Your excellent helper in cable test!

INSTRUCTION MANUAL

Wire Fault Locator

Your excellent helper in cable test!

ORIGINAL AUTHENTIC

Patented products, Counterfeiting not allowed

VER: V2

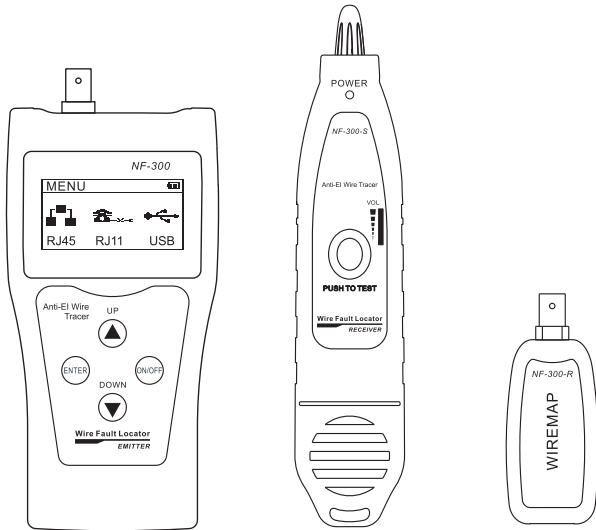**⚠ Please read and learn safety instructions before use or maintain the equipment**

●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

Overview

NF-300 Wire fault locator was upgraded again in according to satisfy customer & users demands, our engineer add a new function for Port flash test which not only can Trace Network cable , Telephone cable , Coax cable and USB cable; Measure Network cable & Coax cable length , but also can locate Network cable which connect the router with the function of Port flash. This is a new breakthrough in Network installation area.

POWER
NF-300-S
Anti-EI Wire Tracer
VOL
PUSH TO TEST
Wire Fault Locator
RECEIVER

NF-300
MENU
RJ45   RJ11   USB
Anti-EI Wire Tracer   UP
ENTER   ON/OFF
DOWN
Wire Fault Locator
EMITTER

NF-300-R
WIREMAP

Main tester (NF-300)   Receiver (NF-300-S)   Remote identifier (NF-300-R)

Main functions

● Trace and locate RJ45 (even STP / 4-core) , RJ11, USB, BNC cables.
● Anti-jamming, capable of working on the exchanger and PC startup.
● Measure cable length for RJ45, coax cable.
● Check open, short, cross, crosstalk for RJ45, RJ11 Coax Cable.
● Trace network cable which connects with the switch.
● Locate and breakage point accurately.
● Memory functions for calibration data.
● Earphone permits use in noisy environments.

Technical parameters

(1). Overall dimensions
Main tester: 175X80X43mm;   Receiver: 218X46X29mm
Remote identifier: 86X34X26mm.

(2). Display
Dot matrix 128X64 (Effective visible area 64X32mm).

(3). Power supply
Main tester: 9V battery.
Receiver: 9V battery.

(4).Testing cable types
STP/UTP 5E, 6E network cable, telephone cable, coaxial 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: "MAIN" for cable length, "BNC" for Coax cable,
"PORT FLASH" for tracing network cable, "SCAN" for cable
tracing, "POWER" for power supply.
Remote: RJ45 & BNC cable connector.

(8).Length measurement
Range: 1-2500m;
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, foot, 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
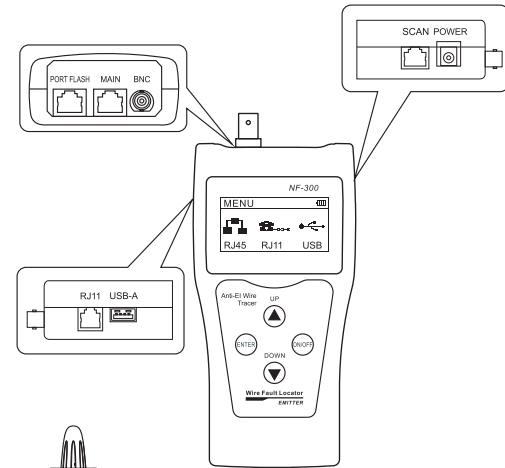Open, short, reverse , cross, crosstalk, etc.

