IPC TESTER

Quick Start Manual

VER:V1

Statements

This manual is used for user guiding. Images or figures are only used for explaining products and may be slightly different from the real instrument, please take the actual product as the criterion. Due to product version upgrade or other needs, our company may update the electronic documents of this manual.Kindly please ask for newest version from supplier.

Responsibility statement

- To the maximum extent permitted by law, the products described in this manual (including hardware, software, firmware, etc.) are provided by "present situation" which may be defective, incorrect or malfunctioning. The company does not provide any explicit or implied warranties such as guarantees of marketability, quality satisfaction, suitability for specific purposes, non-infringement of third-party rights, etc. Also, not make compensation for special, incidental or indirect damages caused by the use of this manual or our products, including but not limited to the loss of business profits, data or documents.
- If you disassemble the product privately, you should bear the risk of accidental damage to the product all by yourself, but the company can provide technical support.
- When using this product, please strictly follow the applicable laws. If the product is used to infringe the rights of third parties or other improper uses, the company will not bear any responsibilities.
- All measurement tools of this instrument may have accuracy errors. The test results are for reference only. The company does not make any commitment to the final test results, and does not assume any legal responsibility for disputes arising from the test results.
- If the contents of this manual conflict with applicable laws, please take the law as the criterion.

Preface

The purpose of this section is to ensure that users can use the product correctly through this manual in order to avoid danger or property loss in operation. Before using this product, please read the product manual carefully and keep it properly for future reference.

Symbolic convention

The meanings of symbols in this manual are as below:

Symbolic	Explication
Description	Descriptive text, represent the addition or interpretation content of main text
Caution	Reminding text, remind users of some important operations to avoid potential damages or property losses
Warning	Warning text, indicate potential risks which may cause accidents, equipment damages or business interruptions if not paid attention to
Danger	Danger warning text, represent high potential risks and may cause injury or death if not paid attention to

Cautions for safety use

Warning

- In the process of installation and use of the product, you must strictly observe local electrical safety regulations.
- Please use power charger provided by original factory for the instrument and 9V laminated batteries provided by regular manufacturers for cable tracker.
- Do not let the product get wet or rained.
- If the product doesn't work properly, please contact the store or service center where the product is purchased. Do not disassemble or change the product in any way (the company will not bear any responsibilities for problems caused by unauthorized change or repair).

Notice

- Avoid placing products in vibration or shock environments and keep products away from EMI sites.
- Do not use the product in extremely hot, cold or humid environment, detailed temperature and humidity requirements please refer to product parameter table.
- Equipment should be stored in dry and non-corrosive gas environment to avoid direct sunlight.
- This product is a weak current equipment. All peripheral interfaces should not be connected to cables with strong current.
- UTP Cable tracking port can not connect over DC 50V PoE switch.
- TDR Cable testing port can not connect any PoE switches, it can only be connected to cable test box or the port on signal receiver.
- Please do not use the instrument while charging or it may shorten the battery life.
- This instrument is designed for security projects debugging, please do not use for entertainment.

Description

Quality requirements for operators: Basic knowledge and operation skills in low voltage cabling and low voltage electronic wiring, be able to understand the contents of this manual.

Table of Contents

Chapter 1. Product Description

The instrument adopts a open-source Android operation system, mainly used for the installation and maintenance of network monitoring cameras, analog video monitor cameras and other security monitoring equipment, the instrument adopts a 7-inch HD IPS full view display screen, can clearly display the IP and analog camera video images. It is built in a variety of network tools and PoE power output, DC12V/3A power output, cable tracking and cable testing, etc. It is an essential tool for security monitoring projects and integrated wiring projects. When you receive the instrument for the first time, please confirm that the package is intact, all accessories and the appearance is complete.

1.1 Parameter table

Product Model	IPCX Video Monitor Tester
Touch Screen	8 inch G + G structure capacitance screen
LCD Screen	8 inch resolution 1920 × 1200 IPS HD full view
Ethernet Port	10/100/1000M adaptive
WIFI	Built-in wireless WIFI, speed 150M
IP Camera Test	8K H.265 IP camera test, video image real-time display without delay, support video snapshot, recording and playback
ONVIF	ONVIF tool, support DAHUA, HIKVISION, ACTI, SAMSUNG and other more than 30 manufacturer private protocols and customized, support camera mobile client installation
PTZ Control	Support Pelco-D/P, Samsung, Panasonic, etc. more than 30 protocols
CVBS Analog Camera Test	1 channel CVBS analog signal input, support PAL/NTSC format adaptation
HD Camera Test	Support HD TVI 8MP, CVI 8MP, AHD 8MP
Video Image Zoom	Real-time enlarge moving HD video image, max enlarge 8 times
Cable Test	Built-in cable testing tool, check cable sequence and breakpoint, etc

Audio Test	One channel audio signal input for testing, can be recorded and saved
Optical Power Meter	Test optical fiber parameters
DC12V Power Output	DC12V power output, max current 3A, provide temporary power for cameras
DC24V Power Output	DC24V power output, max current 1A, provide temporary power for cameras
PoE Power Output	48V standard PoE output, provide PoE power for cameras
DC5V Power Output	Provide temporary power for USB-powered cameras or emergency power for mobile phones, max current 2A
PSE Voltage Test	Display PoE power supply device voltage and circuit condition
HDMI Video Input Test	Input HD video image into instrument to test video recorder
HDMI Video Output Test	Display the current interface image of the instrument
RS485 Serial Port tool	Can send or receive any data or hex data
Power Charger	DC 12V/2A
Battery	Built-in 7.4V polymer lithium battery, capacity 2200mAh, can work continually for 8-10 hours
Language	Chinese Simplified, Chinese Traditional, English, Germany, Spanish, Portuguese, Russian, French, Polish, Korean, Japanese, Turkish and Italian 13 languages
Internal SD Storage	8G
Working Temperature	-10℃--+50℃
Working Humidity	30%--90%
External Size	26.8cm×17cm×52cm
Weight	1.26kg

1.2 Appearance and port description

Notice: This instrument has optional function modules, only if a tester has specific modules, it has the corresponding ports.

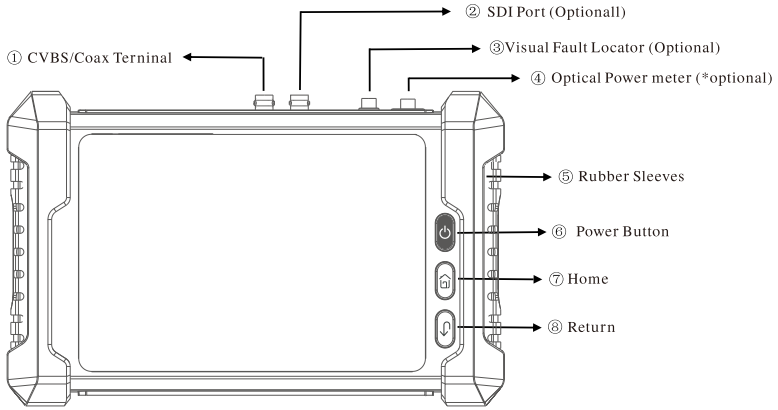


Figure 1

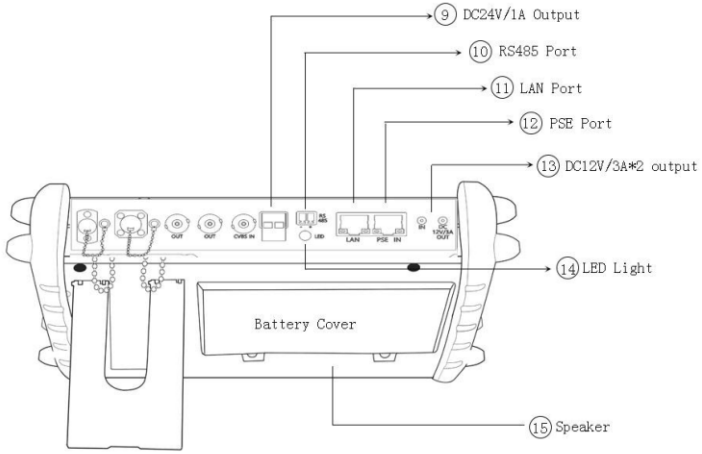


Figure 2

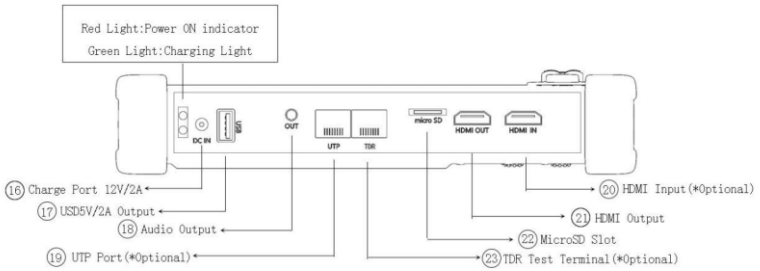


Figure 3

1.2.1 Port description

1. CVBS / Coax HD Input Port: Analog / HD camera connection port (HD is optional)
2. SDI Port: Test SDI HD camera (optional)
3. Visual Fault Locator Port (optional)
4. Red Light Source Port:Red light generator(optional)
5. OPM Port: Optical fiber test port (optional)
6. Protective Rubber Sleeves
7. Home button
8. Return back button
9. DC 24V / 1A Power Output Port: Output 24V / 1A temporary power for camera use
10. RS485Serial Port: Receive, send and analyze data, used for PTZ protocol analysis, etc.
11. LAN Port / IPC Connection Port / POE Power Output Port: Used to connect Ethernet, connect IP camera and output PoE power
12.PSE Test Port: Test PoE switch voltage or electrified cable sequence
13.DC12V / 3A Power Output: Output 12V / 3A temporary power for camera use
14.LED Lamp: Used as flashlight in dark area
15.Speaker: Sound output
16.Charging Port DC12V / 2A: Battery charging

