UNI-T®

Instruments.uni-trend.com

Quick Guide

UTS3000A Series Signal Analyzer

V1.0

July 15th, 2024

Foreword

Dear Users,

Hello! Thank you for choosing this brand-new UNI-T instrument. 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

Trademark

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

Statement

- 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.
- UNI-T reserves all rights. Licensed software products are properties of UNI-Trend and its subsidiaries or suppliers, which are protected by national copyright laws and international treaty provisions. Information in this manual supersedes all previously published versions.

Warranty Service

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 (determined by UNI-T). Replacement parts, modules and products may be brand new, or perform at the same specifications as brand-new products. All original parts, modules, or products which were defective become the property of UNI-T.

The "customer" refers to the individual or entity that is declared in the guarantee. To obtain the warranty service, "customer" must inform the defects within the applicable warranty period to UNI-T and make appropriate arrangements for the warranty service.

The customer shall be responsible for packing and shipping the defective products to the individual or entity that is declared in the guarantee. In order obtain the warranty service, customer must inform the defects within the applicable warranty period to UNI-T and 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, paying the shipping cost, and providing a copy of the purchase receipt of the original purchaser. If the products are shipped domestically to the purchase receipt of the original purchaser. If the product is shipped 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 using 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.

Front Panel

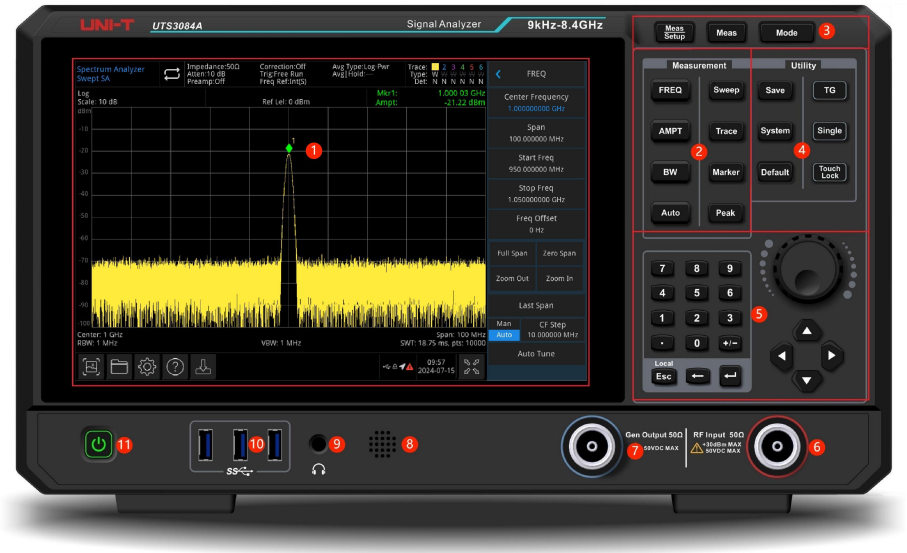

Figure 1-1 Front Panel

1. **Display Screen**: Display area supports touch control
2. **Measurement:** The main functions to active the signal analyzer, including:
   - **FREQ (Frequency):** Press this key to enable the center frequency function and enter the frequency setting menu.
   - **AMPT (Amplitude):** Press this key to enable the reference level function and enter the amplitude setting menu.
   - **BW (Bandwidth):** Press this key to enable the resolution bandwidth function and enter the resolution bandwidth (RBW) and video bandwidth (VBW) setting menus.
   - **Auto (Automatic Tuning):** Press this key to automatically search for the signal and place it at the center of the screen.
   - **Sweep (Sweep/Trigger):** Press this key to access the sweep time setting to select the sweep mode, trigger type, and demodulation type setting menus.
   - **Trace:** Press this key to access the trace, detection mode, and trace operation setting menus.
   - **Marker:** Press this key to select number, type, attribute, tag function, and list of the marker, as well as control the marker display.
   - **Peak:** Press this key to place a marker at the amplitude peak of the signal and control the

marker to perform its functions.

