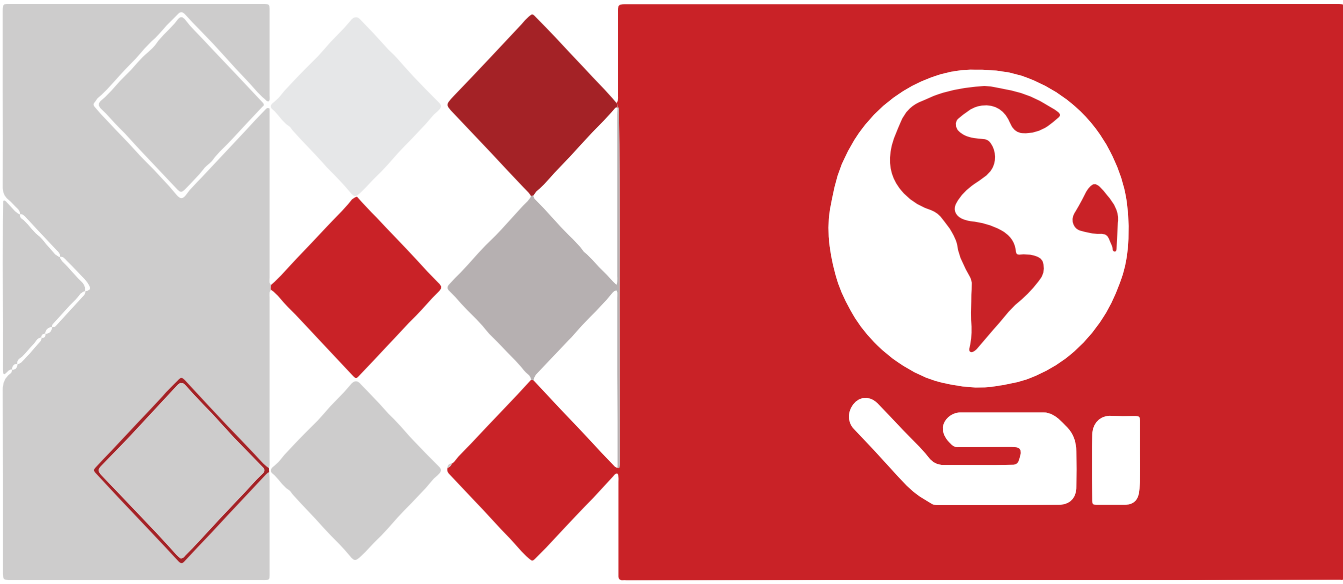
HIKVISION



IPC-4300H
4.3" IP Camera Tester

User Manual

Thank you for purchasing our product. If there are any questions, or requests, do not hesitate to contact the dealer.

Hikvision USA Inc., 18639 Railroad St., City of Industry, CA 91748, USA
Hikvision Canada, 4848 rue Levy, Saint Laurent, Quebec, Canada, H4R 2P1
Telephone: +1-909-895-0400 • Toll Free in USA: +1-866-200-6690
E-Mail: sales.usa@hikvision.com • www.hikvision.com

About this Manual

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company Website (http://overseas.hikvision.com/en/).

Please use this user manual under the guidance of professionals.

Manual Illustrations and Features

Graphics (screen shots, product pictures, etc.) in this document are for illustrative purposes only. Your actual product may differ in appearance. Your product might not support all features discussed in this document.

Trademarks Acknowledgement

HIKVISION and other Hikvision trademarks and logos are the properties of Hikvision in various jurisdictions. Other trademarks and logos mentioned below are the properties of their respective owners.

Legal Disclaimer

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE PRODUCT DESCRIBED, WITH ITS HARDWARE, SOFTWARE AND FIRMWARE, IS PROVIDED "AS IS," WITH ALL FAULTS AND ERRORS, AND HIKVISION MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF THIRD PARTY. IN NO EVENT WILL HIKVISION, ITS DIRECTORS, OFFICERS, EMPLOYEES, OR AGENTS BE LIABLE TO YOU FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES, INCLUDING, AMONG OTHERS, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, OR LOSS OF DATA OR DOCUMENTATION, IN CONNECTION WITH THE USE OF THIS PRODUCT, EVEN IF HIKVISION HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF PRODUCT SHALL BE WHOLLY AT

YOUR OWN RISKS. HIKVISION SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, HIKVISION WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS TO THE APPLICABLE LAW. HIKVISION SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED FOR ILLEGITIMATE PURPOSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATTER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and, if applicable, the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE Directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (Battery Directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Hikvision North America Privacy Policy

Last Updated: December 2018

Hikvision USA Inc. and Hikvision Canada Inc. and its affiliates (collectively "HIKVISION") provide the following services for use in conjunction with various HIKVISION Internet-connected products ("Products"): a HIKVISION user Website and user accounts that may be accessed at

us.hikvision.com,

ca.hikvision.com,

https://distributors-us.hikvision.com/,

https://distributors-us.hikvision.com/guestLogin.htm,

https://ezviz-rma.hikvision.com/,

https://order-na.hikvision.com,

and all associated sites connected with us.hikvision.com (the "Website"); and any services available on the Website, Web Apps, and Mobile Apps ("Available Services"). The term "HIKVISION Services" means the Website and Available Services.

This Privacy Policy explains how HIKVISION handles the collection, storage, and disclosure of information, including personal information, regarding our HIKVISION Services. It also applies to any information we collect from the operation and use of Products we sell while connected to the HIKVISION Services (the "Products), and any other HIKVISION Service that links to this Privacy Policy.

We may modify this Privacy Policy at any time, provided certain provisions of this Privacy Policy prove to be incomplete or outdated and further provided that these changes are reasonable for you, taking into account your interests. If we make material changes to this Privacy Policy, we will notify you by the e-mail address specified in your account or by means of notice on our Websites.

You can determine when this Privacy Policy was last revised by referring to the date it was "Last Updated" above.

What Information We Collect

In order to provide HIKVISION services to you, we will ask you to provide personal information that is necessary to provide those services to you. If you do not provide your personal information, we may not be able to provide you with our products or services.

"Personal information" shall have the same meaning as "personal data" and shall include any information relating to an identified or identifiable natural person ("data subject"); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural, or social identity. Examples of personal information include your name, telephone number, e-mail address, and physical address.

Personal information also includes information that alone cannot directly identify you, but with other information we have access to can identify you such as product serial numbers, log data that automatically records information about your visit such as your browser type, domains, page views, the URL of the page that referred you, the URL of the page you next

visit, your IP address, and page navigation, unique device ID collected from Products and your mobile devices, data from cookies, pixel tags, and Web beacons, video content files that do not contain personal visual identity information, the country and time zone of the connected Product, geo-location, mobile phone carrier identification, and device software platform and firmware information.

How We Collect and Use Your Information

Here are some examples of the personal information we may collect and how we may use it:

- When you create your account to use HIKVISION Services ("Account"), we will collect information including your name, phone number, and e-mail and physical address. In addition, when you install and activate Products, we will collect certain basic information via our HIKVISION Services such as your product name, the product's verification code, and serial number, which are unique to the Product connected to the HIKVISION Services and associated with your Account.
- When you respond to our e-mails, contact our customer service, or use other customer support tools, we collect your information to provide you with support, verify your identity with your Account profile information, and confirm your Product.

We may also use the information we collect for the following purpose:

- send you reminders, technical notices, updates, alerts, support and administrative messages, service bulletins, and requested information; and
- pursuant to our legitimate business interests:
  - operate, maintain, improve, and develop our HIKVISION Services and Products;
  - personalize your experience with our HIKVISION Services and Products;
  - increase the safety of our HIKVISION Services and Products – for example, for user authentication, security protection, fraud detection, filing, and backups;
  - perform analytics and conduct customer research;
  - communicate and provide to existing customers additional information that may be of interest to you about our products and services;
  - manage our everyday business needs such as auditing, administration of our HIKVISION Services, forum management, fulfillment, analytics, fraud prevention, and enforcement of our corporate reporting obligations and Terms of Service;
  - enhance other information we have about you to help us better understand you and determine your interests; and
  - in the context of a corporate transaction (e.g., corporate restructuring, sale or assignment of assets, merger) and to protect our rights or property, to enforce our Terms of Service and legal notices and for the establishment, exercise, and defense of legal claims;

with your express consent to

- send you electronic communications in order to inform you about new products and services, unless you choose to unsubscribe;

- use certain non-essential cookies to better understand user behavior, in order to optimize user experience, perfect function design, and offers for products and services from us or to provide better services;

- meet a legal obligation, a court order or other binding decision(s); and accomplish a purpose unrelated to those described in this Privacy Policy by first notifying you and, where required, offering you a choice as to whether or not we may use your Personal Information in this different manner.

Cookies and Other Technologies

We also use cookies, Web beacons, pixel tags, and other technologies to keep records, store your preferences, improve our advertising, and collect information such as log data and device data. This allows us to better understand how you use our HIKVISION Services and Products, diagnose and troubleshoot any problems you have, and otherwise administer and improve our HIKVISION Services and Products. For more information about cookies, please refer to our **Use of Cookies** (https://order-na.hikvision.com/helpCenter/useOfCookies).

How We Share Your Information

HIKVISION may disclose personal information to cloud service provider, network service provider, and other service providers on the basis of non-disclosure agreements.

The following are the limited situations where we may share personal information:

- We share your personal information with HIKVISION affiliates, who are required to use that information in accordance with the purposes described in this Privacy Policy.

- We use service providers, vendors, technicians, and other third-parties to help us process, store, and protect some of your data and otherwise help us administer our Products and HIKVISION Services effectively, provide a better user experience, process your purchases, and increase the quality of our Products and HIKVISION Services. These third-parties are forbidden from using your personal information for non-HIKVISION purposes and are required to protect your information in accordance with this Privacy Policy and applicable laws.

- We may provide information to third-parties if we believe in good faith that we are required by mandatory law to do so. For example, to comply with legal orders and government requests; response to a subpoena, or similar legal process, including to law enforcement agencies, regulators, and courts; to protect the interests of our customers and users of the HIKVISION Service; to respond to claims that any content posted or displayed using the HIKVISION Service violates the rights of third parties; in an emergency protect the health and safety of users of the HIKVISION Service or the general public; or to enforce compliance with our Terms of Service.

- If HIKVISION and/or all or part of our assets are ever sold or transferred, your personal information may be among the items sold or transferred. Under such circumstance, we will notify you by the e-mail address specified in your account or by means of notice on us.hikvision.com and associated Websites of (i) the identity and contact information of the purchaser or transferee, (ii) your right to revoke your consent to the provision of personal information, and (iii) the means by which you may revoke such consent.

- We share information to protect our own legitimate business interests when we believe in good faith that we are required or permitted by law to do so. For example, we may share your personal information as needed to support auditing, compliance, and corporate governance functions; to combat fraud or criminal activity; to protect our rights or those of our affiliates and users; or as part of legal proceedings affecting HIKVISION.

We may also disclose non-personal information (for example, aggregated or anonymized data) publicly or with third-parties, provided those data have been rendered anonymous in such a way that the data subject is no longer identifiable. For example, we may share non-personal information:

- for the same reasons we might share Personal information;
- to better understand how our customers interact with our HIKVISION Services and Products, in order to optimize your experience, improve our products, or provide better services;
- for our own research and data analytics; or
- to our vendors for their own analysis and research.

Securing Your Personal Information

HIKVISION has implemented commercially reasonable administrative, technical, and physical security controls that are designed to safeguard personal information. We also conduct periodic reviews and assessments of the effectiveness of our security controls.

Notwithstanding the above, no method of transmission over the Internet, or method of electronic storage, is 100% secure. Therefore, HIKVISION cannot guarantee that your personal information is under absolute security with the existing security technology. If you have any questions about the security of our HIKVISION Services, you can contact us at the contact information below in **Contact Us**.

Accessing, Correcting, and Retention of Your Personal Information

HIKVISION generally stores your personal information on HIKVISION's servers, which is established upon Amazon Servers, until you delete or edit it, or for as long as you remain a HIKVISION customer in order to provide you with the most relevant offers.

Keeping your personal information current helps ensure that we provide you with the most relevant offers. You can access, update, or delete your personal information via your Account profile. We are ready to assist you in managing your subscriptions, deactivating your account, and removing your active profile and data. Your personal information might not be immediately deleted, as we are required to retain records relating to previous purchases through our HIKVISION Services for financial reporting and compliance reasons pursuant to applicable laws. In addition, because of the way we maintain certain services, after you delete certain information, we may temporarily retain backup copies of such information before it is permanently deleted.

We will retain your personal information for the period necessary to fulfill the purpose outlined in this Privacy Policy unless a longer retention period is required or permitted by applicable law.

If you are located in the European Union, subject to limitations in applicable law, you have certain rights in respect to your personal information such as a right of access, rectification, restriction, opposition, and portability. In order to exercise your rights please contact us at the contact information below in **Contact Us**. You also have the right to withdraw your consent at all times, free of charge. You can do this by opting out from direct marketing and by rejecting the use of cookies through your browser settings. If you have concerns about how we handle your personal information, you have the right to lodge a complaint with the data protection authority in your country of residence.

Social Community Features and Social Networks

Social Community Features

Our HIKVISION Services may allow you to publicly post or share information, communicate with others, or otherwise make information accessible to others. Prior to doing so, please read our Terms of Service carefully. All the information you post, share, or communicate may be accessible to anyone with Internet access, and any personal information you include may be read, collected, and used by others.

Social Networks

You have the option to link social networks such as Facebook to your Account. You will be able to post HIKVISION activity to your social network. By proceeding through any of the above steps, you grant HIKVISION permission to access elements of your social network profile information that you have made available to be shared and to use it in accordance with the social network's terms of use and this Privacy Policy.

Links to Other Websites

We may permit others to link to the HIKVISION services or to post a link to their Website. We do not endorse these Websites and are not responsible for other Websites or their privacy practices. Please read their privacy policies before submitting information.

Your Choices

We think that you benefit from a more personalized experience when we know more about you and your preferences. However, you can limit the information you provide to HIKVISION as well as the communications you receive from HIKVISION through your Account preferences.

Commercial E-mails

You will receive commercial e-mails from us only if you have granted prior express consent or if sending those e-mails is otherwise permitted, in accordance with applicable laws.

You may choose not to receive commercial e-mails from us by following the instructions contained in any of the commercial e-mails we send or by logging into your Account and adjusting your e-mail preferences. Please note that even if you unsubscribe from commercial e-mail messages, we may still e-mail you non-commercial e-mails related to your Account on the HIKVISION Services.

Device Data

You may manage how your mobile device and mobile browser share certain device data with HIKVISION by adjusting the privacy and security settings on your mobile device. Please refer to instructions provided by your mobile service provider or the manufacturer of your device

to learn how to adjust your settings.

Children's Privacy

HIKVISION does not intend that any portion of its HIKVISION Services will be accessed or used by children under the age of 18, or equivalent minimum age in the relevant jurisdiction and such use is prohibited. Our HIKVISION Services are designed and intended for adults. By using the HIKVISION Services, you represent that you are at least 18 years old, or above the equivalent minimum age in the relevant jurisdiction and understand that you must be at least 18 years old, or above the equivalent minimum age in the relevant jurisdiction in order to create an account and purchase the goods or services advertised through our HIKVISION Services. If we obtain actual knowledge that an account is associated with a registered user who is under the age of 18 years old, or equivalent minimum age in the relevant jurisdiction, we will promptly delete information associated with that account. If you are a parent or guardian of a child under the age of 18, or equivalent minimum age in the relevant jurisdiction and believe he or she has disclosed personal information to us please contact us at the contact information below in **Contact Us**. A parent or guardian of a child under the age of 18, or equivalent minimum age in the relevant jurisdiction may review and request deletion of such child's personal information as well as prohibit the use thereof.

Global Operations

We transfer and process your information globally both in our own facilities and with service providers, or partners, regardless of where you use our Services. The laws, regulations, and standards of the country in which your information is stored or processed may be different from those of your own country.

California Privacy Rights: Pursuant to Section 1798.83 of the California Civil Code, residents of California can obtain certain information about the types of personal information that companies with whom they have an established business relationship have shared with third parties for direct marketing purposes during the proceeding calendar year. In particular, the law provides that companies must inform consumers about the categories of personal information that have been shared with third parties, the names and addresses of those third parties, and examples of the types of services or products marketed by those third parties. To request a copy of the information disclosure provided by HIKVISION pursuant to Section 1798.83 of the California Civil Code, please contact us at the contact information below in **Contact Us**. Please allow 30 days for a response.

Contact Us

Please contact us if you have any questions or comments about our privacy practices or this Privacy Policy. You can always reach us through the below contact information:

A&E Program: aepartners.usa@hikvision.com

Cybersecurity: security.usa@hikvision.com

Dealer Partner Program: partners.usa@hikvision.com

Marketing: marketing.usa@hikvision.com

OEM/ODM: oem.usa@hikvision.com

Sales: inside.usa@hikvision.com

Technical Support: techsupport.usa@hikvision.com

Canadian Technical Support: techsupport.ca@hikvision.com

Need Help with This Product/Product Detail feature: inside.usa@hikvision.com

A&E partner inquiries (user registration, new project support, etc.): aepartners.usa@hikvision.com

HDP partner inquiries (user registration, new partner registration, etc.): partners.usa@hikvision.com

US Hikcentral Trial Version Request: sales.usa@hikvision.com

Canada Hikcentral Trial Version Request: sales.canada@hikvision.com

Hikvision Robotics Division: robotics.USA@hikvision.com

Hikvision OEM/ODM Division: OEMODM.usa@hikvision.com

A&E partner registrations: sarkis.timourian@hikvision.com

RMA: rma.usa@hikvision.com

Customer Service: csr.usa@hikvision.com

Careers: hr.usa@hikvision.com

Hikvision B2B Portal: b2b.usa@hikvision.com

Please provide: (i) your name (or nickname), your country or region of residence, and your preferred method of contact; and (ii) the details of your request or comment along with any corresponding Website links.

Mandatory Electrical Requirements

Hikvision requires the following conditions and equipment for all of its electronic equipment:

- **Grounding**
  Ensure good conductivity for all ground paths; examine ground path contact surfaces for defects, dirt, corrosion, or non-conductive coatings that may impede conductivity. Repair or clean contact surfaces as necessary to assure good metal-to-metal contact. Ensure fasteners are properly installed and tightened.

- **Electrical Wiring**
  Ensure your outlets are properly wired. They can be checked with an electrical outlet Tester.

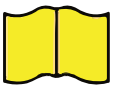
- **Surge Suppressor (Required)**
  Hikvision is not responsible for any damage to equipment caused by power spikes in the electrical power grid. Use of a surge suppressor meeting the following specifications is mandatory for all Hikvision electronic equipment:

  - **Specifications**
    - Listed by Underwriter's Laboratories, meeting the UL 1449 Voltage Protection Rating (VPR)
    - Minimum protection of 1,000 joules or higher
    - Clamping voltage of 400 V or less
    - Response time of 1 nanosecond or less
  - **Usage**
    - Surge suppressors must not be daisy chained with power strips or other surge suppressors

- **Maintenance**
  - › Replace after a serious electrical event (e.g., lighting blew out a transformer down the street)
  - › Replace yearly in storm-prone areas
  - › Replace every two years as routine maintenance

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 **NOTE:**	Provides additional information to emphasize or supplement important points of the main text
 **WARNING!**	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results
 **DANGER!**	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury

Safety Instructions

Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end user.

In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.

Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100–240 VAC or 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.

Do not connect several devices to one power adapter as adapter overload may cause overheating or a fire hazard.

Make sure that the plug is firmly connected into the power socket.

If smoke, odor, or noise rise from the device, turn off the power at once, unplug the power cable, and then contact the service center.

Preventive and Cautionary Tips
Before connecting and operating your device, please be advised of the following tips:

Ensure unit is installed in a well-ventilated, dust-free environment.

Keep all liquids away from the device.

Ensure environmental conditions meet factory specifications.

Ensure unit is properly secured. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.

Use the device in conjunction with a UPS if possible.

Power down the unit before connecting and disconnecting accessories and peripherals.

Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Table of Contents

1. Introduction

1.1. General

The IPC-4300H 4.3" IPS Touch Screen IP Camera Tester is designed for the maintenance and installation of IP cameras, analog cameras, TVI, CVI AHD, and SDI cameras, as well as for testing 4K H.264/4K H.265 cameras in mainstream mode. The 960 x 540 resolution displays images and video from network HD cameras and analog cameras in high resolution. The unit supports many ONVIF PTZ and analog PTZ controls. The combination of touch screen and physical keys make the Tester very user-friendly.

The device is also a useful tool for Ethernet network testing. It can verify PoE power voltage, test ping, and search for IP addresses. The blue cable tracer can be used to locate individually connected cables from a bundle of cables. LAN cables can be tested for proper connection termination. Other functions include the provision of 25.5 W of PoE power to IP cameras, HDMI In and Out, CVBS loop testing, testing of IP and analog devices at the same time, LED Flashlight capability, 12 VDC/2A power output, and more.

The IPC-4300H is portable and has a user-friendly design, as well as many other functions that make it an essential tool for all installers and technicians.

1.2. Box Contents

- Tester
- 12 VDC/2A adapter
- Network cable Tester
- Polymer lithium ion battery (7.4 VDC/5000 mAh)
- BNC cable
- RS-485 cable
- SC, ST connector (only for optical power meter)
- Output power cable
- Audio cable
- TDR alligator clamp (only for TDR Models)
- Safety cord
- Tool bag
- Manual
- 8 GB SD card

1.3. Top Interface

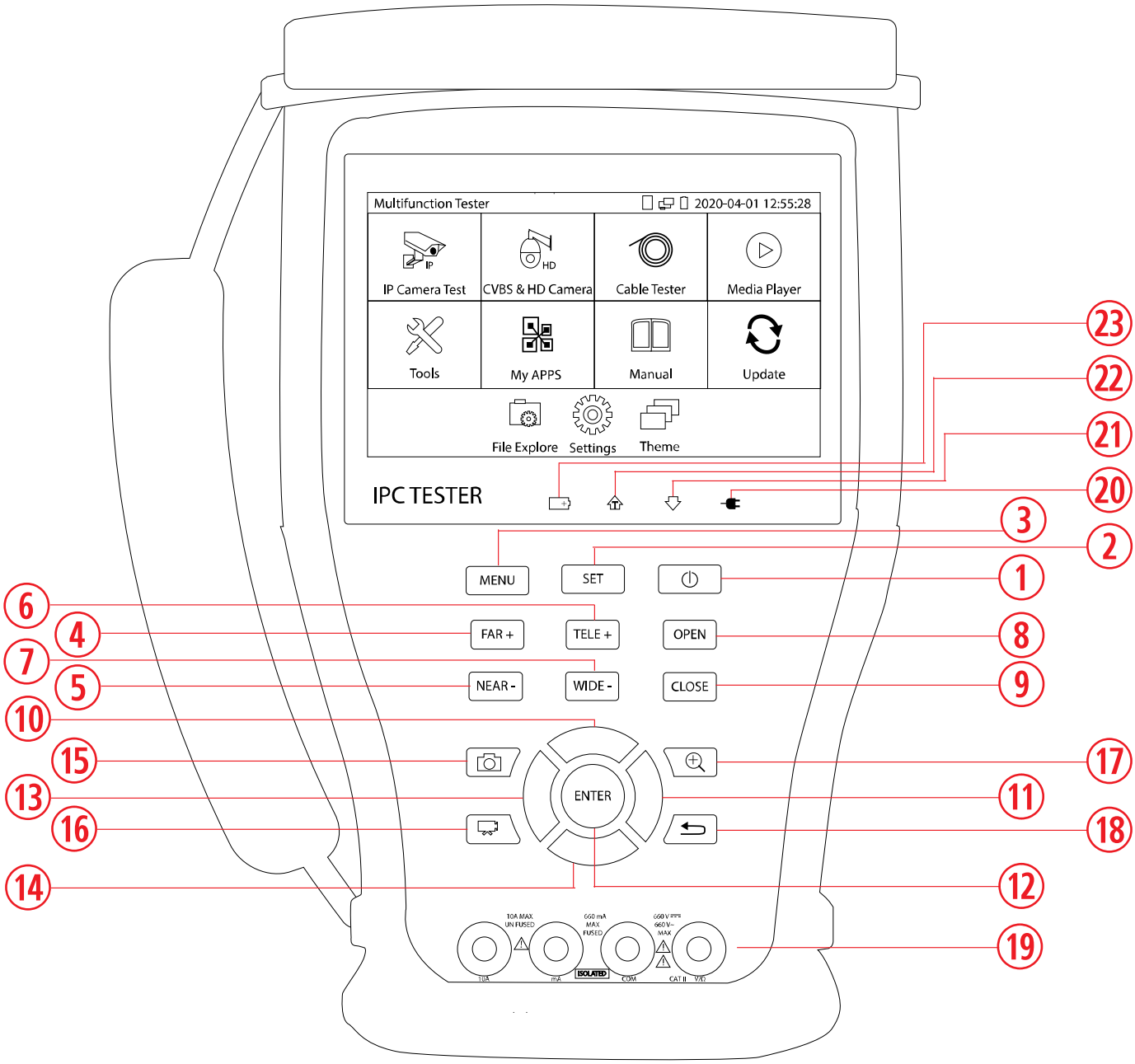
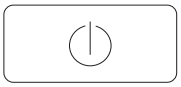


Figure 1, IPC-4300H Front Interface

Table 1, IPC-4300H Tester Functions

①		Press for more than 2 seconds: turn the device on or off; Short Press: turn the menu display on or off
②	SET	Set key
③	MENU	Menu key: press to call the shortcut menu
④	NEAR -	Near focus: focus on nearby image
⑤	FAR +	Far focus: focus on faraway image
⑥	TELE +	TELE: zoom in on the image
⑦	WIDE -	WIDE: zoom out of the image
⑧	OPEN	Open/Set: confirm parameter settings, open or enlarge the aperture
⑨	CLOSE	Return/Close: return or cancel while setting menu parameters, close or decrease aperture
⑩		Upwards: set function or add parameter. Tilt the PTZ upwards.
⑪		Rightwards: select the value of the parameter that is to be changed. Add the parameter value. Pan the PTZ to the right.

⑫		Confirm key (long press it to capture the screen interface).
⑬		Leftward: select the parameters whose value will be changed.
⑭		Downward: set function or reduce the value of the parameter. Tilt the PTZ downward.
⑮		Snapshot
⑯		Video recording
⑰		Open/Set: confirm parameter setting, open or enlarge the aperture.
⑱		Return/Close: Return or cancel while setting menu parameters, close or decrease the aperture
⑲		Multimeter interface (Optional)
⑳		Power indicator: turns green when the Tester is powered on by the adapter
㉑		Data Accepted Indicator: turns red when data is being received
㉒		RS-485/RS-232 Data Transmission Indicator: turns red when data is being transmitted
㉓		Charge Indicator: turns red when the battery is being charged. Once charging is complete, the indicator turns off automatically.

1.4. Top Interface

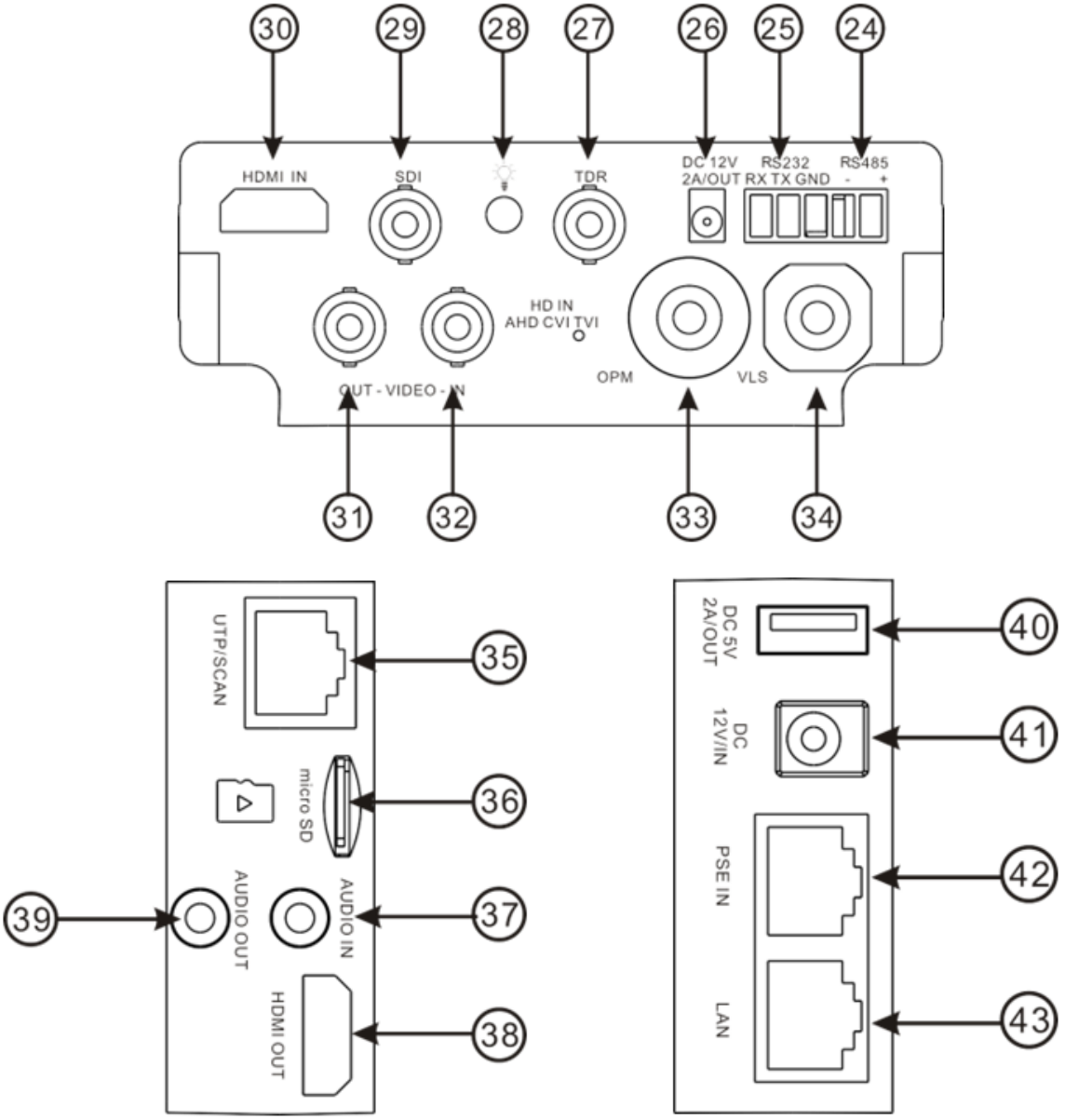


Figure 2, IPC-4300H Top Interface

Table 2, Top Interface Functions

㉔	RS-485 Interface: RS-485 communication for PTZ
㉕	RS-232 Interface: RS-232 communication for PTZ “HD In”, AHD/TVI/CVI coaxial interface (Optional)
㉖	12 VDC/2A power output for provisional DC power supply
㉗	TDR cable test interface
㉘	LED lamp
㉙	SDI input (BNC interface) (Optional)
㉚	HDMI input
㉛	Video image signal output (BNC interface)/cable tracer interface (Optional)
㉜	Video image signal output (BNC interface)/AHD, CVI and TVI input (BNC interface) (Optional)
㉝	Optical power meter interface (Optional)
㉞	Visible red laser source emitter interface (Optional)
㉟	UTP cable port: UTP cable Tester port/cable tracer port
㊱	Removable 8 GB microSD card, up to 32 GB available
㊲	Audio input
㊳	HDMI output interface
㊴	Audi and headphone output
㊵	5 VDC/2A USB power output (power bank)
㊶	12 VDC/2A charging interface
㊷	PSE power sourcing equipment. Tests PoE voltage.
㊸	PoE power supply output or LAN test port (used to test PoE or non-PoE IP cameras)

2. Operation

2.1. Battery Installation

The Tester has a built-in lithium ion polymer rechargeable battery. The battery cable inside the battery cabin should be disconnected for safety during transportation.

Prior to the use of the instrument, the battery cables inside the battery cabin should be well connected.

Pressing the key ⏻ continuously powers the Tester on or off.

Use the original adaptor and connected device cable.

When the battery icon is full or the charge indicator turns off automatically, battery charging is complete.

When the charge indicator turns off, the battery is at approximately 90% of its capacity. The charging time can be extended for about 1 hour, and charging the battery within 12 hours will not damage it.

Press the ⏻ key for several seconds to restore the default settings when the instrument works abnormally.

When using the multimeter function, the red and black leads must be inserted into the corresponding ports.

Subjecting the instrument communication port to a circuit voltage over 6 V will damage the Tester.

Do not insert the leads into the current terminals when measuring voltage.

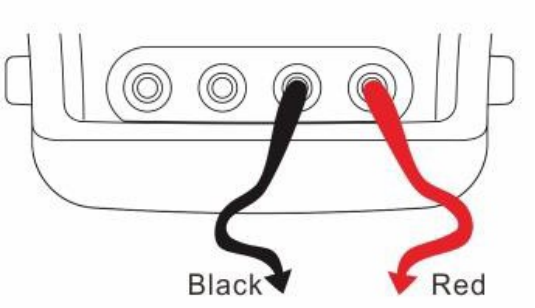


Figure 3, Voltage Lead Setup

2.2. Instrument Connection

2.2.1. IP Camera Connection

Connect the IP camera to an independent power supply and connect the IP camera to the Tester's LAN port.

If the link indicator next to the Tester's LAN port is green and the data indicator flickers, the IP camera and the Tester are communicating.

If the two indicators do not flicker, check if the IP camera is powered on or if the network cable is functioning properly.

Figure 4, Connecting PoE Cameras

NOTE: If the IP camera requires a PoE power supply, connect the IP camera to the Tester's LAN port. The Tester will supply PoE Power to the IP camera. Click on the PoE icon to turn the PoE Power on or off.

When using Tester menu to turn the Tester's PoE power supply on or off, the PoE switch and the power sourcing equipment can be connected to the Tester's PSE port, and PoE power will be supplied to the IP camera using the Tester's LAN port. The Tester cannot receive data from the IP camera in this case, but the computer connected to the PoE switch can receive data via the Tester.

A PoE switch or PSE power sourcing equipment can only be connected to the Tester via the **PSE In** port, otherwise the Tester can be damaged.

2.2.2. Connecting Analog Cameras

Figure 5, Connecting Analog Cameras

- Connect the camera's video output to the Tester's **Video In** port. The image will display on the Tester after the PTZ icon is pressed.
- When the Tester's **Video Out** interface is connected to the monitor's video input and the optical video transmitter and receiver, the image will be displayed on the Tester and monitor.
- Cameras or speed domes can be connected to the Tester's RS-485 interface using a RS-485 cable (note the positive and negative cable connections). PTZ RS-232 controllers are supported.

2.2.3. Connecting Coaxial HD Cameras

SDI, CVI, TVI, AHD camera are classified as HD coaxial cameras. Therefore, the instructions for connecting SDI cameras to the Tester also apply to CVI, TVI, and AHD cameras.

Figure 6, Connecting Coaxial HD Cameras

- When the SDI camera's video output is connected to the IP Tester's **SDI In** interface, the image will be displayed on the Tester. The Tester only comes with an SDI input interface. There is no SDI output interface.
- Connect the SDI camera or the speed dome's RS-485 controller cable to the Tester's RS-485 interface. The RS-232 PTZ controller is supported. Connect the RS-232 cable to the Tester's RS-232 interface.

2.2.4. HDMI IN (Optional)

Figure 7, HDMI Connection

2.3. OSD Menu

- Press ⏻ for 2 seconds to turn the device on.
- Press ⏻ for 2 seconds to turn the device off.
- Press ⏻ briefly to enter sleep mode. Press it again to verify whether a Tester is working properly and cannot be turned off.
- Press and hold ⏻ for more than 2 seconds to reset the device.
- In Lite Mode, press the icon for several seconds to move icons to other applications.

Figure 8, Lite Mode – Changing App Location

- In Lite Mode, click the finger icon in the lower right-hand corner to release the lock icon, to move icons around, or to change the icon sequence function.

Figure 9, Moving Icons

- Click **SD Card** to install or remove the SD card.

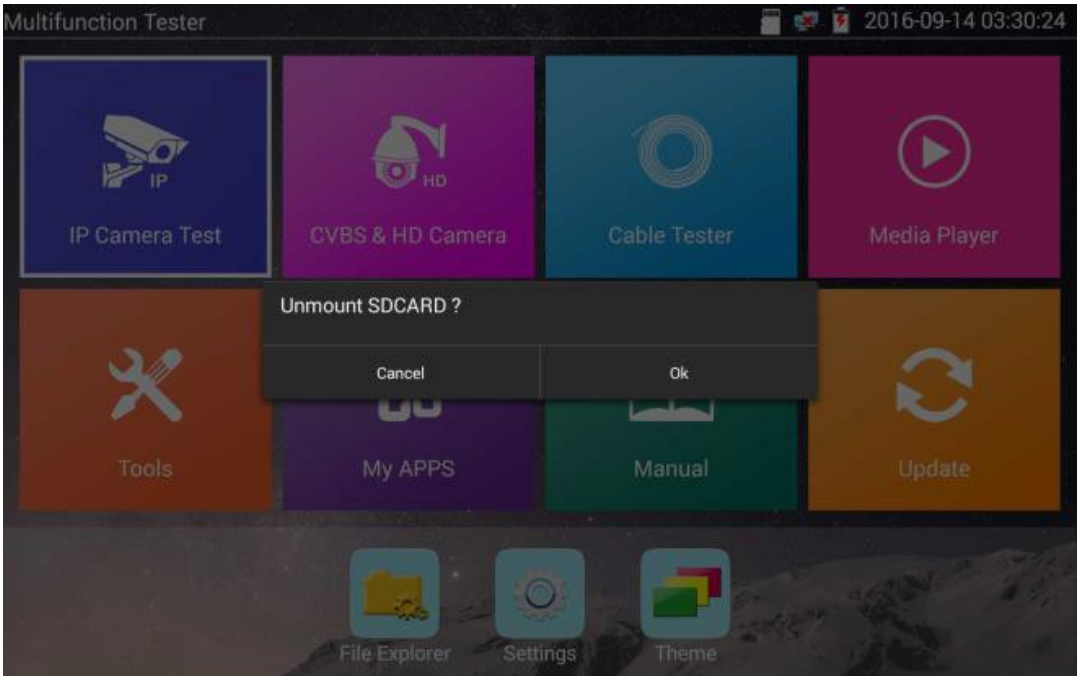


Figure 10, SD Card Installation and Removal

2.3.1. Drop-Down Menu

Press and slide the top right corner down twice to open the shortcut menu.

The shortcut menu includes the following functions: **PoE Power Output**, **IP Settings**, **Wi-Fi**, **HDMI In**, **CVBS**, **Video Out**, **Brightness**, **Settings** and more.

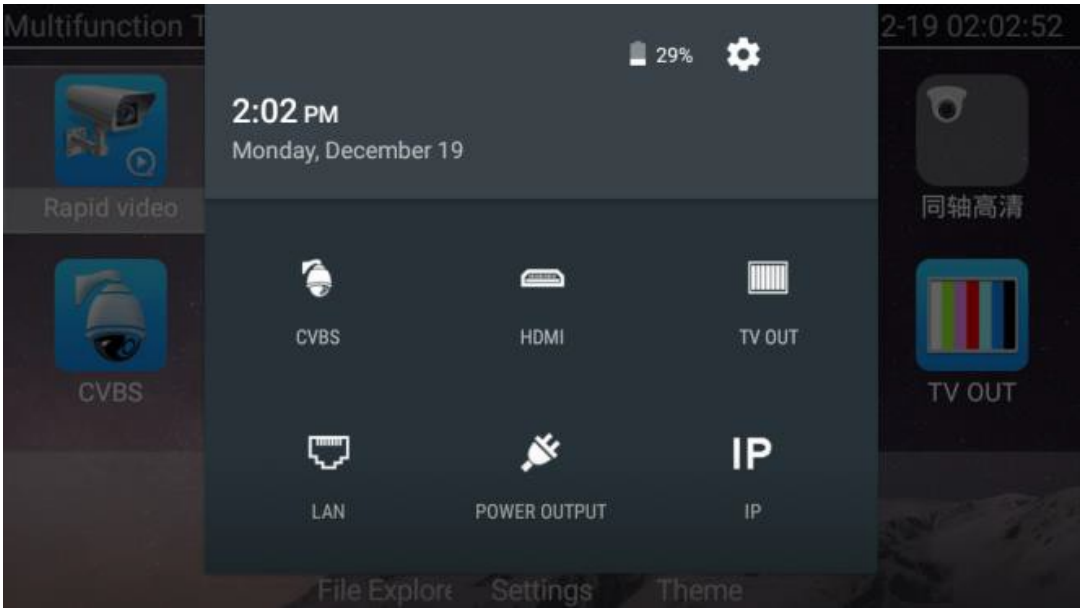


Figure 11, Drop-Down Menu

- **HDMI**: Click **HDMI In**. In **HDMI In** mode, the user can select between **Dual Analog and HDMI** or **Dual Digital and HDMI** tests by selecting **IP and HDMI In** or **Analog and HDMI In**.
- **CVBS**: Click the **CVBS** icon. IP and analog cameras can be tested at the same time.
- **TV OUT**: Click **Video Out** to enter the floating window and connect the BNC cable to the Tester. The analog video will appear on the monitor interface. The connection and BNC cable can be tested.
- **LAN**: Display network ports or Wi-Fi connections, real-time upload and download speeds, and other network parameters.
- **Brightness**: Set brightness.
- **Settings**: Enter the settings interface.
- **PoE Power Output**: Turn the **PoE Power** Tester app on or off.
- **WLAN**: Turn **WLAN Net** on and display current WLAN status.

2.3.2. Shortcut Menu

The menu can be accessed by clicking the **Shortcut Menu** key. The user can also self-define the menu shortcut.

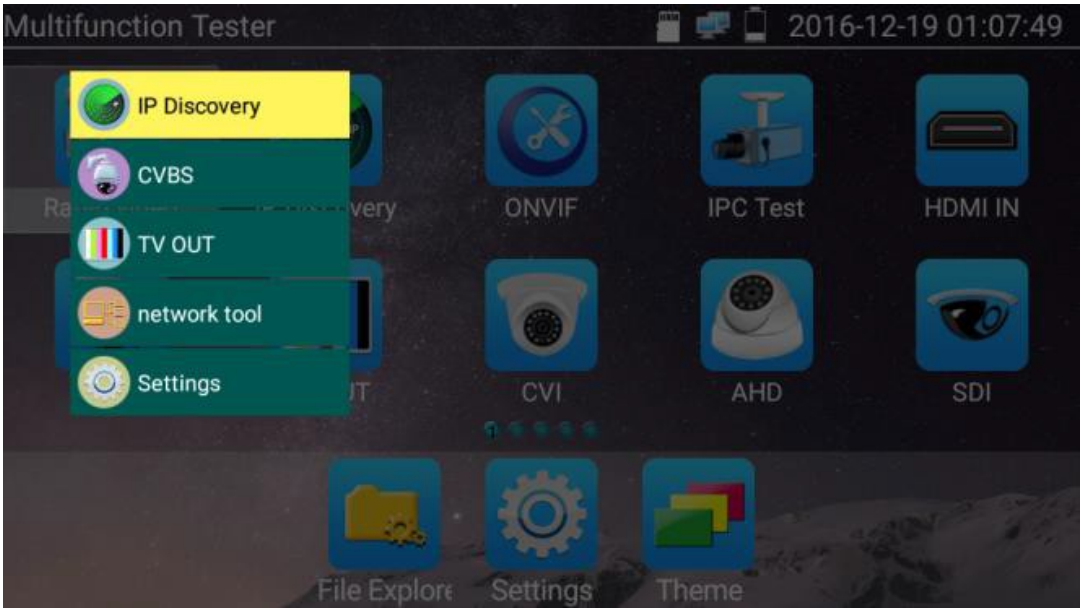


Figure 12, Shortcut Menu

Press MENU to enter the menu and to switch functions. Press to enter the app, and tap other areas on the screen to exit the menu.

Figure 13, Shortcut Menu

To move an app to the shortcut menu, long press an app in the applications list in the **Shortcut Menu** settings.

To delete an app from the **Shortcut Menu**, press it for several seconds.

2.3.3. Screen Capture

To capture the screen interface and save it, long press the **Enter** key.

To view the screenshot, proceed as follows:

File Management → SD Card → Pictures → Screenshots

Figure 14, Screenshots

2.3.4. TesterPlay

- Smartphone screen projection (only for Android phones)

  The Tester creates a Wi-Fi hotspot, which allows for the mobile phone to connect to the Wi-Fi hotspot. The Tester and the mobile phone can also connect to the same Wi-Fi hotspot.

  Tap the icon, then select the **TesterPlay** app. Click the **Start** button to generate a QR code, scan it using a mobile phone, and

download and install the client software. The screen can be viewed in the form of a real-time projection.

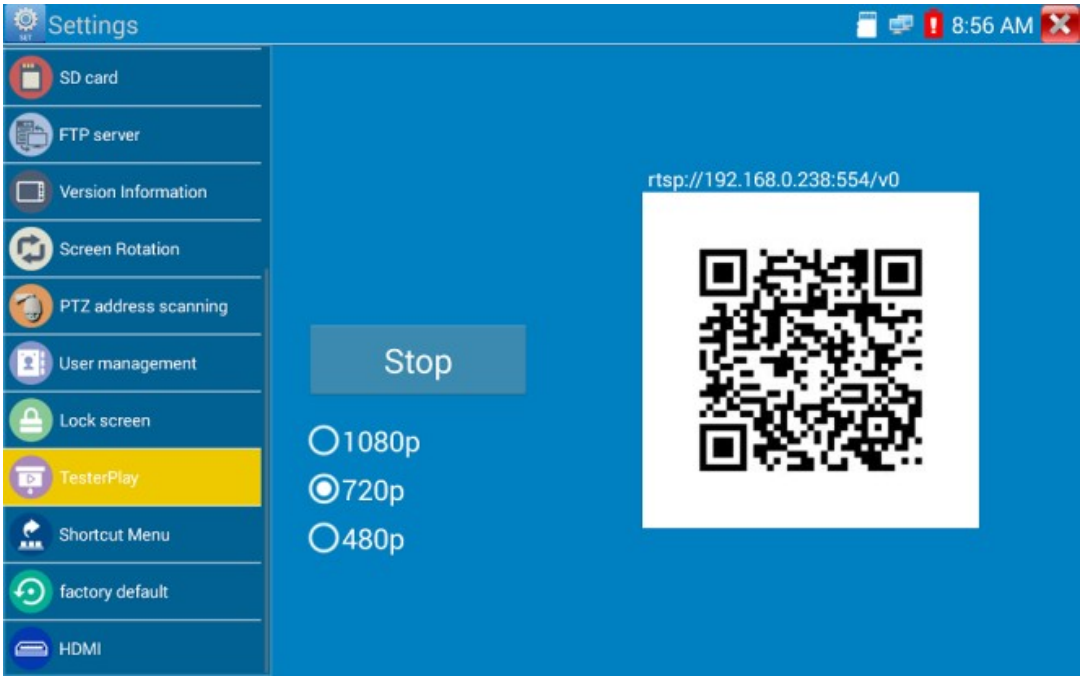


Figure 15, TesterPlay QR Code

PC screen projection:

1. Install VLC on your PC.
2. Follow **Media → Open Network Streaming** in VLC, and input the RTSP address found above the QR code.
3. Click **Play** to view the screen's real-time projection.

