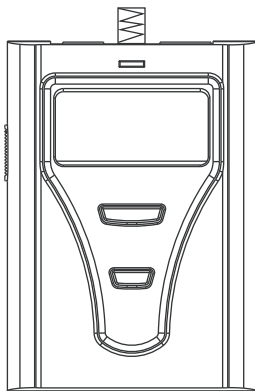# LANsmart Pro

Multi Network Cable Tester

User Manual

LANsmart Pro user manual

Introduction

LANsmart Pro is a hand-held, multifunction Cable Map Tester and Cable Length Meter. It has an integrated Analog and Digital Tone Generator, Port Finder, and Quick Test. It displays cable map results in a pin-to-pin format including split pairs. By using TDR (Time Domain Reflect) technology, it provides a great deal of accuracy when measuring cable length and locating split pairs. It is suitable for professional technicians or installers.

Features:

- All-in-one tester: wire map, twisted mapping, short location, quick test, cable length test, self-calibrating ability, analog and digital tone generator and port finder.
- Incorporates TDR (Time Domain Reflect) Technology
- Wire map for open, short, reversed, cross, split, miswire, and shield continuity.
- Wire map results are displayed in a pin-to-pin format.
- Indicates the remote number of the remote identification unit for wire map test.
- Incorporate Short Location function: locate short position, it determines if short is in the near or far end of the cable.
- Measures twisted pairs of Cat5, Cat5E and Cat6 length without remote.
- Measures length of flat 2-pin, 4-pin and 6-pin telephone line
- Measures coax line length.
- Self-calibrating ability for non-standard cables length test to enhance measuring accuracy.
- Uses both meter and feet standards for cable length display
- Incorporate Quick Test function: memorize a cable's pin out as standard, and test mass cables.

- Incorporates Port Finder function: locate corresponding socket on hub/switch.
- Its Analog Tone Generator sends 1K Hz tone on all pins or selected single pin conductors.
- Its Digital Tone Generator sends Single Tone and Double Tone.
- LCD and "beep" indicator.
- RJ45/ RJ11/COAX port protection from telephone line damage.
- Replaceable battery, with low battery indicator.

Contents:
1 LANsmart Pro Main Unit
4 Remote Unit: ID1, ID2, ID3, ID4
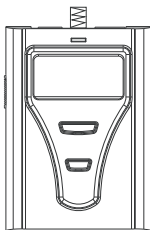
Specifications
- Display: 128*64 Dot Matrix LCD
- Connector Type: RJ45/RJ11/COAX (Main and Remote)
- Accuracy: $\pm$2m less than 10m ($\pm$6.56 Feet in less than 32.81 feet)
  $\pm$5% over 10m (32.81 feet)
- Test range for cable length: 0-300m (0 - 984 feet)
- Split pairs detection: minimum 1.2m (3.94 feet)
- Analog Tone Generator: 1 KHz
- Digital Tone Generator: Single Tone and Double Tone
- Operating Temperature   0°C - 50°C (32°F - 122°F)
- Storage Temperature   -30°C - 50°C (-22°F - 122°F)
- Humidity   10%-90%

- Weight: Main unit 120g. Remote unit 20g
- Dimensions: Master 120*80*33mm / Remote 44*42*28.5mm
- Power source: DC 6V ; 4 * AAA

LANsmart Pro Manual Operation
It is recommended to check the battery conditions before use.
A low battery will lead to inaccurate test results.

Main buttons function:

| SELECT | Change or navigate the arrow on the screen. |
| ENTER | Execute the operation selected by the arrow. |

Default Configuration

In order to perform properly, user should set up the
Configuration menu prior to use. When choosing wire map
test object (twisted cable, telephone line or coax line) and
calibrating parameters for non-standard cable length test,
user must do the following configuration.

Follow the steps to configure the LANsmart Pro:
1. 1. Turn on the LANsmart Pro.
2. LANsmart Pro will self-diagnose first.
3. Press the SELECT button, to choose desired
   "Configuration" (indicated by arrow)

> Cable Test
> Length Test
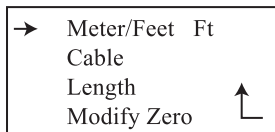> Identification
→ Configuration
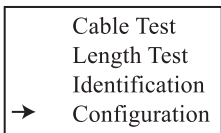
(Main Menu)

4. Press the **ENTER** button and view menu options.

a. On "Meter/Feet" option, press **ENTER** to select desired measurement (Meter (M) or Feet (F))

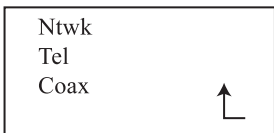| →	Meter/Feet M		→	Meter/Feet Ft
	Cable	or		Cable
	Length			Length
	Modify Zero			Modify Zero
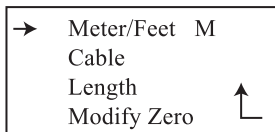
   (Configuration page)   (Configuration page)

b. When first using LANsmart Pro, you can select Modify Zero menu, (note: nothing inserted to Jack), press ENTER to modify Zero.

