Pro'sKit®

MT-7025 Network Tone & Probe Kit

CE ℞ RoHS COMPLIANT

User's Manual

1st Edition, 2013

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Thank you for buying PRO'SKIT MT-7025 Network Tone & Probe Kit. Please read this instruction carefully before using the product.

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1 · Overall description
MT-7025 is a multifunction cable tester. It is a tester that combines wire tracking, wire finding, cable mapping, and telephone line polarity test. It can find the target wire in numerous messy wires, and one doesn't need to unplug the network cable or turn off the switching equipment when finding wires. Signal transmission distance over 2 kilometers. It can be applied on telecommunications network installation and maintenance. Compact sizes for carrying convenience, multifunction and easy to operated, it is a competent tester.

2．Feature

- Multifrequency signal features strong anti - interference ability
- Signal transmission distance up to 2 kilometers suitable for long distance cable finding
- Connected to Ethernet with signal voltage and transmit signal directly, the receiver side can find the wire easily
- Connected to switching equipment of Ethernet with signal voltage for checking cable situation without turn off the telecom switching equipment
- Plug in RJ11 telecom cable for signal transmission and find wire by receiver, suitable for telecommunication wiring
- Check the polarity of telephone line by the Alligator connector of transmitter
- Two different signal frequencies for cable finding
- Comes with RJ45，RJ11 cable，alligator connector cable，RJ45 patch cord and ports to meet different applications
- RJ45 connector for wire mapping test and cable status detection (straight, short, no connection, cross wire) ideal for UTP/STP/SFTP cat.5 cat.5e cat.6 and cat.3 cable.
- Volume adjustment according to environment situation.
- With earphone enable to work in noisy environment.
- LED Illuminate function allowing work in dark areas.

3．Specification

Transmitter	
Tone frequency	1kHz
Max. distance of transmission	2km
Max. distance of cable map	300m
Max. working current	≦45mA
Tone mode	ONE/TWO-note tone
Compatible connectors	RJ45(8 pin)、RJ11(6P/2C)、Alligator clips

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Transmitter	
Continuity test	Yes
Max. signal voltage	8Vp-p
Function selection	3 Position mode switch
Cable map indication	8 LEDs
Shielded indication	1 LED
Phone line polarity indication	Yes
Voltage protection	AC 14V or DC 10V
Low battery display	6.0V
Battery type	DC 9.0V (NEDA 1604/ 6F22 DC9V ×1pcs)
Dimension (LxWxD)	126x49x34mm
Receiver	
Frequency	1kHz
The Max. working current	≤90mA
Compatible connectors	RJ45(8 pin)/RJ11(6 pin)
Ear jack	1
Signal status indication	1 LED & Buzzer
Cable map indication	8 LEDs
Shielded indication	1 LED
LED illumination	1 LED
Battery type	DC 9.0V (NEDA 1604/ 6F22 DC9V ×1pcs)
Dimension (LxWxD)	176x42x27mm

4．**Packing list**

1. Transmitter   X1
2. Receiver   x1
3. Earphone   x1
4. RJ45 8P8C patch cord   x1
5. Carrying bag   x1
6. User's manual   x1
7. Battery   x2

5．**Safety instructions**

- ⚠⚡ Never test the cable that has over AC 14V or DC10V to avoid possible electric shock or personal injury and avoid possible damage the meter or equipment.
- ⚠⚡ Never test a cable without insulation for avoid possible electric shock or personal injury and to avoid possible damage the meter or equipment.
- ⚠⚡ Please don't test on live circuit more than 5 minutes.
- Don't connect any patch cord when testing telecom cable.
- To avoid any possible damage to the meter, please don't open the housing of meter by non- specialized person.
- Always turn the power switch of transmitter off when not in use for power saving.
- Please change battery when low battery indication shows up to ensure correct test result.
- To avoid battery leakage liquid and damage the meter, please take off battery when not in use for long times.

