MT-7029N
Noise-Filtering Network PoE Toner & Probe

User's Manual
1st Edition,

Thank you for purchasing and using the Pro'sKit MT-7029N Noise-Filtering Network PoE Toner & Probe. Please read the instruction manual carefully before using this product and keep it properly for future review.

OVERVIEW

MT-7029N is a new high-frequency filter circuit technology, with the elimination of noise and anti-interference line tracker, Suitable for ordinary network，PoE network, UTP / STP cable search and positioning. The interface on the network can be located through the port flashing function. Diagnosing the straight, short, open, and crossover conditions of the RJ45 network cable, and RJ11 / 12 telephone cable. Use this instrument to check the cable plug crimping and confirm the positive and negative polarity of the telephone line. Accessory crocodile clips that can be used to test coaxial cables, general wiring, and telecommunications / network cables. This product is suitable for telecommunications, network communication, monitoring, CATV and other indoor and outdoor wiring construction or maintenance projects.

SPECIFICATIONS

MT-7029N Transmitter specifications	
Cable tracing	f for RJ45 Lan cable Cat5、5e、6、7（UTP/STP）, RJ11/12 telephone cable
	Signal Voltage 8Vp-p
	Signal frequency 455KHz
	Tracing distance 600m
Cable map test	RJ45 Test/Scan socket for RJ45 、RJ11/RJ12 locating Individual wire pairs；
	8+1 LED indicators
	Test distance max：300m
Crimping Test	Crimping socket for RJ45、RJ11/RJ12 crystal plug
	8 LED indicators
Port Flash	1 LED indicator

Telephone line POL +/-	1 dual color LED: POL-（Green）/ POL+（Red）
Auto power off	1 hour
Low battery indication	About 7.0V; Power LED flashing.
Voltage protection	DC 60V
Battery	9V (NEDA 1604/6F22) x1pcs
working current	Tracing/Cable map/Crimping <35mA; Port flash <110mA
Dimension	（LxWxD）138x80x35mm
weight	142g
MT-7029N Receiver Specifications	
Response frequency	455KHz
Tracing indication	1 LED indicator & speaker, anti-noise and sensitivity adjustable
Compatible connectors	RJ45 socket
Cable map	8+1 LED indicators
NCV	1 LED indicator & speaker (AC 90-1000V)
Earphone	Φ3.5mm socket
Lighting	1 LED
Low battery indication	About 7.0V
Battery	9V (NEDA 1604/6F22) x1pcs
working current	Tracing <200mA; lighting<50mA
Dimension	（LxWxD） 203x50x32mm
weight	95g
Accessories	RJ45 cable patch cords x1、RJ11 cable patch cords x1、RJ45 to alligator clips patch cord x1、RJ11 to alligator clips patch cord x1, earphone

	x1, storage bag, user manual

⚠Safety Information

- **Never use the Transmitter or Receiver on live circuits of more than DC60V or it will result damage.**
- Never use the Transmitter, Receiver or test wire if they are damaged. Inspect the cases and test leads to damage before use.
- Disconnect unused test leads and connectors from the Transmitter when testing telephone circuits.
- Never open the case except to change the battery or the fuse; no user-serviceable parts are inside.
- Turn off the Transmitter or Receiver and disconnect all test leads before replacing the battery.
- Use only a 9V battery, properly installed in the case, to operate the Transmitter and Receiver.
- If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

⚠Caution

- Avoid touching the Receiver tip to patch panel connections and using the tip to dig into cable bundles. Doing so regularly may damage the Receiver tip over time.
- To avoid unreliable test results, replace the battery as soon as the low battery indication appears.

INTRODUCTION

MT-7029N Transmitter：

⚠Do not connect with DC 60V live circuit equipment or it will result damage.

