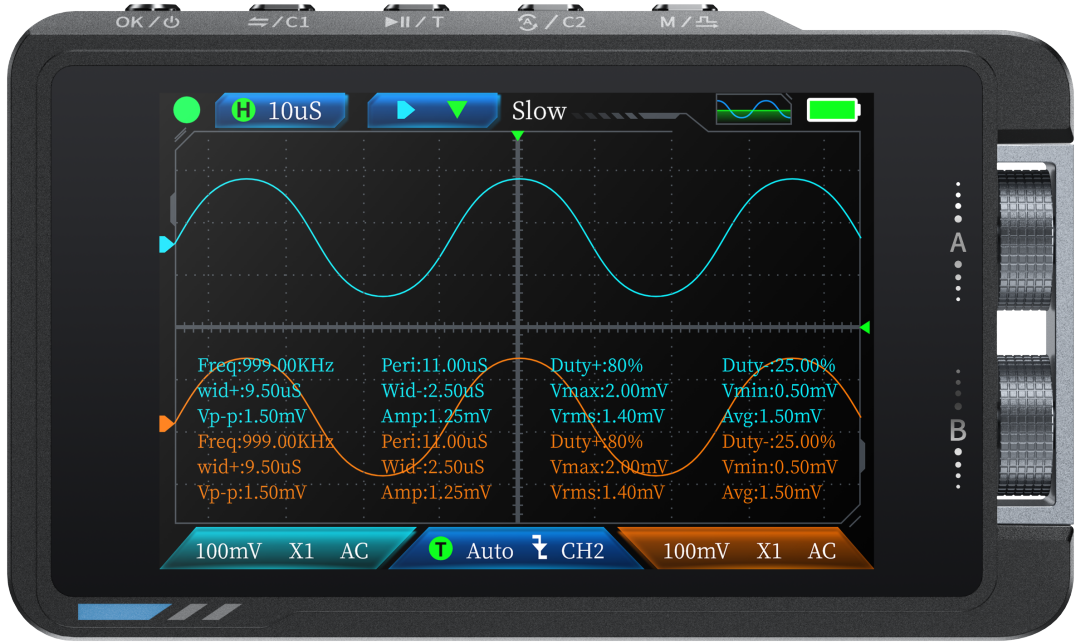
FNIRSi 菲尼瑞斯

DS215H

二合一双通道便携式示波器 V1.1

2-IN-1 DUAL-CHANNEL PORTABLE OSCILLOSCOPE USER MANUAL



※使用产品前请仔细阅读本说明书，并妥善保管。

※Please read this instruction manual carefully before using the product and keep it properly.

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一.安全要求

1.1 环境要求

⃠注意事项

- 避免阳光直射、高温、明火、腐蚀性气体、潮湿或多尘环境，以防设备故障。
- 始终将设备放在平稳坚固的表面，切勿将设备放置在地毯、毛毯等柔软表面。
- 确保通风口不被遮挡，避免设备过热。

⚠远离以下物品

- 加热器：避免过热或火灾风险。
- 空调、通风设备：防止冷凝水导致短路。
- 水源、化学品：溶剂：泄漏可能损坏设备或引发火灾。
- 强磁性设备：防止磁场干扰设备正常运行。

♻废旧处理

- 请勿随生活垃圾丢弃废旧电池或设备，应按国家或当地法规处理

1.2 设备安全标识

充电

专业回收

二.产品概览

2.1 产品简介

FNIRSI-DS215H 是一款由 FNIRSI 推出的功能全面、实用性强的二合一双通道数字示波器，专为维修和研发行业设计。它集 **示波器** 和 **信号发生器** 于一体，采用 **FPGA+MCU+ADC** 硬件架构，具备以下特点：

示波器功能：

- **采样率**：高达 250MS/s。
- **模拟带宽**：50MHz。
- **高压保护**：支持最大 ±400V 峰值电压测量，安全可靠。
- **波形存储**：支持截图保存与查看，便于数据分析。