6．MT-7025 transmitter instructions

1. RJ45 Socket
2. Wire finding and cable status LED indicator
3. Function change button
4. Power and function switch (SCAN/OFF/TEST)
5. Cable test verify LED indicator
6. Cable mapping LED indicators
7. Alligator cable
8. RJ11 cable

- RJ-11 cable, for telephone line test
- Alligator connector cable, red and black for telecom cable test, Caution:
  Never connect to live cable that has over AC14V or DC10V.
- RJ45 socket for test STP/UTP patch cord or network.
- Power and function switch
  - ➢ TEST: For cable mapping and open/short test.
  - ➢ SCAN: Transmit tone signal for cable finding.
  - ➢ OFF: Power off
- Function change button
  - ➢ Power and function switch in "TEST" position:
    Press function change button shortly to change scan speed from either slow or rapid.
    Press function change button and hold for 2 seconds, when "VERIFY" LED change from flash to light up then you can process the telecom cable open/short test.
    Alligator connector clip to 2 wires terminal, it can judge the resistance is hi or low according to brightness of the number "1" LED, more bright means low resistance, otherwise, the

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resistance is high.

➢ Power and function switch in "SCAN" position:
Press function change button shortly for frequency change from either single or dual frequency signal for cable finding. Press function change button and hold for 2 seconds, when "VERIFY" LED lights up then you can take DC level polarity test. Red Alligator connector clip positive wire and black connect clip negative wire then "VERIFY" LED turns red, If reversed the connection then "VERIFY" LED will turn to green.

● **Cable mapping indicator**
When performing cable mapping or connect to telecom switching equipment for connection status detection, number "1" to "8" LED will light up in order. The LED "G" indicates the shielded conductor is connection or no connection.
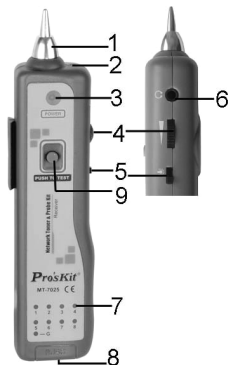
● **Wire finding and cable status LED indicator**
For wire or cable finding and status indication

● **Cable test verify LED indicator**
For testing result indication.

7、MT-7025 Receiver instructions

1. Tone tested probe
2. LED illumination
3. Signal indicator
4. Volume adjustable rotary switch
5. LED illumination power switch
6. Earphone jack
7. Cable mapping LED indicators
8. RJ45 socket
9. Cable finding tested button

8．How to test
*** Cable map
For testing UTP/STP/SFTP cat.5 cat.5e cat.6 cables and cat.3 telecom cables, connect both side of RJ-45 or RJ-11/12 patch cord by plug into transmitter and receiver, slide **"Power and function switch"** to **"TEST"** position, the **"VERIFY "**LED flash, then star to process cable mapping, press **"Function changed button"** to change the scan speed. Cable map and cable status indication; please refer to below "wire map" for more detail

- **Straight:** 1~8/S conductors of UTP/STP patch cord are all connected, both transmitter and receiver 1~8/G LED light up in order at synchronous. LED "G" indicate shield connection or no connection.
- **Crossover:** 1~8/S conducts of UTP/STP patch cord are all connected, both transmitter and receiver 1~8/G LED light up in order, sequence of receiver 1~8/G indicators light up are not follow transmitter 1~8/G indicators.
- **No connection:** Part of 1~8/S conductor of UTP/STP patch cord are not connected, both transmitter and receiver 1~8/G related LED won't light up; the other LEDs will light up in order.
- **Short:** 1~8/S conductors of UTP/STP patch cord are all connected, the transmitter 1~8/G LED light up in order, but related LED of receiver 1~8/G won't light up if it is short, the other will light up in order.
- **CAT.3 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 CAT.3 telecom cable status indication: crossover、no connection or short，please refer to WIRE MAP function instruction.

WIRE MAP
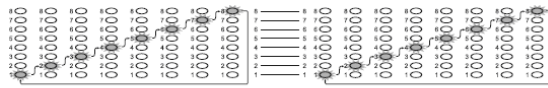
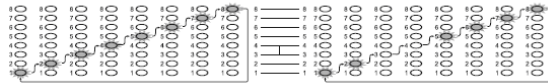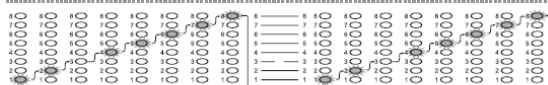Transmitter LED indicator   Reveiver LED indicator

RJ-45 (8P/8C)

RJ-11 (6P/4C)

1~8 Straight

3,4 Short

3 No connection

3,4 Crossover

***Cable test with switching equipment

UTP/STP patch cord, one terminal connect to transmitter, the other terminal connect to switching equipment, slide **"Power and function switch"** to "**TEST**" position, transmitter 1~8 LED will light up in order that indicate 1~8 conductors are all connected, the related LED will off if no connection.