3. **Advanced Functional Key:** Press this key to active the advanced measurement functions, including:
   - **Meas/Setup (Measurement Setup):** Press this key to set average/hold time, average type, display line, and limit value.
   - **Meas (Advanced Measurement):** Press this key to access the transmitter power function menu, which includes options such as adjacent channel, occupied bandwidth, and harmonic distortion.
   - **Mode:** Press this key to select the measurement mode for the signal analyzer.
4. **Utility (Functional Key):** The main functions to active the signal analyzer, including:
   - **Save (File store):** Press this key to access the save setting menu. The instrument can save these file types: state, trace line + state, measurement data, limit value, correction, and export.
   - **System (System Information):** Press this key to access the system menu and browse the settings.
   - **Default:** Press this key to reset the signal analyzer to its default settings.
   - **TG (Tracking Generator):** Press this key to access the tracking generator output terminal setting menus, including the amplitude and the amplitude offset for tracking generator signal. The key indicator will light up when this function is enabled.
   - **Single:** Press this key to perform a single sweep. Press this key again to cancel the single sweep and return to continuous sweep mode.
   - **Touch/Lock:** Press this key to enable the touch screen function. The key indicator will light up in green when this function is enabled.
5. **Data Input Key:** Arrows key, rotary knob, and numeric keypad are used to adjust the numerical values such as center frequency, start frequency, resolution bandwidth, and marker position.

   Note

   Esc Key: If the instrument is in remote control mode, press this key to return to local mode.
6. **RF input 50 Ω:** This terminal is used to connect the external input signal, with an input resistance of 50 Ω (N-Female connector).

   WARNING

   Loading a signal that does not meet the rated value at the input port is prohibited. Ensure that the probe or any connected accessories are properly grounded to avoid

equipment damage or abnormal function. The RF IN port can only tolerate an input signal power of up to +30 dBm or a DC voltage of 50 V.

7. **TG SOURCE (Gen Output 50 Ω):** This N-Female connector serves as the source output for the built-in tracking generator, with an input resistance of 50 Ω.

   WARNING

   Loading input signals on the output port is prohibited to prevent damage or abnormal function.

8. **Loudspeaker:** Used to play the analog demodulation signal and issue warning alerts.
9. **Headphone Jack:** 3.5 mm
10. **USB Interface:** Used to connect an external USB flash drive for storage or to connect a keyboard and mouse.
11. **ON/OFF Switch:** Short press this key to activate the signal analyzer. In on-state, short press this key to enter standby mode, and all functions will be turned off.

User Interface

Figure1-2 User's Interface

1. **Operating Mode**: Signal analysis, vector signal analysis, EMI, and analog demodulation.
2. **Sweep/Measurement**: Tap switch icon to quickly step through the sweep mode, either single or continuous.
3. **Measurement Bar**: Displays measurement settings (input impedance, input attenuation, preset, correction, trigger type, reference frequency, average type, and average/hold). Tap the icon to switch quickly.
4. **Trace Indicator**: Displays the trace line and detector information (trace number, trace type, and detector type).

   Note

   The first line displays the number of the trace line; the color of the number and the trace should be the same. The second line displays the corresponding trace type, which includes W (Refresh), A (Trace Average), M (Max Hold), and m (Min Hold). The third line displays the detector type, including S (Sample Detection), P (Peak), p (Negative Peak), N (Normal Detection), A (Average), and f (Trace Operation). Detection types are displayed in white letters.

   Tap screen's icon to switch quickly. The definitions of different letters are as follows:

   - Letter in highlighted white: Indicates the trace is being updated.

- Letter in grey: Indicates the trace is not being updated.
- Letter in grey with strikethrough: Indicates the trace will not be updated and displayed.
- Letter in highlighted white with strikethrough: Indicates the trace is being updated but not displayed; this is useful for trace mathematical operations.

