Your excellent helper in cable test!

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NF-868/NF-868A/NF-868W

INSTRUCTION MANUAL

ORIGINAL AUTHENTIC

Patented products, Counterfeiting not allowed!

VER: V2

Please read and learn safety instructions before use or maintain the equipment

- Keep the testers in right place to avoid hurt with the sharp probe.
- Never put the equipment in the place with much dust, humidity and high temperature (over 40℃).
- Please use battery according to the specification; otherwise, it may result in damage to equipment.
- Please never dismount the equipment arbitrarily. The mainten -ance and care shall be conducted by professional personnel.
- The tester will shut off automatically if it does not work for 15 minutes in succession.
- Please take out the battery in launcher and receiver if the equipment is not used for a long time so as to prevent that the battery liquid is leaked in future.
- Never use the equipment to detect power cord with electricity (such as power supply circuit of 220V), other wise, it may result in damage to equipment and personal injury.
- Never conduct related operation of communication line in thunderstorm weather so as to prevent lightning stroke and impact on personal safety.

CONTENTS

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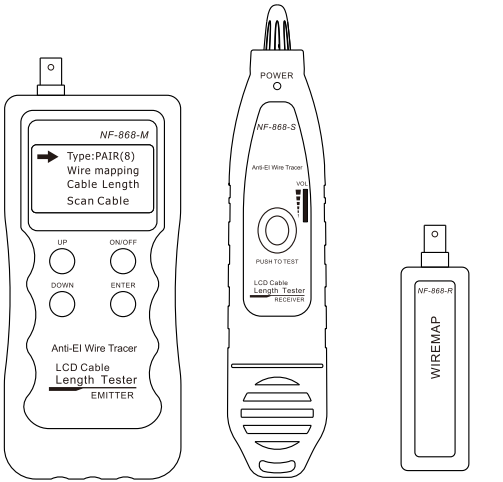
Overview

NF-868 Series are newly developed by our company which are capable of avoiding current inteference . The equipment is composed of three parts: main tester (NF-868-M), receiver (NF-868-S) and remote identifier (NF-868-R).It has couples of circuit state testing functions including length test, cable line finding, line-to-line, crosstalk and breaking point, serving as a practical tool for low voltage system installation and maintenance technicians of communication circuits and comprehensive wiring circuits. It is widely used in the fields like telephone system, computer networks and other metal lead circuits.



Main tester (NF-868-M) | Receiver (NF-868-S) | Remote identifier (NF-868-R)

Main functions

- Tone trace cable with complete AC Interference Rejection.
- Two scan modes: ordinary switch / PoE switch.
- Check cable continuity, such as open, short, cross,ect.
- Measure cable length accurately, without remote unit.
- Locate cable broken position via length display.
- Functions of storage and memory.
- Auto-off time adjustable, lamp for work in dark.
- Low voltage warning.

Technical parameters

(1). Overall dimensions

Main tester: 185X80X32mm; Receiver: 218X46X29mm
Remote identifier: 107X30X24mm.

(2). Display

Dot matrix 128X64 (Effective visible area 56X40mm).

(3). Power supply

Main tester: 9V battery.
Receiver: 9V battery.

(4).Testing cable types

STP/UTP 5E, 6E network cable, telephone cable, coaxial cable, USB cable and common metal wires connected with alligator clip.

(5).Detecting cable types

STP/UTP 5E, 6E network cable, telephone cable, coaxial cable, USB cable and common metal wires connected with alligator clip.

(6).Operating environment temperature/humidity

-10℃ ~ +60℃ /20% ~ 70%;

(7).Testing device interface
Main unit: RJ45 (M), RJ45 (S), RJ11, BNC connector,USB B-type female interface;
Remote identifier: RJ45, RJ11, BNC connector, USB A-type female interface.

(8).Length measurement
Range: 1-2000m;
Calibration precision: 2% (+/-0.5m, or +/-1.5 feet); (calibration; cable >10m) measurement precision: 3% ((+/-0.5m, or +/-1.5 feet); (AMP, CAT5E, 6E cable material)
Display unit: meter, feet, yard.

(9).Length calibration, storage and data load
User can set a length value at a known length, store the value in the system,which can be used for future choice. and the calibration length should be over 10m.