信号发生器功能：

●支持 13 种波形输出，频率范围 0-50KHz，步进 1Hz。

●输出参数（频率、幅值、占空比）可调，灵活适配多种需求。

便携设计：

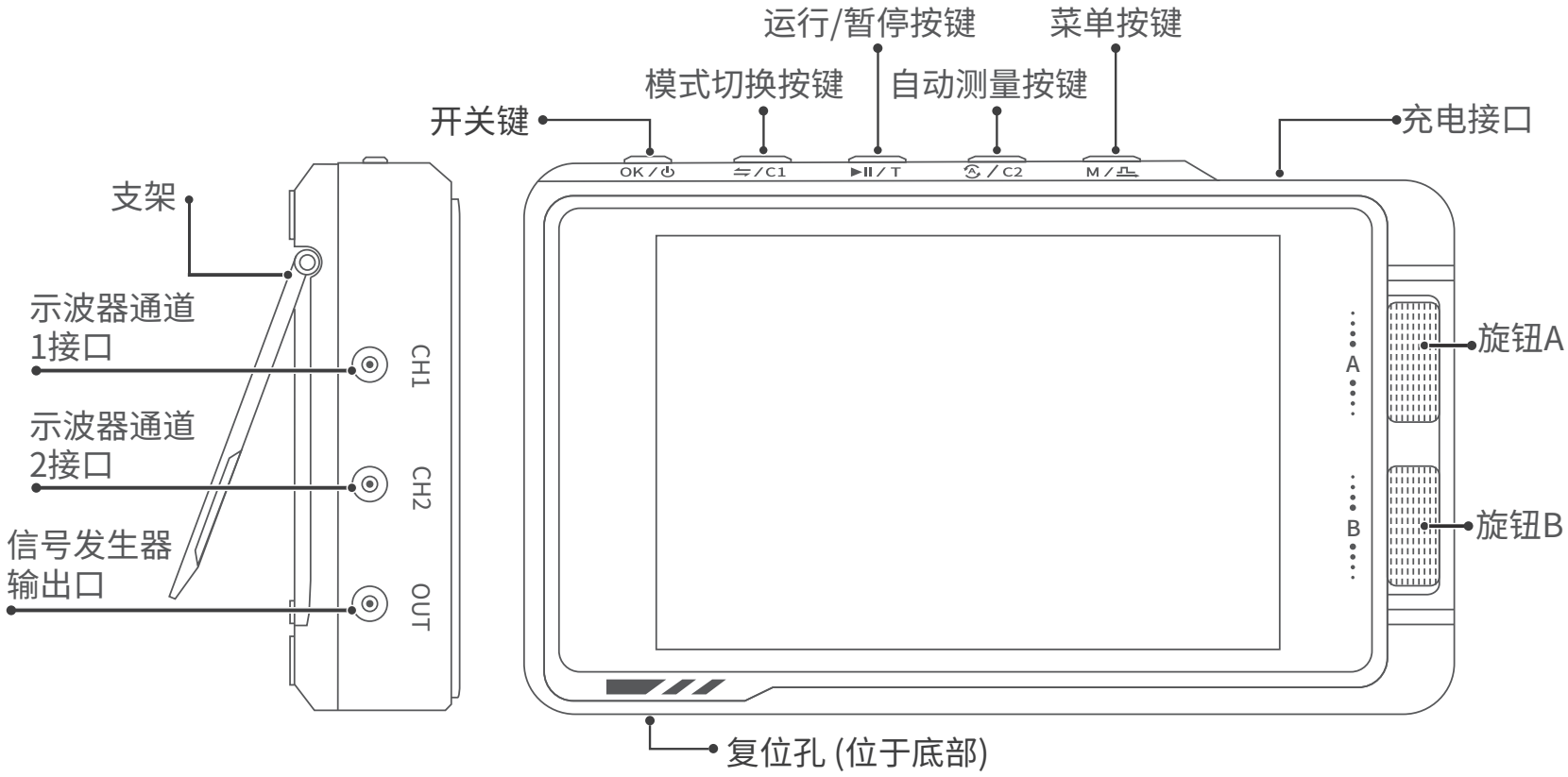
●配备 3.5 英寸 480×320 分辨率显示屏，画面清晰直观。

●内置高容量可充电锂电池（1500mAh），支持长时间待机（4小时）。

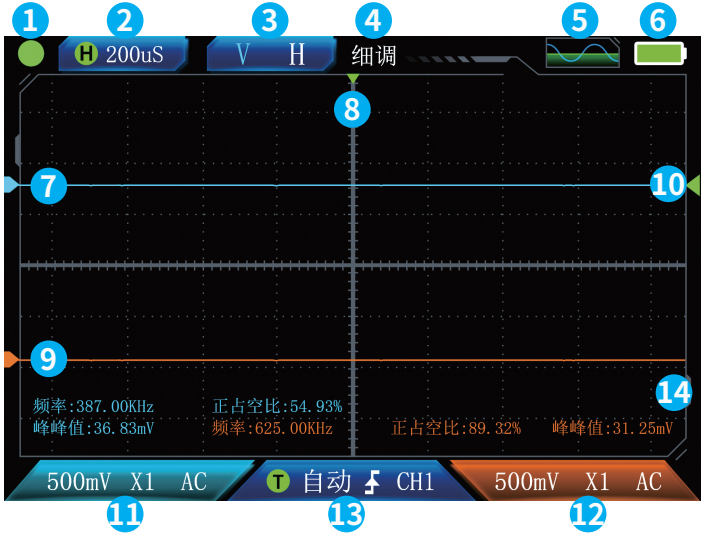
●小巧轻便，适合移动使用。

FNIRSI-DS215H 致力于为用户提供强大、灵活的功能与便携的操作体验，是维修、研发工作的理想工具。

2.2 产品操作示意图


运行/暂停按键
菜单按键
模式切换按键
自动测量按键
开关键
充电接口
支架
示波器通道
1接口
示波器通道
2接口
信号发生器
输出口
CH1
CH2
OUT
OK / ⏻
⇋ / C1
▶II / T
C2
M
A
B
旋钮A
旋钮B
复位孔 (位于底部)

2.3 示波器页面示意图



① 运行/暂停指示：

短按运行/暂停键切换，绿色为运行，红色暂停。

② 系统时基：

指水平方向一大格代表时间长度，由采样速率决定。

③ 模式切换：

短按模式切换按键可切换控制时基、通道垂直灵敏度、水平触发移动、通道波形上下移动、触发电平上下移动、光标开启的的光标控制。

④ 细调/粗调：

短按开关键可切换细调/粗调。

⑤ 函数信号发生器指示：

高亮代表开启函数信号发生器，灰色代表未开启。

⑥ 电量指示：

指示系统电量。

⑦ 通道1波形：

通道1采集的波形信号。

⑧触发X位置指示箭头：

指此处为触发点。

⑨通道2波形：

通道2采集的波形信号。

⑩触发电压指示图标：

即触发阈值。

⑪通道1设置：

长按模式切换按键，设置通道开启/关闭、探头比例、耦合类型、FFT。

⑫通道2设置：

长按自动测量按键，设置通道开启/关闭、探头比例、耦合类型、FFT。

⑬触发设置：

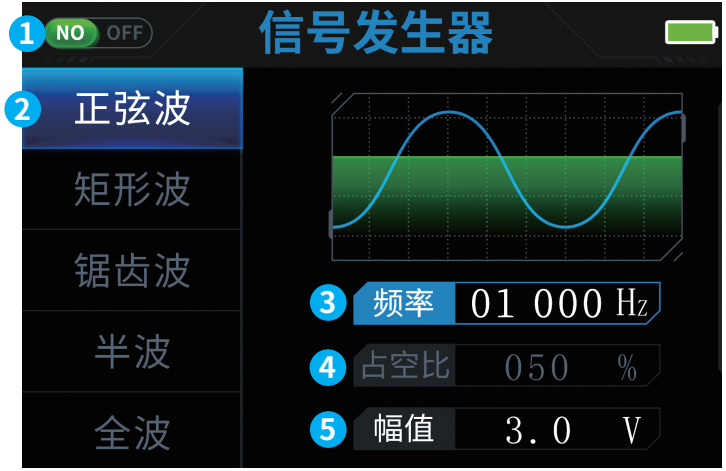
长按运行/暂停按键，可以设置触发模式、触发沿、触发通道。

⑭参数测量：

根据设置中选择的测量项显示。

按键/滚轮	操作	功能描述
OK / ⏻	短按	切换粗/微调滚轮（未进入其他菜单时），确认（在其它菜单中）
	长按	开关机
⇋ / C1	短按	切换滚轮功能（未进入其他菜单/设置时）
	长按	打开 CH1 设置
▶II / T	短按	切换暂停/运行
	长按	打开触发设置
Ⓐ / C2	短按	自动测量
	长按	打开 CH2 设置
M / ⏎	短按	打开菜单/返回
	长按	进入信号发生器界面
滚轮 A	—	未进入其他菜单时：上下操作；进入菜单时：上下选择
滚轮 B	—	未进入其他菜单时：左右操作；进入菜单时：左右选择

2.4 信号发生器页面示意图



①开启/关闭：

短按运行/暂停键可以开启/关闭信号输出

②信号类型选择：

共有正弦波、矩形波、锯齿波、半波、全波、正阶梯波、反阶梯波、指数升、指数降、直流信号、多音频、辛克脉冲、洛伦茨波，13种波形。

③频率：

可通过按钮和旋钮输入具体参数进行设置，最大值50 000Hz。

④占空比：

可以通过按钮和旋钮输入设置具体参数，最大值100%。

⑤幅值：

可以通过按钮和旋钮输入设置具体参数，最大值3.0V。

按键/滚轮	操作	功能描述
OK / ⏻	短按	进入/退出参数设置
	长按	开关机
Ⓐ / C2	短按	开启/关闭输出
M / ⏎	短按	进入/退出参数设置
	长按	回到示波器界面
滚轮 A	—	未进入参数设置时:切换信号;进入设置时:加减参数
滚轮 B	—	未进入参数设置时:切换参数;进入设置时:调节参数