(11). Language set
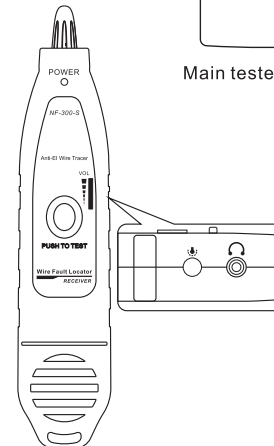Users can choose English or Chinese for operation.

(12). Setup
Unit & brightness & Auto-power off time can be set in this menu.

Product interface and key introduction
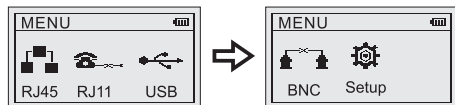

Main tester (NF-300)

Receiver (NF-300-S)

Product operation method
Bootscreen
Synchronous self test (------self test dynamically displayed in the line from left to right)

NF-300

5 seconds later, the following main interface is displayed:

MENU
RJ45 RJ11 USB

MENU
BNC Setup

There are six functional options in the main menu interface
(1) Lang— English or Chinese.
(2).RJ45—Cable tracing/ Wire mapping/ Length measurement/ Port flash.
(3).RJ11— Wiremapping /Cable tracing.
(4).USB— Cable tracing.
(5).BNC— Wiremapping / Length measurement / Cable tracing.
(6).Setup— Unit / Light／ Auto-off time.
Note:
Calibration— Seven calibration coefficient can be stored in it.
User can calibrate network/ Coax cables.
Data loading---Select the calibration coefficients stored in system.
Attentions:
1. When tracing cable, never insert telephone cable into RJ45 port especially a charged one, in fear of burnout of the tester.
2. When testing cable length, just connect one end of cable with Main tester, no need of remote unit.

a.Cable line-to-line test:
Taking network test as an example: after entering RJ45 function to check wire mapping.At this time, the following interface is shown indicating test is in process:

RJ45
→ CAT5
CAT6
Port Flash

CAT5
→ Wire Mapping
Scan Cable
Cable Length

----identify----
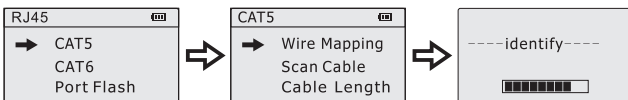
Test result 1: Short circuit
If there is short circuit with the cable and terminal, it will show as below:
(Short circuit with 3 and 6)

Short mapping:
1 2 3 4 5 6 7 8
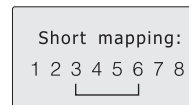
At this time, press any key to return to the main menu, and then press "ENTER" key for re-test.
Please do not perform test again until short circuit problem solved.

Test result 2：if the far end of the cable to be tested is not plugged in remote adapter (R) or cable is not plugged into the "SCAN",the following interface is shown:

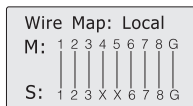Cable open or
too Short !
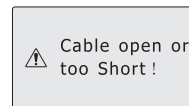
Test result 3:correct connection
the following interface is shown:

Wire Map: Remote
M: 1 2 3 4 5 6 7 8 G

R: 1 2 3 4 5 6 7 8 G
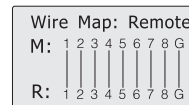
"M" stands for Master unit. "R" stands for remote unit "G" stands for "Grounded".

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

```
Wire Map: Local
M:  1 2 3 4 5 6 7 8 G
    | | | | | | | | |
S:  1 2 3 X X 6 7 8 G
```

In the figure, "X" shown in "4" and "5" pin position in "S" line, indicates there is open circuit in "4" and "5" pin of the remote 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 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:

```
Wire Map: Local
M:  1 2 X 4 5 X 7 8
    | | | | | | | |
S:  1 2 3 4 5 6 7 8
```
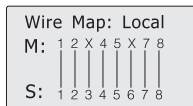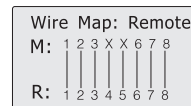
In the figure, "X" shown in "3" and "6" pin position in "M" line, indicates there is open circuit in "3" and "6" pin of the near pin.