17. USB 5V/2A Input / Output port: Output power for mobile phone use or connect U disk, mouse, etc.
18. Audio Out Port :Audio output to connect earphones
19. UTP Cable Tracking Port: Connect one end of cable for tracking(optional)
20. HDMI HD Input Port: HDMI HD video input test (optional)
21.HDMI Output Port: Display the current interface image of the instrument
22. MicroSD Slot:Maximum 8G
23. TDR Breakpoint Test Port: Cable length measurement or cable breakpoint locating(optional)

⚠ **Warning:**

1. All ports are not allowed to connect strong current devices, or the instrument may be burnt out.
2. UTP cable tracking port is not allowed to connect over DC 60V or any AC devices.
3. TDR port is only allowed to connect the blue cable test box or the port on cable tracker, not allowed to connect any other devices.
4. All ports are not allowed to short circuit connect, or the instrument may be burnt out.
5. Do not use a non-original charger to charge the instrument.

Chapter 2. Operation Guide

2.1 System desktop

This instrument uses smart operation system, ensure that the lithium battery is installed correctly and has enough power, press the power button for 2 seconds to boot, waiting for system boot completion, then you enter the system desktop main menu, as shown in Figure 5

Operation Instructions:

1) The upper right status bar icons represent the SD card status, network connection status, battery level, the upper left icons represent the current time and date, as shown in Figure 5

Figure 5 System Desktop

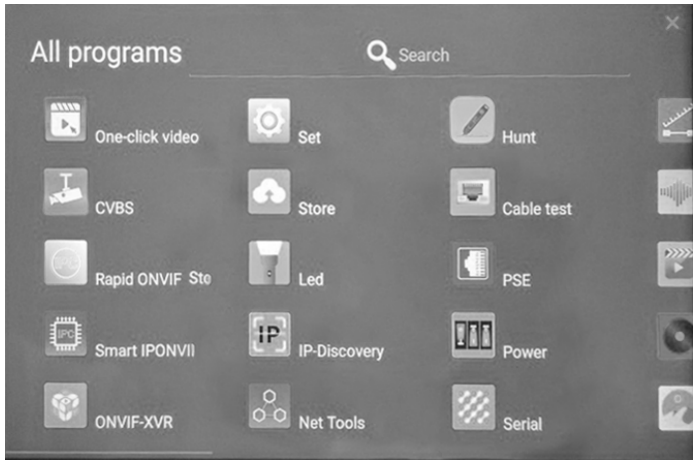


Figure 6

2) Directly touch the icon in the lower left corner of figure 5 to list all software in the system, slide left or right to view more App icons, as shown in Figure 6

3) Long press common tool bar to drag the App icon in it to any other folder or to icon to uninstall the App, when dragging an icon over a folder, the folder will turn grey, release to put it into the folder, drag an icon to common tool bar and release to put it into the 6 dotted square , you can also switch the position of Apps in common tool bar by dragging one icon over another icon, as shown in Figure 7

Figure 7

2.2 CVBS Analog Video, AHD, TVI, CVI ,SDI Coaxial HD Video Input Test

In the CVBS & HD main menu, touch CVBS icon to enter the application main interface, as shown in Figure 8

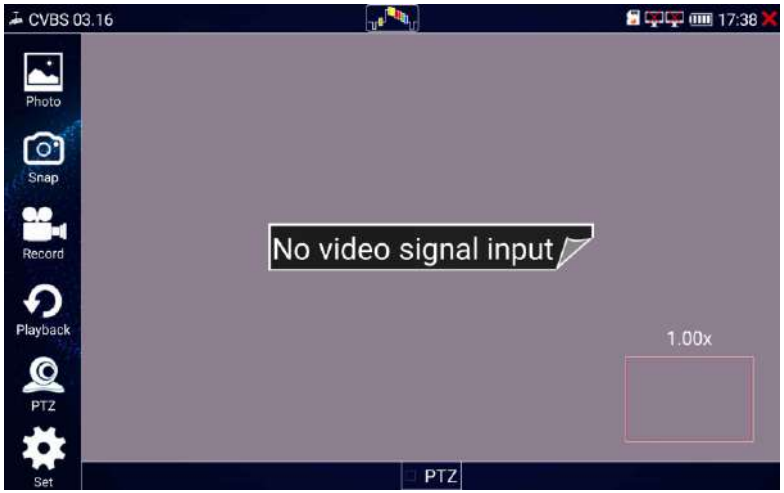


Figure 8 CVBS Analog Video Test Main Interface

When connecting analog video signal to CVBS input port, it can display analog video image and format directly, as shown in Figure 9

Operation Instructions:

1. Connect analog camera to the instrument CVBS port via BNC video cable

2. Connect analog camera power

3. Touch ‘CVBS’ icon to enter the App to view video image

Figure 9 Video Image When Connecting Analog Camera

Operation Options:

1) Photo taking: touch the Snap icon on the left to take photos, click Photo icon on the left to view the photo you just took.

2) Video recording: touch the Record icon on the left to start recording, click it again to end the recording, click Playback icon to watch the video.

3) PTZ operation: select the PTZ button on the bottom center to turn on touch PTZ control, click the PTZ icon on the left, PTZ setting menu will popup, as shown in Figure 10

Figure 10

You can set the PTZ protocols, port, baud rate, address, horizontal speed, vertical speed and preset position by this menu, after setting, touch OK button to finish. After setting, you can operate PTZ control by physical buttons, moving gestures or zooming operations. Coaxial control: switch to coaxial control by setting port, coaxial control enables you to set camera menu and coaxial PTZ control, as shown in Figure 11, 12

Figure 11

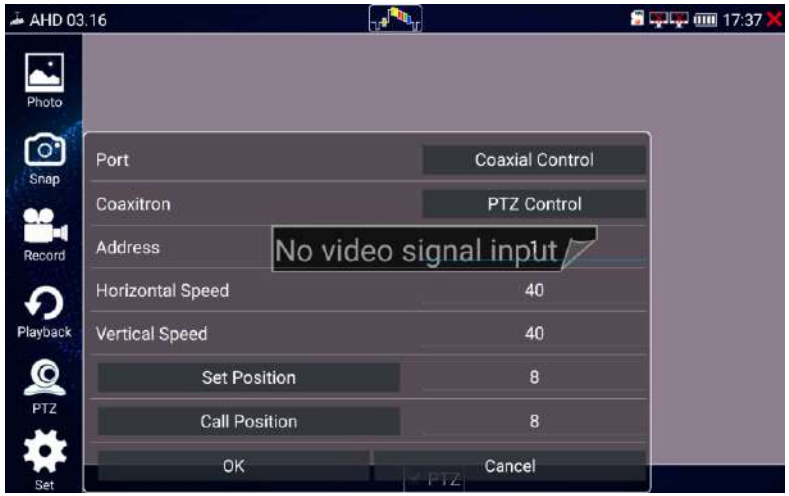


Figure 12

4) Image zooming operation:

Select the PTZ icon on the bottom to enable PTZ function, disable PTZ function to zoom or move image freely through gestures, the image magnification times and current display area will be shown on the lower right hand corner, as shown in Figure 13

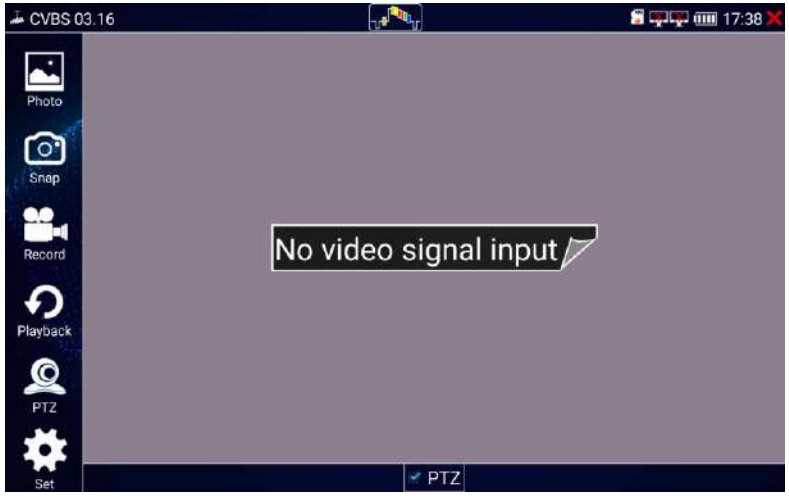


Figure 13

5) Full screen operation:

In the image display area, quickly touch the screen twice to enter full-screen mode, touch the screen twice again to exit full-screen mode.

