

# ***Cable Length Tester User Manual***



**Please read this manual before switching the unit on.  
Important safety information insi**



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### **1.Description**

The meter is a precision cable length tester by using TDR (Time Domain Reflectometer) technology to measure cable length.

The meter can be used for any cable consisting of at least two insulated metallic elements, one of which may be the sheath or shield of the cable. The meter has automatic internal matching networks to allow testing with automatic selection range, which correspond to power, telephony, CAT V and LAN, etc. cables.

The meter can be closely matched to the cable under test using the function selection keys. The velocity of propagation(V.O.P) value can be similarly adjusted to match the cable under test, thus ensuring an accurate distance measurement.

### **2.Features**

- High accuracy and fast reflection.
- Operation for easy-to use
- 2.4 inch TFT color screen
- User friendly menu on screen
- Auto-Zero and Auto Range, Auto adjust sensitivity, can measure various cables
- Built-in 20 groups of standard cable V.O.P value
- Optional auto power off time
- Auto-Sensitivity allows for closer matching to a wide range of cables under test. Only V.O.P. Settings required
- Measuring capability of the V.O.P. of a sample cable
- 99 internal memory locations store up to 99 traces for future analysis

### **3.General Specifications**

<b>Minimum distance:</b>	pair cable or coaxial cable >5m
<b>Maximum distance:</b>	Depends upon the V.O.P of the cables under test. 3.0km @V.O.P≤99.9% 2.4km @V.O.P≤80.0% 2.0km @V.O.P≤66.0% 1.5km @V.O.P≤50.0%
<b>Range Selection:</b>	Automatic range control
<b>Resolution:</b>	0.1m
<b>Accuracy:</b>	± [2% of reading ±0.2m] < 100m ± [2% of reading ±0.5m] ≥100m
<b>Impedance Selection:</b>	Automatic output impedance control
<b>Velocity Factor:</b>	Adjustable from 1.0% to 99.9%
<b>Cable Library:</b>	20 standard cable types
<b>Memory Location:</b>	99 for custom cable types
<b>Connector Type:</b>	BNC,RJ45
<b>Power Supply:</b>	2 LR6 (AA) type 1.5 volt alkaline batteries
<b>Operating Temperature:</b>	0°C to 40°C(32°F to 104°F)
<b>Storage Temperature:</b>	-10°C to 50°C14°F to 140°F)
<b>Relative Humidity:</b>	0% to 80%RH

## **4.Accessories**

Battery, 2 x 1.5V LR6

Belt (S2C)

User manual

Transfer parts(X2)

## **5.Instrument parts Introductions**

1-Coaxial cable connection(BNC socket)

2-network cable connection(RJ-45 socket)

3-LCD display

4-MEAS/OK button

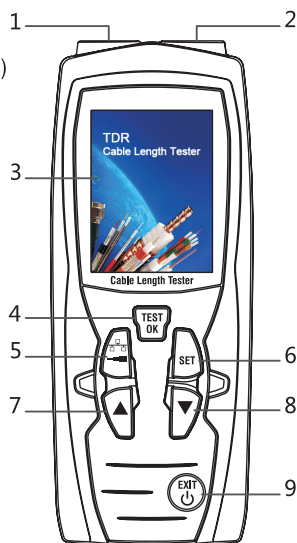
5-COAX/DATA switch button

6-SET button

7- ▲ button(move up, increase button)

8- ▼ button(move down, decrease button)

9-  EXIT/POWER button





## 6. Operating Instructions

### 6-1. Inserting/Replacing Batteries



- 1-Remove battery compartment lid.
- 2- Insert batteries according to the mark of battery box
- 3-Close the battery compartment again.
  - Replace the batteries when the battery symbol flashes red in the display
  - Use alkaline batteries only.
  - Remove the batteries before any long period of non-use to avoid the danger of corrosion.

### 6-2. Power On and Off

Power On: Long press  button








Power Off: Long press  button 3 seconds (The instrument without use will automatically turn off after 10 minutes).

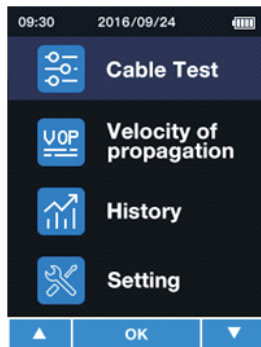
### 6-3. Function menus

After power on the instrument, the default interface is data cable length measurement. If you want to enter the functions menu, please short press  button. Press the  button again to return to the measurement interface .

