Ⅰ. Technical Specification

1). Display

A lattice 128x64 Sequence LCD (valid visual range 48x32mm)

2). Power Supply

A stacked 9V Battery with a power consumption of 25 mA

3). Low battery display

LCD prompts low battery when the battery voltage is lower than 6.5V

4). Dimension

149x 66x23 mm

5).The type of testable cable

The cable tester used to test STP/UTP CAT 5E/6E twisted cable, BNC coaxial cable, telephone line, USB signals line, and other common wire line by alligator clip.

6).The testable Port

Main machine, designed with RJ45 (M-main), RJ45(S-slave), RJ11, BNC (male), USB (A female);Slave machine, designed with RJ45(S), RJ11(S), BNC (male), USB(B female);RJ11 port can be connected to alligator clip for testing common wire line.

7). Working Ambient Temperature

-10℃------+60℃.

8). Measurement of cable length

Length Scope: 1---1200 M

Calibration accuracy: 2 %(+/-0.5M or +/- 1.5ft) (Calibration cable>10M)

Measurement accuracy: 3 %(+/-0.5M or +/- 1.5ft) (AMP, CAT5E, CAT5E cable)

Display: Meter, Feet or Yards.

9) Length Calibration:

User can set calibration factor by himself with a given length cable, the length of calibrating cable is more than 10 Meter.

10). General test function:

Wire mapping and check errors such as open circuit, short circuit, reverse, crossover or cross-talk, interference, connection or disconnection.

11).Locate function

In the slave machine, there is a far-end test jacks without power supply, which can help to locate the cable while connect to main machine.

12).Automatically shut off while time-delay:

The tester will shut off while stop working for15 minutes.

13). Adjust sensitivity

The sensitivity can be adjusted by turning the volume sw

Ⅱ.Function and Features

1).SM-8818

1.With M-S and M-R two methods to check error such as open, short circuit, jumper, reverse, crossover, matching connections for 5E/6E network cable, BNC cable, USB and phone line and visually displays on the LCD

2. To test crosstalk error on cable to shut out the potential issue of slow network speed

3. Can accurately determine the exact open point in the crystal end of cable (left, right or middle)

4. Automatically time-delaying power off.

5. With a low voltage display when voltage is low.

6. With a self-test and adjust functions to various conditions such as the automatic replenishment for battery capacity and ambient temperature while changes.

2).SM-8828

1. Can check error such as open, short circuit, jumper, reverse, crossover matching connections for 5E/6E network cable, BNC cable, USB and phone line and visually displays on the LCD
2. To test crosstalk error on cable to shut out the potential issue of slow network speed
3. Super searching-lines feature make you find the cable, telephone lines and other various metal wires among the numerous lines, help to find the line what you want at another remote end by the size of the prompt volume, with anti-interference and high sensitivity, the volume control knob on receiver can be adjusted for sensitivity.
4. Can accurately determine the exact open point in the crystal end of cable (left, right or middle)
5. Automatically shut-off while time-delay.
6. With a low voltage display when voltage is low,
7. With a self-test and adjust functions to various conditions such as the automatic replenishment for battery capacity and ambient temperature while changes.

3). SM-8838

1. With M-S and M-R two methods to check error such as open, short Circuit, jumper, reverse, crossover, matching connections and cable break point for 5E/6E cable, BNC cable, USB and phone line and visually displays on the LCD
2. To test crosstalk error on cable to shut out the potential issue of slow network speed..
3. With the M-S, M-R, OPEN three methods to measure the cable length up to 1,200 meters for network cable, coaxial cable, telephone line, USB cable. The accuracy of the measurement of length and location of cable break point is up to 98%.
4. Can determine which side is open between two cables ends tested, and accurately determine the exact open point in the cable end (left, right or middle).
5. With a low voltage display when voltage is low,
6. Automatically shut-off while time-delay.
7. With a self-test and adjust functions to various conditions
8. Can test the connection between network cable and router is good or not, and router can be live tested.