6) Image quality test:

Touch the icon  on the top to display the image quality data, touch again to disable, as shown in Figure 14

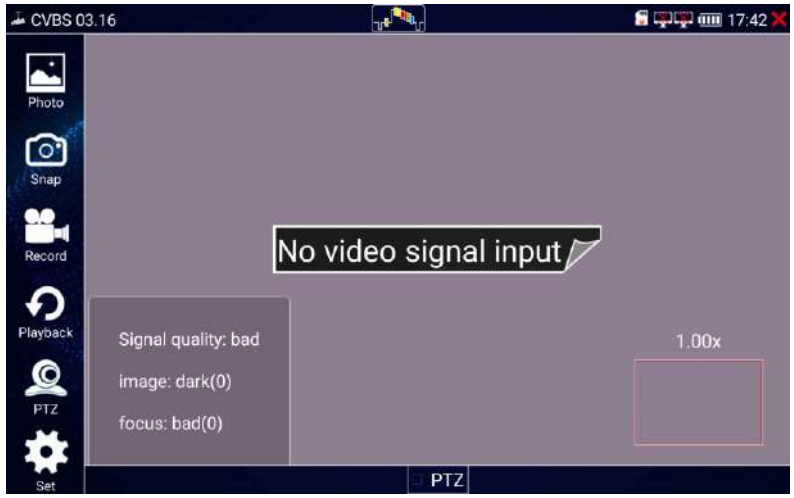


Figure 14

7) AHD, TVI, CVI coaxial HD max resolution: (HD module is optional)

AHD coaxial HD max 8MP resolution 3840*2160

TVI coaxial HD max 8MP resolution 3840*2160

CVI coaxial HD max 8MP resolution 3840*2160

SDI coaxial HD max 8MP resolution 3840*2160

8) Advanced settings:

Touch the Set icon on the lower left hand corner to enter advanced settings, you can set the screen auto sleep time, photo watermarking and testing report, view instructions and set the hardware version number **(warning: be careful to set)**, as shown in Figure 15

Figure 15

2.3 IPC Network Camera, IP-Discovery, Rapid ONVIF

IP-Discovery adopts whole network segment searching technology, it changes the instrument IP to the same network segment as IP camera automatically, no need to operate manually. It can check if the camera has started completely, PING directly to check network status and jump to rapid ONVIF (you can disable it) to view camera video automatically, automatically log in and save username password, support violent password cracking for some cameras, it can identify HIKVISION inactivated camera automatically and add ONVIF protocol automatically for new HIKVISION cameras, support one key activation and generate testing reports and so on, as shown in Figure 16

Operation Instructions:

1. Connect IP camera to LAN port via network cable, then supply power for camera

2. For POE cameras, after connecting camera to LAN port, open PoE power output switch, no need to connect power adapter cable (there are follow-up instructions for PoE, please refer to ‘power management’)

3. Touch ‘IP-Discovery’ or ‘One-click video’ App icon to view camera video

Figure 16

2.4 Rapid ONVIF, ONVIF-XVR

Touch the Rapid ONVIF icon to enter this App function, in the state of connecting to network, the instrument will scan ONVIF cameras in LAN automatically, after scanning for 1-2 seconds, Scanned ONVIF IP cameras will be listed on the left, for cameras do not require authentication, you can view the video image by touching the camera directly, for cameras that require authentication, input username and password to log in and view the image, as shown in Figure 17

1) Input the username and password in the second column, touch the login button, by default, username and password are both ‘admin’, if it prompts error username or password, touch log out to edit the value. By default, it logins automatically, you can disable it in advanced setting menu. Click the small  icon on the right of username and password to view or delete the history username and password records, as shown in Figure 17

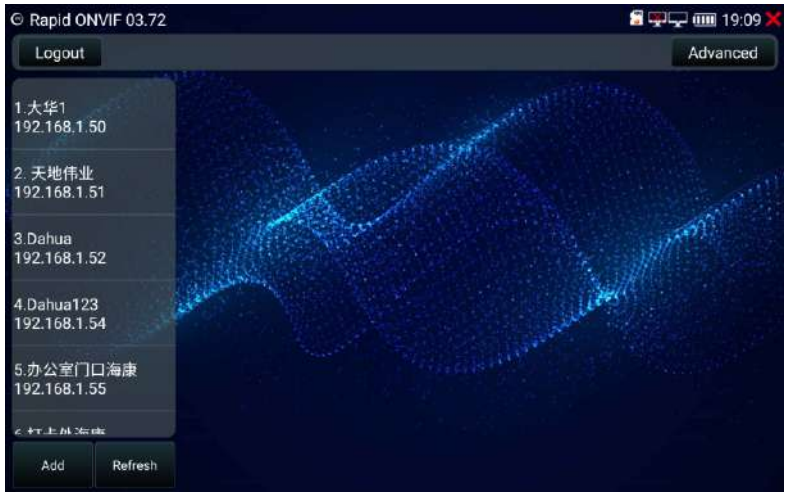


Figure 17

2) Select the camera to be operated, touch it on the left to display image directly, it can display 4K H265, H264, MPEG4 format video, as shown in Figure 18

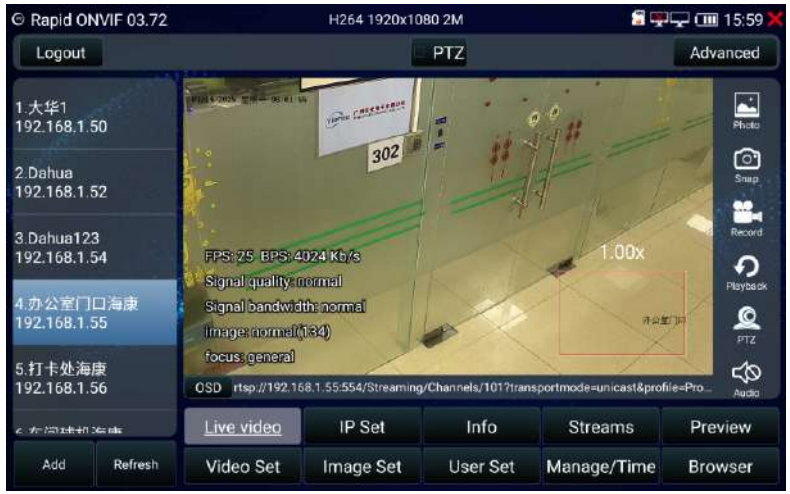


Figure 18

3) Photo taking, video recording, playback, full screen operation and image zooming functions please refer to CVBS analog video operation part.

2.4.1 ONIVF-XVR multiple cameras batch display

1) CCTV testers in the market support only single camera image viewing by now, YIAN Electronics developed multiple cameras batch preview function which support max 32-channel HIKVISION, DAHUA, etc. IP cameras, as shown in Figure 19

Operation Instructions:

1. When all cameras are in the same Ethernet and use the same username and password, this tester can display at most 32 camera videos in one screen, there are different combinations.

2. Support reload IP cameras, support cache history playing record to display again rapidly next time, you can also clean the cache.

3. Support to add new cameras manually in this screen.

4. Double press to full screen view video, you can take photos, edit OSD channel name or date time, etc.

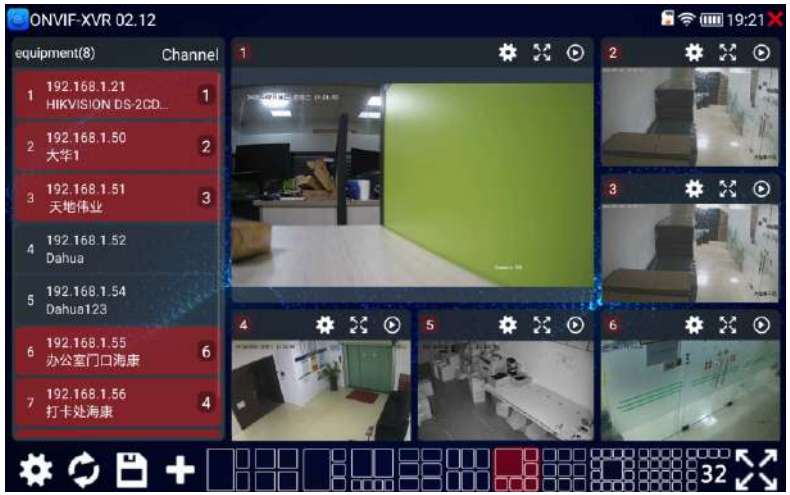


Figure 19

2.4.2 ONVIF **Parameter setting:**

ONVIF function can operate cameras which support ONIVF protocol as below:

1) Device information viewing, touch the 'device information' button to view the camera information, touch the item to edit value then touch OK to apply, as shown in Figure 20

Figure 20

2) Maintenance / time, touch the Manage / Time setting button to reboot camera, reset configuration or change Time zone, as shown in Figure 21

