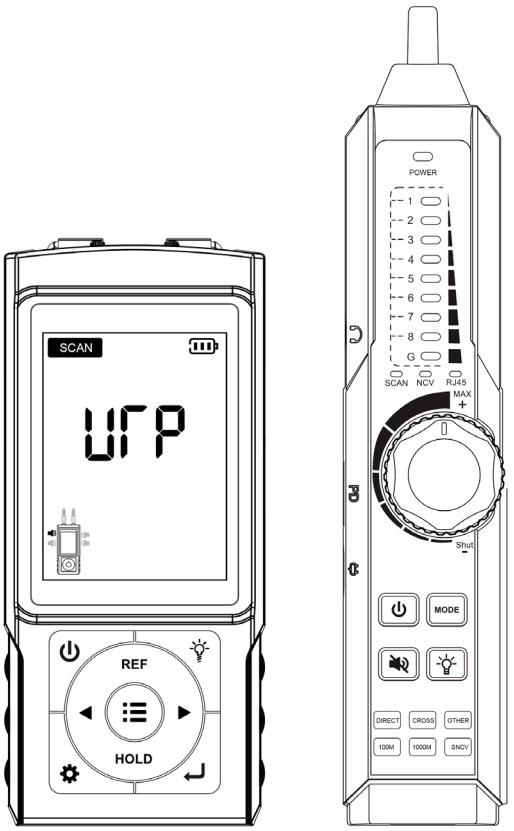
Multi-function Network Cable Tester

User Manual



- Thank you for purchasing the multi-function cable tracer. Please read the user manual carefully before use and operate it correctly.
- To ensure the safe use of this instrument, please read the "Safety Precautions" section in the user manual carefully.
- After reading the manual, please keep it in a safe place for future reference.
- Do not damage the warranty certificate or the warranty seal on the device.
- If you encounter any issues during use or if the device is damaged, please contact our technical support department.

Contents

1. Safety Precautions 1

2. Features 2

3. Accessories 2

4. Interface and Function Introduction.....3

5 Instructions 9

5.1 Power On/Off.....9

5.2 Setting Backlight Time and Auto Shutdown 10

5.3 Cable Tracing.....11

5.4 NCV Mode 12

5.5 UTP/Continuity Test 14

5.6 Length Measurement 17

5.7 Port Flashing.....19

5.8 PoE Detection 20

5.9 Optical Power Meter（*optional） 22

5.10 Visual fault locator（*optional） 24

6.Technical Specifications 25

1. Safety Precautions

- When using this device, please comply with local electrical regulations. Avoid using it in places where electrical devices are prohibited, such as hospitals and gas stations.
- Use only the accessories provided by the manufacturer to avoid damage caused by uncertified accessories.
- Do not place the device in humid, dusty, or high-temperature (above 50°C) environments.
- Use batteries that meet the specifications; otherwise, the device may be damaged.
- Do not use this device to detect live power lines (e.g., 220V power lines), as it may damage the device or pose a safety risk.
- Avoid operating communication lines during thunderstorms to prevent lightning strikes and ensure personal safety.
- The accessories provided with this device are only for use with this device. Do not use them for other purposes to avoid accidents.
- Avoid severe collisions or shaking during transportation and use to prevent damage to the components.
- Do not use the device in environments containing flammable gases.
- When using the red laser source, do not look directly into the light, as it may cause permanent eye damage. When not in use, turn off the red laser source and cover it with a protective cap.
- Do not disassemble or repair the device by yourself. If disassembly is necessary, please contact our technical support team

2. Features

1. **Cable Tracing:** Anti-interference digital cable tracer, supports UTP/STP shielded cable modes.
2. **UTP/Continuity Test:** Tests network cable sequence, and detects open circuits, short circuits, and cross-connections. Also check if the RJ45 connector is properly crimped.
3. **Cable Length Measurement:** Measures the length of open/short-circuited network cables from 1 to 600 meters.
4. **Port Flashing:** Quickly locates ports on switches or routers and identifies port speeds.
5. **PoE Testing:** Detects PoE power supply protocols (802.3BT/AT/AF/Non-standard), power supply voltage, Line pair, pair polarity, and real-time power when connected to a PD load device.
6. **Optical Power Meter:** Wavelength (nm): 850/980/1270/1300/1310/1490/1550/1577/1625/1650nm. Power range (dBm): -70 to +6dBm. ***（optional）**
7. **Visual fault locator:** 10mW power output, wavelength of 650nm, stable and pulse modes. ***（optional）**

