

FNIRSI 2D15P

FNIRSI 2D15P 3-in-1 Portable Oscilloscope, Multimeter, and Signal Generator User Manual

Model: 2D15P | Brand: FNIRSI

1. INTRODUCTION

The FNIRSI 2D15P is a versatile 3-in-1 handheld device, integrating a digital oscilloscope, a true RMS multimeter, and a signal generator. Designed for portability and ease of use, it offers comprehensive measurement and analysis capabilities for various electronic applications, from circuit testing to field maintenance.

This manual provides detailed instructions for the safe and effective operation of your FNIRSI 2D15P device. Please read it thoroughly before use and keep it for future reference.

2. PRODUCT OVERVIEW

2.1 Key Features

- **Oscilloscope:** 2 channels, 100MHz bandwidth, 500MS/s real-time sampling rate. Features 10K/100K/1M memory depth, grayscale, afterglow, and color temperature display. Maximum input voltage of 800V. Supports Y-T, Roll, and X-Y display modes. Includes 6 types of waveform operations and 13 automatic measurement functions. High-speed waveform capture up to 1200fps for detecting abnormal signals.
- **Multimeter:** 4.5-digit, 20000-count true RMS digital multimeter. Measures DC/AC voltage, DC/AC current, resistance, capacitance, diode, and continuity. Maximum measurement range of DC1000V/AC750V. Features an automatic measurement (AUTO) mode for simplified operation.
- **Signal Generator:** Built-in 10MHz DDS signal generator supporting 9 waveform types: sine, square, triangle, half-wave rectification, full-wave rectification, step, inverse step, noise, and DC. Adjustable frequency, amplitude (0.1-3.0Vpp), and duty cycle (0-100%).
- **Advanced Functionality:** ARM+FPGA+ADC architecture for high-speed processing and precise waveform display. Includes cursor measurement, image saving, USB export, automatic calibration, and Lissajous (X-Y) mode.
- **Portability:** Compact design with a 4.3-inch touch screen and physical buttons. Integrated 5000mAh rechargeable lithium battery for extended use. Supports Type-C fast charging.

2.2 Components and Layout

The FNIRSI 2D15P combines a touch screen interface with physical buttons and a rotary encoder for intuitive control. Key components include input terminals for oscilloscope probes and multimeter leads, a signal output port, and a USB Type-C port for charging and data transfer.

2D15P OSC • DMM • SG

3-IN-1 | 100MHz | 19,999 TRMS

オシロスコープ&マルチメーター

[4.3" IPS] タッチスクリーン



Figure 2.2.1: FNIRSI 2D15P device with probes and multimeter leads connected, illustrating its 3-in-1 capabilities.

Figure 2.2.2: Internal hardware architecture of the FNIRSI 2D15P, highlighting the FPGA, MCU, and ADC for high-speed processing.

3. SETUP

3.1 Package Contents

Verify that all items are present in the package:

- FNIRSI 2D15P Main Unit
- P6100 High Voltage Probe (x2)
- Multimeter Test Leads
- Alligator Clip
- USB Charging Cable
- Instruction Manual (this document)
- Carrying Case



Figure 3.1.1: Package contents of the FNIRSI 2D15P.

3.2 Charging the Device

The 2D15P is equipped with a built-in 5000mAh lithium polymer battery. To charge, connect the provided USB Type-C cable to the device's Type-C port and a compatible USB power adapter (not included). The device supports fast charging.

