

Noise-Filtering Network PoE Toner & Probe

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 alligator 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.

INTRODUCTION

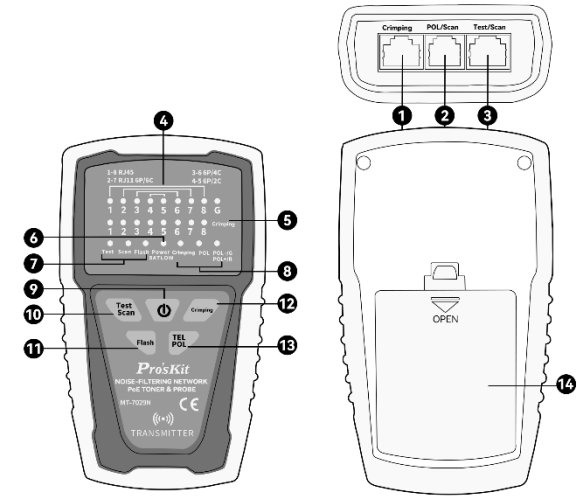


Figure1. MT-7029N Transmitter Diagram

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

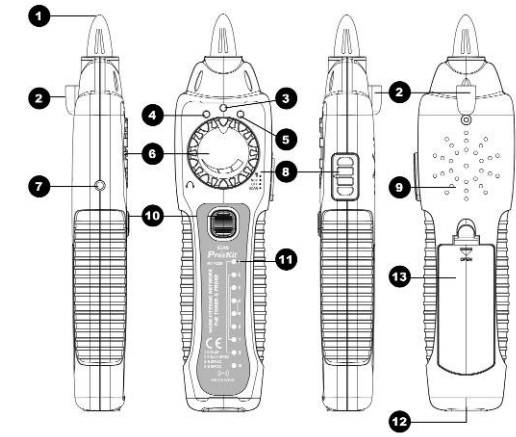


Figure 2. MT-7029N Receiver Diagram

- Probe: Used for cable tracing and NCV detection.
- LED light
- Power ON/OFF indicator
- NCV indicator
- Signal status indicator
- Volume control
- Earphone socket (Φ3.5mm)
- Function switch (LED light/NCV/OFF/SCAN mode)
- Speaker
-  Locating and tracing cables function button
- 「1~8/G」 Cable map & Shielded indicator
- RJ45(8 pin)/ RJ11 (6/4/2 pin) cable mapping test socket.
- Battery cover

SPECIFICATIONS

MT-7029N Transmitter specifications	
Cable tracing	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 locating
	Individual wire pairs
	RJ11 POL/Scan socket for RJ11 locating
	Individual wire pairs
	8+1 LED indicators
Crimping Test	Test distance max: 300m
	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

OPERATION

MT-7029N Transmitter:

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

▲ Cable map test :

This function is to check whether the network cable jumper connection is normal. Network cable connection to the transmitter and receiver, by viewing the transmitter and receiver 1-8 / G indicator light lit to judge the network cable connection situation, can test the network cable straight, short, open, crossover and other faults. You can also use the transmitter to directly connect to the network switch or the computer network card to test whether the RJ45 jumper connection is on or broken. The specific operation is as follows:

- Insert the pending network cable into the transmitter 「Test/Scan」 socket and the other end into the receiver socket.
- Press the " " button, the power indicator is on.
- Press the 「Test / Scan」 button , the "Test" indicator will illuminate, the line order / fault test starts, and the line order indicates of the LED to start the scanning display.
- Interpreting the results:

●**Straight:** The LED of the transmitter and receiver will flash one by one. The "G" indicates shield connection or no connection.

T: 1-2-3-4-5-6-7-8 T: 1-2-3-4-5-6-7-8-G
R:1-2-3-4-5-6-7-8 R:1-2-3-4-5-6-7-8-G

●**Crossover:** If pin2&5 is cross, when LED2 of the transmitter lights. LED5 of the receiver light at the same.

T: 1--3-4-5-6-7-8 T: 1-2-3-4--6-7-8
R:1-2-3-4--6-7-8 R:1--3-4-5-6-7-8

●**Open:** If pin 2 is open, the LED2 of the transmitter and the receiver will not light.