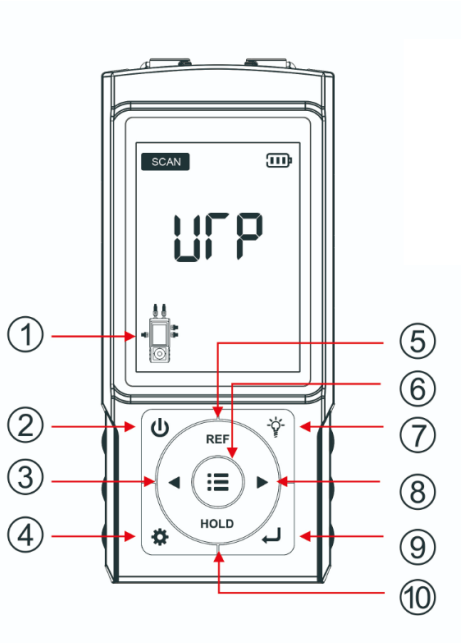
3. Accessories

1. Emitter
2. Cable tracer
3. RJ45 Cable
4. RJ11 Cable
5. Alligator Clip cable
6. Screw, Screwdriver

7. RJ45 to BNC connector (only for the model with VFL and OPM))

4. Interface and Function Introduction

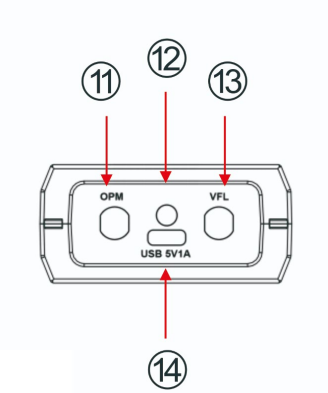
(1) Emitter Interfaces and functions:



1	Port Indicators
2	Power On/Off
3	Left Direction Key

4	Settings Key: Sets backlight timeout and auto shutdown; calibrates optical power.
5	REF: Optical Power Difference Key
6	Main Function Switch Key
7	LED Light Key
8	Right Direction Key
9	Confirm Key
10	HOLD: Optical Power Lock Key

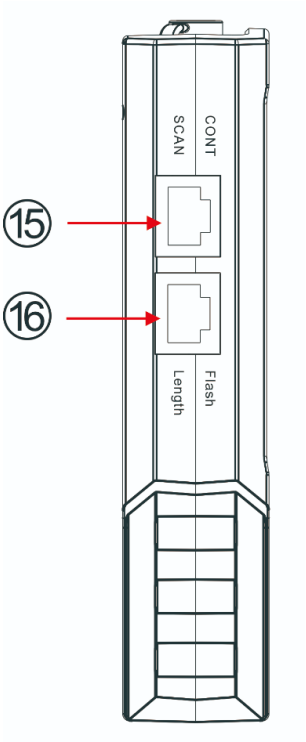
Top interface



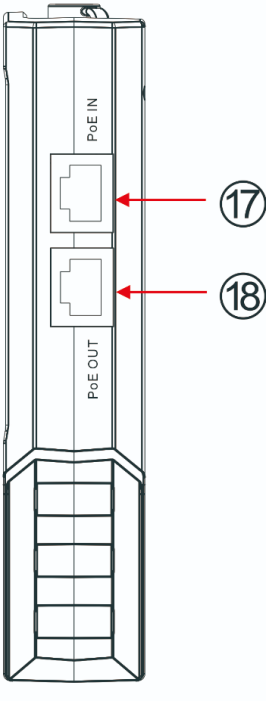
11	Optical Power Meter *（**optional**）
12	LED Light
13	Visual fault locator *（**optional**）