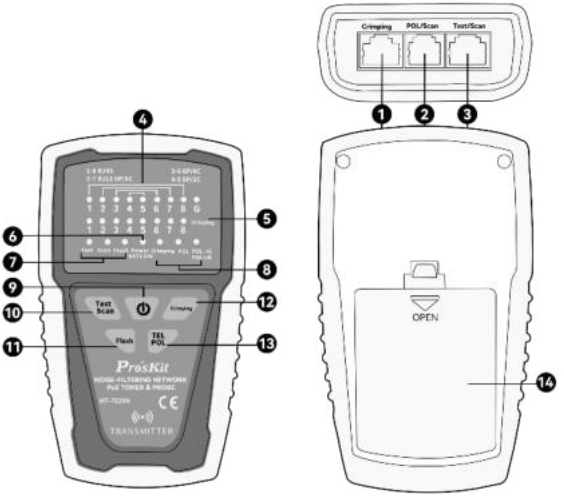

Figure1. MT-7029N Transmitter Diagram

1.「Crimping」: RJ45 plug crimping test socket.
2.「POL/Scan」: Scan & Telephone line test socket.
3.「Test/Scan」RJ45 cable map test & scan socket.
4.「1~8/G」Cable map & Shielded indicator
5.「1~8」 RJ45 plug crimping test indicator
6.「POWER/BAT LOW」 Power ON/OFF & Battery low indicator
7. Function indicator:
 「Test」: Cable map & Shielded function indicator
 「Scan」: Locating and isolating cables function indicator
 「Flash」: Network port flashing function indicator
8. Function indicator
 「Crimping」: RJ45 plug crimping test function indicator
 「POL」: Telephone line + / - pole test function indicator
 「POL－/G，POL＋/R」: Phone line polarity indicator

9. 「⏻」：Power ON/OFF button
10.「Test/Scan」：Cable map test & Scan function button
11.「Flash」： Network port flashing function button
12.「Crimping」:RJ45 Plug crimping test button
13.「TEL/POL」: Phone line polarity function button
14. Battery cover

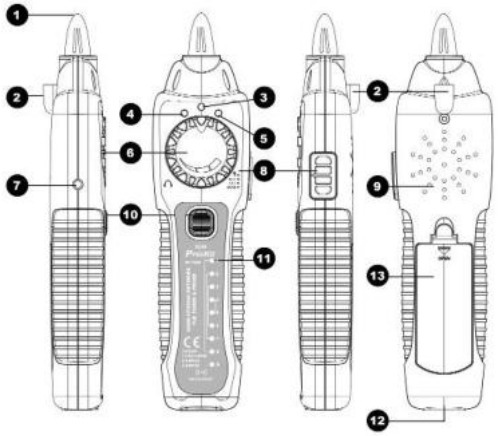

Figure 2. MT-7029N Receiver Diagram

1. Probe：Used for cable tracing and NCV detection.
2. LED light
3. Power ON/OFF indicator
4. NCV indicator
5. Signal status indicator
6. sensitivity control
7. Earphone jack Φ3.5mm
8. Function switch (LED/NCV/OFF/SCAN mode)
9. Speaker
10.「SCAN」 Locating and isolating cables function button
11.「1~8、G」 Cable map & Shielded indication
12. RJ45(8 pin)/ RJ11 (6/4/2 pin) cable mapping test socket.

13. Battery cover

OPERATION

Locating and Isolating Cables :

Using MT-7029N to locate and insolate cables using the 130KHz analog, also trace twisted wires (UTP, STP, Cat 5, Cat 5e, Cat 6) and telephone line. Use with a patch cord for RJ45 / RJ11 coaxial cable, general cable and various wiring boards can be tested by using with alligator clip cable.

Warning

- It is not intended to be used on live wires with a DC power source over DC 60V (e.g., live telephone lines), nor will it work on wire pairs that carry AC signals.
- Use RJ45 SCAN compatible connector for RJ45 cable tracing. Use RJ11(6 pin) connector for RJ11(6P/6C/4C/2C) cable tracing. Use RJ11 (6 pin) connector and work with alligator clips for coaxial cable, general cable and various wiring boards.

