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› [FNIRSI DST-201 3IN1 Digital Multimeter 19999 Counts TRMS, 1MHz Bandwidth Handheld Oscilloscope Multimeter DDS Generator, 5MSa/s Sample Rate, AC/DC Voltage Current Capacitor Resistor Diode Temperature](#)

FNIRSI DST-201

FNIRSI DST-201 3-in-1 Digital Multimeter, Oscilloscope, and DDS Signal Generator User Manual

Model: DST-201

1. INTRODUCTION

The FNIRSI DST-201 is a versatile 3-in-1 handheld device combining the functionalities of a digital multimeter, an oscilloscope, and a DDS signal generator. Designed for electronics enthusiasts, engineers, and technicians, it offers precise measurements and waveform analysis capabilities in a compact form factor.

Key features include a 19999 TRMS digital multimeter with curve mode and data logging, a 1MHz bandwidth oscilloscope with 5MSa/s sampling rate, and a DDS signal generator capable of outputting 13 waveforms up to 10 KHz. Its user-friendly interface and robust design make it an essential tool for various electrical and electronic testing applications.



Figure 1: FNIRSI DST-201 device with included probes and cables.

2. WHAT'S IN THE BOX

Upon opening the package, please verify that all the following items are included:

- FNIRSI DST-201 DMM Scope Unit
- Temperature Probe
- Multimeter Test Leads
- Alligator Clip Probe
- USB Data Cable (Type-C)
- User Guide (this manual)

What's in the box?



1.DST-201 DMM Scope

2.Temperature Sensor

3.DMM Test Leads

4.Alligator Clip Probe

5.USB Data Cable

6.User Guide

Figure 2: All components included in the FNIRSI DST-201 package.

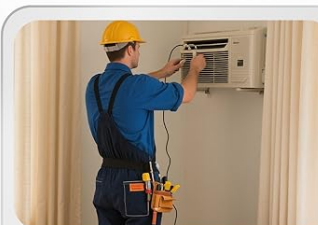
3. SPECIFICATIONS

3.1 General Specifications


Parameter	Specification
Model	DST-201
Display	2.8 inch TFT color screen
Backlight	Adjustable brightness
Power Supply	Type-C (5V/1A)
Battery	3000mAh (included)
Languages	Chinese, English
Product Size	177.43 x 87.47 x 34.5 mm
Bare Weight	~300g

3.2 Multimeter Parameters

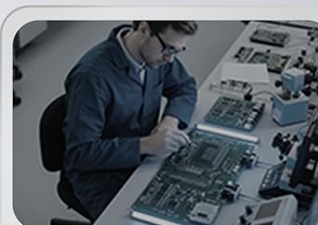
12V but No Start?
Beep, Then Silence?
Why DST-201?
Why DST-201?



AC power unstable



Random dropouts or bad grounding



Digital timing errors

DST-201 Shows ripple & interference clearly

VS Multimeter ✗ Averages only

Tracks momentary voltage loss

✗ Can't catch blips


Captures signal timing & jitter

✗ No timing data


Figure 3: Detailed specifications for Multimeter functions.

3.3 Oscilloscope Parameters


12V but No Start?
Beep, Then Silence?
Why DST-201?
Why DST-201?



Voltage looks fine, but circuit unstable



PWM / CAN issues



Ignition faults

DST-201 Shows real-time dips & drops

VS Multimeter ✗ Shows value

See live duty cycle & signal noise

✗ Can't read waveform

Visual pulse shape & delay check

✗ No signal details

Figure 4: Detailed specifications for Oscilloscope functions.

3.4 Signal Generator Parameters

12V but No Start? **Beep, Then Silence?** Why DST-201? Why DST-201?

**Plug connected
Buzzer sounds
but why the occasional fail?**

Multimeter beeps mean continuity—but why the intermittent glitches?

DST-201 waveform logging reveals fleeting power drops and instant disconnections to find the real cause.




Figure 5: Detailed specifications for Signal Generator functions.