14	USB Type-C charging port

Left interface



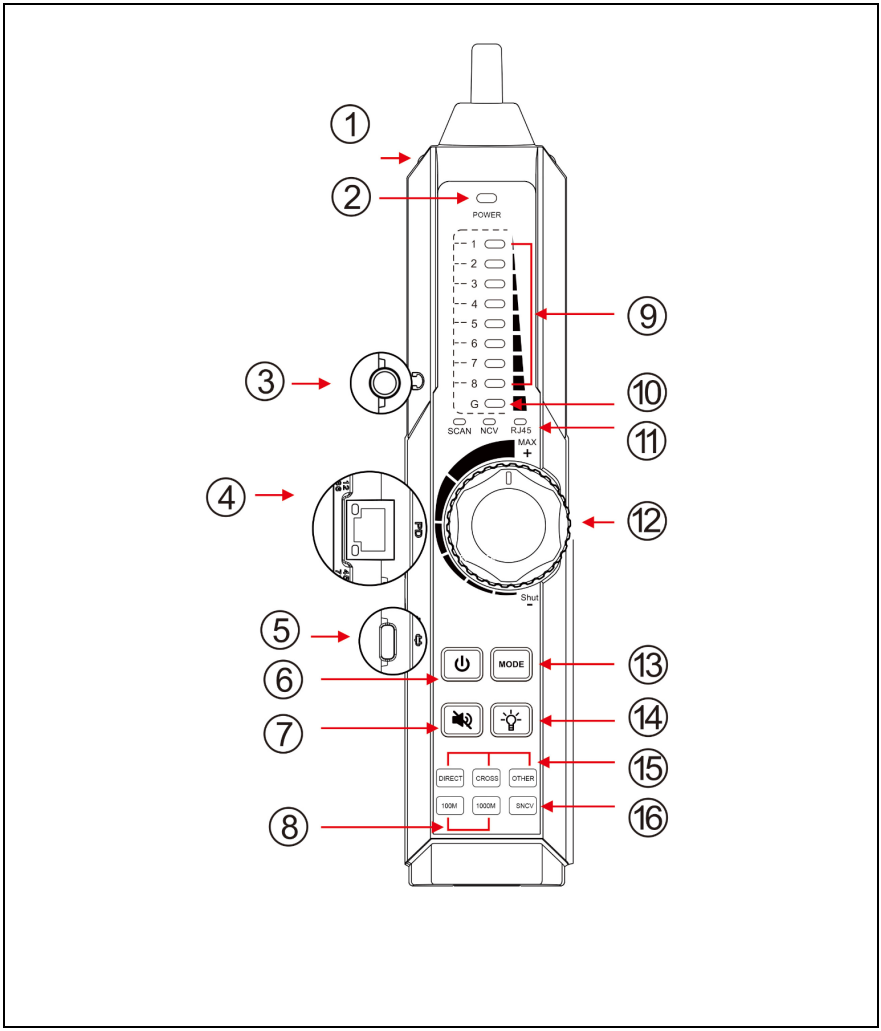
Right interface



15	UTP/Continuity Test/Cable Tracing
16	Port Flashing/Length Test
17	PoE Input
18	PoE Output (It’s the PoE input interface loopback output, not powered by the

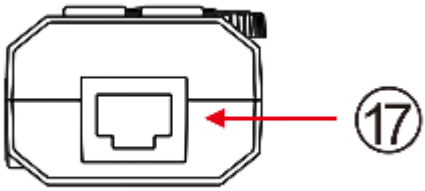
	device. No output if the connected PoE switch is off)

(2)Cable tracer (Receiver) Interfaces and functions：



1	LED light
2	Power Indicator
3	Earphone jack
4	PD Powered test port (Flashing is the standard PoE, Constant brightness is

	non-standard PoE.)
5	USB 5V charging port
6	Power: Long press to turn on/off (Red light when charging, turns off when fully charged)
7	Long press to silent mode, short press SNCV (Only effective in SCAN+NCV mode)
8	100M /1000M indicator
9	UTP cable sequence/signal strength indicator
10	Shielded layer continuity indicator
11	Mode indicator
12	Sensitivity knob
13	MODE (1. Short press to switch: SCAN mode/NCV mode/UTP mode 2. Set automatic shutdown time)
14	LED switch
15	UTP cable type indicator: straight /cross /other
16	SNCV indicator

Bottom interface  	
17	UTP cable test port

Note: Receiver port continuity detection only supports the local end, and does not support the remote end. Emitter can support near-end, middle-end end, and far-end port detection.

5 Instructions

5.1 Power On/Off

This product contains rechargeable lithium-ion batteries. Press and hold the power button

for 2 seconds to turn on or off the device.