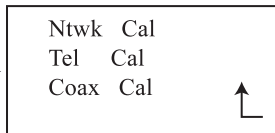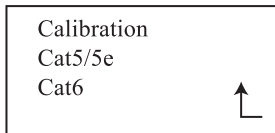c. On Cable option, press ENTER to test wire map of twisted cable, Tel. line or Coax line.

```
Ntwk
Tel
Coax
```

d. On Length option, press ENTER to open the Length setting mode.

```
Calibration
Cat5/5e
Cat6
```
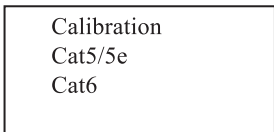
e. On the Calibration option, press **ENTER** to open the calibration mode.

```
Calibration          →     Ntwk   Cal
Cat5/5e                    Tel    Cal
Cat6                       Coax   Cal
```

4

In order to increase measuring accuracy for cable length test, the setup is used to adjust calibrating parameters for non-standard cables. It includes twisted cables, flat phone lines and coax lines.

For example, network cable calibration page explanation:

```
Ntwk  Cal        10  M


        +              -
        YES
                       ↑
```

- Ntwk-the calibration object is network twisted pair.
- *Cal xx M*-----It is the cable length supplied by LANsmart Pro when using default parameter
- "+ and -" to change the *Cal*—value (increase or decrease).
- YES to save the setting.
- ↑ to go back or return to previous menu.
- Adjustable *Cal*—value is from 10M to 150 M.

f. Complete the setup and save the setting, then the Main Menu is displayed.
g. The "Cat5/Cat5e" and "Cat6" mode denotes the LANsmart Pro is using default factory parameter for testing standard Cat5/Cat5e or Cat6 cable length.

Wire map Test
Before wire map test, user should setup test object (twisted cable, telephone line, or coax line) in Configuration menu. Connect one end of tested cable to LANsmart Pro main unit, and the other to the remote.
Select the Cable Test option from the Main Menu, and then select Wiremap, LANsmart Pro will begin to diagnose on the attached cable.

```
  →  Cable Test            →  Wiremap
     Length Test              Twisted Mapping
     Identification           Short Location
     Configuration            Quick Test        ↰
```

`ENTER` → `ENTER` → /Diagnose/

(Main Menu)   (Cable test menu)
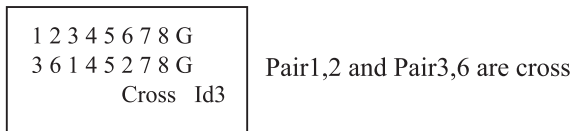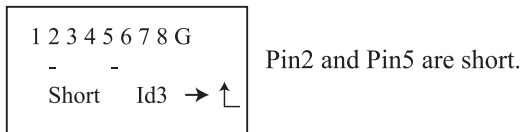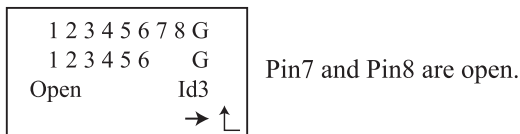
```
1 2 3 4 5 6 7 8 G    →  Transmitting side (main unit)
1 2 3 4 5 6 7 8 G    →  Receiving side (remote unit)
Open Short Cross Idn    G: Ground/shield layer
Pass Split  Rev      ↰  Idn: The number of remote identification unit.
                        n=1,2,3,4
```
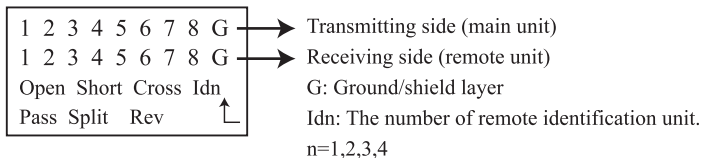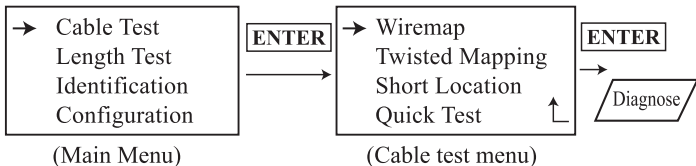
LANsmart Pro displays cable map results by pin-to-pin. If there are shorts with shields layer, LANsmart Pro will automatically display it first.