4) .SM-8868

1. With M-S and M-R two methods to check error such as open, short Circuit, jumper, reverse, crossover, matching connections and cable break point for 5E/6E cable, BNC cable, USB and phone line and visually displays on the LCD
2. To test crosstalk error on cable to shut out the potential issue of slow network speed..
3. searching-lines feature make you to find the cable, telephone lines and other various metal wires among the numerous lines, help to find the line what you want at another remote end by the size of the prompt volume, with anti-interference and high sensitivity, the volume control knob on receiver can be adjusted for sensitivity.
4. With the M-S, M-R, OPEN three methods to measure the cable length up to 1,200 meters for network cable, coaxial cable, telephone line, USB cable. The accuracy of the measurement of length and location of cable break point is up to 98%.
5. Can determine which side is open between two cables ends tested,and accurately determine the exact open point in the cable end (left, right or middle).
6. With a low voltage display when voltage is too low
7. Automatically time-delay shut-off.
8. With a self-test and adjust functions to various conditions such as the automatic replenishment for battery capacity and ambient temperaturewhile changes.
9. Can test the connection between network cable and router is good or not, and can be live tested.

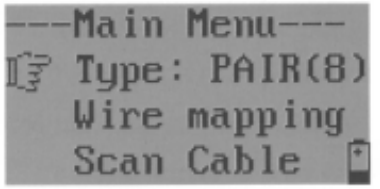
"R "line shows RJ45 jack pin number of far-end port and the far-end

III. Operation Procedures

SM-8818 & SM-8828

Push "ON/OFF" key, it runs a self-checking at the same time, the LCD display "Network Cable Tester" 3 seconds as below

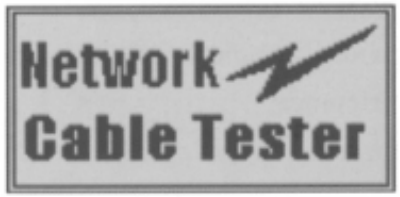
or push any arbitrary key to display main menu.



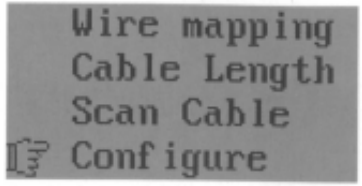
There are three functions to be chosen on main menu.

SM-8838 & SM-8868

Push "ON/OFF" key, it run a self-checking at the same time, the LCD display "Network Cable Tester" 3 seconds as below

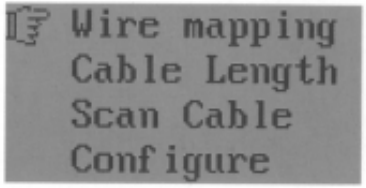


or push any arbitrary key to display main menu,



There are four functions to be chosen on main menu.

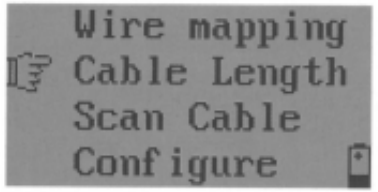
1. Wire Mapping



As the diagram, the cable-testing program can help to detect the connection status of cable port to port by the M, S, R port in the main machine and location of the error.

It can also be detected in coaxial, USB cable, telephone line connections, and display the open and short circuit conditions.

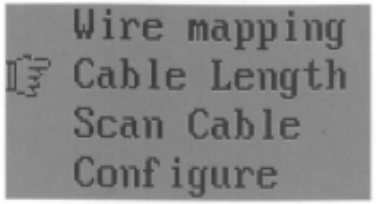
2. Cable Length



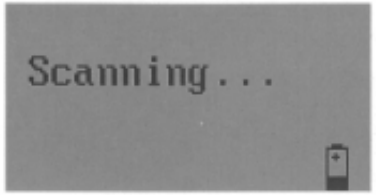
Pair and measure length to verify cable length, open circuit distance, pairing and cross-talk interference,

And measure the length for Coaxial cable, USB line and telephone line.

3. Scanning and locating Cable



Select "Scan cable" in the menu, and push "Enter" key, then LCD display



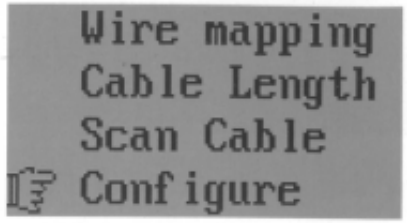
The port of BNC ,USB,RJ11,& RJ45(M),will send a single, Plug one port of the cable(such as the port of extension line or the port extension line or the port of computer network cable) into the RJ11,or(BNC,USB,RJ45(M)) jack on the emitter

Power on the receiver and the "Power" LED lights then detect the sound "toot" from the speaker on the receiver around another port of cable testing (such as cable layout shelf of telephone system, junction box, and Hub port of computer).