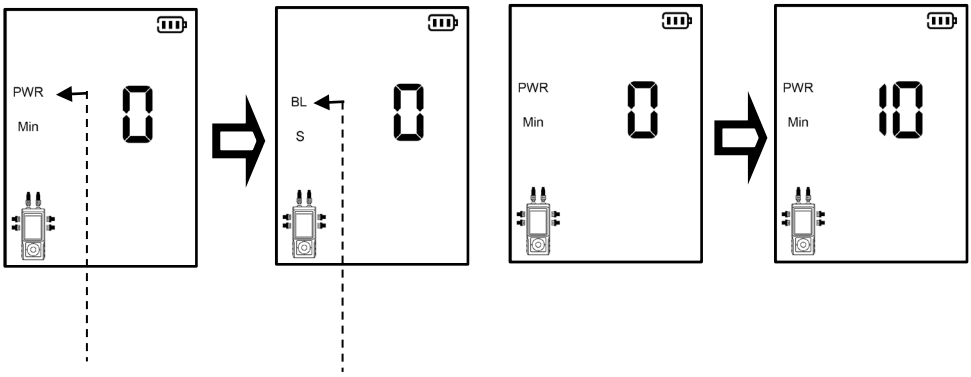
Attention: If the Emitter displays “Lo” and the battery icon is low battery, the battery needs to be charged; After the receiver is turned on, the 1-8 signal indicators light keeps flashing, or the power indicator light is red, indicating that the Receiver needs to be charged.

5.2 Setting Backlight Time and Auto Shutdown

The Emitter automatic shutdown setting

In the power-on state, press the settings key to enable and switch between auto shutdown or backlight timeout options. Use the left and right keys to set the time. Auto shutdown can be set from 0 to 240 minutes (0 means auto shutdown is off). Backlight timeout can be set from 0 to 60 seconds (0 means the backlight stays on).

Press the confirm key to save settings. Press the menu key to exit without saving.



press ◀ ▶ to set the time

auto shutdown setting **backlight timeout setting**

the ⚙ switch between auto shutdown or backlight timeout options

The Receiver automatic shutdown setting

In the shutdown state, press and hold the receiver MODE MODE y, then press the power ⏻ key to turn on and enter the shutdown time setting mode. In this mode, the "straight, Cross, Other" and sequence indicator lights flash.

Press the MODI MODE key to modify the shutdown time. One line sequence indicator light represents 10 minutes. If the 1-3 indicator lights are on, it indicates that the current automatic shutdown time is set to 30 minutes, which can be set to 10-90 minutes. If all indicator lights are not on, it means automatic shutdown is turned off.

After setting up, press the power ⏻ key to save and exit the setting mode.

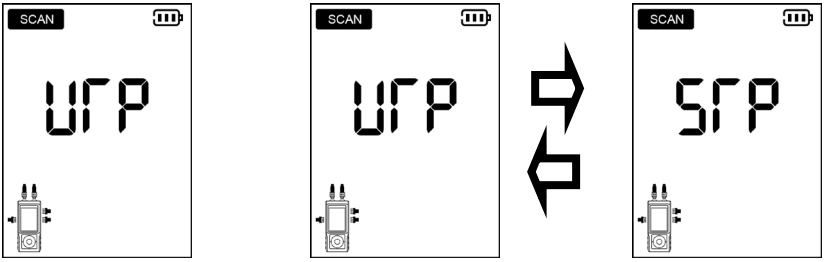
5.3 Cable Tracing

Connect the network or telephone cable to the "Wire Mapping/Continuity Test/Cable Tracing" port on the Emitter. Press the menu key to switch to the cable tracing function (default on startup). The receiver can be used for cable tracing.

Adjust the sensitivity knob on the receiver. When scanning the target cable, the closer the receiver's probe, the stronger the signal and the louder the sound.

Press and hold the "SNCV" key on the receiver to enter or exit silent mode.

Use the left and right keys to switch between UTP and STP modes. UTP is for unshielded network cables, and STP is for shielded network cables.



Use the left and right keys to switch between UTP and STP modes.

Quickly verify the tracking result: After finding the cable, connect the network cable to the wire receiver “UTP” port for pair line detection. For example, When the "Straight/Cross/Other" indicator is on, indicates the verification of the matching cable.

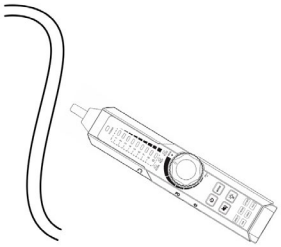
Note: The UTP port of the emitter and receiver can max 60V withstand voltage, and the wire can be traced directly in connection with the PoE switch.

5.4 NCV Mode

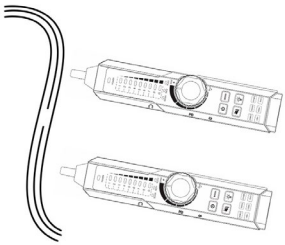
(1) NCV

Turn on the receiver, press the “Mode” button, "NCV" indicators is red, allowing simultaneous cable tracing and NCV scan.