The following explains the Wiremap results in details:

```
1 2 3 4 5 6 7 8 G
1 2 3 4 5 6      G
Open          Id3
            → ↰
```
Pin7 and Pin8 are open.

```
1 2 3 4 5 6 7 8 G
  -       -
Short   Id3  → ↰
```
Pin2 and Pin5 are short.

```
1 2 3 4 5 6 7 8 G
3 6 1 4 5 2 7 8 G
        Cross  Id3
```
Pair1,2 and Pair3,6 are cross

```
1 2 3 4 5 6 7 8 G
1 2 3 4 5 6 7 8 G
              Id3 → ↰
   Split
```
Pair1,2 and Pair3,6 are split.

```
 1 2 3 4 5 6 7 8 G
 2 1 3 4 5 6 7 8 G
              Id3
   Rev
```
Pin1 and Pin2 are reversed

```
 1 2 3 4 5 6 7 8 G
 1 2 3 4 5 6 7 8 G
              Id3
 Pass
```
All pins are ok

```
 1 2 3 4 5 6 7 8 G
 8 1 2 7 5 6 4 3
              Id3
 Fail
```
Pins are miswire.

LANsmart Pro can also identify and indicate the remote identification number attached to the far end of the subject cable.

```
 1 2 3 4 5 6 7 8 G
 1 2 3 4 5 6 7 8 G
              Id3
 Pass
```
The number of remote identification unit is 3.

Twisted Mapping
The cable's twisted status can be analyzed and shown as map by selecting the "Twisted mapping" option from the Cable Test Menu.

```
┌─────────────────────────┐
│  Wiremap                │
│  Twisted Mapping        │
│  Short Location         │
│  Quick Test        ↑    │
└─────────────────────────┘
```

In "Twisted mapping" mode, remote unit should be removed from the end of cables.
Otherwise test result will be inaccurate.

```
┌─────────────────────────┐
│  Please                 │
│  take off remote        │
│  Yes                    │
│                    ↑    │
└─────────────────────────┘
```

A warning will be displayed for unplugging the remote unit. Select "Yes" to continue.
Select ↑ go to previous menu.

If the cable is shorter than 1.2 meter, the LANsmart Pro can not identify the twisted status, it will show the warning message "Cannot detect cable under 1.2m".

Short Location
LANsmart Pro can show which end of cable are shorted by using TDR technology. Also user can see short details on Wiremap menu.

```
┌─────────────────────────┐
│  1 ┌─── 3 ───┐          │
│  2 └─── 6 ───┘          │
│        → OK        ↑    │
└─────────────────────────┘
```

1. Pair 1 (1-2) are shorted at near side of cable (TX)
2. Pair 2 (3-6) are shorted at far side of cable (RX)

```
┌─────────────────────────┐
│  No short detected      │
│              → ↑        │
│                         │
└─────────────────────────┘
```

No pins are shorted

```
┌─────────────────────────┐
│  Too much short         │
│                         │
│                         │
└─────────────────────────┘
```

More than 2 pins are shorted one point.

Quick Test

This function is used to test a number of cables.

First, LANsmart Pro records a cable pin out status. We call it standard cable. Next, it tests another cable to judge whether the tested cable's pin out status is the same to standard cables. By this, user can test numerous cables.

Select the Cable Test option from the Main Menu, then select Quick Test,

```
     Wiremap
     Twisted Mapping
     Short Location
→    Quick Test          ↑
```
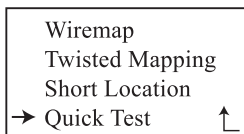
First, record a cable's pin out as test standard. User should connect the standard cable with the main unit and the remote unit. Then select Record Cable

```
→    Record Cable
     Test Cable

                         ↑
```

```
     Cable Recorded!
```
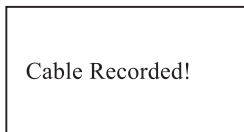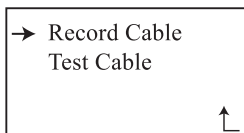
When recording is completed, the beeper
Beeps "Bi--" and the LCD display a message "Cable Recorded".