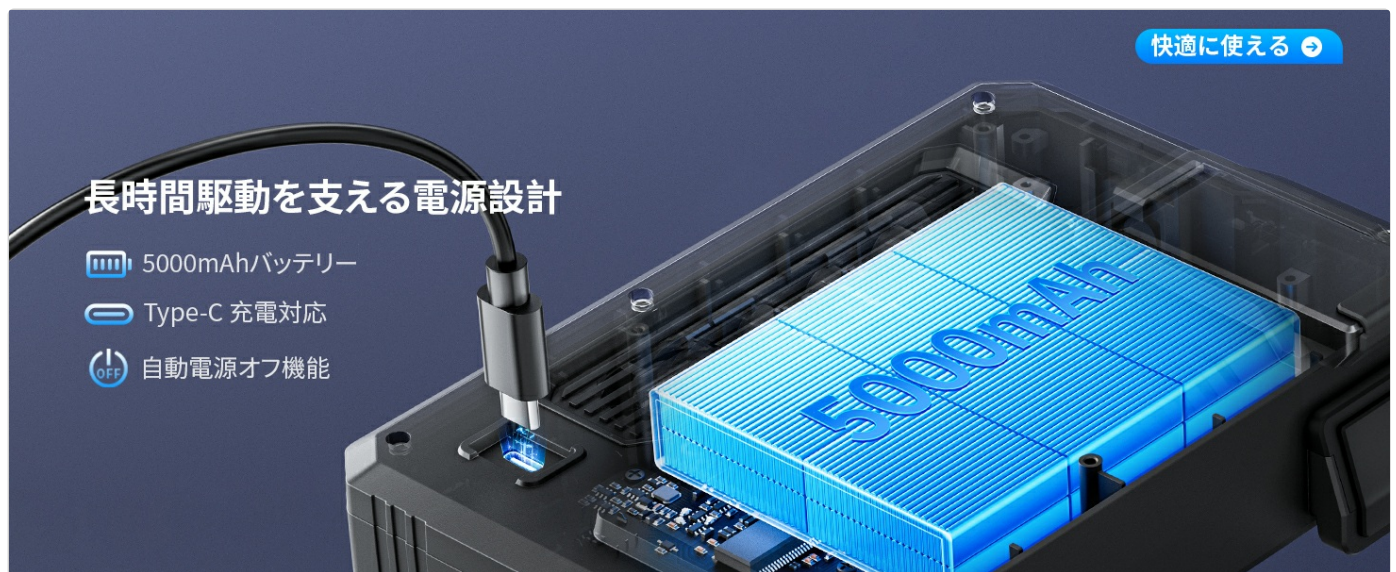


Figure 3.2.1: Charging the FNIRSI 2D15P via its Type-C port.

3.3 Initial Power On and Calibration

Press and hold the power button to turn on the device. It is recommended to perform an automatic calibration upon first use or if measurement accuracy is critical. Refer to the on-screen menu for the auto-calibration option.

4. OPERATING INSTRUCTIONS

4.1 Oscilloscope Mode

The oscilloscope function allows for detailed waveform analysis. Connect the P6100 high voltage probes to the CH1 and CH2 input terminals. Select 'OSC' mode from the main menu.

- **Bandwidth:** 100MHz.
- **Sampling Rate:** 500MS/s.
- **Memory Depth:** 10K, 100K, 1M options.
- **Display Modes:** Y-T (time-domain), Roll, X-Y (Lissajous figures).
- **Trigger Modes:** Auto, Normal, Single. Use the dedicated trigger buttons for quick selection.
- **Waveform Operations:** Access 6 types of mathematical operations for waveform analysis.
- **Automatic Measurements:** The device provides 13 types of automatic measurements, including frequency, peak-to-peak voltage, RMS, etc.
- **Cursor Measurement:** Use cursors for precise manual measurements of voltage and time.
- **Bandwidth Limit:** The 20MHz bandwidth limit function can be enabled to filter out high-frequency noise for clearer ripple measurements.



Figure 4.1.1: Oscilloscope display modes and cursor measurement.



Figure 4.1.2: Trigger mode selection buttons.



Figure 4.1.3: Effect of 20MHz bandwidth limit on waveform clarity.

4.2 Multimeter Mode

The multimeter function provides precise digital measurements. Connect the multimeter test leads to the appropriate input terminals. Select 'DMM' mode from the main menu.

- **Measurement Types:** DC/AC Voltage, DC/AC Current, Resistance, Capacitance, Diode, Continuity.
- **True RMS:** Provides accurate readings for non-sinusoidal waveforms.
- **AUTO Mode:** Automatically selects the appropriate measurement range for ease of use.