When the probe detects nearby AC voltage, the “NCV” indicator will flash on the receiver and emit a beeping alarm. The 1-5 indicators on the panel will flash to indicate the current NCV scan signal strength. Different signal strengths will result in different beeping frequencies and light flashing frequencies.



Inductive NCV Scan



Line interruption test

(2) SNCV Strength Signal Scan

When the receiver is in "SCAN + NCV” mode, press the "SNCV/Silent" key to increase sca n sensitivity. This can be used to trace plastic water pipes or high-voltage wires inside walls (not effective for iron pipes)

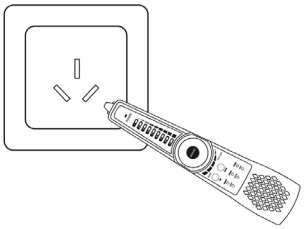
Note: This function only works in " SCAN + NCV " mode. For safety, before working with

wires, always verify that they are De-energized with an additional voltage tester

(3) Live/Neutral Wire Detection Mode

Touch the receiver's probe to the live/neutral wires in the electrical box or the live/neutral holes in wall sockets or power strips. The indicator lights and beeping alarm will help distinguish between live and neutral wires.

- **Live Wire**: The indicator flashes quickly, and the beep is rapid.
- **Neutral Wire**: The indicator does not light up or flashes slowly, with no beep or a slow beep.



5.5 UTP/Continuity Test

(1) UTP test

Connect the network or telephone cable to the "CONT/SCAN" port on the Emitter, and the other end to the UTP port on the receiver (the receiver must be powered on).

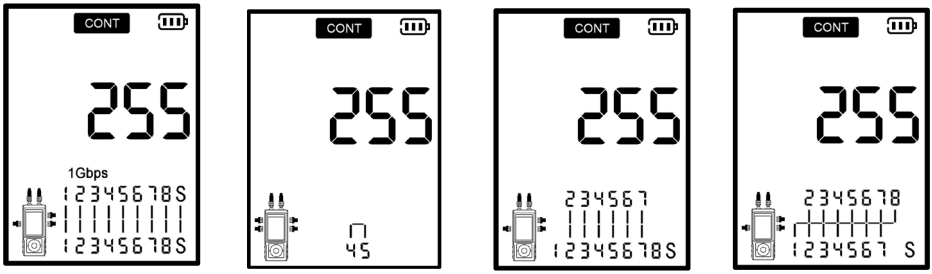
On the Emitter, press the menu key to switch to the "CONT" (continuity) function mode to perform the wire mapping test.

The 1-8 and S sequence indicators on the screen will display the network cable sequence.

- **1Gbps/100Mbps**: Indicates whether the cable can be used for 1000M or 100M Ethernet networks. A straight-through connection will be displayed with a "|", and a crossed connection will be displayed with a jumping indicator. The receiver can also display this information.
- **255**: Receiver number, which can be customized.

The receiver's network cable type indicator can quickly determine if the cable is normal. If it shows "Straight" or "Cross", the cable is normal. When testing the sequence, a "beep" indicates a connected pair, and a "buzz" indicates a short-circuit pair (all short-circuit pairs will light up simultaneously).

After the 8 indicators stop flashing, the receiver will beep to indicate the cable type: one “buzz” sound is for straight-through, two “buzz” sounds is for cross, and three “buzz” sounds is for other or incorrect connections.

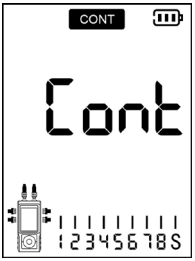


（shielded wire） （4 5 short circuit） （1 8 open circuit） （1 8 cross） test result

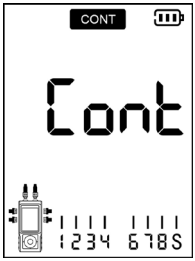
(2) Continuity Test

The continuity test checks the connection of the RJ45 connector or the cable within 10cm of the port (note: the receiver tests up to 1 meter).

In Continuity test mode, connect the network cable to the "CONT/SCAN" port on the Emitter. The "1-8, S" indicators will show the continuity test results. If the indicators light is on, the RJ45 connector is properly crimped. If an indicator light is off, the corresponding pin is not properly crimped.



Normal RJ45 connector



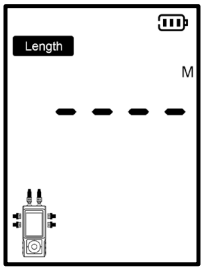
Pin 5 of the RJ45 connector is abnormal.