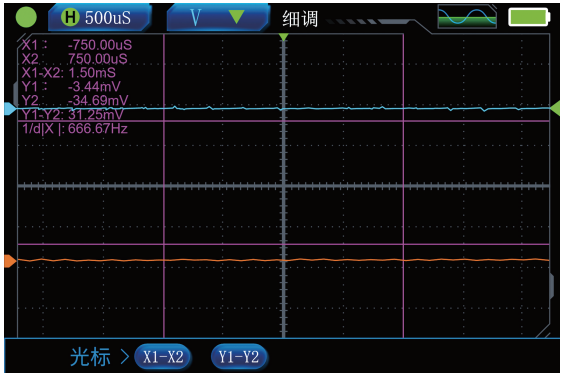
2.5 设置页面及相关操作

50%：自动把偏置电压、触发电压等调整到合适的位置。

测量：可选择要显示的测量参数值，如图所示。

保存：点击保存，会将测量页面示波器，以 BMP 格式图片存放在机器 U 盘中的Screenshot file 文件夹里，图片名会在保存时显示。

光标：可选择X1-X2，Y1-Y2显示。



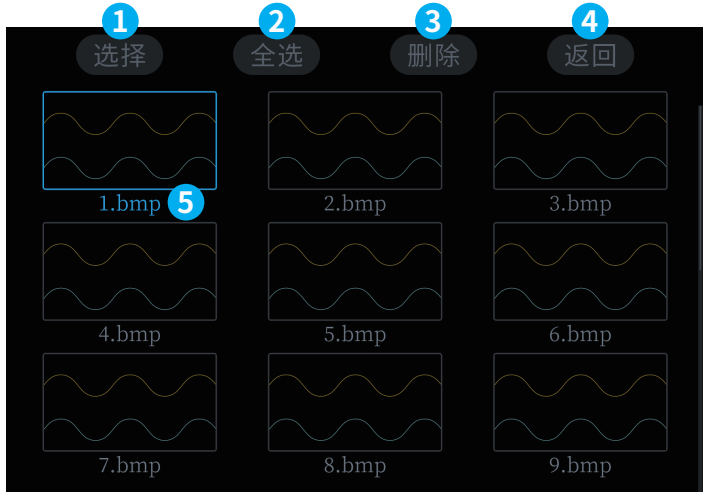
X-Y：可进入X-Y显示，这时测量、光标、运算全部没用。

运算：可选择1+2、1-2、1*2、1/2、-1、-2、|1|、|2|的显示。

余晖：可选择500mS、1S、无限的显示。

校正：点击校正，在确定拔掉所有探头后，并且未连接USB后，进入校正。

图片：进入图片查看界面。



①按键 ⇋ / C1短按，进入删除图片的选择。

②按键 ▶II / T短按，选择全部图片进行删除

③按键 Ⓐ / C2 短按删除。

④按键 M / ⏎短按返回。

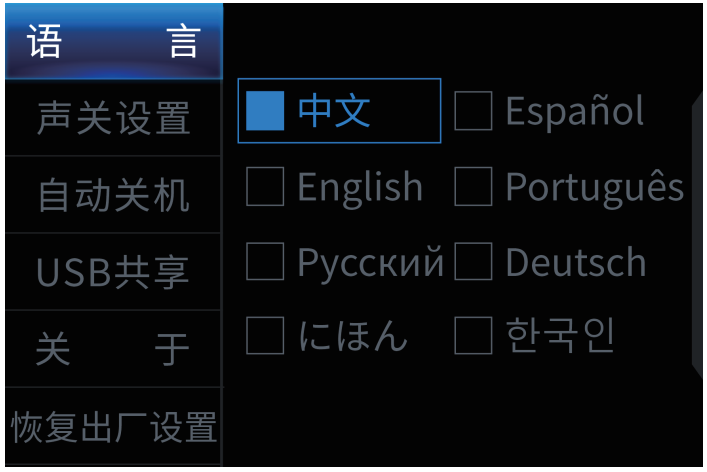
⑤当前选择的图片。

⑥ 按键OK / ⏻ 打开图片/确定。

⑦打开图片后，滚轮1可上下查看图片。按键▶II / T 短按删除图片。

按键/滚轮	操作	功能描述
OK / ⏻	短按	打开图片/确定
⇋ / C1	短按	删除图片的选择
▶II / T	短按	全部图片删除
Ⓐ / C2	短按	删除图片
M / ⏎	短按	返回
滚轮 A	/	上下选择图片
滚轮 B	/	左右切换图片

设置：进入设置界面



语言设置：共有中文、English、Deutsch、Português、にほんご、Español、한국인、Русский，8种语言可切换。

声光设置：转动旋钮A选择亮度/音量，短按开关键确定选择，转动旋钮B调节。

自动关机：可设置自动关机OFF、15min、30min、1hour。

USB共享：开启后将进入USB共享界面，连接电脑后有U盘弹出，可在【Screenshot file】文件夹获取截图图片。以及可在【LOGO】文件夹中放置“LOGODS215H.jpg”(自定义开机LOGO)。

关于：显示品牌信息与当前版本号。

恢复出厂设置：恢复出厂设置会重置之前所有设置。

三.技术规格

3.1 机型参数

参数	规格
屏幕材质	3.5寸IPS高清彩屏
背光	背光亮度可调
供电电源	TYPE-C（5V/1A）
电池	1500mAh
语言	中文, English, русский, 日本語, Español, Português, Deutsch, 한국어
产品尺寸	≈66x110x19.5mm
裸机重量	≈138g

3.2 示波器参数

参数	规格
通道	双通道
带宽	50MHz
实时采样率	250MSa/s
存储空间	14M
时基范围	20ns/div - 20s/div
垂直灵敏度	10mV/div - 10V/div
波形显示模式	YT/XY/滚动
垂直分辨率	8位
输入阻抗	1MΩ
测量数据	周期、频率、峰峰值、最大值、最小值、平均值、 有效值、幅值、占空比、脉宽

参数	规格
探头衰减系数	1x/10x
输入耦合	AC/DC
触发类型	上升沿/下降沿
峰值电压	±400V
触发电平范围	8格（正负）
触发方式	自动/正常/单次