Caution

- The position on the MT-7029N lets you use the Receiver to trace using an analog 130KHz tone. When using the Receiver to isolate the tone source in the cable bundle or at the patch panel, the signal might be interfered with or decreased, and the signal will not pass through metal tubes.
- It is not necessary to touch the Receiver's tip to the cable or patch panel when searching for the Transmitter's signal.
- Make sure the black alligator clip of the Transmitter is connected to the ground before use.
- When using the MT-7029N with earphones to locate and isolate cables, please keep probe away from the earphones to avoid interference of resonance effects

To locate cables, do the following steps (Figure 3) :

1. Connect the black alligator clip of the Transmitter to the ground and then connect the red clip to a jack or punch-down block as shown in Figure 3.
2. As the Figure 3 shown, when push ⏻, the red indicator of

"POWER/ BAT LOW" will light up and turn on the power.

SCAN : Press SCAN button for cable tracing. When the red "SCAN" indicator lights up, the cable tracing is working.

PoE Switches SCAN : Press the SCAN button twice for PoE switches cable tracing. When the red "PoE SCAN" indicator lights up, the cable tracing is working.
PoE SCAN function is applicable with PoE switches and network switches. (In the cable tracing process, if the sound is weak, perhaps cable did not connect to the PoE switches/network switches or cable is broken, please switch to "SCAN" mode)

Press SCAN button again, stop tracing.

3. As the figure 3 shown, put the receiver function switch at "**scan"**, the red indicator in the middle will light up, and long press " SCAN " on receiver to operate cable tracing function. The tracing sound will be output from speaker. When put on the earphones, there will be no sound from speaker, but from the earphones.
4. Use the Receiver to find the cable location from the cable rack, patch panel, or behind the wall. The closer the cable locates, the louder signal sound will be. The signal status indicator will change from red to blue, and the brightness depends on signal strength. If the blue LED light indicator is not bright, there is no signal.
5. Adjust the volume control on the receiver to locate the wire pairs from 0 cm to 15cm.

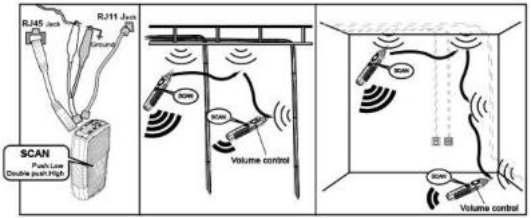

Figure 3 Locating cables

Isolating Cables:

To isolate the tone source in the cable bundle or at the patch panel, do the steps as described in the previous section of "Locating

Cables".

1. Strip the cable's shield to a length of between 30 to 45 centimeters and divide the wires into two parts. Do the wire separation to isolate the cables to verify the signal of each part. If the beeper gets louder and LED lights up, you have located the position you are looking for.
2. Adjust the volume control from high to low to locate the wire that is more difficult to identify. Narrowing the length from 15 to 0 centimeters will help to identify the wire pairs more accurately.
3. Repeat steps 1 and 2 to isolate the bundled cables.

Caution

- If you cannot locate the MT-7029N signal on 2-conductor cables, the cable may be shorted or opened. Use the Continuity Test to check for shorts or opens on coax and non-terminated cables. If cables are connected to the switches, it may not be easy to find the signal from MT-7029N; please try to turn off the switches or pull out the cable 1 pce a time to check the signal. If signal is still hard to find, use " " Cable map & Shielded function or " " Continuity function test to check cable connection.