5. **Scale**: Scale value and scale type (logarithm, linear). The scale value in linear mode cannot be changed.
6. **Reference Level**: Reference level value and reference level offset value.
7. **Cursor Measurement Result**: Displays the cursor measurement results (frequency, amplitude). In zero span mode, it displays time.
8. **Panel Menu**: Displays menu and functions for the functional keys: frequency, amplitude, bandwidth, trace, and marker.
9. **Grid**: Displays trace, marker point, video trigger level line, display line, threshold line, cursor line, and peak list.
10. **Data**: Displays center frequency value, span, start frequency, stop frequency, frequency offset, RBW, VBW, sweep time, and sweep points.
11. **Function Setting**: Quick screenshot, file management system, system information, help system, and file storage.
    - Quick Screenshot  : Screenshots will be saved in the default file. If there is external storage, it will be preferentially saved to the external storage.
    - File Management System  : Save corrections, limit values, measurement results, screenshots, traces, states, or other files into internal or external storage, and these settings can be recalled.
    - System Information  : Browse the basic information and optional information.
    - Help System  : Help navigation.
    - File Storage  : Import or export state, trace + state, measurement data, limit values, and corrections.
12. **System Log Dialog Box**: Click the blank area on the right of the file storage to view the instrument operation log, alerts, and prompts.
13. **Connection**: Displays the connection state of mouse, USB and screen lock.
14. **Date and Time**: Displays the current date and time.
15. **Full Screen Switch**: Toggle full screen on or off. ON: the screen is stretched horizontally, and the key on the right side will be hidden automatically.

Rear Panel

Figure 1-3 Rear Panel

1. **10 MHz Reference Input:** The signal analyzer can use either an internal reference source or an external reference source.
   - If the instrument detects that the **[REF IN 10 MHz]** connector is receiving a 10 MHz clock signal from an external source, the signal is automatically used as the external reference source. The user interface status will display "**Freq Ref: Ext**." When the external reference source is lost, exceeded, or not connected, the instrument's reference source is automatically switched to the internal reference, and the measurement bar on the screen will show "**Freq Ref: In.**"

   WARNING

   Loading a signal that does not meet the rated value at the input port is prohibited. Ensure that the probe or any connected accessories are properly grounded to avoid equipment damage or abnormal function.

2. **10 MHz Reference Output:** The signal analyzer can use an internal reference source or function as an external reference source.
   - If the instrument uses an internal reference source, **[REF OUT 10 MHz]** connector can output 10 MHz clock signal generated by the instrument's internal reference source, which can be used to synchronize other devices.

   WARNING

Loading input signals on the output port is prohibited to prevent damage or abnormal function.

3. **Trigger IN:** If the signal analyzer uses an external trigger, the connector receives the rising or falling edge of an external trigger signal. The external trigger signal is fed into the signal analyzer via a BNC cable.

   WARNING

   Loading a signal that does not meet the rated value at the input port is prohibited. Ensure that the probe or any connected accessories are properly grounded to avoid equipment damage or abnormal function.

4. **HDMI Interface:** HDMI video signal output interface.
5. **LAN Interface:** TCP/IP port for remote control and connection of the instrument.
6. **USB Device Interface:** The signal analyzer can use this interface to connect to a PC, allowing remote control via software on the computer.
7. **Power Switch ON/OFF:** When the switch is enabled, the signal analyzer enters standby mode, and the indicator on the front panel lights up.
8. **Power Input Socket:** For connecting the signal analyzer to a power source.
9. **Burglar-Proof Lock:** Protects the instrument from theft.
10. **Handle:** Easy to move the signal analyzer.
11. **Dustproof Cover:** Remove the dustproof cover to clean off any dust.

User Guide

Inspect Packing List

When you received the instrument, please inspect the packaging and packing list as follows,

- Inspect the packaging box for any damage or scratches caused by external forces and check the instrument's appearance for any damage. If you have any questions or issues with the product, please contact the distributor or local office.
- Carefully take out the goods and check them against the packing list.

Safety Instruction

This chapter contains information and warnings that must be observed. To ensure that the instrument is operating under safety conditions. In addition to the safety precautions indicated in this chapter, you must also follow accepted 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 the 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 of device. Please check the region's voltage range.
	**Grounding**	Frame and chassis grounding terminal.
	**Grounding**	Protective grounding terminal.
	**Grounding**	Measuring 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		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.
CE	**Certification**	CE indicates a registered trademark of EU.
UKCA	**Certification**	UKCA indicates a registered trademark of United Kingdom.
ETL Intertek 4007682	**Certification**	Conforms to UL STD 61010-1, 61010-2-030, Certified to CSA STD C22.2 No. 61010-1, 61010-2-030.
	Waste	Do not place equipment and accessories in the trash. Items must be properly disposed of in accordance with local regulations.
40	**EEUP**	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 environmentally 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.