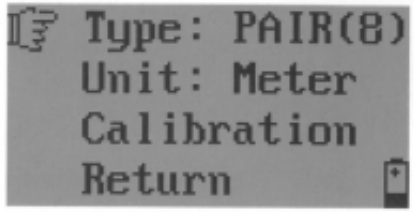
Then compare the volume of the "toot" sound, the twin cables which makes the highest sound of "toot" are the one to be found.

Ⅳ. Calibration and settings

Select "Configure" in the menu, and push "Enter" key,



Then LCD Display



A) Type: PAIR (8),

Configure 5E, 6E:select Type: PAIR (8), then select Return,push"ENTER" key,

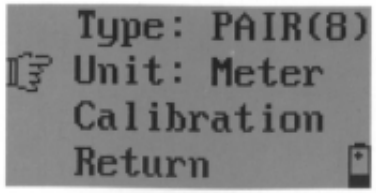
Configure TEL (6): select Type: TEL (6), then select Return, push "ENTER" key

Configure USB (4) select Type: USB (4), then select Return, push "ENTER" key

Configure BNC (2) select Type: BNC (2), then select Return, push "ENTER" key

B） Configure Unit:

Select main menu: Configure, push "enter" key,



Select Unit: Meter

Select Return, push "enter" key, and display main menu.

Select Unit: Feet

Select Return, push "enter" key, and display main menu

Select Yards, then push Return, and display main menu

C) Calibration,

For an accurate measurement of cable length, the calibration operation

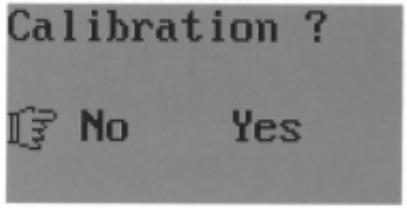
You should be done as follow. The length of cable for calibrate is more 10M,

After entering into dynamic calibration function, Insert same type cable of given length into "M" port, do not need insert far-end

Select main menu,

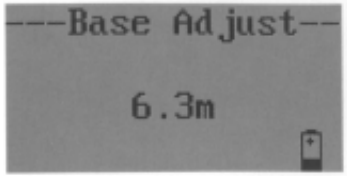
Push "ENTER" key

Then LCD display



And select Yes, Push "ENTER" key

Then LCD display



At the moment, hold up and down to display the length to be adjusted to actual

Given length and then push "enter" key to resave calibration factor and exit

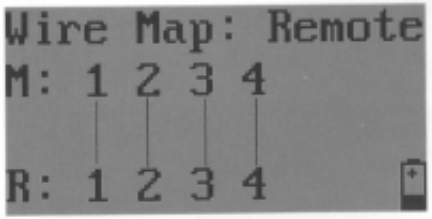
Calibration factor and exit calibration function.

D) Return
Push" Return "key" to main menu.

V. Wire Map function

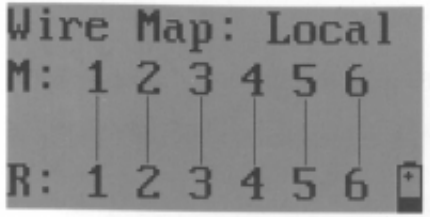
After entering the wiring test function, the tester first configure the 5E, 6E, Coaxial and USB cable in main menu, and display as follows while checking is being undertaken:

The Result 1, there is a USB line is tested the LCD will display as follows:



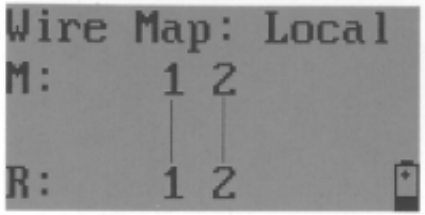
At the moment, push "enter" key to return main menu.

The Result 2, there is a TEL line is tested the LCD will display as follows.



At the moment, push "enter" key to return main menu.