After enter functions menu, you can use ▲ or ▼ button to select any function you need.


After choose the function, press  button to enter next display.



Items	Description
 Cable Test	Cable length measurement
 Velocity of propagation	VOP library , VOP Set
 History	The history of VOP
 Setting	System Set
	Move up button
	Move down button
	OK button

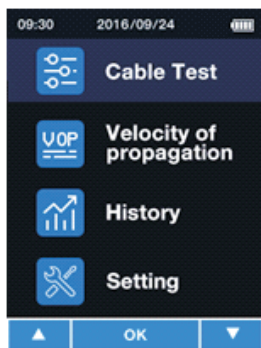


### 6-4.Cable measurement

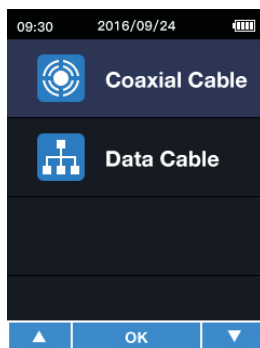
- Connect the cable to the meter cable socket. (if the cable is network cable, Connect the network cable to the RJ45 cable socket. If the cable is coaxial cable, Connect the coaxial cable to the BNC socket.
- Set the instrument to the cable measurement mode, there are two ways to enter the cable measuring interface:

**The first:** the boot default interface is network cable measurement. Short press  button select network cable measurement, or coaxial cable measurement.

**The second:** 1) Enter functions menu, short press ▲ or ▼ button to select  Cable Test, then press the  button to enter the cable selection interface.  
2) Then press ▲ or ▼ button again to select the cable measurement mode.





Function menus

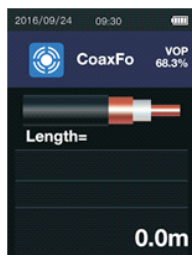


Cable menus

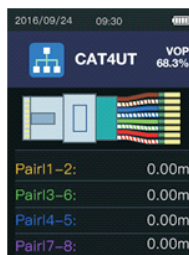


Items	Description
 <b>Coaxial Cable</b>	Coaxial cable measurement
 <b>Data Cable</b>	Network cable measurement











- Press the  button to enter the cable measurement mode.



Coaxial cable test

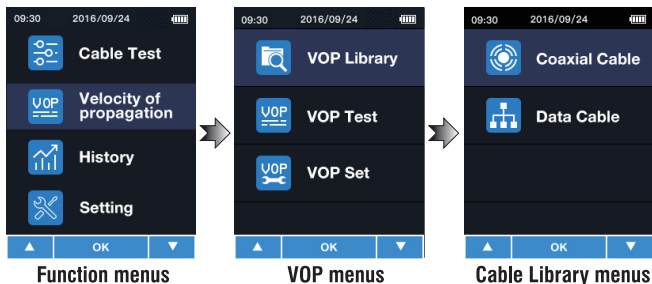


Network cable test

- Select the VOP of the network to be tested from the library, or adjust the current VOP slightly
  - Select the VOP of the network to be tested from the library.  
Short press  button to enter the library. Short press  or  button to select the corresponding network cable. Short press  button to complete the VOP settings.
  - Adjust the current VOP slightly  
Long press  button until the VOP value shows the anti black state. Short press the  or  button to increase or decrease the VOP value, Press  button to complete the VOP settings.
- Short press the  button to complete a measurement. LCD displays the length of cable to be measured
- Press the  button to clear the measurement

## 6-5.Cable Library V.O.P.

- After entering the function menu, short press the ▲ or ▼ button to select **Velocity of propagation**. Short press **TEST OK** to enter VOP function selection interface.
- After entering the cable selection, short press the ▲ or ▼ button to select **VOP Library**. Short press **TEST OK** to enter the cable database selection interface.
- After entering the cable database selection, short press ▲ or ▼ button to select the appropriate database.



- Short press **TEST OK** to enter cable database.