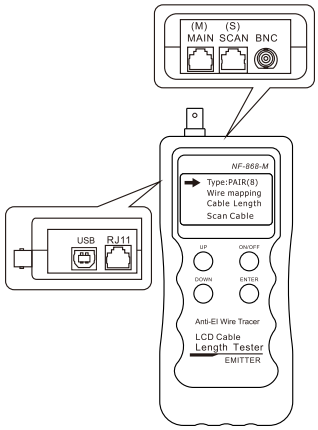
(10). Line sequence and cable failure positioning
Open, short, reverse , cross, crosstalk, etc.

(11).NF-868W includes 8 remote units with ID1-ID8.

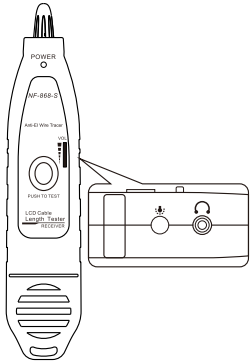
(12). Line tracing function (Note: NF-868A can't trace cable)
Locate targeted cable among lots of cables

(13). Automatic power-off
Users can choose time to turn off the tester automatically (15mins, 30mins,45mins ,60mins)

Product interface and key introduction



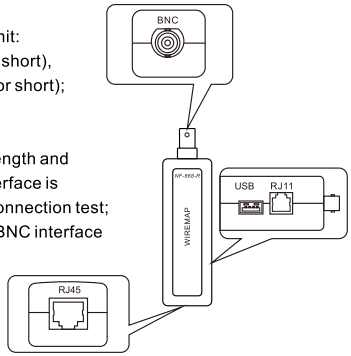
Main tester (NF-868-M)



Receiver (NF-868-S)

Main unit port instructions

(1). Two RJ 45 interfaces on the main unit:
one of them is "MAIN" interface ("M" for short),
and the other is "SCAN" interface ("S" for short);
RJ11 interface, USB interface
and BNC interface
(2). M interface is used for measuring length and others, but not for cable tracing; "S" interface is used for cable tracing test and "local" connection test;
(3). RJ11 interface, USB interface and BNC interface on the main unit are used for line-to-line, length testing and line tracing.



Remote identifier (NF-868-R)

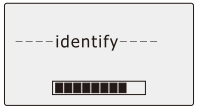
Product operation method

There are eight functional options in the main menu interface

(1).Wire mapping --- Cable continuity testing.
(2).Cable Length---Measuring cable length, check cable broken location.
(3).Scan cable---to find target cable among lots of network cables, telephone cables, USB cables, coaxial cables and other kinds of wires.
(4).Type--- PAIR(8) / Tel(6) / BNC(2) / USB(4)
(5).Unit---Meter / Feet / Yards.
(6).Calibrate— Seven calibration coefficient can be stored in it. User can calibrate network/ telephone/ USB/ Coax cables.
(7) Data loading---Select the calibration coefficients stored in system.
(8) Auto power off— set the time for power off.

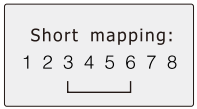
a.Cable line-to-line test:

Taking network test as an example: after entering connection test function, press “ENTER” key to check wiremap. At this time, the following interface is shown indicating test is in process:



Test result 1: Short circuit

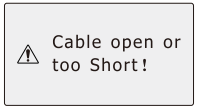
If there is short circuit with the cable and terminal, it will show as below: (Short circuit with 3 and 6)



At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.
Please do not perform test again until short circuit problem solved.

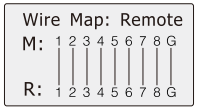
Test result 2:

If the cable is not connected well with the device, or the cable is too short, it will show you the following image on the screen.



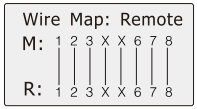
Test result 3:correct connection

the following interface is shown:



“M” stands for Master unit. “R” stands for remote unit.

Test result 4: In case of open circuit existing at the cable, the following interface is shown:



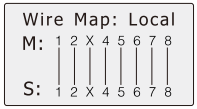
In the figure, “X” shown in “4” and “5” pin position, indicates there is open circuit in “4” and “5” pin .

