INSTRUCTION MANUAL
MT900
CABLE LENGTH METER

INTRODUCTION

MT900 is a precision cable length meter 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, telephone, CAT V and LAN, cables etc.

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.

Features

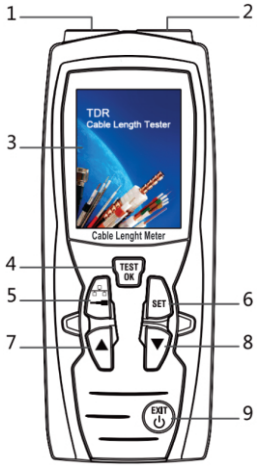
- High accuracy and fast reflection
- Easy to use
- 2.4 inch TFT color screen
- User friendly menu on screen
- Auto-Zero and Auto Range, Auto adjust sensitivity, can measure various cables
- Built-in 20 groups of standard cable V.O.P. value
- Optional auto power off time
- Auto-Sensitivity allows for 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

Accessories

- 2 x 1.5V AA LR6 battery
- Belt (S2C)
- User manual
- Transfer parts (X2)

Instrument Parts Introduction

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



OPERATING INSTRUCTIONS

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.

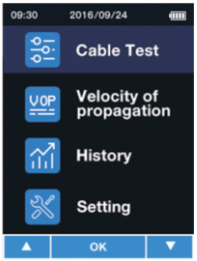
Power On and Off

Power On: Press and hold the EXIT button
Power Off: Press and hold the EXIT button for 3 seconds
(The instrument will automatically turn off after 10min after being inactive.)

Function menus

After turning on the instrument, the default interface is data cable length measurement. If you want to enter the functions menu, press the EXIT button once. Press the EXIT button once again to return to the measurement interface.
After enter functions menu, you can use the ▲ or ▼ button to select any function you need. After you have chosen the function, press the TEST OK 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	OK button



Cable measurement

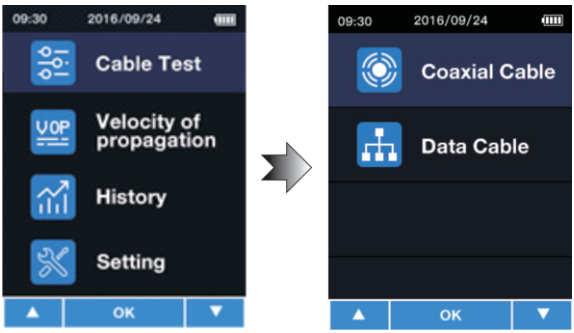
- Connect the cable to MT900 cable socket. (If the cable is a network cable, connect the network cable to the MT900 RJ45 cable socket. If the cable is a coaxial cable, connect the coaxial cable to the MT900 BNC socket.)
- Set the instrument to the cable measurement mode, there are two ways to enter the cable measuring interface:

The first:

The boot default interface is network cable measurement. Press the button once to select network cable measurement, coaxial cable measurement, or single-wire cable measurement.

The second:

1. Enter functions menu, press the ▲ or ▼ button to select Cable Test , then press the TEST OK button once to enter the cable selection interface.
2. Then press the ▲ or ▼ button again to select the cable measurement mode.

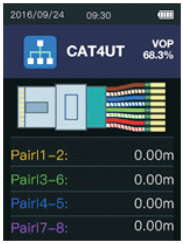


Function menus Cable menus

Items	Description
Coaxial Cable	Coaxial cable measurement
Data Cable	Network cable measurement

- Press the TEST OK button to enter the cable measurement

Coaxial cable test



Network cable test

- Select the V.O.P. of the network to be tested from the library, or adjust the current V.O.P. slightly.

1. Select the V.O.P. of the network to be tested from the library. Press the SET button once to enter the library. Press the ▲or ▼ button to select the corresponding network cable. Press the SET button once to complete the V.O.P. settings.
2. Adjust the current V.O.P. slightly.
   Press and hold the TEST OK button until the V.O.P. value shows the anti black state. Press the ▲or ▼ button to increase or decrease the V.O.P. value, Press the TEST OK button once to complete the V.O.P. settings.
   - Press the TEST OK button once to complete a measurement. LCD displays the length of cable to be measured.
   - Press the EXIT button once to clear the measurement

Cable Library V.O.P.

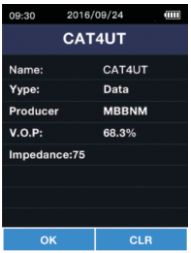
- After entering the function menu, press the ▲or ▼button to select Velocity of propagation . Press the TEST OK button once to enter V.O.P. function selection interface.
- After entering the cable selection, press the ▲or ▼button to select VOP Library . Press the TEST OK button once to enter the cable database selection interface.
- After entering the cable database selection, press the ▲or ▼ button to select the appropriate database.

Function menus VOP menus Cable Library menus

- Press the TEST OK button once to enter the cable database.

Coaxial Library Data Library

- Press the ▲or ▼button to select the corresponding cable name. Press the TEST OK button once to enter the corresponding cable measurement. Press the SET button once to enter the current cable details.



- In the current cable details interface, press the TEST OK button to return to the database. Press the EXIT button, this will show indication whether to delete the current data information. To delete, press the TEST OK button. If you do not want to delete, press the EXIT button once to return to the database.

