer's delivery date of three years, without any defects in materials and workmanship. If the product is proven to be defective within this period, UNI-T will repair or replace the product in

accordance with the detailed provisions of the warranty.

To arrange for repair or acquire warranty form, please contact the nearest UNI-T sales and repair department.

In addition to permit provided by this summary or other applicable insurance guarantee, UNI-T does not provide any other explicit or implied guarantee, including but not limited to the product trading and special purpose for any implied warranties.

In any case, UNI-T does not bear any responsibility for indirect, special, or consequential loss.

5.3 Contact Us

If the use of this product has caused any inconvenience, if you in mainland China you can contact UNI-T company directly.

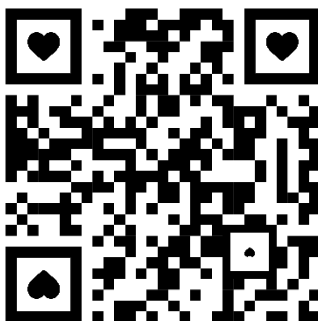
Service support: 8am to 5.30pm (UTC+8), Monday to Friday or via email. Our email address is infosh@uni-trend.com.cn

For product support outside mainland China, please contact your local UNI-T distributor or sales center.

Many UNI-T products have the option of extending the warranty and calibration period, please contact your local UNI-T dealer or sales center.

To obtain the address list of our service centers, please visit our website at URL: <http://www.uni-trend.com>

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