4. SETUP

4.1 Initial Charging

Before first use, fully charge the device using the provided Type-C USB cable and a 5V/1A power adapter (not included). The battery indicator on the screen will show charging status.

4.2 Power On/Off and Language Selection

To power on the device, press and hold the power button located on the right side. Upon first startup, you may be prompted to select a language. Use the navigation buttons to choose 'English' and press 'ENTER' to confirm.

Your browser does not support the video tag. This video demonstrates powering on the FNIRSI DST-201, selecting the language, and navigating through the main modes (multimeter, oscilloscope, signal generator).

Video 1: Initial setup and mode selection demonstration.

4.3 Connecting Probes

Connect the appropriate test leads or probes to the input jacks on the bottom of the device based on the measurement function you intend to use. Ensure secure connections to prevent inaccurate readings or damage.

1MHz | 5MSa/s Handheld Oscilloscope



Figure 6: Labeled diagram of the FNIRSI DST-201, highlighting input ports.

5. OPERATING MODES

The DST-201 features three primary operating modes: Multimeter, Oscilloscope, and DDS Signal Generator. Use the rotary dial to switch between these modes and specific functions within each mode.

5.1 Multimeter Mode

The digital multimeter function provides 19999 TRMS counts and supports various measurements including AC/DC voltage, current, resistance, capacitance, frequency, diode, temperature, and continuity. It also features live/neutral detection, auto-ranging, and data hold.

- **DC/AC Voltage Measurement:** Connect test leads to the VΩHz and COM ports. Select the appropriate voltage range using the rotary dial or use auto-range.
- **DC/AC Current Measurement:** Connect test leads to the 10A or mA and COM ports. Select the appropriate current range.
- **Resistance Measurement:** Connect test leads to the VΩHz and COM ports. The device will automatically detect resistance.
- **Capacitance Measurement:** Connect test leads to the VΩHz and COM ports. The device will automatically detect capacitance.
- **Continuity Test:** Connect test leads to the VΩHz and COM ports. A buzzer will sound for continuity.
- **Diode Test:** Connect test leads to the VΩHz and COM ports. The device will display the forward voltage drop.
- **Temperature Measurement:** Connect the temperature probe to the designated ports.
- **Data Logging:** The device supports logging up to 10 data points and displays max/min values in curve mode.