3.3 信号发生器参数

参数	规格
输出波形	支持多种波形输出
波形频率	0-50KHz
方波占空比	0-100%
波形幅值	0.1V-3.0V

四.操作指南

4.1 开机与语言设置

长按按键OK开机，滑动滚轮A选择语言，按OK确认，进入示波器界面。

4.2 调整示波器参数

时基与垂直灵敏度调节：

滑动滚轮B调整时基，滑动滚轮A调整通道一垂直灵敏度。

通道二垂直灵敏度调节

点按按键 ⇋/C1 ，V变为黄色，滑动滚轮B调整通道二垂直灵敏度。

触发与电平游标调节

- 再次点按按键 ⇋/C1 ，滑动滚轮B调整垂直触发游标，滑动滚轮A调整通道一电平游标。
- 再次点按按键 ⇋/C1 ，滑动滚轮B调整垂直触发游标，滑动滚轮A调整通道二电平游标。
- 再次点按按键 ⇋/C1 ，滑动滚轮B调整垂直触发游标，滑动滚轮A调整水平触发电平。

4.3 滚轮灵敏度调节

在调节过程中，点击按键OK切换滚轮灵敏度，便于粗调细调。

4.4 长按功能操作

- 长按按键 ⇋ / C1 修改通道一相关参数。
- 长按按键 Ⓐ / C2 修改通道二相关参数。
- 长按按键 ▶II / T 修改触发相关参数。

4.5 菜单与信号发生器操作

- 点按按键 M / ⏢ 调出菜单页面，通过滚轮选择，按OK设置参数。
- 长按按键 M / ⏢ 切换到信号发生器页面。

4.6 子菜单调整

- 滑动滚轮A切换上层菜单，滑动滚轮B切换子菜单。
- 点按按键OK进入子菜单，修改波形参数（频率、占空比、幅值）。

五.快速入门

5.1 快速测量

- 连接探头并检查连接:地线共地、信号探头连接信号源
- 点击自动设置按钮:按键 / C2
- 点击按钮五:进入测量功能,按钮一选择,开启相关测量参数
- 分析数据与记录数据,频率、峰峰值、过冲等。

5.2 测量周期信号

- 连接探头并检查连接:地线共地、信号探头连接信号源
- 点击自动设置按钮:按键 / C2
- 调整时基,直到波形显示稳定(可选项)
- 调整垂直灵敏度,直到显示完整(可选项)
- 触发相关调整:触发模式、边沿、位置、电平
- 打开测量功能(与自动测量一致)
- 分析数据与记录数据(与自动测量一致)

5.3 测量非周期信号

- 连接探头并检查连接：
- 打开测量功能
- 触发相关调整：单次/常规，其他选项
- 分析数据与记录数据

5.4 固件升级

- 在关机的情况下，先按住按键M / ⏎，然后按住开机键。
- 使用Type-C线连接板子上的Type-C口至电脑端，此时电脑会弹出一个名为“IAP”的U盘。
- 将固件拉入到U盘里，如果固件升级完成，会显示关机充电界面。

注意：固件升级只支持在电脑Windows10及以上系统使用

六.故障排查

6.1 无法开机

可能原因：

- 电池电量耗尽。
- 电池连接松动或损坏。

解决方法：

- 检查电池电量，若电量不足请充电。
- 如果电池无法充电或设备依然无法开机，尝试重新安装电池，或更换电池。

6.2 屏幕无法显示

可能原因：

- 屏幕背光关闭。
- 显示屏硬件故障。
- 系统软件异常。

解决方法：

- 按照手册检查并调节背光亮度设置。
- 尝试重启设备，确保系统恢复正常。
- 如果屏幕仍无法正常显示，可能需要维修或更换显示屏。

6.3 示波器无法捕捉信号

可能原因：

- 示波器输入通道未正确连接。
- 输入信号幅度过小或过大，超出示波器量程。
- 触发设置不正确。
- 探头或接线问题。

解决方法：

- 检查探头是否正确连接到示波器的输入通道。
- 调整垂直灵敏度和时基设置，确保能够捕捉到信号。
- 检查触发模式是否正确设置，例如选择“上升沿”或“下降沿”触发。
- 确认探头与信号源的连接是否稳定，接线是否完好。

6.4 信号发生器无法输出信号

可能原因：

- 信号发生器未启用。
- 输出频率或幅值设置不正确。
- 信号发生器硬件故障。
- 输出夹接口差错孔位

解决方法：

- 检查信号发生器是否已开启，并确保设置正确（例如频率、幅值、占空比）。
- 如果设置正确且无法输出信号，尝试重启设备。
- 如故障持续，可能需要维修或替换信号发生器部分。
- 检查接口孔位是否插入正确

七.维护保养

清洁设备外部：

频率：每月清洁一次，具体取决于使用环境。

方法：使用柔软的布轻轻擦拭设备表面。避免使用化学清洁剂，特别是含有酒精或强酸、强碱的清洁剂，以免损坏外壳或屏幕。

检查电池与电源：

电池保养：对于内置电池的示波器，定期检查电池的健康状态。避免电池完全放电，建议定期充电并避免长时间不使用设备。

充电规范：使用官方提供的充电器进行充电，避免过充或过放，确保电池处于适宜的工作电压范围。

电池更换：若电池表现出过度衰减（如无法正常充电或极快放电），应及时更换。

存放与携带：

存放环境：示波器应存放在干燥、通风的环境中，避免高温、高湿或剧烈的温度变化。避免将其放置在阳光直射的地方。

携带：使用时应小心避免摔落，尤其是在携带过程中。推荐使用保护套或专用包进行携带。

软件更新：

- 定期检查设备是否有新的固件更新。最新的固件可以修复已知的BUG并提升设备性能。
- 更新时确保操作步骤正确，使用官方发布的固件文件，并避免断电或其他干扰。

恢复出厂设置：

●若设备出现异常或无法正常工作，可尝试恢复出厂设置。恢复设置后，设备将清除所有自定义配置，恢复到初始状态。

●恢复出厂设置的方法可以参考用户手册或联系厂商客服。

八.生产信息

产品名称：DS215H 二合一双通道便携式示波器

品牌/型号：FNIRSI / DS215H

生产商：深圳市菲尼瑞斯科技有限公司

地址：广东省深圳市龙华区大浪街道伟华达工业园C栋西侧8楼

服务热线：0755-28020752

服务邮箱： support@fnirsi.com

商务邮箱： business@fnirsi.com

官方网站：www.fnirsi.cn

执行标准：GB/T 15289-2013

九、保修说明

※此页为保修卡基本凭证，请妥善保管

感谢您选择本公司产品，本产品自销售之日起计保修期。在产品保修期内，凡按照产品使用，说明书安装使用。于正常环境、条件使用之下，因原物料及加工过程中之瑕疵而导致故障，可依据本保修条款的内容享受无偿维修服务，本保修卡请用户妥善保存，以作保修凭证，丢失恕不补发。

以下情况将实施有偿维修服务

1.不能出示有效保修卡原件；

2.产品安装不符合产品要求、标准和相关规范造成的损坏；

3.产品安装环境中相关配件不符合产品要求、标准和相关规范造成的损坏；

4.用户对产品使用不当、保管不妥或擅自拆机、私自维修等原因造成的损坏；

5.超过保修期；

1.SAFETY REQUIREMENTS

1.1 Environmental Requirements

Precautions

- Avoid high temperatures, open flames, corrosive gases, humid or dusty environments to prevent equipment failure.
- Always place the device on a stable and solid surface. Do not place the device on soft surfaces such as carpets and blankets.
- Ensure the air intake is not blocked to avoid affecting the measurement values.