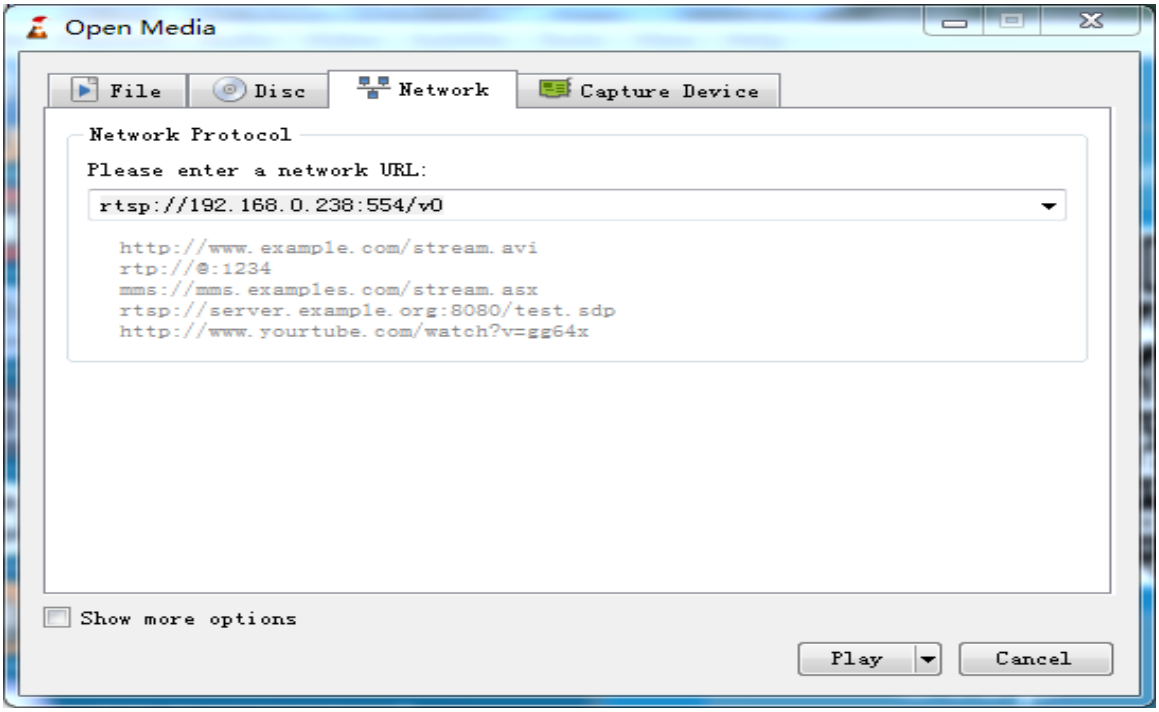


Figure 16, Screen Projection in VLC

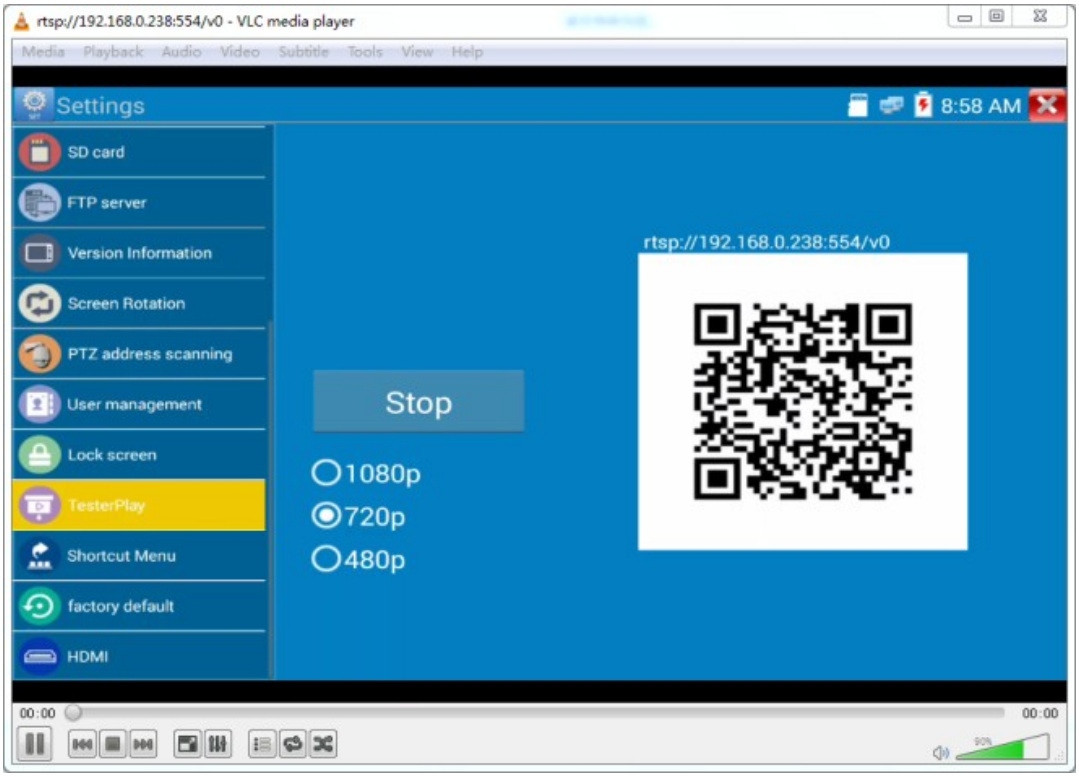


Figure 17, Screen Projection in VLC

2.3.5. Rapid Video

Press  to select this function. One key can be used to detect all network cameras and automatically play their images.

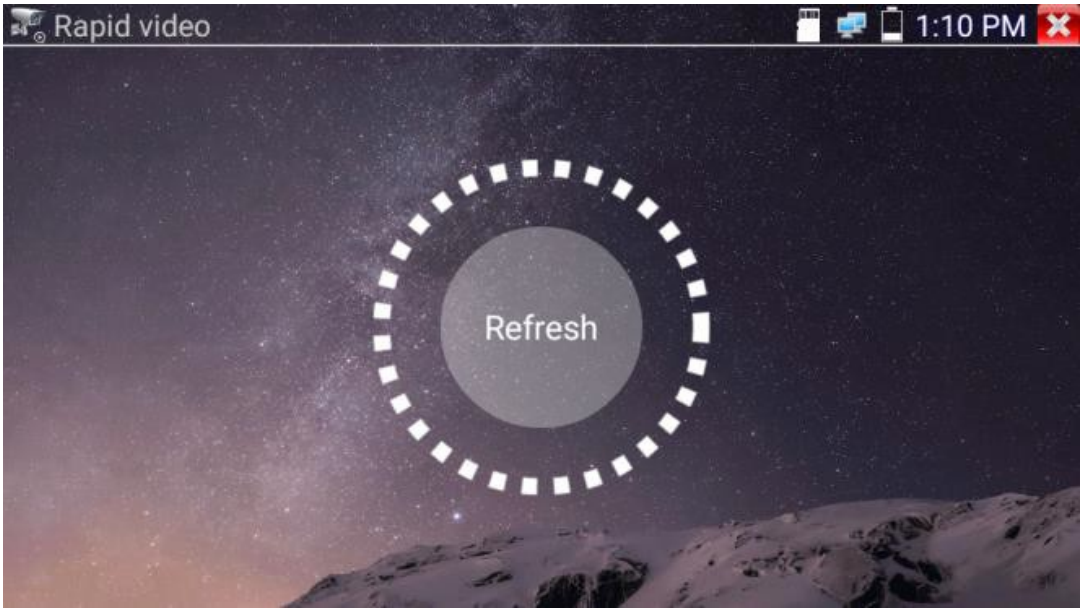


Figure 18, Rapid Video Screen

Log in automatically and display the camera image.

For more details, refer to ONVIF user instructions.

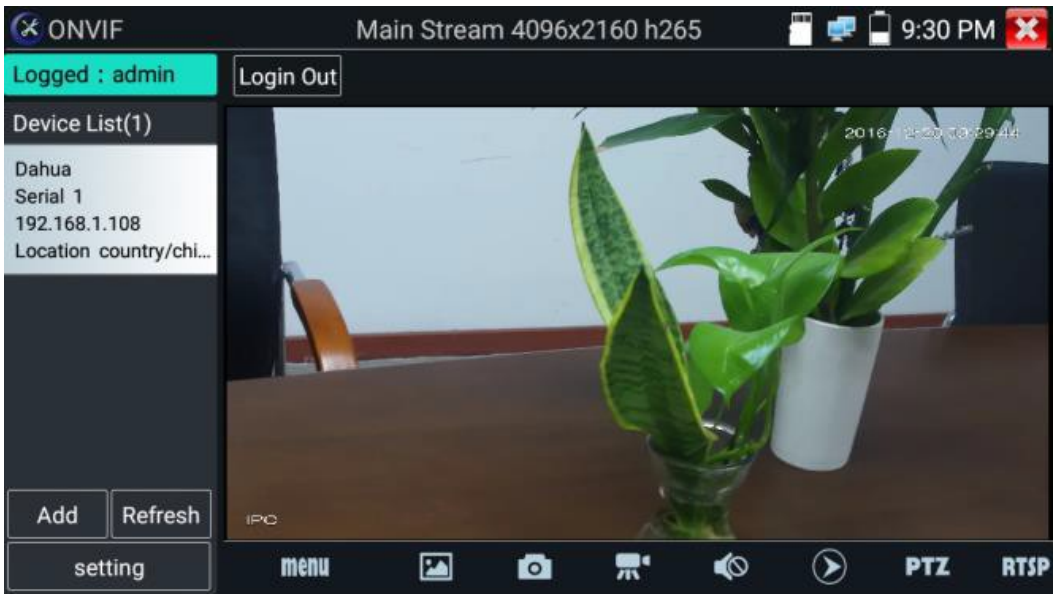


Figure 19, Camera Image Display

After exiting the ONVIF app, click **Refresh** to search for a specific IP address.

2.3.6. IP Discovery

Press the IP discovery button  to scan a given network segment for a specific IP address.

The Tester's IP address can be automatically changed to the same network segment as the scanned camera's IP address.

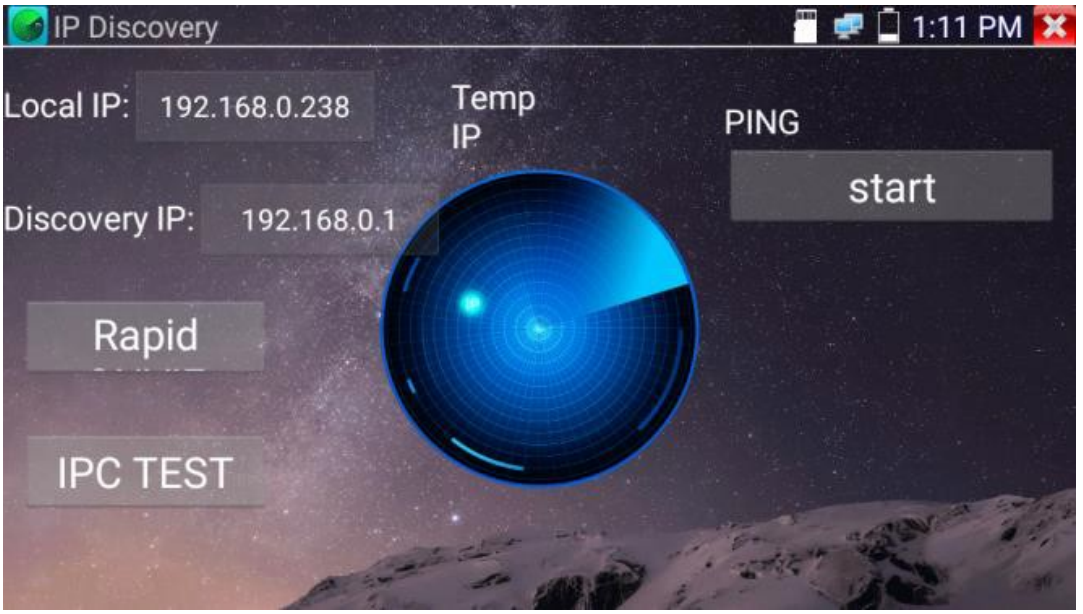


Figure 20, IP Discovery Screen

- **Local IP**: The Tester's IP address. The Tester can automatically modify its IP address to match the IP address of the camera being scanned.

- **Discovery IP**: IP address of the camera connected to the Tester. When the camera is connected to the Tester directly, the Tester will display the camera's IP address. When the Tester connects to a LAN network, it will display its current IP address.

- **Temp IP**: The Tester's modified IP address will not be saved after searching for an IP address. If **Temp IP** is not selected, the

modified Tester IP will automatically save after a search is performed.

- **Start**: Ping function. Click **Start** to ping the camera's IP address.
- **Rapid ONVIF**: Rapid ONVIF quick link
- **IPC Test**: IP camera test quick link
- **Applicability**: When using the IP discovery app, the first 2 digits of the camera's IP address do not need to be known. The entire network segment can be scanned for a specific IP address. The Tester's IP address can also be modified automatically.

2.3.7. Rapid ONVIF Testing

The Rapid ONVIF function can display 4K H.265/H.264 camera images in main stream mode. One key can be used to activate a Hikvision camera.

Press  to enter the ONVIF section. The Tester automatically scans all ONVIF cameras in different network segments. It lists camera names and IP addresses on the left side of the screen.

The Tester can automatically log into a camera and display the camera's image. The admin password is used as a factory default to automatically log into the camera.

If the password has been modified, the default feature is to use the modified password for login.

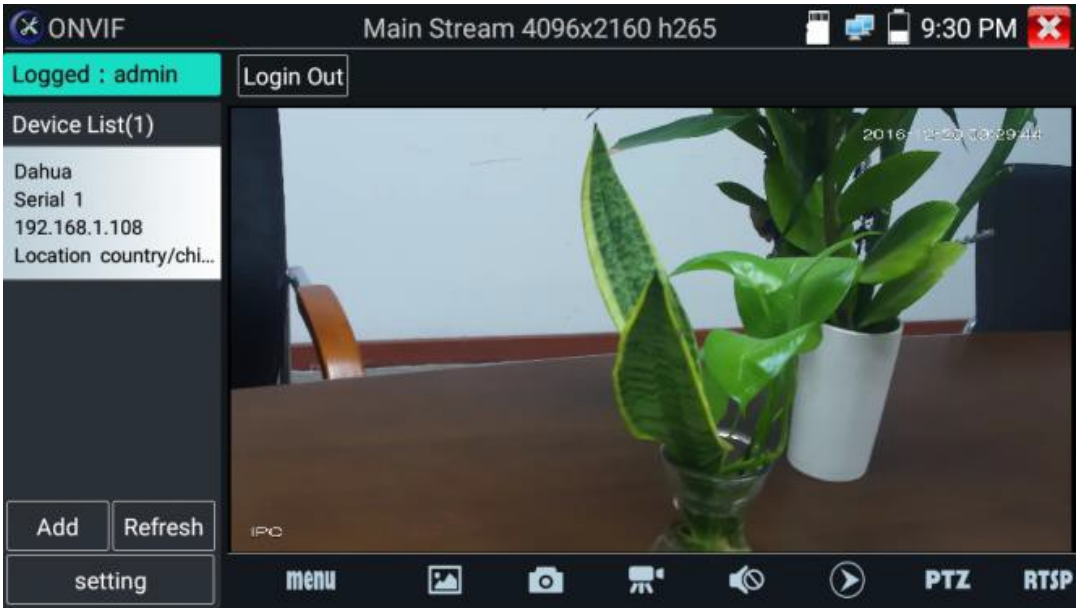


Figure 21, ONVIF Screen

If you select ONVIF Rapid mode, the meter automatically scans different network segments for ONVIF cameras. It lists the camera name and IP address on the Device List. The Tester can automatically log into the camera and display the camera image.

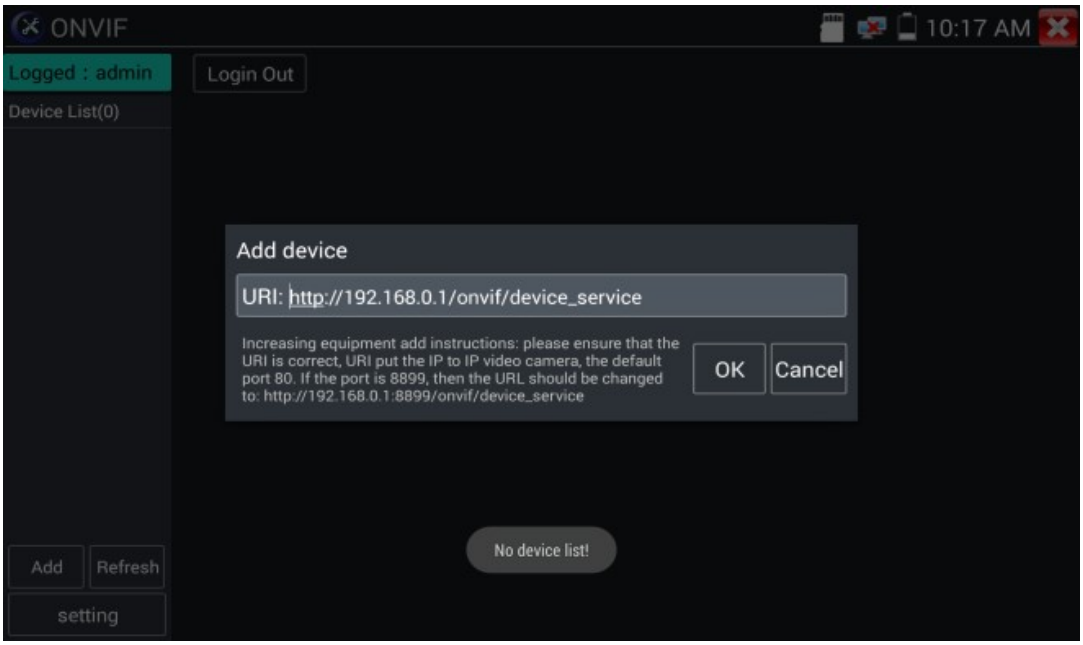


Figure 22, Device Addition Screen

Click **Refresh** to have the Tester scan the ONVIF camera again.

Click the newly displayed ONVIF camera on the **Device List**.

The Tester will show the IP camera's relative information and settings.

The Tester can automatically detect connected and unactivated Hikvision cameras.

The following prompt will be displayed: "The camera has not been activated, activate now?" will be displayed.

Click **OK** to start activation.

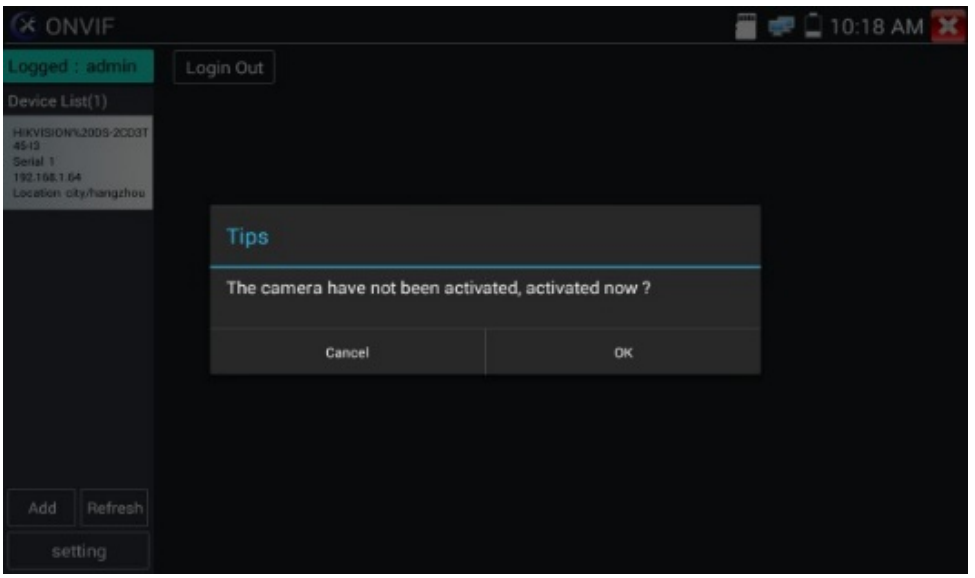


Figure 22, Device Activation Screen

Enter a new password for the camera.

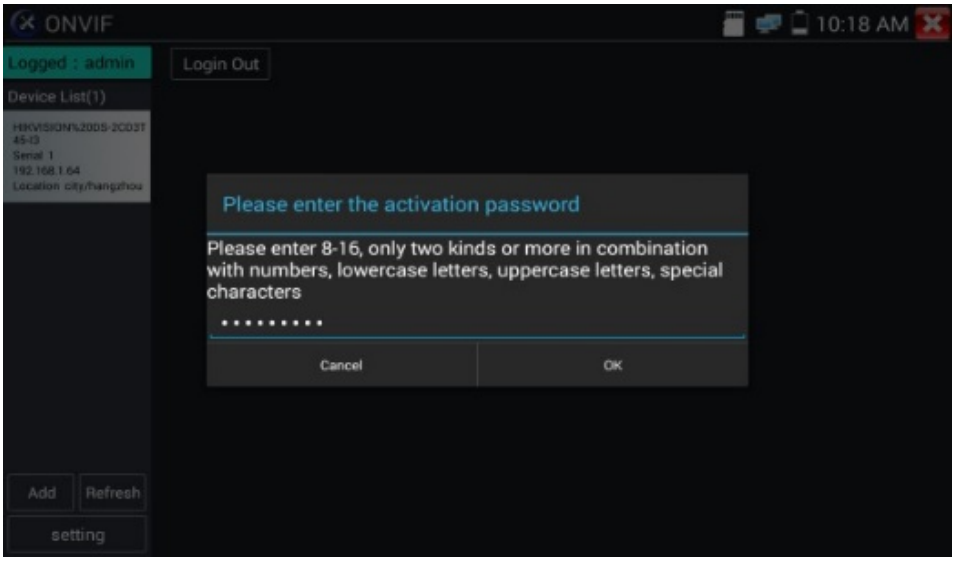


Figure 23, Activation Password Screen

Once the "Successful Activation" prompt is displayed, click login to display the camera image.

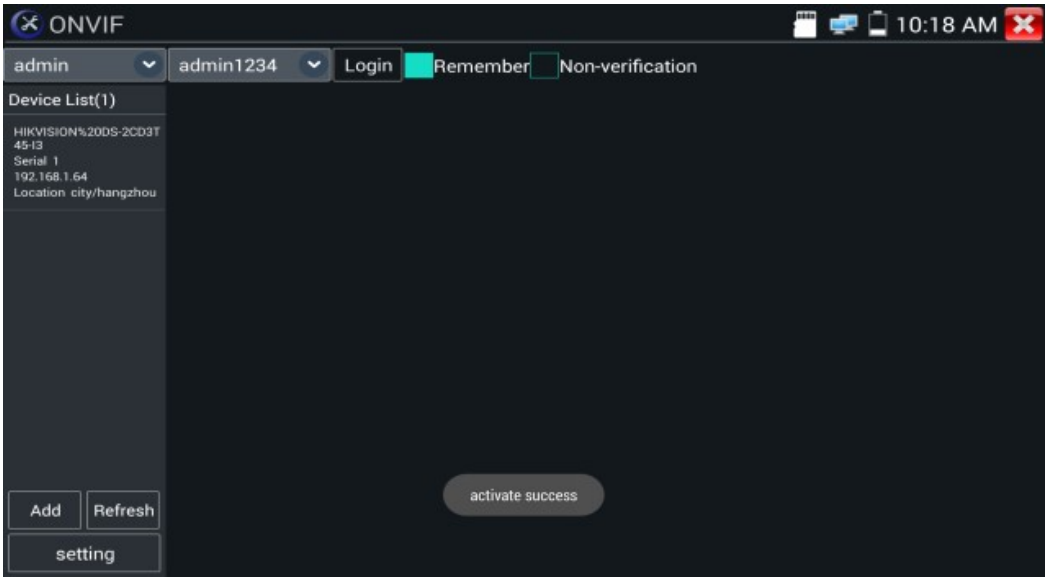


Figure 24, Successful Activation Prompt

Clicking the "**ONVIF Settings**" icon in the upper left-hand corner will display the settings menu.

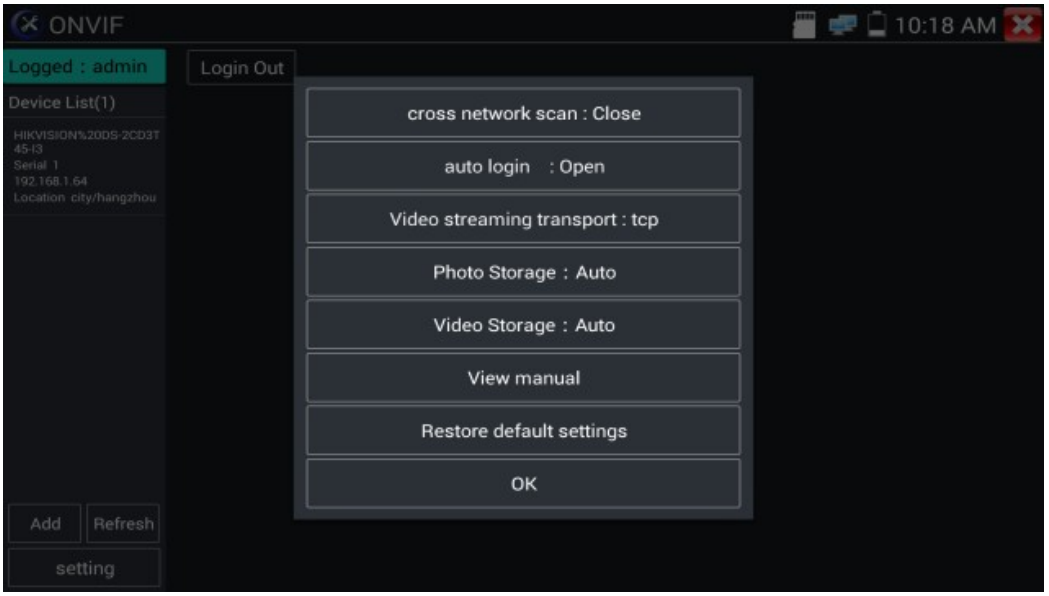


Figure 25, Pop-Up Settings Screen

- **Cross Network Scan**: Click this function and proceed as follows: **Settings → IP Settings → Advanced** to add other network IP segments. The Rapid ONVIF function can scan camera IP addresses across network segments.
- **Auto Login**: Tester automatically logs into cameras and displays camera images (the login password is saved between uses, and "admin" is the default password).
- **Video Transmission Protocol**: UTP and TCP protocol
- **Open Password Cracker**: Cracks camera passwords
- **View Manual**: Open manual
- **Restore Defaults**: Revert "Rapid ONVIF" to default settings
- **Confirm**: Save modified parameters

Click the **Menu** icon to open camera settings.

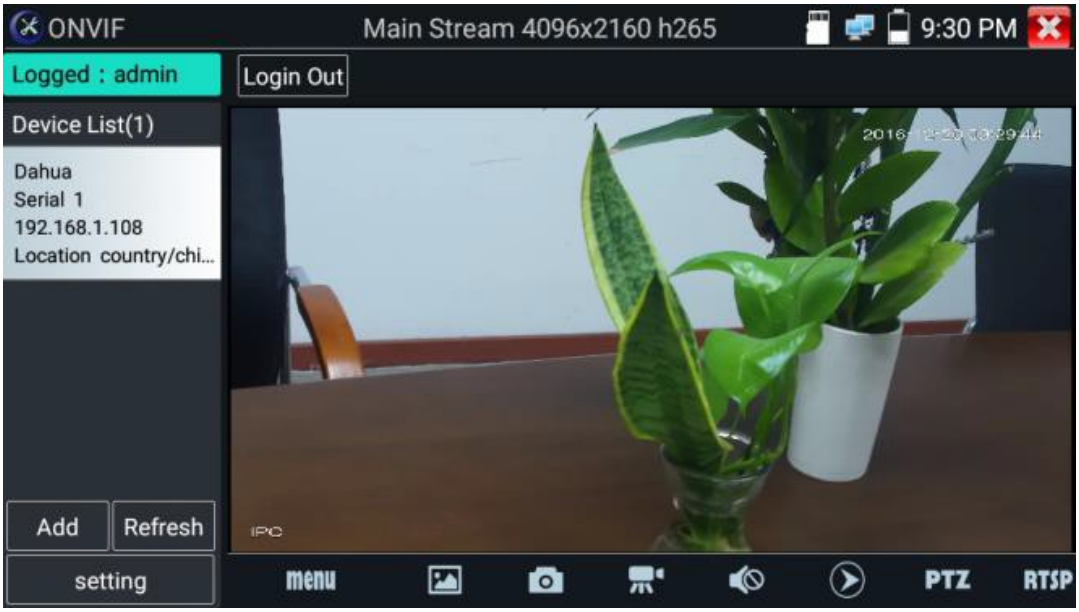


Figure 26, ONVIF Settings Screen

In the **Live Video** menu, click **Video Menu** on the top right-hand corner of the image to access the following tools: **Snapshot**, **Record**, **Photo**, **Playback**, **PTZ** and **Settings**.

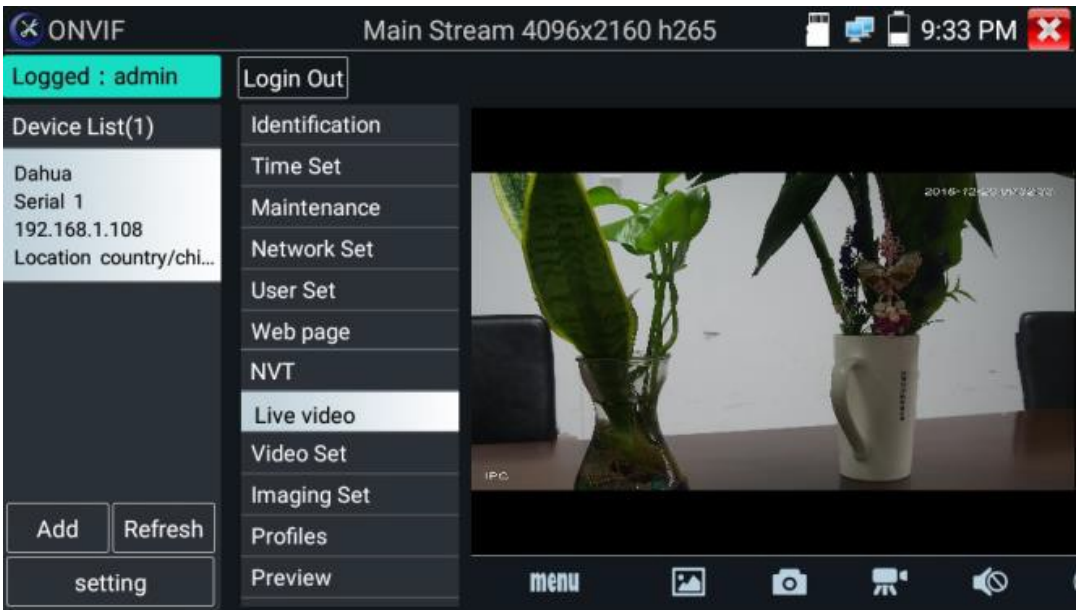


Figure 27, ONVIF Settings Screen – Live Video

- **ONVIF PTZ Control**: Tap the image in the direction you want the PTZ camera to move.

Tap the left side of the image to move the camera left, right to move towards the right, up to move upward, and down to move downward.

Compatible IP PTZ cameras will rotate accordingly.

The PTZ rotation direction is displayed on the top left-hand corner of the image.

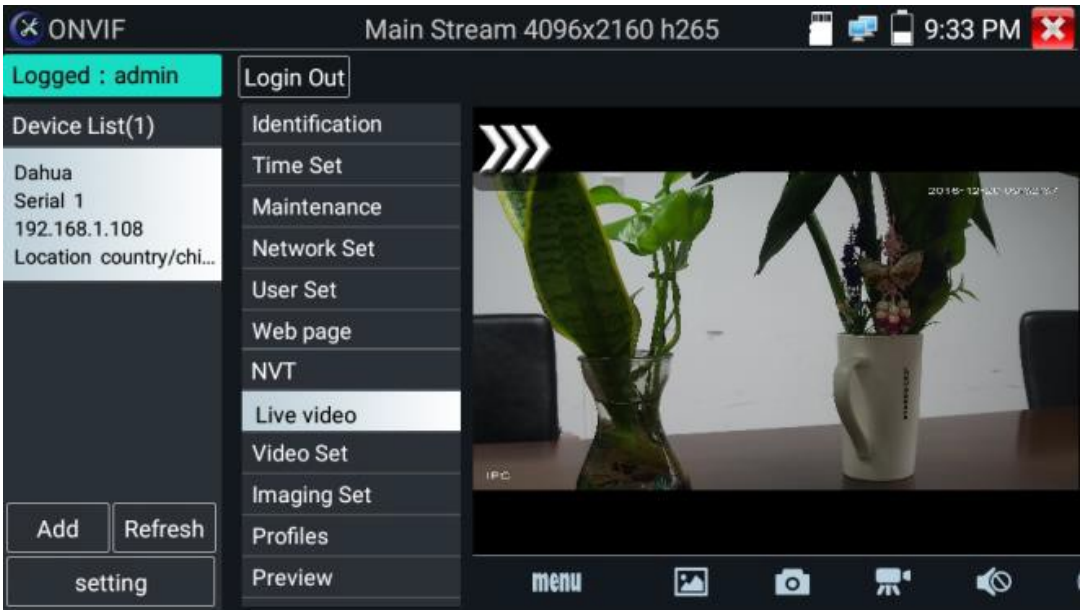


Figure 28, ONVIF Settings Screen – Live Video – PTZ Movement

- **IP Camera Video Settings**: Click **Video Set** to enter the IP camera's encoder and resolution settings.

  Click **OK** after the desired changes have been made.

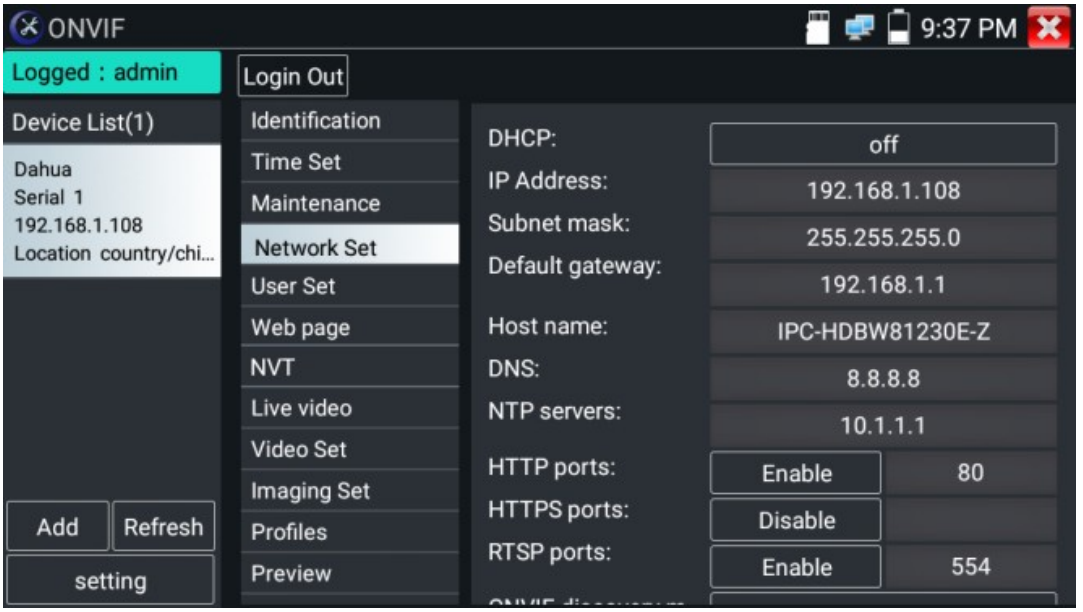


Figure 29, ONVIF Settings Screen – Network Settings

- **Image Setting**: Click **Imaging Set** to adjust image brightness, saturation, contrast, sharpness and backlight compensation.

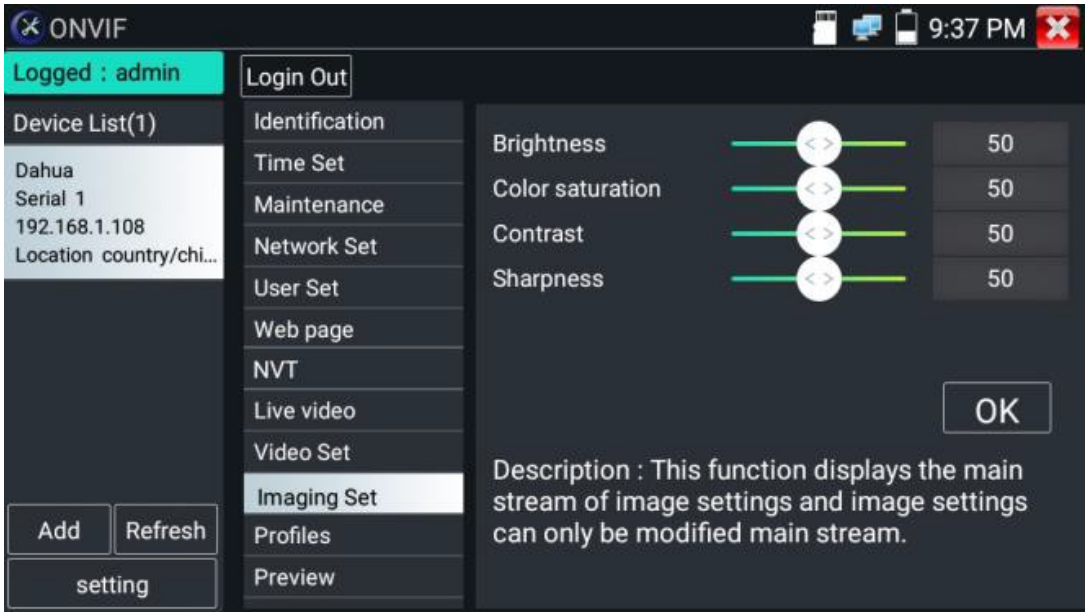


Figure 30, ONVIF Settings Screen – Image Settings

- **Profiles**: Click **Profiles** to view current video streaming configuration files and to switch between mainstream and substream.

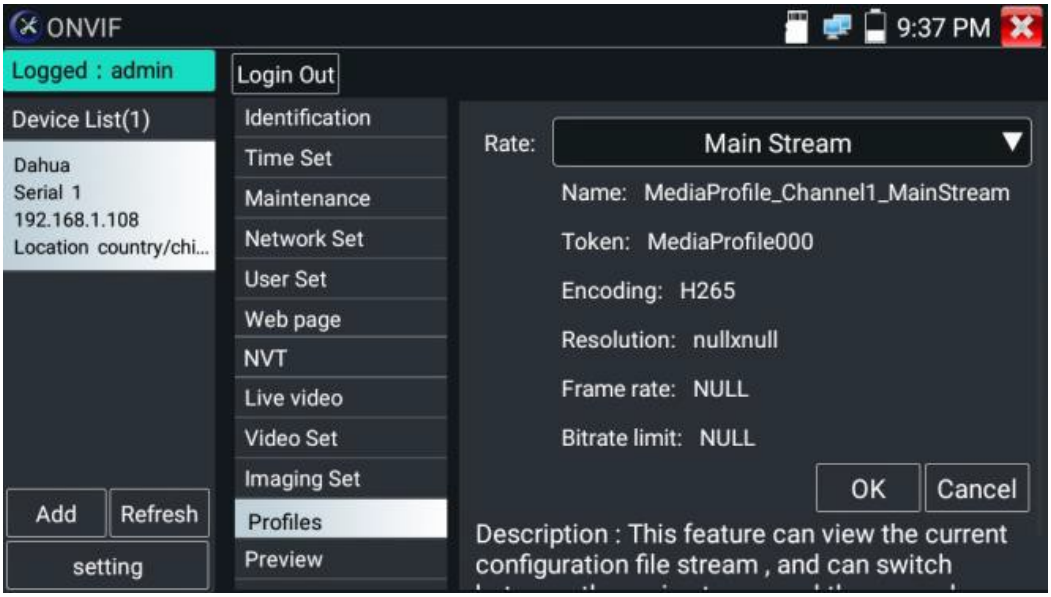


Figure 31, ONVIF Settings Screen – Profiles

- **Preview Pictures**: Quickly preview, zoom in and out of pictures, and refresh automatically or manually.

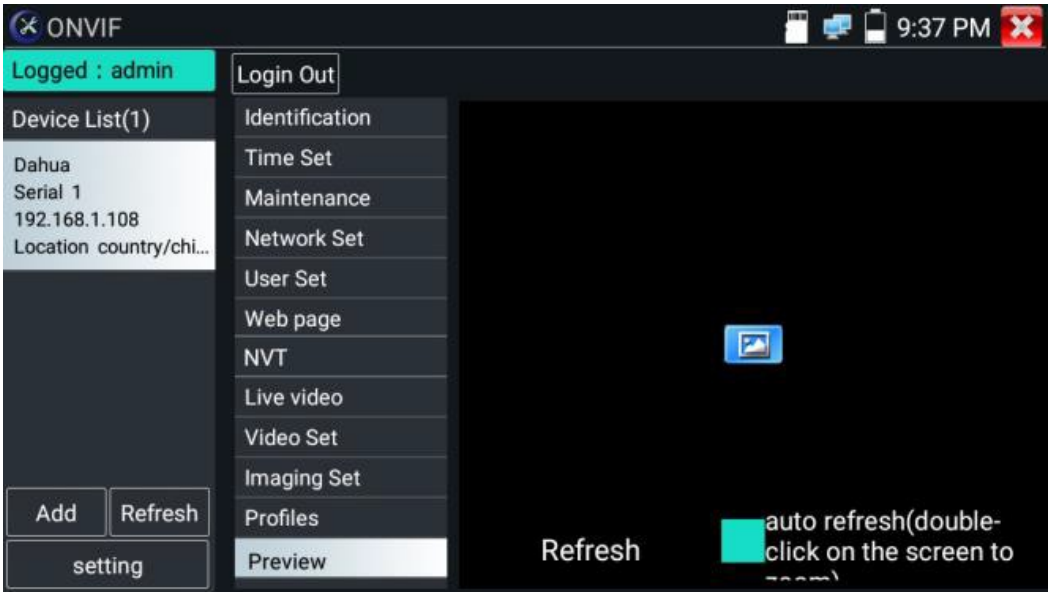


Figure 32, ONVIF Settings Screen – Preview Pictures

- **Identification**: Click **Identification** to view camera information.

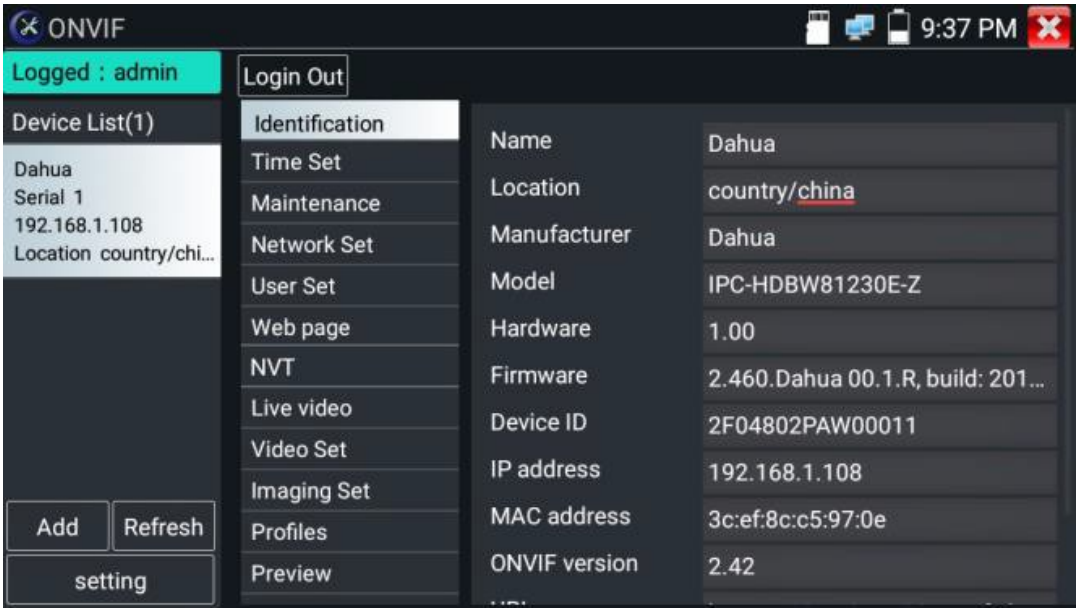


Figure 33, ONVIF Settings Screen – Identification

- **Time Set**: Click **Time Set** and select **Manual Set** to set camera time.

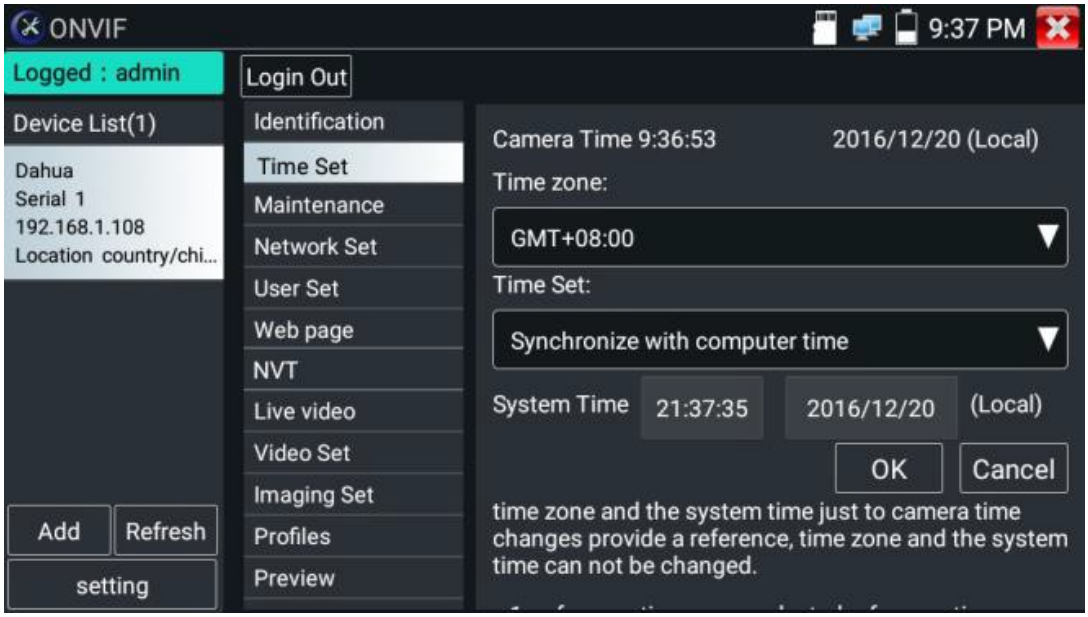


Figure 34, ONVIF Settings Screen – Time Set – Manual

- **Maintenance**: Reset camera software or factory reset camera settings.