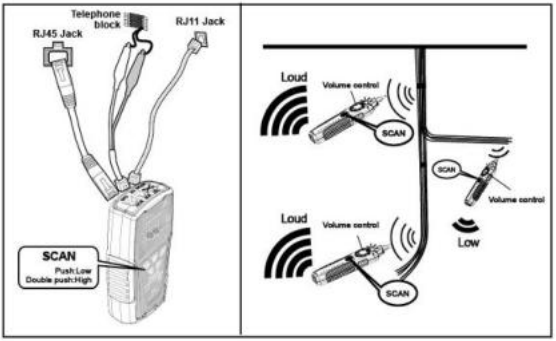

Figure 4 Isolating Cable

Cable Map Testing :

Caution

- When use the product for RJ45 or RJ11 cable mapping, please only plug in the cable to the RJ45/RJ11 “TEST socket” on the transmitter. Do not use RJ45 SCAN or RJ11 SCAN socket.
- You can use the MT-7029N Transmitter or Receiver to validate the cable map on RJ45/RJ11 by RJ45/RJ11compatible connector on transmitter. The cable map function finds the most common wiring faults on twisted pair cables: shorts, opens, and crossed pairs.

1. Connect the MT-7029N Transmitter or Receiver to RJ45/ RJ11 jacks.
2. Press “⏻”, the indicator of “POWER/ BAT LOW” will light up and turn on the power. Press “ TEST FAST TEST ” on MT-7029N transmitter for cable mapping and shielded function indication. When the green LED indicator flickers slowly, the low-speed scan is working. Press “ TEST FAST TEST ” button again, the green LED indicator flickers faster, and the fast speed scan will be operated. Press “ TEST FAST TEST ” button again, the product will be standby for next operation.

⚠ **Caution**

- Each LED that corresponds to an active pin flash briefly and should light for about 1 second. For fast scan cable mapping, the light will flicker for about 0.5 seconds, from 1 to 8, G. If the cable is open, the LED indicator will not light up.
- Before cable map testing, repeat the procedures of “Locating Cables” on page 7 to identify the correct connector or wires on the other end of the cable if necessary.

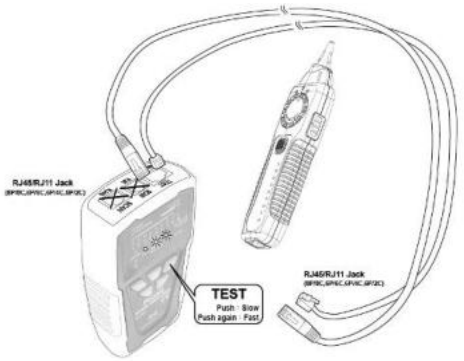

Figure 5 Validating Cable Maps

3. Different connectors generate different LED and sound indications as shown in Figure 4.
   - **RJ45(8P/8C) LED indication :** MT-7029N Transmitter (from 1-8 seconds in sequence) is synchronized with the MT-7029N Receiver cable map.
   - **RJ11(6P/6C, 6P/4C, 6P/2C) LED indication :** MT-7029N Transmitter cable map, 6P/6C each second from 2 to 7 in sequence, 6P/4C each second from 3 to 6 in sequence, 6P/2C each second from 4 to 5 in sequence is synchronized with the MT-7029N Receiver cable map. If it encounters an empty line, the indication will cease.

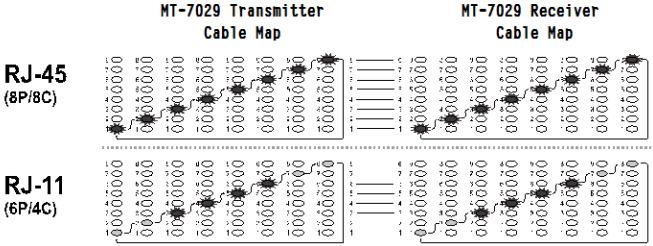

Figure 6 Different Connector's Cable Map

4. You can use MT-7029N to validate the cable map on RJ11 and RJ45 connectors. The cable map function finds the most common wiring status on twisted pair cabling: good, shorts, opens, and crossed pairs as shown in Figure 5.
   - **Good wiring:** Each LED that corresponds to an active pin flash briefly and in a stairway order.
   - **Shorts:** If two LEDs turn on for 1 second at the same time, those two pins are shorted together. If more than 2 wires are shorted together, the LEDs for the shorted pins indicate opens.
   - **Opens:** If an LED flashes briefly, then no LEDs turn on, that pin is open.
   - **Crossed pairs:** If one LED flashes briefly, then another LED lights for one second, the wire for the first LED is crossed pairs to the pin for the second LED.
5. Each LED that corresponds to an active pin flash briefly, it should light for about 1 second. The brief flash shows which LED is next in the sequence.