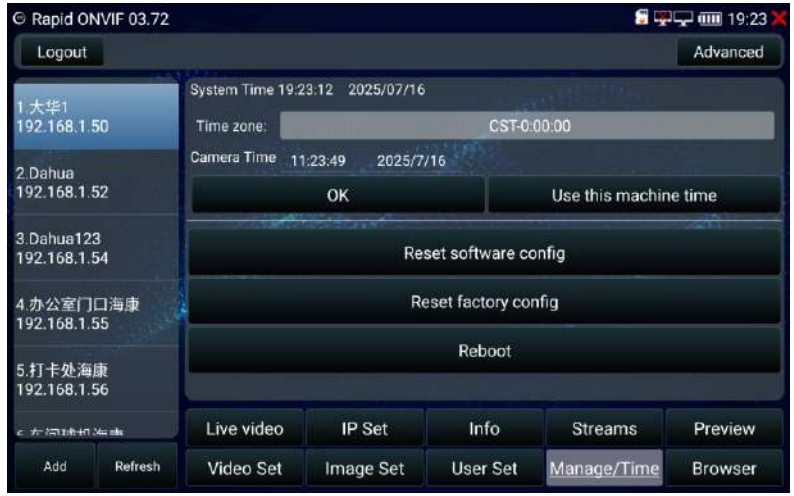


Figure 21

3) IP set, touch the IP Set button in the main interface to enter the camera

parameter setting function, as shown in Figure 22, 23

Figure 22

Figure 23

4) For cameras unable to edit IP: in rapid ONVIF App, touch IP Set button to set IP, if it cannot be set, touch 'More' button in the middle, it will list out all camera clients and recommend you to use the corresponding client software, touch to enter client and finish setting, as shown in Figure 24

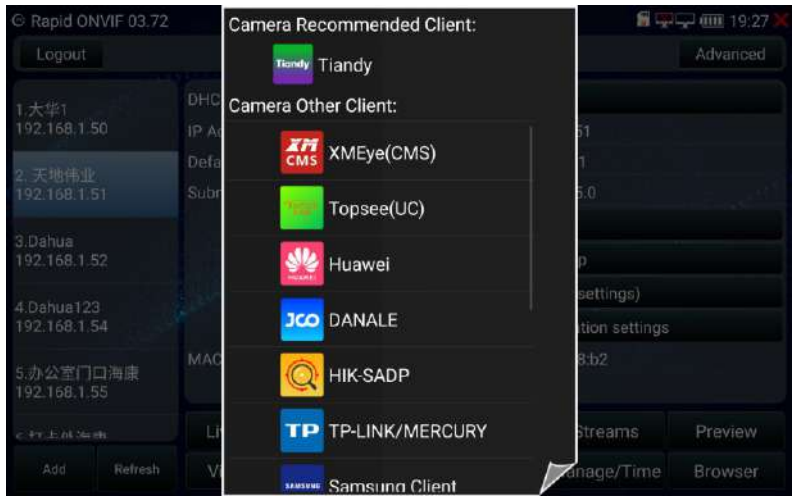


Figure 24

5) Video setting, touch 'Video Set' button to enter video stream setting interface, you can set 'Encoder and resolution', 'Encoder interval', 'Quality', 'Frame rate', 'bit rate limit', 'GOV length' parameters, after setting touch OK to apply settings, as shown in Figure 25

Figure 25

6) Image setting, touch 'Image Set' button to enter image setting interface, you

can set the image parameters including brightness, saturation, contrast ratio, sharpness, etc, after setting touch ‘OK’ button to apply settings, as shown in Figure 26

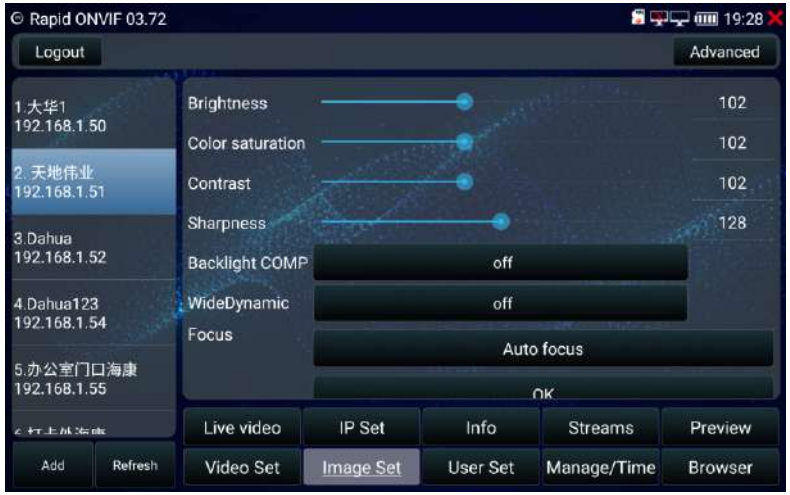


Figure 26

7) Stream selection, touch the ‘Streams’ button to view the current stream configuration file, you can switch between main stream and auxiliary stream, as shown in Figure 27

Figure 27

8) ‘Add’ button: touch the ‘Add’ button on the lower left hand corner to add ONVIF camera address manually.

9) ‘Refresh’ button: touch ‘refresh’ button to reload all ONVIF camera list in the same network segment.

10) Advanced settings, you can set Auto-login, Play sub-stream, Watermarked photographs, Video tensile, Lens, etc, as shown in Figure 28

Figure 28

11) Channel name setting, Touch ‘info’ button under the ONVIF interface, touch ‘OSD’ button at the bottom of this page to popup channel name, date time editing dialog, if you cannot edit on this page, please go to corresponding camera client to operate, if there are no corresponding client, please use the browser to login camera configuration page to edit the value.

2.5 HIKVISION SADP

HIKVISION SADP can scan the network full segment for HIKVISION camera IP, if there are no cameras found, you can add IP manually. It can identify if a camera is activated automatically, set the camera IP or series number. It can activate or batch activate cameras, set or batch set IP, edit password or channel name, restore factory settings, jump to browser and view camera video through different ways, as shown in Figure 29

Figure 29

2.6 RTSP player

RTSP player enables you to input RTSP address manually to play video. You can input IP and scan IP to search RTSP address automatically, you can choose a camera brand to find RTSP addresses to play. The device supports almost all brand cameras in the market by default, as shown in Figure30, 31.

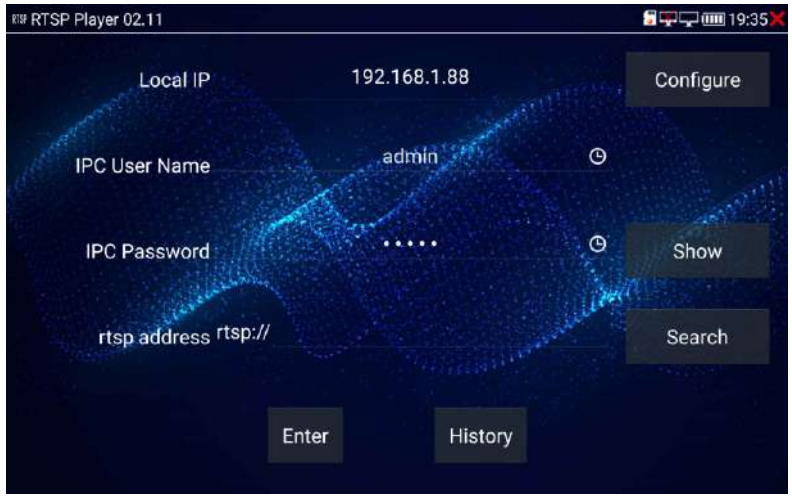


Figure 30

Figure 31

2.7 Network tools

1) IP address scan function: IP address scan function can scan out all IP addresses in LAN, and identify whether it is a camera IP address, touch the ‘Scan’ icon on the left bar and wait for a few seconds to scan out all IP addresses in this

range, if it shows the listed IP is a camera, you can touch ‘Watch camera’ to jump to ‘Rapid ONVIF’ App to view the camera video, as shown in Figure 32

Figure 32

2) PING Tool: Touch ‘Ping’ icon on the left bar to perform network debugging conveniently, input ‘Remote IP’, ‘Send Num’ and ‘Send size’ can use default value, you can test current network condition and PING value, touch ‘Start’ button to perform this operation, as shown in Figure 33

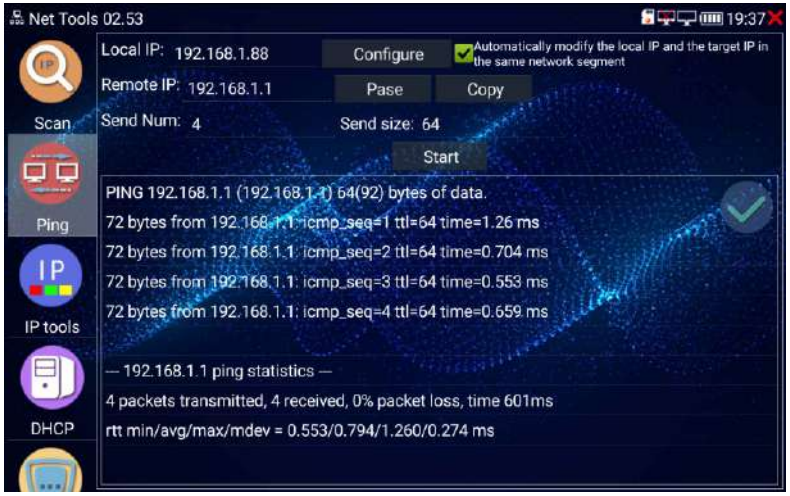


Figure 33

3) NET-port Blink function: Connect one end of the cable to LAN port, touch ‘Start’ button then you can see the port on network device blink regularly, it’s easy to find the other end of a cable by this function, port blink period is 2 seconds, as shown in Figure 34