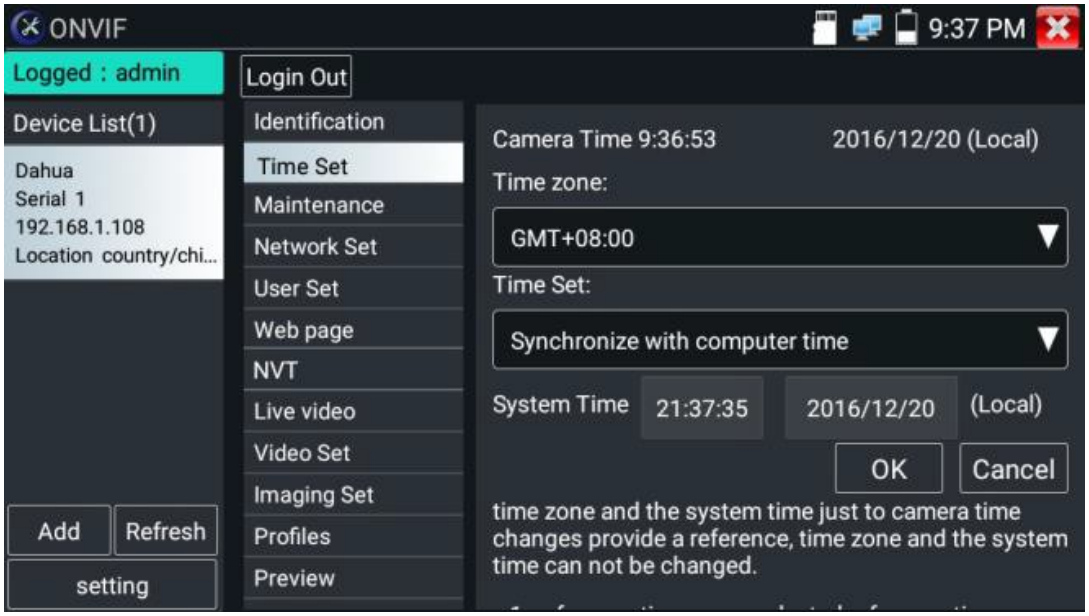


Figure 35, ONVIF Settings Screen – Time Set – Maintenance

- **User Settings**: Modify camera user name, password, etc.

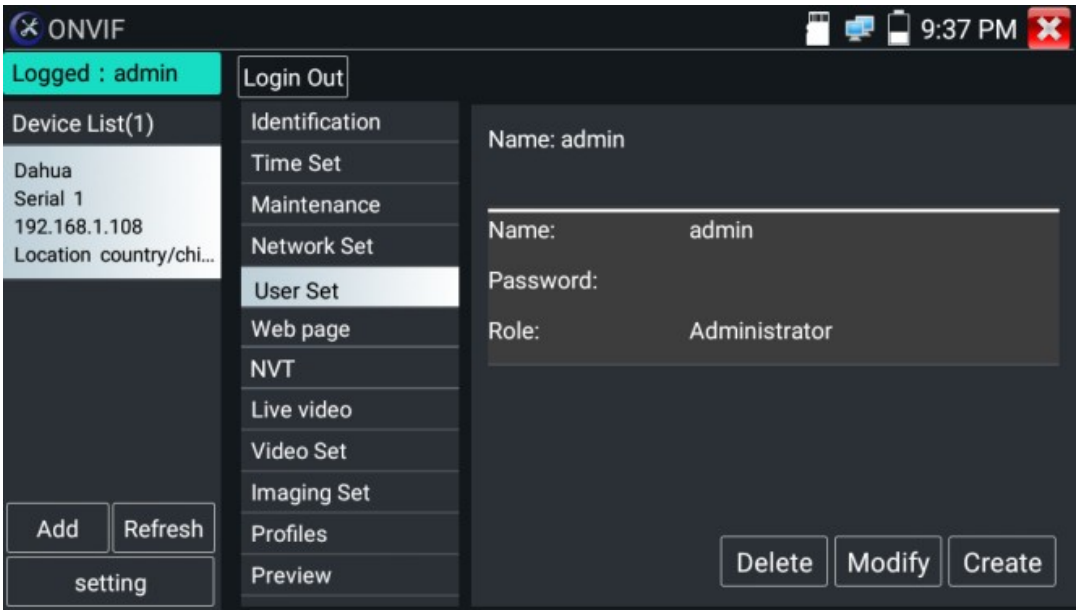


Figure 36, ONVIF Settings Screen – User Settings

- **Network Settings**: Click **Network Set** to change the camera's IP address. Certain cameras do not support changes in IP address. For those cameras, changes do not apply after saving.

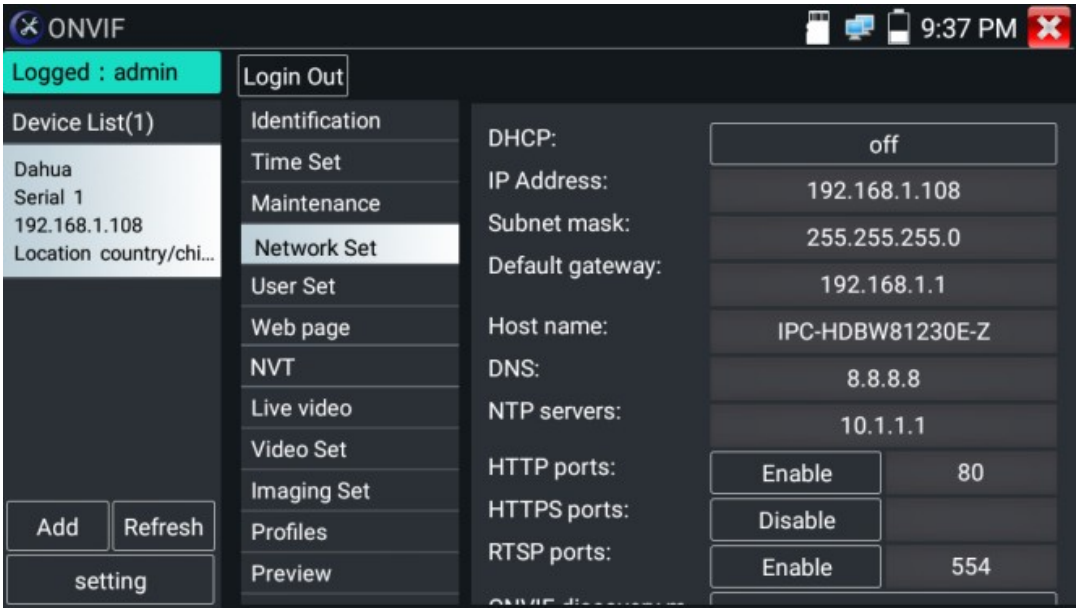


Figure 37, ONVIF Settings Screen – Network Settings

- **Zoom In Image**: Press  to enter zoom mode.

  Press  again to exit zoom mode.

  Once the image is enlarged, tap left, right, up or down on the image to move the image on the screen.

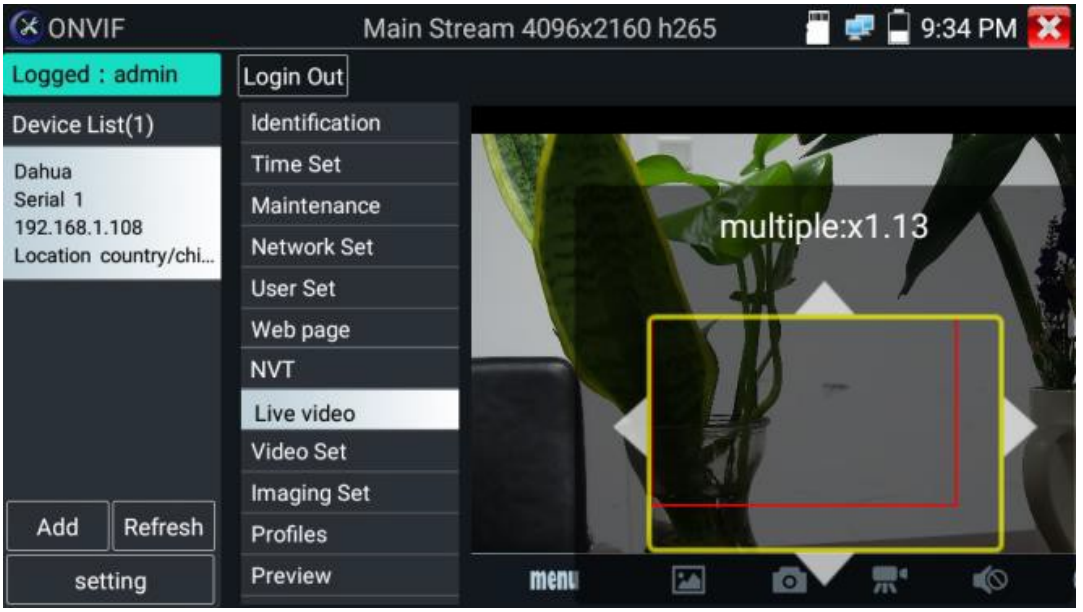


Figure 38, ONVIF Settings Screen – Zoom In

When the image is enlarged, press TELE + on the keyboard to zoom in.

Press WIDE - to zoom out. Press the up and down keys to move the image.

For network video inputs, the Tester supports resolutions up to 1080p. The input image is very clear once it is enlarged. This allows installers to verify the IP camera's video coverage and select a suitable installation site.

The image can only be enlarged in SD mode ("ONVIF" is equivalent to SD mode).

Select relative function on the bottom toolbar for the following options: **Snapshot**, **Record**, **Photos**, **Video Playback**, **Storage Set**, **PTZ Control** and more.

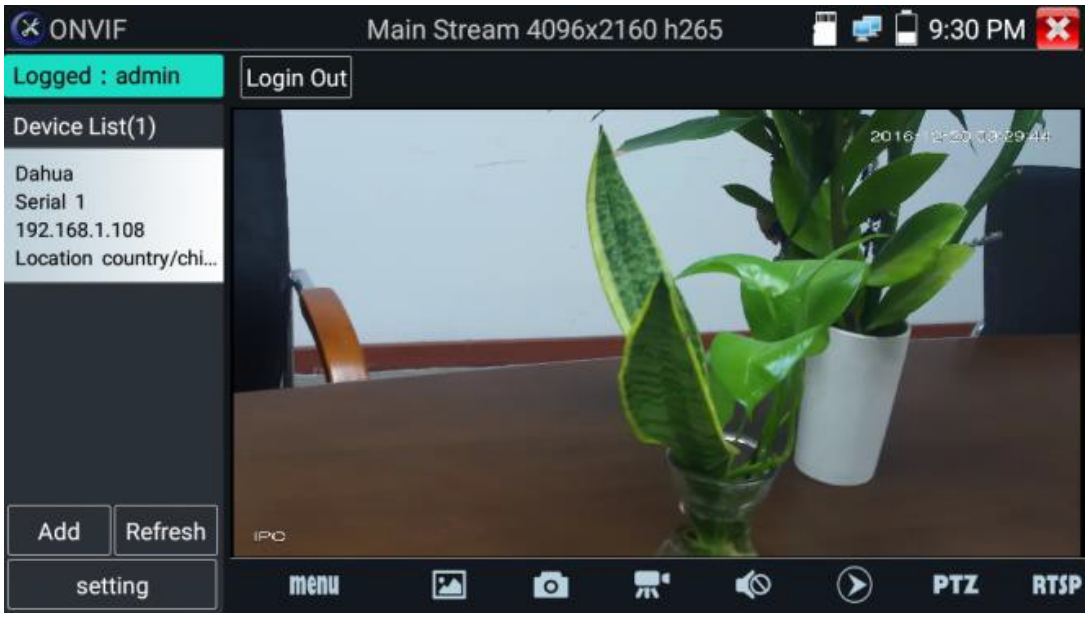


Figure 39, ONVIF Settings Screen

- **Snapshot**: Click **Snapshot** to take a picture of the screen and store it to the SD card if manual storage has been selected.

In the **Input Name** dialogue box, choose a file name (letters or numbers are acceptable) to save the image to the SD card.

If **Auto Storage** has been selected, the Tester will store the file automatically.

- **Record**: Click the **Record** icon to start video recording.

  A red recording icon will appear on the screen and begin to flash.

  A timer will also appear, indicating the time elapsed.

  Click the **Stop** icon to stop recording and to save the video file on the SD card.

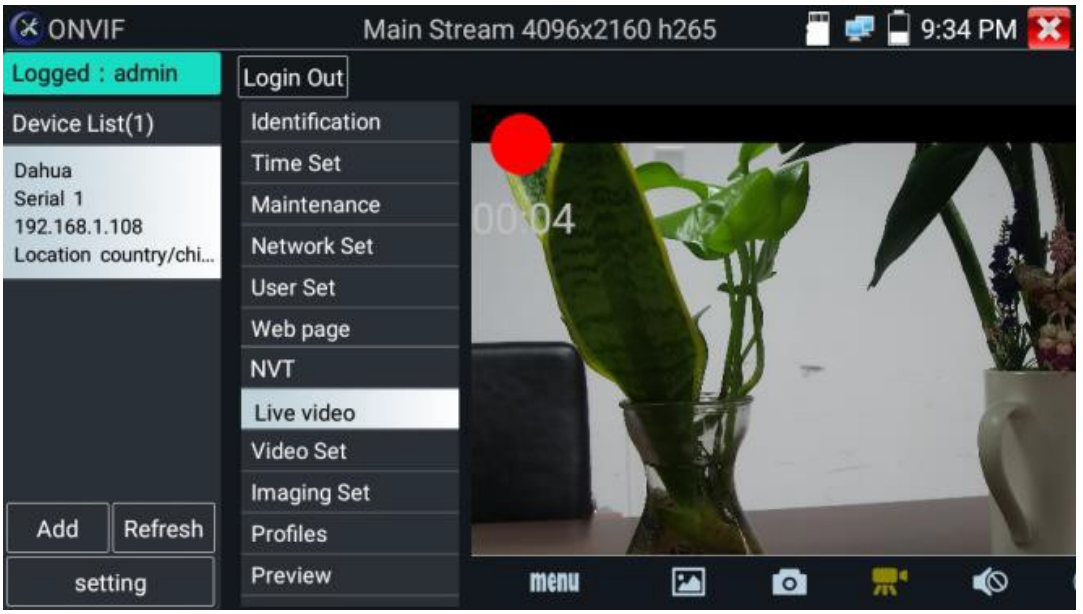


Figure 40, ONVIF Settings Screen – Live Video

- **Playback**: Click the **Playback** icon to view the saved videos. Double-click the video that is to be played. Click anywhere else to return to the previous menu.

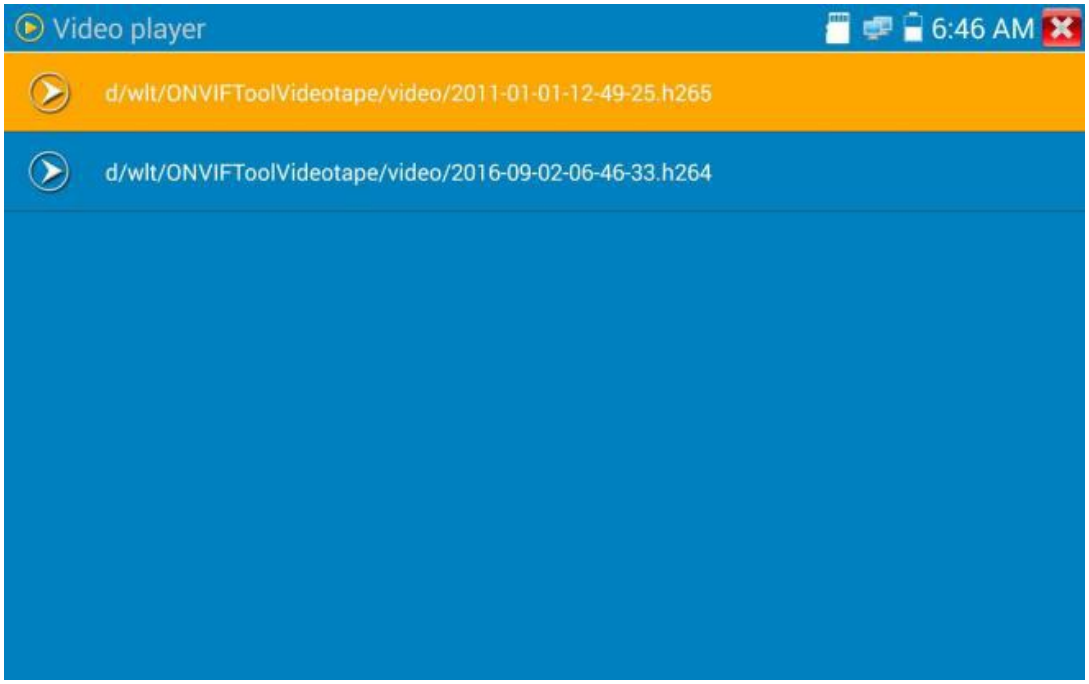


Figure 41, Playback of Saved Videos

To rename or delete an image, click and hold the file until the following screen appears.

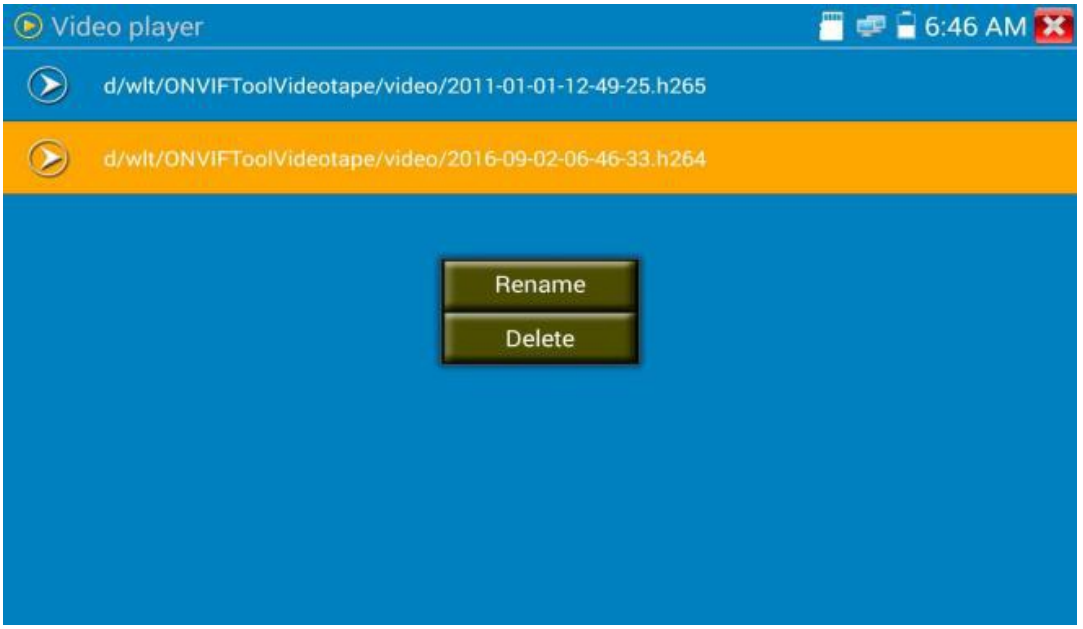


Figure 42, Video Rename or Delete Screen

NOTE: Video files can be played in the video player from the main menu.

PTZ Cameras

- **Set Preset Position**: Move the camera to the preset position and enter the preset number in the bottom right-hand corner to complete the preset position.
- **Call the Preset Position**: Select the preset number on the left and click **Call** to call a preset.

Figure 43, Presets Position Call Screen

- **PTZ Speed Set**: Horizontal and vertical speed setting

Figure 44, PTZ Speed Settings

- **RTSP**: Obtain current camera's RTSP address.
- **Doc**: Auto generate camera test report document and click **Create Document**. Click **Preview** to view the report document.

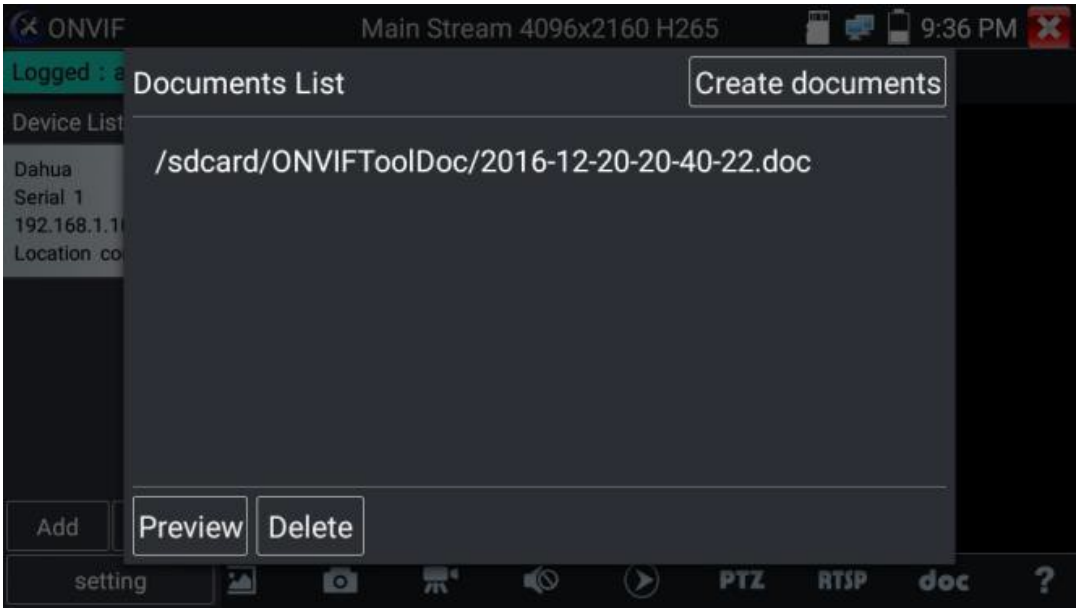


Figure 45, Testing Reports

Enter the camera test information interface and click **Create Document** to complete the report.

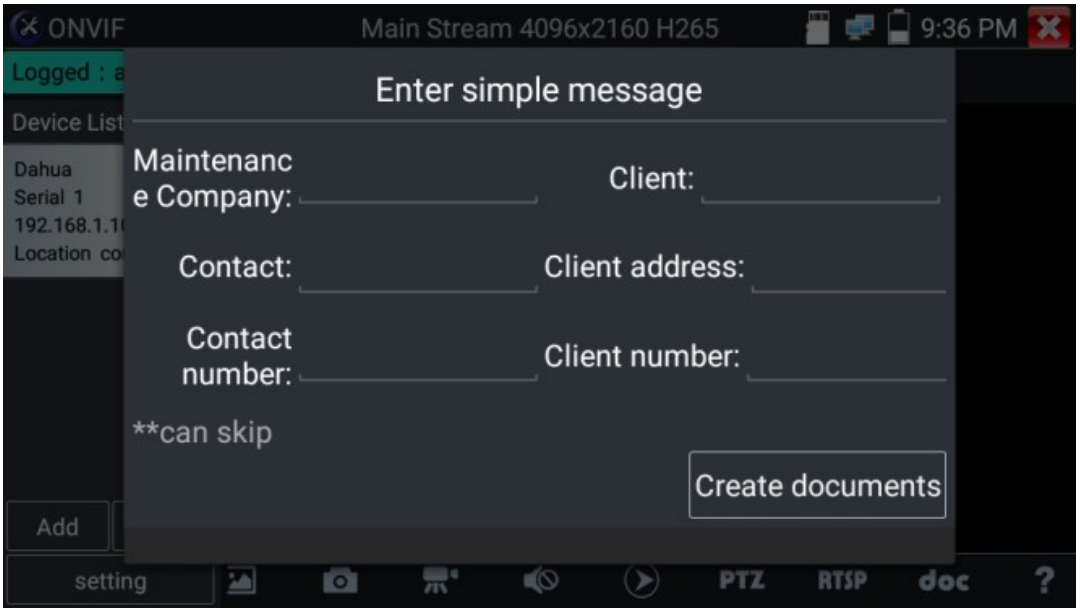


Figure 46, Report Creation

Click the **Doc** menu again to preview the report.

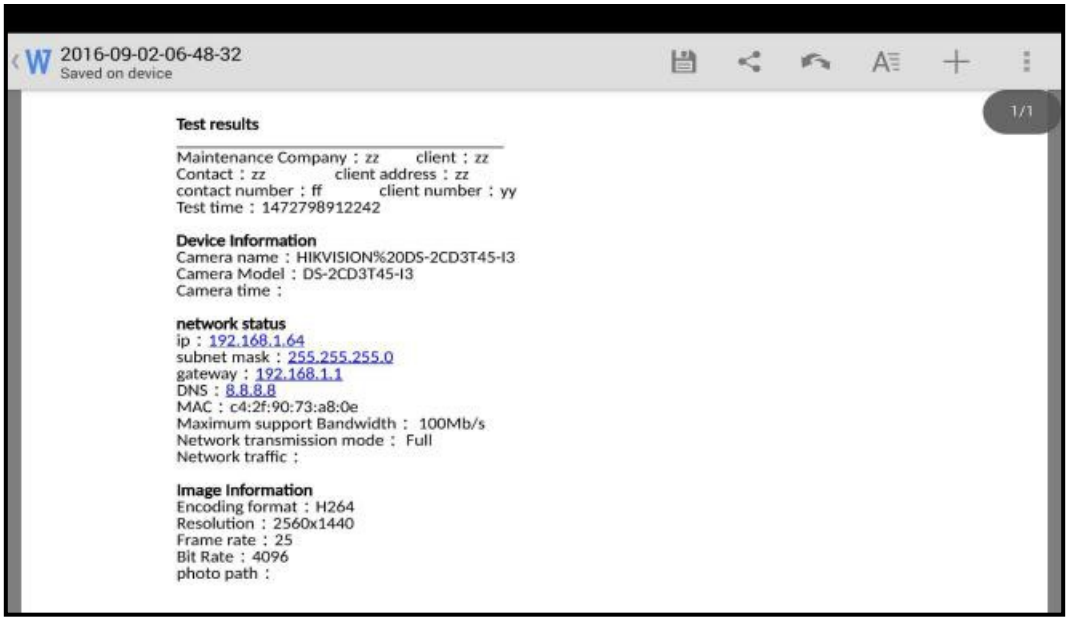


Figure 47, Report

- **Icon Descriptions**: A description of the function icons is available on the bottom toolbar.

2.3.8. IP Camera Testing

Display image from 4K H.265 cameras in mainstream mode.

Click  to enter the IP camera test module.

NOTE: Currently, the IP Camera Test Application supports only specific models manufactured by ACTI, AXIS, Dahua, Hikvision, Samsung, and certain other brands. Use the ONVIF or RTSP applications for unsupported cameras.

Figure 48, IP Camera Test Interface

- **Local IP**: This is the Tester's IP address. Click **Edit** to enter the **IP Settings** section and to change the Tester 's IP address settings.
- **IP Camera Type**: Click the **IP Camera Type** to select the manufacturer and model number of the supported IP camera.
- **Manual**: Click **IP Camera Type** and select from the list of available products. If the camera supports an official protocol, select the camera type, input the IP camera address, user name and

password, and click **Official** to enter the camera image display interface (only DAHUA official protocols are supported at this time).

Figure 49, Manual IP Camera Testing Interface

- **Stream Code**: When testing a camera via RTSP, select mainstream or substream (if RTSP is unsupported or has not been initialized, "Auto Match Fail" will be displayed, and the stream must be selected manually).

- **Camera IP Address**: Enter the camera's IP address manually or click **Search** to auto-scan for it. Connect the IP camera to the Tester so that search results display only the camera's IP address. If the Tester is connected to a PoE switch, several IP addresses will be displayed.

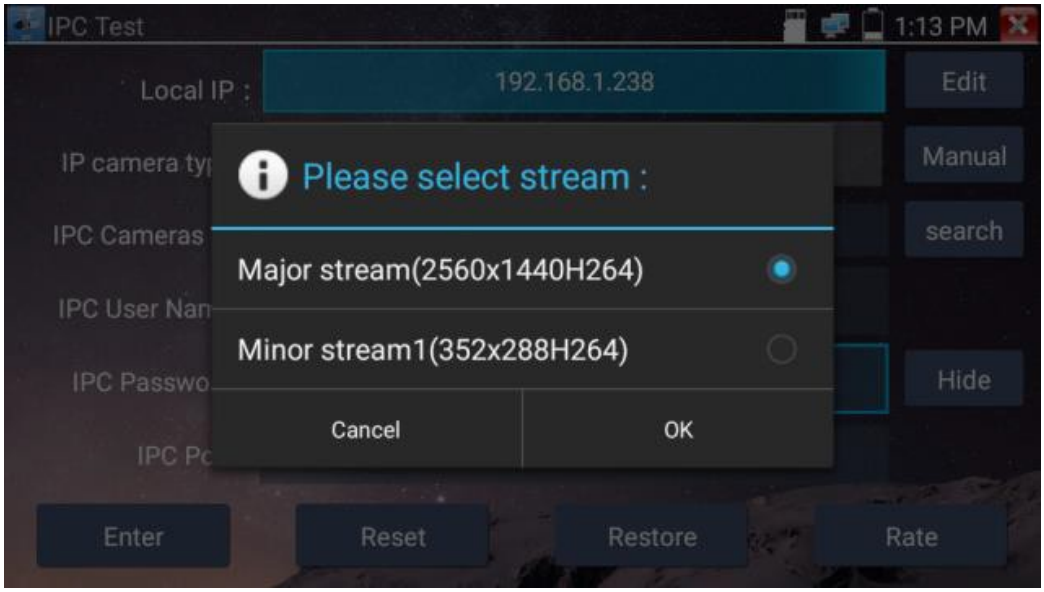


Figure 50, Stream Selection Screen

- **IPC User Name**: Enter the IP camera's user name.
- **IPC Password**: Enter the IP camera's login password.
- **IPC Port**: When the IP camera type is selected, the camera port number will be defaulted.

Click **Enter** to view the live video.

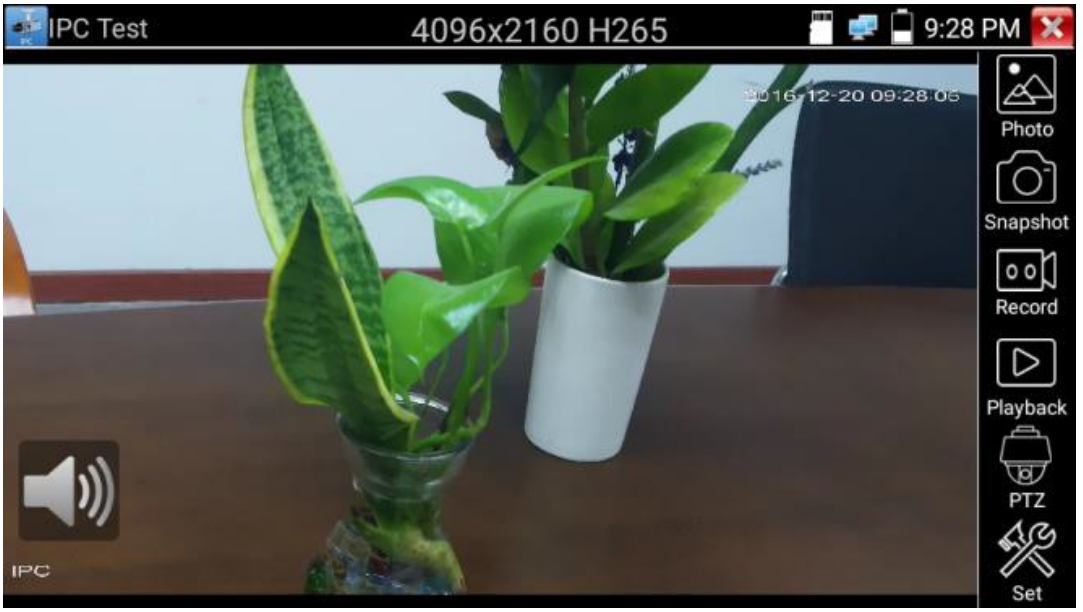


Figure 51, Live Video Screen

If the wrong IP address has been entered or the IP camera is not connected, the Tester will display "Network Error". Click to leave the image display and return to the IP camera test interface.

NOTE: When viewing video in the IP Camera Testing application, the "Video Menu" icon will be displayed in the top right-hand corner. This button provides access to the Snapshot, Record, Photo, Playback, PTZ, and Set functions. Return to the ONVIF section to use these functions.

2.3.9. HDMI IN (Optional)

Tap to enter the **HDMI In** section in the **HD Signal Test** section.

Once the Tester receives an HDMI In image, the top tool bar will show the image resolution. Select **Resolution** to set the resolution in the settings menu. Tap the screen twice display the full image.

The following resolutions are supported:

720 × 480p, 720 × 576p, 1280 × 720p, 1920 × 1080p, 1024 × 768p, 1280 × 1024p, 1280 × 900p, 1440 × 900p

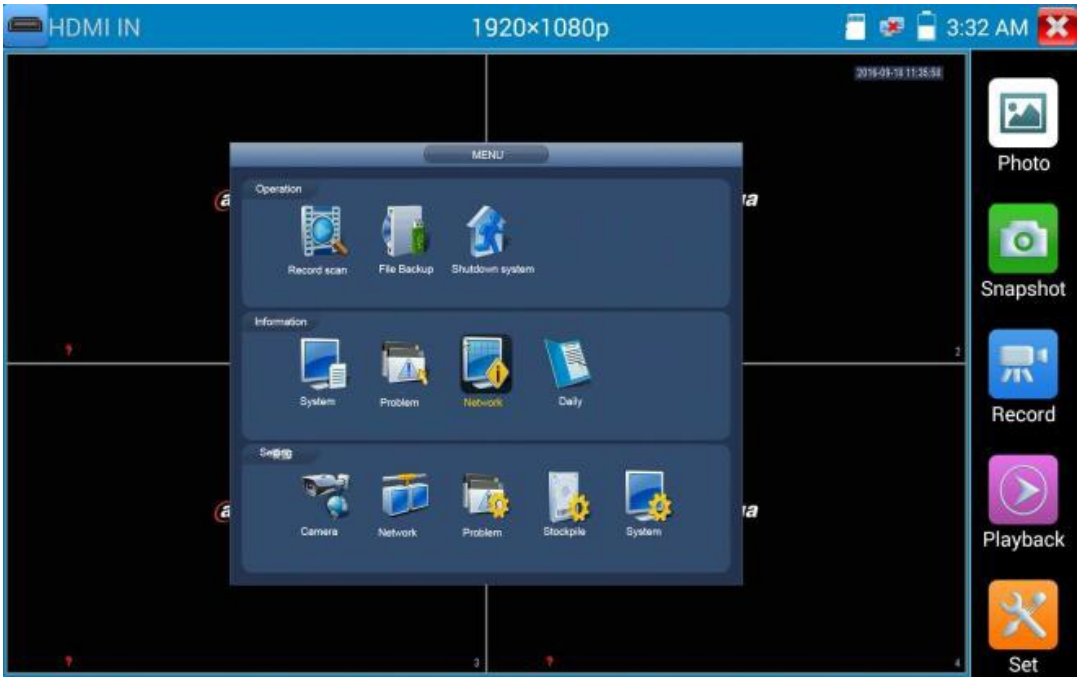


Figure 52, HDMI In Screen

- **Snapshot**

  Click **Snapshot** to take a picture and save the current video frame on the SD card as a JPEG file.

  If the unit is set to manual mode, an “Input Name” pop-up box will appear. The snapshot title can be entered here. If the unit is set up to automatically set file names, this box will not be shown.

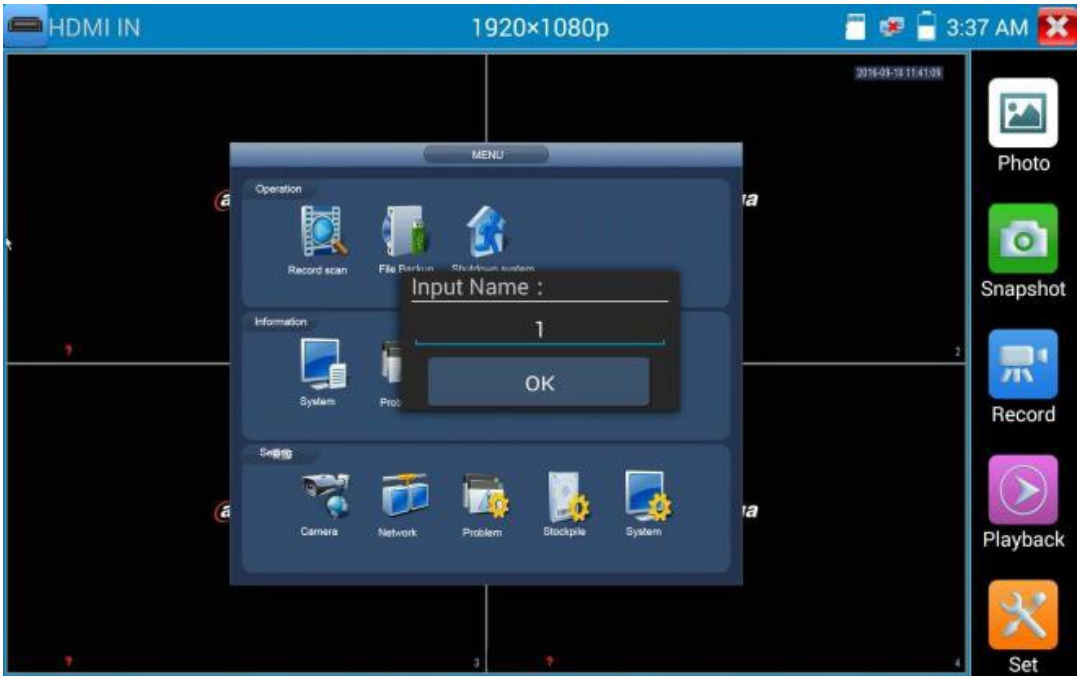


Figure 53, File Name Input Screen

- **Video Recording**

  Click **Record** to start recording video. A red recording icon will appear on the screen and begin to flash. A timer will also appear indicating the time elapsed for the video.

  Click **Record** again to stop recording and save the video file to the SD card.

  If manual storage is selected, before recording begins, an "Input Name" dialogue box will appear. In the "Input Name" dialogue box, choose a file name (letters or numbers are acceptable) to save the recording to the SD card.

  If **Auto Storage** has been selected, the Tester will store the file on the SD automatically after recording.

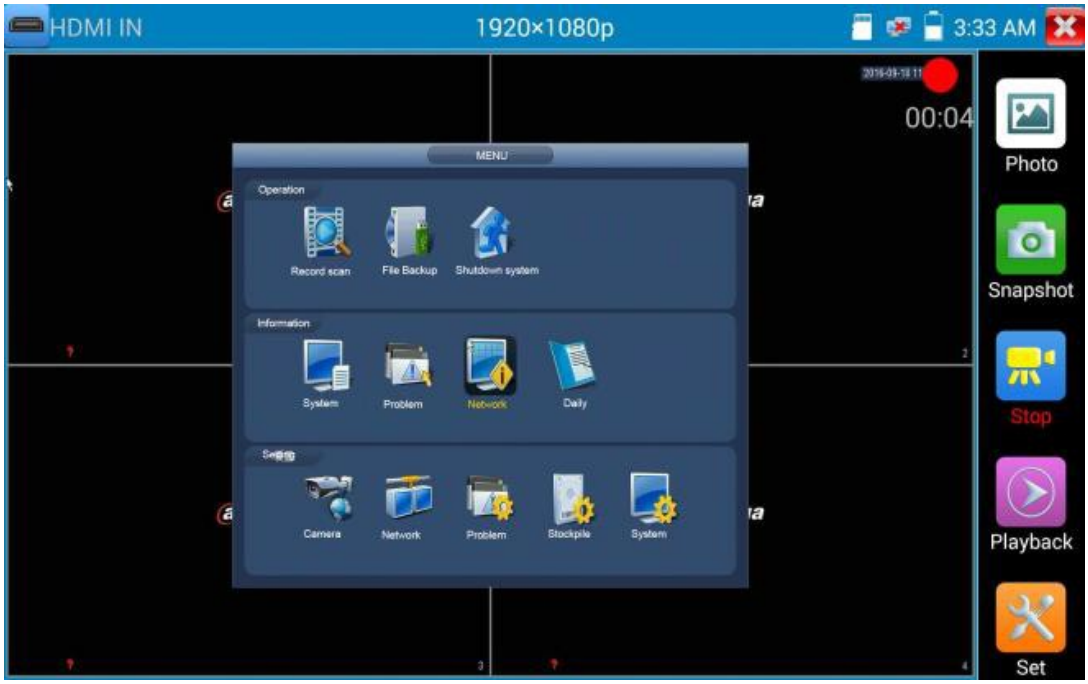


Figure 54, HDMI In Screen

- **Photo**

  Click **Photo** to select this option. Click the selected thumbnail photo to display it on the screen.

  Double-click the image to view it in full-screen mode.

  Double-click the image once again to return.

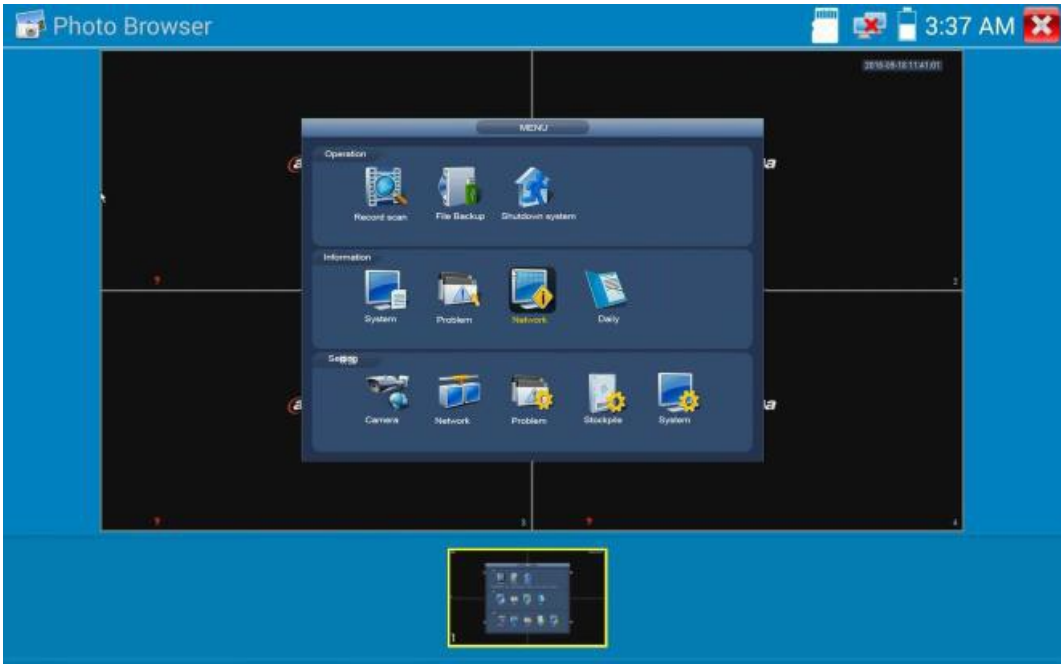


Figure 55, Photo Thumbnail

To rename or delete an image, click and hold the file until the following screen appears.

Figure 56, Photo Thumbnail Rename or Delete

Click  to close and return to PTZ controller.

- **Recorded Video Playback**

  Click the **Playback** icon to view your recorded videos. Tap on the video file image you want to watch.

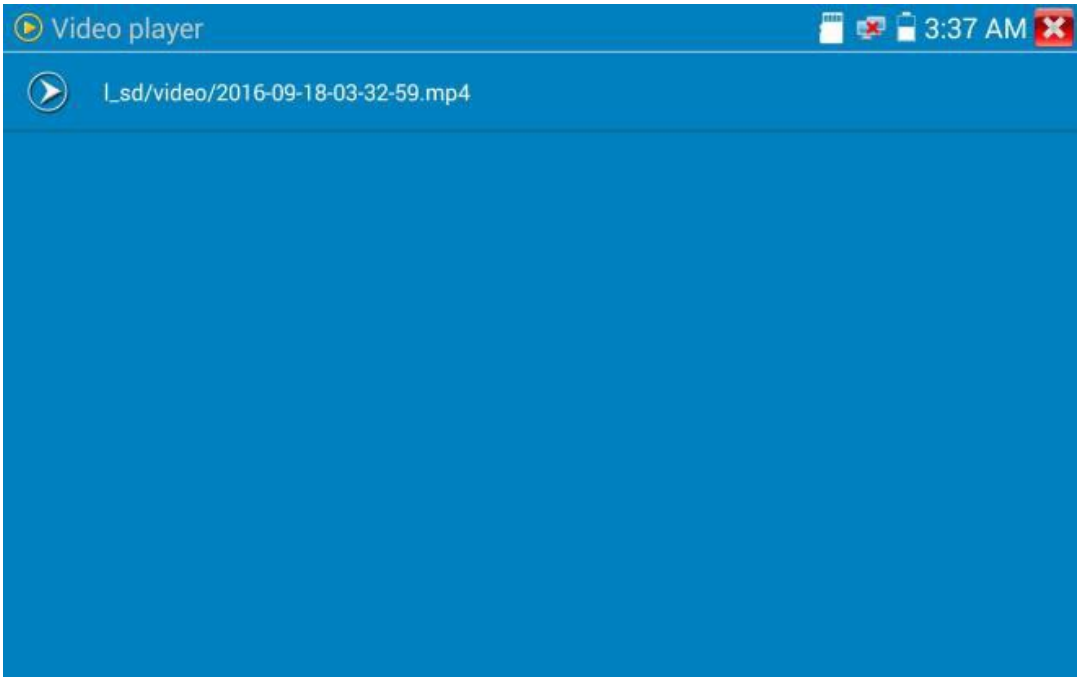


Figure 57, Recorded Video Playback Screen

To rename or delete a video, click and hold the file until the following screen appears.

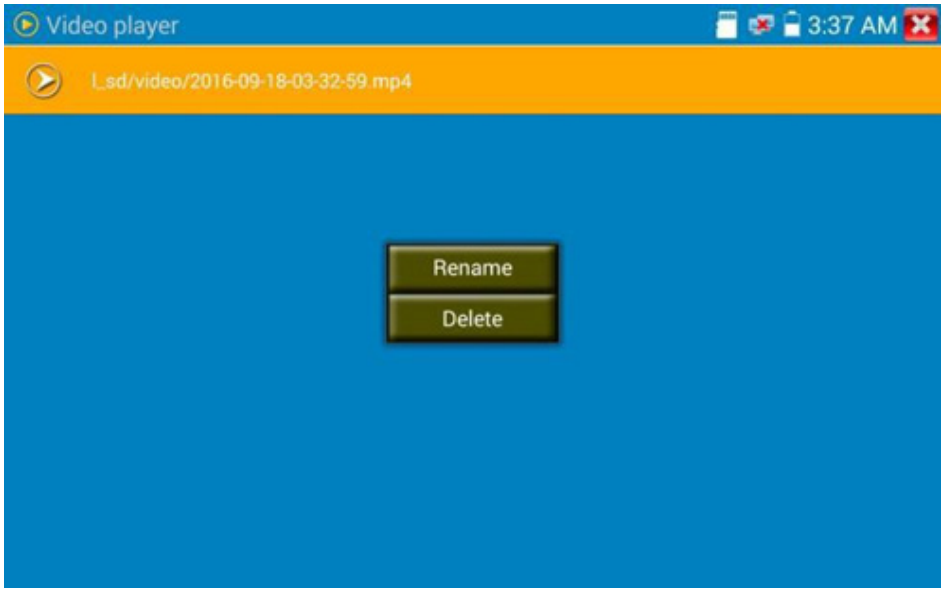


Figure 58, Rename or Delete Recorded Videos

Video files also can be played in the main **Video Player** menu.

2.3.10. Video Monitor Test

Click  to perform analog camera testing and PTZ control.