Note. This function just for connected testing, it can't verify cable crossed or short.

***Cable finding
- Connect the transmitter to the tested cable, you can choose

RJ-11, Alligator connector or 8P8CR J45 patch cord to connect the tested cable according to the tested cable type.

● Slide **"Power and function switch"** to "**SCAN**" position, transmitter will transmit dual frequency tone. If you want to change the dual frequency to single, press **"Function changed button"** shortly for frequency change.

● Please press and hold the **"Cable finding tested button",** put tested probe as close as possible to numerous cable or wall that has cable inside, the speaker will sound when the tested probe near the tested cable (Signal indicator also lights up), if testing switching equipment, you will find receiver sounded when close 2 or 3 wire, need to find the clearest sounded one by receiver.

● It is probable tone signal interfere by telecom switching equipment signal when perform cable finding test that will effect testing result, you can turn off telecom switching equipment power if necessary.

***Telecom cable open/short testing
● Slide **"Power and function switch"** to "**TEST**" position, press test button and hold 2 seconds, the "VERIFY" LED will change from flash to light up.

- Black and red Alligator connectors clip to 2 wires terminal the RJ-11 cable plug in socket of tested wire.
- The number "1" LED will light up if wires short, The number "1" LED will off if wires open, brightness of number "1" LED indicates the wires with hi or low resistance, LED bright indicates low resistance, LED off indicates hi resistance.

Telephone line polarity test
- Slide **"Power and function switch" to "SCAN"** position, then press **"TEST"** button and hold 2 seconds, **"STATUS"** LED will off and **"VERIFY"** LED lights up at the same time.
- Black and red Alligator connector clip to 2 wires terminal the RJ-11 cable plug in socket of tested wire.
  Red Alligator connector clip positive wire and black connect clip negative wire then **"VERIFY"** LED turns red, if reverse the connection then **"VERIFY"** LED will turn to green.

***LED illumination:
If working place is dark, turns on the LED light for illumination.

***Earphone
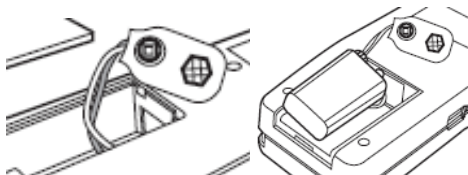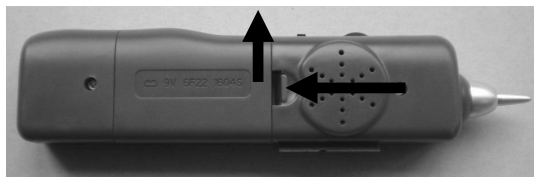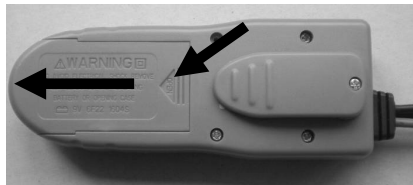If the working environment is noisy, wear the earphone to listen and the sound will be more clear.

9・Battery
Low battery indicator
- Slide **"Power and function switch" to "SCAN"** position**,** if **"STATUS"** LED and **"VERIFY"** LED flash at the same time that indicates battery voltage is lower than 6V, please change battery.
- When you perform any test, you find the LED indicator is off or sound volume is low, please change battery.