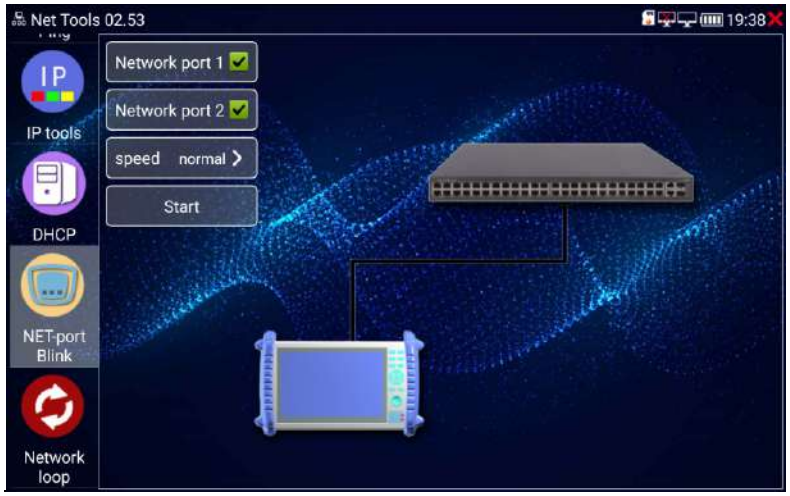


Figure 34

2.8 PSE voltage test

PSE voltage test enables you to test the POE network cable port power voltage and power supply cable sequence, touch ‘PSE’ icon to enter this App function, as shown in Figure 35

Operation Instructions:

1. Use one network cable to connect switch with instrument PSE IN port, be careful do not turn on instrument POE power.

2. Use another network cable to connect instrument LAN port with a camera which support POE power, notice that the camera must support POE power or it will cause test failure (if you are testing a non-standard PSE, skip this step).

3. Touch ’PSE’ App icon then you can see the power supply voltage of cable 1,2 is 46V

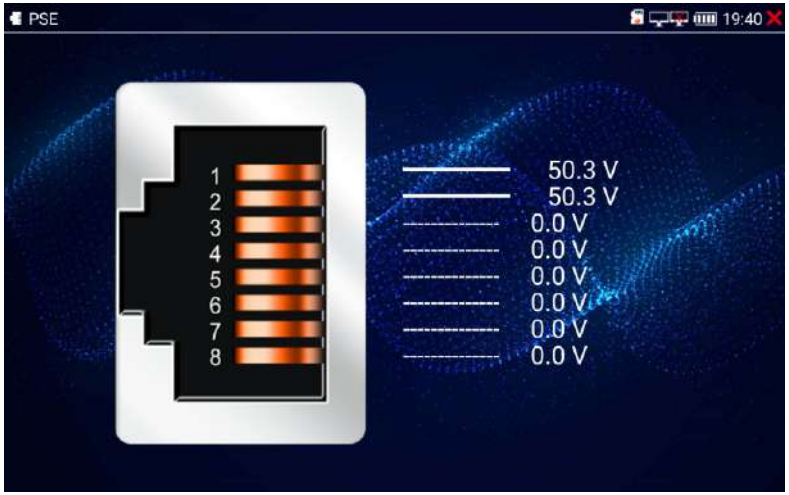


Figure 35

2.9 Power management

Power management enables you supply 48V temporary power for cameras which support POE power. Touch ‘Power’ icon to enter POE power control function, USB5V/2A and 12V/2A power is on by default, no need to open manually, touch the switch button to open or close 48V power, at this time LAN port provides 48V standard POE power for cameras, as shown in Figure 36

Operation Instructions:

1. 24V/1A power output port: use a power output cable to connect instrument with camera, touch ‘ON’ to supply temporary power, please distinguish positive and negative poles if the camera requires, or it may damage the camera and instrument.

2. POE48V power output: use a network cable to connect LAN port with POE camera, touch ‘ON’ to supply temporary power for POE camera, network cable 1/2/3/4 supply 48V standard power.

⚠ **Warning: Before using this function, please make sure the camera support POE power, if not, please do not connect the camera, it may cause camera failure or damage and other unpredictable consequences.**

Figure 36

2.10 RS485 Serial Port Tools

RS485 tools can accept, send and analyze RS485 port data. It can be used to analyze PTZ protocols. Touch ‘Series’ icon to enter the serial port function interface, you can set Baud rate, Data bit, Parity bit and Stop bit, you can set the data type to character or HEX to display and send. Touch ‘Clr Recv’ or ‘Clr Send’ to clear the screen, as shown in Figure 37

Operation Instructions:

1. Connect RS485 cable to RS485 port, crocodile clamp to device, be careful the port has positive and negative distinction, do not connect incorrectly.

2. Touch ‘Serial’ icon to enter App to test

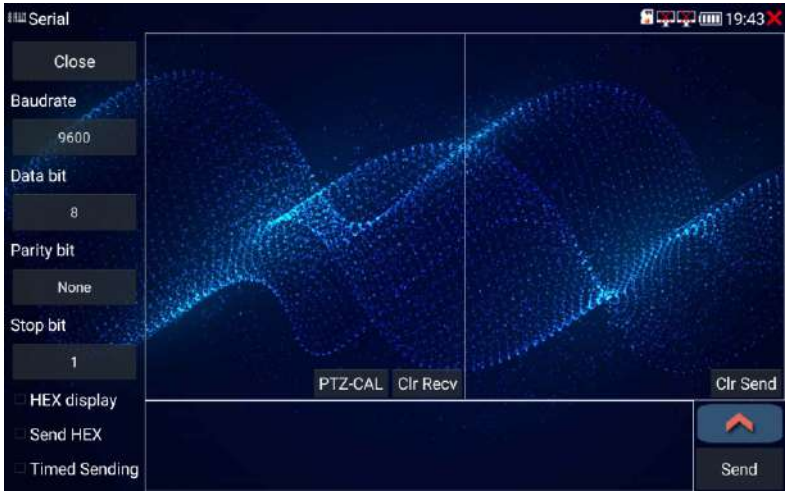


Figure 37

2.11 File management

File management function enables you to perform copy, move, rename or other operations for internal storage and external SD card files conveniently, when the instrument is connected to LAN, FTP function is also available, you can perform file operations directly on computer instead of pulling out SD card. Touch ‘Explorer’ icon to enter this App

▲ Export the file to an external SD card

Find the target file in the internal storage, press and hold for two seconds, and then select the second line "Copy" after the pop-up window, as shown in Figure 38-1

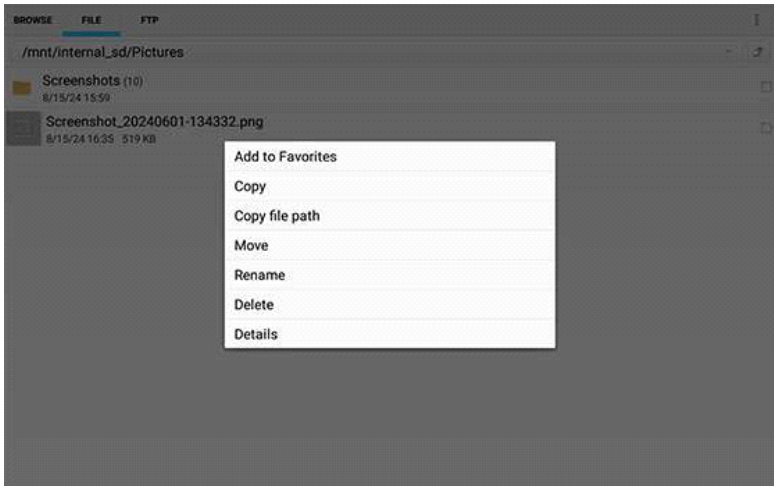


Figure 38-1

Then click the arrow button on the top right, find and enter the external SD card, and click "Paste" on the bottom left,as shown in Figure 38-2

Figure 38-2

▲ Remote management

When the instrument is connected to LAN, you can use the remote management function, touch 'Start Service ' button to turn on the remote FTP service, after starting FTP, click 'my computer ' on PC and input ftp address to enter the instrument internal or external SD card storage, it's convenient to copy or delete files, no need to remove SD card, as shown in following figure

2.12 Browser

1) Browser function enables user to access the IPC camera directly through web page, touch the 'Browser' icon to enter browser function, input camera IP address directly in address bar to open the camera web page, as shown in Figure 39 (notice: all IPC testers in the market do not support installing plug-ins for browser).

