DATAMASTER®

PROFESSIONAL LAN & COAXIAL CABLE TESTER



USER GUIDE

LINDY®
CONNECTION PERFECTION

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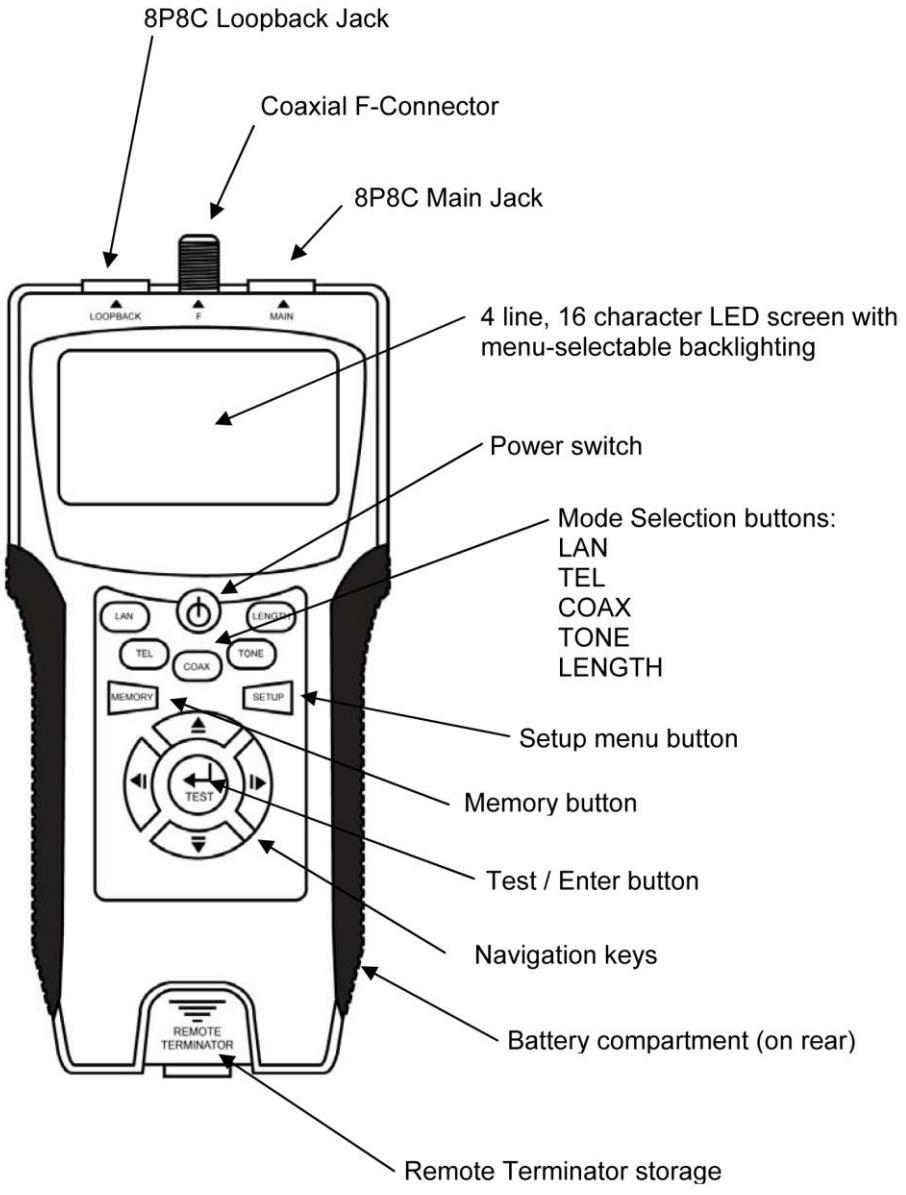
Datamaster® Professional LAN Cable Tester – User Guide

The Datamaster® Professional LAN Cable Tester is suitable for use with UTP (unshielded) and STP (shielded) Cat-5, Cat-5E, Cat-6, Cat-6A and also with Coaxial cables. The Loopback and Remote operating modes indicate cable continuity, wiring configuration (and type of fault) and the type of cable being tested. TDR (Time Domain Reflectometer) technology is used to measure cable lengths between a range of 1 to 350 metres. TDR is also used to indicate the distance to a short or open circuit.