Battery replacement
1. Remove the cover of battery compartment
2. Replace new battery
3. Put the cover back

10・Troubleshooting

Problem	Solution
Can't receive the tone signal for finding cable	Check battery power or connection
	Confirm **"Power and function switch"** is on **"SCAN"** position
	Instrument is damaged; please send it back to us for repair.
Perform test with telecom switching equipment, can't receive the tone signal for finding cable	It is probable tone signal interfere with telecom switching equipment signal when perform cable finding test that will effect testing result, you can turn off telecom switching equipment power if necessary.
Cable mapping LED indication is incorrect.	LED indicator damaged, please send it back to us for repair.
	Plug conductors are not contact to socket, please reinsert the plug to socket.
The other problems.	Instrument is damaged; please send it back to us for repair.

MT-7025 音頻/網路測試器使用說明

感謝您購買和使用 PRO'SKIT MT-7025 音頻/網路測試器，使用儀器前請仔細閱讀說明書，閱讀後請妥善保存，以備查閱。

目錄

1．特點概述

MT-7025 是一款集尋線、線序查對、電話線路檢測、直流電壓正負極判斷於一身的多功能查線器，該儀器可以在眾多線纜中快速尋找出目標線纜；可以帶電檢測和查尋探測網路線纜，不需要拔掉網線或關閉交換機；信號傳輸距離可達 2km 以上，可遠距離尋線作業，適用於電信網路工程施工和維護；計算機網路工程施工和維護；以及其它導線工程施工和維護室內，室外使用。本產品外觀小巧，攜帶方便，功能齊全，配件齊全，操作使用方便。是你得力的檢測工具.

2・產品特點

- 音頻發射器發射多頻脈沖信號,抗干擾能力強,信號容易被接收器探測,信號傳輸距離可達 2km 以上,適用於電信行業遠距離尋線作業。
- 音頻發射器可以接入帶電乙太網路,發送音頻信號,接收器能夠探測出信號。適用於網路布線,查線作業
- 音頻發射器可以接入帶電乙太網路交換機網路,在交換機開機情況下對網線接線情況查線作業。
- 音頻發射器可以接入帶電電話線,發送音頻信號,接收器能夠探測出信號。適用於電信布線,尋線作業
- 音頻發射器可以接入帶電電話線,查看判斷電話線路正負極。
- 音頻發射器可以發射單、雙音頻。
- 音頻發射器有 RJ45 接口,配 8P8C 跳線,自帶 RJ11 跳線,紅黑鱷魚夾跳線,可供多種場合接入測試。
- 接收器有 RJ45 接口,可作 Wire map 測試遠端器,配合發射器,可檢測網路跳線直通,短路,斷路,夾錯等跳線壓接情況,適用於檢測 UTP/STP/SFTP cat.5 cat.5e cat.6 以及 cat.3 電話線跳線。
- 接收器有音量大小調節電位器,可根據環境干擾信號強弱及噪音大小調節合適音量。
- 接收器有耳機插座並配有耳機,可供噪音較大的環境中戴耳機尋線使用。
- 接收器有一輔助照明 LED 燈,可用於光線較暗的工作場所輔助照明。

3・產品規格

發射器	
頻率	1kHz
最大測試距離	2km
線序校對測試最大距離	300m
最大工作電流	≦45mA
音頻模式	2 種音頻切換
適用連接器	RJ45(8 pin)、RJ11(6P/2C)、Alligator Clips
導通測試	有

| 最大信號電壓	8Vp-p
功能選擇	3 種模式切換
線序指示	8 LEDs
遮蔽指示	1 LED
電話線正負極指示	有
電壓保護	AC 14V or DC 10V
低電池指示	6.0V
使用電池規格	DC 9.0V (NEDA 1604/ 6F22 DC9V ×1pcs)
尺寸(LxWxD)	126x49x34mm
接收器	
頻率	1kHz
最大工作電流	≦90mA
適用連接器	RJ45(8 pin)/RJ11(6 pin)
耳機插座	1
信號狀況指示	1 LED & 蜂鳴器
線序指示	8 LEDs
遮蔽指示	1 LED
LED 照明	1 LED
使用電池規格	DC 9.0V (NEDA 1604/ 6F22 DC9V ×1pcs)
尺寸(LxWxD)	176x42x27mm

4‧包裝明細

1. 音頻發射器　1台
2. 音頻接收器　1台
3. 耳　　　機　1附
4. 8P8C 跳線　1條
5. 帆 布 包　　1只
6. 說 明 書　　1本
7. 電　　　池　2顆