Figure 4.2.1: Multimeter measuring voltage.



Figure 4.2.2: Examples of various multimeter measurements.

4.3 Signal Generator Mode

The signal generator produces various waveforms for testing circuits. Connect the signal output port to your circuit under test. Select 'SG' mode from the main menu.

- **Frequency Range:** 0 to 10MHz.
- **Waveform Types:** Sine, Square, Triangle, Half-wave Rectification, Full-wave Rectification, Step, Inverse Step, Noise, DC.
- **Adjustable Parameters:** Frequency, Amplitude (0.1-3.0Vpp), and Duty Cycle (0-100%).



Figure 4.3.1: Signal generator interface showing available waveform types.

4.4 Application Examples

The FNIRSI 2D15P is suitable for a wide range of applications:

- **LIN Bus Signal Analysis:** Verify and analyze communication signals in automotive systems.
- **Audio Signal Analysis:** Detect distortion and drift in audio circuits in real-time.
- **Power Ripple Analysis:** Visualize and identify ripple or voltage fluctuations in power supplies.
- **Development and Design:** Essential tool for electronic circuit development.
- **Equipment Maintenance:** Diagnose and troubleshoot electronic equipment.
- **Research and Education:** Ideal for laboratory experiments and learning electronics.
- **Field Testing:** Portable design allows for convenient on-site measurements.



Figure 4.4.1: Examples of signal analysis applications.

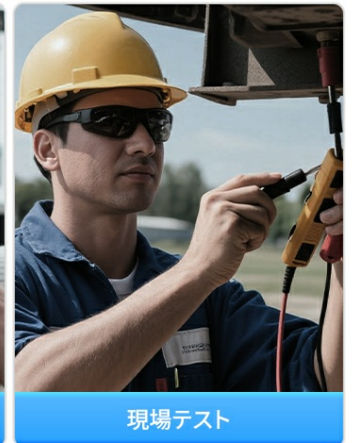
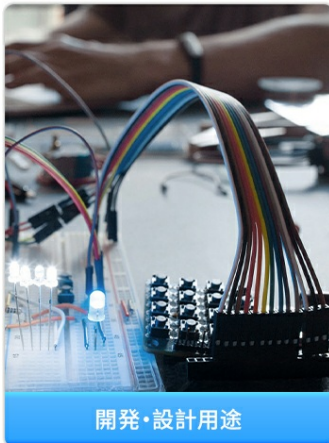


Figure 4.4.2: Diverse applications of the FNIRSI 2D15P.

5. MAINTENANCE

5.1 Cleaning

Clean the device with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the device is powered off and disconnected from any power source before cleaning.

5.2 Firmware Updates and Data Export

The device supports firmware updates and waveform data export via its USB Type-C connection. Connect the device to a computer using the USB cable. Refer to the official FNIRSI website for the latest firmware and instructions on how to perform updates and export data.



Figure 5.2.1: USB connectivity for waveform export and firmware updates.

5.3 Cooling System

The 2D15P features a quiet cooling fan to ensure stable operation during prolonged use. Keep the ventilation openings clear of obstructions.



Figure 5.3.1: Internal cooling fan and integrated stand.

6. TROUBLESHOOTING

If you encounter issues with your FNIRSI 2D15P, please refer to the following common troubleshooting steps:

- **Device not powering on:** Ensure the battery is sufficiently charged. Connect the device to a power source using the USB Type-C cable and try again.
- **Inaccurate measurements:** Perform an automatic calibration. Check probe connections and ensure they are securely attached. Verify that the correct measurement mode and range are selected.
- **No waveform display:** Check probe connections to the circuit under test. Ensure the trigger settings (mode, level, type) are appropriate for the signal being measured. Adjust vertical and horizontal scales.
- **Screen unresponsive:** If the touch screen is unresponsive, try using the physical buttons and rotary encoder. If the device is completely frozen, perform a hard reset by holding the power button for an extended period (e.g., 10-15 seconds) until it powers off, then restart.
- **Signal generator not outputting:** Ensure the signal generator mode is active and the output is enabled. Check the

frequency, amplitude, and duty cycle settings. Verify the connection to the circuit under test.