T: 1-X-3-4-5-6-7-8
R:1-X-3-4-5-6-7-8

●**Short:** If pin 4&5 is short, the transmitter 1~8/G LED light up in order, The 4&5 led in 1-8 / G LED on the receiver are lit simultaneously but are dark.

T: 1-2-3--5-6-7-8 T: 1-2-3-4--6-7-8
R:1-2-3---6-7-8 R:1-2-3---6-7-8

The telecom cable map

6P6C: LED 2~7 must light up and the other LED are off.

6P4C: LED 3~6 must light up and the other LED are off.

6P2C: LED 4~5 must light up and the other LED are off.

For telecom cable status indication: crossover、open or short, Fault display mode is the same as RJ45 network cable.

▲ Cables tracking :

This function is used to transmit signals to the network cable through the transmission signal from the audio transmitter. The receiver receives the audio signal transmitted by the network cable to find the target network cable and can simultaneously check the network cable connection or disconnect. This product has the characteristics of signal anti-interference, clear audio sound. Specific operations are as follows:

- Connect one end of the target line to be found to the transmitter 「Test / Scan」 /RJ45 or 「POL / Scan」 /RJ11 socket.
- Press the transmitter power button to turn on, the "Power / BAT LOW" light is on, then press the "Test / Scan" button twice, the "Scan" function light is on, the transmitter begins to transmit the signal.
- With the transmitter transmits signals, the line order indicator led (1-8) will be scanned at the same time and light to easily determine the connection situation of the network cable. If the indicator led in the 1-8 indicator lamp is not on, it indicates that the line is open.
- The receiver function switch is switched on to the "Scan" or "lighting" position, and the receiver will "tick", and the receiver power indicator lights on.
- The receiver sensitivity adjustment knob rotates clockwise to the maximum, and then holds down the receiver SCAN button, the receiver probes close to the network cable, when the receiver sounded, indicating that the receiver probe touched the network cable is the target line to be found.

- When tracing, you must hold the receiver“SCAN”button, release the button to enter the standby state, and cannot receive the signal. After work, please turn it off in time to save the battery.
- Maybe several cables near the network interface are ringing at the same time (different by network switch) when tracing, this is because the transmitter transmits audio signal to the internal circuit of the switch at the same time. You can rotate the receiver sensitivity knob counterclockwise, reduce the reception sensitivity to achieve to find the target cable.

▲ Plug crimping checking

This function can check whether the network plug quality, just plug in the transmitter "Crimping" test socket can judge plug pass or fail.

- Insert the pending network cable into the transmitter 「Crimping」 socket.
- Press the " " button then press the 「Crimping」 button , the "Crimping " indicator will illuminate.
- Insert the network cable plug into the transmitter 「Crimping」 socket, the crimping "1-8" indicator will illuminated at the same time, if the indicator light is not on, the plug pin corresponding to the indicator is not connected to the network wire core. refer figure below, the 2 and 5 lights are not on, indicating that the PLUG second and fifth pins are not connected to the network cable.
1-X-3-4-X-6-7-8

▲ Port Flash

This function transmits the pulsing signal through the transmitter to flashing the LED indicator of the network switch, then can locate the interface of the network cable on the switch.

- Insert the pending network cable into the transmitter 「Test/Scan」 socket.
- Press the " " button, then press the 「Flash」 button , the "Flash " indicator will illuminate or flashing.
- Check the indicators of the interface on the network switch, If the indicator light flashing every about 3 seconds, the corresponding network interface is the interface you want to find.

▲ Telephone line POL +/-

This function is suitable for testing and determining the positive and negative poles of a telephone line.

- Insert the alligator clip patch RJ11 into transmitter “ POL / Scan” socket.
- Press the " " button, then press the 「POL TEL」 button , the " POL " indicator will illuminate.
- Put the red and black alligator clip to the core of the telephone line, and the  indicator light is lit.
- When the indicator light is bright red, the red alligator is caught on the positive pole of the telephone line, the black alligator is the negative pole; when the indicator light is bright green, the red alligator is caught on the negative and the black alligator is positive.

▲ Non-contact Voltage detection (NCV)

This function is used to determine whether the wire or equipment has an AC voltage, the detection range AC90-1000V (50 / 60Hz).