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:

```
Wire Map: Local
M:  1 2 X 4 5 6 7 8
    | | | | | | | |
S:  1 2 X 4 5 6 7 8
```
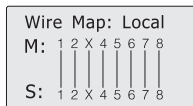
In the figure, "X" shown in "3" pin position in "M" and "S" line, indicates there is open circuit in "3" pin of the middle part of the cable. Perform"Cable Length" to locate the exact fault point. Refer to the related chapter below.

Test result 7: In case of open circuit existing in the cable when testing with main tester and remote unit together, the following interface is shown:

```
Wire Map: Remote
M:  1 2 3 X X 6 7 8
    | | | | | | | |
R:  1 2 3 4 5 6 7 8
```

In the figure, "X" shown in "4" and "5" pin position in "M" line, indicates there is open circuit in "4" and "5" pin of the remote pin.

Test result 8: 6-core telephone cable line sequence test

Before checking wiremap of telephone cable, users need to choose "RJ11" and then check its wiremap. If the testing cable is in good connection, it will displays as follows:

```
Wire Map: Local
M:  1 2 3 4 5 6
    | | | | | |
S:  1 2 3 4 5 6
```
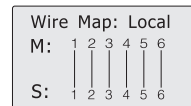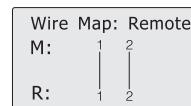
At this time, press any key to return to the main menu, and then press "ENTER" key for re-test.
Note: when checking wiremap of telephone cable, users can only test with main testers, for the remote unit has no RJ11 port.

**Test result 9: BNC coaxial cable line sequence test**

Before checking wiremap of BNC cable, users need to choose "BNC"; and then check its wiremap. If the testing cable is in good connection, it will displays as follows:

```
Wire Map: Remote
M:     1   2
       |   |
R:     1   2
```

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

Special use: In case of exchanger power-on, the main unit can test line sequence of the connecting cables

Take network cable as an example: one end of the cable is connected with "MAIN" interface of the main unit, and other end is connected with exchanger interface. And direct connection test can be performed. If the exchanger interface tested is reliably connected, the following interfaces shown (exchanger interface is 8-core):

```
Short mapping:
1 2 3 4 5 6 7 8
  |_|_|_|_|_|_|_|
```
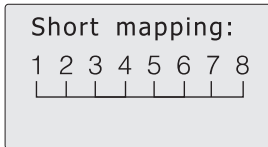
In case of open circuit with line 1 and 2 of the exchanger tested, the following interface is shown (exchanger interface is 8-core):
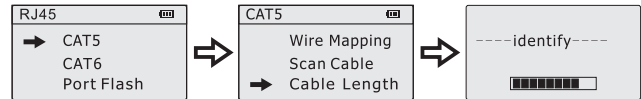
```
Short mapping:
1 2 3 4 5 6 7 8
    |_|_|_|_|_|
```
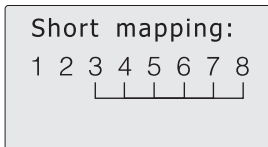
b. Port flash testing: (only for good network cable scanning)

After entering main menu, choose "Port Flash" function, it will show ⭕ on the screen. Insert one end of the lan cable into "Port Flash" Port, the other end connects to the switch, then the hollow circle ⭕ will turn into ⬤ , besides, on the other side, the switch port which the targeted cable connects to will flash in a different frequency as other ports. It helps users to find the target cable on switch much easier and visually. The image is as below:

```
RJ45            📶
➡  CAT5
   CAT6
   Port Flash
```
⮕
```
Port Flash
```
⮕
```
Port Flash
```
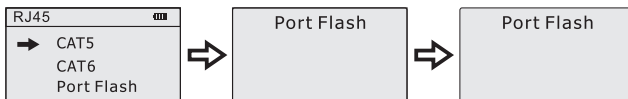
c.Cable length test:(Test length only with the main tester,don't connect cable into remote unit.)