Take HIKVISION IP camera as an example, input HIKVISION camera IP to open the following page.

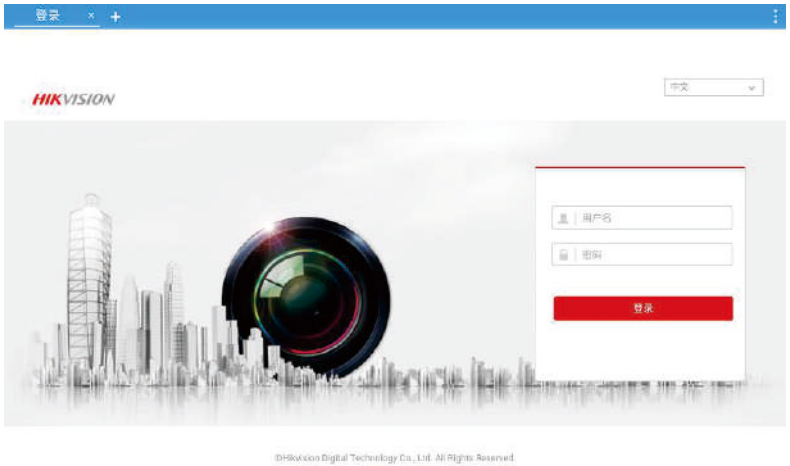


Figure 39

2) Input camera username and password to login to camera web configuration page to modify IP and other parameters directly, as shown in Figure 40

Figure 40

2.13 Upgrade center

Upgrade center is used for application management, you can install or uninstall

instrument Apps here, it supports to connect remote server to install online or install locally.

1) In application center, you can view application version, perform online or local upgrade for Apps. The number under App name is current version number, touch the App to jump to corresponding manual, long press to uninstall it, after uninstalling, if it is a system App, slider to the page end you can find and recover it, touch ‘Store’ icon to enter application update function, as shown in Figure 41

2) Online installation, touch ‘Online’ button, the instrument will connect to server and check if there are any Apps need to upgrade, as shown in Figure 42

Figure 41

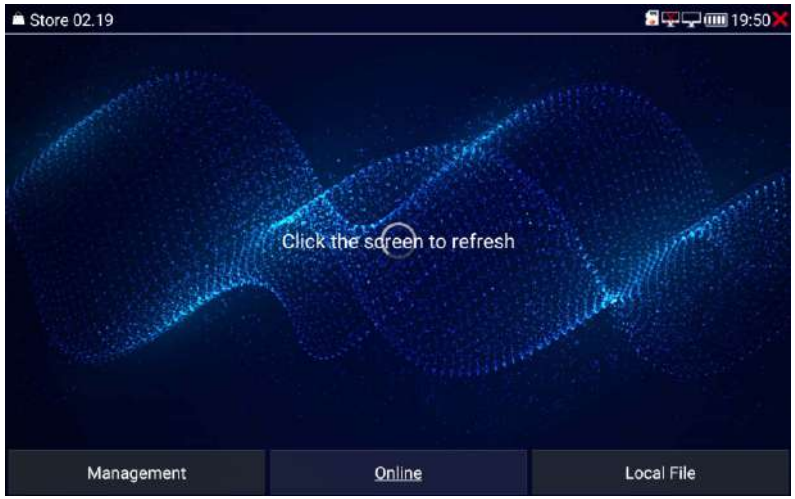


Figure 42

3) Local installation, touch ‘Local File’, the instrument will scan internal storage, SD card and U disk to look for installable software packages, long press corresponding Apps to delete application file, as shown in Figure 43

Figure 43

2.14 Settings

System settings function can set instrument parameters such as network parameter, WIFI, time (it's able to use network time after connecting to Internet), backlight brightness, volume, sleep time, languages, etc. you can also view the instrument system version information. Touch the 'Set' icon to enter system setting function.

1) Ethernet Settings

Touch 'Ethernet' icon on the left bar, select 'use Ethernet' column, connect a network cable to instrument LAN port, the instrument can be set to static IP or dynamic IP mode, if you want to use static IP, select 'Use static IP' column, then set the instrument IP address, gateway, subnet mask, primary DNS and alternate DNS items and you can add multi segment IP, as shown in Figure 44.

1. By default, the instrument uses static IP address 192.168.1.88, gateway is 192.168.1.1, subnet mask is 255.255.255.0, primary DNS is 192.168.1.1 and alternate DNS is 8.8.8.8

2. Use dynamic IP address mode, the instrument can be changed to dynamic IP acquisition mode, current IP is 192.168.1.86, as shown in Figure 44

Figure 44

3. Touch the icon in the bottom to set IP quickly, rapid IP setting enables you to add, edit and delete common used IP, touch the icon in the bottom to restore default network settings, as shown in Figure 45

Figure 45

2) WLAN Settings

⚠ **Notice:** Please pull out the network cable first if you want to use WIFI, or the instrument will use Ethernet by default

3) WLAN Hotspot

⚠ **Notice:** WIFI hotspot and WIFI cannot be used at the same time

4) Storage

Storage settings enable you to view the current internal storage space and available capacity, external SD card and U disk, you can uninstall SD card or U disk, when SD card is plugged in and selected to use, the storage path is external SD card, if not selected, the storage path is internal SD card, by default, storage path is external SD card when it's plugged in, as shown in Figure 46

⚠ **Warning:** before pulling out SD card or U disk please uninstall it first, or it may cause data loss or SD card, U disk damage, etc unpredictable consequences

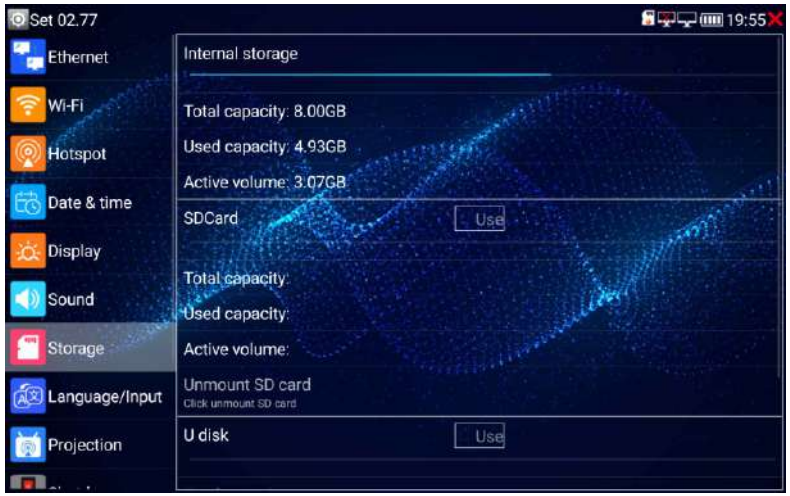


Figure 46

5) Screen projecting, the instrument can use Ethernet, WLAN or WLAN hotspot to perform projection (turn on WLAN hotspot first), screen projection supports devices including Android, Apple, WP, Black berry, Computer, etc., no need to download, free flow, scan QR code to perform projection directly or input manually, as shown in Figure 47

Figure 47

6) Language/Input, this instrument is built-in multiple languages, you can use

English, Russian, Japanese, etc. as shown in Figure 48

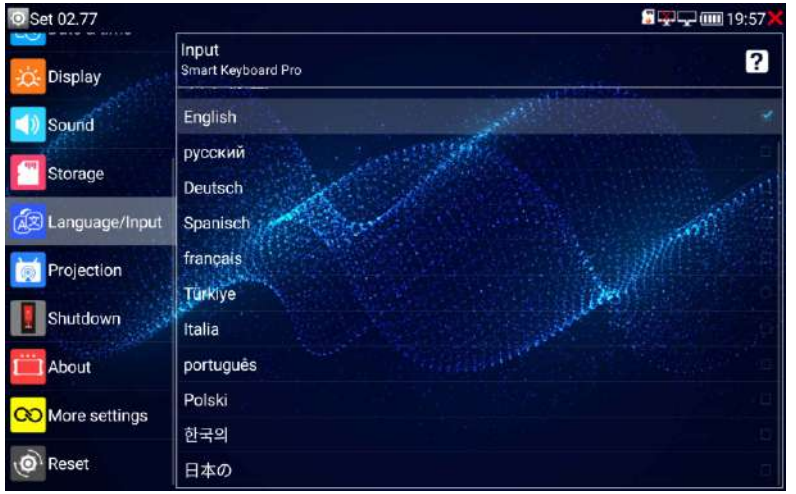


Figure 48

2.15 Cable tracking function

1) The cable tracker supports normal network cable tracking, PoE switch cable tracking, coaxial cable tracking 3 different signal modes, can be applied on electrified or loaded wire, completely no noise, anti-jamming, signal receiver sensitivity is adjustable, support max 1000m, as shown in Figure 49, 49-1.

Operation Instructions:

1. Connect normal network cable to instrument UTP port directly

2. Coaxial BNC cable or other cables need a RJ45/BNC or BNC/crocodile clamp convertor to connect instrument port

3. Touch 'Hunt' App to enter cable tracking function

⚠ **Warning:**

1. The UTP port withstand voltage is DC 50V, it is possible to connect electrified PoE switches in the market, but this does not mean it can connect strong current devices, especially when connecting to some uncertain source power wires, network cable or electrified telephone wires

2. Make sure the power wire is not connected to alternating current like

household AC220V, or it may cause the instrument electrical burnout or fire accidents.