- Push the receiver function switch to the NCV position, put the receiver probe close to the target body, if the AC voltage is detected, the speaker emits an alarm sound of different frequency, the speaker rapid sound indicates a high voltage or fire line, the slow sound may be low voltage or zero line.

Note:

- This function is for reference; the voltage may remain even if there is no detection shown up. There are many possible factors that might block the detection.
- There are external sources (like flashlight and motor) that may trigger non-contact voltage detection.

Pro'sKit®

MT-7029N 抗干擾型音訊網路 PoE 查線器

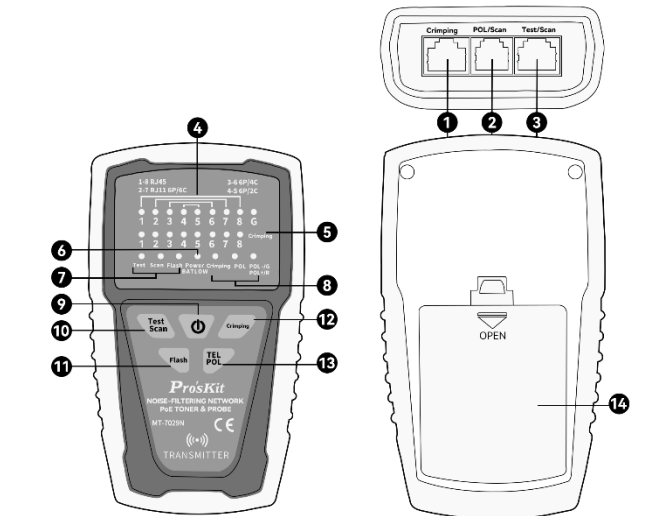
使用說明書

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、 特点概述:

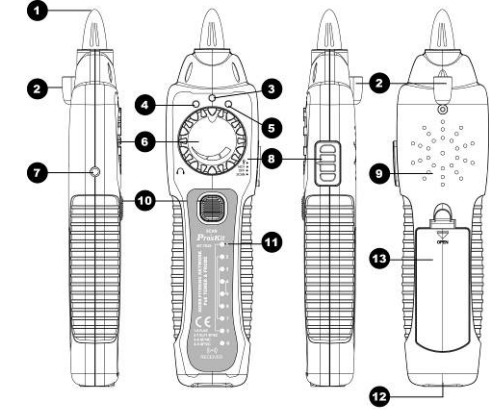
MT-7029N是一款採用最新高頻濾波電路技術，具有排除噪音抗干擾尋線的多功能尋線器，適用於普通交換機& PoE交換機，UTP/STP線纜的查找與定位：可以通過埠閃爍功能定位網線在交換機上的接口；診斷RJ45網路跳線(UTP/STP、Cat 5、Cat 6、Cat 7)、RJ11/12電話線(2/4/6 pin)的通路、短路、斷路、交叉等狀況；可以檢查網線水晶頭壓接是否正確；確認電話線的正負極性等功能。配件鱷魚夾，可應用於測試同軸電纜線、一般電線和電信/網路接線。適用於電信、網路通訊、監控、有線電視等室內、外佈線施工或維護等工程使用。

二、 MT-7029N外觀及部件名稱



MT-7029N音訊發射器 外觀圖

1. 「Crimping」:網路水晶頭壓接測試插座
2. 「POL/Scan」:RJ11電話線+/-極性、尋線測試插座
3. 「Test/Scan」: RJ45/RJ11對線、尋線測試插座
4. 「1~8/G」: 線序指示燈
5. 「1~8」: 水晶頭壓接測試指示燈
6. 「POWER」: 電源開關/低電壓指示燈
7. 功能指示燈: “TEST” 線序測試功能指示燈；“SCAN” 尋線功能指示燈. “FLASH” 交換機RJ45插座燈閃爍功能指示燈.
8. 功能指示燈: “Crimping” 水晶頭壓接測試指示燈. “POL” 電話線+/-極測試功能指示燈 “POL+/-” 電話線測試極性指示燈；
9. 「」:電源開/關鍵
10. 「TEST/SCAN」:線序測試、尋線功能鍵
11. 「Flash」: 交換機RJ45插座燈閃爍功能鍵
12. 「Crimping」:水晶头压接测试功能键:
13. 「TEL/POL」:电话线+/-极测试功能键
14. 電池蓋