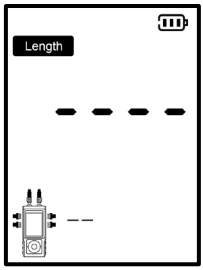
The continuity test on the receiver: Turn on the receiver, press “Mode” key until the “RJ45” indicator light is on, and connect the network cable to the wire receiver “UTP” port, The "1-8, S" indicator light being on indicates that the RJ45 connector is properly crimped. The indicator light being off means that the corresponding pin of RJ45 connector is abnormal. Note: In Wire Pairing/Crimping or cable tracing function, if a wire pairing short circuit or abnormal detection occurs without physical connections, press setting key in continuity test interface, then press power key to reset the continuity test function.

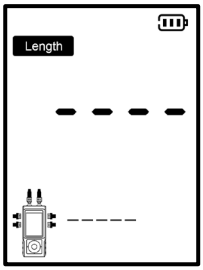
5.6 Length Measurement

Measure the length of open/short-circuited network cables from 1 to 600 meters. Note that the other end of the cable should not be connected to any device or powered on. Insert the cable into the "Length/Flash" port on the left side of the Emitter.

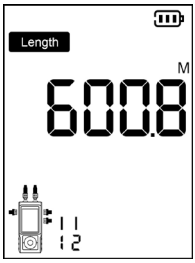
On the Emitter, press the menu key to switch to the "Length" function mode, then press the confirm key to start the length measurement.



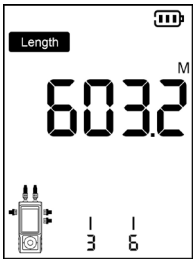




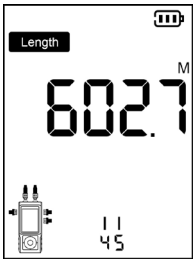
Press the Confirm Key to test During the test, wait for the test progress to complete



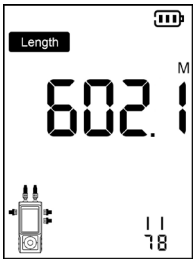
1 2 cable pairs



3 6 cable pairs



4 5 cable pairs

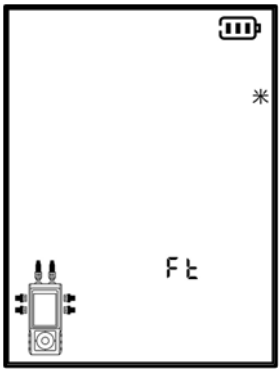


7 8 cable pairs

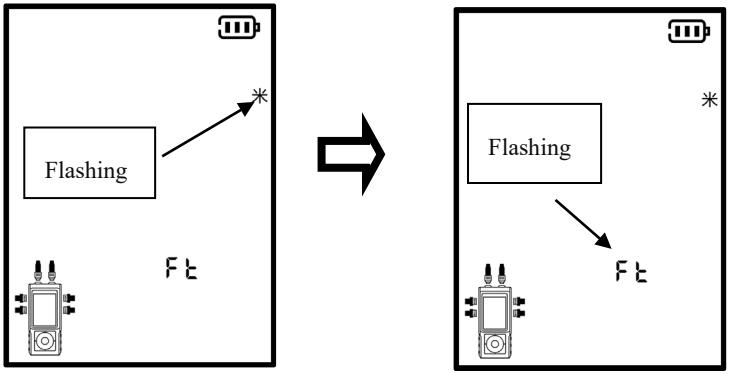
Test result

After the testing is completed, the results for each twisted pair will be displayed on the screen.

Switch the numerical unit:



Press setting key to switch the numerical unit



Press ◀ ▶ key to switch the unit, the unit can be switched between m(meter) or Ft (feet) in turn, flashing unit indicate the current selection, press confirm key to save the unit.

5.7 Port Flashing

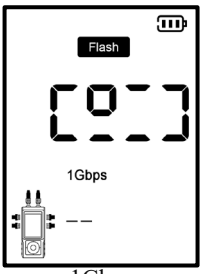
Connect the network cable to the "Flash" port on the Emitter, and the other end to a switch or router.

On the Emitter, press the menu key to switch to the "Flash" function mode. The device will automatically start the test.

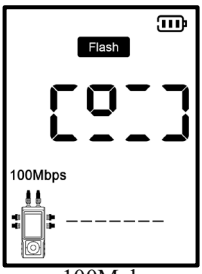
The device will send a flashing signal. If the connection is normal, the switch port icon on the screen will flash at a certain frequency. If the connection is not normal (e.g., the cable is not properly connected), the switch port will not change. The switch or router port will flash

at a fixed frequency, making it easy to identify the target port and avoid unplugging the wrong cable.