Then select "Test Cable" for mass cable testing

```
     Record Cable
→    Test Cable

                         ↑
```
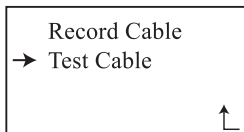
Pass!	If the cable's pin out is the same as the standard cable, the beeper beeps "Bi-Bi--", and LCD displays "Pass"
Fail!	If the cable's pin out is different form the standard cable, the beeper beeps "Bi-Bi-Bi--", and LCD displays "Fail"

Length Test

LANsmart Pro can measure the length of twisted cable, flat telephone line and coax line.

Before test, user should setup the type of cable to be tested in the Configuration menu.

For standard twisted cable, user should setup Configuration - "Cat5/Cat5e" or"Cat6".

For non-standard twisted cable, flat telephone line and coax line, user should calibrate parameter by using a criterion cable first. It is operated by Configuration - Calibration menu.

Select Length from LANsmart Pro Main Menu

```
   Cable Test
→  Length Test
   Identification
   Configuration
```
(Main Menu)

```
   Please
   take off remote
   Yes
              → ↑
```
User should take off remote, or it will lead to inaccurate result.

```
┌─────────────────────────┐
│   Ntwk:  93.8   M       │
│                         │
│ →   Pairs Length        │
│                    ↑    │
└─────────────────────────┘
```
First, LCD displays the average length. M for Meter, and Ft for Feet.

```
┌─────────────────────────┐
│ P1&2      93.5          │
│ P3&6      92.1  M       │
│ P4&5      94.0          │
│ P7&8      95.9 → ↑      │
└─────────────────────────┘
```
By selecting "Pairs Length" operation, user can see pair length.

Bulk cable length measurement

To measure the length of bulk cable
1. Peel off the cable jacket of the Green/ Green white wires.
2. Use the attached cable in the package. (RJ45 plug to two alligator clip).
3. Plug one end of RJ45 to the Main unit and the other end to the two alligator clips, Green clips to the Green wire and White clips to the Green white wire.
4. Test the cable length.

Tone Generator

At 1 KHz frequency, the LANsmart Pro emits an audio signal to a cable; user can trace the cable with corresponding cable tracer. Select the Analog Tone options from Identification menu.
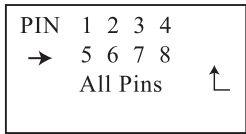
```
┌─────────────────────────┐        ┌─────────────────────────┐
│   Cable Test            │  ENTER │ →  Analog Tone          │
│   Length Test           │ ─────→ │    Digital Tone         │
│ → Identification        │        │    Port Finder          │
│   Configuration         │        │                         │
└─────────────────────────┘        └─────────────────────────┘
```

User can select the pins to send the tone signal.

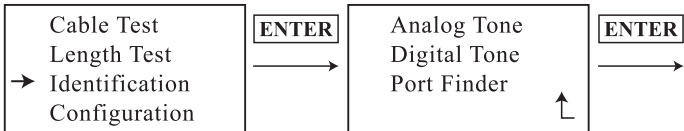PIN 1 2 3 4
➜   5 6 7 8
     All Pins   ⌐

The Selected pin will be highlighted.
Select ↑ to stop Tone mode and
return to previous menu.
Note: Under normal conditions
Tone on all pins will be louder than
Tone on single pin.

Select the Digital Tone options from Identification menu
Select Single tone or Double Tone from Digital Tone.
Press ENTER to send Digital Tone

Port Finder

Port finder is a distinctive feature. Professionals recommend it.
It is used to identify correct ports the cable is using. The
correspondent port's LINK LED will blink, once the
LANsmart Pro sends 10M fast link signals through the cable.
Cable labeling has just become so much easier.

Cable Test
Length Test
➜ Identification
Configuration

ENTER →

Analog Tone
Digital Tone
Port Finder   ⌐

ENTER →

Single Sending . . .

          → ⌐

LANsmart Pro sends fast link signals
until ⌐ is selected.

(Port Finder menu)

Warning: Telephone line connection

When LANsmart Pro's RJ45/RJ11 port is connected to an active telephone line, it sends out a warning message "High Voltage Detected! Please Reset" and causes all function module to stop working. You must immediately turn off the unit!

Thank you for choosing Hobbes Corporation another innovation that is designed to improve trouble shooting, network performance, and productivity. We are dedicated to providing the best quality and value for all your electronics needs. Whether it's for individual, corporate or governmental use, Hobbes has the solution for you!

End.