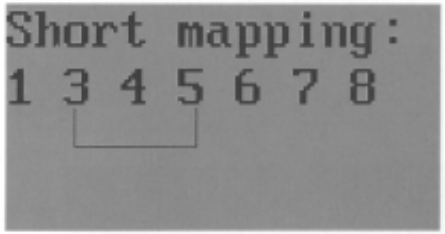
The Result 3, there is a coaxial is tested the LCD will display as follows:



At the moment, push "enter" key to return main menu.

The Result 4: Short circuit

It display as follows if there is any short circuit in cable or terminal :(e.g. 3 5 short circuit in the sample)

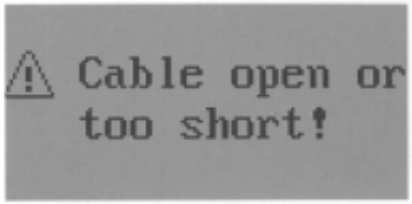


At the moment ,push up or down key to restart testing or push "enter" key to return main menu.

It will display wiring diagram (wiremap) as follows

Test Result 5: the far-end matcher is not found, and the cable is not being connected into the S cable port in main machine.

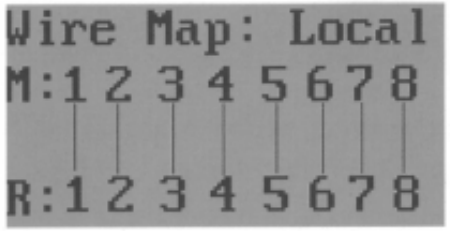
The tester will automatically detect far-end matcher or local port (S) cable and it will display as follows if the far-end of cable to be checked does not insert into the far -end matcher or if the cable does not insert into the local port (S) in local test:



At the moment, push ENTER key restart testing,
Or push up or down return main menu.

The Result 6: Normal wiring diagram display

The tester will automatically detect far-end matcher or local port (s) cable and it will display wiring diagram as follows if it is found the far-end matcher or the local port (S) on the far-end of cable to be checked:

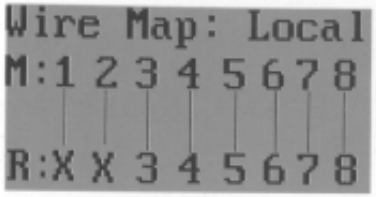


matcher number,

"M" line shows the RJ45 jack pin number of master port,

At the moment, push up or down key to restart testing or push enter key to return main menu.

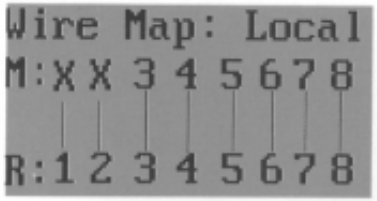
The Result 7 Wiring diagram display when there is an open circuit at the far-end of cable.



R :line 1 and 2 pins location display "x", it indicates o circuit in far-end plug "1" and "2"pins and open circuit is located nearby the far-end plug .

The Result 8 Wiring diagram display when there is an open circuit at the far-end of cable

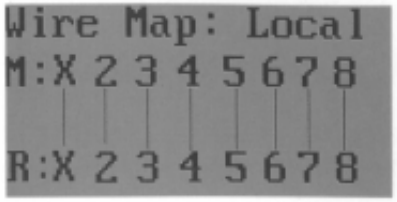
It will display wiring diagram (wiremap) as follows if there is an open circuit at the near-end plug of the cable:



M: line "1" and "2" pins location display "x", it indicates open circuit in far-end plug "1" and "2"pins and open circuit is located nearby the near-end plug.

The Result 9: Wiring diagram display when there is an open circuit in the middle of the cable

There is an open circuit in the middle of the cable:



Line 1 pin location display "x" ,it indicates open circuit in the middle of "1" pin cable .For further locating open circuit ,the pair and length function(pair &length)of the tester could used as detailed hereinafter.

VI. Length measurement function

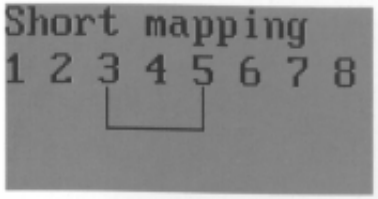
No matter whether there is a far-end recognizer at the far-end of the cable, the tester is capable to have pair and

Length (pair &length) measurement .therefore, the far-end recognizer can keep connected in the course of wiring diagram (wiremap) and pair and length (pair &length) measurement to avoid repeated insertion and pulling out.