5‧使用安全

- ⚠️⚡不能在帶有強電(交流 14V, 直流 10V 以上)的線路上使用本設備,在強電線路上使用會造成儀器損壞,並可能造成人身傷害。
- ⚠️⚡避免將測試探頭接觸帶強電的電線裸線,以免造成儀器損壞或人身傷害。
- ⚠️⚡不要測試帶電線路超過 5 分鐘,以免造成儀器損壞。
- 在測試電話線路時,請將其它不使用的網路跳線從儀器上斷開。
- 非專業人員,請勿打開儀器外殼,以免造成儀器損壞。
- 使用結束,請將音頻發射器撥至 off 檔,以節省電源。
- 當電池顯示低電壓時,請及時更換電池,以保證測試結果可靠。
- 長時間不使用,請拿掉電池,以免造成電池漏液,造成儀器損壞。

6‧MT-7025 音頻發射器外觀圖
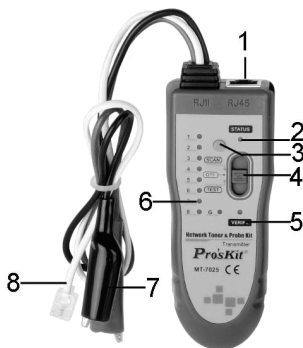
1. RJ45 插座
2. 尋線指示燈 STATUS
3. 功能切換按鍵
4. 功能檔位開關 SCAN/OFF/TEST
5. 測試指示燈
6. 線序指示燈
7. 鱷魚夾條線
8. RJ-11 跳線

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RJ-11 跳線: 用於電話網路接入測試。

鱷魚夾跳線: 紅黑兩個,用於電話網路或其它線路接入測試,注意不能接入帶強電線路。

RJ45 插座: 用於 STP/UTP 網路跳線測試或接入查線測試。

功能檔位開關

　　TEST: 網路跳線線序校對或通斷短路等測試。

　　SCAN: 發射音頻信號,可供音頻接收器探測接收查線。

　　OFF: 手動關機。

功能切換按鍵

　　TEST 檔,短按此鍵,可進行快、慢掃描切換;長按此鍵 2 秒,VERIFY 燈由閃爍變爲長亮,可進行電話線開路/短路測試,紅黑鱷魚夾分別夾住待測線路兩端,如短路,則線路指示 LED 燈的 1# 燈會長亮,反之不亮,線路的阻抗可由燈的亮度來顯示,燈越亮,阻抗越小,越暗,阻抗越大。
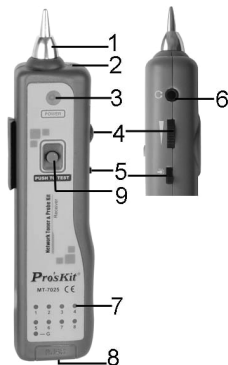
　　SCAN 檔,短按此鍵,發射信號單、雙音頻切換;長按此鍵 2 秒,VERIFY 燈亮,可測 TEL 線路/DC 電壓正負極,紅、黑夾分別接正、負極時亮紅燈,反之亮綠燈。

線序指示 LED 燈: 進行線序校對或連接交換機進行通斷測試時,此 1#～8# LED 按順序點亮,G 指示燈爲線路屏蔽層連接通斷情況

尋線指示燈 LED: 　　指示尋線狀況
測試指示燈 LED: 　　指示測試狀況

7・MT-7025 音頻接收器外觀圖

1.　　測試探頭
2.　　輔助照明 LED
3.　　信號指示 LED
4.　　音量調節旋鈕
5.　　輔助照明開關
6.　　耳機插座
7.　　線序指示 LED
8.　　RJ45 插座
9.　　尋線測試按鍵

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測試探頭: 尋線時靠近目標線,以便接收器能接收到音頻發射器發射的信號。
音量調節旋鈕 可根據需要調節接收器音量大小。
尋線測試按鍵 按壓此鍵,探頭靠近線束,可探測出音頻發射器發射的目標線。
輔助照明開關 可打開或關閉輔助照明 LED 燈
RJ45 插座 用於 STP/UTP 網路跳線測試或接入查線測試。
耳機插座 可插入耳機,方便在噪音較大的工作場尋線工作。
信號指示燈 尋線時,接收到音頻信號時,此燈亮,信號越強,燈越亮。
線序指示 LED 進行線序校對時,此 1#~8# LED 按一定順序點亮;G 燈爲線
　　　　　　　路屏蔽層連接通斷
**輔助照明 LED** 輔助照明使用