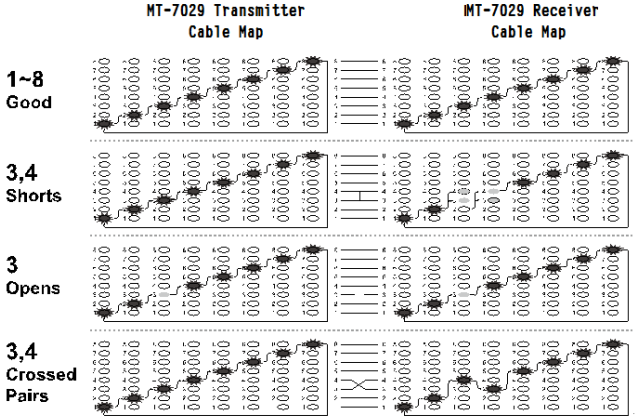

Figure 7 good wiring, shorts, opens, crossed pairs

Live Telecommunication Equipment and Router Test:

Caution !

The feature can only be used for testing cable continuity and openings, cannot be used for cross over and short.

1. Connect MT-7029N transmitter and working router by RJ45 cable map test socket.
2. Press button to turn on the power, “POWER/ BAT LOW” indicator will light up. Press TEST button on transmitter to feature cable map function. When the TEST indication green LED flickers slowly, the slow cable mapping is working and the red cable map LED starts scanning. Press TEST button again, the TEST indication green LED twinkled fast, the fast cable mapping is working and the cable map LED starts scanning. Press the button again, the TEST green LED light will be off, and the product will be on standby for next operation.
3. When the “1~8, G” LED indicator on MT-7029N transmitter lighted one by one, the cable (1~8, G) is good. If any LED indicator is not lighted, the cable is damaged.

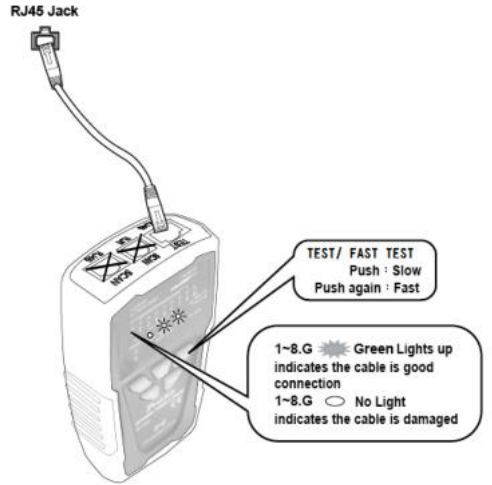

Figure 8 Cable testing on working line

Coaxial Cable & Continuity Testing:

DANGER

Before testing, please be sure the power of receiver is **OFF.**

To validate cable shield during cable map tests, do the following as:

1. Connect the Transmitter to the circuit as shown in Figure 9. Connect the test leads to the coaxial cable to be tested.
2. Press "⏻" button to turn on the power, "POWER/ BAT LOW" indicator will light up. Press "⏻" button on transmitter for short/ open function, the green LED indicator lights up, and the short/ open testing is working. Press "⏻" again, the green LED lights off and the product is standby for next operation.
3. When "SHORT" red LED indicator lights up, the cable is connected. (the resistance of cable is less than 300Ω). If the indicator is off, the cable is short or resistance of the cable is over 300Ω.