Coaxial Library		
Num	Name	Producer
1	CoaxFo	MBBNM
2	CoaxSo	ADHD
3	CW1308	EFDG
4	BT2002	S24R
5	RJ58	GFERTD
6	coAXA	SOUTHW

Data Library		
Num	Name	Producer
1	cAT4UT	MBBNM
2	cAT5UT	ADHD
3	cAT5ST	EFDG
4	cAT6ST	S24R
5	cAT6UT	GFERTD
6	cAT7ST	SOUTHW

Coaxial Library
Data Library

- Short press ▲ or ▼ button to select the corresponding cable name. Short press **TEST OK** to enter the corresponding cable measurement. Short press **D** to enter the current cable details.










CAT4UT	
Name:	CAT4UT
Type:	Data
Producer	MBBNM
V.O.P:	68.3%
Impedance:	75
OK	CLR

- In the current cable details interface, short press **TEST OK** button to return the database. Short press **ENT** button will show indication whether to delete the current data information. If delete, please short press **TEST OK**. If not delete, please short press **ENT** to return the database.


## 6-6.Measurement and storage of VOP values

- In the case of the V.O.P unknown of the cable measured, the VOP can be detected by the length of a known cable.
  - Insert a known length cable (greater than 10 meters) into the instrument.
  - After enter the function menu, short press **▲** or **▼** button to select **Velocity of propagation**, press **TEST OK** to enter the VOP function selection interface.
  - After enter the cable selection, short press **▲** or **▼** button to select **VOP Test**, press **TEST OK** to enter the VOP TEST interface.



Function menus	VOP menus	VOP Test																																								
<table border="1"> <thead> <tr> <th colspan="2">09:30 2016/09/24</th> </tr> </thead> <tbody> <tr> <td><b>Cable Test</b></td> <td></td> </tr> <tr> <td><b>VOP</b> Velocity of propagation</td> <td></td> </tr> <tr> <td>History</td> <td></td> </tr> <tr> <td>Setting</td> <td></td> </tr> <tr> <td>▲</td> <td>OK ▼</td> </tr> </tbody> </table>	09:30 2016/09/24		<b>Cable Test</b>		<b>VOP</b> Velocity of propagation		History		Setting		▲	OK ▼	<table border="1"> <thead> <tr> <th colspan="2">09:30 2016/09/24</th> </tr> </thead> <tbody> <tr> <td><b>VOP Library</b></td> <td></td> </tr> <tr> <td><b>VOP Test</b></td> <td></td> </tr> <tr> <td>VOP Set</td> <td></td> </tr> <tr> <td>▲</td> <td>OK ▼</td> </tr> </tbody> </table>	09:30 2016/09/24		<b>VOP Library</b>		<b>VOP Test</b>		VOP Set		▲	OK ▼	<table border="1"> <thead> <tr> <th colspan="2">09:30 2016/09/24</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>VOP Test</b></td> </tr> <tr> <td>Length:</td> <td>10m</td> </tr> <tr> <td>VOP:</td> <td>7%</td> </tr> <tr> <td>Name:</td> <td></td> </tr> <tr> <td>Type:</td> <td>Data</td> </tr> <tr> <td>Producer</td> <td></td> </tr> <tr> <td>Impedance:</td> <td>51</td> </tr> <tr> <td>▲</td> <td>SET ▼</td> </tr> </tbody> </table>	09:30 2016/09/24		<b>VOP Test</b>		Length:	10m	VOP:	7%	Name:		Type:	Data	Producer		Impedance:	51	▲	SET ▼
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4. In the VOP TEST interface, short press ▲ or ▼ button to select , short press  then the length display become anti-black.
5. Short press ▲ or ▼ button to adjust the value and the actual length to be the same, then short press  to measure the VOP of the cable.
6. Name storage. Short press ▲ or ▼ button to select , short press  to enter the name storage.
  - Select the character, starting with "A"  
 Short press ▲ button, characters change from 9 → 0;  
 Short press ▼ button, characters change from A → Z.
  - Short press  to store the following characters, the maximum number of stored characters is 6. Short press  once to clear the following  character till to a character behind.
  - Short press  button to complete the name storage.





### 6-7. Cable type selection

- Short press ▲ or ▼ button to select , short press  to enter the cable type selection. Short press ▲ or ▼ button to select Data, coaxial. Short press  button to complete the cable type selection.