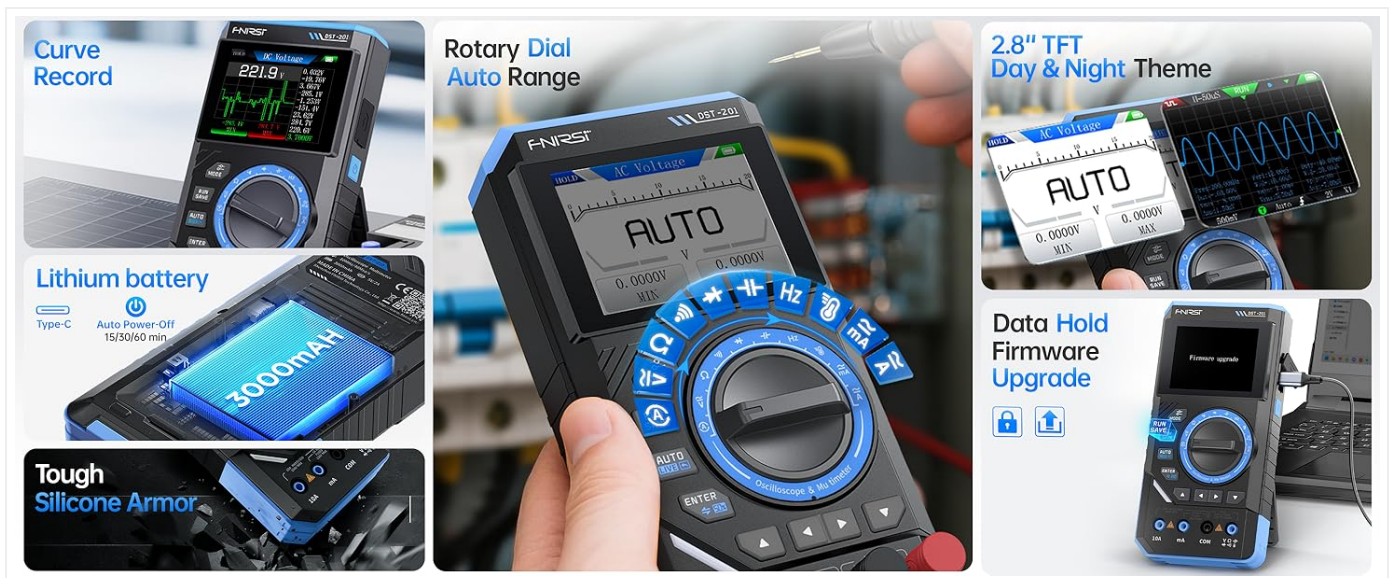


Figure 7: Examples of various multimeter measurements.

Your browser does not support the video tag. This video demonstrates the FNIRSI DST-201's multimeter functions, including DC voltage test, curve recording, AC voltage, DC/AC current, continuity, neutral/live wire identification, resistance, capacitance, diode, and temperature measurements.

Video 2: Comprehensive demonstration of Multimeter functions.

5.2 Oscilloscope Mode

The oscilloscope function provides a 1 MHz bandwidth and 5 MSa/s sampling rate, suitable for basic waveform analysis. It supports a maximum voltage of 400V and offers vertical sensitivity from 10 mV/div to 10 V/div.

- **Connecting Probe:** Connect the oscilloscope probe to the dedicated BNC connector on the top of the device.
- **Measurement:** Select Oscilloscope mode using the rotary dial. The device will automatically display the waveform. Adjust vertical sensitivity and horizontal time base as needed.
- **Applications:** Ideal for CAN Bus verification, audio analysis, and power supply ripple checks.



Figure 8: Practical applications of the oscilloscope function.

Your browser does not support the video tag. This video demonstrates connecting the oscilloscope probe and performing mains power measurement, showing the waveform on the screen.

Video 3: Oscilloscope function demonstration with mains power measurement.

5.3 DDS Signal Generator Mode

The DDS signal generator can output 13 different waveforms with frequencies up to 10 KHz and adjustable amplitude from 0.1 V to 3.0 V. This function is useful for waveform simulation and signal testing.

- **Waveform Selection:** Use the navigation buttons to select from sine wave, square wave, sawtooth wave, half-wave, full-wave, step wave, and more.
- **Parameter Adjustment:** Adjust frequency, duty cycle (for square wave), and amplitude using the device controls.
- **Output:** Connect the signal output to the circuit or device under test.



Figure 9: Available waveforms from the DDS Signal Generator.

Your browser does not support the video tag. This video demonstrates the signal generator function, showing how to select different waveforms and adjust parameters.

Video 4: DDS Signal Generator function demonstration.

6. MAINTENANCE

6.1 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the device is powered off and disconnected from all power sources and circuits before cleaning.

6.2 Battery Care

The DST-201 is equipped with a 3000 mAh rechargeable lithium battery. For optimal battery life, avoid fully discharging the battery frequently. Recharge the device when the battery indicator is low. The auto power-off feature (adjustable from 15 minutes to 1 hour) helps conserve battery life.



Figure 10: Battery and charging features of the device.

6.3 Firmware Upgrade

The device supports firmware upgrades. Connect the device to a computer using the USB data cable and follow the instructions provided by FNIRSI for firmware updates. This can improve performance and add new features.



Figure 11: Device connected for firmware upgrade.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your FNIRSI DST-201.

7.1 Device Not Powering On

Ensure the battery is sufficiently charged. Connect the device to a power source using the Type-C cable and allow it to charge for at least 30 minutes before attempting to power on again. If the issue persists, contact support.