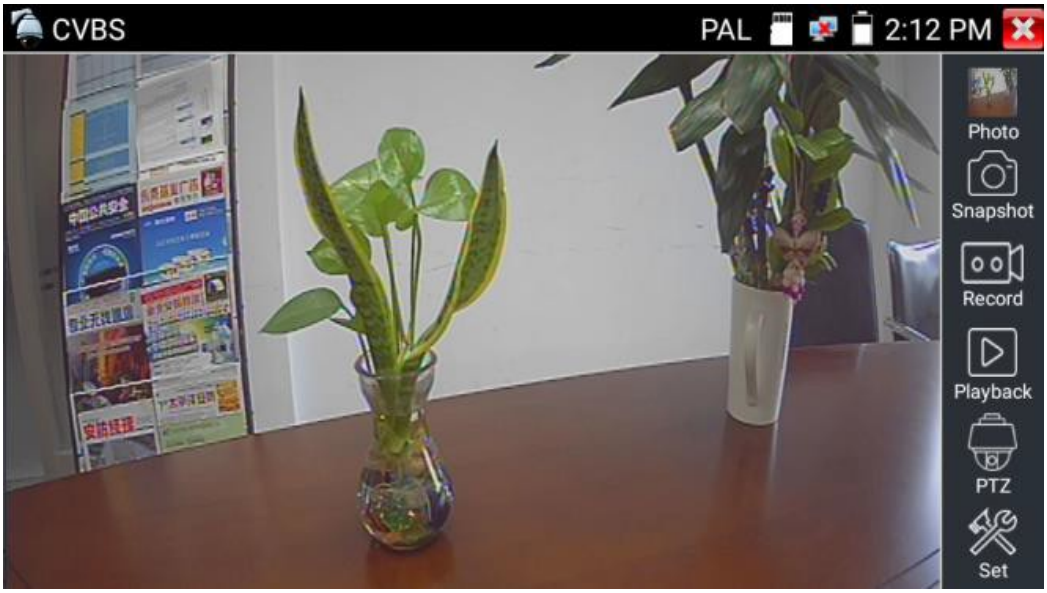


Figure 59, Video Monitor Test Screen

To show the input video image, click  in the top menu bar to enter the video level meter. Available options include Peak Level,

Sync Level and Color Burst measurement).

Select relative function on the right side of the toolbar for the following functions: **Photos**, **Snapshot**, **Record**, **Playback**, **PTZ** and **Set**.

Click  or press 

to quit.

Click the screen twice quickly to zoom in on the touch screen.

- **PTZ Controller Parameter Settings**

  Select and click the **PTZ** icon to enter PTZ settings.

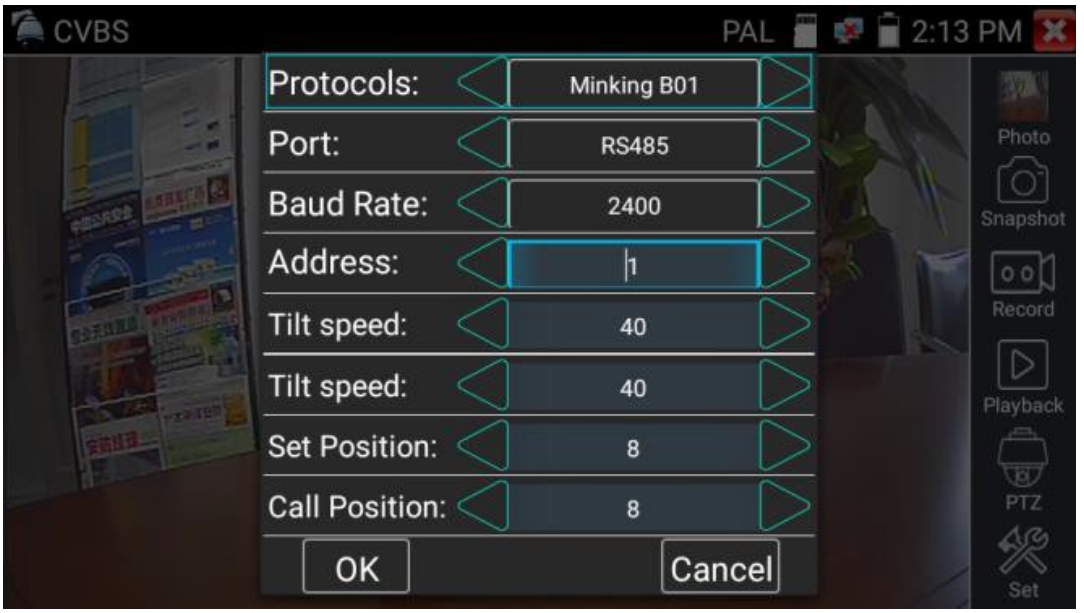


Figure 58, PTZ Controller Parameter Settings

- **Protocol:** Use the up and down arrow keys to move the yellow cursor to **Protocol**. Set the corresponding protocol (over 30 PTZ protocols are supported, such as Pelco-D, Samsung, Yaan, LiLin, CSR600, Panasonic, Sony-EVI, and more).

- **Port**: Click and move to set **Port** settings. Select the communication port for the PTZ camera (RS-485).

- **Baud**: Move the yellow cursor to “Baud”. Select the baud rate for the PTZ camera, as follows: 150/300/600/1200/2400/4800/9600/19200/57600/115200.
- **Address**: Set the ID according the PTZ camera ID (0 to 254). The setting address data must be consistent with the speed dome address.
- **Pan Speed**: Set the PTZ camera pan speed (0 to 63).
- **Tilt Speed**: Set the PTZ camera tilt speed (0 to 63).
- **Set Preset Position (Set PS)**: Click and select **Set PS**. Set and save the preset position number (1 to 128).
- **Call Preset Position (Go PS)**: Click and select **Set PS**. Set and save the preset position number (1 to 128). Click **Sure** to save.

NOTE: Check and set the protocols, address, interface and baud rate. All values must be consistent with those of the dome camera. After parameters are set, the Tester is able to control the PTZ and the lens.

To control the PTZ via the touch screen, tap left, right, upward and downward to control the PTZ rotation direction. The PTZ image can be zoomed in our out by moving two fingers outward or inward.

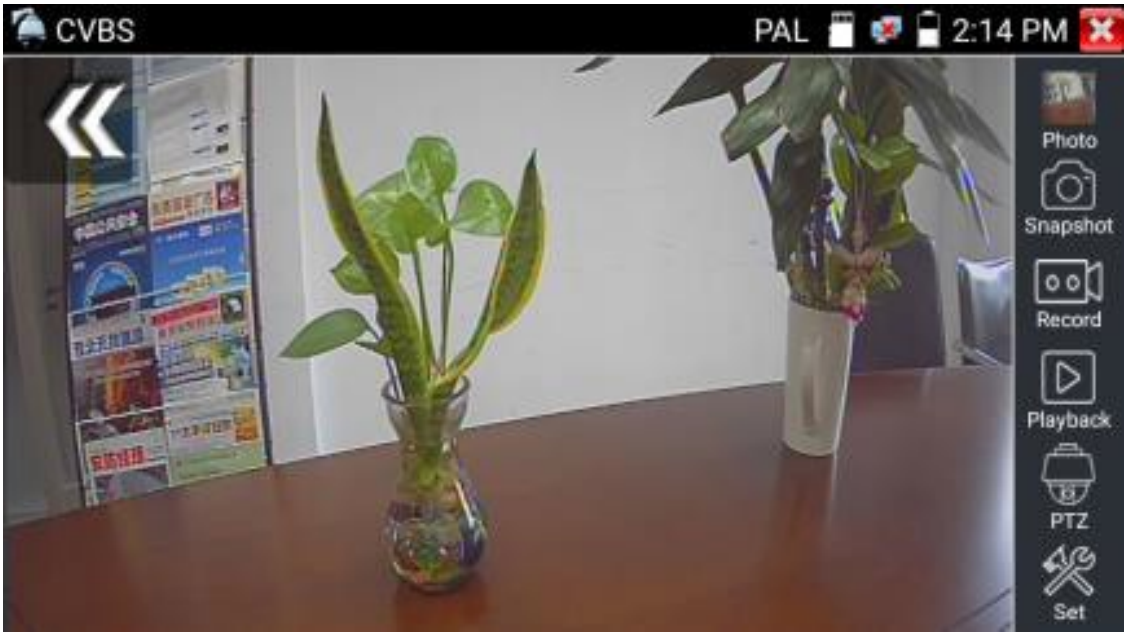


Figure 59, PTZ Control (Left Movement)

PTZ Control

- Press  to control PTZ rotation direction.
- Press OPEN or CLOSE to turn open or close the aperture.
- Press FAR + or NEAR - to adjust the focus manually.
- Press TELE + or WIDE - to adjust the zoom manually.

- **Video and Storage Settings**

  Click **Set** to enter and set analog video image brightness, contrast, color saturation, and the file storage pathway for snapshots and recordings. Auto-storage and manual storage are supported.

  When selecting manual storage, the user can name and store the files.

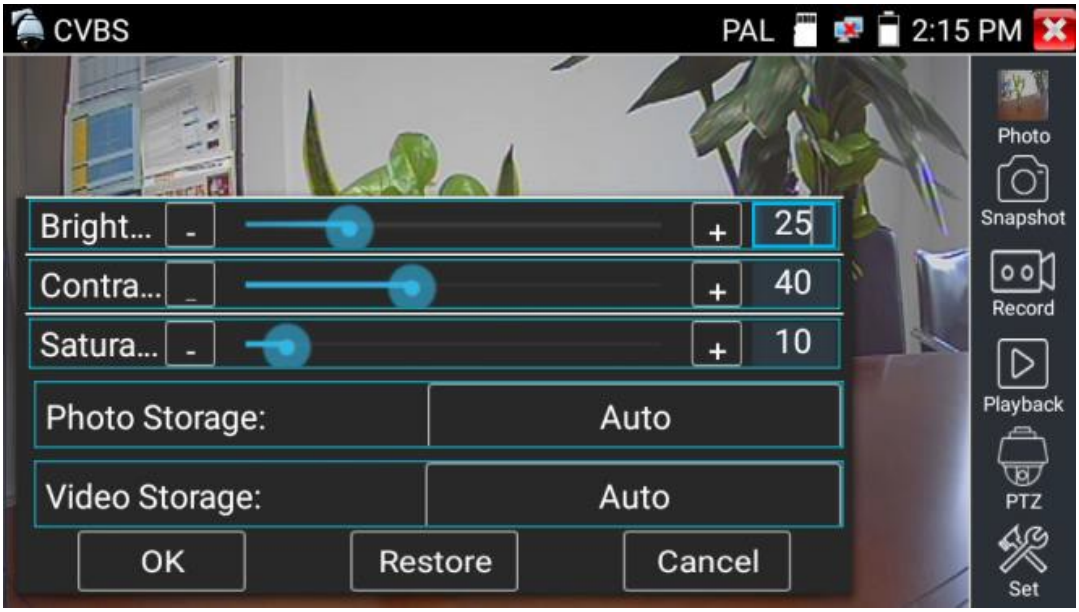


Figure 60, Video and Photo Storage Settings

- **4x Zoom Image Display and Video Output**

  Press  to begin **Zoom** and press it again to leave it.

  Using the touch screen, control PTZ camera movements as follows:

  Tap left, right, upward or downward on the video image to move the PTZ camera in a desired direction.

  Stretch two fingers outward or inward on the touch screen to zoom the image in or out.

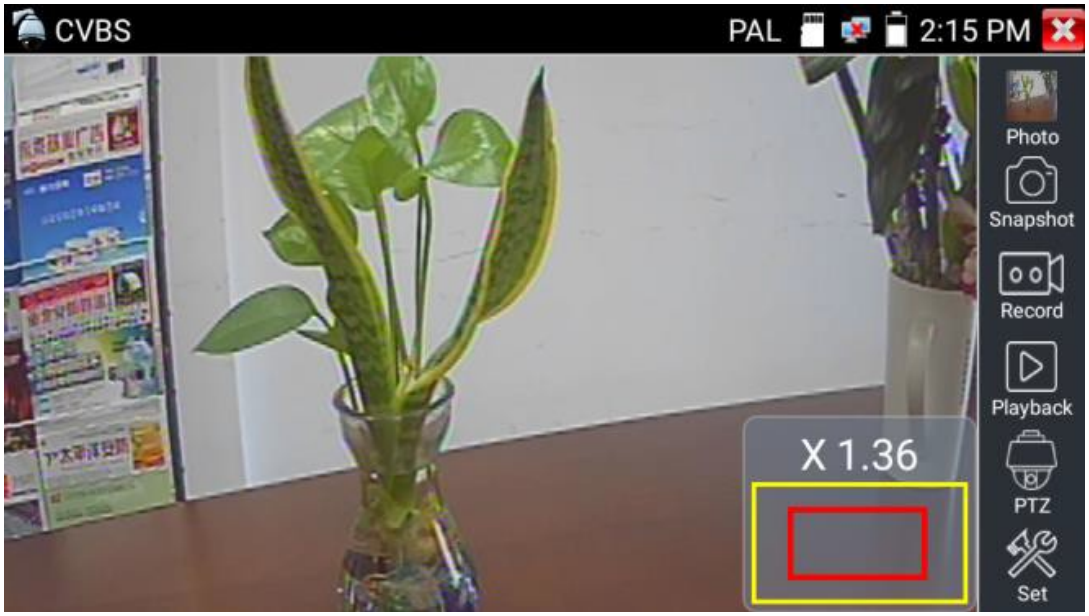


Figure 61, PTZ Camera Movements

Press TELE + to zoom out and WIDE - to zoom in.

Press the upward and downward keys to move the image.

NOTE: Given that the resolution is 720 x 480 for zoomed in analog output, the images are not always clear.

Zoomed in IP images have a resolution of 960 x 540 and are therefore very clear. This facilitates IP camera installation.

- **Snapshot**

Click **Snapshot** to take a picture and save the current video frame on the SD card as a JPEG file.

If the unit is set to manual mode, the **Input Name** box will appear and a title can be entered for the snapshot.

This box will not appear for units that automatically set file names.

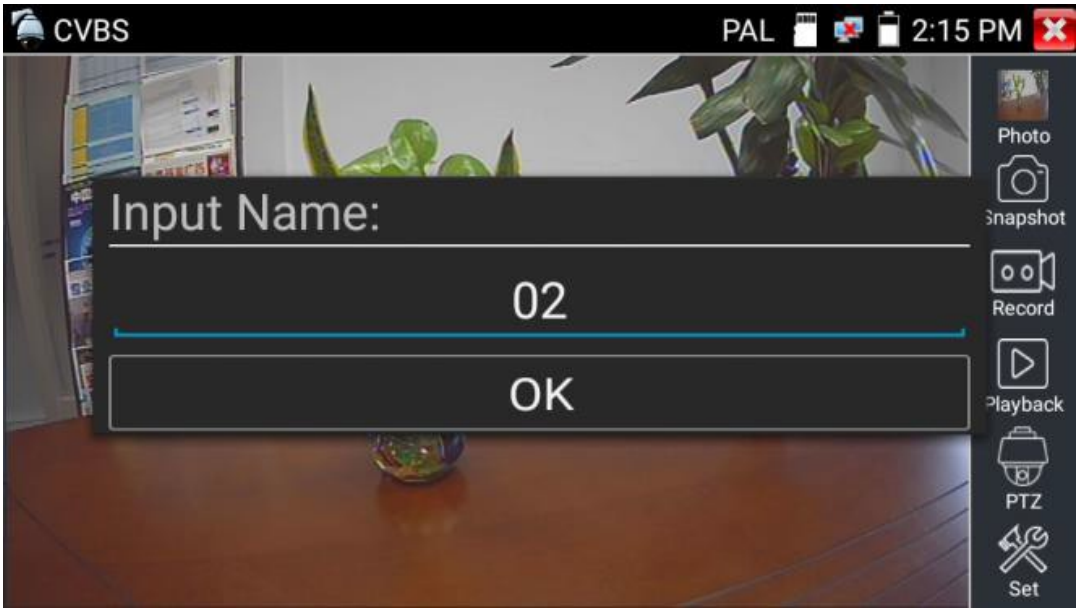


Figure 62, Snapshot Input Name Box

- **Video Recording**

  Click **Record** to start recording the video. A red recording icon will appear on the screen and begin to flash. A timer will appear indicating the time elapsed for the video.

  Click **Record** again to stop recording and save the video file to the SD card.

  If manual storage is selected, the **Input Name** dialogue box will appear. File names can be defined by the user (English characters and numbers are accepted) and stored to the SD card.

  If **Auto-Storage** is selected, the Tester will automatically store the files on the SD card after recording is completed.

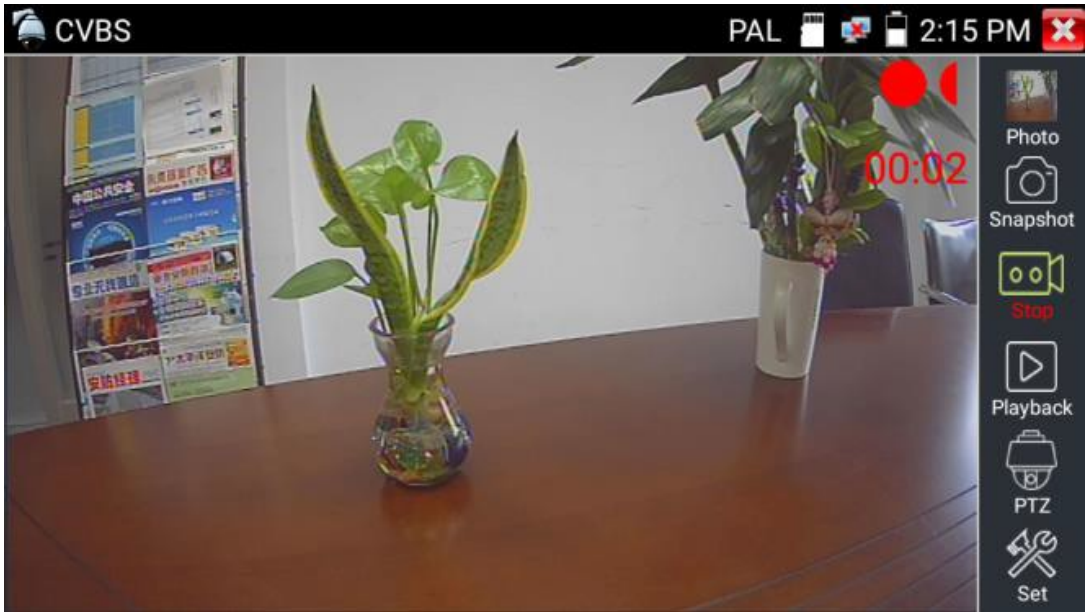


Figure 63, Video Screen

- **Photo**

  Click **Photo** to enter and select the thumbnail photo to display it on the screen.

  Double-tap the desired image to view in full screen.

  Double-click the photo again to return to previous menu.

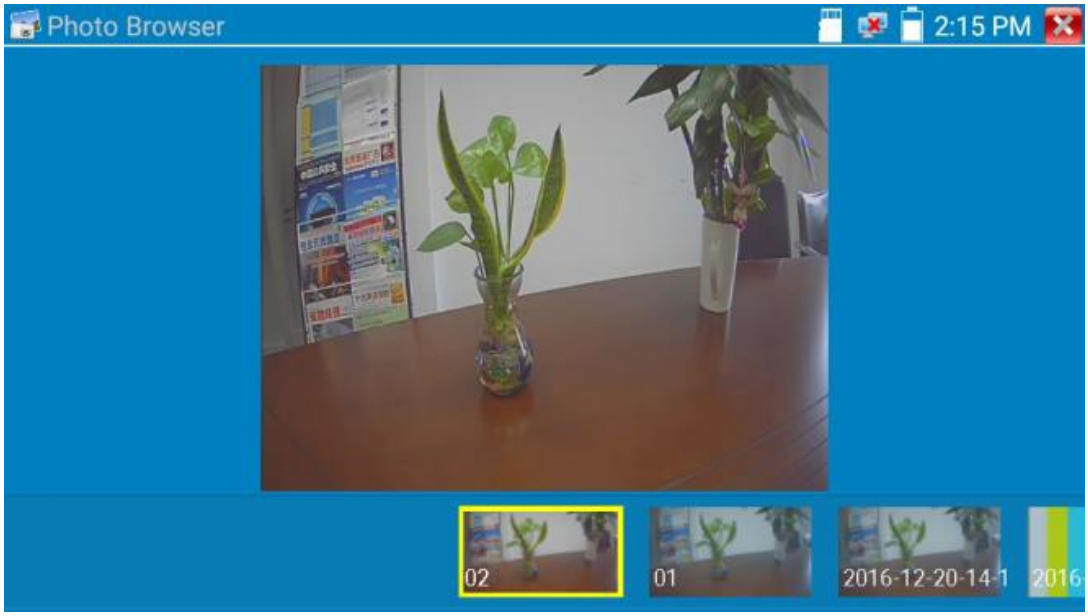


Figure 64, Snapshot Selection Screen

To rename or delete an image, click and hold the file until the screen below appears.

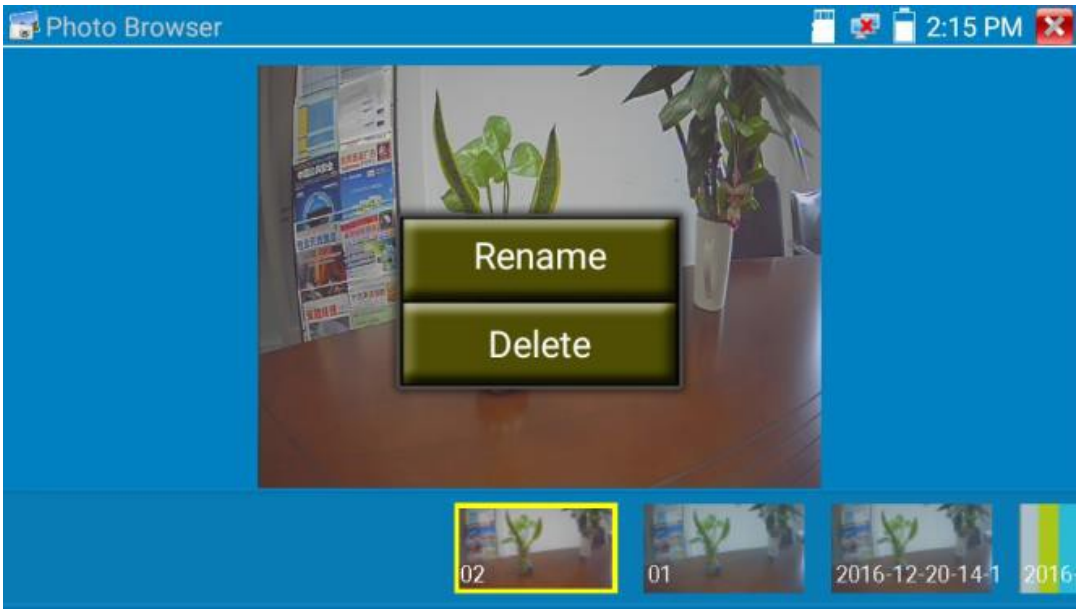


Figure 65, Delete or Rename Snapshot Screen

- **Recorded Video Playback**

  Click the **Playback** icon to view recorded videos. Tap on the desired video file image to watch it.

To rename or delete a video, click and hold the file until the following screen appears.

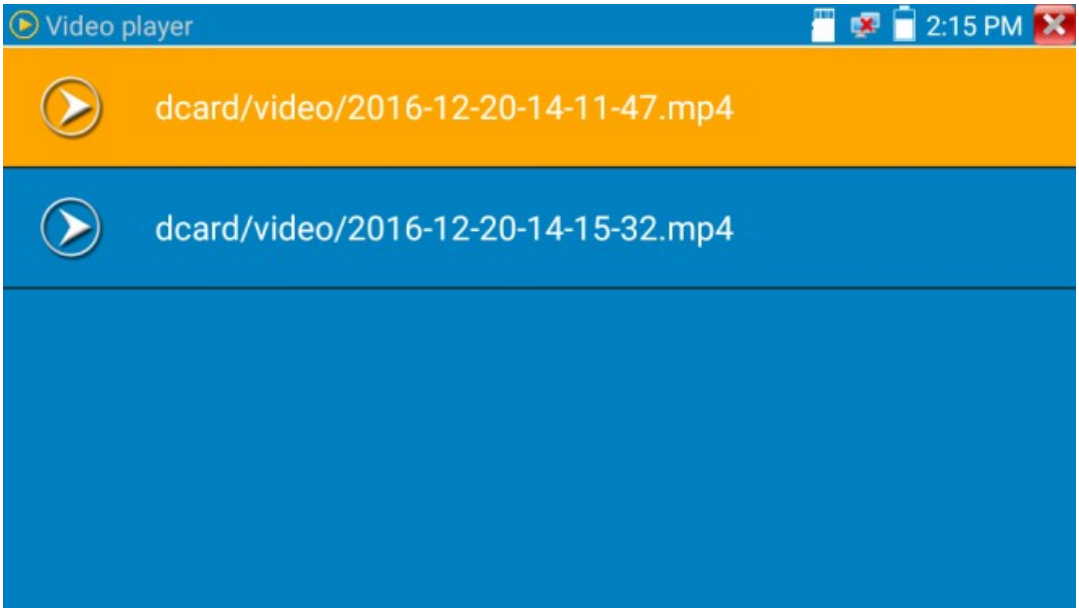


Figure 66, Recorded Video Playback Screen

Video files also can be played in the main **Video Player** menu.

- **Video Level Meter**

Click  to begin.

The IP Camera Tester is equipped with high-speed sampling and processing technology, and can perform both NTSC and PAL video Peak-to-Peak Amplitude, Sync level and Color Burst/Chroma level measurements.

When an analog signal is fed into the meter, the Tester displays the measurements on the bottom left-hand corner of the screen.

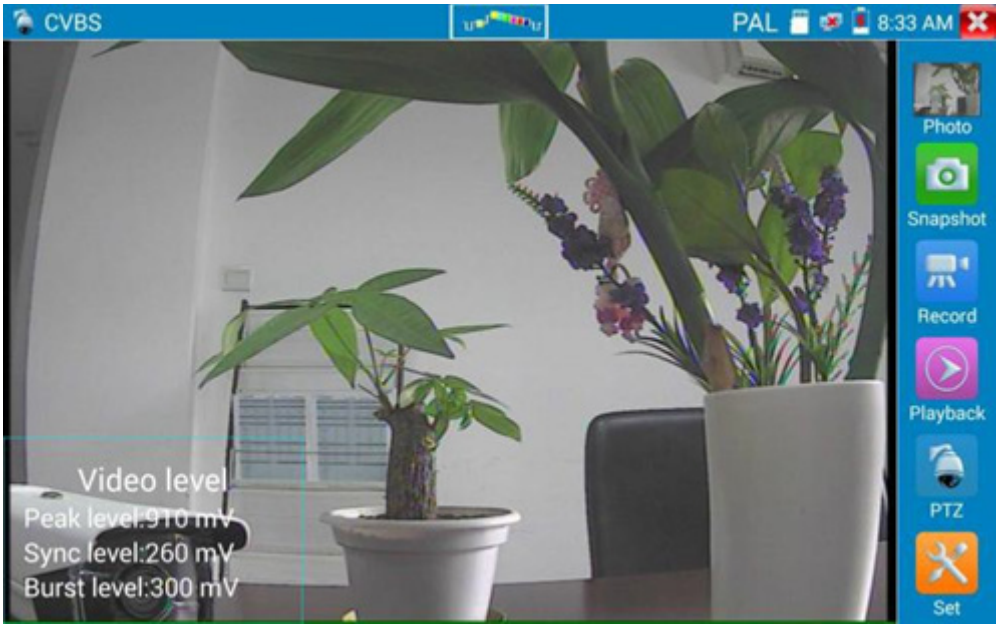


Figure 67, Video Level Meter Screen

While in PAL format, the unit will operate in mV units, and in IRE while in NTSC format.

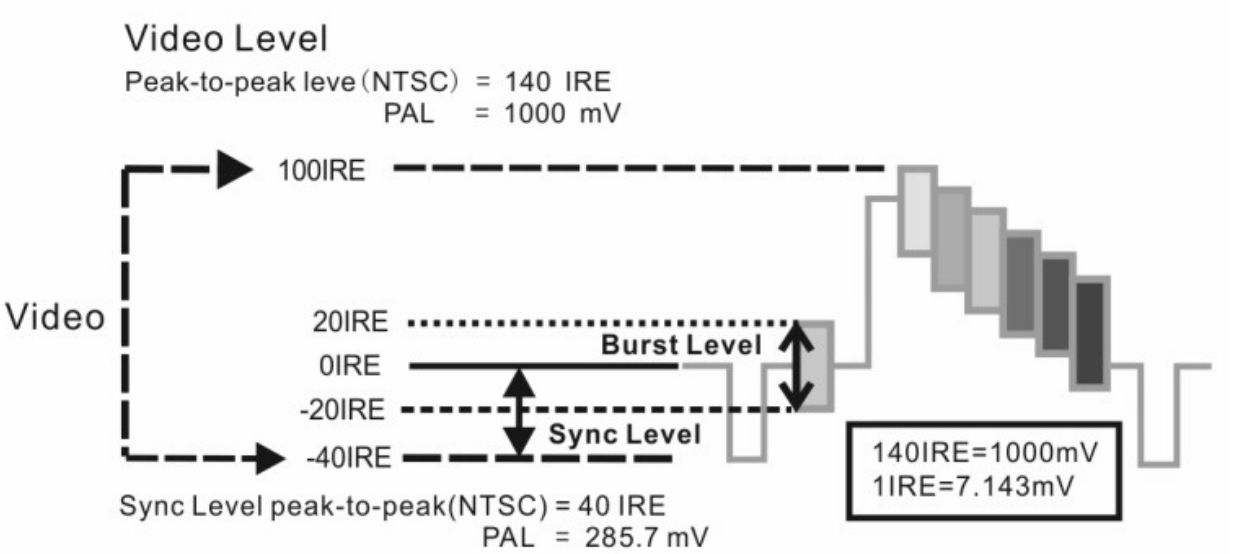


Figure 68, Video Level Measurement

Table 2, Video Signal Peak to Peak Values

NTSC	Video signal level	140 ± 15 IRE
	Chroma level (color burst)	40 ± 5 IRE
	SYNC signal level	40 ± 5 IRE
PAL	Video signal level	1000 ± 200 mV
	Chroma level (color burst)	300 ± 35 mV
	SYNC signal level	300 ± 35 mV

- **Video Signal Peak-to-Peak Levels:**

  For NTSC, the video signal level is 140 ± 15 IRE.

  For PAL, the video signal level is 1000 ± 200 mV.

  If the level is too low, it will cause the image to lose quality and limit the distance traveled over cable. If the level is too high, the image will be distorted.

- **SYNC Level**:

  Tests the amplitude of the video sync pulse to verify if the video level is correct.

  For NTSC, the Sync level is 40 ± 5 IRE.

  For PAL format, the Sync level is 300 ± 35 mV.

  If the level is too low, the image will not frame out properly. If the level is too high, image quality will be poor.

- **Color Burst Level**:

  Testing the color burst level will determine if the burst signal is sufficient enough to trigger the display's color-producing circuit.

Burst will diminish in amplitude over longer cable runs and can fall below the threshold required for the video display to show a color image.

For NTSC, the standard chroma level is 40 IRE.

For PAL, the standard chroma level is 280 mV.

If the chroma level is too low, the color will not be as deep, and some details of the image will become lighter. If the chroma level is too high, there will be distortions in the image. If the coaxial cable is too long, the chroma level will be diminished.

- **Image Loop Test**:

  Test the video's optical transmitter, receiver and video cable.

  Connect one end to the Tester's **Video Out** port, and the other end to the **Video In** port. The signal will be sent via the **Video Out** port, and received via the **Video In** port. If testing is successful, the Tester will display several gradually dwindling images on the desktop.

2.3.11. Color Bar Generator (TV OUT)

Click  to proceed.

The Tester will send color bars from the **Video Out** port.

Click the **PAL** icon and select **PAL/NTSC** output formats.

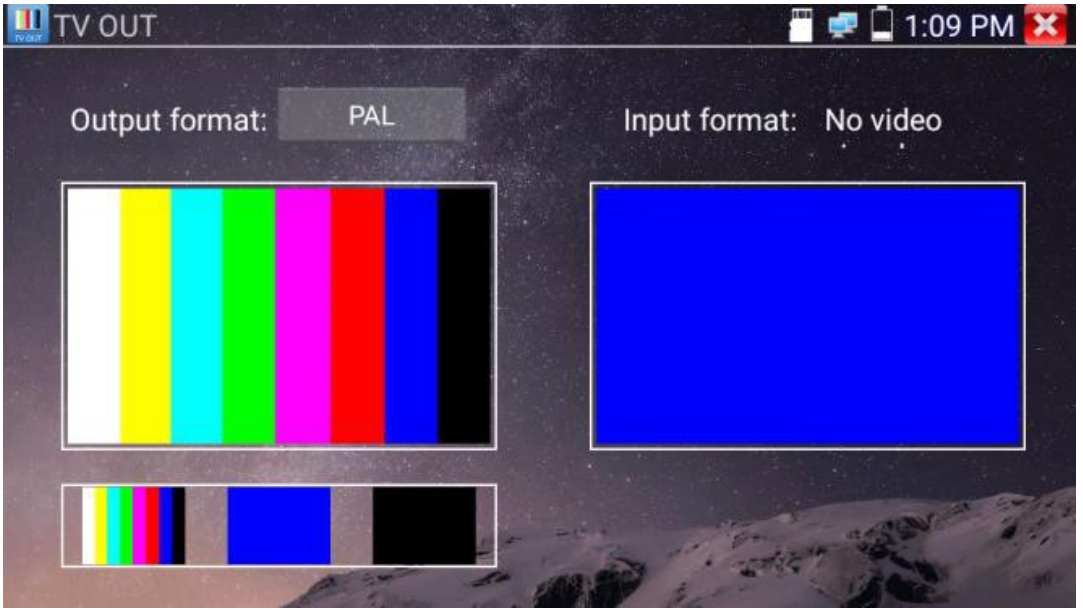


Figure 69, TV OUT Screen – No Video

Click the selected color-bars, the testing image or the single bar (red, green, blue, white or black). Double click to display on the screen in full, and click to return main menu.

- **BNC Loop Test**:

  The Tester can send and receive color bars through the Tester's **Video Out** and **Video In** ports, which can be used for testing transmission channels. The Tester's **Video Out** port can connect to the optical terminal's output port, and the **Video In** port can connect to the optical terminal's receiving port.

  A. When maintaining the dome camera, the Tester sends out the color bar via its BNC output to the monitor at the monitoring center. If the monitor receives the color bar, the video transmission channel works normally. Based on this, the monitoring center can evaluate whether a transmission is experiencing loss or interference.

  B. The Tester sends out a pure color bar (white and black) to test for bright or black dots.

C. The Tester sends out a video signal image to test the image received by the monitor.

2.3.12. SDI Camera Test (Optional)

Click  to perform SDI camera testing, dome camera testing or PTZ control.

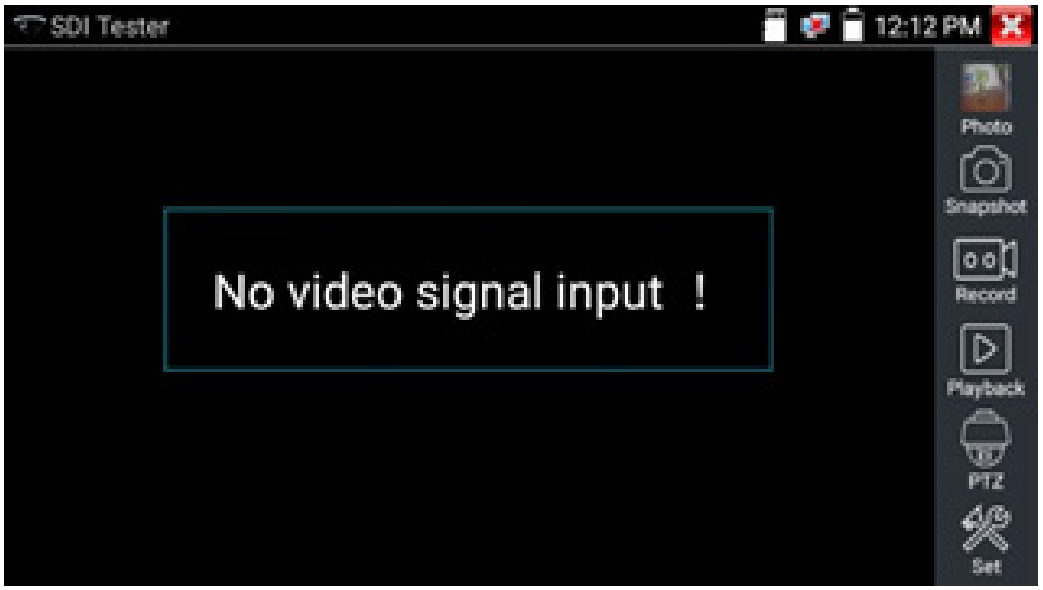


Figure 70, SDI Tester Screen

Double-tap on the screen to display the image in full-screen mode.

The Tester supports the following resolutions:

1280 x 720p: 25 Hz, 1280 x 720p: 30 Hz, 1280 x 720p: 50 Hz, 1280 x 720p: 60 Hz, 1920 x 1080p: 25 Hz, 1920 x 1080p: 30 Hz, 1920 x 1080l: 50 Hz, 1920 x 1080l: 60 Hz, 2560 x 1440p: 25 and 30 fps, 3840 x 2160p: 20 and 30 fps

Figure 71, SDI Tester - Resolution

The IP Camera Tester's HDMI output port can be used as an SDI-to-HDMI converter, i.e. to output HD SDI images to an HD TV monitor.

Select relative function on the right side of the toolbar for the following options: **Snapshot**, **Record**, **Photos**, **Video Playback**, **PTZ Control**, **Video Brightness** and **Storage Set**.

The operation is the same as for the video monitor function. Please refer to the Section 2.3.10: Video Monitor Test for more details.

Click or press MENU to quit.

2.3.13. CVI Camera Test (Optional)

The Tester will display the HD CVI signal input image resolution on the top bar.

Double-tap the screen to display the image in full-screen.

The Tester supports the following resolutions:

1280 x 720p: 25 fps, 1280 x 720p: 30 fps, 1280 x 720p: 50 fps, 1280 x 720p: 60 fps, 1920 x 1080p: 25 fps, 1920 x 1080: 30 fps, 2560 x 1440p: 25 fps, 2560 x 1440p: 30 fps, 3840 x 2160: 12.5 or 15 fps

Figure 72, CVI Tester – Resolution

- **PTZ Control**:

  Click **PTZ** on the right side of the toolbar to change the settings.

  Select **Port** in the **Coaxial Control** field.

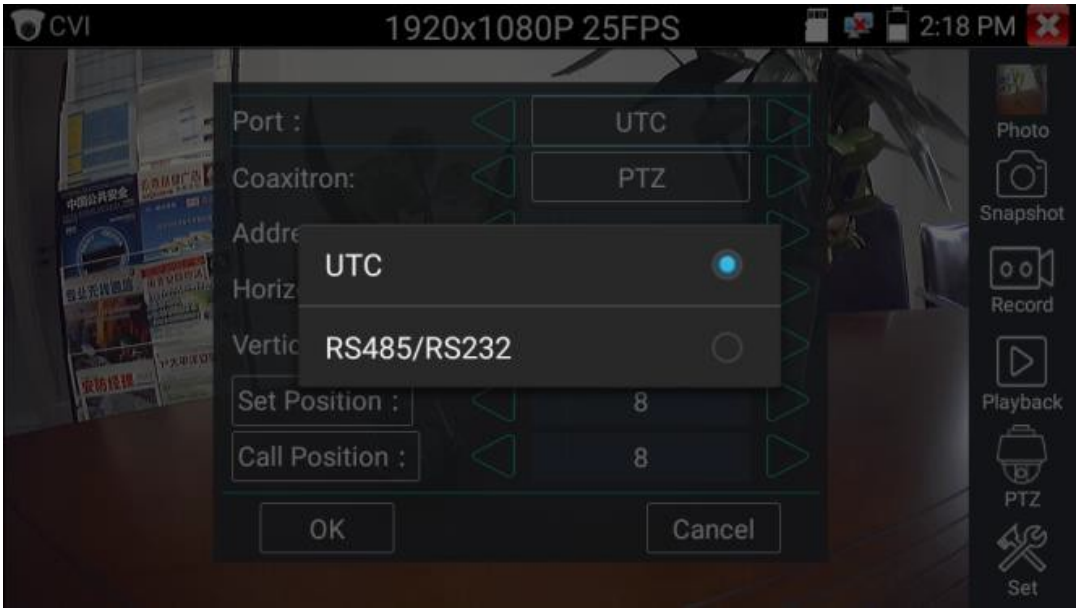


Figure 73, Coaxial Control Selection Box

Enter the PTZ address to set the parameters.

Figure 74, CVI Settings Screen

To control the PTZ using the touch screen:

Tap left, right, upward and downward on the touch screen to control the PTZ rotation direction.

Move two fingers outward and inward on the touch screen to zoom the PTZ in and out.

To control the PTZ using key buttons, proceed as follows:

- Press  to control PTZ direction.
- Press OPEN or CLOSE to open or close the aperture.
- Press FAR + or NEAR - to adjust the focus manually.
- Press TELE + or WIDE - to adjust zoom manually.

- **Set Preset Position**:

  Move the PTZ camera to the preset position.

  Tap the preset position and input the preset position number.

  Tap **Set Position** to set the preset position.

- **Call Preset Position:**

Figure 75, CVI Preset Settings Screen

Tap the preset position area and input preset position number. Tap **Call Position** to call the preset position.

Figure 76, CVI Preset Settings Screen

- **RS-485 Control**:

Figure 77, RS-485 Control Screen

For operation instructions, please refer to the PTZ Control Settings found in Section 2.3.10: Video Monitor Test.

For Coaxial Camera Menu Settings, tap **UTC** and select **Menu Setting** to enter the dome camera menu.

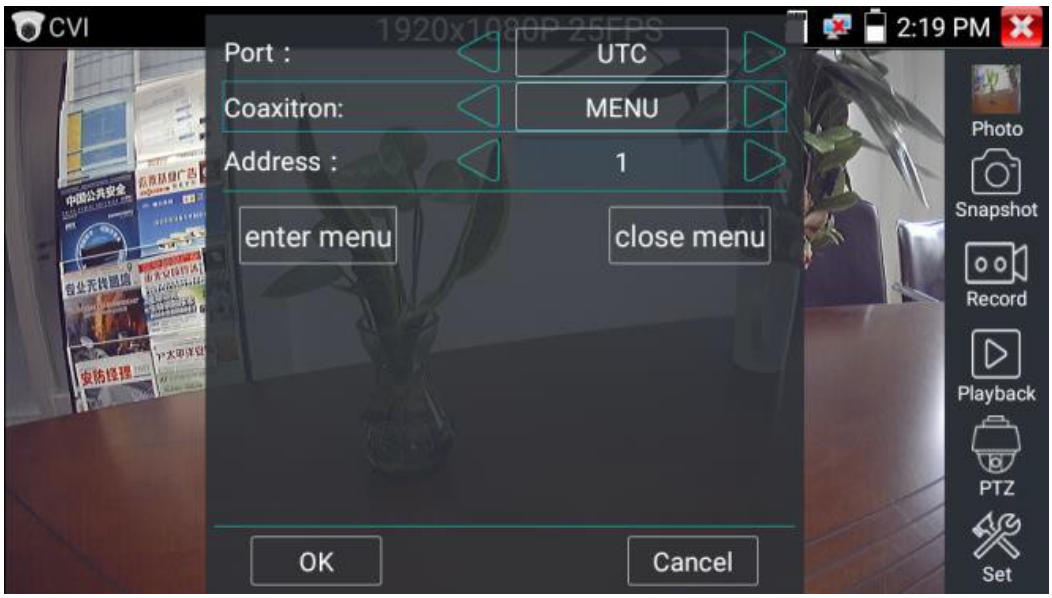


Figure 78, Coaxial Camera Menu Settings

Input the dome camera menu address code. After the parameter settings have been entered, press ENTER or click to call the dome camera menu.

Figure 79, Dome Control Menu

Press the  arrow keys to set direction.

Figure 80, CVI Output Image

For **Snapshot**, **Record**, **Photo Viewer** and **Video Playback**, refer to the Section 2.3.10: Video Monitor Test.

Tap **Close Menu** or press CLOSE to close the camera menu.

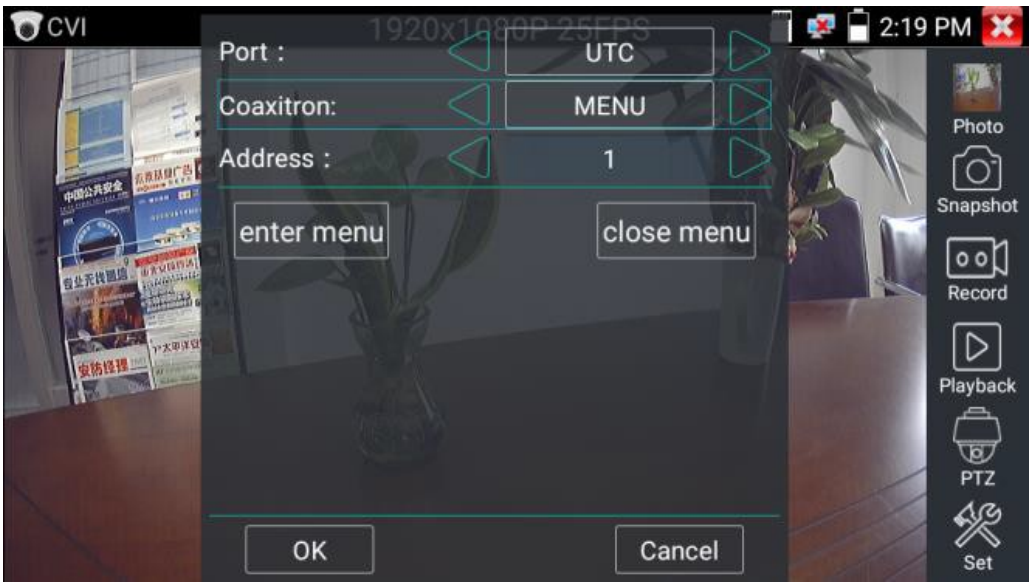


Figure 81, Coaxial Camera Menu Settings

To save settings, click **Set** on the right side of the toolbar to enter storage settings. Auto-storage and manual storage is supported.

When selecting manual storage, the user can name and store files.

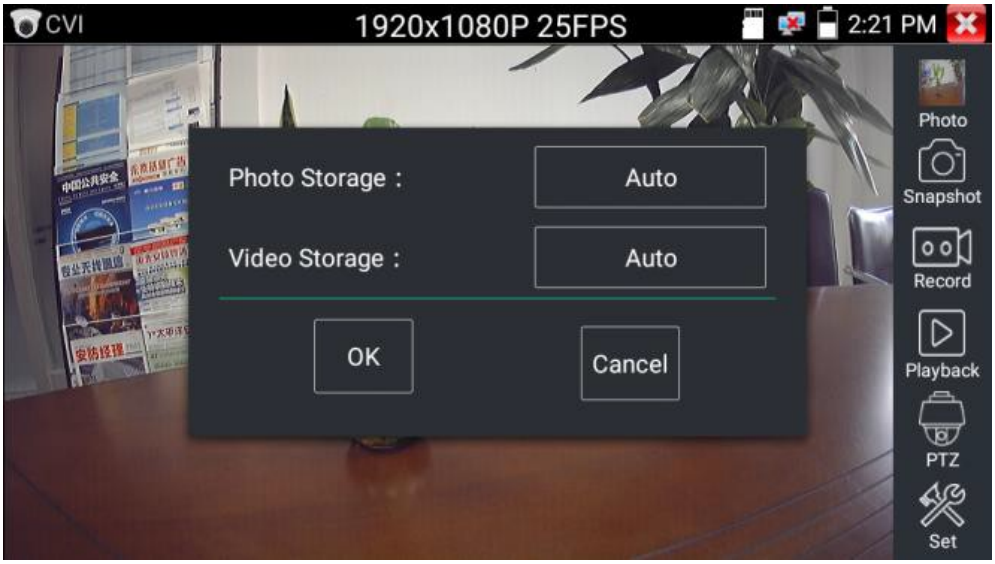


Figure 82, Photo and Video Storage Settings

2.3.14. TVI Camera Testing (Optional)

For HD TVI camera testing, TVI dome camera testing and PTZ control, click to proceed.