Measurement and storage of V.O.P. values

In the case that the V.O.P. is unknown of the cable measured, the V.O.P. can be detected by the length of a known cable.

1. Insert the known length cable (greater than 10 meters) into the instrument.
2. After entering the function menu, press the ▲or▼button to select Velocity of propagation, press the TEST OK button to enter the V.O.P. function selection interface.
3. After entering the cable selection, press the ▲or▼button to select VOP Test, press the TEST OK button to enter the V.O.P. TEST interface.

4. In the V.O.P. TEST interface, press the ▲or▼button to select

, press the SET button once then the length display becomes anti-black.
5. Press the ▲or▼button to adjust the value and the actual length to be the same, then press the TEST OK button once to measure the V.O.P. of the cable.
6. Name storage. Press the ▲or▼button to select

, press the SET button once to enter the name storage.

- Select the character, starting with "A"
  Press the ▲button, characters change from 9 to 0
  Press the ▼button, characters change from A to Z.
- Press the SET button once to store the selected characters, the maximum number of stored characters is 6.
  Press the ESC button once to clear the selected character
  Press the TEST OK button to move a character behind.
- Press the TEST OK button to complete the name storage.

Cable type selection

Press the ▲or▼button to select

, press the SET button once to enter the cable type selection. Press the ▲or▼button to select data, coaxial, single-wire. Press the TEST OK button once to complete the cable type selection.

Manufacturer 's information storage

Press the ▲or▼button to select

, press the SET button once to enter the manufacturers information storage. The mode of operation is the same as name storage.

Cable impedance type selection

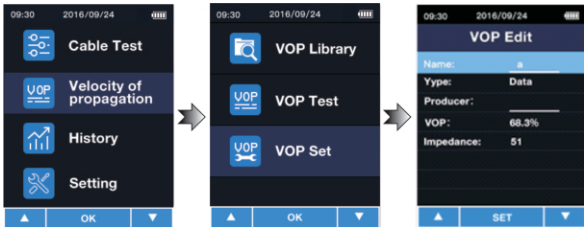
- Press the ▲or▼button to select

, press the SET button once to enter the cable type selection. Press the ▲or▼button to select 51Ω, 75Ω or 100Ω. Press the TEST OK button once to complete the cable impedance storage.
- Press the EXIT button once to complete the measurement and storage of V.O.P. value.

Edit and storage of V.O.P. value

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

1. After enter the function menu, press the ▲ or ▼ button to select Velocity of propagation, press the TEST/OK button once to enter the V.O.P. function selection interface.
2. After enter the cable selection, press the ▲ or ▼ button to select VOP Set, press the TEST/OK button to enter the V.O.P. Edit interface.

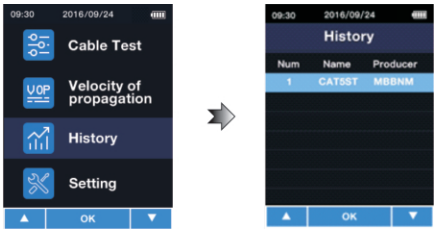


Function menus VOP menus VOP Edit

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

History

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



Function menus History

System settings

After eater the function menu, press the ▲or▼button to select Setting. Press the TEST OK button once to enter setting.

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

Unit setting

After entering the function setting, press the ▲or ▼ button to select Unit: m. Press the SET button to enter unit setting. Press the ▲or▼button to select the measurement unit, ft or m (1m = 3.281ft), press the TEST OK button once to complete the unit setting.

Time setting

Press the ▲or▼button to select Time: 09:58 . Press the SET button to enter time of hour setting. Press the ▲or▼button to set current time. Press the SET button again to set the minutes. Press the ▲or▼button to set current time. Press the TEST OK button to complete the time setting.

Date setting

Press the ▲or▼button to select Data: 2017/05/05 . Press the SET button once to enter the date of the year. Press the ▲or▼button to set the current year.

Press the SET button once to set month, press the ▲ or ▼ button to set current month. Press the SET button to set date, press ▲ or ▼ button to set current date. Press the TEST OK button once to complete the date setting.

Auto power off time setting

Press the ▲ or ▼ button to select Auto Off time: 10 min. Press the SET button once to enter the auto power off time setting. Press the ▲ or ▼ button to select auto power off time. Press the TEST OK button once to complete the auto power off time setting.

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 to blink and it may affect the accuracy of the measurement.

General Specifications

Function	Range
Minimum distance:	Pair cable, Coaxial Cable or Cable Tester >5m
Maximum distance:	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%
Range Selection:	Automatic range control
Resolution:	0.1m
Accuracy:	± [2% of reading ±0.2m] < 100m ± [2% of reading ±0.5m] ≥ 100m
Impedance Selection:	Automatic output impedance control
Velocity Factor:	Adjustable from 1.0% to 99.9%
Cable Library:	20 standard cable types
Memory Location:	99 for custom cable types
Connector Type:	BNC, RJ45
Batteries:	2 LR6 (AA) type 1.5V alkaline
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Storage Temperature:	-10°C to 50°C (14°F to 140°F)
Relative Humidity:	0% to 80%RH
Size (H X W X D):	152 X 61 X 34mm
Weight:	227,9g

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