MT-7029N 接收器 外觀圖

- 1.音訊信號接收探頭
- 2.LED照明燈
- 3.電源指示燈
- 4.非接觸驗電(NCV)指示燈
- 5.接收信號強弱指示燈
- 6.靈敏度調節旋鈕
7. ø3.5mm耳機插座
- 8.四段功能開關
- 9.喇叭
- 10.「SCAN」尋線功能按鍵
- 11.「1~8/G」測試結果指示燈
12. RJ45/RJ11網路跳線測試插座
- 13.電池蓋。

三、 產品規格:

MT-7029N-C 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
RJ45 埠指示燈閃爍	1 LED 閃爍
電話線正負極測試	1 LED(紅綠雙色): POL-（Green）/POL+（Red）
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;

	RJ45 埠指示燈閃爍測試 <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	ø 3.5mm 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

四、 操作說明

 任何超過DC 60V的活電的線路，不可接入本儀器任何測試插座，以免造成儀器損壞。

（一）網路跳線 線序測試

此功能是檢查網線跳線連接是否正常，網線連接音訊發射器和音頻接收器，通過查看音頻發射器和接收器1-8/G指示燈點亮情況來判斷網路跳線連接情況，可測試出網路跳線常見的通路、短路、斷路、交叉等故障。也可用音頻發射器直接連接網路交換機或電腦網卡測試RJ45跳線連接通、斷情況，具體操作如下：

1. 將待測網路跳線插入發射器「Test/Scan」插座，另一端插入接收器插座。
2. 按  電源開/關鍵開機，「POWER/BAT LOW」指示燈亮，再按一次「Test/Scan」鍵，「TEST」指示燈點亮，線序/故障測試開始，線序指示LED開始掃描顯示：
▲**直通** UTP/STP 網路跳線 1~8/G PIN 全部連接，主機和測試遠端 1~8/G 指示燈按先後順序依次同步點亮,G 為遮罩層指示。如下圖
T: 1-2-3-4-5-6-7-8 T: 1-2-3-4-5-6-7-8-G
R:1-2-3-4-5-6-7-8 R:1-2-3-4-5-6-7-8-G
▲**交叉** UTP/STP網路跳線1~8/G PIN有錯位連接，主機1~8/G指示燈按先後順序依次點亮，測試遠端1~8/G指示燈按實際錯位順序依次點亮。如下圖
T: 1--3-4-5-6-7-8 T: 1-2-3-4--6-7-8
R:1-2-3-4--6-7-8 R:1--3-4-5-6-7-8
▲**開路** UTP/STP網路跳線1~8/G PIN連接有斷路，主機和測試遠端1~8/G指示燈對應斷路位置LED燈不亮，其它燈按先後順序依次同步點亮。如下圖
T: 1-X-3-4-5-6-7-8
R:1-X-3-4-5-6-7-8
▲**短路** UTP/STP網路跳線1~8/G PIN全部連接，主機1~8/G指示燈按先後順序依次點亮，測試遠端1~8/G對應短路位置指示燈同時點亮（稍暗）或不亮（短路≥3線），其它燈按先後順序依次點亮。如下圖
T: 1-2-3--5-6-7-8 T: 1-2-3-4--6-7-8
R:1-2-3--5-6-7-8 R:1-2-3--5-6-7-8
▲**RJ-11/12電話線**：測量6芯電話線LED亮 “2-7”，4芯電話線亮 “3-6”，2芯電話線 “4-5”，故障顯示方式同RJ45網路跳線。

音頻發射器直接連接網路交換機或電腦網卡測試：這種方法僅測試通、斷情況，不能判定交叉或短路。

1. RJ45跳線一端連接音頻發射器，另外一端連接交換機或電腦網卡；
2. 按POWER鍵開機，按一次Test/Scan鍵進行測試，發射器1-8/G指示燈依次點亮，該跳線連接正常，如有指示燈不亮，該線斷路。

（二）網線尋線（查找網線）

此功能是通過音頻發射器發射信號傳輸到網線，接收器接收網線傳輸的音頻信號來實現查找目標網線，並且可同時檢查網線連接通斷的情況。本產品尋線具有信號抗干擾，音訊聲音清晰等特點。具體操作如下：