Safety Requirements

Warning	
Preparation before use	Please connect this device to AC power supply with the power cable provided. The AC input voltage of the line reaches the rated value of this device. See the product manual for specific rated value. The line voltage switch of this device matches the line voltage. The line voltage of the line fuse of this device is correct. Do not used to measure mains circuit.
Check all terminal rated	Please check all rated values and marking instructions on the product to avoid fire and the impact of excessive current. Please consult the product manual for

values	detailed rated values before connection.
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 4KV for contact discharge and 8KV for air discharge.
Measurement accessories	Measurement accessories are of lower class, which are not applicable to main power supply measurement, CAT II, CAT III, or CAT IV circuit measurement. Probe assemblies and accessories within the scope of IEC 61010-031, and current sensors within the scope of IEC 61010-2-032 shall meet the requirements thereof.
Use the input / output port of this device properly	Please use the input / output ports provided by this device in a proper 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 the 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 0 °C to 40 °C. Do not use this device in explosive, dusty or humid air.
Do not operate in	Do not use this device in a humid environment to avoid the risk of internal short circuit or electric shock.

humid environment	
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	
Abnormity	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	Do not block the ventilation holes at the side and back of this device. Do not allow any external objects to enter this device via ventilation holes. Please ensure adequate ventilation and leave a gap of at least 15 cm on both sides, front and back of this device.
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.

Environmental Requirements

This instrument is suitable for the following environment:

- Indoor
- Pollution degree: Class 2
- For overvoltage: This product should be powered from a mains supply that complies with Overvoltage Category II, which is a typical requirement for connecting equipment via power cords and plugs.
- Operating: Altitude below 3,000 meters; non-operating: Altitude below 15,000 meters
- Unless otherwise specified, the operating temperature is 0 to +40°C; storage temperature is -20 to +70 °C.

- Operating: Humidity at temperatures below +35°C, ≤ 90% RH.; non-operating: Humidity at temperatures from +35 °C to 40 °C, ≤ 60% RH.

Note

There are ventilation openings on the rear and side panels of the instrument. Please ensure that air can flow through these vents. To prevent excessive dust from blocking the vents, 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.

Connecting Power Supply

The specification of the AC power supply is as shown in the following table.

Voltage Range	Frequency
100-240 VAC (Fluctuations±10%)	50/60 Hz
100-120 VAC (Fluctuations±10%)	400 Hz

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

Connecting to the service cable:

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

Please install the AC power cable as follows:

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

Electrostatic Protection

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

The following measures can reduce the damage caused by electrostatic discharge:

- Test in an antistatic area as far as possible.
- Before connecting the power cable to the instrument, briefly ground the inner and outer conductors of the instrument to discharge static electricity.
- Ensure all instruments are properly grounded to prevent the accumulation of static.

Preparation Work

1. Connect the power cable and insert the power plug into a protective grounding outlet. Adjust the tilt bracket as needed for your viewing angle.

Figure 2-1 Tilt Adjustment

1. Press the switch on the rear panel to enter standby mode.
2. Press the soft switch on the front panel; the indicator lights up green, and the signal analyzer powers on.

   It takes about 30 seconds to initialize the boot, and then the signal analyzer enters the system default menu mode. To ensure optimal performance, it is recommended to warm up the signal analyzer for 45 minutes after powering on.

Usage Tip

Use an External Reference Signal

If you want to use an external signal source 10 MHz as a reference, please connect the signal source to the **10 MHz In** port on the rear panel. The measuring bar on the top of the screen will indicate "**Freq Ref: Ext**".

Activate the Option

If you want to activate an option, you need to input the secret key for the option. Please contact the UNI-T office to purchase it.