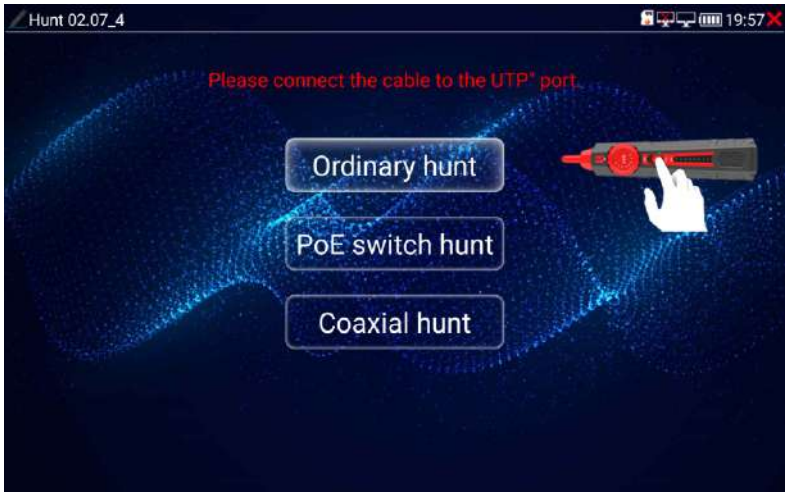


Figure 49

Description

● Coaxial hunt mode, used for tracking coaxial video cable, power wire or other kinds of 2-core wire

● Under Ordinary hunt mode, for some kind of PoE switch, all of the cables nearby may make signal receiver ring, in this situation, select PoE switch hunt mode and turn the signal receiver accuracy to 1/3 of max, then you will find the target cable.

● The following situations may cause signal absorbed completely and signal receiver does not respond.

1) The target cable to be tracked is completely short circuit.

2) The target cable goes through grounding rod, the part close to grounding rod of the cable may cause signal receiver no response.

3) The cable is shielded cable and shield layer connects to ground, in this situation you can only track it at the end of cables.

4) Single-core cable, signal transmission distance is short, it may cause the signal receiver no response.

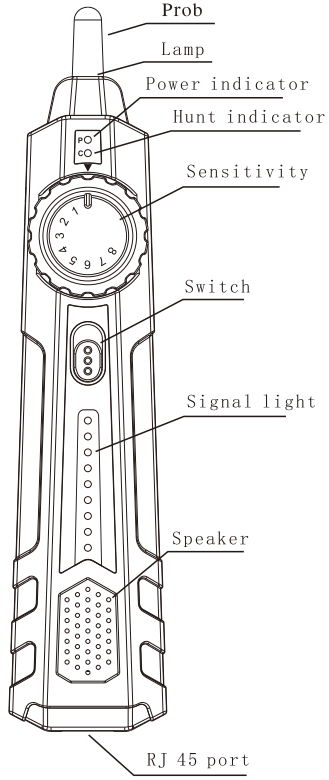


Figure 49-1 Cable Tracker

2.16 Network cable test

The network cable test function can display cable connection status directly, there is a built-in wire map to work with the cable test function to find out which side of the connectors is a fault connector, it can generate test report, as shown in Figure 50

Operation Instructions:

1. Connect one end of network cable to instrument TDR port, the other end to the port on cable tracker signal receiver or the blue cable test box

2. Touch ‘Cable test’ App to enter network testing interface

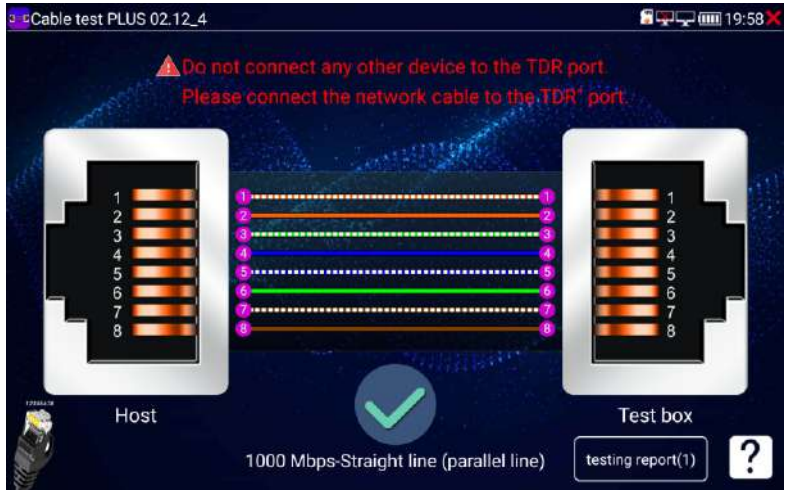


Figure 50

⚠ Warning: TDR port is not allowed to connect PoE switch or other over 5V device, or it can be burnout.

Description

1. When the network cable test fails, in order to find out which end of the connectors is incorrect, the cable should be at least 2 meters.

2.17 TDR Breakpoint Test (optional)

TDR breakpoint test function can measure the cable length or the distance between breakpoint and instrument, support max 1500m, support network cable, BNC cable, telephone wire, TVVB, etc. It also supports user-defined cables and precision calibration. It can lock the test result and generate test report, as shown in Figure 51

Operation Instructions:

1. Connect ordinary network cable to the instrument TDR port to view its length directly, the other end do not need to connect anything

2. BNC video cable or other cable please use a RJ45/BNC or BNC/crocodile clamp convertor to connect instrument TDR port, the other end do not need to connect anything

3. Touch 'TDR' icon to enter cable breakpoint test function interface

Figure 51

2.18 Network Cable TDR Test

Network cable TDR test function can display cable length, attenuation, quality, reflectivity, impedance parameters, etc. Touch 'Cable TDR test' icon to enter this App, touch setting icon on the lower right hand corner to view 'help' text, to test attenuation, there is a cable length requirement please refer to detailed instructions, you can set the data unit, there are built-in connection map and cable sequence map to help understand test result, it can also generate test reports, as shown in Figure 52

Operation Instructions:

1. Connect network cable to LAN port then you can view cable status and length data, if no value is measured, keep the other end from any devices away and try again

2. To test attenuation value, the cable length should be more than 10m

3. Reflectivity, impedance parameter can be tested only when communicating to cameras

4. Touch 'Cable TDR test' icon to enter this function interface

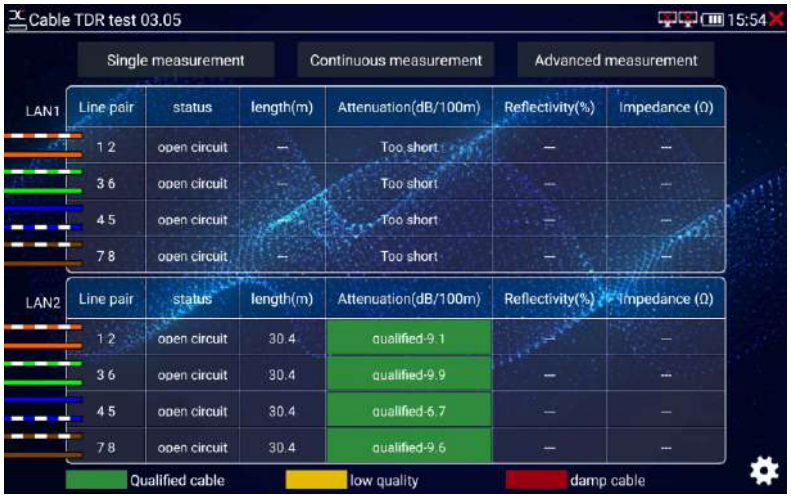


Figure 52

Description

1. Cable TDR test requires cable length 2-195 meters.

2. Test result may have an accuracy error, error range ±1.2%.

2.19 Optical power meter (optional)

The optical power meter supports wave lengths of 850nm、1300nm、1310nm、1490nm、1550nm、1625nm 6 wavelength correction point. It can display optical power linearly or nonlinearly, used for testing optical power directly, it is an essential tool used for optical fiber communication, CATV System, security monitoring installation and maintenance, it can store several set of test results, as shown in Figure 53

Operation Instructions:

1. Connect fiber cable to instrument OPM port and open VFL directly

2. Touch 'OPM' icon to enter this application to test

Figure 53

Description

1. In order to ensure the accuracy of the test results, the cleanliness of the OPM interface is necessary during daily use. It is recommended to use alcohol regularly for cleaning

2. Test result may have an accuracy error, error range ±0.2dBm.

2.20 VFL (optional)

VFL is 620nm highlight red laser, it can output 1Hz, 2Hz or continuously shining 3 mode light, it can test optical fiber problems such as shell broken, poor contact or twisted, measurement range up to 1000m, it can test if the fiber is broken but cannot test where is the breakpoint, as shown in Figure 54

Operation Instructions:

1. Connect optical fiber cable to instrument VFL port

2. Touch 'VFL' icon to enter application

⚠ **Warning:** visible laser light source is harmful to eyes, do not look at it directly

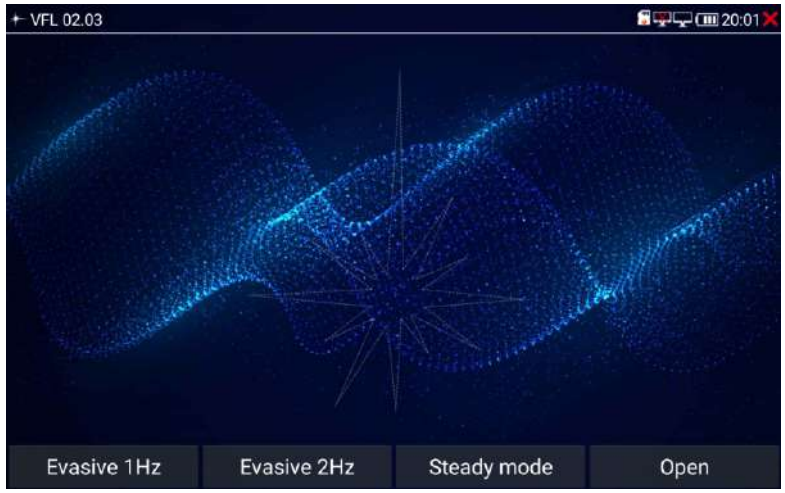
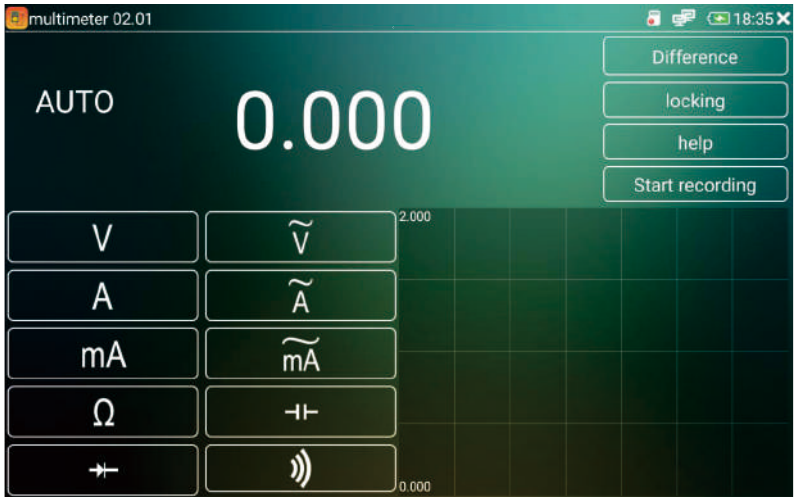


Figure 54

2.21 Digital Multi-meter(*Optional)



Symbols:

V: DC voltage measuring　　A:DC current measuring

Ω:Resistance measuring　　Diode Testing

:AC Voltage measuring　　:AC Voltage measuring

:Continuity Testing　　:Capacitance Measuring

AC/DC	Voltage and current measurement state display
Auto-Range	The multimeter auto adjust the range by input signal or tested components
Data Hold	Hold data
Relative Measurement	Display the relative measurement value Press the key to change display state
10A Socket	In 10A current measurement state, indicate to use 10A socket
Over Range	The current measurement value over the range,if in the Auto range state, to switch Auto

Operating instruction

1.DC Voltage Measurement

1).connect the black lead to “COM” Jack, and the read lead to “V/Ω”

2).Select “V” to measure DC voltage

3).the tester default Auto Range status, indicate “DC Auto Range”

2.AC Voltage Measurement

1).connect the black lead to “COM” Jack, and the read lead to “V/Ω”

2).Select “ ” to measure AC voltage

3).the tester default Auto Range status, indicate “AC Auto Range”

3.AC/DC Current Measurement(Only Manual Range)

1).connect the black lead to “COM” Jack and the red lead to the “mA” for maximum 660 mA current, or red lead to “10A” Jack for maximum 10A.

2).Select A, the screen display “DC” and manually select range for further measurement

Manual Range: 0.000mA ➡6.600mA Range

00.00mA ➡ 66.00mA Range

000.0mA ➡ 660.0mA Range

00.00A ➡ 10.00A Range（Use 10A Jack）

⚠ Remark

1).When the value scare to be measured is unknown beforehand, set the range selector at the highest position. Transfer to corresponding range according to the display value.

2).The maximum current of mA socket is 660mA; over current will destroy the fuse, and will damage the meter.

3).The maximum current of 10A socket is 10A, over current will destroy the meter and will damage the operator.

4).When in "DC current measuring" state, if input current is AC current or AC-DC mixed current, the meter only indicates the value of DC. And it may lead to burn the fuse, damage the meter or the operator if the actual input current is over range.

⚠ Warning

In current measurement mode, it is only used for current testing, if not will damage the meter, even the operator.

4. Resistance Measurement

1) .Connect the black lead to "COM" Jack, and the read lead to "V/Ω"

2) .Select "Ω" mode, enter the resistance measurement.

3) .The meter default Auto range status, it displays "Auto Range" on top left corner. Press the key manually select range, Press "Near" to restore "Auto Range"

4) .Manual Range:(touch black lead and red lead together, will display the measure range)

000.0Ω ➡ 660.0Ω
0.000KΩ ➡ 6.600KΩ
00.00KΩ ➡ 66.00KΩ
000.0KΩ ➡ 660KΩ
0.000MΩ ➡ 6.600MΩ
00.00MΩ ➡ 66.00MΩ

⚠ Remark:

The resistance to be measured should be measured separately, not in the circuit.

5. Continuity Testing

1) .Connect the black lead to "COM" Jack, and the read lead to "V/Ω"

2) .Select "  " mode, enter continuity test. If continuity exists (resistance less than 50Ω), built in buzzer will sounds

⚠ **Remark:**

When testing the circuit continuity, make sure that the power of circuit has been shut down and capacities have been discharged fully.

6. Diode Testing

1) .Connect the black lead to "COM" Jack, and the read lead to "V/Ω"(the red lead anode "+"

2) .Select "  ", and enter Diode Testing mode

3) .Connect the red lead to the anode, and the black lead to the cathode of the diode under testing.

4) .Connect the red lead to the cathode, and the black lead to the anode of the diode under testing.

5) Tested diode, forward voltage low 30mv, there is sound indication, then can finish the testing quickly without view the screen.

⚠ **Warning**

The diode should be tested separately, not int the circuit

7. Capacitance Testing

1) .Connect the black lead to "COM" Jack, and the read lead to "V/Ω"

2) .Select "⊣⊢", enter capacitance testing mode. The tester default auto range status, and manual range by press upward and downward key, auto range by press the key "Near"

3) .Manual Range

0. 000nF ➡ 6. 600nF, 00. 00nF ➡ 66. 00nF

000. 0nF ➡ 660. 0nF , 0. 000u ➡ 6. 600uF

00. 00uF ➡ 66. 00uF, 000. 0uF ➡ 660. 0uF

0. 000mF ➡ 6. 600mF, 00. 00mF ➡ 66. 00mF

⚠ **Warning**

1) . A Capacitor would be tested separately, should not tested in circuit.

2) .Before testing, make sure that the capacitor has been discharged fully.

3) .While testing the capacitance of a capacitor to 660uF, the max time will be 6.6 seconds, if the capacitor is leaked or damaged, the data can't be read. The tester will be normal after disconnecting the capacitor.

Chapter 3. After-sales Service

To our users:

With your trust and support, in order to protect your interests and make you get better quality service, our company make the following commitments:

1. Product warranty: all products sold by our company enjoy a 2-year warranty service. During maintenance we support spare machine for customer use (except for the damage or failure caused by man-made factors or irresistible natural phenomena). When the warranty expires, we provide paid service (charge a fee).

2. After-sales technical service: we provide timely, comprehensive technical and business consultation, comprehensive technical information and data, lifetime free technical support and using guidance service. Users can inquire technical issues and get a clear solution through after-sales phone.

3. When performance problem occurs in normal use, our company promises the above warranty service. In addition, our company will comply with relevant laws and regulations that the state clearly defined.

4. During the warranty period, paid maintenance service will be implemented in the following situations:

(1) Damage caused by man-made factors or irresistible natural phenomena;

(2) Damage or failure caused by improper operations;

(3) Damage or failure caused by transformation, decomposition, assembly of the product.

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编号	201	202	301	302	303	304	305	比例:	1:1	品号:	
类目	塑胶件	五金类	镜片	PVC贴纸	不干胶贴	说明书	包装盒	单位:	mm		
选择						√		设计	LJQ	品名:	NF-IPC728系列说明书骑马订英文-V120250717
306	307	308	309	310	311	312	313	核准			
彩卡	吸塑	工具包	PE袋	纸箱	宣传单	合格证	打印标签	标准:	√	文件类型:	打样文件
								定制:			

制作日期	2025.07.17	样式	骑马订	印刷材质	128g双铜纸
印刷要求	彩色	页码	56P	变更记录	
尺寸大小	210*148mm	版本	V1		