Keep away from the following items

- Heating devices: To avoid overheating or fire risks.
- Water sources, chemicals, solvents: Leaks may damage the equipment or cause fires.
- Strong magnetic devices: To prevent magnetic fields from interfering with the normal operation of the device.

Waste Disposal

Do not dispose of used batteries or equipment with household waste; handle it according to national or local regulations.

1.2 Equipment safety label

Charging

Professional recycling

2.PRODUCT OVERVIEW

2.1 Product introduction

FNIRSI-DS215H is a comprehensive and practical two-in-one dual-channel digital oscilloscope launched by FNIRSI, designed for the maintenance and R&D industries. It integrates an oscilloscope and a signal generator, adopts FPGA+MCU+ADC hardware architecture, and has the following features:

Oscilloscope function:

- Sampling rate: up to 250MSa/s.
- Analog bandwidth: 50MHz.
- High voltage protection: supports maximum ±400V peak voltage measurement, safe and reliable.
- Waveform storage: supports screenshot saving and viewing, which is convenient for data analysis.

Signal generator function:

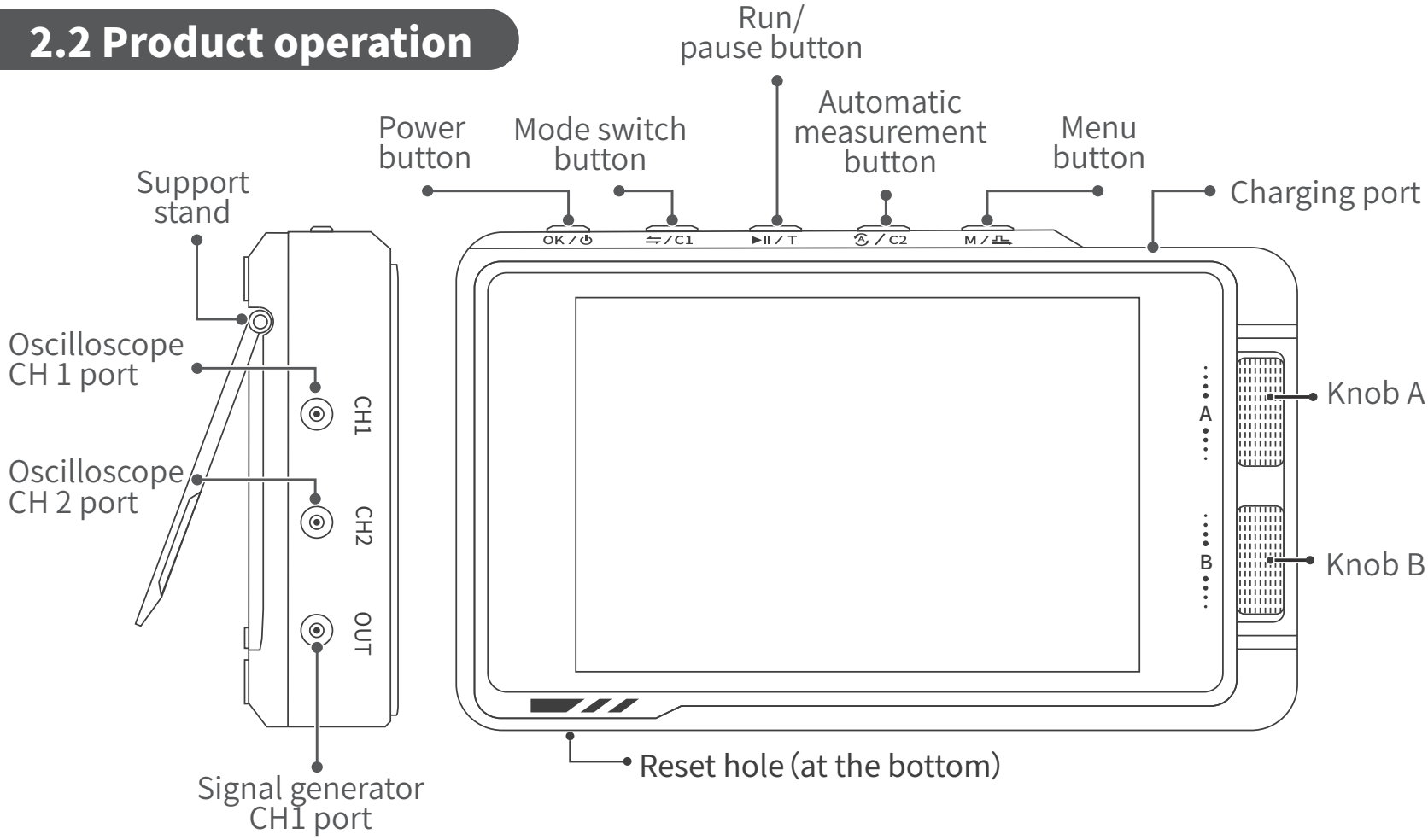
- Support 13 waveform outputs, frequency range 0-50KHz, step 1Hz..
- Output parameters (Freq, Amp, Duty cycle) are adjustable, flexible to meet various needs.

Portable design:

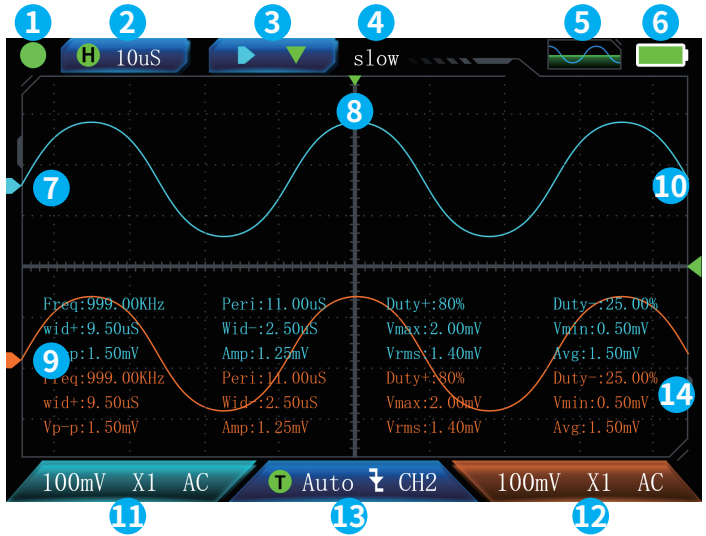
- Equipped with a 3.5-inch 480×320 resolution display, the picture is clear and intuitive.
- Built-in high-capacity rechargeable lithium battery (1500mAh), supports long standby (4 hours).
- Small and light, suitable for mobile use.