Refer to the following steps to activate the option you have purchased:

1. Save the secret key into a USB drive and insert it into the signal analyzer.
2. Press the **[System]** key > **System Information** > **Add Token**.
3. Select the purchased secret key and press the **[ENTER]** key to confirm.

Touch Operation

The signal analyzer has a 10.1-inch multipoint touch screen for various gesture operations, which include:

- Tap the top right of the screen to enter the main menu.

- Slide up/down or left/right in the waveform area to change the center frequency on the X-axis or the reference level on the Y-axis.
- Zoom with two points in the waveform area to change the span on the X-axis.
- Tap parameters or menus on the screen to select and edit them.
- Turn on and move the cursor.
- Use auxiliary quick keys to perform common operations.
- Use **[Touch/Lock]** key to turn on/off the touch screen function.

Remote Control

UTS3000A series signal analyzers support communication with computers via USB and LAN interfaces. Through these interfaces, users can use the corresponding programming language or NI-VISA and employ SCPI (Standard Commands for Programmable Instruments) commands to remotely program and control the instrument. Additionally, they can interoperate with other programmable instruments that support the SCPI command set.

For more information about installation, remote control, and programming, please refer to the ***UTS3000A Series Programming Manual*** available on the official website: http://www.uni-trend.com.

Help System

The signal analyzer's built-in help system provides help information for each functional key and menu control key on the front panel.

- Touch the left bottom of the screen "  ", and a help dialog box will pop out in the center of the screen. Tap the support function to get a more detailed help description.
- After the help information is displayed in the center of the screen, tap "×" or any other key to close the dialog box.

Troubleshooting

This chapter lists potential faults and their corresponding troubleshooting methods for the signal analyzer. Follow these steps to resolve issues. If the methods do not work, please contact UNI-T and provide your machine's information (acquisition method: **[System] > Information**).

1. After pressing the power soft switch, the signal analyzer displays a blank screen, and nothing appears.
   a. Check if the power connector is properly connected and the power switch is turned on.
   b. Check that the power supply meets the required specifications.

c. Check whether the fuse of the machine is properly installed or blown.

2. Pressing the power switch still results in a blank screen with no display.
   a. Check the fan. If the fan rotates but the screen remains off, the cable to the screen may be loose.
   b. Check the fan. If the fan does not rotate and the screen is off, it may indicate that the instrument is not powered on.
   c. If the above steps do not resolve the issue, do not disassemble the instrument yourself. Please contact UNI-T immediately for further assistance.
3. Spectral line is not updated for a long time.
   a. Check if the current trace is in the update state or if multiple averaging is enabled.
   b. Check whether the current settings meet the restriction conditions. Review the restriction settings and check for any restriction signals.
   c. If the above steps do not resolve the issue, do not disassemble the instrument yourself. Please contact UNI-T immediately for further assistance.
   d. Check whether the current mode is in the single sweep state.
   e. Check whether the current sweep time is excessively long.
   f. Check if the demodulation time in the demodulation listening function is excessively long.
   g. Confirm that the EMI measurement mode is sweeping.
4. The measurement results are incorrect or not accurate enough.

   Users can refer to the detailed technical index descriptions at the back of this manual to calculate system errors and address issues with measurement results and accuracy. To ensure performance as specified in this manual, the following steps should be taken:
   a. Ensure that external devices are properly connected and functioning.
   b. Have a good understanding of the signal being measured and set appropriate parameters for the instrument.
   c. Perform measurements under specific conditions, such as allowing the instrument to warm up for a certain period after startup and maintaining an appropriate working environment temperature.
   d. Calibrate the instrument regularly to compensate for any measurement errors caused by instrument aging.

   If calibration is required after the warranty calibration period, please contact UNI-T or obtain paid services from authorized measurement institutions.

Appendix

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:

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

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

c. When cleaning the dust screen, use a screwdriver to remove the screws of the dust cover and then remove the dust screen. After cleaning, install the dust screen in sequence.

d. 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.

Contact Us

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

Service support: 8 a.m. to 5.30 p.m. (UTC+8), Monday to Friday or via email at 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 offer options to extend the warranty and calibration period. Please contact your local UNI-T dealer or sales center for more information.

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

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