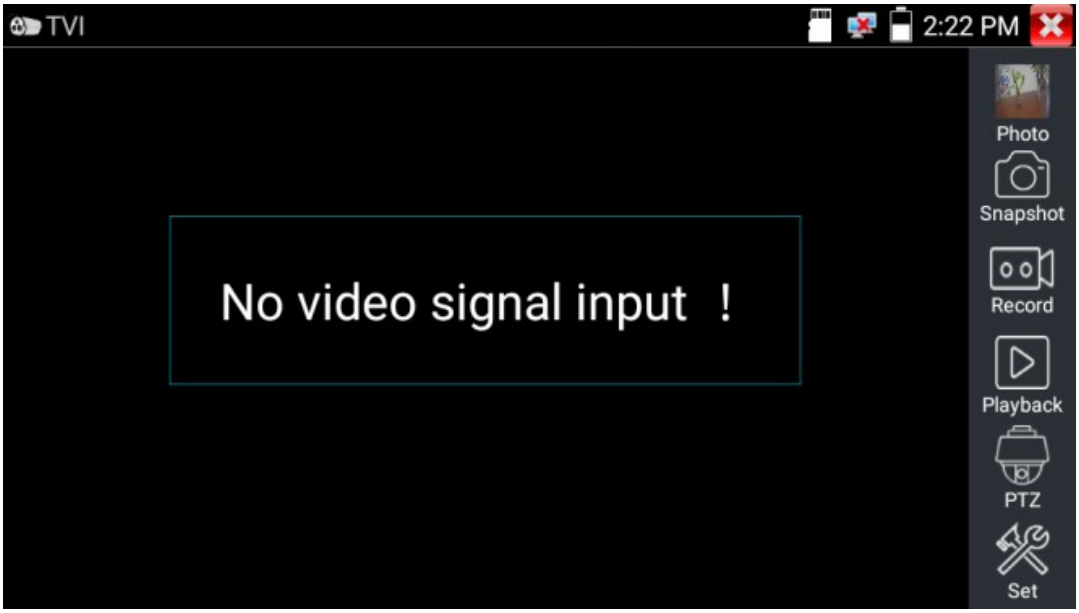


Figure 83, TVI Testing Screen

For HD TVI signal input, the Tester will display the image resolution on the top bar. Double-tap on the screen to display the image in full-screen mode.

The Tester supports the following resolutions:

1280 x 720p: 25 fps, 1280 x 720p: 30 fps, 1280 x 720p: 50 fps, 1280 x 720p: 60 fps, 1920 x 1080p: 25 fps, 1920 x 1080p: 30 fps, 1920 x 1080p: 50 fps, 1920 x 1080p: 60 fps, 2048 x 1536p: 18 fps, 2048 x 1536p: 25 fps, 2048 x 1536p: 30 fps, 2560 x 1440p: 15 fps, 2560 x 1440p: 25 fps, 2560 x 1440p: 30 fps, 2688 x 1520p: 15 fps, 2592 x 1944p: 12.5 fps, 2592 x 1944p: 20 fps, 3840 x 2160: 12.5 or 15 fps

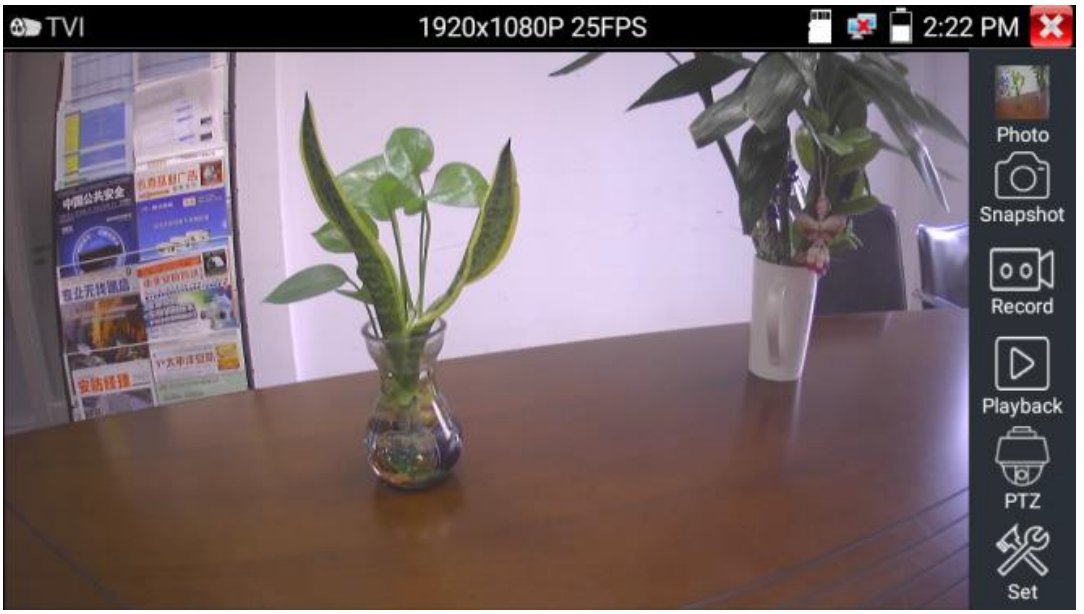


Figure 84, TVI Testing Screen

For Coaxial Camera Menu Settings, tap **UTC** and select **Menu Settings** to enter the dome camera menu.

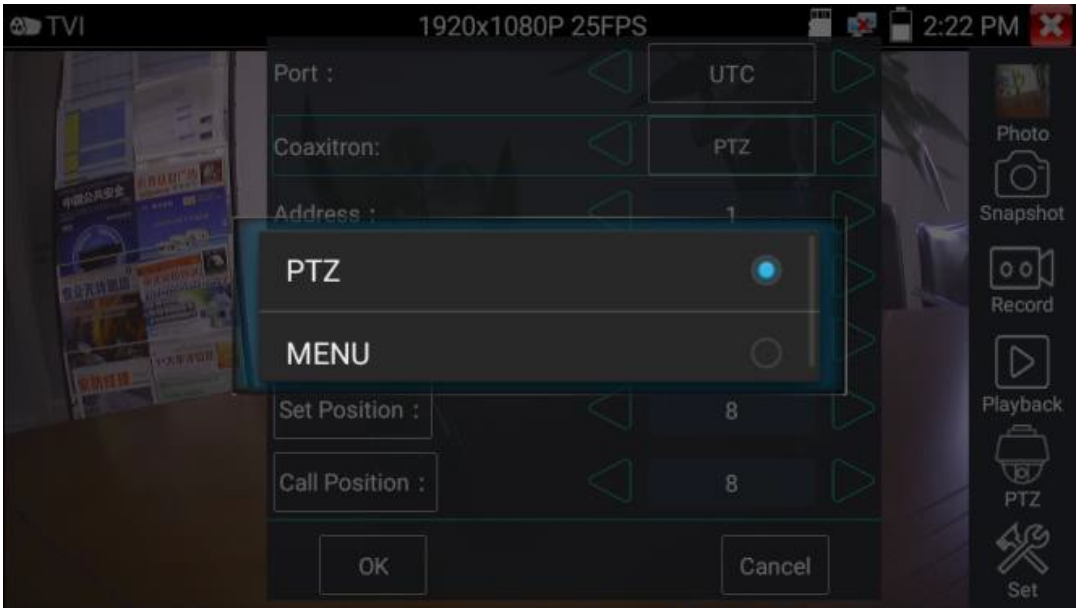


Figure 85, Coaxial Selection Menu

Input the dome camera menu address code. After the parameter settings have been entered, press ENTER or click to call the dome camera menu.

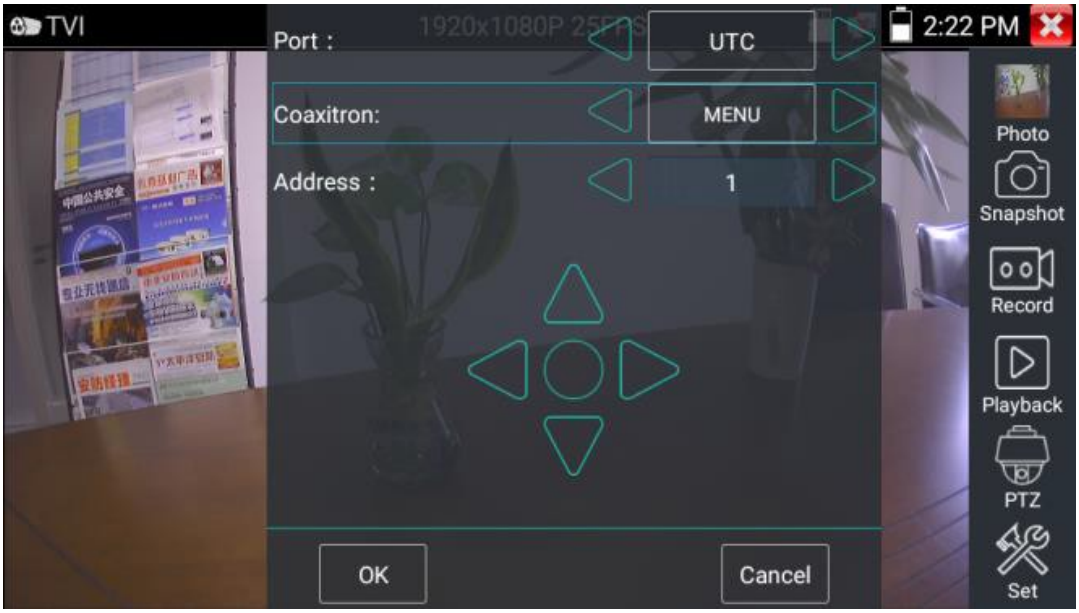


Figure 86, Dome Control Menu

More operation instructions (such as **PTZ Control**, **Coaxial Camera Menu Settings**, **Snapshot**, **Recording**, **Playback**, etc.), refer to the Section 2.3.13: CVI Camera Test.

2.3.15. AHD Camera Test (Optional)

Click  for AHD camera and AHD Dome Camera testing, and PTZ Control.

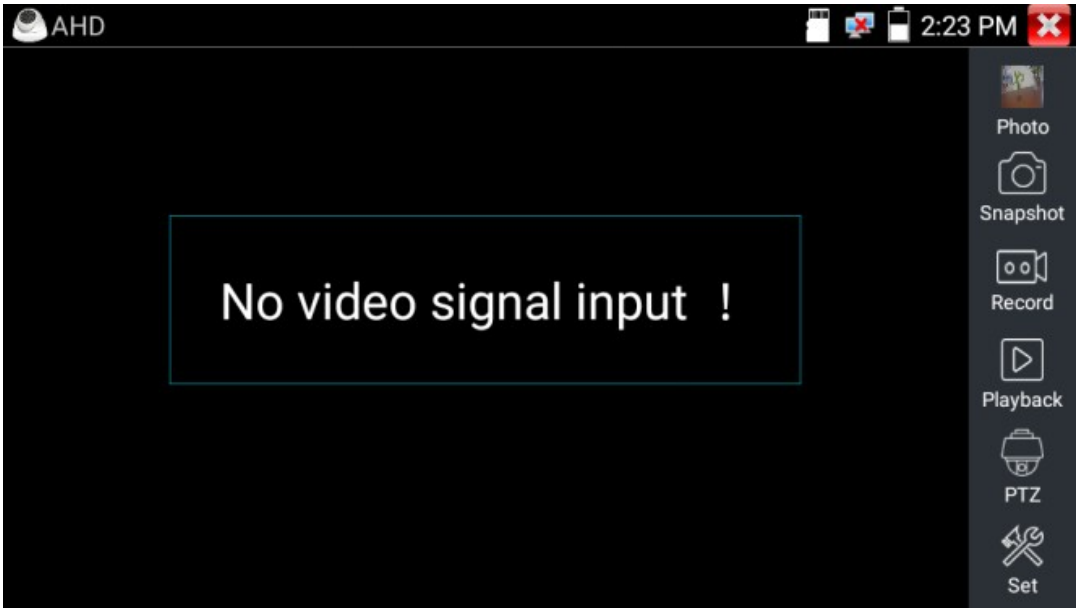


Figure 87, AHD Testing Screen

When the AHD signal is connected, the Tester will display the image resolution on the top bar. Double-tap the screen to display a full-screen image.

The Tester supports the following resolutions:

1280 x 720p: 25 fps, 1280 x 720p: 30 fps, 1920 x 1080p: 25 fps, 1920 x 1080p: 30 fps, 2048 x 1536p: 18 fps, 2048 x 1536p: 25 fps, 2048 x 1536p: 30 fps, 2560 x 1440p: 15 fps, 2560 x 1440p: 25 fps, 2560 x 1440p: 30 fps, 2592 x 1944p: 12.5 fps, 2592 x 1944p: 20 fps, 3840 x 2160p: 15 fps

- **Coaxial PTZ Control**

  UTC Control: Select **PTZ** or **PTZ-2**

AHD cameras have different settings. The **PTZ** setting does not allow for the camera to be controlled. **PTZ-2** must be selected in this case.

Figure 88, Coaxial Selection Menu

For Coaxial PTZ Control of an AHD camera, no parameter settings are required.

For further operation instructions, please refer to Section 2.3.13: CVI Camera Test.

2.3.16. Network Tool

- **IP Address Scan**

Connect the cable to the LAN port and click to begin. Set the IP address search range by changing the Start and End IP addresses.

Click the **Start** button to scan the IP address range. An IP address can also be entered in the **Port Number Scan** field to scan for open ports.

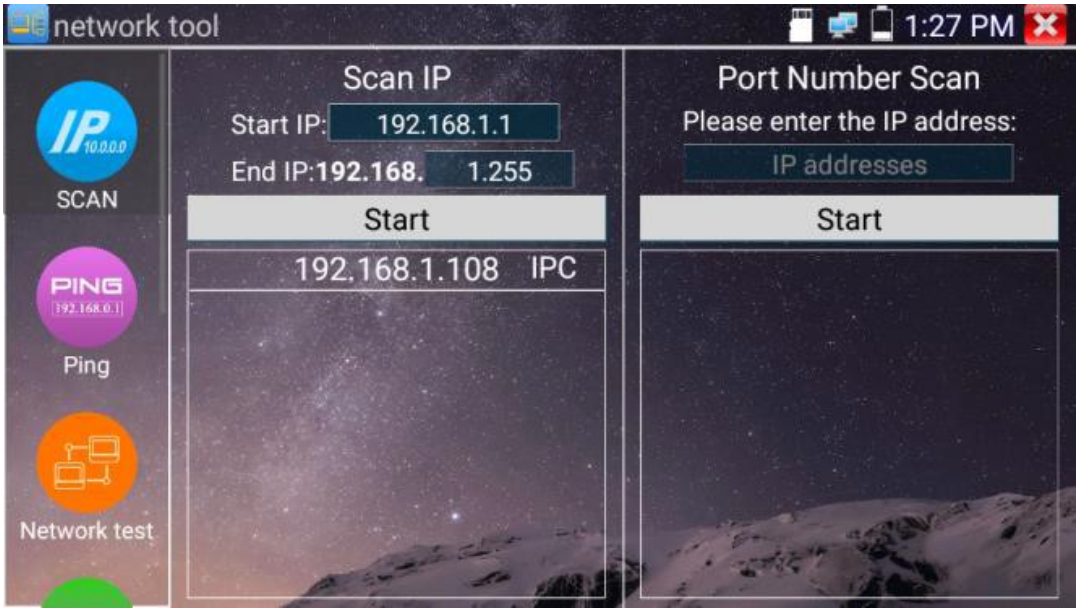


Figure 89, Port Scan Screen

- **Ping Testing**

  Connect a network cable to the LAN port and click to open the Ping tool. Set the **Local** (native) **IP Address**, **Remote IP Address** (e.g. IP camera), **Packet Count**, **Packet Size**, **Packet Time** and **Timeout** value.

  Press **Start** to start pinging. If the IP camera or network device is not configured properly or not plugged in, the "Destination host unreachable" message will be displayed, or there will be a 100% packet loss.

  When the Tester successfully connects to the device, there will be a 0% packet loss in the sent and received packets field.

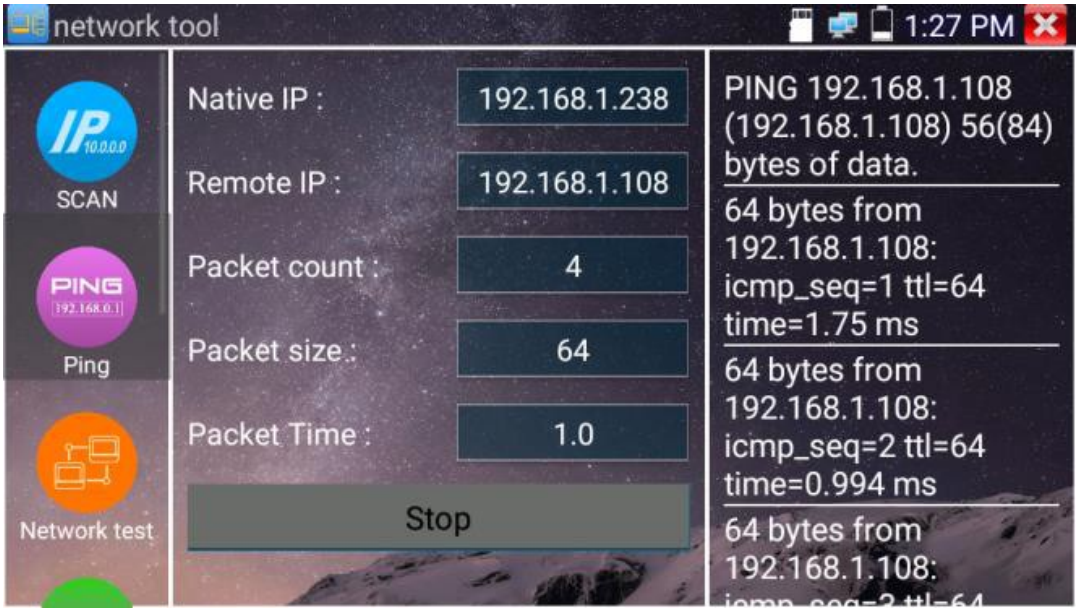


Figure 90, Ping Screen

- **Application**

  Ping testing is one of the most conventional network debugging tools. It is used to verify whether the Ethernet port of a connected IP camera or other network equipment is functioning properly or whether the IP address is correct.

- **Network Testing (Ethernet Bandwidth Testing)**

  To use the **Network Tester** function, two IP Camera Testers are required. One is used as a Server and the other as a Client. Both devices must be on the same network segment in order to communicate.

  Click  to open the **Network Tester** application.

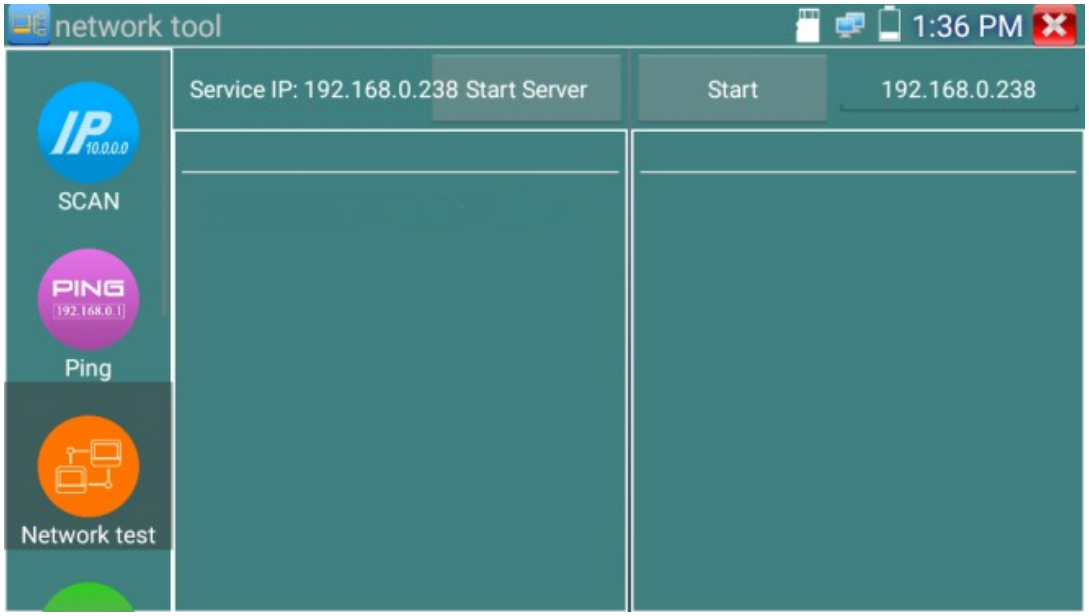


Figure 91, Network Testing Screen

- **Start the server**:

  Click **Start Server** to use the Tester as a Server. The IP address will be displayed at the top of the screen.

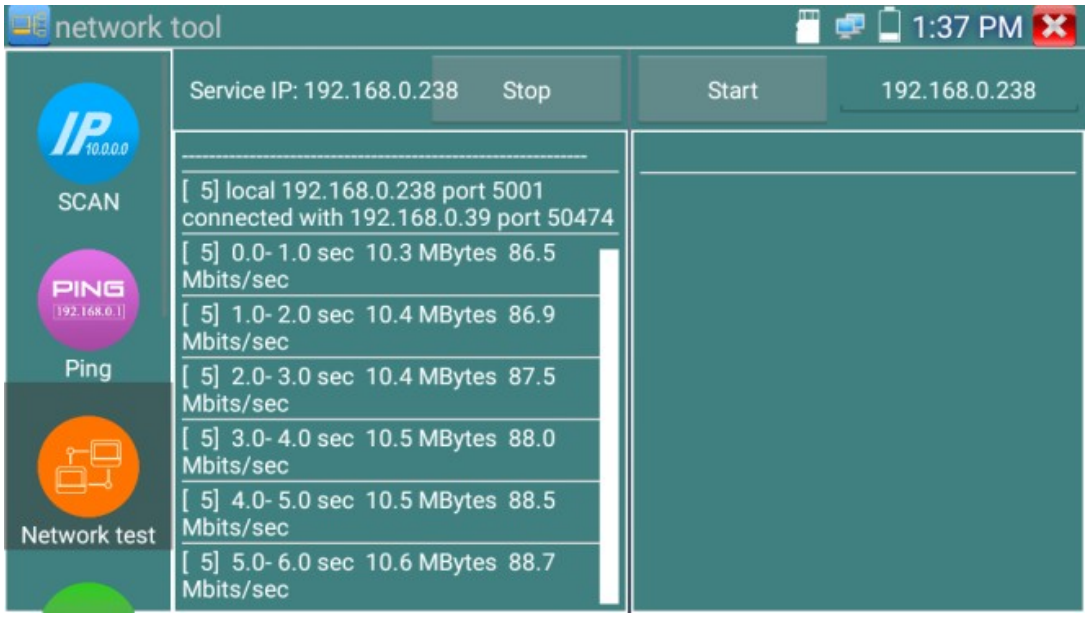


Figure 92, Start Server

- **Start sending packet test**:

  Using the other IP Tester, type in the Server's IP address at the top right corner of the screen. This app is used to send packets for network speed testing.

  Click the **Start** button to send the packets and start testing.

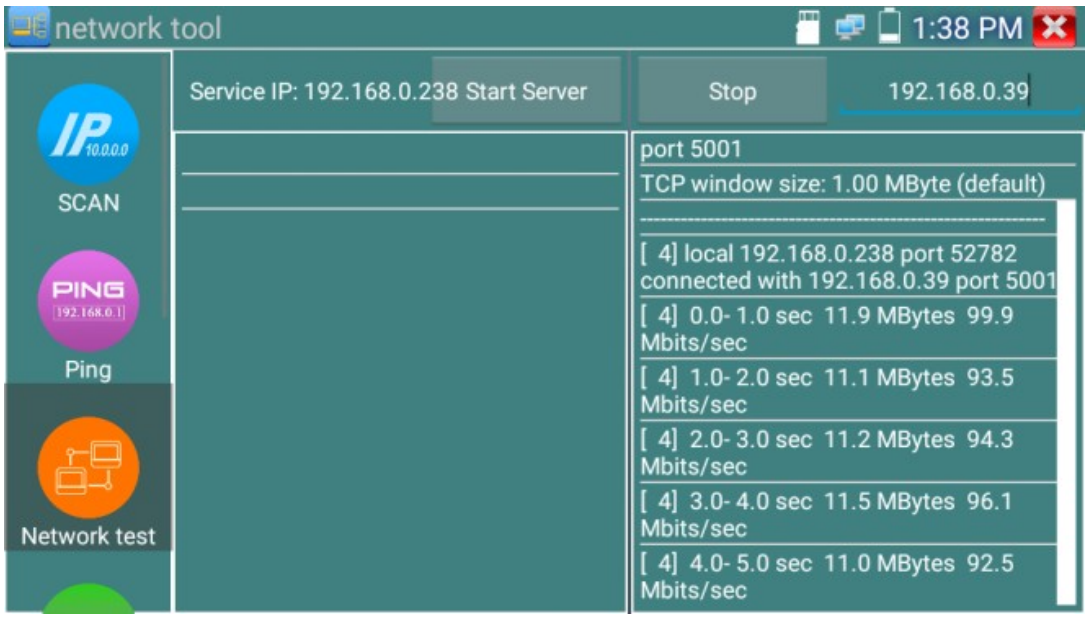


Figure 93, Start Packet Test

Network bandwidth can also be tested with a computer using compatible network bandwidth testing software.

Network bandwidth testing software can be installed on a computer, and the computer can be used as a Client or Server.

When using a computer as a Server, the computer's IP address must be 192.168.0.39.

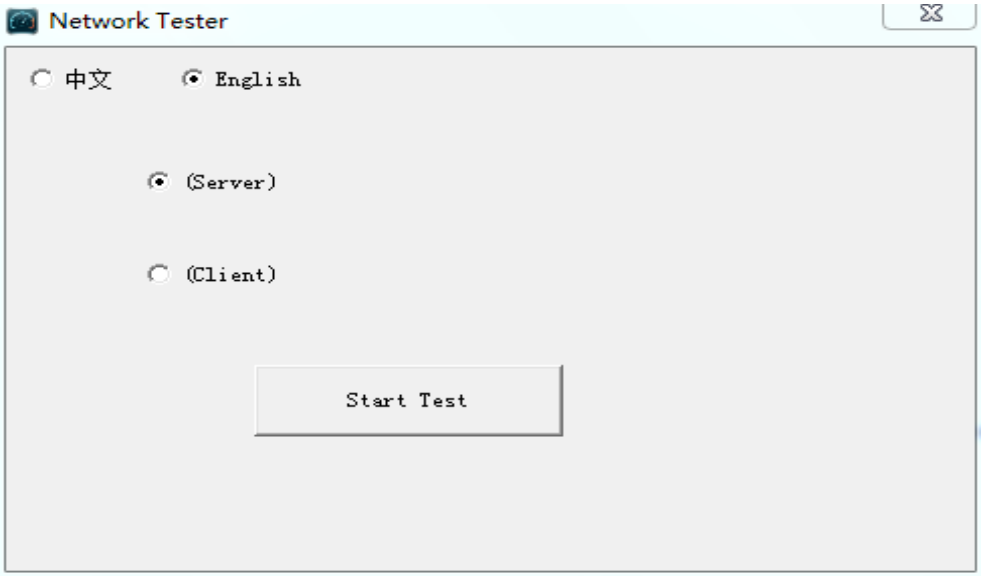


Figure 94, Server/Client and Language Selection Screen

When using the Tester as a Client, the Tester's IP address is 192.168.0.238. Although the Server and Client are on at the same network segment, they have different IP addresses. Enter the Server's IP address as 192.168.0.39 in the Tester and click **Start**" to test network bandwidth.

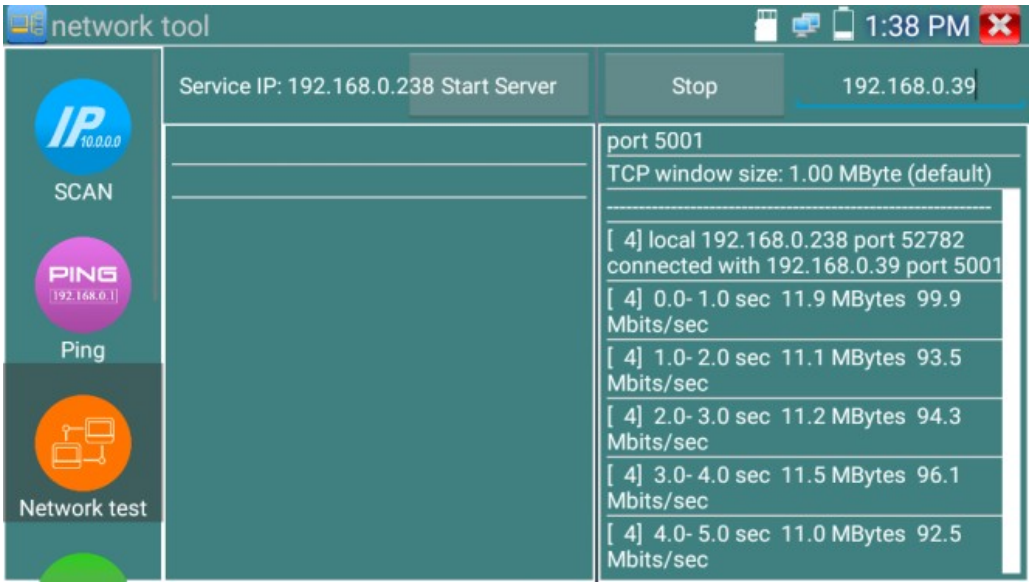


Figure 95, Network Bandwidth Testing in Progress

Alternatively, the Tester can be used as a Server and the computer as a test Client (in this case, select Client and enter the Tester's IP address in the Server IP field).

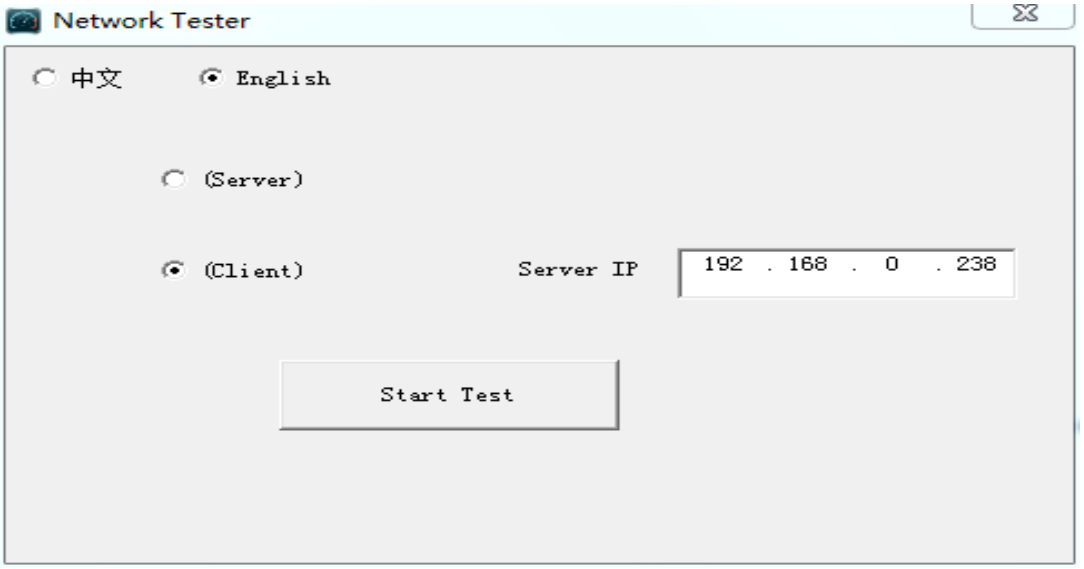


Figure 96, Server/Client Selection and IP Input Screen

Using the Tester as a Server shows the following results:

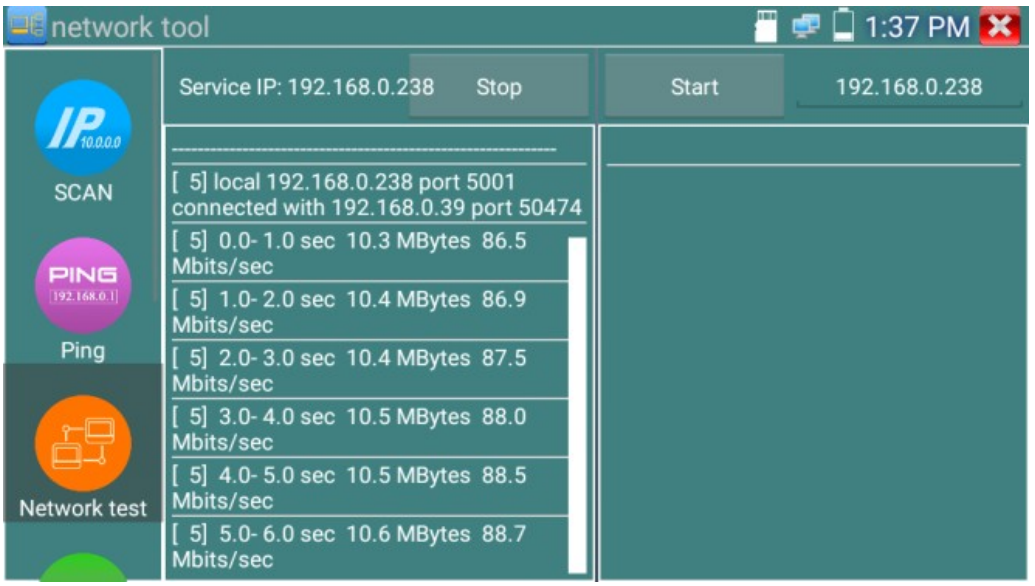


Figure 97, Ping Testing in Progress

- **Port Flashing**

  1. Connect a network cable to the meter's **LAN** port.
  2. Click  to start the Port Flashing application.

3. Click **Start**. The IP Tester sends a unique signal that flashes the switch's connected LAN port.

Figure 98, Port Flashing Screen

If the Tester and PoE switch are connected well, the LAN port of the PoE switch will flash at special frequency. Otherwise, there will not be any changes to the LAN port.

Figure 99, Port Flashing Screen – Connection Confirmed

Application:

The Tester will send signals that will have the connected LAN port flash at a specific frequency, which allows installers to easily and quickly identified connected Ethernet cables. This function can prevent the mistaken insertion or disconnection of non-corresponding cables, which would interrupt network connections.

- **DHCP Server**

  Click the DHCP button to open the DHCP server application. Select the **Start** checkbox at the top and make any desired changes to the network settings. Click **Save** to begin assigning dynamic IP addresses to IP cameras and other networked devices. Click the **Refresh** button to refresh the Client list.

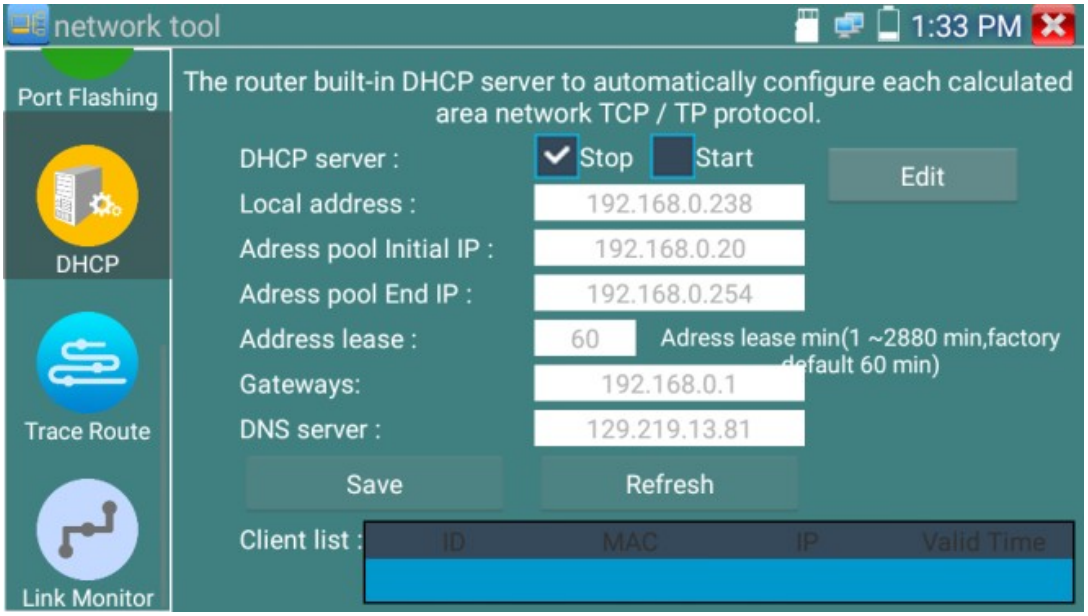


Figure 100, DHCP Server Settings

- **Trace Route**

  This function is used to determine the path taken by the IP packet to reach its target.

NOTE: Trace route testing should only be used for rough estimation purposes. For accurate test route tracking, use a professional Ethernet Tester.

1. Click  to begin route tracing.
2. Input the tracking IP address or the domain name in the **Remote IP** field. Set maximum **Hop Address** count. The default value is 30.

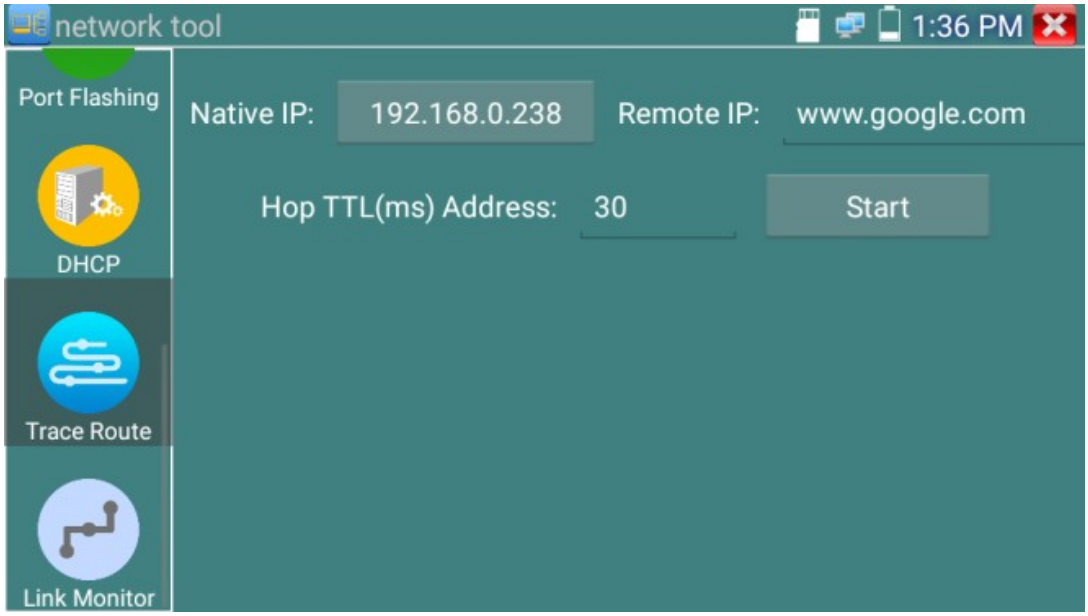


Figure 101, Tracking IP and Hop Count Input Boxes

3. Click “Start” to trace the destination address.

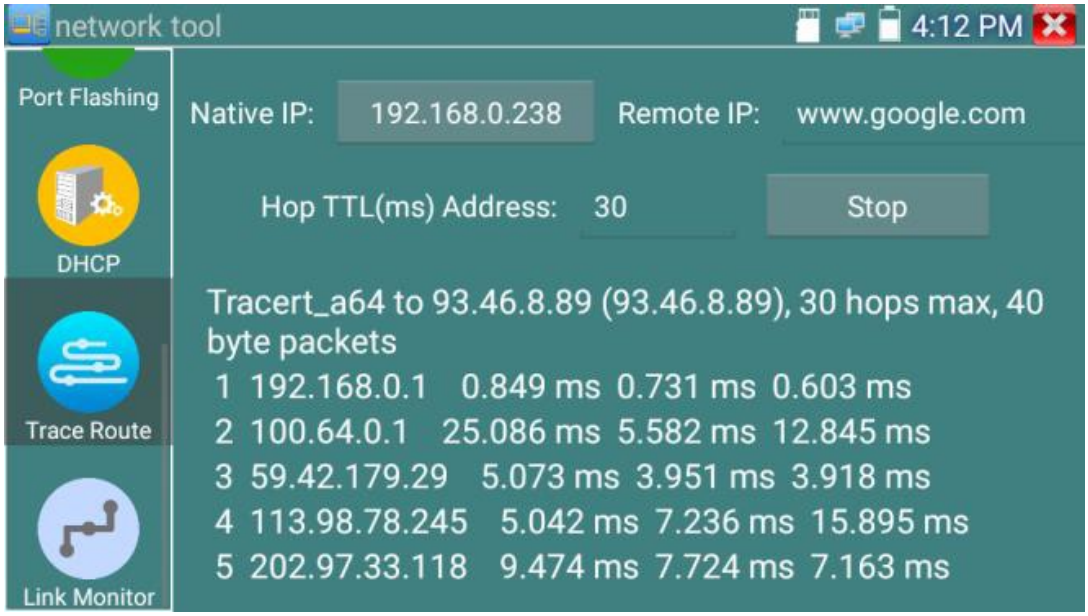


Figure 102, Tracking in Progress

- **Link Monitor**

  Click  to open the **Link Monitor** application. This application is used to verify whether an IP address is occupied by other network devices. New address conflicts can be avoided as a result.

  Click **Add** and enter the desired IP address. To test different network segments, click **Settings** in the main menu and proceed to IP Settings to make the desired changes.

  Once the desired IP addresses are added to the Link Monitor list, click **Start**. If there is a checkmark next to the IP address status, the IP address is occupied. If there is an **X** next to the IP address status, the IP address is available. Click **Stop** to end testing.

Figure 103, Link Monitor IP Addresses

Application:

Add an IP camera or other network device to the current network group. The new IP address must not be occupied, otherwise IP conflicts will result and equipment will not work properly. The Link Monitor can verify whether a new desired IP address is occupied.

2.3.17. Rapid IP Discovery

Connect the cable to Tester's LAN port. Press  to enter the Rapid IP Discovery application.

Click **Start** to search all IP addresses for connected equipment in a given network IP segment. Click **Stop** to end.

2.3.18. PoE Power - USB Power Output

When the Tester is turned on, the 12 VDC and 5 VDC power output functions are automatically turned on. When the IP Tester is turned off, the 5 VDC USB port can still be used to power an external USB device.

To use the PoE Power Output function, click  and change the switch setting from **Off** to **On**.

The IP camera needs to be connected to the LAN port before PoE Power is turned on. For IP cameras that supports PoE, PoE power is delivered via pins 1, 2, 3, and 6 on the LAN port. The IP Tester will display "48 V On" at the top of the screen when PoE power is on.

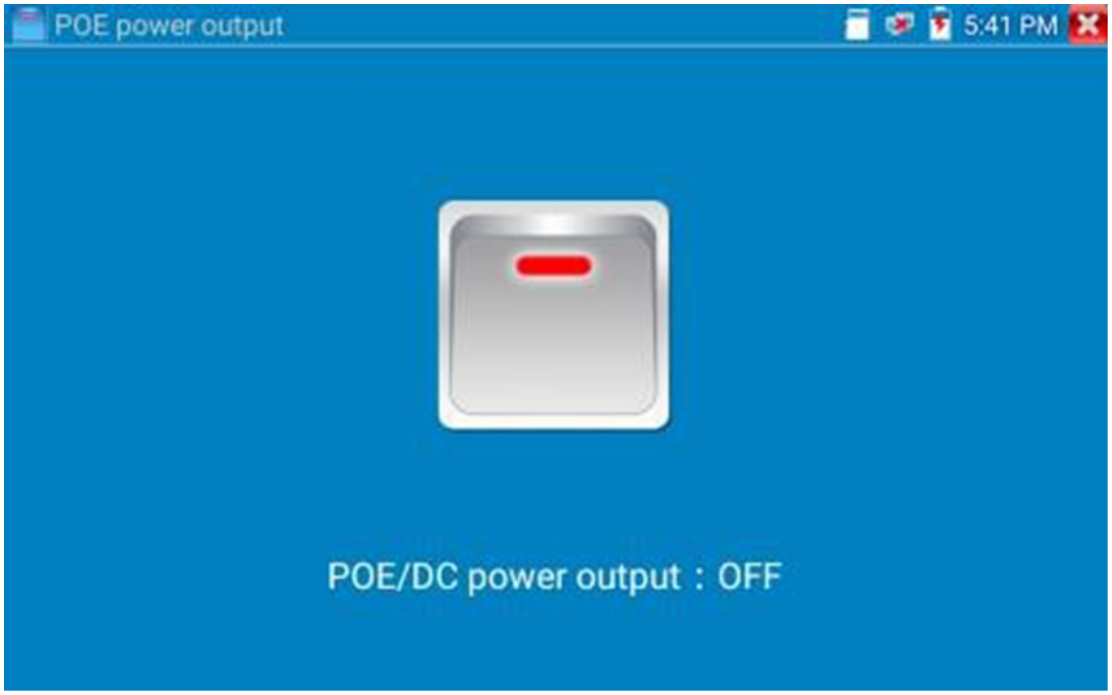


Figure 104, PoE Power Output Screen – Power Off

Figure 105, PoE Power Output Screen – Power On

NOTE: Do not input power into the "12 VDC/2A Output" port.

Do not output 12 VDC/2A power into the Tester's 12 VDC/In port, as this will damage the device.

The Tester's power output is close to 2A. For IP cameras with a power supply over 2 V, the Tester will automatically enter protection mode.

Disconnect all of the Tester connections, and reconnect the Tester to the power adaptor to restart the Tester.

Before turning on the PoE power output, make sure the IP camera supports PoE power. Otherwise, the IP camera may become damaged.

Make sure to plug in the IP camera into the LAN port prior to turning on PoE power.

Make sure the Tester is full charged, or at least 80% charged. Otherwise the, Tester will display a "Low Power" or "Not Able to Supply Power" message.

2.3.19. Cable Test

Click  to enter.