Auto-off mode (except in TONE MODE) prolongs battery life. A low-battery condition is displayed when it is time to change the battery. The backlit LCD screen has four lines of 16 characters. A Tone mode is provided for F-Set probe fault location or identification. There are 24 memory locations for storing test results.

It is supplied with belt clip, black zippered vinyl pouch, 2 x F-type to BNC coax adaptors, 2 x 8P to 6P modular reducers and a 9V battery.

1 INTERFACES AND CONTROLS



2 Power On

Pressing the **POWER** button displays a splash-screen for a few seconds. This is followed by the main menu as shown below: If no further action is taken the unit will automatically switch off after about five minutes to conserve the battery.



3 Setup

Pressing the **SETUP** button takes you into SETUP MODE (displayed at the top of the screen).

Use the **UP / DOWN NAVIGATION** keys to scroll through the following menu items:

1 Unit	M ◄ ► FT
2 LAN Length Adj	TEST KEY
3 COAX Length Adj	TEST KEY
4 Buzzer	ON ◄ ► OFF
5 Backlight	ON ◄ ► OFF
6 Restore Default	TEST KEY

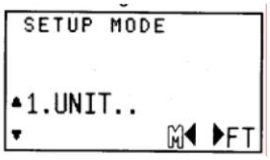
Use the **LEFT / RIGHT NAVIGATION** keys to select a choice or else press the **TEST** key if instructed to do so.

The chosen option will be flashing. Press the **TEST** key to choose that option. Then press the **MEMORY** key to lock the option into memory. Your chosen option will not be saved after power-down if the **MEMORY** key is not pressed.

3.1 To set the UNIT:

Select Option 1 *UNIT* from the SETUP menu.
The current selection will be blinking.

Use the **LEFT / RIGHT NAVIGATION** keys to select an option. The selected option will blink.



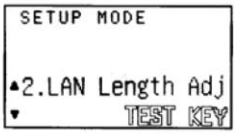
Press the **MEMORY** key to save the value.

3.2 To set the LAN Length Adjustment:

Connect a known length of cable (eg 100 metres) to the **MAIN** socket as shown in the drawing leaving the other end unterminated.

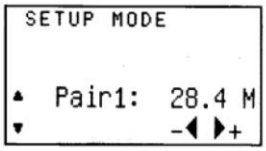


Select Option 2 *LAN Length Adj* from the SETUP menu



Push the **TEST** key.

A result will be displayed as shown:



Use the **LEFT / RIGHT NAVIGATION** keys to adjust the value to the known lengtl

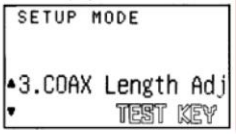
Press the **MEMORY** key to save the value.

3.3 To set the COAX length adjustment:

Connect a known length of cable (eg 100 metres) to the **COAX** socket as shown in the drawing leaving the other end unterminated.

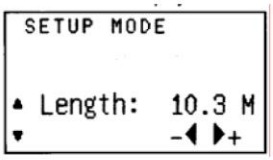


Select Option 3 *COAX Length Adj* from the SETUP menu



Push the **TEST** key.

A result will be displayed as shown:



Use the **LEFT / RIGHT NAVIGATION** keys to adjust the value to the known length.

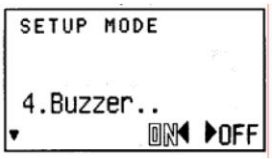
Press the **MEMORY** key to save the value

3.4 To set the Buzzer:

Select Option 4 *Buzzer* from the SETUP menu.
The current selection will be blinking.

Use the **LEFT / RIGHT NAVIGATION** keys to select an option. The selected option will blink.

Press the **MEMORY** key to save the value.