1. 將待查找目標線的一端接入音頻發射器「Test/Scan」或「POL/Scan」插座。
2. 音頻發射器按  電源開/關鍵開機，「Power/BAT LOW」指示燈亮起，再按二次「Test/Scan」鍵，「Scan」功能指示燈點亮，發射器開始發射信號。
3. 音頻發射器在發射信號同時,線序指示燈(1-8)也會同時掃描,按順序依次點亮，方便同時判定網線連接情況，1-8指示燈中如有指示燈不亮，表示這根線斷線。
4. 音頻接收器檔位開關撥到「Scan」或「照明」檔位開機，接收器“嘀”一聲，同時接收器電源指示燈點亮；
5. 靈敏度調節旋鈕順時針旋轉到最大，再按住接收器SCAN按鍵，接收器探頭貼近網線，當接收器喇叭響起，表示接收器接觸到的網線即為所要尋找的目標線。
6. 尋線時，必須按住接收器SCAN按鍵不鬆開，鬆開按鍵進入待機狀態，不能接收信號。工作結束，請及時關機，以節省電池。
7. 因為網路交換機的原因，尋線時，有可能臨近幾個網路介面的網線都響（不同網路交換機情況不同），這是因為音頻發射器發射的音頻信號經交換機內部電路同時傳輸到其它網路接口，此時，可以逆時針旋轉音訊接收器靈敏度旋鈕，降低接收靈敏度來實現查找到目標線。

（三）網路水晶頭壓接測試

此功能可檢查網路水晶頭壓接是否有斷線情況，不需要連接接收器或遠端測試，只需插在音頻發射器「Crimping」測試插座即可測試。操作方法如下：

1. 音頻發射器按  電源開/關鍵開機，「Power/BAT LOW」指示燈亮起，再按「Crimping」鍵，「Crimping」功能指示燈點亮。
2. 將壓接後的網路水晶頭插入「Crimping」測試插座。
3. 「Crimping」“1-8”指示燈同時點亮；如有指示燈不亮，表明該指示燈對應的水晶頭針與網線線芯沒有連接。

（四）端口閃爍

此功能可通過音頻發射器發射閃爍信號，使網路交換機對應網路接口的LED指示燈閃爍來定位網線在交換機上的接口位置。操作方法如下：

1. 將待查找目標線的一端接入音頻發射器「Test/Scan」插座,另一端已經在交換機上.
2. 音頻發射器按  電源開/關鍵開機，「Power/BAT LOW」指示燈亮起，再按「Flash」鍵，「Flash」功能指示燈點亮或閃爍，每隔約3秒閃爍一次。
3. 查看網路交換機上RJ45接口指示燈，如有指示燈每隔約3秒閃爍一次，該指示燈對應的接口即是要查找的網線。

（五）電話線正負極測試

此功適用於測試並判定電話線的正負極，也可以適用於判定低於60V直流電路正負極的判定。操作方法如下：

1. 將本產品配件中鱷魚夾跳線RJ11一端插入音訊發射器「POL/Scan」插座。
2. 音頻發射器按  電源開/關鍵開機，「Power/BAT LOW」指示燈亮起，再按「POL」鍵，「POL」功能指示燈點亮。
3. 將紅、黑鱷魚夾分別夾在電話線兩線的線芯，此時 **POL-/G** 指示燈點亮。
4. 當指示燈亮紅色，表示紅色鱷魚夾在電話線的正極，黑鱷魚夾負極；當指示燈亮綠色，表示紅、黑鱷魚夾分別夾電話線負極和正極。
5. 測試直流電路正負極方法同上。

（六）NCV非接觸電壓檢測

此功能用於判定電線或設備是否帶交流電壓,探測範圍AC90-1000V（50/60Hz）。

操作方法如下：

- 將接收器開關撥NCV檔位，將接收器探頭貼近目標體，如果探測到交流電壓，蜂鳴器發出不同頻率的報警聲，蜂鳴器急促鳴叫說明電壓高或火線，鳴叫緩慢可能電壓低或零線。

 注意：

- ❖ 即使沒有指示，電壓仍然存在。不要依靠非接觸電壓探測來判斷導線是否存在電壓。探測操作可能會受到插座設計、絕緣厚度及類型等不同因素的影響。
- ❖ 外部環境的干擾源（如閃光燈,馬達等），可能會誤觸發非接觸電壓探測。

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