### 6-8. Manufacturer's information storage





- Short press ▲ or ▼ button to select , short press  to enter the manufacturer's information storage. The mode of operation is the same as name storage.

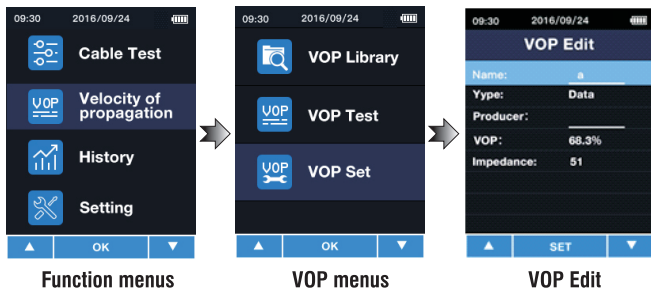
### 6-9. Cable impedance type selection

- Short press ▲ or ▼ button to select , short press  to enter the cable type selection. Short press ▲ or ▼ button to select 51Ω, 75Ω, 100Ω. Short press  button to complete the cable impedance storage.
- Short press  button to complete the measurement and storage of VOP value.

## 7. Edit and storage of VOP value

In the case of V.O.P known cable, the VOP value of the cable can be stored directly.

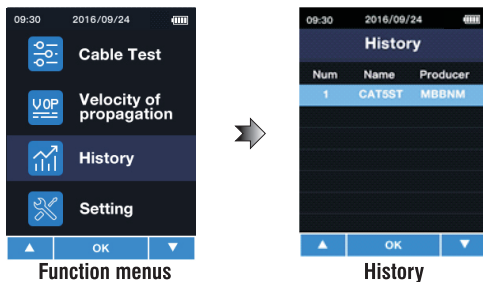
1. After enter the function menu, press the ▲ or ▼ button to select  Velocity of propagation, short press  to enter the VOP function selection interface.
2. After enter the cable selection, short press ▲ or ▼ button to select  VOP Set, press  to enter the VOP Edit interface.



3. Repeat step 6-10 in **Measurement and storage of VOP** to complete the VOP storage.

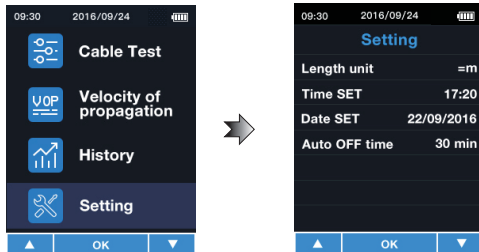
## 8. History

1. After enter the function menu, short press ▲ or ▼ button to select  History. Press  to enter the history interface.






## 9. System settings

After enter the function menu, short press ▲ or ▼ button to select  Setting.  
Press  to enter Setting.



Item	Description
Unit	Unit setting
Time	Time setting
Data	Date setting
Auto Off time	Auto power off time setting

### 9-1. Unit setting

After enter the function Setting interface, short press ▲ or ▼ button to select  Unit: m. Short press  to enter unit setting. Short press ▲ or ▼ button to select the unit is ft or m (1m = 3.281 ft), short press  to complete the unit setting.

### 9-2. Time setting

Short press ▲ or ▼ button to select  Time: 09:58. Short press  to enter time of hour setting. Short press ▲ or ▼ button to set current time. Again short press  to set time of minute. Short press ▲ or ▼ button to set current time. Short press  to complete the time setting.

### 9-3. Date setting

Short press ▲ or ▼ button to select  Data: 2017/05/05. Short press  to complete the date setting.

to enter the date of year set. Short press ▲ or ▼ button to set current year. Again short press  to set month, short press ▲ or ▼ button to set current month. Again short press  to set date, short press ▲ or ▼ button to set current date. Short press  to complete the date setting.

#### **9-4.Auto power off time setting**

Short press ▲ or ▼ button to select . Short press  to enter the auto power off time setting. Short press ▲ or ▼ button to select auto power off time. Short press  to complete the auto power off time setting.

## **VII Measurement conditions**

- 1.Do not operate with electricity
- 2.When the battery symbol turns red, you need to replace the battery. Otherwise the key operation will cause the screen blink and it may affect the accuracy of the measurement.



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