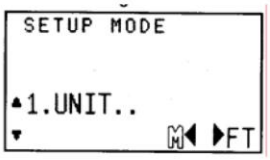


3.5 To set the Backlight:

Select Option 5 *Backlight* from the SETUP menu.
The current selection will be blinking.

Use the **LEFT / RIGHT NAVIGATION** keys to select an option. The selected option will blink.

Press the **MEMORY** key to save the value



3.6 To Restore Default settings:

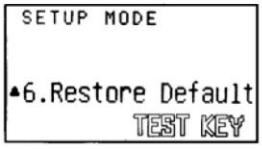
Select Option 6 *Restore Default* from the SETUP menu.

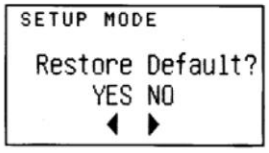
The words ***TEST KEY*** will be blinking.

Press the **TEST** key.

The following screen will be displayed:

Press either the **LEFT** or **RIGHT NAVIGATION** key to select what you want to do.



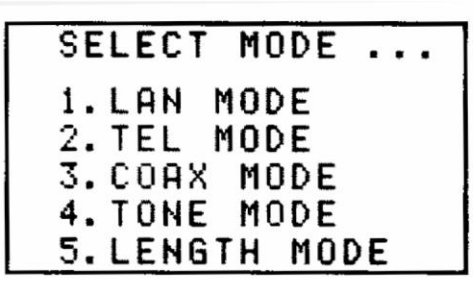


4 MODE SELECTION

Use the UP /DOWN NAVIGATION keys to select one of the five operating modes shown on the main menu screen (shown opposite)

OR

Press one of the five blue coloured **Mode Selection Buttons**.



5 LAN MODE - LOOPBACK

The Loopback Mode is capable of testing for the following faults:

- Open circuit
- Short circuit
- Crossed wires
- Split wires

Enter LAN Mode from either the main menu on the screen or by pressing the blue coloured LAN button.

Connect the cable between the **MAIN** and **LOOPBACK** sockets as shown in the diagram opposite.

Press the **TEST** button.

The display will indicate a *PASS* and the type of cable connected if there is no fault.

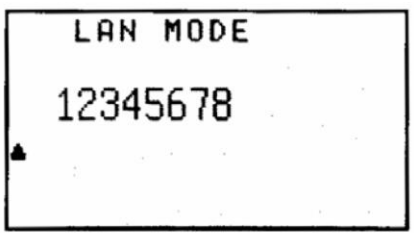
If there is a *FAIL* due to a open-circuit fault, the distance to the fault will be displayed.

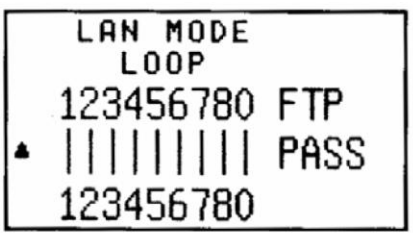
Failures due to SHORT / SPLIT / CROSS problems will have the applicable wire pair(s) shown).



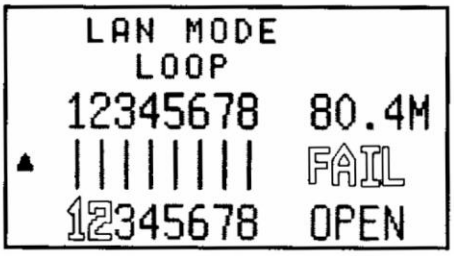
TEST RESULTS

If the cable being tested was not faulty, the display will show the type of cable (***FTP*** *or* ***UTP***) the word ***PASS*** and the word ***LOOP*** (indicating the test was performed in Loopback Mode. An FTP cable will also show a wire ***0*** for the shield connection in addition to the 1 – 8 data wires. The following screen-shots show the initial and the result screens for a non-faulty FTP cable.