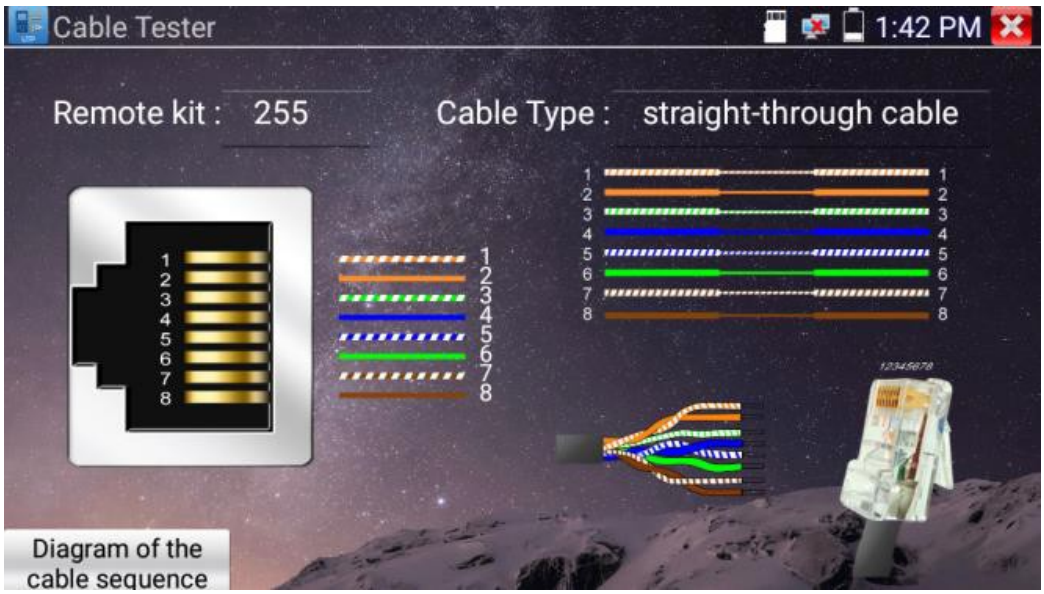


Figure 106, Cable Tester Screen

This module allows for the testing of LAN or telephone cables.

Connect a LAN or telephone cable with the IP Camera Tester. The connection status, cable type, wire sequence and the serial number of the Tester kit will be displayed.

The number of the cable Tester is 255.

Tap **Cable Test Sketch Map** to obtain a straight-through cable and crossover cable sketch.

The above provides a reference for straight-through wired cables and crossover wired cables.

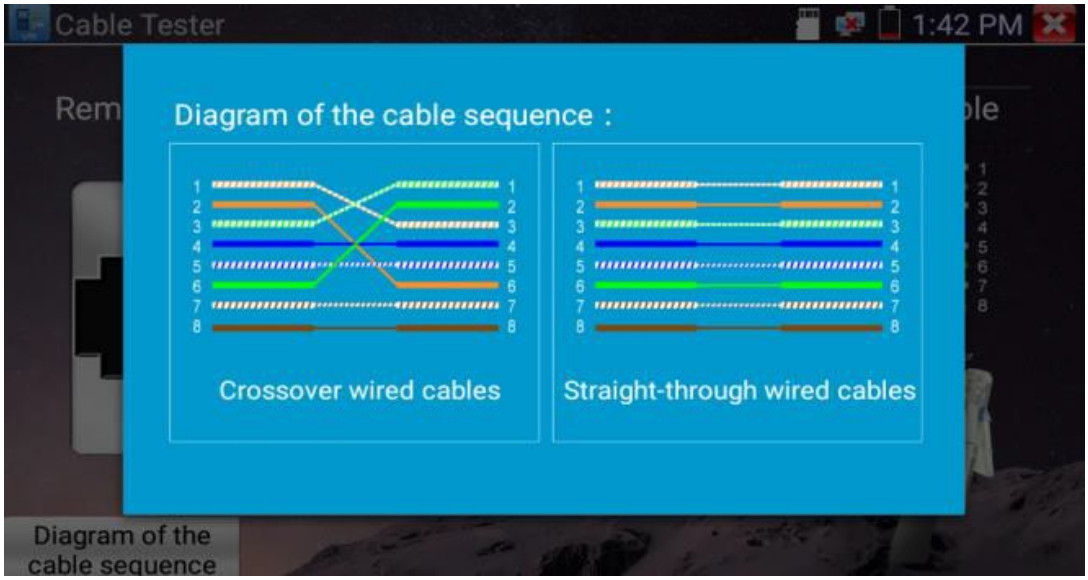


Figure 107, Cable Sequencing Diagram

2.3.20. RJ-45 Cable TDR Test

Connect the cable to Tester's LAN port and click  to enter the RJ-45 cable's TDR testing application.

Figure 108, RJ-45 Cable TDR Test Screen

- **Single Test**: Test cable status, length and attenuation.
- **Repeat Test**: Repeat cable status, length and attenuation test.

- **Status**: After the cable is successfully connected, the screen displays the "Online" status. If the cable is not connected or the circuit is open, the screen displays an "Open Circuit" status. Short circuit cable situations display a "Short Circuit" status.

- **Length**: The maximum test length is 180 meters. When the status is "Open Circuit" or "Short Circuit", the cable length can be tested. If the status is "Online", test results will not be accurate.

- **Cable Quality Test**: Green indicates a good quality cable, yellow indicates a poor quality cable, and red indicates a cable that has been damaged by water. The attenuation value will be displayed when the cable is over 10 meters in length.

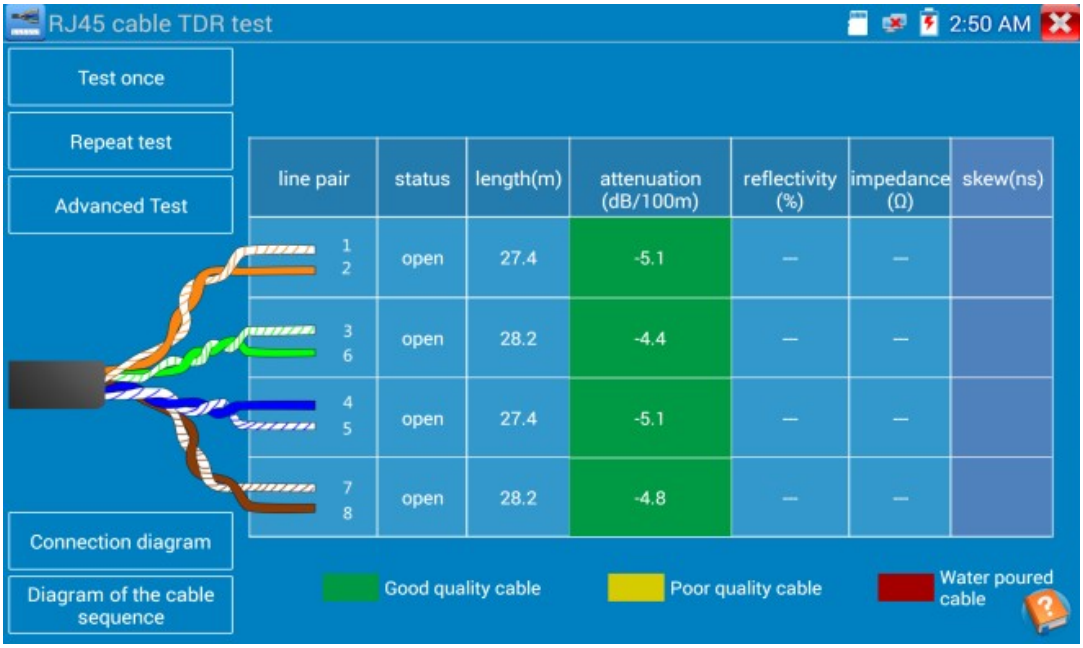


Figure 109, RJ-45 Cable TDR Test Screen

- **Advanced Test**: Test cable pair status, length, attenuation, reflectivity, impedance, skew and other parameters.

- **Attenuation Reflectivity**: A reflectivity value of 0 (following a successful connection) indicates the highest quality communication.

- **Impedance**: An impedance value of 100 Ω (following a successful connection) indicates the highest quality communication. The range is generally between 85 and 135 Ω.
- **Skew**: A skew value of 0 ns (following a successful 1000M connection) indicates the highest quality communication. A value over 50 ns leads to a Bit Error Rate in the transmission.

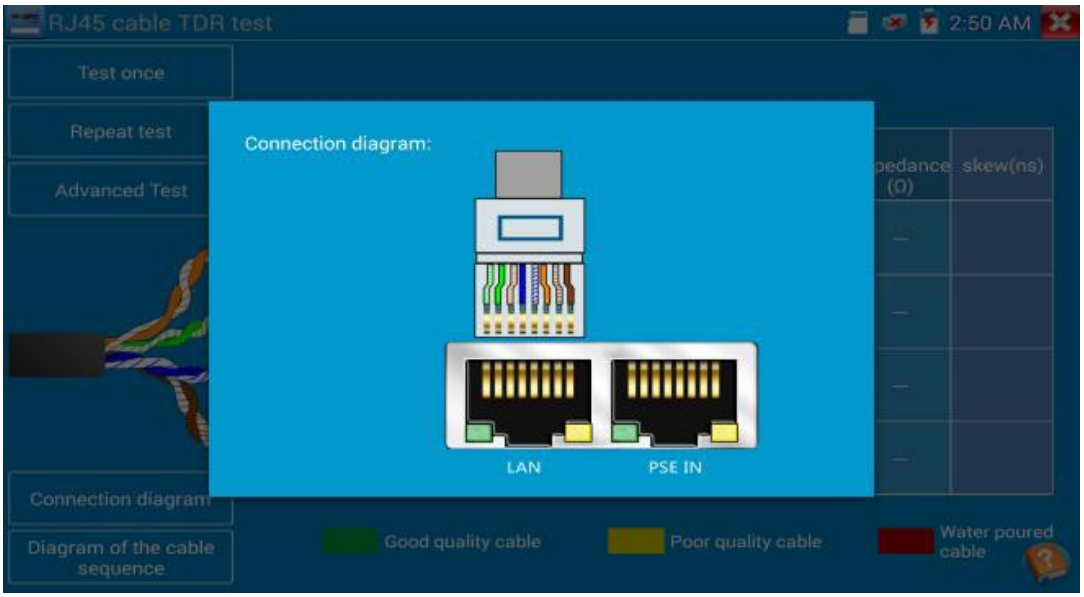


Figure 110, Cable Sequencing Diagram

A straight through and crossover cable diagram for reference purposes is found below.

Figure 111, Cable Sequencing Diagram

Click **Help** to see all the instruction for all settings.

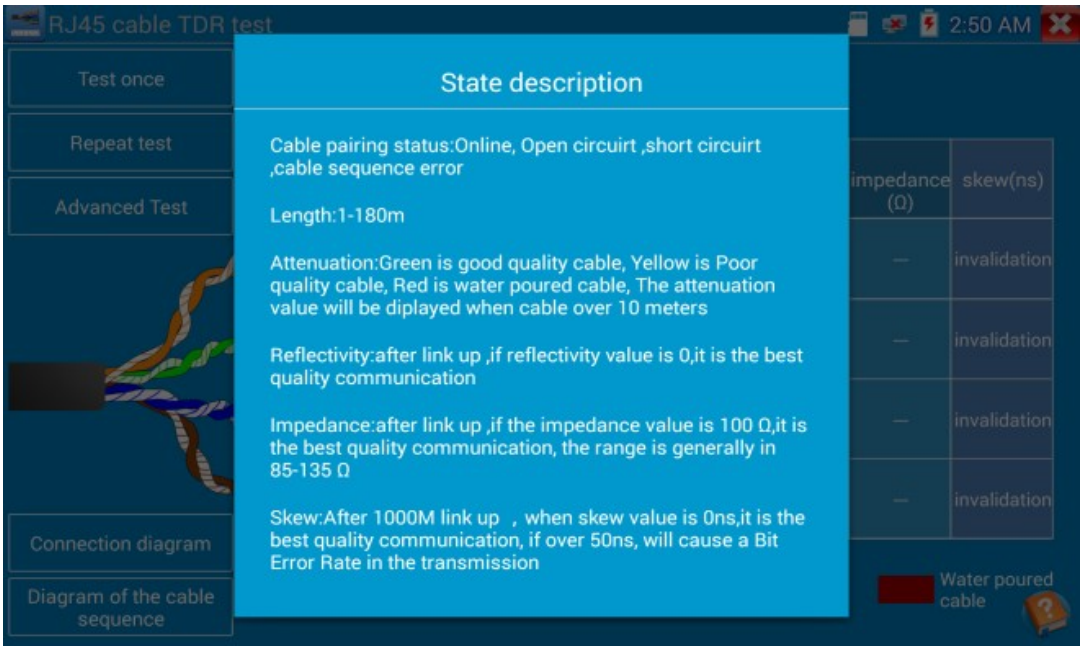


Figure 112, Cable State Description

2.3.21. Cable Search (Optional)

Connect the test or BNC cable to the UTP Port or the Cable Scan (Video Out) Port at the bottom of the device.

Click  to begin and choose a number on the screen to adjust audio settings.

Figure 113, Cable Search Screen

Use the Blue Combination Cable Identifier and the Tester's copper pointer to touch all the cables in the bundle.

The cable that gives off the loudest sound is the one that is connected to the Tester. Press + or – on the Blue Cable Identifier to adjust the volume.

NOTE: The Blue Cable Identifier requires two AAA batteries.

NOTE: While the cable tracer is receiving an audio signal from the Tester, there may be interference from adjacent or crossing cables. However, the cable that makes the loudest noise is the one that is connected to the meter.

This features allows people to find cable endings in cases where there are many cables close to one another, and it is difficult to find the endings of one specific cable.

While searching for a BNC cable, connect one port of the alligator clips to the copper core or copper net of the BNC cable. The other one should be connected to the earthing wire (barred windows).

NOTE: The cable tracer battery must be connected according to the corresponding positive pole (+) and negative pole (-). Otherwise, the Tester will be damaged.

NOTE: While the cable tracer Tester is receiving an audio signal from the Tester, it may be influenced by other signals and make some noise.

2.3.22. TDR Cable Test (Optional)

NOTE: The testing cable cannot be connected to any equipment, otherwise the Tester will be damaged.

Connect the alligator clip cable to the TDR port. The cable must be connected before testing takes place, otherwise the test will be inaccurate. Click  to enter and **Start** to begin the test.

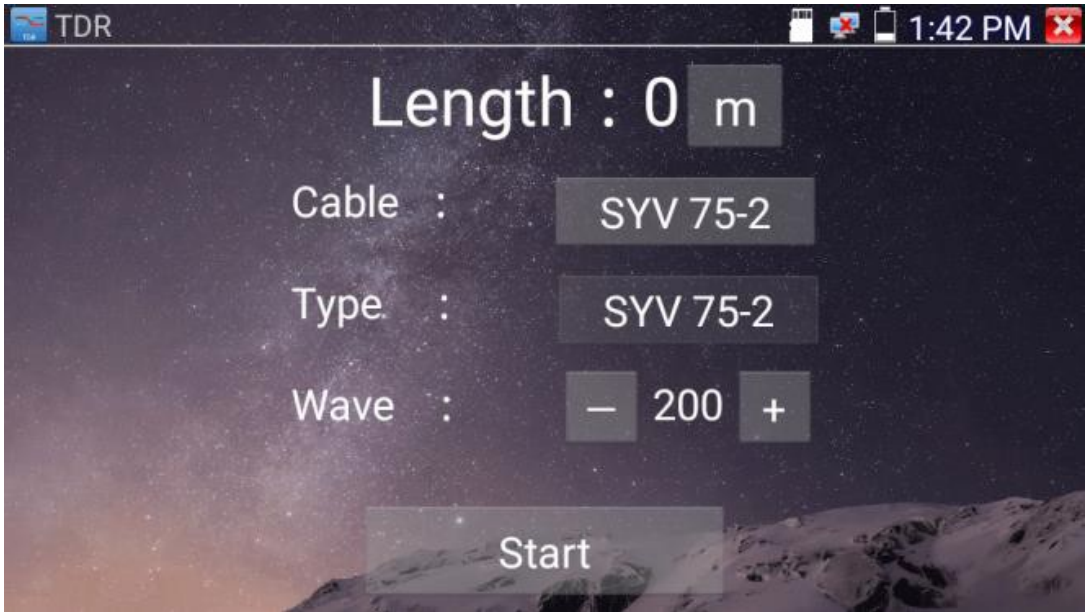


Figure 114, Cable Testing Interface

The Tester can test 11 groups of user-defined cables, such as built-in BNC cables, network cables, RVV control cables, telephone lines, and TVVB cables.

Click **Cable** and **Type** to select the cable type and to begin testing.

Tap **Start** to begin testing.

For built-in cables, click **+** and **-** to adjust the cable's wave speed.

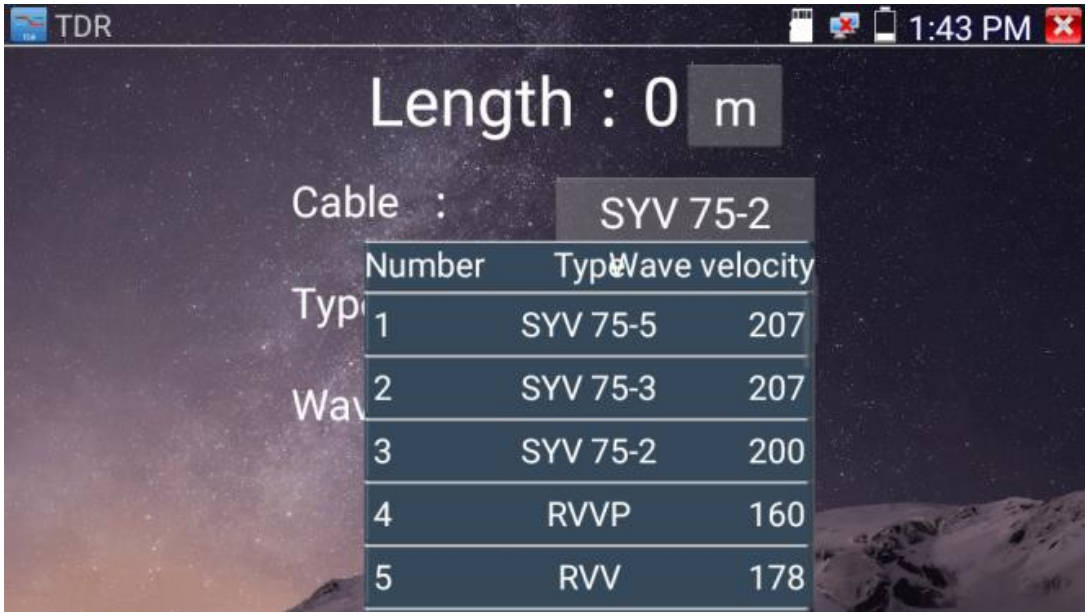


Figure 115, Cable Testing Interface

For user-defined calibration, select a cable length between 109 yards (100 meters) and 219 yards (200 meters). The length should be at least 55 yards (50 meters). Click **Cable** and **Type** to select the type of cable (from 11 possible groups).

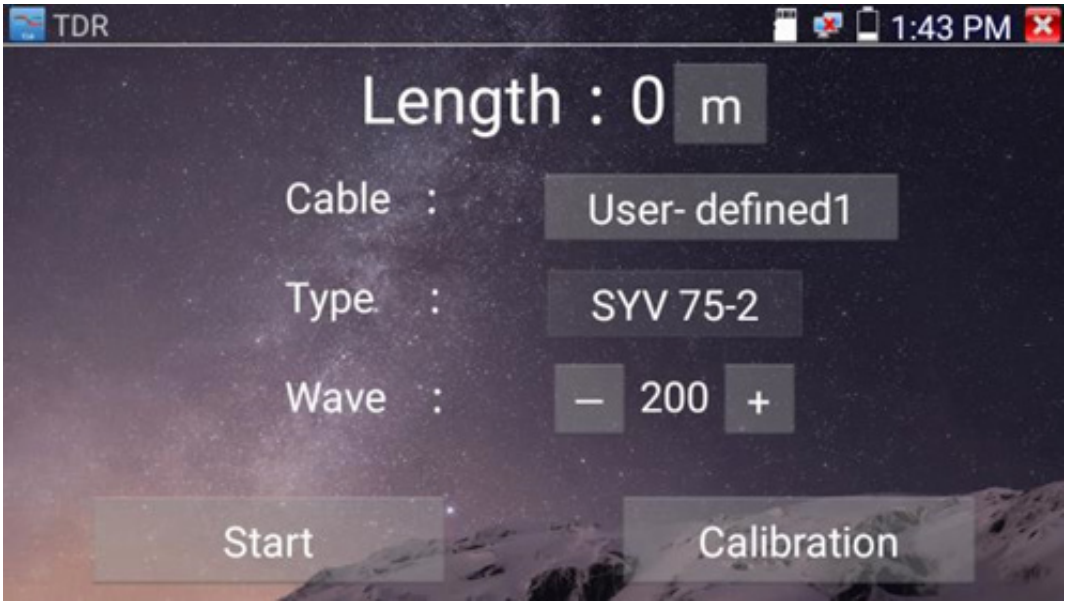


Figure 116, Cable Testing Interface

- Select "**User-Defined** and click **Calibration** to start the test. Click **User-defined 1** and define a cable type.
- Click **Cable** and **Type** to select cable and the corresponding cable type. For example, if testing a BNC cable, select **BNC**.

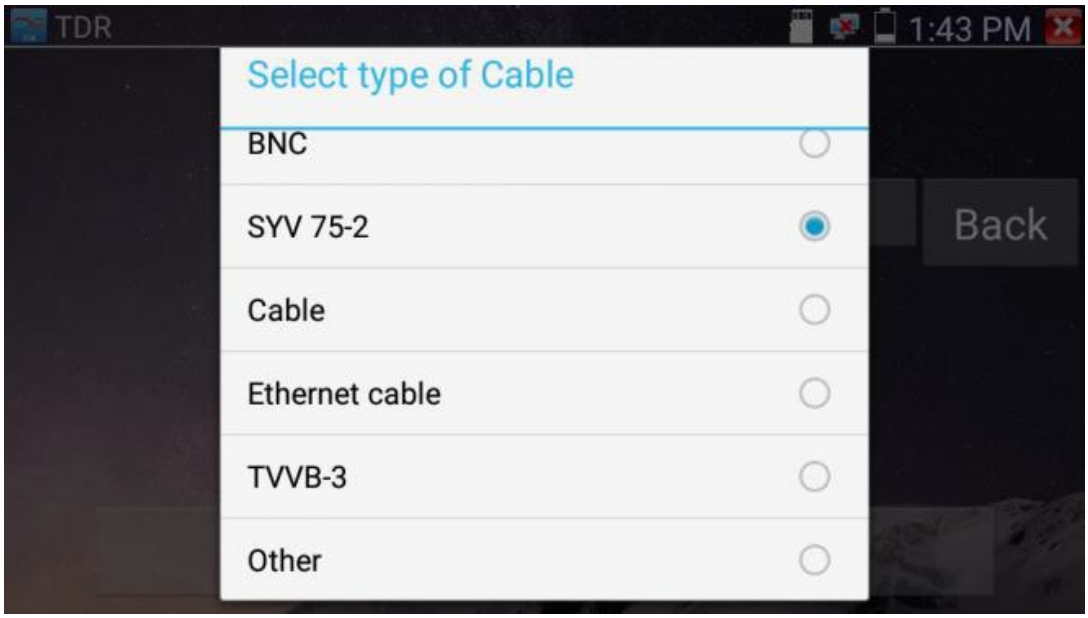


Figure 117, Cable Type Selection Menu

- Click **+** or **-** to adjust the wave speed. **Display Length** is the same as the actual Length. Click **Save** to save the calibration data. Cable testing data can be reused between tests.

Figure 118, Cable Testing Interface

The TDR Test uses pulse reflection to transmit pulse signals through a tested cable. When the cable is open circuit or short-circuit, a reflected pulse is generated,

The Tester receives the reflected wave and displays the measurement results on the screen. The TDR test can identify open and short circuits and quickly identify the location where the cable has a problem. It is more convenient and efficient to repair a faulty cable rather than replace it.

NOTE: The TDR reflect signal could be affected by the cable quality, cable not being connected, etc., which can cause differences in TDR measurements. The TDR measurement should be used for reference only.

2.3.23. PoE Voltage and Power Measurement

Click PoE to enter the PoE voltage measurement interface.

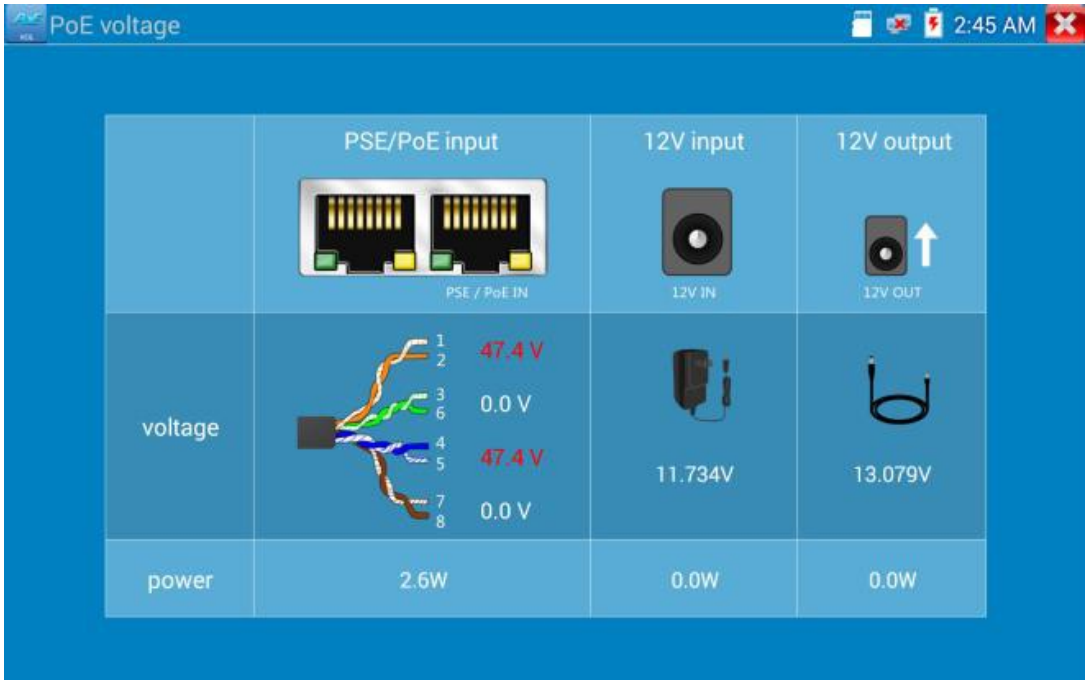


Figure 119, PoE Voltage and Power Measurement Interface

Connect a network cable from a PoE switch to the IP Tester's **PSE In** port. Connect an IP camera or other PoE node to the IP Tester's LAN port. The PoE voltage and the cable's pin connection status will show on the screen.

NOTE: This test is used for measuring the voltage drawn by the PoE node. The IP Tester must be located between the PoE switch and the PoE node for this test to work.

The PoE switch must be connected to the **PSE In** port. The powered device (IP camera or other PoE node) must be connected to the LAN port.

Do not connect PoE power supply equipment (such as a PoE switch) to the Tester's UTP/SCAN port. Doing so will damage the Tester.

- **PSE Transmission**:

  When PoE/PSE voltage testing, the PoE/PSE must be connected to the Tester's **PSE In** port and the camera must be connected to the Tester's Lan port.

  The Tester can transmit data and provide power to the camera at the same time. A computer connected to the PoE/PSE can also log into a connected Tester's PoE camera.

2.3.24. 12 V Power Input Test

Connect the 12 V power adaptor to the Tester's charging port and click **PoE** to enter the voltage measurement application. The screen will show the current adaptor input voltage and power.

NOTE: The battery charging power and the device's working power is 12 V. The measured power will change depending on the difference between battery power and backlight brightness.

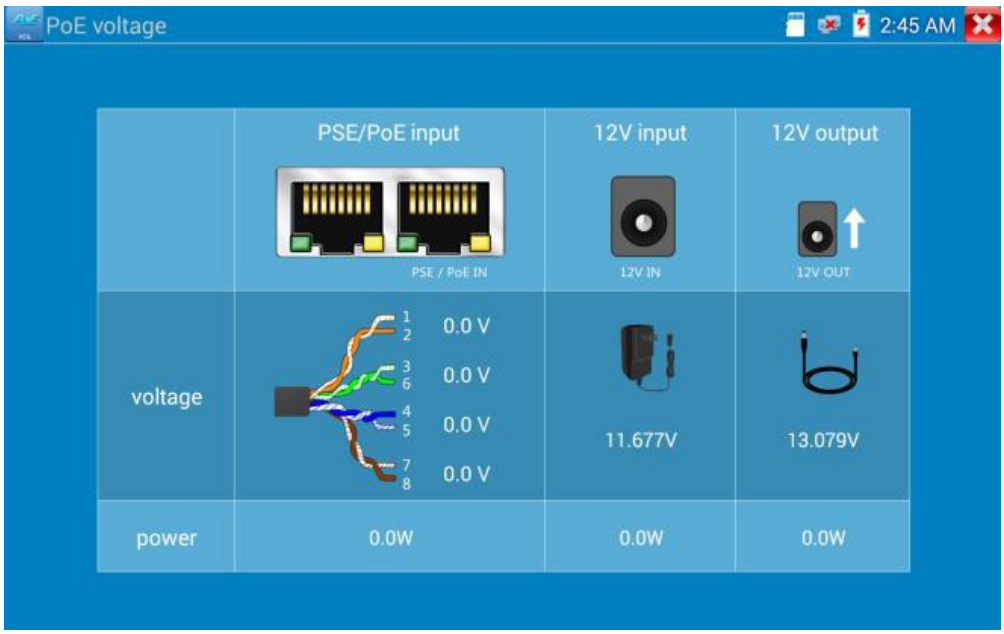


Figure 120, PoE Voltage and Power Measurement Interface

NOTE: Do not connect devices with an input power greater than 17 V to the Tester's **12V In** port. This can damage the Tester.

2.3.25. Digital Multi-Meter (Optional)

Click to enter.

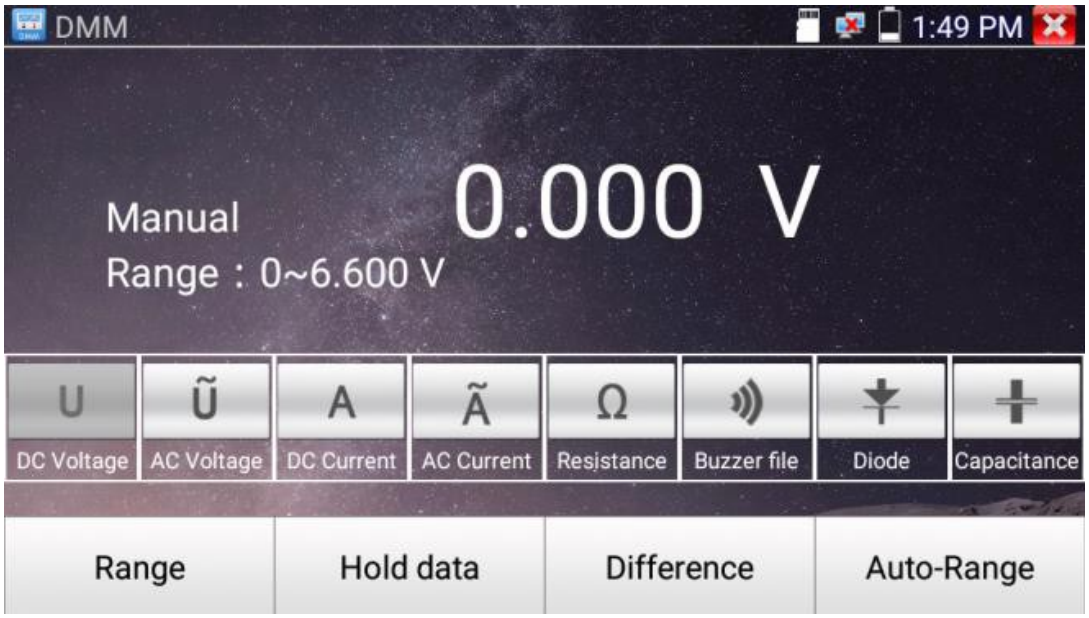


Figure 121, Digital Multi-Meter Screen

- **Symbols**

U	DC Voltage Measurement	Ω	Resistance Measurement
Ũ	AC Voltage Measurement		Continuity Testing
A	DC Current Measurement		Diode Testing
Ã	AC Current Measurement		Capacitance Measurement

Table 3, Digital Multimeter Features

AC/DC	Voltage and current measurement state display
Auto-Range	The multimeter automatically adjusts the range according to input signal or tested components.
Data Hold	Hold data
Relative Measurement	Display the relative measurement value. Press the key to change display state.
10 A Socket	For 10 A current measurement situations, use a 10 A socket.
Over Range	The current measurement value is above the range. Switch to Auto if in the Auto Range state.

- **Operating Instructions**

DC Voltage Measurement

- Connect the black test lead to the **COM** port and the red test lead to the **V/Ω** port.
- Select **U** and enter the **DC Voltage Measurement** setting.
- The Tester is in Auto Range status by default. Click **DC Auto Range** and press the key to manually select range, or to restore Auto Range.
- Manual Ranges: 0.000 V → 6.600 V, 00.00 V → 66.00 V, 000.0 V → 660.0, 000.0 mV → 660.0 mV

AC Voltage Measurement

- Connect the black test lead to the **COM** port and the red test lead to the **V/Ω** port.
- Select **Ũ** to enter the **AC Voltage Measurement** section.

- The Tester is in Auto Range status by default. Click **AC Auto Range**.
- Manual range can be selected. Press the **Near** key to restore Auto Range.
- Manual Ranges: 0.000 V → 6.600 V, 00.00 V → 66.00 V, 000.0 V → 660.0 V, 000.0 mV → 660.0 mV

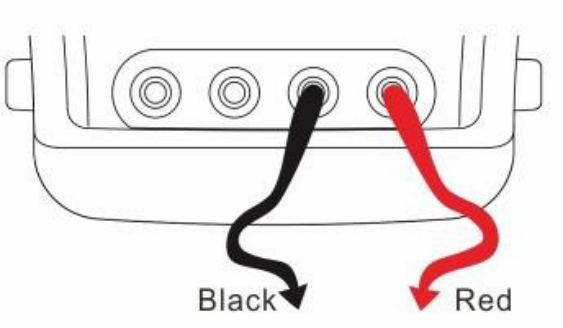


Figure 122, Voltage Measurement Lead Setup

DC Current Measurement (Only Manual Range)

NOTE: Turn off the tested circuit and connect the meter to the circuit for measurement.

- Connect the black test lead to the **COM** port and the red test lead to the **mA** port for a maximum 660 mA current. For a maximum of 10 A, move the red lead to the 10 A port.
- Select **A** and enter the **DC Current Measurement** section. The screen displays "DC Current", and manual range can be selected.
- Manual Ranges: 0.000 mA → 6.6 mA, 00.00 mA → 66.00 mA, 000.0 mA → 660.0 mA, 00.00 A → 10.00 A (use 10 A socket)
- Select the range to enter the current measurement section.

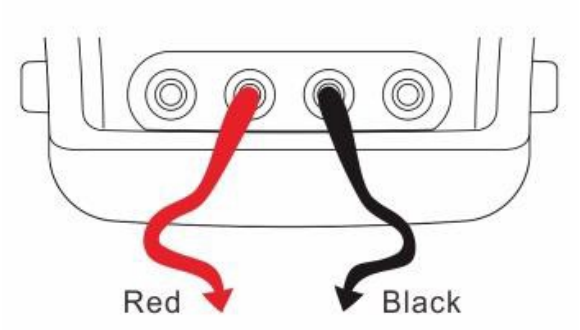


Figure 123, Current Measurement Lead Setup

NOTE: **OL** indicates the presence of an "over range" situation. A higher range must be selected.

When the scale of the value to be measured is unknown beforehand, set the range selector to the highest position.

The maximum current of an mA socket is 660 mA. Over current will destroy the fuse and will damage the Tester.

The maximum current of the 10 A port is 10 A. Over current will destroy the Tester and will damage the operator.

AC Mode only allows for "AC" inputs. Damage will result otherwise.

Resistance Measurement

NOTE: When measuring in-circuit resistance, make sure that the circuit being tested is unplugged and that all capacitors have been fully discharged.

- Connect the black test lead to the **Com** port and the red test lead to the **V/Ω** port.
- Select **Ω** to enter the Ω measurement.

- **Auto Range** is the Tester's default status. Press the key to manually select a range. Press **Near** to restore **Auto Range**.
- Manual Ranges: 000.0 Ω → 660 Ω, 0.000 kΩ → 6.600 kΩ, 00.00 kΩ → 66.00 kΩ, 000.0 kΩ → 660.0 kΩ, 0.000 MΩ → 6.600 MΩ, 00.00 MΩ → 66.00 MΩ

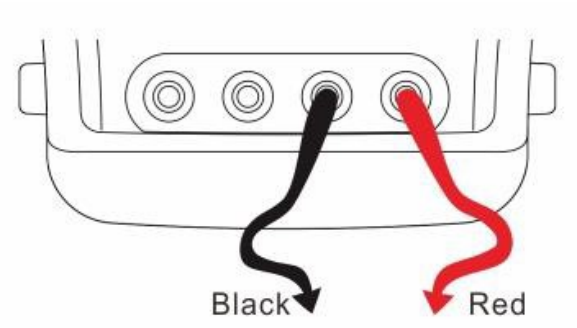


Figure 123, Resistance Measurement Lead Setup

Continuity Testing

- Connect the black test lead to the **COM** port and the red test lead to the **V/Ω** port.
- To select))), enter the **Continuity Test** section. Connect the test leads across two points of the circuit being tested.
- If continuity exists (i.e., resistance is less than about 50 Ω), the built-in buzzer will sound.

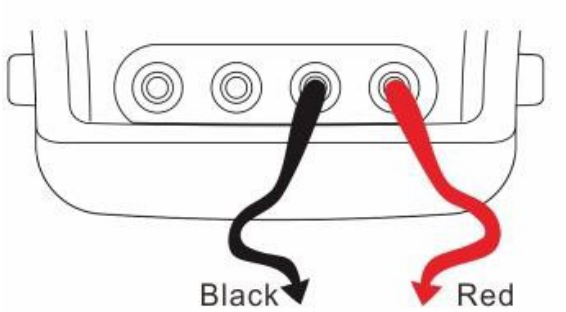


Figure 124, Continuity Testing Lead Setup

Diode Testing

- Connect the black test lead to the **COM** port and the red test lead to the **V/Ω** port (the red lead anode, i.e. **+**).
- Select the ⏚ button.
- Connect the test red lead to the anode and the black lead to the cathode of the diode undergoing testing.
- Connect the red test lead to the cathode and the black lead to the anode of the diode undergoing testing.
- For tested diodes, a low voltage of 30 mV should trigger an audio alert. This allows for the testing to be finished quickly without a screen as a reference.

Capacitance Measuring

- Connect the black test lead to the **COM** port and the red test lead to the **V/Ω** port.
- Select ⏚ to begin and enter the capacitance measurement.
- The Tester is in Auto Range status by default. For Manual Range, press the up and down key. For Auto Range, press the **Near** key.
- Manual Ranges: 0.000 nF → 6.600 nF, 00.00 nF → 66.00 nF, 000.0 nF → 660.0 nF, 000.0 µF → 6.600 µF, 00.00 µF → 66.00 µF, 000.0 µF → 660.0 µF, 0.000 mF → 6.600 mF, 00.00 mF → 66.00 mF

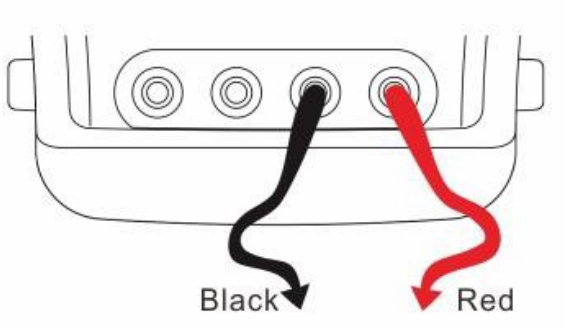


Figure 125, Capacitance Measurement Lead Setup

- Before connecting the test leads to the two sides of the capacitor being measured, ensure that the capacitor has been discharged fully.

NOTE: The capacitance of a capacitor should be tested separately, and should not be tested on the circuit itself.

To avoid electric shock, ensure that the capacitors have been discharged fully before measuring the capacitance.

While testing the capacitance up to 660 µF, the maximum time will be 6.6 second. If the capacitor is damaged or has a leak, the data will not be read. The Tester will return to normal after the capacitor is disconnected.

Manual Range and Auto Range

When testing, click **Range Select** to change the value. Click **Auto Range** to start the Auto Measurement feature**.**

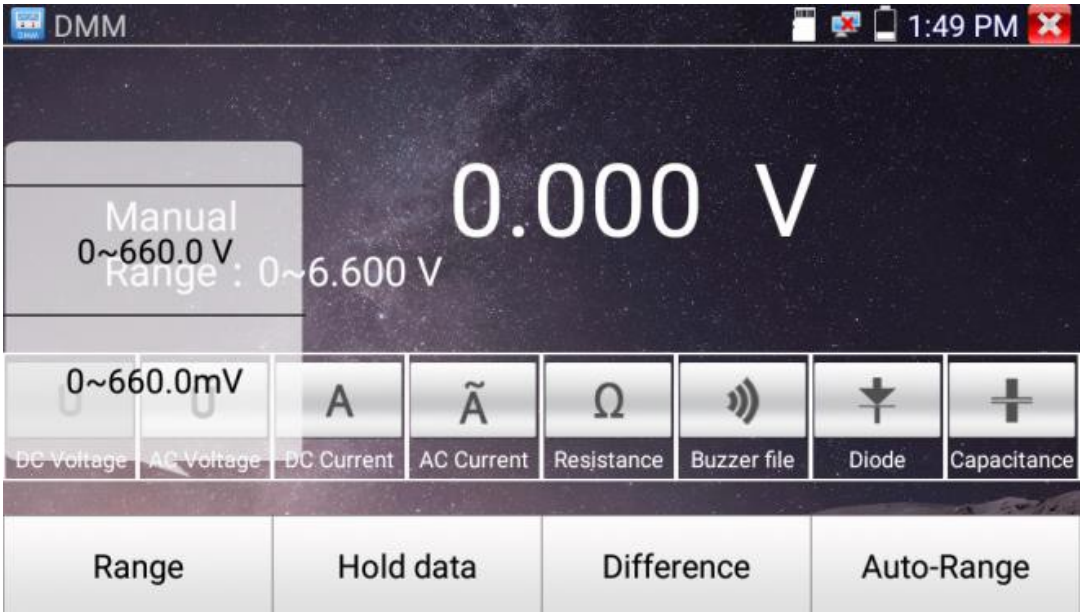


Figure 126, Manual and Auto Range Screen

Data Hold

Click **Hold Data** to enter. The data to be held will be shown in green. Press the screen again to quit.

Relative Value Measurement

Click **Relative** to enter the Tester and automatically save the data. The new measurement and relative value will be shown in red. Press the screen again to quit.

The combined hold and relative value will be shown in yellow.

Meter Protection

- **Voltage Protection**

  Voltage above 660 VAC cannot be inputted and will damage the Tester's inner circuit.

- **Resistance, Continuity, Diode, PTC Component Protection**

  Incorrect input voltage will prompt the Tester to automatically enter into a protective state. The device can

only be exposed to unusual voltages for short and limited time periods. If the input voltage is over 600 V, the meter will be damaged.

› **mA Current Fuse Range: 250 V, 1A**

If the current is over the rated range, the fuse will melt in order to protect the meter. Replace a fuse only with a similar rating. Open the battery cover to replace the fuse.

NOTE: The 10 A socket is not equipped with a fuse to protect the device with over range currents. Using the 10 A socket to measure voltage will damage the meter.

2.3.26. Optical Power Meter (Optional)

Click  and enter one of five wavelength, as follows: 1625 nm, 1550 nm, 1490 nm, 1310 nm, 1300 nm, or 850 nm.

Linear or nonlinear optical power displays are available for optical power testing and fiber link loss relative measurement. This is a useful tool for the installation and maintenance of optical fiber communication, cable television, and security systems.

NOTE: Keep the fiber connector and the dust cap clean, and clean the detector with special alcohol.

Data Hold

While testing, click **Hold** to hold data. Held data will not change and can be easily accessed if required. Press again to quit.

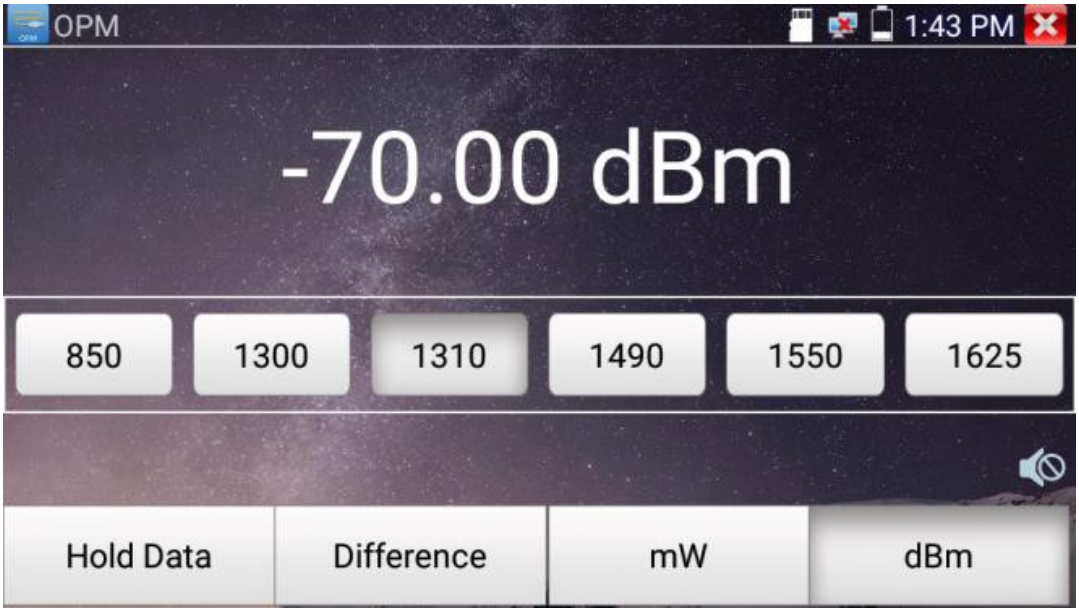


Figure 127, Optical Power Meter Screen

› **Relative Power Value (Optical Link Loss) Measurement**

While testing, set the wavelength required for measurement. Click "Relative" (difference) to test. The Tester will automatically save the current fiber power value as the base reference value.

Connect another optical fiber to be measured. The new measurement and relative value will be shown in red. Press again to quit.

Figure 128, Relative Power Measurement Screen

Held data and relative measurements used together will be shown in yellow when the function is in effect.

Figure 129, Data Hold and Relative Power Measurement

2.3.27. Visual Fault Locator (Optional)

Click  to enter.