For persistent issues, please contact FNIRSI customer support.

7. SPECIFICATIONS

FNIRSI 2D15P Product Specifications

Category	Parameter	Value
General	Manufacturer	FNIRSI
	Model Number	2D15P
	Product Dimensions	12.9 x 5.7 x 19.6 cm
	Item Weight	600 g
	Battery Type	Lithium Polymer
	Battery Capacity	5000mAh
	Charging Port	USB Type-C
	Display	4.3-inch IPS Touch Screen
	Measurement Accuracy	+/-5%
	Included Components	2D15P Main Unit, P6100 High Voltage Probe (x2), Multimeter Test Leads, Alligator Clip, USB Charging Cable, Instruction Manual, Carrying Case
	First Available Date	2025/12/16
	Best Sellers Rank (Oscilloscope)	26
	Best Sellers Rank (Industrial & Scientific)	17808
	Average Customer Rating	4.2 out of 5 stars (9 ratings)
Oscilloscope	Channels	2
	Sampling Rate	500MS/s
	Analog Bandwidth	100MHz
	Memory Depth	10K, 100K, 1M
	Input Impedance	1MΩ
	Time Base Range	5ns~50s
	Vertical Sensitivity	10mV/~10V/div
	Max Input Voltage	800V (X10 probe)
	Trigger Modes	Auto, Normal, Single
	Trigger Types	Rising edge, Falling edge
	DC Voltage	1.9999V / 19.999V / 199.99V / 1000V
AC Voltage	AC Voltage	1.9999V / 19.999V / 199.99V / 750.0V

Category	AC Voltage Parameter	1.9999V / 19.999V / 199.99V / 750.0V Value
Multimeter	DC Current	19.999mA / 199.99mA / 1.9999A / 9.999A
	AC Current	19.999mA / 199.99mA / 1.9999A / 9.999A
	Resistance	199.99Ω / 1.9999KΩ / 19.999KΩ / 199.99KΩ / 1.9999MΩ / 19.999MΩ
	Capacitance	9.999nF / 99.99nF / 999.9nF / 9.999uF / 99.99uF / 999.9uF / 9.999mF
	Diode / Continuity	Yes
Signal Generator	Channels	1
	Frequency Range	0~10MHz
	Amplitude	0.1~3.0Vpp
	Duty Cycle	0~100%

8. WARRANTY AND SUPPORT

8.1 Warranty Information

FNIRSI products typically come with a standard manufacturer's warranty. Please refer to the warranty card included with your product or contact FNIRSI customer support for specific warranty terms and conditions.

8.2 Customer Support

For any questions, technical assistance, or support regarding your FNIRSI 2D15P, please contact FNIRSI customer service. You can typically reach them via:

- **Amazon Messaging:** If purchased through Amazon, you can contact the seller via your order history.
- **Email:** support@fnirsi.com

When contacting support, please provide your product model (2D15P) and a detailed description of the issue.

**日本語の取扱説明書を入手するには、
以下の方法をご利用いただけます**

①商品ページでダウンロードしてください。
②Amazonのメッセージ機能を通じてFNIRSIにご連絡ください。
③FNIRSIアフターサービスセンター（support@fnirsi.com）にご連絡ください。

現在、対応可能な日本語の取扱説明書は下記の通りです。

オシロスコープ DSO-153、DSO-TC3、2C23T、2C53T、
DSO-510、DSO-TC4、2C53P、DPOS-350P、
DST-210、DST-201

マルチメーター DMT-99、DMC-100

LCRメーター LCR-P1、LCR-ST1

溶接ツール HS-02A/B、SWM-10

直流安定化電源 DPS-150

安全性と商品リソース

安全性に関する文書
ユーザーガイド (PDF)

商品ページで
ダウンロードする場合
ココをクリックしてください

Figure 8.2.1: Contacting FNIRSI customer support.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question