8．使用說明
線序校對測試(Wire map)
該功能適用於檢測 UTP/STP/SFTP cat.5 cat.5e cat.6 網路跳線及 cat.3 電話線跳線。
將壓好的網路跳線 RJ-45 或 RJ-11/12 水晶頭插入音頻發射器和接收器 RJ-45 測試插座,發射器功能切換開關撥至 TEST 檔位,VERIFY 燈閃爍,儀器開始對跳線排列線序掃描,按發射器功能切換按鍵,可以切換快慢掃描方式。
掃描線序排列顯示如下(詳細請參考 WIRE MAP 圖)
● **直通** UTP/STP 網路跳線 1~8/S PIN 全部連接,音頻發射器和接收器 1~8/G 指示燈按先後順序依次同步點亮,G 指示燈爲線路屏蔽層連接通斷。
● **交叉** UTP/STP 網路跳線 1~8/S PIN 全部連接,音頻發射器 1~8/G 指示燈按先後順序依次點亮,接收器 1~8/G 指示燈按實際壓接錯位順序依次點亮。
● **斷路** UTP/STP 網路跳線 1~8/S PIN 連接有斷路,音頻發射器和接收器 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。
● **短路** UTP/STP 網路跳線 1~8/S PIN 全部連接,音頻發射器 1~8/G 指示燈按先後順序依次點亮,接收器 1~8/G 指示燈對應短路位置燈不亮,其它燈按先後順序依次點亮。
● **CAT.3 電話線跳線---直通測試**
　6P6C 跳線---音頻發射器和接收器 2~7 指示燈按先後順序同步點亮,其它燈不亮。
　6P4C 跳線---音頻發射器和接收器 3~6 指示燈按先後順序同步點亮,其它燈不亮。
　6P2C 跳線---音頻發射器和接收器 4~5 指示燈按先後順序同步點亮,其它燈不亮。
● **CAT.3 電話線跳線---交叉、斷路、短路等**,同網路跳線測試類同,具體請參考 WIRE MAP.

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WIRE MAP
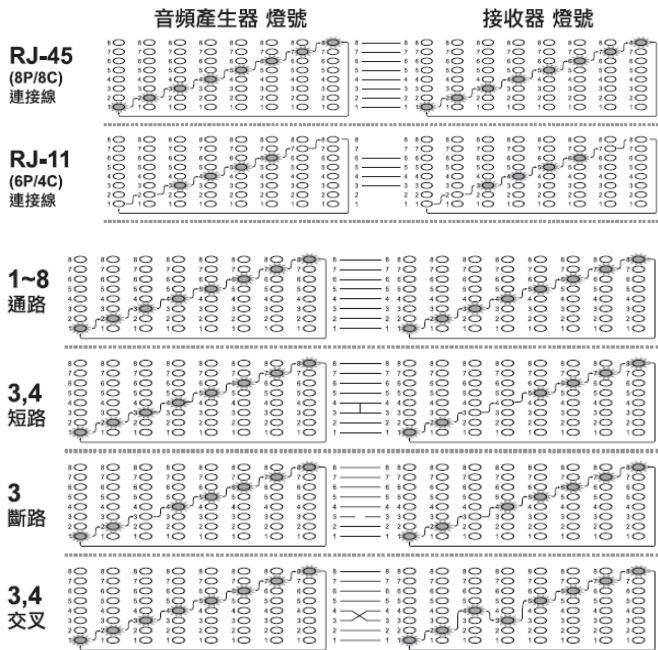
---帶交換機網路測試

對於 UTP/STP 網路跳線，可以用一端連接音頻發射器，另一端連接在網路交換機上，檔位開關撥至 TEST 檔位，音頻發射器 1~8 指示燈按先後順序點亮，表示網路跳線 1~8 PIN 全部連通，否則，對應斷路位置不亮；