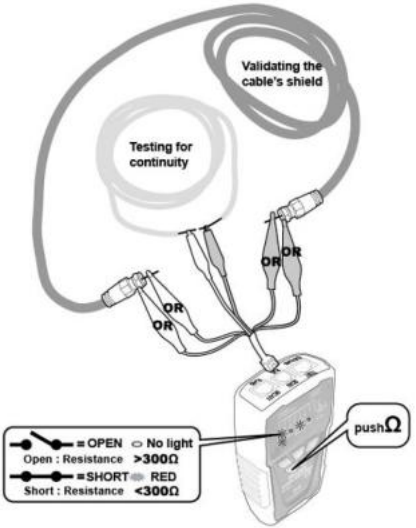

Figure 9 Coaxial Cable & Continuity Test

Validating Telephone Service and Polarity：

Please follow the following steps to check the polarity of telephone lines:

1. Connect the red and black alligator clip of the Transmitter to the telephone line jack or socket or punch-down block.
2. Press ⏻ button to turn on the power, “POWER/ BAT LOW” indicator will light up. Then press POL TEL to operate the polarity indication feature and the LED indicator will light up. According to the function of the phone positive/negative polarity test start.
3. 「POL - /G , POL + /R」LED indicator is dual color (Red/ Green). The LED indicator of the Transmitter indicates the status as below:
    - Red light：Red alligator clip at positive (+) polarity；Black alligator clip at negative (-) polarity.
    - Green light：Red alligator clip at negative (-) polarity；Black alligator clip at positive (+) polarity.
    - No Light：Non service or line fault.

Phone Status Indication Test *(only used for the analog phone lines, cannot be used in the digital telephone)*:

Please complete the following steps to check the status of the phone line:

1. Connect the red and black alligator clip of the Transmitter to the telephone line jack or punch-down block.
2. Press ⏻ button to turn on the power, “POWER/ BAT LOW” indicator will light up. Then press “ POL TEL “ button twice, the” TEL” phone line status function indicator will light up, phone status indication test start.
3. In the phone status indication test, the polarities will synchronism shown. The “CONT” indicator is dual color (Red/ Green). Indicates the status as below:
    - Red light：Red alligator clip at positive (+) polarity；Black alligator clip at negative (-) polarity.
    - Green light：Red alligator clip at negative (-) polarity；Black alligator clip at positive (+) polarity.
    - No Light：Non service or line fault.
4. “CONT” phone status indicator shows test results; it is a red/green dual color LED lights:

- Red or green color: Standby status.
- Not bright or dim: Served line status.
- Red and green flashing: Incoming call ringing.

NCV (Non-Contact Voltage) Testing：

⚠Caution

- The feature can be used before locating, isolating, and cable mapping to identify if the tested cable is with AC voltage. It can not only help to ensure the safety of user and avoid possible electric shock or personal injury but also protect the product from being damaged by AC power.

1. Turn the switch to “NCV”, the function is started when the power indication is on.
2. When doing the NCV testing, place the probe of MT-7029N receiver to the tested cable, the NCV indicator twinkled fast and the buzzer sounded means the tested objective is with AC 90~1000V. If the indicator did not come on and no buzzer sounded, it means the tested objective with AC power less than 90V or there is no AC power on it.

Maintenance & Trouble shooting：

⚠⚠Warning

Turn off the Transmitter or Receiver and disconnect all test leads before replacing the battery.

⚠Caution

To avoid damaging the case, do not use solvents or abrasive cleansers. Clean the case with a soft cloth dampened with water or a mild soap solution.

Trouble shooting

Possible Problems	Trouble shooting
The signal from transmitter cannot be detected by receiver	Shortage of battery power: Check the battery on both transmitter and receiver. If the battery voltage is less than 6.5V, please replace it with a new battery.
	Make sure the switch position on receiver is “SCAN” or” LED”. The SCAN function will

	not work if the switch is at another position.
	Device damaged: please return the product to the place you purchased for maintenance.
No signal received from transmitter on Live telecommunication device testing	There might be conflict between the signal from telephone office and the signal from transmitter. Please turn off the telephone exchange device.
Incorrect cable mapping result	LED indicator broken please return the product to the place you purchased for maintenance.
	Improper connection of networking or telephone cables: please reconnect the cables toRJ45/ RJ11 compatible connectors.
NCV NOT WORK	Switch at SCAN position, and push “SCAN” button; If the indicator did not light up, please replace with a new battery
Others	Device damaged: please return the product to the place you purchased for maintenance.