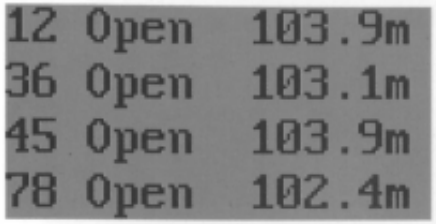
After entering into pair and length measurement function, the tester shall have pair and length test and it will display as follows to indicate the measurement is being undertaken

Test Result 1: short circuit (short)

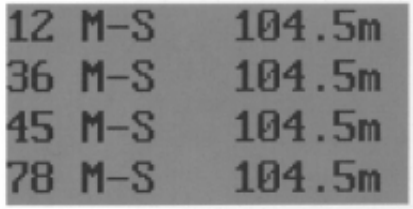
It will display as follows if there is any short circuit in cable or terminal:
Short circuit in the sample



At moment, push enter key to return main menu,
Test Result 2 one of the pair are open, the other plug "M" jack, it will display,



In which, after the pair is the pair line number and it is the length after the line number,
At the moment push up and down enter key to return to main menu,
Test Result 3 One of the pair be plug "M" jack, the other port plug the "S" jack, it will display as follows



At the moment push up and down enter key to return to main menu,

Test Result 4 One of the pair be plug "M" jack, the other port plug the "R" jack, it will display as follows

```
12 M-R    104.3m
36 M-R    104.1m
45 M-R    104.7m
78 M-R    103.1m
```

At the moment push up and down enter key to return to main menu

Test Result 5, Abnormal pair and length (PAIR & LENGTH), it will display as follows,

```
12 M-R    104.3m
36 M-R    104.1m
45 M-R    104.7m
7          74.7m
```

In which, the last line (8) indicates there is no pair is found in lines 8,at the moment it will display the length of unpaired line number, if you push the up key it will display:

```
8 M-R    104.3m
```

Test Result 6 One of the pair be plug "USB" jack of main, the other port plug USB of the "R" jack, it will display as follows

In the slave machine, there is a far-end test jacks without 4


```
1 M-R      2.6M
2 M-R      2.6M
3 M-R      2.6M
4 M-R      2.6M
```

At the moment push up and down enter key to return to main menu

Test Result 7 One of the pair be plug "BNC" jack of main, the other port is open, it will display as follows

```
1   Open    30.0m
2   Open    30.0m
```

At the moment push up and down enter key to return to main menu

Test Result 8 One of the pair be plug "TEL" jack of main, the other port plug of the "R" jack, it will display as follows

```
1 Open      5.1m
2 Open      5.1m
3 Open      5.1m
4 Open      5.1m
```

At the moment push up and down enter key to return to main menu

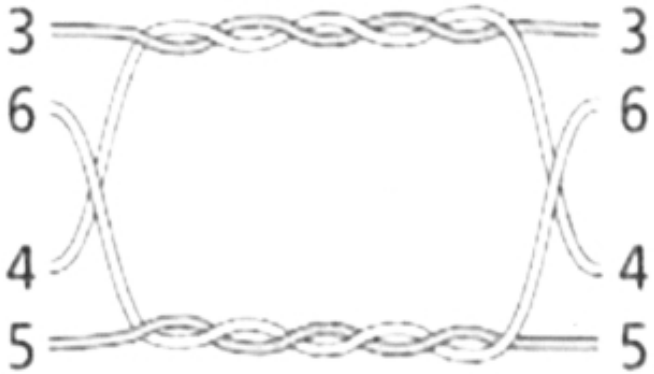
Ⅶ. Crosstalk test function

Figures as below shows there is a crosstalk error on the lines 3, 6 and 4, 5, and the pair line of splitpairs will flash to indicate a crosstalk problem in it.

In pair line of splitpairs, the connectivity of end to end is correct, but the line is connected from different pairs, a splitpairs of the line pair will lead to a larger crosstalk problem, and thus result in interference for the network traffic.

Note:

Some non-twisted pair cable just like telephone line, which usually appears as splitpairs for the excessive crosstalk.



Crosstalk winding on the wire ports