7.2 Inaccurate Readings

Verify that the test leads are correctly connected to the appropriate input jacks for the selected measurement mode. Ensure the probes are making good contact with the circuit. Check for any damage to the test leads or probes. For voltage measurements, ensure the device is set to the correct range or auto-range is enabled.

7.3 Oscilloscope Not Displaying Waveform

Confirm the oscilloscope probe is securely connected to the BNC port. Ensure the input signal is within the device's voltage range (max 400V). Adjust the vertical sensitivity (V/div) and horizontal time base (S/div) settings to properly capture the waveform. Check the trigger settings to ensure the oscilloscope is triggering correctly.

7.4 Signal Generator Output Issues

Verify that the signal generator output is enabled and the correct waveform is selected. Check the frequency and amplitude settings to ensure they are within the desired range (0-10 KHz, 0.1-3.0V). Ensure the output cable is properly connected to the circuit under test.

7.5 Specific Application Scenarios

The DST-201 is designed to help diagnose complex electrical issues that traditional multimeters might miss:

Car Won't Start, but Voltage Reads Normal?

Oscilloscope Parameters

Parameters	Specifications	Notes	Parameters	Specifications
Sampling rate	5MSa/s		Horizontal time base range	50ns~20s
Bandwidth	1MHz		Trigger mode	Automatic, normal and single
Input impedance	1M Ω		Trigger mode	Rising edge, falling edge
Coupling mode	AC/DC		Trigger level	Adjustable, with indication
Test voltage range	1:1 probe: 80Vpp (+40V) 10:1 probe: 800Vpp (+400v)	Oscilloscope sets X1 gear Oscilloscope sets X10 gear	Waveform freeze	Support(HOLD function)
Vertical sensitivity	10mV/div~10V/div	X1 gear	Automatic measurement	Max, Min,Average, RMS, VPP,Frequency,Period, Duty Cycle
Vertical displacement	Adjustable, with indication			



The DST-201 can catch voltage spikes during startup to spot a weak battery or slow relay response, providing insights beyond a simple voltage reading.

Buzzer Sounds, but Occasional Fail?

Multimeter Parameters

Function	Range	Accuracy
DC voltage	1.9999V/19.999V/199.99V/1000V	$\pm(0.5\%+3)$
AC voltage	1.9999V/19.999V/199.99V/750.0V	$\pm(1\%+3)$
DC current	19.999mA/199.99mA/1.9999A/9.999A	$\pm(1.2\%+3)$
AC current	19.999mA/199.99mA/1.9999A/9.999A	$\pm(1.5\%+3)$
Resistance	19.999M Ω /1.9999M Ω /199.99K Ω /19.999K Ω	$\pm(0.5\%+3)$
	1.9999K Ω /199.99 Ω	$\pm(2.0\%+3)$
Capacitance	999.9uF/99.99uF/9.999uF/ 999.9nF/99.99nF/9.999nF	$\pm(2.0\%+5)$
	9.999mF/99.99mF	$\pm(5.0\%+20)$
Frequency	9.999MHz/999.9KHz/99.99KHz/9.999KHz/999.99Hz/99.99Hz/9.999Hz	$\pm(0.1\%+2)$
Temperature	(-55~1300°C)/(-67~2372°F)	$\pm(2.5\%+5)$
Diode/Continuity	✓	
Single probe AC voltage detection (live) (LIVE)	✓	



Waveform logging reveals fleeting power drops and instant disconnections, helping to find the real cause of intermittent glitches in continuity.

Voltage Looks Fine, but Circuit Unstable?