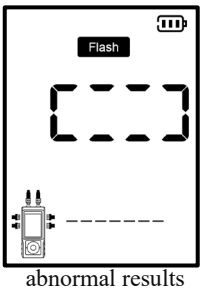
Port Rate Detection: The port rate is automatically detected simultaneously when the port flashing.



1Gbps



100Mpbs



abnormal results

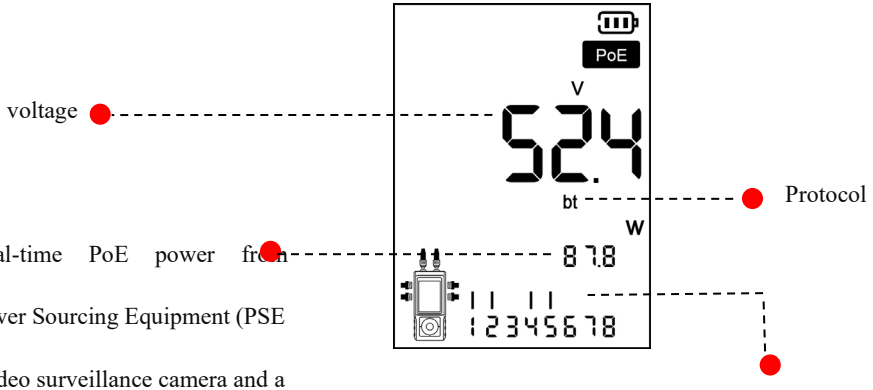
The possible reasons for abnormal results are as follows: 1. The wrong port was connected to the Emitter. 2. The network cable is faulty or not properly connected. 3. The ports of the switch or router are faulty. 4. The instrument is faulty.

5.8 PoE Detection

The PoE detection function is used to detect the PoE power supply protocol, line pairs, voltage, and real-time power when connected to a PD load device. It supports IEEE802.3bt/at/af and non-standard protocols.

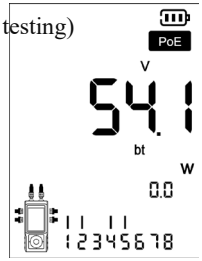
Connect the network cable to the "PoE Input" port on the Emitter, and the other end to a PoE switch or power supply.

On the Emitter, press the menu key to switch to the "PoE" function mode. The device will automatically start the test.



The real-time PoE power from Power Sourcing Equipment (PSE) to IP video surveillance camera and any other Powered Devices (PD) (PoE input connected to a switch, PoE output connected to POE camera, etc. load testing)

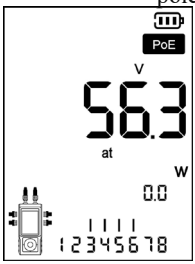
The vertical line above represents the positive pole, and the group of 1236 is one set, while the group of 4578 is another set. As shown in Figure, 1 2 are the positive poles, 3 6 are the negative poles



802.3 bt

pin1/2（+）3/6（-）

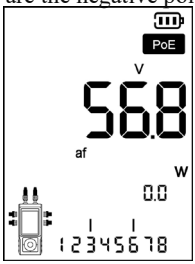
4/5（+）7/8（-）



802.3 at

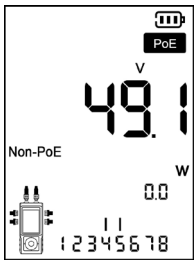
pin1/2（-）3/6（+）

4/5（+）7/8（-）



802.3 af

pin1/2（-）3/6（+）



non-standard PoE

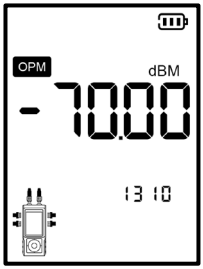
pin4/5（+）7/8（-）

PD powered detection: The PD interface at the bottom of the receiver is connected to the

POE switch or the power supply device, and the indicator light is on indicates that there is POE voltage output. 1236,4578 two indicator lights indicate that the cable pair is powered. When both indicators are on, it indicates that both pairs are powered.

5.9 Optical Power Meter（*optional）

Connect the fiber optic cable to the "OPM" port on the Emitter, and the other end to an optical terminal or fiber optic transceiver.