FNIRSI-DS215H is committed to providing users with powerful, flexible functions and portable operation experience, and is an ideal tool for maintenance and R&D work.

2.2 Product operation



2.3 Oscilloscope



①Run/Pause Indicator:

Press the Run/Pause button to switch, green for running, red for pause.

②Time Base:

A large horizontal grid represents the length of time, which is determined by the sampling rate.

③Mode Switch:

Press the mode switch button to switch the control time base, channel vertical sensitivity, horizontal trigger movement, channel waveform up and down movement, trigger level up and down movement, and cursor control of cursor opening.

④Fine/Coarse Adjustment:

Press the switch button to switch fine/coarse adjustment.

⑤Function Signal Generator Indicator:

Highlight means the function signal generator is turned on, and gray means it is not turned on.

⑥Battery Indicator:

Indicates the system battery.

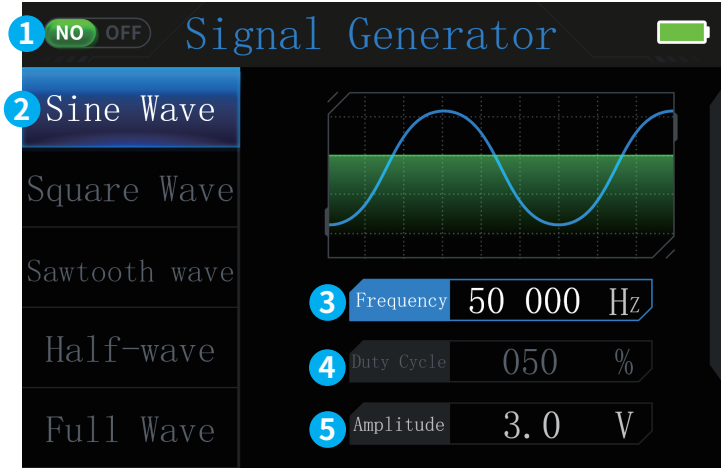
⑦Channel 1 Waveform:

The waveform signal collected by channel 1.

⑧Trigger X position indicator arrow:
Indicates that this is the trigger point.
⑨Channel 2 waveform:
The waveform signal collected by channel 2.
⑩Trigger voltage indicator icon:
The trigger threshold.
⑪Channel 1 settings:
Long press the mode switch button to set the channel on/off, probe ratio, coupling type, and FFT.
⑫Channel 2 settings:
Long press the automatic measurement button to set the channel on/off, probe ratio, coupling type, and FFT.
⑬Trigger settings:
Long press the run/pause button to set the trigger mode, trigger edge, and trigger channel.
⑭Parameter measurement:
Displayed according to the measurement item selected in the settings.

Button/ Scroll Wheel	Operation	Function Description
OK / ⏻	Short Press	Switch the coarse/fine adjustment scroll wheel (when not in other menus), confirm (in other menus)
	Long Press	Power on/off
⇋ / C1	Short Press	Switch the scroll wheel function (when not in other menus/settings)
	Long Press	Open CH1 settings
▶II / T	Short Press	Switch pause/run
	Long Press	Open trigger settings
Ⓐ / C2	Short Press	Automatic measurement
	Long Press	Open CH2 settings
M / ⎍	Short Press	Open menu/return
	Long Press	Enter the signal generator interface
Scroll Wheel A	/	When not in other menus: up and down operation; when entering the menu: up and down selection
Scroll Wheel B	/	When not in other menus: left and right operation; when entering the menu: left and right selection

2.4 Signal Generator



①On/Off:

Short press the Run/Pause button to turn on/off the signal output.

②Signal Type Selection:

There are 13 waveforms: sine wave, rectangular wave, sawtooth wave, half wave, full wave, positive step wave, reverse step wave, exponential rise, exponential fall, DC signal, multi-tone, Sinker pulse, Lorentz wave.

③Frequency:

Set the specific parameters by inputting buttons and knobs, with a maximum value of 50,000Hz.

④Duty Cycle:

Set the specific parameters by inputting buttons and knobs, with a maximum value of 100%.

5 Amplitude:

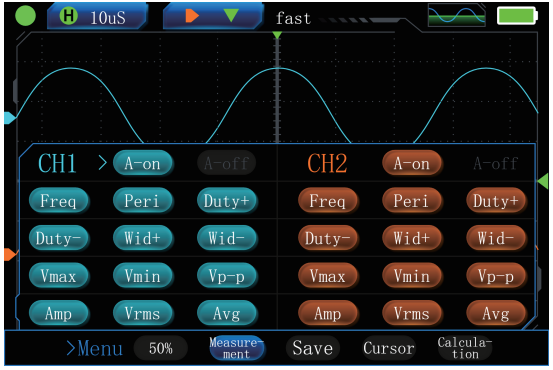
Set the specific parameters by inputting buttons and knobs, with a maximum value of 3.0V.

Button/ Scroll Wheel	Operation	Function Description
OK / ⏻	Short Press	Enter/exit parameter settings
	Long Press	Power on/off
Ⓐ / C2	Short Press	Turn output on/off
M / ⎍	Short Press	Enter/exit parameter settings
	Long Press	Return to oscilloscope interface
Scroll Wheel A	/	When not in parameter settings: switch signals; when in settings: add/subtract parameters
Scroll Wheel B	/	When not in parameter settings: switch parameters; when in settings: adjust parameters

2.5 Settings page and related operations

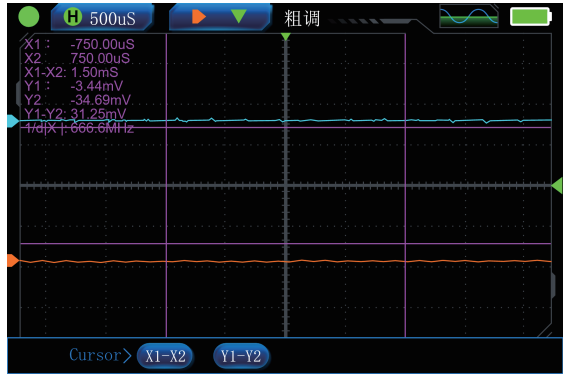
50%: Automatically adjust the bias voltage, trigger voltage, etc. to the appropriate position.

Measurement: Select the measurement parameter value to be displayed, as shown in the figure.