Note:
Because network cable is made of pair cores, if there is open circuit, it will show faults in pairs, just as above "4" &" 5". it means either "4" pin or "5" pin exsits an open circuit, or both "4" and "5" exsit an open circuit.

Test result 5: In case of open circuit existing at the near end of the cable when testing only with main tester, the following interface is shown:

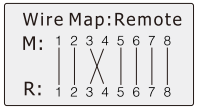
In the figure, “X” shown in “3” and “6” pin position in “M” line, indicates there is open circuit in “3” and “6” pin near “Main Tester” end.

Test result 6: In case of open circuit existing at the middle part of the cable when testing only with main tester, the following interface is shown:



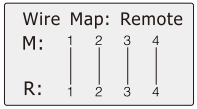
In the figure, “X” shown in “3” pin position in “M” and “S” line, indicates there is open circuit in “3” pin of the middle part of the cable. If need to check the exact fault location. Refer to the related chapter below.

Test result 7:
In case of cross pairs exsits at the cable, the screen will display as below:



Test result8: USB cable line sequence test

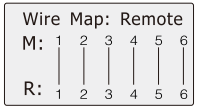
Before checking wiremap of USB cable, users need to choose "USB(4)" in "Type" . and then return to main menu to check its wiremap. If the testing cable is in good connection, The following interface will be shown:



At this time, press any key to return to the main menu, and then press“ENTER” key for re-test.

Test result 9: 6-core telephone cable line sequence test

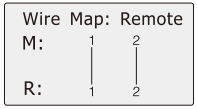
efore checking wiremap of telephone cable, users need to choose "TEL(6)" in "Type" . and then return to main menu to check its wiremap. If the testing cable is in good connection, it will displays as follows:



At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.

Test result 10: Coaxial cable line sequence test

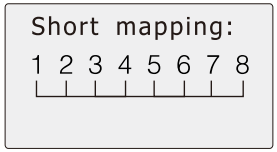
Before checking wiremap of BNC cable, users need to choose "BNC(2)" in "Type" . and then return to main menu to check its wiremap. If the testing cable is in good connection, it will displays as follows:



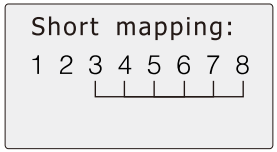
At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.

Special use: Check cable continuity on switch directly

Take network cable as an example. One end of the cable connects to "MAIN" port, the other ends connects to router, then choose "Wiremap" to start test. it will display as below.(the router is 8 pins)

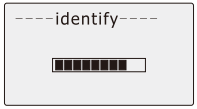


In case of open circuit with line 1 and 2 of the exchanger tested, the following interface is shown (exchanger interface is 8-core):



b.Cable length test:(Test length only with the main tester, don't connect cable into remote unit.)

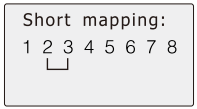
Firstly insert one end of the testing cable into "M" port in the main tester. When entering "Pair & Length" testing function to check the length.
At this time, the following interface is shown:



Note: Due to different technical parameters with different branded cables, users are recommended to use dynamic calibration function of the equipment before measuring length (Refer to the related chapter for more details.).

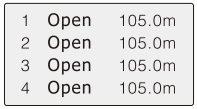
Test result 1: Short circuit

If there is short circuit with the cable and terminal, the following interface is shown (Short circuit with 2 and 3)

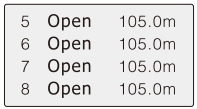


At this time, press any key to return to the main menu, and then press "ENTER" key to other functions.
Please do not perform test again until short circuit problem solved.

Test result 2: The length will display if the cable is good



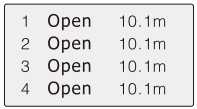
And then press "UP" or "DOWN" key, the following interface will display length of pin5 ~ pin8:



Thus , the cable is 105m . Only one end of cable connect with main tester, the other end needs no connection, so it show "Open" in the picture.

Test result 3: USB cable length test

Insert one end of the USB cable to be tested into "USB" port of the main tester, the other end needs no connetion, select "USB(4)" Type, return to the main menu, and select length test, and then press "ENTER" key to perform length test with the equipment, the following interface will be shown:



It indicates that length of USB cable is 10.1m. At this time, press any key to return to the main menu, and then press "ENTER" key for other testing.