(1) Function key description

HOLD ： Lock display　　REF ： Difference measurement

◀ ▶ ： wavelength choice ↵ : Switch the unit

(2) Operating instructions

1. When detected the optical signal, the optical power detection value of the meter will change

2.Press ◀ ▶ to Select the wavelength, if the measurement wavelength is not at the calibration wavelength point, select a similar calibration wavelength point

Lock display function

When measuring, press HOLD , then the display content is locked and will not change. The HOLD button light is on. Easy reading. Press the lock button again to cancel the lock.

Difference measurement function (optical fiber loss measurement)

When measuring, press REF , and the "REF" button lights up. The instrument automatically stores the current value and then displays the difference between the new measurement value and that value.

Press the difference display button again to cancel the difference display and return to the real measurement display state

User self-calibrated optical power values

When measuring, first select the current laser wavelength, hold do ⚙ for 2 seconds, the optical power value flashes, indicating that the user enters the self-calibration mode, the ◀ ▶ to select the new optical power value. Press the Confirm key to save the changes and exit, press the menu key not to save the changes and exit. In user self-calibration mode, press and hold the setting key again for 2 seconds to restore the factory

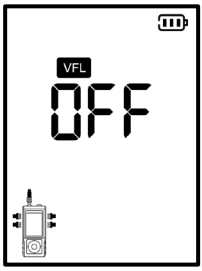
calibrated optical power value and exit the calibration mode.

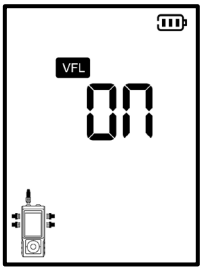
5.10 Visual fault locator（*optional）

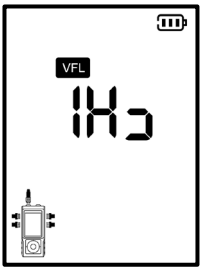
Connect the fiber optic cable to the "VFL" universal connector on the top of the device. On the Emitter, press the menu key to switch to the "VFL" function mode.

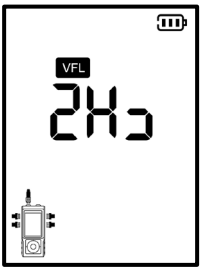
By default, the red laser source outputs 10mW at a wavelength of 650nm.

Press the key to turn on/off and switch between stable and pulse modes.









Press the device key to turn the red light on/off and toggle mode

Steady on mode

flicker 1Hz

flicker 2Hz

Note: The emission laser source is a high-intensity laser light source. Do not look at the laser emission port with your eyes or aim at your eyes, which may cause eye damage.

6.Technical Specifications

Product Model	**Multi-function Network Cable Tester**	
Display	3.0-inch HD display	
Cable	Transmit Signal	Digital signal (decisively rejects noise and false signals)

Tracing/Wire Mapping/Continuity Test	Cable Types	Supports RJ45 twisted pair, RJ11 telephone cable, BNC video cable, and low-voltage metal cables.
	UTP Cable Test	Tests any two or more wires in a network cable. The screen displays the connection sequence, Gigabit/100M, and cable number. The receiver identifies through indicator lights.
	Continuity Test	Emitter: Minimum recognition length of 10cm
		Receiver: Minimum recognition length of 1m
	Short Circuit Detection	Supports network cable short circuit detection
Length Measurement	Measures open/short-circuited network cables from 1 to 600 meters. Accuracy: Cable length x 3% ± 1m	
Port Flashing	Quickly locates ports connected to Ethernet switches and other devices.	
PoE Testing	Supports IEEE802.3BT/AT/AF and non-standard protocol detection. Displays power supply voltage, power supply pins, and pin polarity. Supports PoE input voltage loop-through output. Real-time power can be detected when connected to a load. Online power range: 0~90W.	

PD Power Detection	Detects standard or non-standard PoE, supports 24V and 48V PoE.	
Optical Power Meter (*optional)	Wavelength (nm): 850/980/1270/1300/1310/1490/1550/1577/1625/1650nm. Power range (dBm): -70 to +6dBm	
Visual fault locator (*optional)	Emits visible red laser to detect fiber optic breaks, cracks, bends, and other faults.	
Power		
Battery Power	Emitter	3.7V 2000mAh lithium-ion rechargeable battery
	Receiver	3.7V 2000mAh lithium-ion rechargeable battery
Working Environment and Specifications		
Operating Temperature	-10℃---+50℃	
Operating Humidity	30%-90%	
Dimensions	Emitter	142mm x 64mm x 30mm / 0.2Kg

	Receiver	218mm x 48mm x 32mm / 0.15Kg

The above data is for reference only. Changes may be made without prior notice. For detailed technical inquiries, please contact our technical support team.