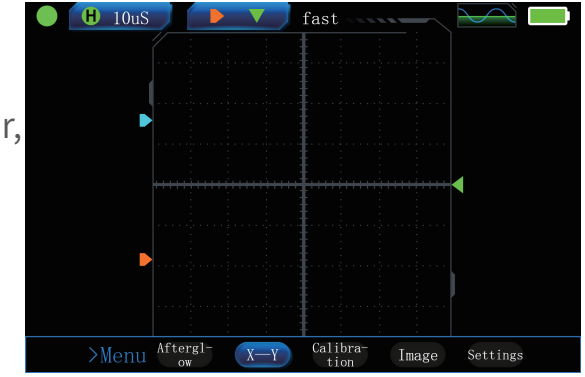


Save: Click Save to save the oscilloscope's measurement page in the Screenshot file folder in the machine's USB flash drive as a BMP format image. The image name will be displayed when saving.

Cursor: You can choose X1-X2, Y1-Y2 display.

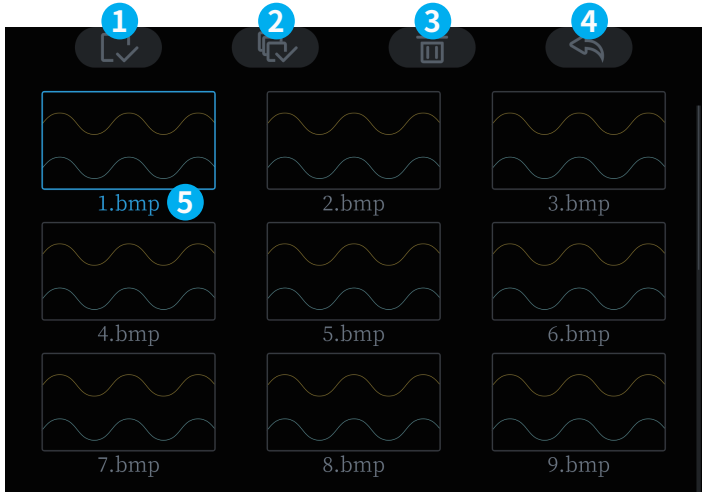


X-Y: You can enter X-Y display, at this time, measurement, cursor, calculation are all useless.



Calculation: You can choose 1+2, 1-2, 1*2, 1/2, -1, -2, |1|, |2| display.
Afterglow: You can choose 500mS, 1S, infinite display.
Calibration: Click Calibration, and enter calibration after confirming that all probes are unplugged and USB is not connected.

Picture: Enter the picture viewing interface.



①Button ⇆ / C1 Short press to enter the selection of deleting pictures.

②Button ▶II / T Short press to select all pictures for deletion

③Button Ⓐ / C2 Short press to delete.

④Button M / ⎍ Short press to return.

⑤Currently selected picture.

⑥Button OK / ⏻ Open picture/OK.

⑦After opening the picture, scroll wheel 1 can view the picture up and down. Button ▶II / T Short press to delete the picture.

Button/ Scroll Wheel	Operation	Function Description
OK / ⏻	Short Press	Open image/confirm
⇋ / C1	Short Press	Delete image selection
▶II / T	Short Press	Delete all images
Ⓐ / C2	Short Press	Delete image selection
M / ⏎	Short Press	Return
Scroll Wheel A	/	Select image up and down
Scroll Wheel B	/	Select image up and down

Settings: Enter the settings interface

USB sharing: After turning it on, you will enter the USB sharing interface. After connecting to the computer, a USB flash drive will pop up. You can get the screenshot in the [Screenshot file] folder. And you can put "LOGODS215H.jpg" (custom startup LOGO) in the [LOGO] folder.

Language settings: There are 8 languages to switch between: 中文, English, Deutsch, Português, にほんご, Español, 한국인, Русский.

Sound and light settings: Turn knob A to select brightness/volume, short press the switch button to confirm the selection, and turn knob B to adjust.

Auto shutdown: You can set auto shutdown to OFF, 15min, 30min, 1hour.

About: Display brand information and current version number.

Restore factory settings: Restoring factory settings will reset all previous settings.

3.TECHNICAL SPECIFICATIONS

3.1 Model parameters

Parameters	Specifications
Display	3.5-inch IPS high-definition color screen
Backlight	Brightness Adjustable
Power supply	TYPE-C (5V/1A)
Battery	1500mAh
Languages	中文, English, русский, 日本語, Español, Português, Deutsch, 한국어
Product size	≈66x110x19.5mm
Bare weight	≈138g

3.2 Oscilloscope parameters

Parameters	Specifications
Channel	Dual channel
Bandwidth	50MHz
Real-time sampling rate	250MSa/s
Storage space	14M
Time base range	20ns/div - 20s/div
Vertical sensitivity	10mV/div - 10V/div
Waveform display mode	Scroll
Vertical resolution	8 bits
Input impedance	1MΩ
Measurement data	Cycle, Freq, Vpp, Max, Min, Avg, RMS, Amp,Dduty cycle, Pulse width

Parameters	Specifications
Probe attenuation factor	1x/10x
Input coupling	AC/DC
Triggaer type	Rising edge/Falling edge
Peak voltage	±400V
Trigger level range	8 grids (positive and negative)
Trigger mode	Auto/Normal/Single

3.3 Signal Generator

Parameters	Specifications
Output waveform	Supports multiple waveform outputs
Waveform frequency	0-50KHz
Square wave duty cycle	0-100%
Waveform amplitude	0.1V-3.0V

4.OPERATING INSTRUCTIONS

4.1 Power on and language setting

Long press the OK button to power on, slide the roller A to select the language, press OK to confirm, and enter the oscilloscope interface.

4.2 Adjust oscilloscope parameters

Time base and vertical sensitivity adjustment

Slide roller B to adjust the time base, slide roller A to adjust the vertical sensitivity of CH1.

CH2 Vertifical Sensitivity Adjustment

Press button ⇋/C1 , V turns yellow, slide roller B to adjust the vertical sensitivity of CH2.

Trigger and level cursor adjustment

●Press button ⇋/C1 again, slide roller B to adjust the vertical trigger cursor, slide roller A to adjust the level cursor of channel one.

●Press button ⇋/C1 again, slide roller B to adjust the vertical trigger cursor, slide roller A to adjust the level cursor of channel two.

●Press button ⇋/C1 again, slide roller B to adjust the vertical trigger cursor, slide roller A to adjust the horizontal trigger level.

4.3 Scroll wheel sensitivity adjustment

During the adjustment process, click the OK button to switch the roller sensitivity for coarse and fine adjustment.

4.4 Long press function operation

●Long press the button ⇆ / C1 to modify the parameters related to CH1.

●Long press the button Ⓐ / C2 to modify the parameters related to CH2.

●Long press the button ▶II / T to modify the trigger related parameters.