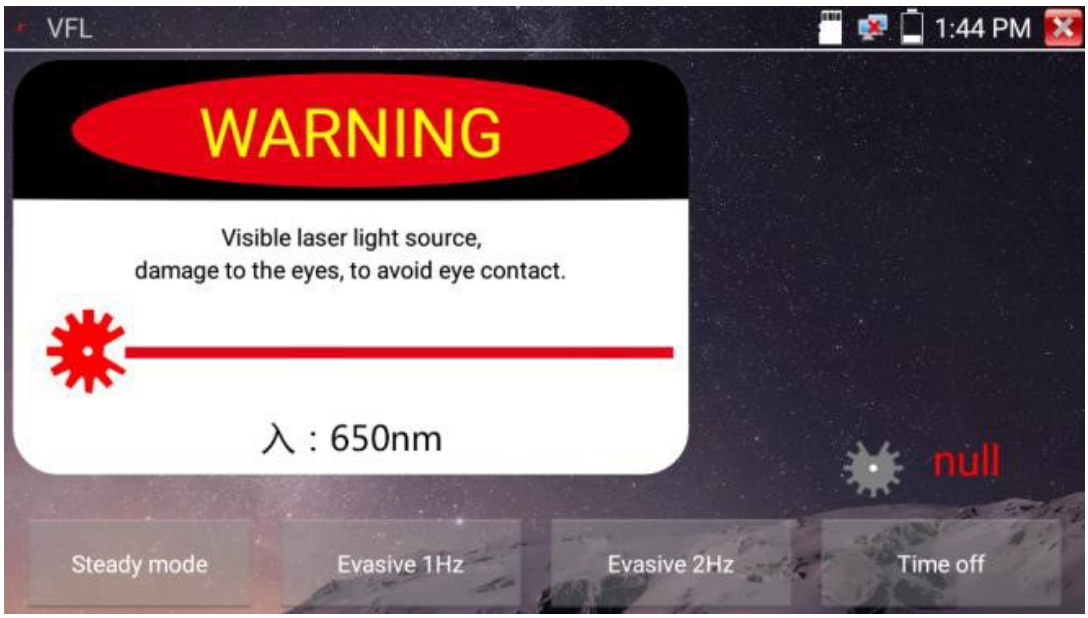


Figure 130, Visual Fault Locator Screen

Four Visual Fault Locator modes can be selected, as follows: **Steady Mode**, **Evasive 1 Hz**, **Evasive 2 Hz**, and **Time Off**.

Click **Steady Mode** to enter steady status.

Click **Evasive 1Hz** and **Evasive 2Hz** to enter pulse mode.

Click **Time Off** to turn off Visual Fault Locator Mode.

Time Off includes the following lengths of time: 5 minutes, 10 minutes, 30 minutes, 60 minutes, and 120 minutes.

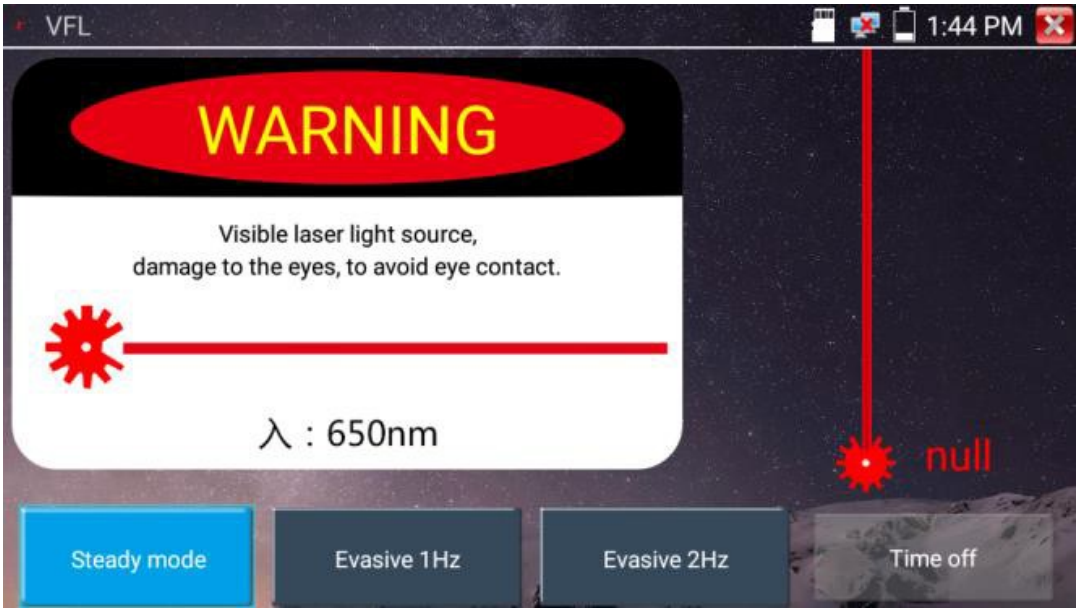


Figure 131, Visual Fault Locator Screen – Stealth Mode Button

Click **Steady Mode** for continuous red laser emission. Click again to quit.

Figure 132, Visual Fault Locator Screen – Pulse Mode

2.3.28. Audio Recording

Connect an audio device to the IP Tester's audio input port. Click  to enter the **Audio Recorder** application. Click the red button to stop, and the unit will prompt you to save the recording.

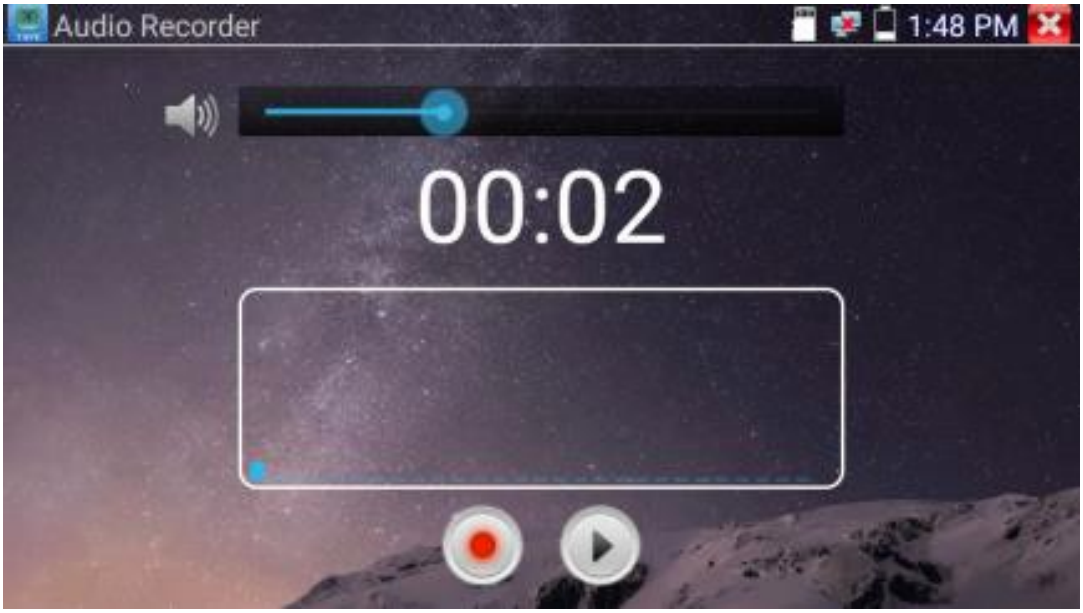


Figure 133, Audio Recording Screen

2.3.29. Data Monitor

Click  to enter.

Figure 134, Data Monitor Screen

Click **Setting** to choose the baud rate for the RS-485/RS-232 controllers. The value must be the same as the DVR or control keyboard. The DVR or control keyboard sends the code to the Tester. If the protocol can be read, it will show on the upper right-hand corner as Pelco D, for example. If it cannot be read, it will show as P:---.

While the Tester receives the code, press CLOSE RETURN to clear.

The RS-485 port displays the PTZ control code for the multifunctional keyboard or the DVR. The controller can check the status of the RS-485 transmission through the code on the display. The RS-485 communication rate must be the same.

Check whether the RS-485 communication states of the video optical transmitter are correct. Technical support can check the

protocol and verify the data by means of the displayed code.

2.3.30. Audio Player

Click to enter. The audio player only supports MP3 audio files.

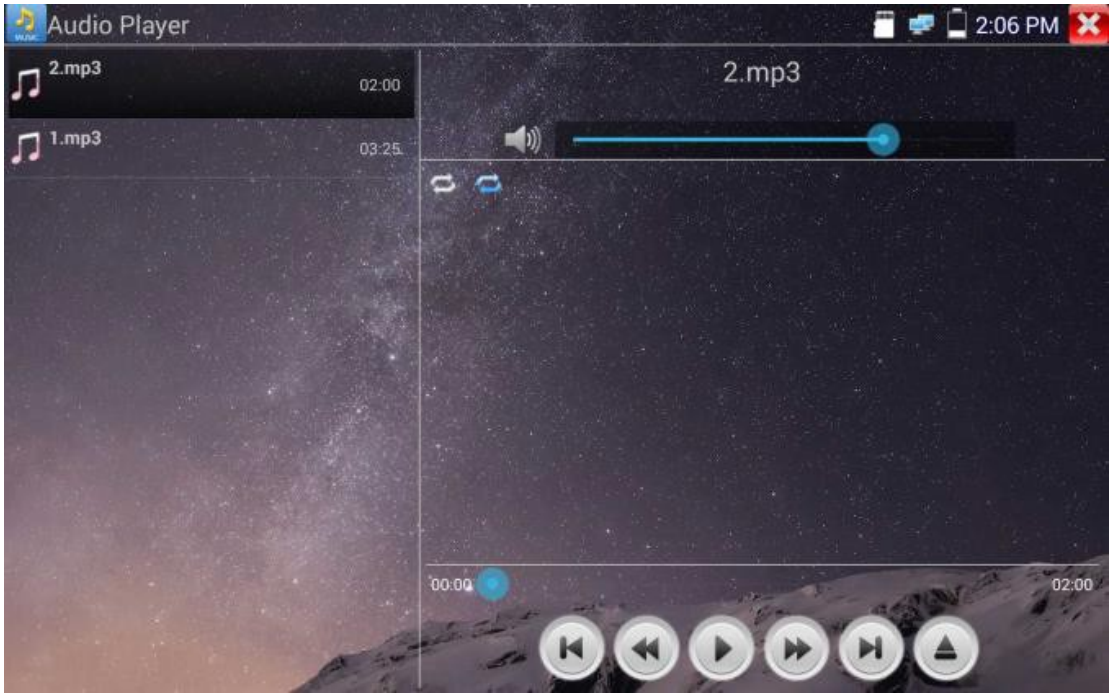


Figure 135, Audio Player Screen

2.3.31. Media Player

Click  to enter.

Figure 136, Media Player Screen

The Media Player can browse video and image files in MP4, H.264, MPEG4 and MKV format. Files recorded on the Tester can play directly via the Media Player. The Media Player will automatically display the video files from the SD card. Click on the desired file to play it. Click **Return** to exit.

To rename or delete an existing file, press the file name for a few seconds until the screen below appears. Rename or delete the file by pressing the desired option.

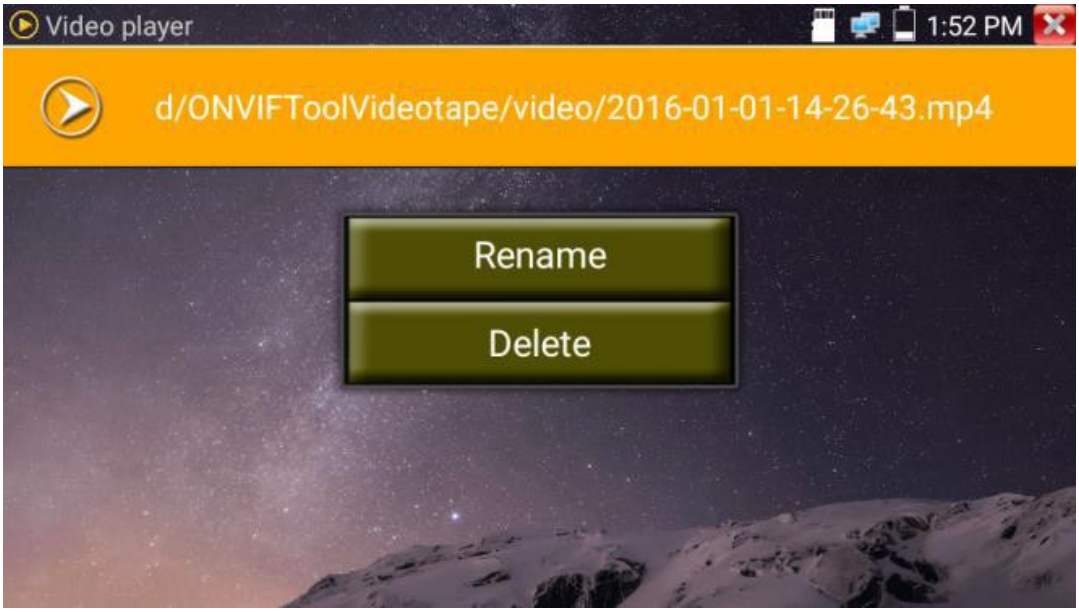


Figure 137, Video Name Change Menu

2.3.32. RTSP Player

The RTSP Player application allows the user to view the RTSP video stream from an IP camera. For those unable to view a camera feed via the ONVIF or IP Camera Test applications, it may be possible to view live video via a camera's RTSP stream.

From the main menu, select the **APP Tool** folder and choose the **RTSP Player** to open the application. If the IP camera uses MJPEG, select the RTSP icon. If the IP camera uses H.264, select the **RTSP HD** icon.

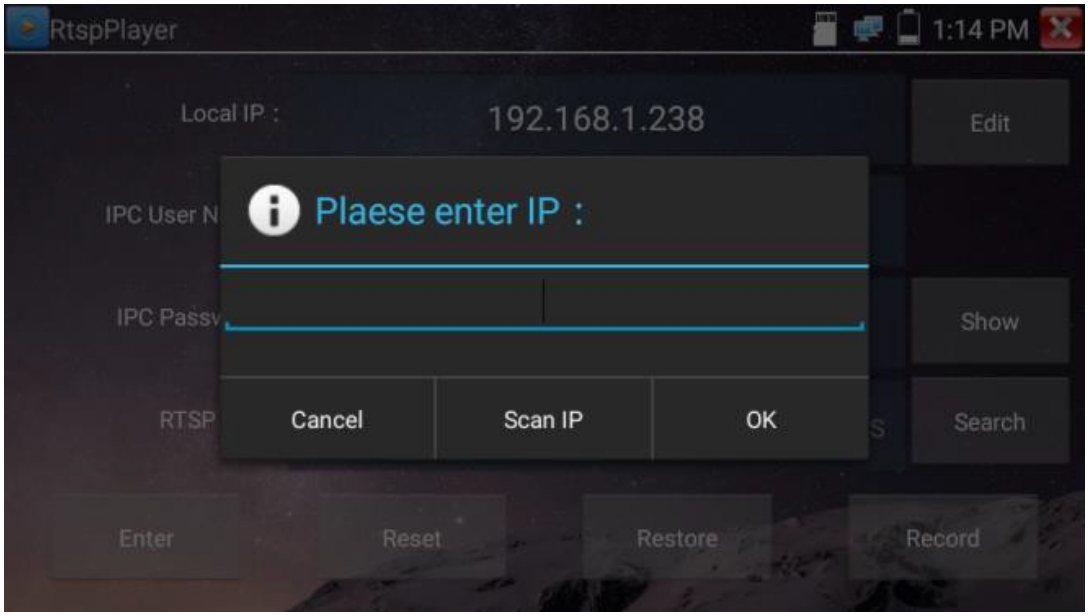


Figure 138, RTSP Player Screen – Enter IP Address

- **Local IP**: This is the Tester's IP address.
- **RTSP Add**: Enter the IP camera's RTSP URL manually or click **Search** to search the network for cameras that use an RTSP stream.
- **IPC Username**: Enter the IP camera's user name.
- **IPC Password**: Enter the IP camera's password.

  Once all necessary information has been entered, click **Enter** at the bottom left-hand side to view the RTSP stream.

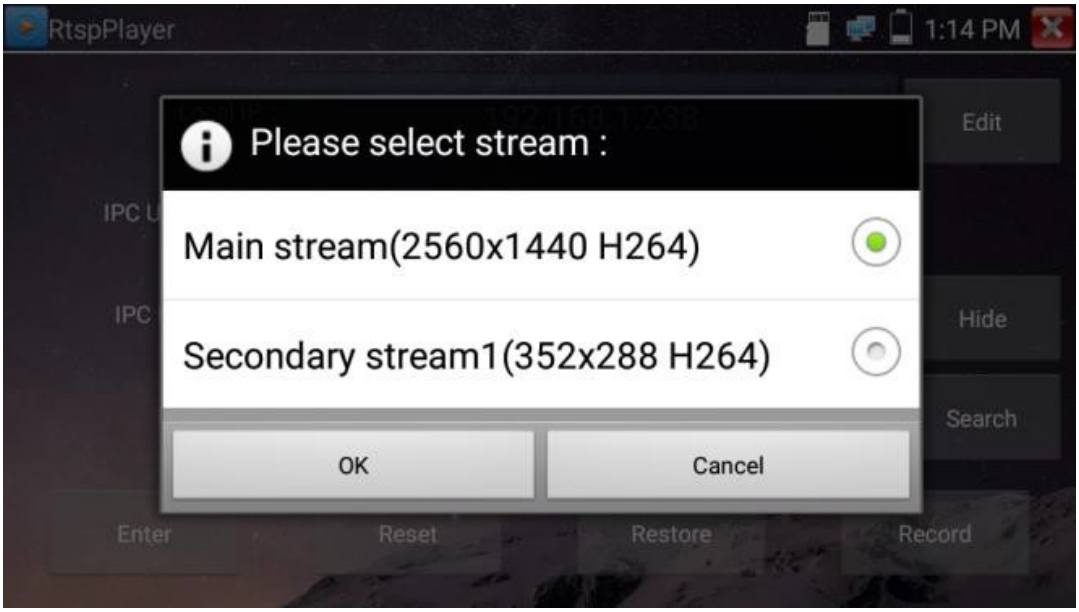


Figure 139, RTSP Player Screen – Stream Selection Menu

NOTE: In the event that the IP Tester does not automatically detect the RTSP stream, refer to the specific camera manufacturer for the specific RTSP stream URL. This information can be found online by searching for a camera's model number and RTSP.

2.3.33. Hik Test Tool

The Hik Test Tool application is design to activate and debug Hikvision cameras. It can auto-identify unactivated Hikvision cameras and display images from them.

Tap HIK to enter.

- **Hikvision Activation:** When connecting an unactivated Hikvision camera to the Tester, the camera will be auto-identified and display "Unactivate" in safety mode. Select **Enable** and click **OK** in the "The camera is not activated, activate now?" pop-up.

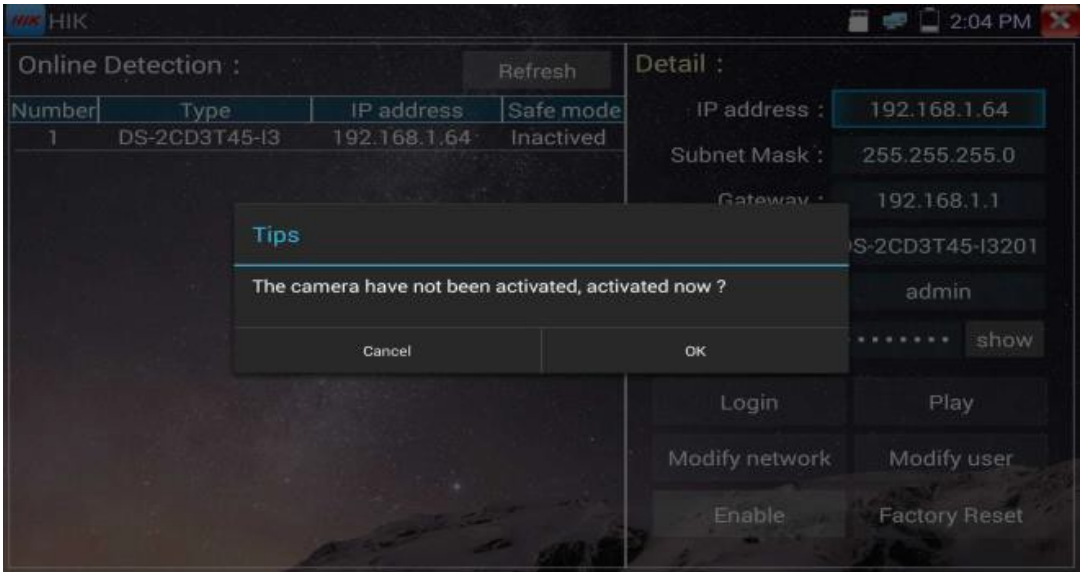


Figure 140, Hikvision Camera Activation Screen

- **Input Password**: Input the new password and tap **OK** to activate.

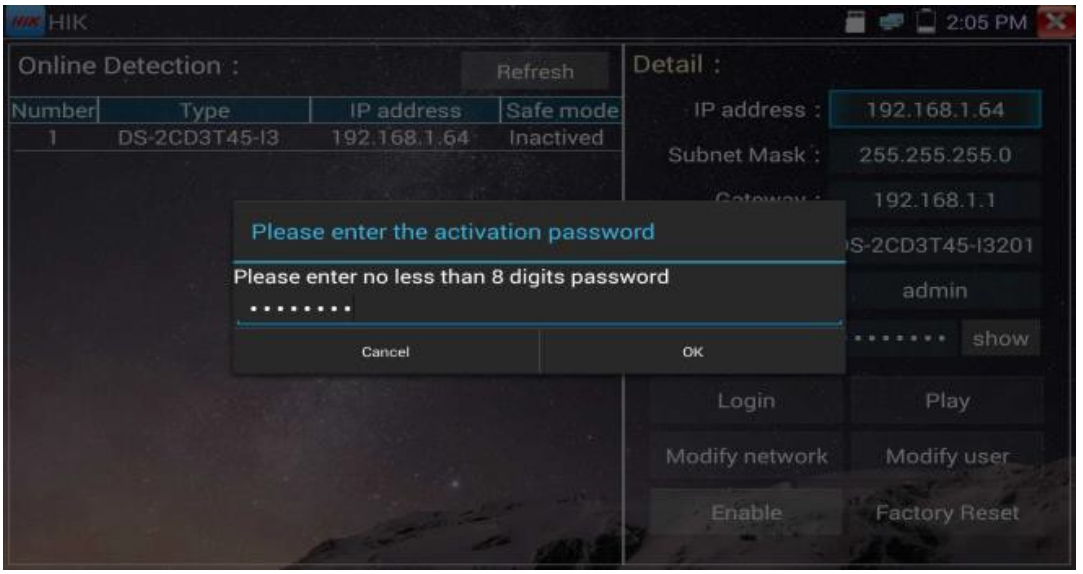


Figure 141, Password Input Screen

Confirm Activation: After activating the camera, the program modifies the camera IP by default. Multiple cameras can be activated in a Local Area Network. Modify the IP in the pop-up menu to improve project efficiency.

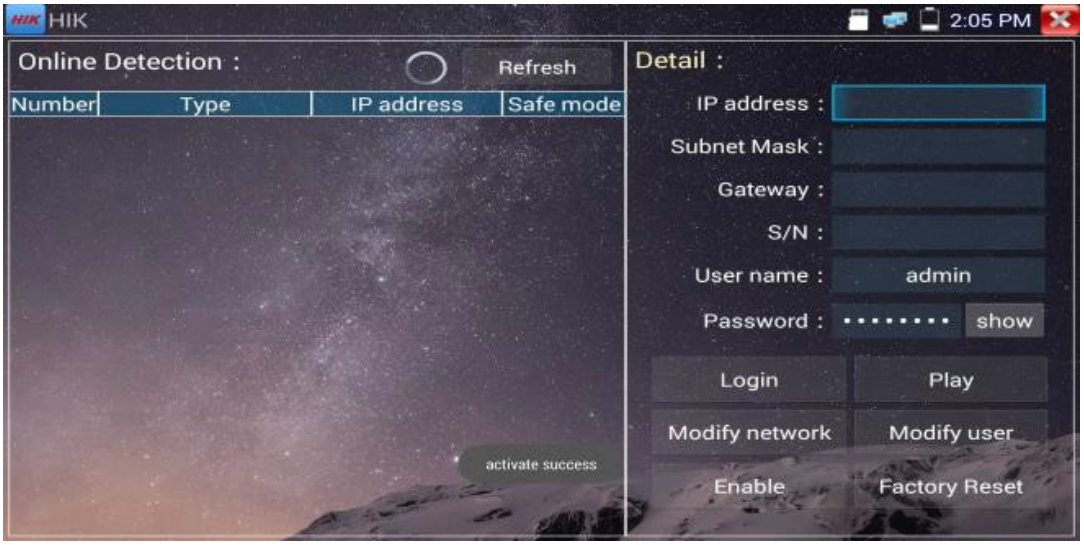


Figure 142, Camera IP Modification Screen

- **Play**: Display camera image.
- **Modify Network Information**: Change the camera IP address, subnet mask, gateway, etc.

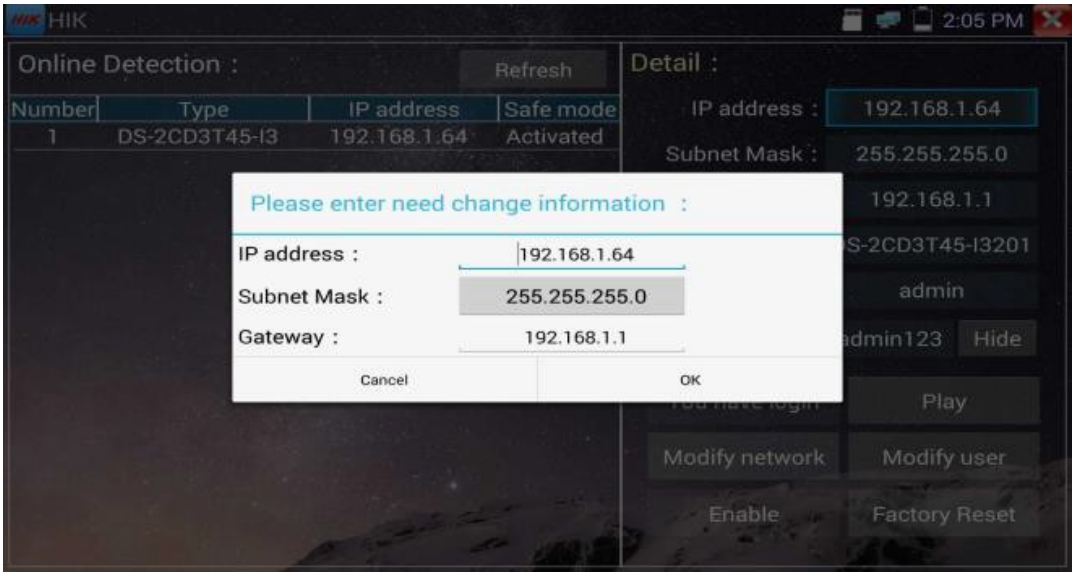


Figure 143, Network Information Modification Screen

- **Modify User Information**: Modify the camera's user name and password.

Figure 144, User Name and Password Modification Screen

- **Factory Reset**: Camera factory reset.

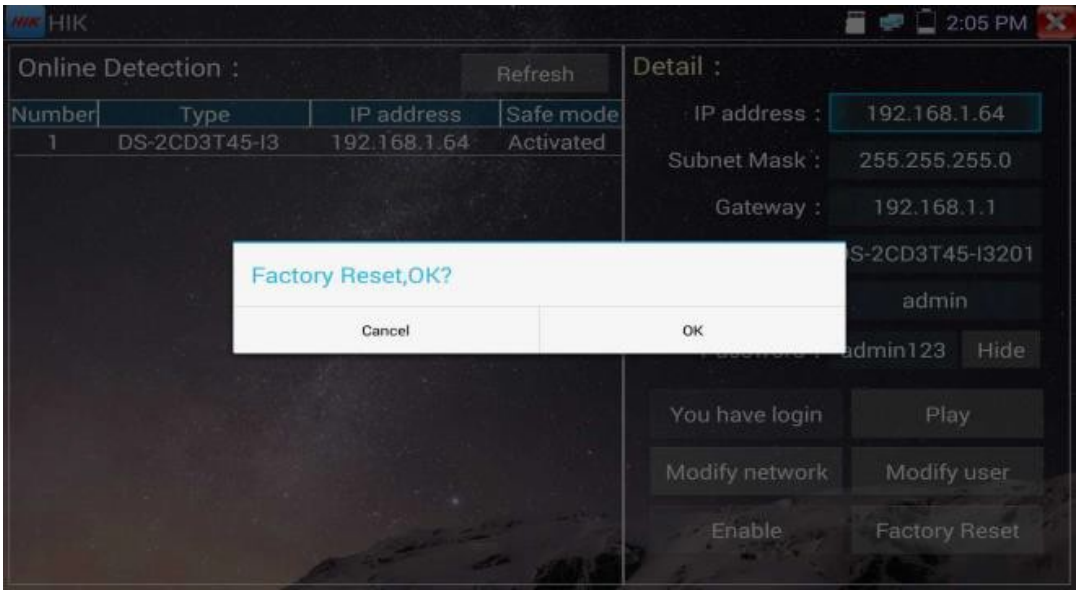


Figure 145, Factory Reset Confirmation

2.3.34. Dahua Test Tool

The Dahua Test Tool was developed for the installation and debugging of Dahua IP cameras. It can display camera images, modify IP, user name, password, and perform other tasks.

Click DH to enter the Dahua Test Tool.

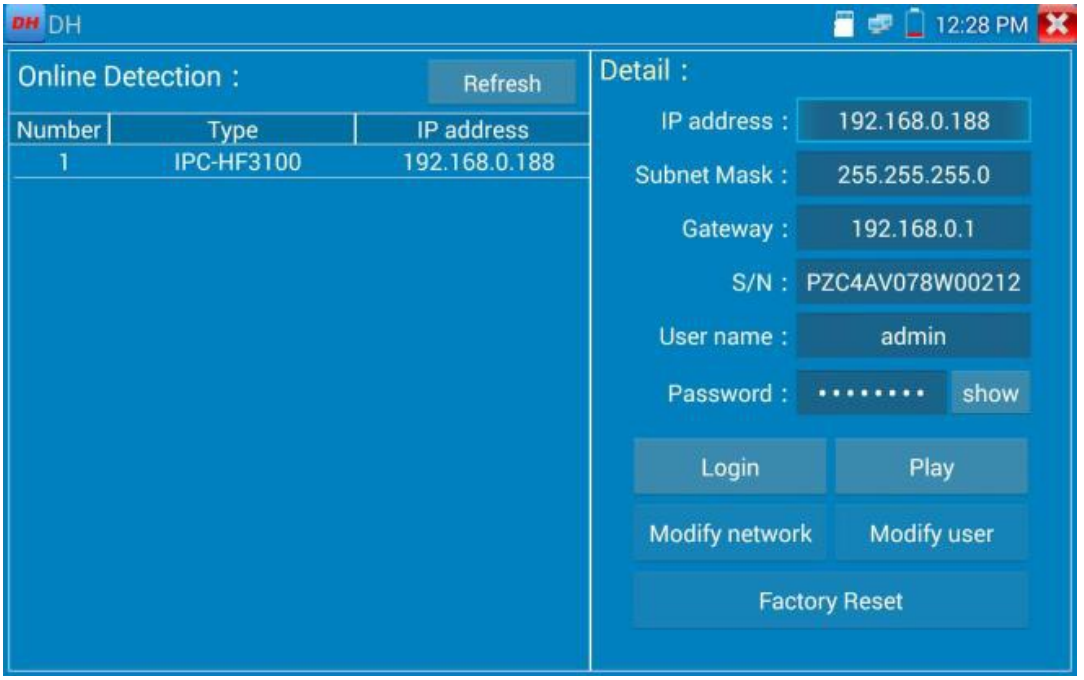


Figure 146, Dahua Test Tool Screen

Select the camera from the online detection menu. If the camera supports non-verification login, click **Play** to view the image.

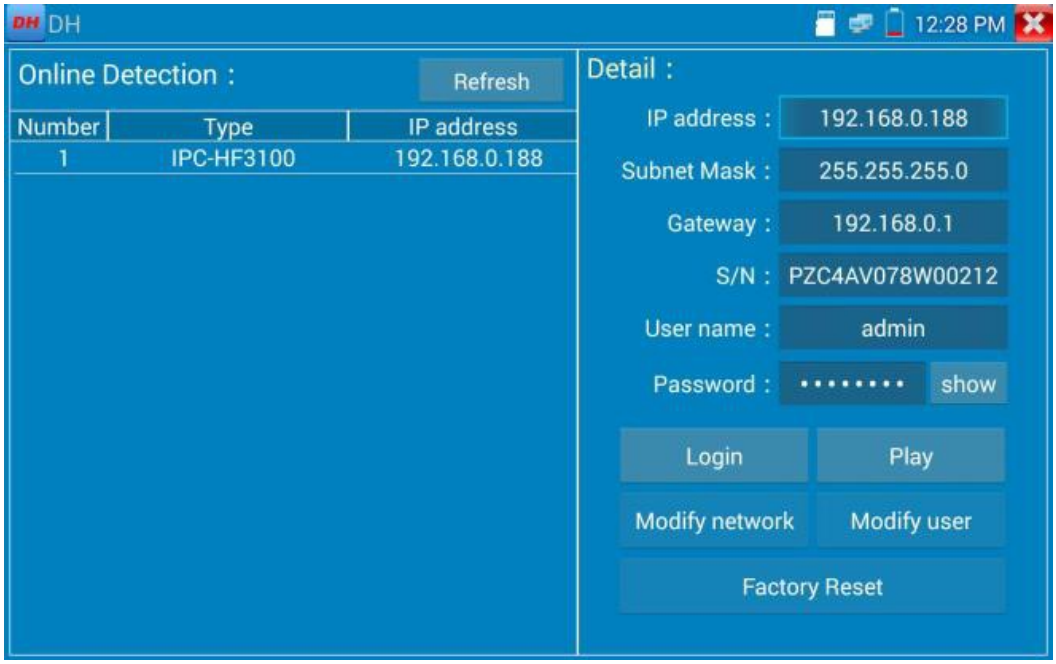


Figure 147, Dahua Test Tool Screen

In the pop-up stream menu, select the mainstream or substream that is to be tested.

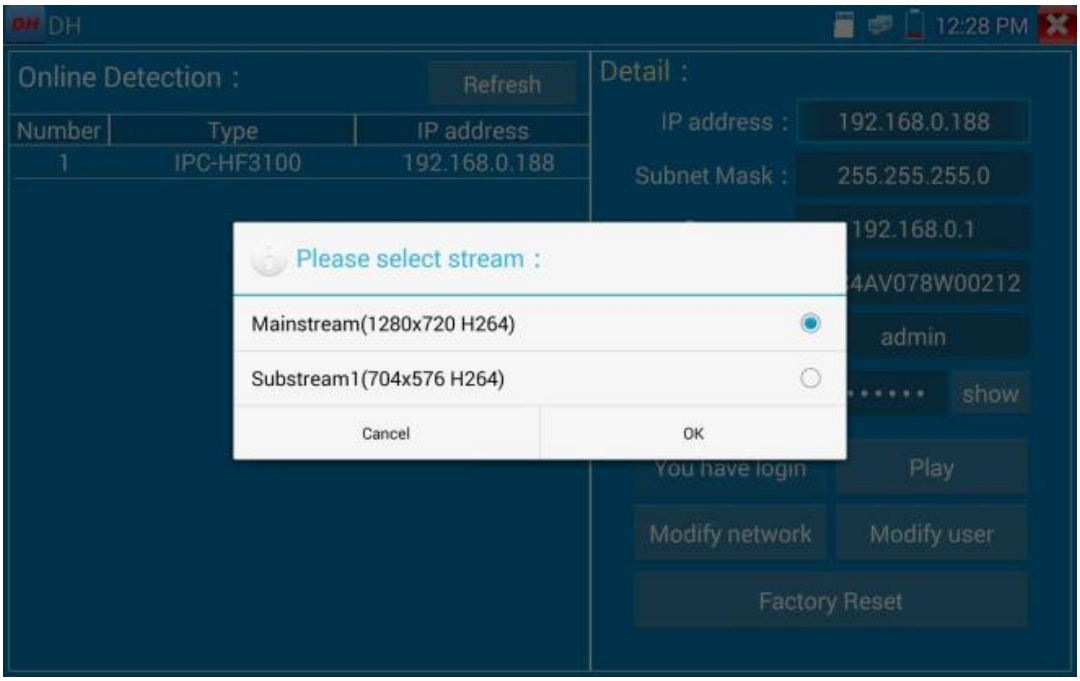


Figure 148, Stream Selection Menu

If the camera does not support non-verification login, choose the camera in the online detection menu, provide the correct user

name and password, and click **Log In**. After logging in successfully, the camera can be tested.

- **Play**: Select mainstream or substream to play the IP camera's live video.
- **Modify Network Information**: Modify the camera's user name and password (i.e. the ONVIF, Dahua Test Tool, or IP Camera Tester user name and password, not the web user name and password).

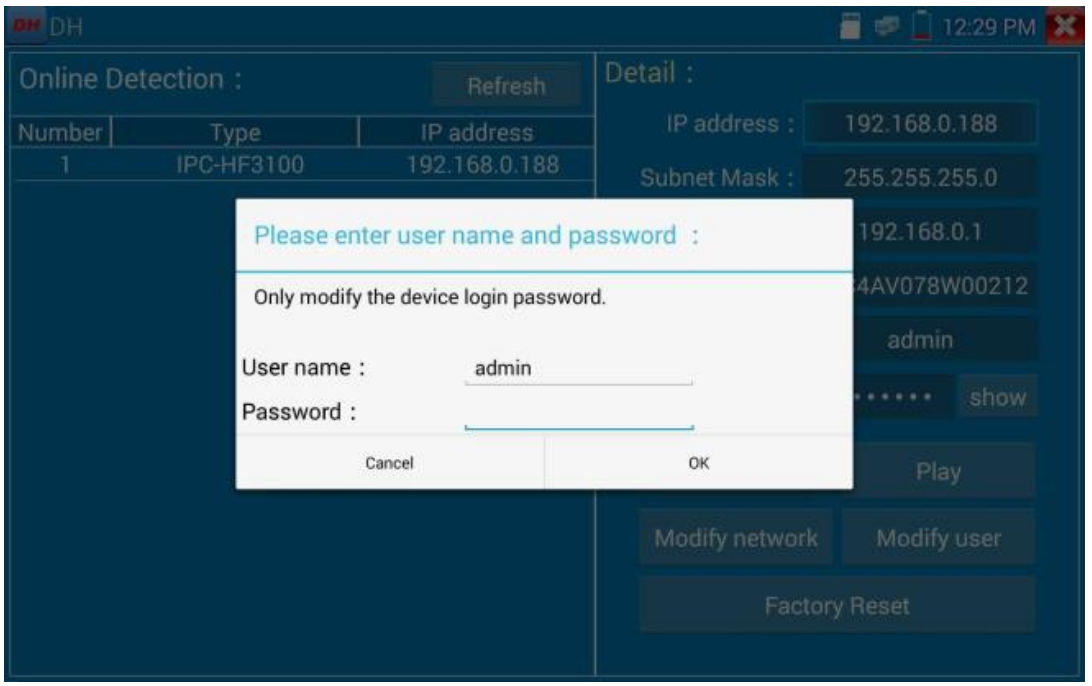


Figure 149, User Name and Password Modification Screen

- **Factory Reset**: The camera will undergo a soft reset and the device's user name, password and network settings will be saved. Other information will be factory reset.

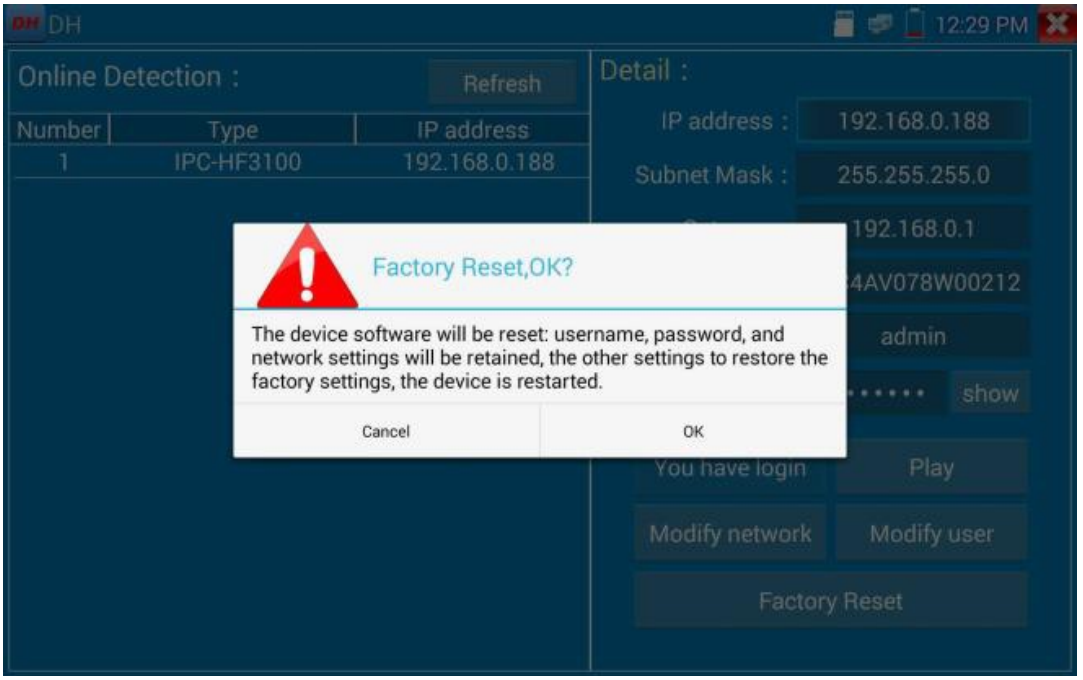


Figure 150, Factory Reset Confirmation Screen

2.3.35. Update

Copy the downloaded update file to the SD card's **Update** directory. If there is no directory, one has to be created.

Click  to open the **Update** menu. Select **Local Update** to update via SD card, or select **Online Update** to check for updates online. Applications that need to be updated will be displayed on the screen.

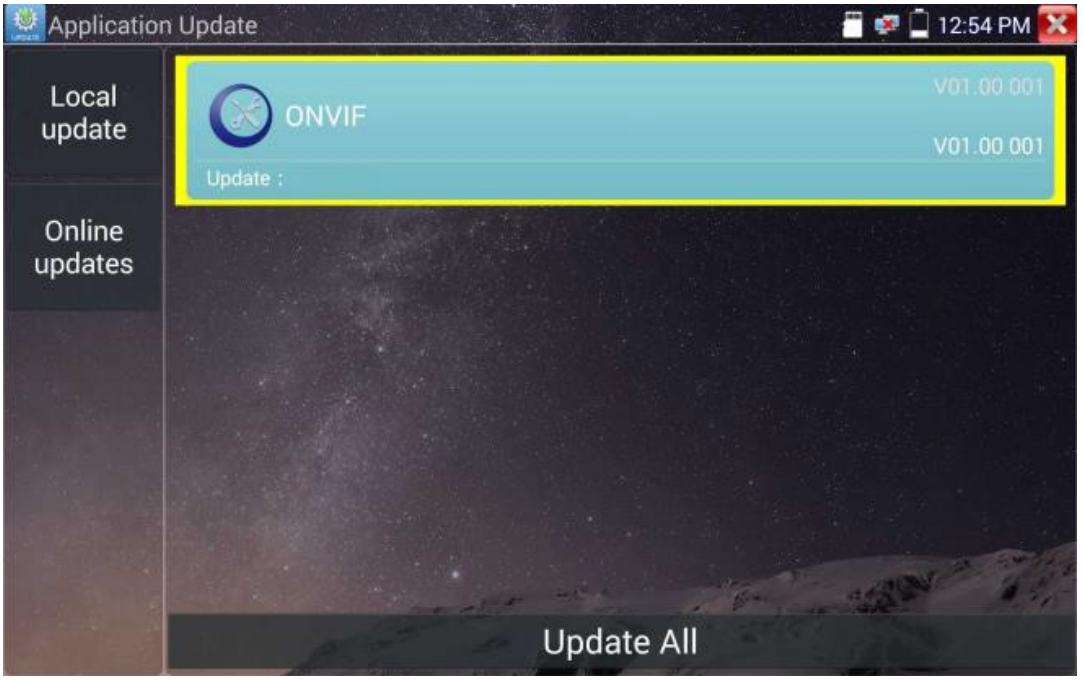


Figure 151, Application Update Screen

Programs that need to be updated will be listed on the screen. Click the available application to update to the latest version.

2.3.36. Office

The Quick Office application (supports Excel, Word, and Power Point formats) allows for convenient document editing functionality.

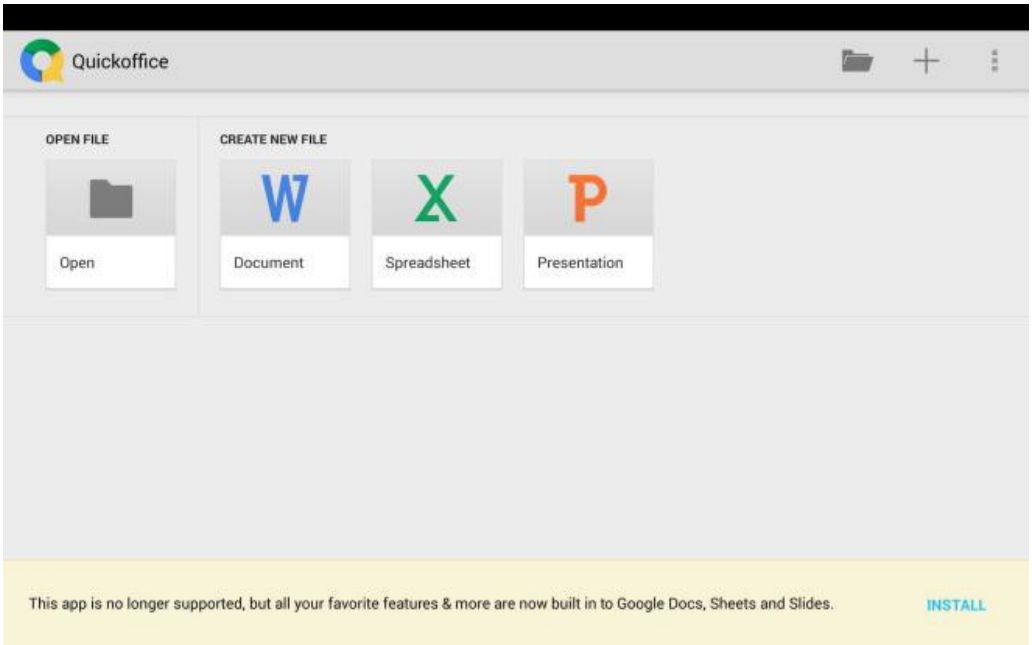


Figure 152, Quick Office Screen

2.3.37. LED Flashlight

A flashlight is available to operate the Tester in dark environments. Click  to turn the flashlight on.

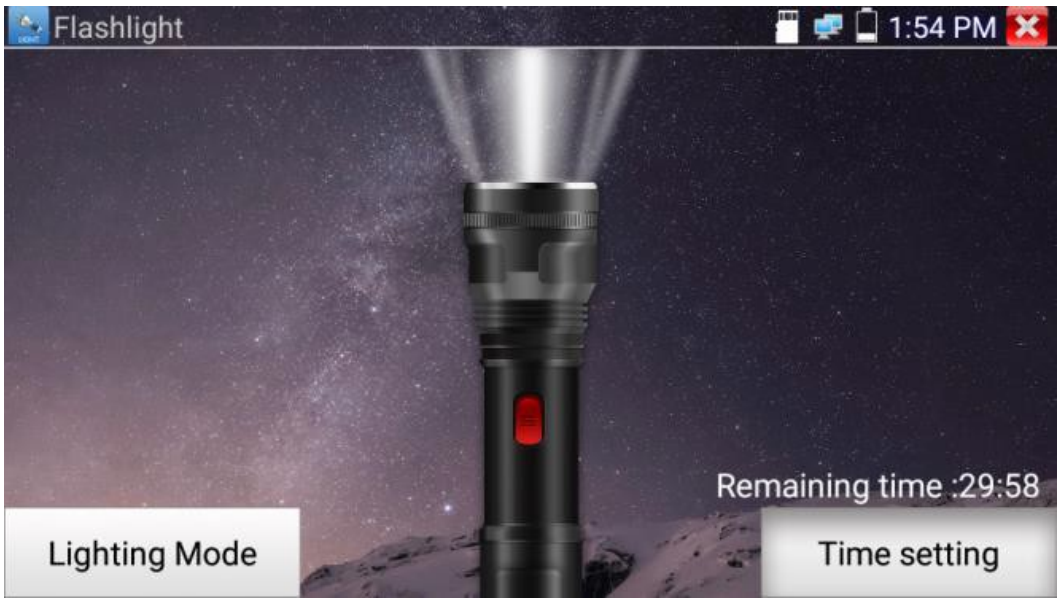


Figure 153, Flashlight Screen

While using the flashlight application, click the red button to turn on the LED lamp. Press it again to turn it off.