Test result 4: RJ11(TEL) cable length test

Insert one end of the RJ11 cable to be tested into “RJ11” port of the main tester, the other end needs no connection. select “Tel(6)” mode, return to the main menu, and select length test, and then press “ENTER” key to perform length test with the equipment, the following interface will be shown:

1	Open	50m
2	Open	50m
3	Open	50m
4	Open	50m

And then press “UP” or “DOWN” key, the following interface will further be shown:

5	Open	19 m
6	Open	19 m

It indicates that whole length of telephone cable is 50m while pin5 & pin6 is broken at 19m, this is how we check the fault location via measuring length.

Test result 5: BNC cable length test

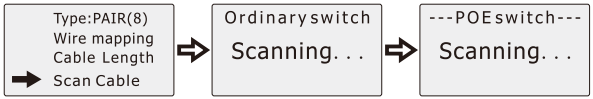
If to insert one end of the BNC cable to be tested into “BNC” port of the main tester, the other end is an open circuit, select “BNC(2)” mode, return to the main menu, and select length test, and then press “ENTER” key to perform length test with the equipment, the following interface will be shown:

1	Open	10.1m
2	Open	10.1m

It indicates that length of BNC cable is 10.1m. At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.

c. Cable tracing test:

After entering main menu, choose icon”scan cable” and press OK to enter, then press Up/ Down button to switch scan modes. Choose “ scanning” mode if scan cable on ordinary switch(Graph No.1), choose “scanning PoE switch” if scan cable on PoE switch (Graph No.2).



Graph No.1 Graph No.2

Caution: users must choose POE switch mode if trace network cables on PoE Switch.

Connect one end of network cable into “RJ45(SCAN)”port, then choose scan mode to trace cable, the screen will display as below.

The usage of receiver

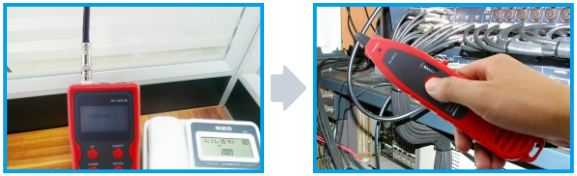
Install 9V battery, push the test key, get close to the cables with probe.you can hear “beep”, the power led flashes. When the probe finds the targeted cable,the voice will be loudest, and the led light will be brightest.

1.Tracing cable (RJ45/RJ11 Cable) which is connected to switch or router.

Insert the cable into port RJ11/ RJ45 (S), Press the testing key of receiver, “Power” indicator will be lit, then hold the receiver close to the cables connected to switch, when the probe gets close to the targeted one, you can hear clear and loud “beep, beep, beep” .
(Note: telephone cable into RJ11, Lan cable into port RJ45(S))

Tip: if there are lots of cables connects to switch, there might exsit current noise in the case, adjust the volume lower, it will more easily to find targeted cable.

2.Tracing Coax cable

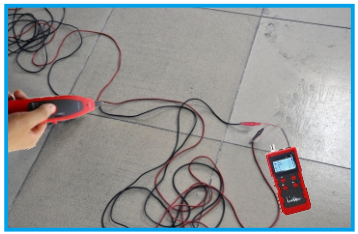


Insert the cable into port BNC, Press the testing key of receiver, “Power” will be lit, then go to the switch side, hold the receiver to touch the cables one by one,when the probe gets close to the targeted one, you can hear clear and loud “beep,beep, beep” .
(Note: turning down the voice slowly help trace cable easiler.)

3.Locate the short or broken point (eg: metal line)

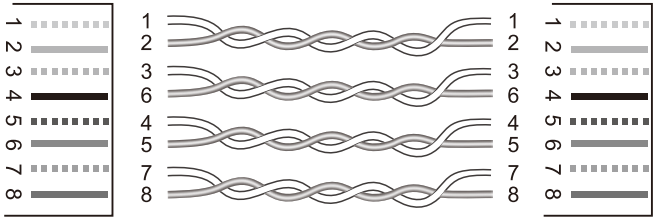
Connect the metal line with the cable clips, press the testing key of receiver, hold the receiver close to the cables, “beep, beep,beep” will generate, but when the probe targets the breakge point, “beep,beep,beep” stops, which indicates that is where the breakage is.