Signal Generator Parameters

Parameters	Specifications
Output waveform	Supports 13 waveform outputs
Waveform frequency	0-10KHz
Square wave duty cycle	0-100%, Square and Sawtooth are adjustable
Waveform amplitude	0.1V-3.0V

Device Parameters

Parameters	Specifications
Model	DST-201
Display	2.8-inch TFT color screen
Backlight	Backlight brightness adjustable
Power supply	TYPE-C (5V /1A)
Battery	3000mAh
Languages	中文、English
Product size	≈177.43×87.47×34.5mm
Bare weight	≈300g

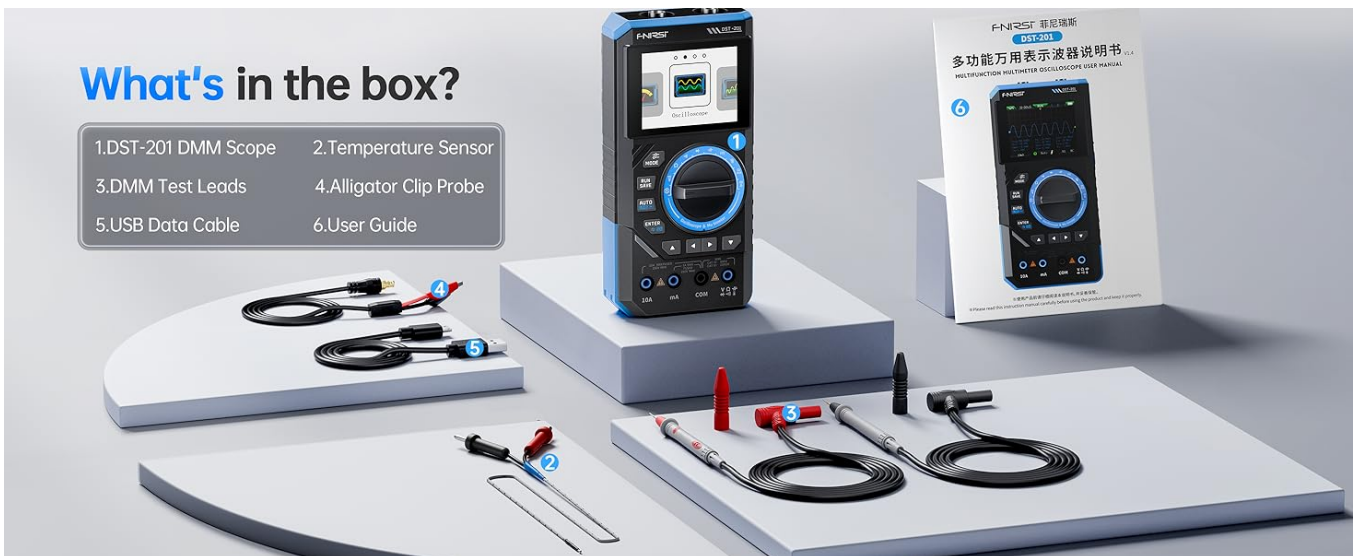


The DST-201 shows real-time dips and drops, and can track momentary voltage loss, which a standard multimeter might average out.

AC Power Unstable?

What's in the box?

- | | |
|----------------------|-------------------------|
| 1. DST-201 DMM Scope | 2. Temperature Sensor |
| 3. DMM Test Leads | 4. Alligator Clip Probe |
| 5. USB Data Cable | 6. User Guide |



Clearly see ripple and interference, and capture signal timing and jitter, providing a comprehensive view of AC power stability.

8. SAFETY INFORMATION

Please read and understand all safety information before operating the device. Failure to follow these instructions may result in electric shock, fire, or damage to the device.

- Always ensure the device is in the correct measurement mode before connecting to a circuit.
- Do not exceed the maximum input ratings for any function.
- Use caution when working with live circuits. Always assume circuits are live until proven otherwise.
- Inspect test leads and probes for damage before each use. Do not use if insulation is damaged.
- Do not operate the device in wet environments or if your hands are wet.
- Keep the device away from strong electromagnetic fields.
- Refer to the specifications for voltage and current limits for each function.

9. WARRANTY AND SUPPORT

FNIRSI products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the official FNIRSI website or contact the seller directly through your purchase platform. For the latest drivers, firmware updates, and additional resources, please visit the official FNIRSI support page.