If is not pressed to shut off the lamp and to exit the application, the lamp will stay on. Click the **Time Setting** button to set a timer that will shut off the lamp.

2.3.38. Browser

Click to open.

Type in the camera's IP address and press **Go** to access the IP camera's interface.

NOTE: Live video cannot be viewed in the Web browser. To view video, use the IP Tester's live camera view applications.

Figure 154, IP Camera Browser Screen

Figure 155, IP Camera Browser Screen – Settings

The IP camera and IP Tester must be on the same network segment in order for the browser to interact with the camera.

If they are not in the same segment, press **Return** to exit.

Open the **Settings** application from the main menu to change the IP Tester's network settings to match those of the IP camera.

2.3.39. Notepad

The Notepad can be used to record important testing results. Click **Save** to save the contents. The Notepad can also auto-record the storage date and time.

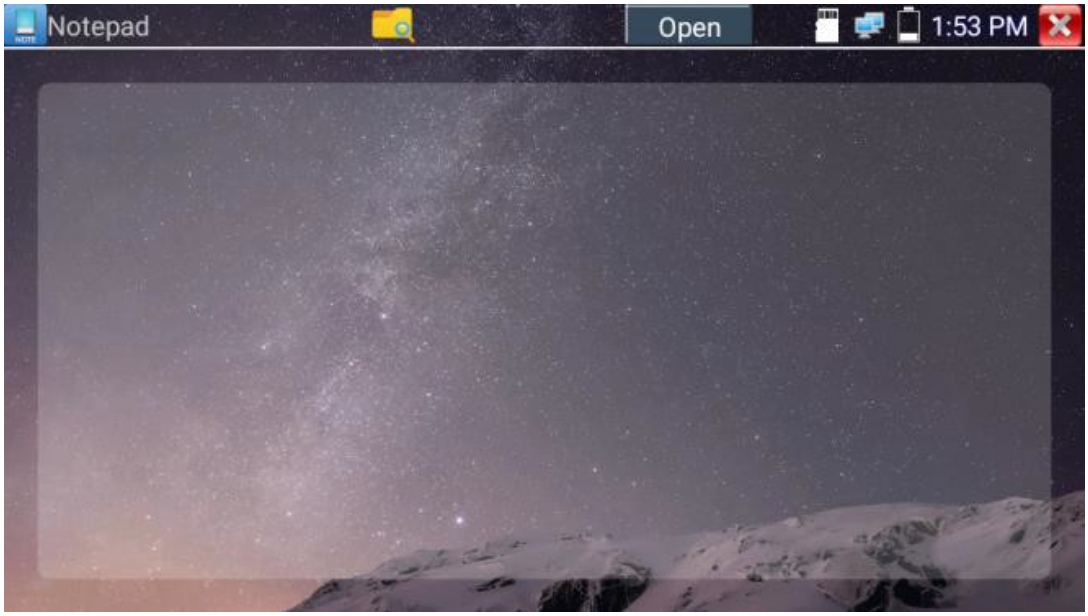


Figure 156, Notepad Screen

Click to view the Notepad. Click each **Record Bar** to show the details. To delete an entry, press the **Record Bar** for several seconds. A deletion prompt will appear.

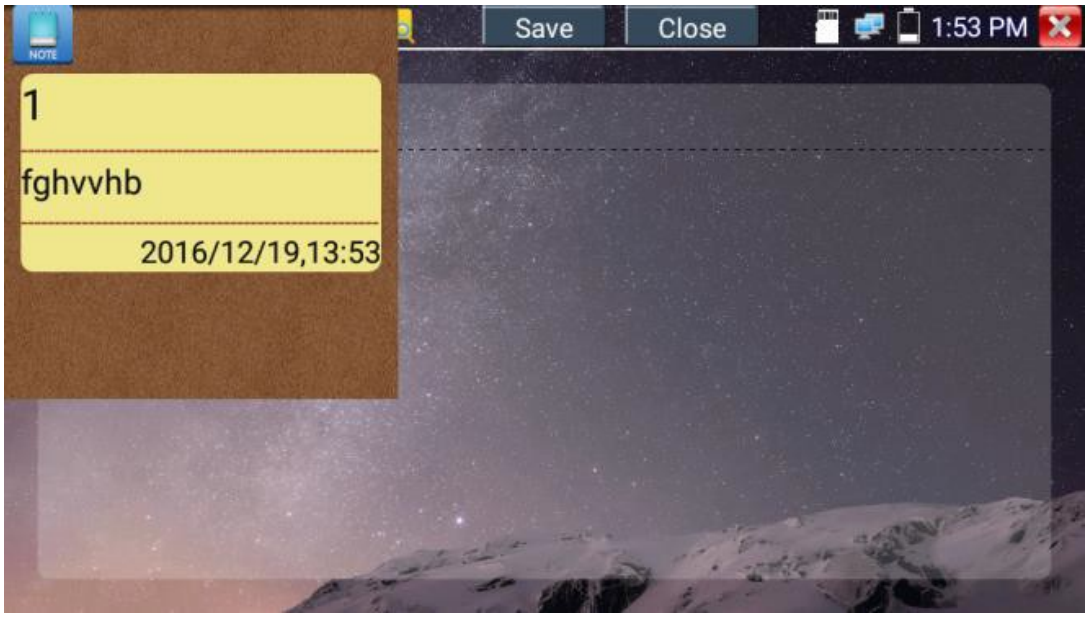


Figure 157, Notepad Screen – Example of Use

2.3.40. System Settings

Click  to open.

Figure 158, Settings Screen

- **Language**: Choose language. Options include English, Chinese, Korean, Russian, Italian, Polish, Spanish, French or Japanese.
- **Typewriting**: Select typewriting, or install another form of typewriting.
- **Date/Time**: Set the Date/time of the IP Tester.
- **IP Settings**: Manually set the **IP Address**, **Subnet Mask**, **Default Gateway** and **DNS Address**, or select **Dynamic Allocation** to use DHCP.

Figure 159, IP Settings Screen

- **WLAN Net**: Turn Wi-Fi on or off by pressing the **Open Wi-Fi** button. Once the Wi-Fi is turned on, the application will scan for wireless networks in your area.

Figure 160, Wi-Fi On/Off Switch

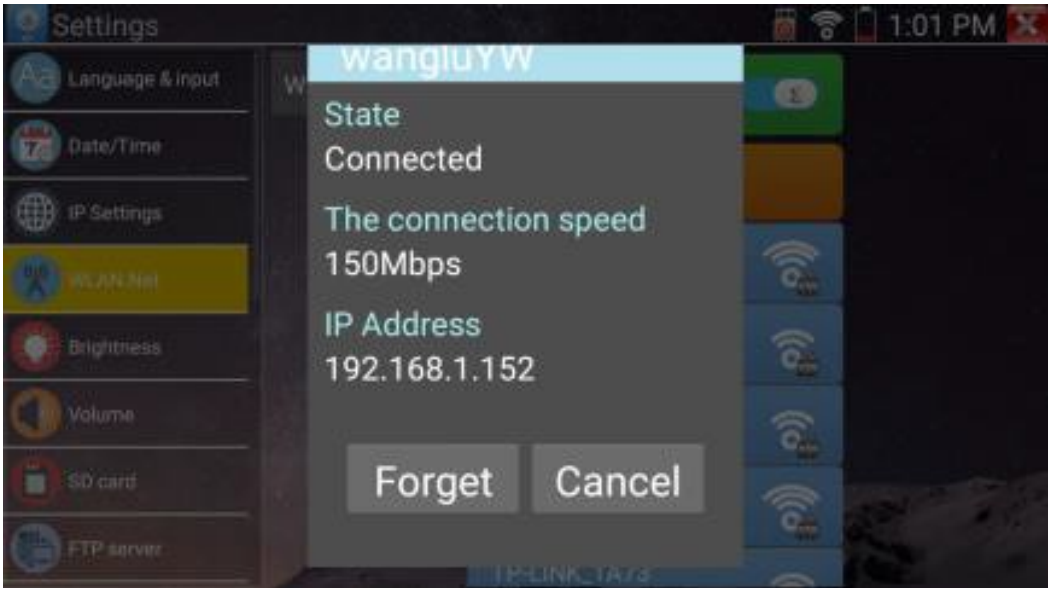


Figure 161, Wi-Fi Information Screen

Select and press **Wi-Fi** several seconds to set a static IP address.

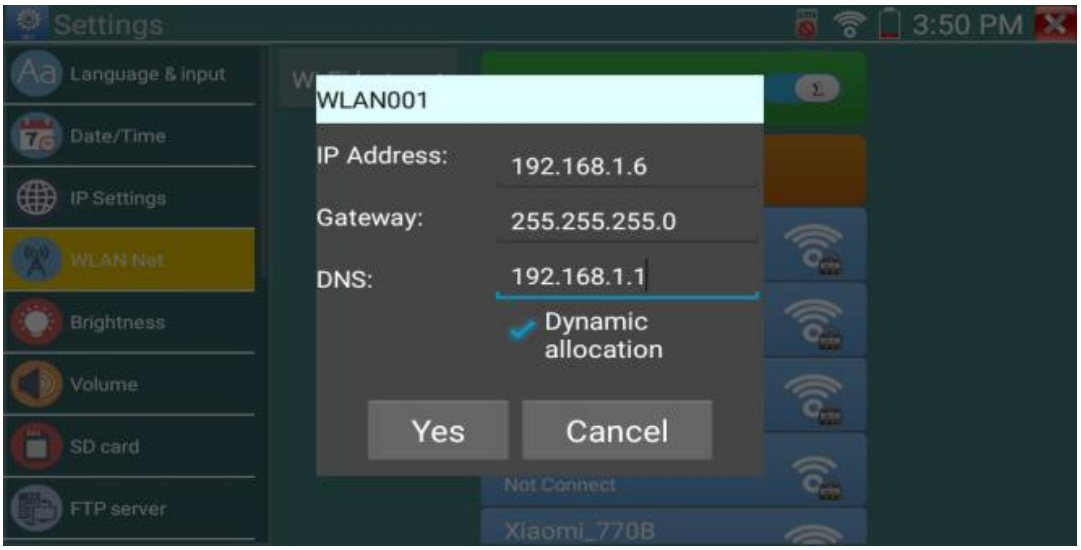


Figure 162, IP Information Screen

- **Wi-Fi Hotspot**: Enter the **SSID** and **Password**, and click **OK** to create a Wi-Fi hotspot.

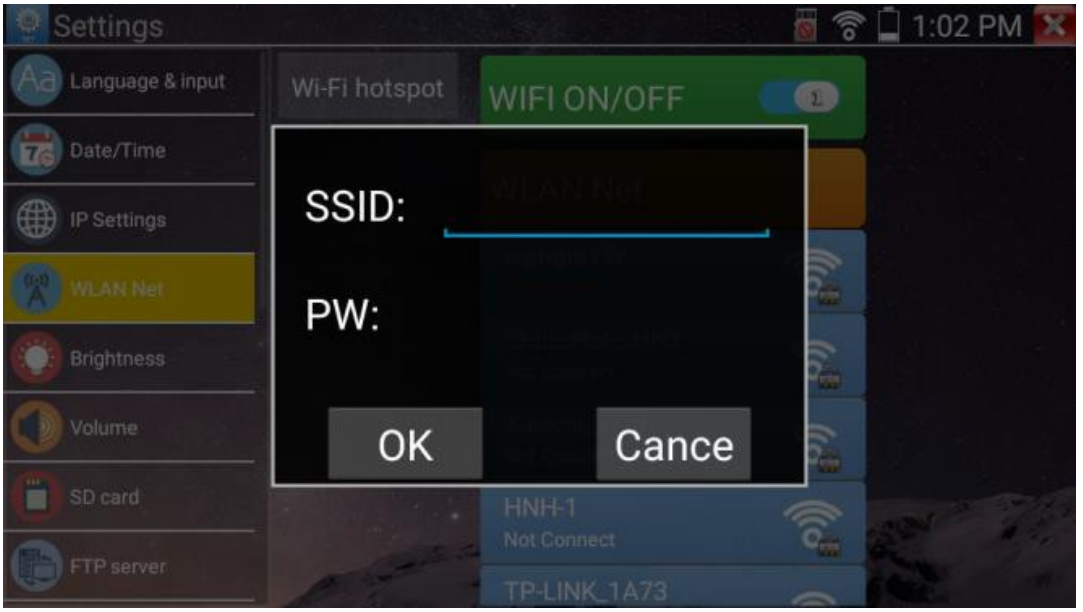


Figure 163, SSID and Password Input Screen

- **Brightness**: Set the desired brightness and adjust the sleep time settings.
- **Volume**: Set the volume.
- **SD Card**: Displays SD Card Capacity. The SD card can also be formatted or unmounted before being removed.
- **FTP Server**: Once the IP Tester connects to a network, a computer can be used to read the SD card files via FTP.

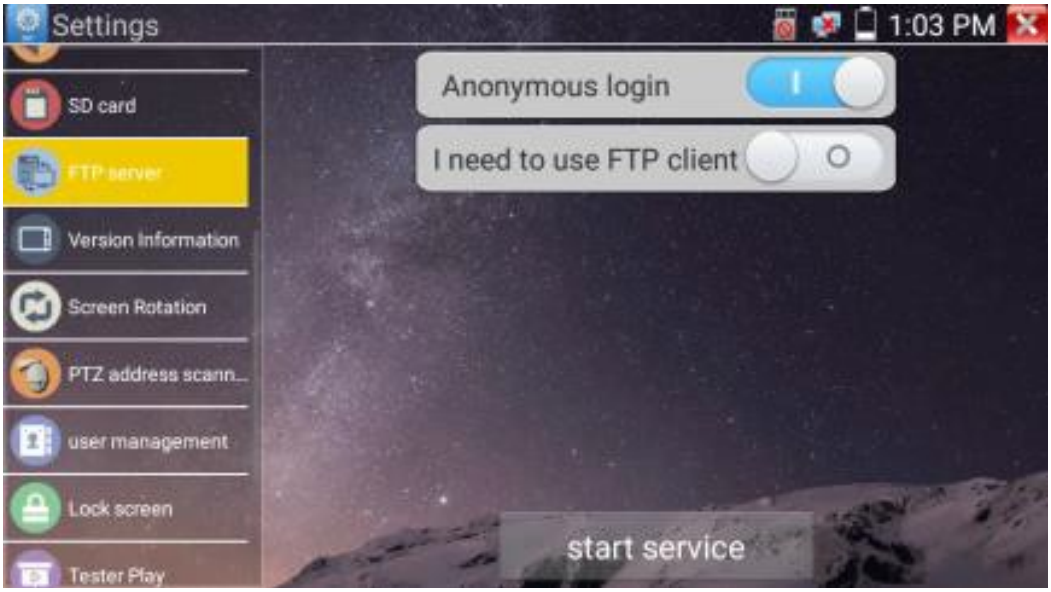


Figure 164, FTP Server Screen – Start Service

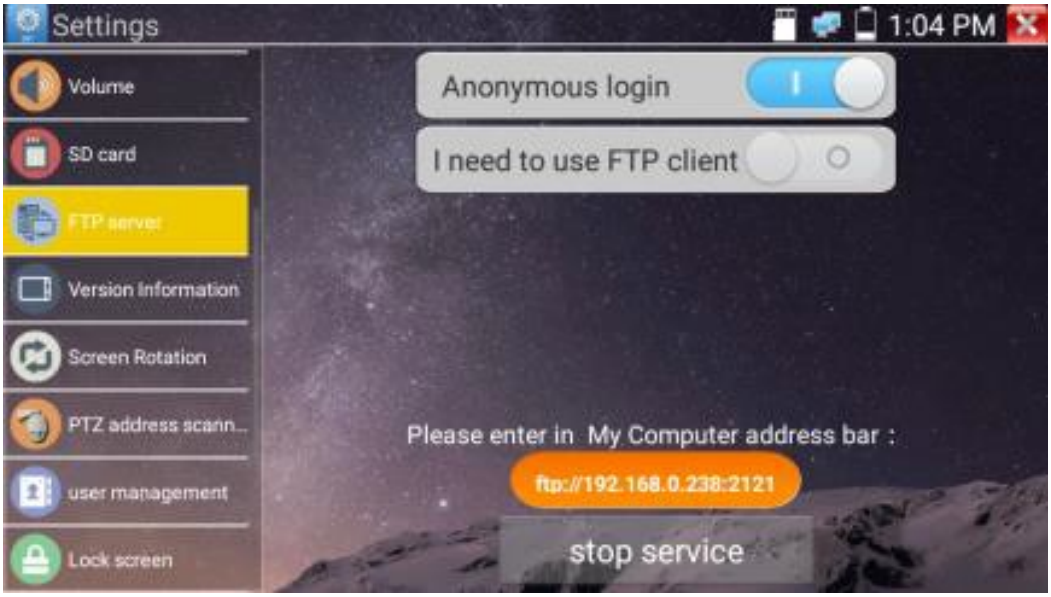


Figure 165, FTP Server Screen – Stop Service

Start the FTP server and enter the Tester's FTP address in the PC's address bar. This will enable the PC to read, copy and edit the files from the SD card without the use of an SD card reader.

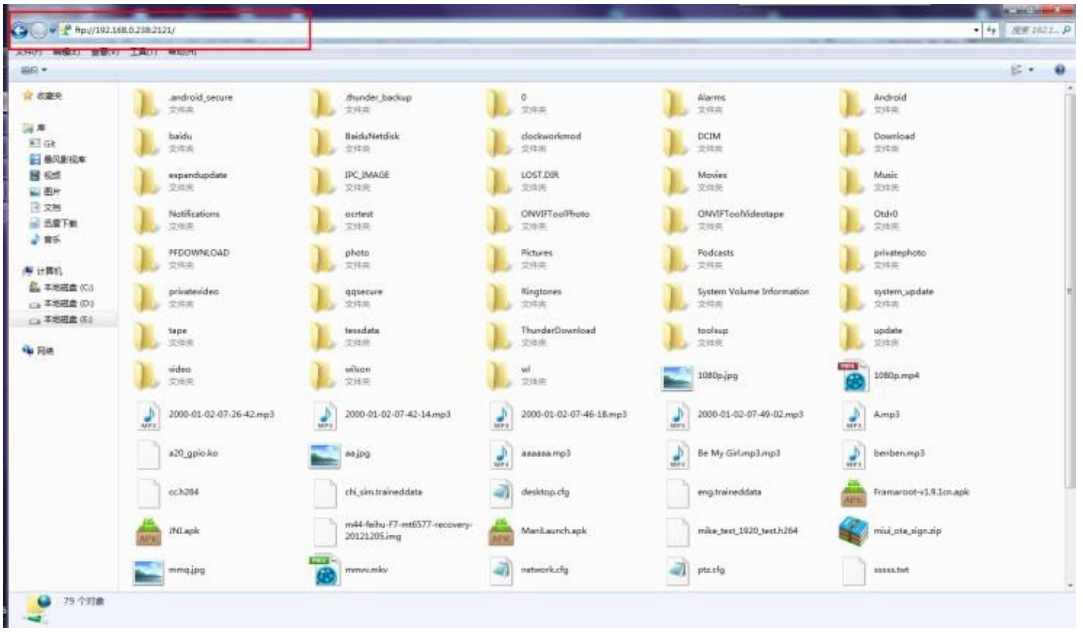


Figure 166, Reading Files from SD Card

- **Version Information**: Shows application version information. Press an application for several seconds to uninstall it.
- **Screen Display Rotation**: Click on **Screen Rotation** to flip the IP Tester's display by 180 degrees. This function is very convenient for when using the LAN cable on the bottom of the unit without having to flip the unit itself.
- **PTZ Address Scan**: Toggle the PTZ Address scan on or off before entering the **PTZ Controller** application. This option needs to be turned on in order to use the PTZ Scan feature.
- **Online Registration**: Online updates require prior registration. After the Tester connects to the network, the registration information can be filled in.
- **User Feedback**: To send comments or suggestions regarding the Tester, connect it to a network and write the feedback.
- **Lock Screen**: The Tester does not lock by default. A password screen or pattern screen lock can be configured, but is not mandatory.

- **Password Lock Screen**: A password can consist of digits, letters or characters. Confirm the password by entering it a second time. When the Tester is in standby mode or needs to be turned on, input the password to access it.
- **Pattern Lock Screen**: Draw a lock pattern. The Tester can be accessed using this pattern when it is in standby mode or is turned on or off.

  To modify the lock screen password, enter the lock screen password. Select the lock screen password or pattern to reset the lock screen password. After resetting the lock screen pattern, a new lock pattern needs to be drawn.
- **Restore to Factory Settings**: If the Tester is restored to factory settings, all personal files and applications will be removed.

2.3.41. File Explorer

Click **File** on the top bar tool to select internal or external storage. Click **...** in the upper right-hand corner to see the pop-up menu. Select another operation or exit.

Figure 167, File Explorer Screen

- **Browser**: View and manage **Music**, **Videos**, **Pictures**, **Documents**, **Zip files**, and more.
- **FTP Server**: Choose internal or external SD card storage. Refer to FTP Settings in Section 2.3.40: System Settings for more details.

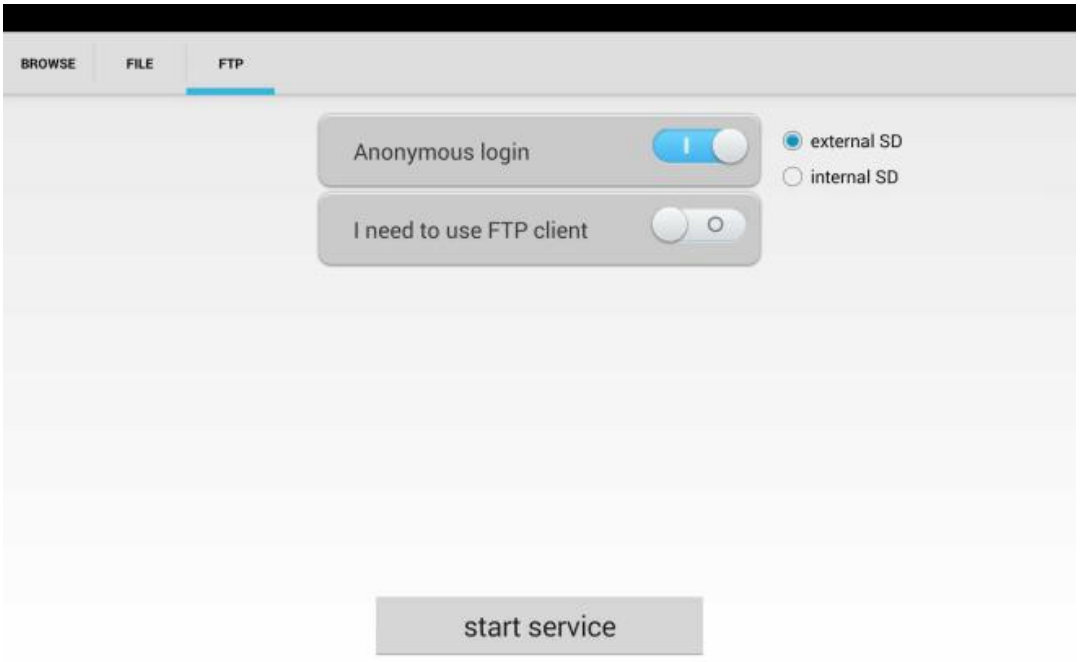


Figure 168, FTP Server Access Screen

2.3.42. Theme

Click the **Theme** icon to enter.

- **Desktop Style**: Select between Lite Mode and Normal Mode.
- **Theme**: Pressing a square of any color for several seconds will automatically move the square to the rectangular area. Pressing a selected color for several seconds will automatically delete it. Theme colors are in fixed or random order. Click **Set** to save.

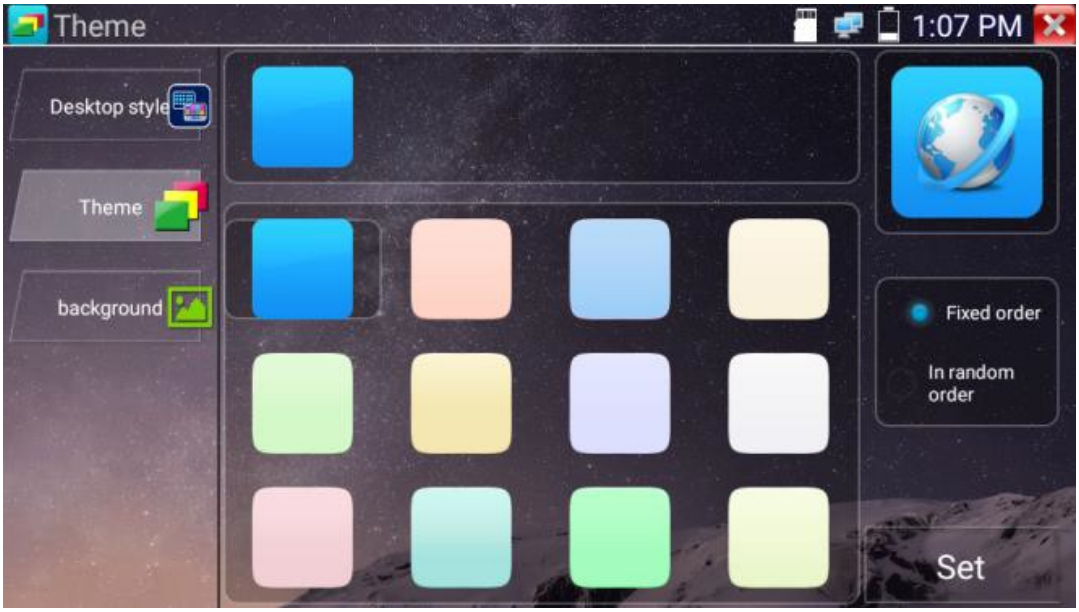


Figure 169, Theme Selection

- **Color**: When setting background color, select colors from **Color Phase** or input the color's RGB.

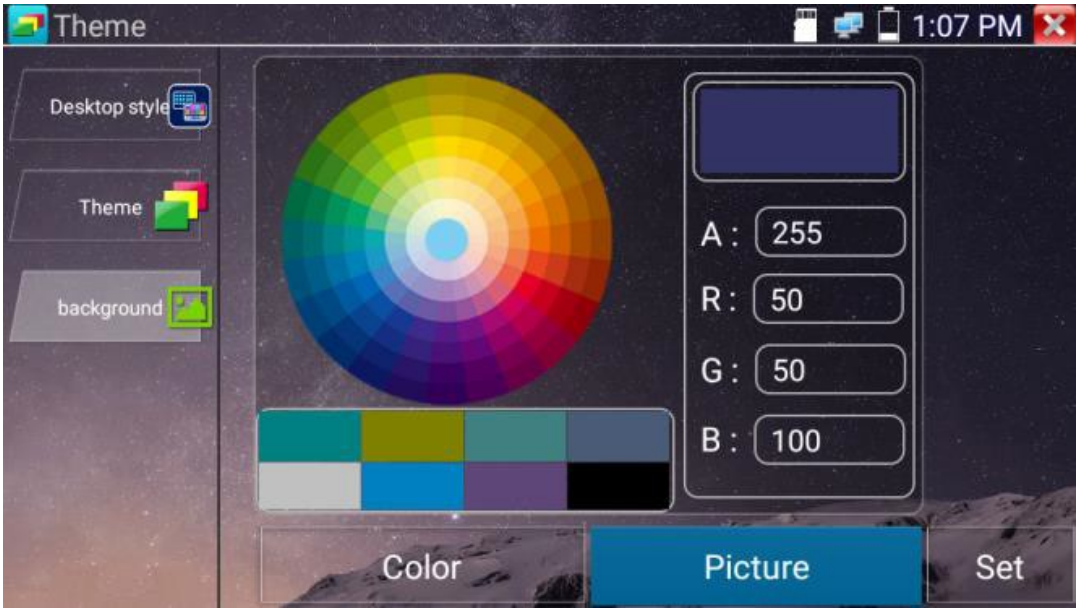


Figure 170, Background Color Selection

After color setting is finished, click **Set** to set it as a desktop or application background.

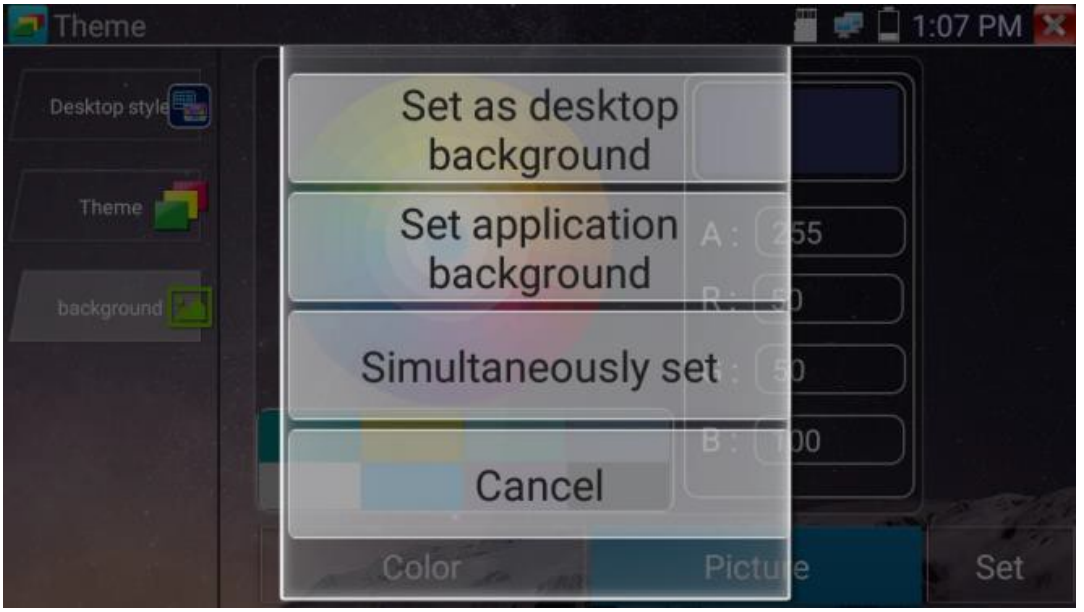


Figure 171, Background Application Menu

- **Set as Desktop Background**: Set color as desktop background.
- **Set as Application Background**: Set color as application background.
- **Simultaneously Set**: Set color as desktop background and application background.
- **Cancel**: Cancel current settings.
- **Picture**: Click **Picture** to select a picture and set it temporarily as background in order to view setting effects. Click **More** to select pictures from a local file, and click set to set picture as background.

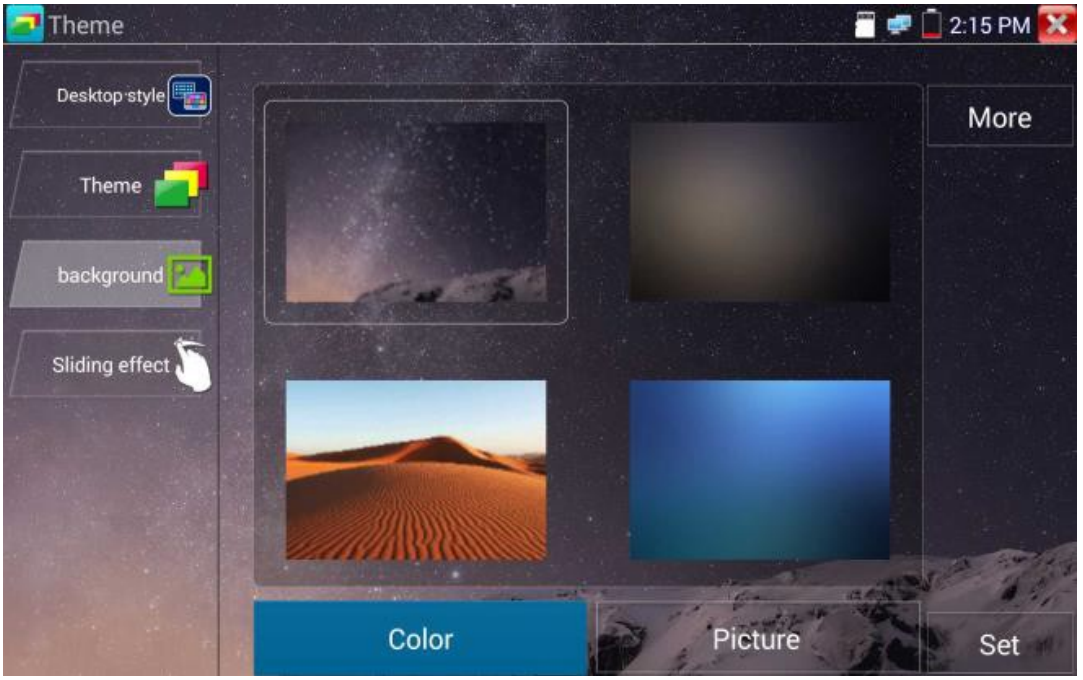


Figure 172, Theme Selection from Local Files

- **Sliding Effects**: Tester's sliding effects include **Stereo Effect**, **Folding Effect**, **Left and Right Folding**, **Rotate Effect**, **Ombre Effect**, and more. Select one of the effects to view the slide effect in the square area and click **Set** to save.

2.3.43. Audio Test

Test the audio input from audio pickup devices by connecting the audio pickup device to the IP Tester with the supplied audio cable.

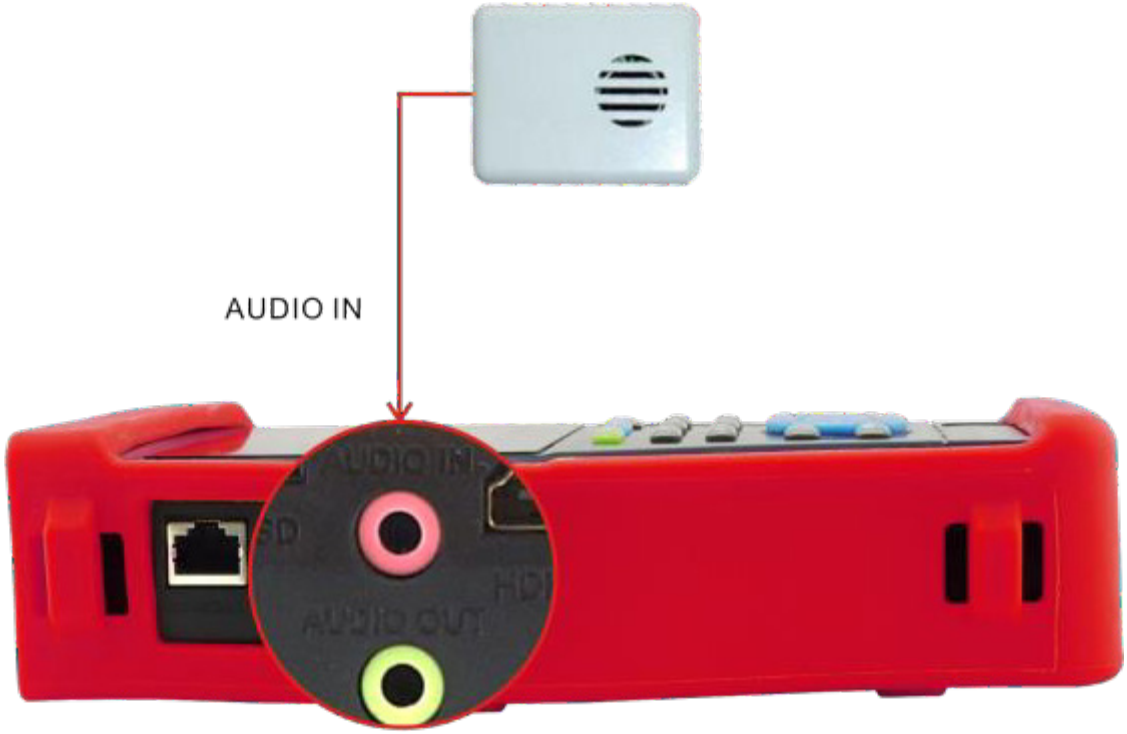


Figure 173, “Audio In” Port

2.3.44. PoE Power Output

The IP Tester supports PoE (Power over Ethernet) output to an IP camera via the LAN port.

The network cable transmits data and 48 VDC power over pins 1, 2, 3, and 6. IP cameras that support PoE can be directly connected to the Tester without the use of an external power supply.

Figure 174, LAN Port Connection

NOTE: Ensure that the cable connected to the Tester's LAN port is a straight-line cable and that there is no short circuit, otherwise the Tester will be damaged.

Before using PoE power output, ensure that the IP camera supports PoE power. Otherwise, the IP camera will be damaged.

The Tester's maximum PoE power output is 24 W. If an ultra high-power load is connected, the Tester will enter protection mode.

2.3.45. HDMI Output

The built-in HDMI output port can output live video from an analog or IP camera. It can also transmit recorded files, media files and images to HDTV monitors. Connect an HDMI cable from the IP Tester to an HDTV monitor at any time. A 1080p resolution is supported.

2.3.46. 12 VDC/2A Power Output

When the IP Tester is turned on, the 12 VDC power output is turned on by default. The smaller end of the supplied converter cable connects to the Tester's 12 VDC/2A output, and the other end connects to the camera's power input.

Figure 175, 12 VDC/2A Power Output

Power output function is mainly used for camera field demonstration and testing. On some camera installation sites, if there is no power outlet for the adapter to power the camera, the Tester can supply power temporarily. We do not recommend using the Tester as a power supply for longer periods of time, however.

NOTE: Do not plug in any power sources into the Tester's 12 VDC/2A OUTPUT port.

Hikvision's warranty does not cover damage due to human error.

The IP Tester's power output capacity is 2A. If more than 2A are supplied, the Tester will automatically enter protection mode.

Disconnect all cables from the Tester and reboot it to resume use.

The Tester's power output is close to 2A. If the IP camera's power is greater than 2V, the Tester will automatically enter protection mode. Disconnect all Tester connections and reconnect the Tester to the power adaptor to resume use.

Make sure that the Tester is sufficiently charged. Otherwise, it will not be able to provide enough output power.

2.3.47. 5V/2A USB Power Output

When the Tester is turned on, the 12 VDC and 5 VDC power output functions are automatically turned on. If the Tester is turned off, the 5 VDC USB can still be used to power an external USB device.

NOTE: The USB port is for power only and cannot be used for data transmission.

Figure 176, USB Charging Port

3. Specifications

3.1. General Specifications

General Specifications	
Display	New 4.3" IPS IP Camera Tester with touch screen and 960 x 540 resolution
Network Port	RJ-45 self-adaptive 10/100/1000M Ethernet Port
Wi-Fi	Built in Wi-Fi with speeds up to 150 M. Connects to a wireless network to view IP cameras.
H.265 Main Stream Test	Hardware decoding, 4K, H.265/H.264 camera image display for mainstream testing
IP Discovery	Auto-scan the entire network segment for IP cameras
Rapid ONVIF	Search the camera quickly,

	automatically log in and display the camera image, activate the Hikvision camera
Hik Test Tool	Activate Hikvision camera, display image from the camera, modify IP, user name and password parameters, and more.
Dahua Test Tool	Dahua camera test, modify IP, user name and password parameters, and more.
IP Camera Type	ONVIF, ONVIF PTZ, Dahua IPC-HFW2100P, Hikvision DS-2CD864-E13, Samsung SNZ-5200, Tiandy TD-NC9200S2, Kodak IPC120L, Honeywell HICC-2300T, RTSP Viewer
SDI Video Signal Test (Optional)	1 channel SDI input (BNC interface), supported resolution: 720p: 25, 30, 50, 60 fps, 1080p: 25, 30, 50, 60 fps,1080i: 50 or 60 fps, EX-SDI: 2560 x 1440p: 25 or 30 fps, 3840 x 2160p: 20 or 30 fps
CVI Video Signal Test (Optional)	1 channel CVI input (BNC interface, supported resolution: 720p: 25, 30, 50, 60 fps, 1080p: 25 or 30 fps, 2560 x 1440p: 25 or 30 fps, 3840 x 2160 12.5 or 15 fps
TVI Video Signal Test (Optional)	1 channel TVI input (BNC interface), supported resolution: 720p: 25, 30, 50, 60 fps, 1080p: 25 or 30 fps, 2048 x 1536p: 18, 25, 30 fps, 2560 x 1440p: 15, 25, 30 fps, 2688 x 1520p: 15 fps, 2592 x 1944p: 12.5 or 20 fps, 3840 x 2160: 12.5 or 15 fps, UTC control and

	OSD menu
AHD Video Signal Test (Optional)	1 channel AHD input (BNC interface), supported resolution: 720p: 25 or 30 fps, 1080p: 25 or 30 fps, 2048 x 1536p: 18, 25, 30 fps, 2560 x 1440p: 15, 25, 30 fps, 2592 x 1944p: 12.5 or 20 fps, 3840 x 2160: 12.5 or 15 fps, UTC control and OSD menu
Analog Video Test	1 channel BNC input and 1 channel BNC output, NTSC/PAL (auto-adaptive)
Video Level Meter (Optional)	Peak video signal level, Sync signal level, Color Burst Chroma level measurements for CVBS cameras
Zoom Image	Supports Analog and IP camera image zooming and movement
Snapshot, Video Recording, Playback	Capture current images and record live video as JPG file. Media player will view photos and playback video.
HDMI In (Optional)	Supports 720 x 480p: 60 fps, 720 x 576p: 60 fps, 1280 x 720p: 25, 30, 50, 60 fps, 1920 x 1080p: 25, 30, 50, 60 fps, 1920 x 1080i: 50 or 60 fps, 800 x 600p: 60 fps, 1024 x 768p: 60 fps, 1280 x 1024p: 60 fps
HDMI Output	1 channel HDMI output, supports up to 1080p
Power Supply to Camera	12 VDC/2A
RJ-45 Cable TDR Test	RJ-45 cable TDR, cable quality, cable pair status, length, attenuation reflectivity, impedance, skew and other parameter testing.
5 V USB Power Output	5V/2A power output only, no data

PoE Power Output	48 V PoE power output, maximum power 25.5 W
Theme	Self-define icons, desktop and application interface background, modify interface sliding effect
Drop-Down Menu	Includes PoE power switch, IP setting, WLAN switch, HDMI In functions, screen lock, password screen lock, and pattern screen lock
Audio Test	1 channel audio signal input and 1 channel audio signal output to connect Headphones
PTZ Control	Supports RS-232/RS-485 controllers, Baud of 600 to 115200 bps, compatible with more than 30 protocols, such as PELCO-D/P, Samsung, Panasonic, Lilin, Yaan, etc.
Color Bar Generator	Output one-channel PAL/NTSC color bar video signal for testing monitors or video cables (red, green ,blue, white and black)
UTP Cable Tester	Test UTP cable connection status and display on the screen. Read the number on the screen.
Data Monitor	Capture and analysis of command data from controlling device. Sending of hexadecimal data supported.
Network Test	IP address scan, link scan, and Ping test. Quickly search for IP camera's IP address on network segment.

Cable Tracer (Optional)	Find a connected cable from a bundle of cables using audio tones.
Visual Fault Locator (Optional)	Test fiber's bending and breakage (SM and MM fiber)
TDR Cable Test (Optional)	Cable's open circuit (Breakpoint) and short circuit measurement (BNC cable, telephone cable)
Power	
External Power Supply	21 VDC/2 A
Battery	Built-in 7.4 V lithium polymer battery, 5000 mAh
Recharging	After charging 5~6 hours, normal working time of 10 hours
Parameters	
Operation Settings	OSD menu, select desired language: English, Chinese, Korean, Russian, Italian, French, Polish, Spanish, Japanese, etc.
Auto Off	1 to 30 minutes
General	
Working Temperature	14° F to 122° F (-10° C to 50° C)
Working Humidity	30% to 90%
Dimensions	215 mm x 127 mm x 53 mm (8.46" x 5" x 2.09")
Weight	0.82 kg (1.81 lbs)

3.2. Multi-Meter Specifications

Counts: -6600 to 6600

Conversion Rate: 3 times/s

Current modes for clamp meter with zero function.

Isolation: the multimeter connector must be isolated with the other connector.

DC Voltage

Range	Accuracy	Resolution
660 mV (manual range)	± (0.3%+4)	0.1 mV
6.600 V		1 mV
66.00 V		10 mV
660.0 V		100 mV

AC Voltage

Range	Accuracy	Resolution
660.0 mV (manual range)	± (1.5%+6)	0.1 mV
6.600 V	± (0.8%+6)	1 mV
66.00 V		10 mV
660.0 V		100 mV

DC Current

Range	Accuracy	Resolution
6.600 mA	± (0.5%+3)	1 µA
66.00 mA		10 µA
660.0 mA		100 µA
10.00 A	± (1%+5)	10 mA

AC Current

Range	Accuracy	Resolution
6.600 mA	± (0.5%+3)	1 µA
66.00 mA		10 µA
660.0 mA		100 µA
10.00 A	± (1%+5)	10 mA

Resistance

Range	Accuracy	Resolution
660.0 Ω	± (0.8%+5)	0.1 Ω
6.600 kΩ	± (0.8%+2)	1 Ω
66.00 kΩ		10 Ω
660.0 kΩ		100 Ω
6.600 MΩ		1 kΩ
66 mΩ	± (1.2%+5)	10 kΩ

Continuity

Range	Resolution	Function
660.0 Ω	0.1 Ω	The Tester will sound if it detects values lower than 30 Ω±3 Ω.

Diode

Range	Resolution	Function
2.0 V	1 mV	Schottky diode: 0.15 to 0.25 V Rectifier diode: 0.6 to 1.0 V Triode PN junction: 0.5 to 0.8 V

Capacitance

Range	Accuracy	Resolution
6.600 nF	± (0.5%+20)	1 pF
66.00 nF	± (3.5%+8)	10 pF
660.0 nF		100 pF
6.600 µF		1 nF
66.00 µF		10 nF
660.0 µF	± (5%+8)	100 nF
6.600 mF		1 µF
66.00 mF		10 µF

3.3. Optical Power Meter Specifications

Measurement Range (dBm)	-70 to 10
Wavelength (nm)	850, 1300, 1310, 1490, 1550, 1625
Detector	InGaAs
Uncertainty	< ±3% dB (-10 dBm, 22 °C) < ±5% dB (full range, 22 °C)
Display Resolution	Linear: 0.1% Nonlinear: 0.01 dBm
Operating Temperature (° C)	-10 to 50
Storage Temperature (° C)	-20 to 70
Connector Type	FC/PC

3.4. Visual Fault Locator Specifications

Laser Type	LD
Wavelength Calibration	650 nm
Output Power	5 mW (10 or 20 mW optional)
Modulation Mode	CW/1 Hz/2 Hz
Measurement Range	5 km (10-20 km optional)
Connector	FC/PC exchangeable
Working Temperature (° C)	-10 to 50
Operating Temperature (° C)	-20 to 70

*The above information is for reference purposes only and is subject to change without notice. For technical inquiries, contact Hikvision's technical support department.