MT-7029N 抗干擾型音訊網路 PoE 查線器
使用說明書

感謝您購買和使用 **Pro'sKit** MT-7029N 抗干擾型音訊網路 PoE 查線器，使用本產品前請仔細閱讀說明書，閱讀後請妥善保存，以備日後查閱。

一、 特點概述：

MT-7029N是一款採用最新高頻濾波電路技術，具有排除噪音抗干擾尋線的多功能尋線器，適用于普通交換機& PoE交換機，UTP/STP線纜的查找與定位；可以通過端口閃爍功能定位網線在交換機上的介面；診斷RJ45網路跳線(UTP/STP、Cat 5、Cat 6、Cat 7)、RJ11/12電話線(2/4/6 pin)的通路、短路、斷路、交叉等狀況；可以檢查網線水晶頭壓接是否正常；確認電話線的正負極性等功能。配件鱷魚夾，可應用於測試同軸電纜線、一般電線和電信/網路接線。適用於電信、網路通訊、監控、有線電視等室內、外佈線施工或維護等工程使用。

二、 產品規格：

MT-7029N 音訊發射器	
尋線功能	RJ45 插座：適用網線 Cat5、5e、6、7（非遮罩/遮罩），RJ11/12 電話線
	輸出信號電壓 8Vp-p
	輸出信號頻率 455KHz
	最長尋線距離 600m
網路跳線線序測試	RJ45 插座：適用網線 Cat5、5e、6、7（非遮罩/遮罩），RJ11/12 電話線
	結果顯示：8+1 LED
	最長測試距離：300m
網路水晶頭壓接測試	RJ45 插座：適用於 RJ45、RJ11/RJ12 水晶頭
	結果顯示：8 LED
端口閃爍	1 LED 閃爍
電話線正負極	1 LED(紅綠雙色): POL-（Green）/ POL+（Red）

測試	
自動關機	1 小時
低電壓指示	約 7.0V 電源指示燈閃爍
輸入保護	DC 60V
適用電池	9V (NEDA 1604/6F22) x1pcs
工作電流	線序測試/尋線/水晶頭壓接測試 <35mA;端口閃爍測試 <110mA
產品尺寸	（LxWxD） 138x80x35mm
產品重量	142g
MT-7029N 音訊接收器	
接收頻率	455KHz
尋線結果	1 LED 信號指示燈；揚聲器響
線序測試插座	RJ45 插座
線序測試顯示	8+1 LED
非接觸測電	AC 90-1000V 50/60Hz 1 LED 指示 & 揚聲器
耳機插座	φ3.5mm 插座
輔助照明	1 LED
低電壓指示	約 7.0V 電源指示燈閃爍
使用電池	9V (NEDA 1604/6F22) x1pcs
工作電流	尋線 <200mA; 輔助照明<50mA
尺寸	（LxWxD）203x50x32mm
重量	95g
配件	RJ45 跳線 x1、RJ11 跳線 x1、RJ45 轉紅黑鱷魚夾跳線 x1、RJ11 轉紅黑鱷魚夾跳線 x1, 耳機 x1,收納包, 說明書

⚠ 使用安全

- **請勿連接超過DC 60V的活電線路，以免造成儀器損壞。**
- 請勿使用破損的測試器或測試線，使用前請檢查機殼和測試線是否有破損。
- 測試電話電路時，請先將不使用的測試線和連接器從測試器上移除。
- 除非要更換電池，否則不得打開機殼；其中沒有任何使用者可維修的零件。