注 此測試方法只能測試網線線路通斷，不能檢測交叉或短路。

尋線測試

- 音頻發射器接入待測目標線路，接入方式根據實際情況，可選擇用 RJ-11 跳線或紅黑鱷魚夾跳線或 8P8C 網路跳線接入；
- 接好跳線後，音頻發射器檔位開關拔到 **SCAN** 檔位，此時音頻發射器

發射雙音頻信號，如需要選擇單音頻信號，可按**功能切換按鍵**，切換單、雙音頻；

● 音頻接收器，按住**尋線測試按鍵**，測試探頭靠近線束中的每根網線或埋線牆壁，當接收器喇叭響起（信號指示燈同時點亮），探頭靠近的線就是所要查找的目標線。如網路交換機工作中，尋找的線束中會有 2~3 根線都響，聲音最清晰的那根線是目標線。

● **注意** 帶電查尋電話局域網線路時，因不同電話交換機信號頻率不同，可能會有與本音頻發射器發射信號衝突，造成無法探測出信號情況，如有必要，可以關閉電話交換機進行查尋線工作

查尋示意圖

電話線路短路/開路測試
● 音頻發射器檔位開關撥至 TEST 檔，長按此鍵 2 秒，VERIFY 燈由閃爍變為長亮；
● 紅黑鱷魚夾分別夾住待測線路兩端，或用儀器自帶 RJ-11 跳線插入待測 RJ-11 插座；
● 如短路，則線路指示 LED 燈 1＃長亮，開路則不亮。線路的阻抗可由燈的亮度來顯示，燈越亮，阻抗越小，越暗，阻抗越大；

電話線路正負極/DC 電壓正負極測量
● 音頻發射器檔位開關撥至 SCAN 檔，長按此鍵 2 秒，STATUS 燈熄滅同時 VERIFY 燈亮；
● 紅黑鱷魚夾分別夾住待測線路兩端，或用儀器自帶 RJ-11 跳線插入待測 RJ-11 插座；如紅、黑夾分別接正、負極時亮紅燈，反之亮綠燈。

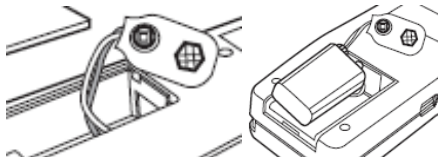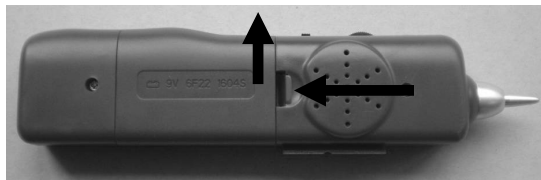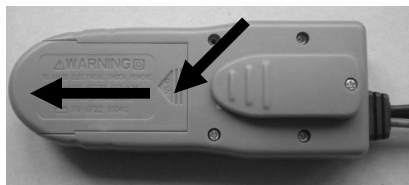**輔助照明**

如工作環境光線不足,可開啓輔助照明 LED。

耳機使用

如工作環境噪音太大,可使用耳機,方便尋線測試。

9・電池使用
電池低電壓顯示
- 音頻發射器功能檔位開關撥至 SCAN 檔,如 STATUS 燈和 VERIFY 燈同時閃爍時,電池電壓低於 6V,需要更換電池。
- 音頻接收器探測發射信號中的音頻發射器跳線時,聲音小,信號指示燈不亮時,表示電池供電不足,需更換電池。

電池裝卸

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10・簡易故障排除

故障	排除
無法探測音頻發射器信號	檢查電池，如電壓低，更換電池
	發射器檔位不正確，撥至 SCAN 檔
	儀器故障，返回經銷商維修
帶電測試電話局域網路，無法探測音頻發射信號	可能電話網路信號頻率與本音頻發射信號衝突，可關閉電話交換機
線序校對顯示不正確	LED 指示燈壞，返回經銷商維修
	網線沒插好，重新插入 RJ-45 插座
其它功能異常	儀器故障，返回經銷商維修

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http://www.prokits.com.tw
E-mail : pk@mail.prokits.com.tw

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