4.5 Menu and signal generator operation

●Click the button M / ⎍ to call up the menu page, select through the roller, and press OK to set the parameters.

●Long press the button M / ⎍ to switch to the signal generator page.

4.6 Submenu adjustment

●Slide the roller A to switch the upper menu, slide the roller B to switch the submenu.

●Click the OK button to enter the submenu and modify the waveform parameters (Freq, Duty cycle, Amp).

5.QUICK START GUIDE

5.1 Quick measurement

● Connect the probe and check the connection: ground wire common ground, signal probe connected to signal source
● Click the auto-set button: button / C2
● Click button five: enter the measurement function, button one selection, open the relevant measurement parameters
● Analyze and record data, Freq, Vpp, Overshoot, etc.

5.2 Measuring periodic signals

● Connect the probe and check the connection: ground wire common ground, signal probe connected to signal source
● Click the auto-set button: button / C2
● Adjust the time base until the waveform display is stable (optional)
● Adjust the vertical sensitivity until the display is complete (optional)
● Trigger-related adjustments: trigger mode, edge, position, level
● Turn on the measurement function (consistent with automatic measurement)
● Analyze and record data (consistent with automatic measurement)

5.3 Measuring non-periodic signals

- Connect the probe and check the connection
- Trigger related adjustments: single/normal, other options
- Turn on the measurement function
- Analyze data and record data

5.4 Firmware upgrade

- With the power off, press the M / button first, then press the power button.
- Use a Type-C cable to connect the Type-C port on the board to the computer. At this time, the computer will pop up a USB flash drive named "IAP".
- Pull the firmware into the USB flash drive. If the firmware upgrade is completed, the shutdown charging interface will be displayed.

Note: Firmware upgrade is only supported on computers with Windows 10 or newer version

6.TROUBLESHOOTING

6.1 Unable to boot

Possible causes:

●Battery exhausted. ●Loose or damaged battery connection

Solution:

●Check battery charge and charge if low

●If battery fails to charge or device still does not power on, try reinstalling or replacing the battery.

6.2 Screen does not display

Possible causes:

●Screen backlight off ●Display hardware malfunction. ●System software abnormality

Solution:

●Check and adjust the backlight brightness settings according to the manual.

●Try restarting the device to ensure the system returns to normal.

●If the screen still does not display properly, the display may need to be repaired or replaced.

6.3 Oscilloscope Cannot Capture Signals

Possible reasons:

●The oscilloscope input channel is not connected correctly.
●The input signal amplitude is too small or too large,exceeding the oscilloscope range.
●The trigger setting is incorrect.

Solution:

●Check whether the probe is correctly connected to the oscilloscope input channel.
●Adjust the vertical sensitivity and time base settings to ensure that the signal can be captured.
●Check whether the trigger mode is set correctly, such as selecting "rising edge" or "falling edge" trigger.
●Confirm whether the connection between the probe and the signal source is stable and the wiring is intact.

6.4 Signal Generator Cannot Output Signals

Possible reasons:

●The signal generator is not enabled.
●The signal generator hardware is faulty.
●The output frequency or amplitude setting is incorrect.
●The output clip interface is in the wrong hole position.

Solution:

●Check whether the signal generator is turned on and make sure the settings are correct (such as frequency, amplitude, duty cycle).

●If the settings are correct and the signal cannot be output, try restarting the device.

●If the fault persists, the signal generator may need to be repaired or replaced.

●Check whether the interface hole is inserted correctly.

7. MAINTENANCE AND CARE

Cleaning the outside of the device:

Frequency: Clean once a month, depending on the usage environment.

Method: Use a soft cloth to gently wipe the surface of the device. Avoid using chemical cleaners, especially those containing alcohol or strong acids or alkalis, to avoid damaging the casing or screen.

Check the battery and power:

Battery maintenance: For instruments with built-in batteries, check the health of the battery regularly. Avoid complete battery discharge. It is recommended to charge regularly and avoid not using the device for a long time.

Charging specifications: Use the official charger to charge, avoid overcharging or over-discharging, and ensure that the battery is in the appropriate operating voltage range.

Battery replacement: If the battery shows excessive attenuation (such as failure to charge normally or extremely fast discharge), it should be replaced in time.

Storage and Carrying:

Storage environment: The device should be stored in a dry and ventilated environment, avoiding high temperature, high humidity or drastic temperature changes. Avoid placing it in direct sunlight.

Carrying: Be careful to avoid falling when using, especially when carrying. It is recommended to use a protective case or a special bag for carrying.

Software Update:

●Regularly check whether the device has new firmware to update. The latest firmware can fix known bugs and improve device performance.

●When updating, make sure the operation steps are correct, use the officially released firmware files, and avoid power outages or other interference.

Software Update:

●Regularly check whether the device has new firmware to update. The latest firmware can fix known bugs and improve device performance.

●When updating, make sure the operation steps are correct, use the officially released firmware files, and avoid power outages or other interference.

8.CONTACT US

Any FNIRSI users who contact us with questions will receive our promise of a satisfactory solution, plus an extra 6-month warranty as a token of our appreciation for your support! By the way, we have created an exciting community, and we welcome you to contact FNIRSI staff to join.

SHENZHEN FNIRSI TECHNOLOGY CO.,LTD

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Tel: 0755-28020752

Web:www.fnirsi.com

E-mail:business@fnirsi.com (Business)

E-mail:service@fnirsi.com(Equipment Service)

http://www.fnirsi.com/

9.WARRANTY INFORMATION

※**This page is the basic warranty card. Please keep it.**

Thank you for choosing our company's products. The warranty period of this product starts from the date of sale. During the product warranty period, if the product is installed and used in accordance with the product manual and used in normal environment and conditions, and the fault is caused by defects in the original materials and processing, you can enjoy free repair services according to the content of this warranty clause. Please keep this warranty card properly as a warranty certificate. No reissue will be issued if it is lost.

The following situations will incur paid repair services

1.Unable to present the original valid warranty card.

2.Damage caused by improper installation not meeting product requirements, standards, or relevant specifications.

3.Damage caused by accessories in the installation environment not meeting product requirements, standards, or relevant specifications.

4.Damage caused by improper use, improper storage, unauthorized disassembly, or unauthorized repairs by the user.

5.Expiration of the warranty period.

保修卡

产品型号	**DS215H**	**数量**	
渠道商名称 （购买商店）		**渠道商地址**	
联系方式		**发票号** （订单号）	
购买时间	**年　　月　　日**		
客户姓名:		**地址:**	
联系方式:		**故障说明:**	

Warranty Card

Product Model	**DS215H**	**Qty.**	
Distributor Name (where to buy)		**Address**	
Contact		**Invoice Number** (Order Number)	
Purchase Date (as per invoice)	**年　　月　　日**		
User Name:		**Address:**	
Contact:		**Fault Description:**	

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