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

```
RJ45            📶
➡  CAT5
   CAT6
   Port Flash
```
⮕
```
CAT5            📶
   Wire Mapping
   Scan Cable
➡  Cable Length
```
⮕
```
----identify----
[████████]
```

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 3 and 6)

```
Short mapping:
1 2 3 4 5 6 7 8
    |____|
```
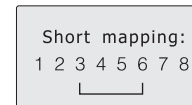
At this time, press any key to return to the main menu, and then press "ENTER" key to other functions.
Please do not perform test again until short circuit problem solved.

Test result 2: **In case of normal pairing and length test, the following interface is shown:**

1	Open	105.0m
2	Open	105.0m
3	Open	105.0m
4	Open	105.0m

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

5	Open	105.0m
6	Open	105.0m
7	Open	105.0m
8	Open	105.0m

Thus , the cable is almost 105m . Only one end of cable connect with main tester, the other end needs no connection, so it show "Open" in the picture At this time,press "ENTER" to return to the main menu,and then press "ENTER" key for re-test..

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, and then 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.

d. Cable tracing test:

After powering on the main tester and entering "RJ45" port of the main tester，press"ENTER" key，entering main test menu，then press "UP","DOWN" key to move " ➡ " cursor to cable scan, and then press"ENTER" key to find the line.The following interface will be shown:

Scanning. . .
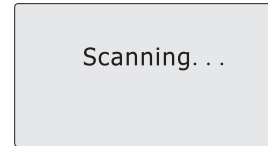
Connect the cable to be found with the corresponding RJ45(Scan) port of the emitter, (RJ11,USB or BNC). Take network line finding as an example: connect the network cable to be found with RJ45 port, move " ➡ " cursor to cable scan, and press "ENTER" key to perform line finding test as shown in the figure below:
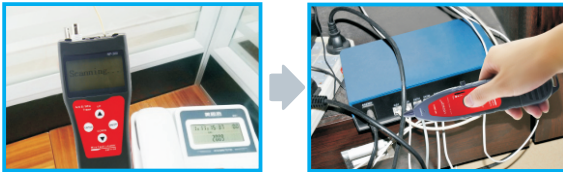
The usage of receiver

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" will be lighted, then hold the receiver close to the cables, 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))

2.Tracing Coax cable
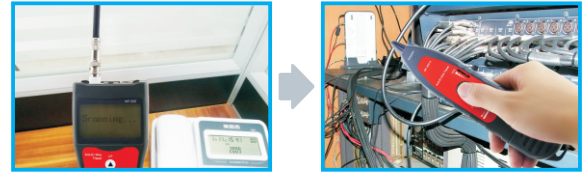
Insert the cable into port BNC, Press the testing key of receiver, "Power" will be lighted, then hold the receiver close to the cables, when the probe gets close to the targeted one, you can hear clear and loud "beep,beep, beep" .
(Note: turning down the voice slowly help trace cable easiler.)

3.Locate the short or breakge 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.
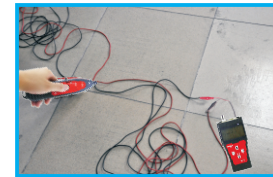
e. Crosstalk test

As shown the figure below, it shows 3, 6 and 4, 5 with crosstalk. The pair with crosstalk will flash. In the pairs with crosstalk, end-to-end connection is correct. However, the linear orders are incorrect, which we call it crosstalk. In this case, network speed will be slow.
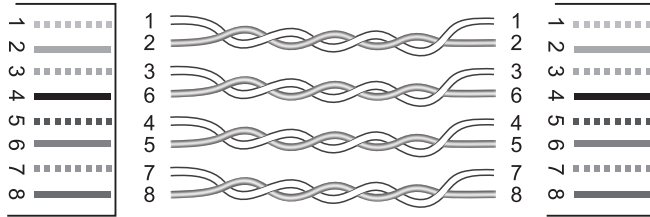
Connection diagram of crosstalk line pair