Note:
1) the metal line is de-energized.
2) Turn up the voice, which helps locate breakge easily.
3) Two cables must be connected together, if only one cable, the black clip has to be grounded.



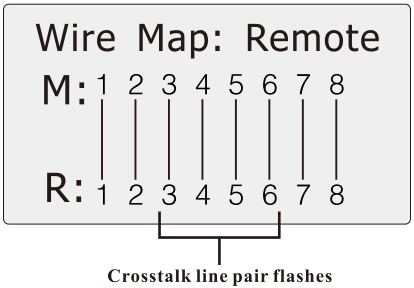
d. Crosstalk test

As shown the figure below: it shows 3, 6 and 4, 5 with crosstalk. The line pair with crosstalk will flash to indicate failure. If the testing cable is crosstalk , which will slow down the network speed



Connection diagram of crosstalk line pair

Crosstalk interface is shown as below:

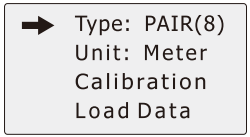


Crosstalk line pair flashes

Note: In case of the non-twisted-pair cable like telephone cable, due to over large interference, it may also displays as crosstalk.

Calibration and setup

After powering the main tester and entering the main test menu, press “UP”, “DOWN” key to move cursor “➔” to “Configure” , and then press “ENTER” key to perform calibration and setup function. The following interface will be shown:



Type selection:

1). Type: twisted-pair cable

When testing network cable, users need to firstly choose”Pair(8)” in”Type” after this, users can test cable length and check its wiremap.

2). Type: telephone cable

When testing telephone cable, users need to firstly choose”Tel(6)” in”Type” after this, users can test cable length and check its wiremap.

3).Type: USB cable

When testing USB cable, users need to firstly choose"USB(4)" in"Type" after this, users can test cable length and check its wiremap.

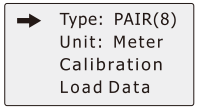
4). Type: BNC coaxial cable

When testing BNC cable, users need to firstly choose"BNC(2)" in"Type" after this, users can test cable length and check its wiremap.

Unit setup:

Set unit: meter

When moving cursor "➡" to "Unit" item, press "ENTER" key till unit of meter is shown. Move the cursor "➡" to "Return" item, press "ENTER" key to return to the main menu. The following interface will be shown:

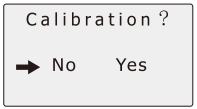


Note: Setup of the unit of feet and yard is just the same as that of meter.

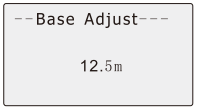
Calibration function:

Due to different materials of the cables, calibration is required before testing the cables. The function of calibration is for accurately measuring length of the cables.

When starting dynamic calibration, insert the same type of cables at a specified length into "M" port. It is unnecessary to insert into remote unit.



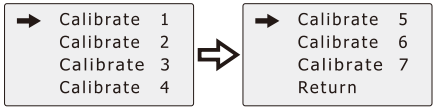
Select "Yes", and then press "ENTER" key, the measured length will be shown: At this time, press "UP" or "DOWN" key to adjust to show the actual length as below:



Save the calibrated data, there are 7 sets of calibration, you can save into any set. When you need to export the data, just choose it from "data load", which can avoid calibration again.

Data loading:

Choose the functions of "Load data", it will show 7 sets of length values which were stored before. Select the desired one and then start to test the cable length.



Auto power-off :

Choose the time for power off according to your own requirement.

Standard Packing

1. Emitter	1PCS	6. RJ45 Adaptor cable	1PCS
2. Receiver	1PCS	7. Alligator clip adaptor	1PCS
3. Remote adapter	1PCS	8. User manual	1PCS
4. Earphone	1PCS	9. Carry case	1PCS
5. RJ11 Adaptor cable	1PCS	10. Color box	1PCS

Note:

(1). NF-868A: It doesn't have receiver that cannot cable tracing.

(2). NF-868W: It includes 8 remotes to wire map(ID1-ID8).

Diagram of series products

NF-838

NF-268

NF-8601

NF-806B

NF-800

NF-816

NF-468L

NF-820

NF-2100

NF-708

NF-905

NF-911