Crosstalk interface is shown as below:


```
Wire Map: Remote
M: 1 2 3 4 5 6 7 8

R: 1 2 3 4 5 6 7 8
```
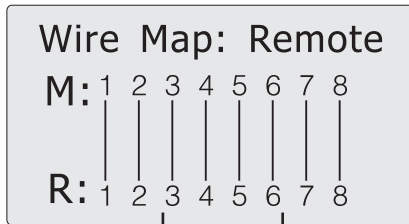
Crosstalk line pair flashes

Note: In case of the non-twisted-pair cable like telephone cable, due to over large crosstalk, it generally shown as crosstalk.

Length Calibrate

The calibrated cable must be more than 10m, 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.
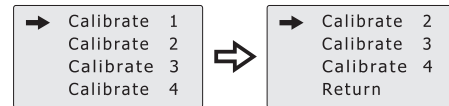
```
Calibration？
➡ No    Yes
```
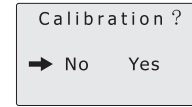
Select "Yes", and then press "ENTER" key, the measured length will be shown: At this time, press "UP" or "DOWN" key to adjust to show the actual length as below:

```
--Base Adjust---

       12.5m
```
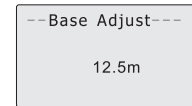
When length is given, press "ENTER" key to save the calibration value. The screen will show calibration 1, cabliration 2...calibration 4. Users can choose it from "Data load", which can avoid more calibration next time.
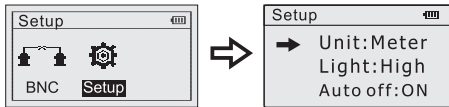
Data loading:

Choose the functions of "Load data", it will show 4 sets of length values which were stored before. Select the desired one and then start to test the cable length.

```
➡  Calibrate  1          ➡  Calibrate  2
   Calibrate  2             Calibrate  3
   Calibrate  3             Calibrate  4
   Calibrate  4             Return
```
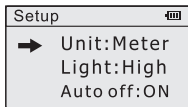
Setup

Choose "Setup" on the main menu,then the screen will be as below:

```
Setup              ▥
  ⟘⟘     ⚙
   BNC    Setup
```
⟹
```
Setup              ▥
  ➡  Unit:Meter
     Light:High
     Auto off:ON
```

Unit :

Set unit: meter

Move cursor " ➡ " to "Unit" item, choose "meter",then the screen will be as below:

```
Setup              ▥
  ➡  Unit:Meter
     Light:High
     Auto off:ON
```

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

Light

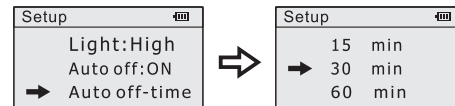Move " ➡ " to "Ligh", choose the brightness degree,then the screen will be as below:

```
Setup              ▥
  ➡  Unit:Meter
     Light:High
     Auto off:ON
```
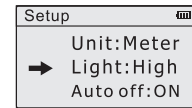
Auto off

Move" ➡ " to " Auto off" , start power-off function to ON, then the screen will be as below:

```
Setup              ▥
     Unit:Meter
     Light:High
  ➡  Auto off:ON
```
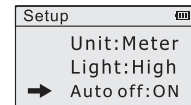
Auto-off time

Move " ➡ " to "Auto-off time",then the screen will be as below:

```
Setup              ▥
     Light:High
     Auto off:ON
  ➡  Auto off-time
```
⟹
```
Setup              ▥
     15   min
  ➡  30   min
     60   min
```

Choose the time as you need, 15 mins, 30mins, 60mins,120mins.

Packing list

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. Kit	1PCS
5. RJ11 Adaptor cable	1PCS	10. Color box	1PCS

Diagram of series products

NF-868

NF-268

NF-8601

NF-806B

NF-800

NF-816

NF-468L

NF-820

NF-2100

NF-708

NF-905

NF-911