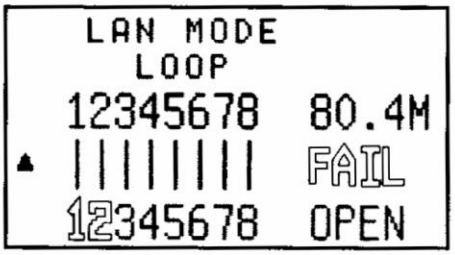




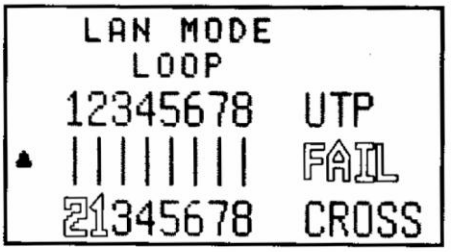
If one (or more) pairs are open circuit, the word ***FAIL*** is displayed along with the identity of the ***open pair(s)*** (in this case, wires 1 & 2) in blinking text. The ***distance*** from the MAIN socket to the open circuit is also displayed (± 5% accuracy). Other wires will be displayed in non-blinking text to indicate that they were not faulty.



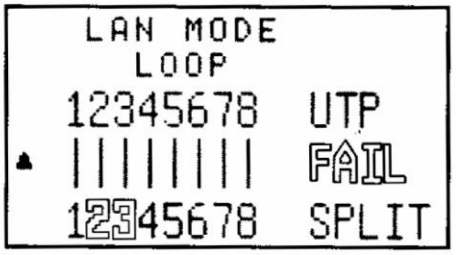
For a short circuit, the word ***FAIL*** is displayed along with the identity of the ***short circuited pair(s)*** (in this case, wires 4 & 5) in blinking text.



For crossed wires, the word ***FAIL*** is displayed along with the identity of the ***crossed wires*** (in this case, wires 1 & 2) in blinking text. Note that the crossed wires will also be displayed with an incorrect numbering sequence.



For split wires, the word ***FAIL*** is displayed along with the identity of the split ***wires*** (in this case, wires 2 & 3) in blinking text.



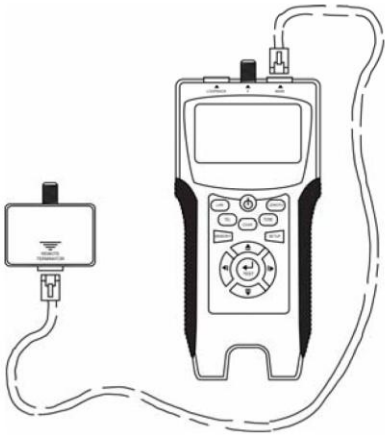
6 LAN MODE – MAIN TO REMOTE TERMINATOR

The Loopback mode is capable of testing for the following faults:

- Open circuit
- Short circuit
- Crossed wires

Enter LAN Mode from either the main menu on the screen or by pressing the blue coloured **LAN** button.

Connect the cable between the **MAIN** socket and a **Remote Terminator** as shown in the diagram opposite.



Press the **TEST** button.

The display will indicate a *PASS* and the type of cable connected if there is no fault.

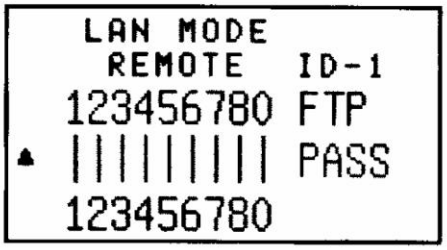
If there is a *FAIL* due to a open-circuit fault, the distance to the fault will be displayed.

Failures due to SHORT or CROSS problems will have the applicable wire pair(s) shown).

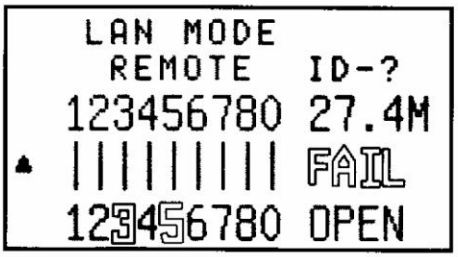
The ID number of the remote terminator is displayed

TEST RESULTS

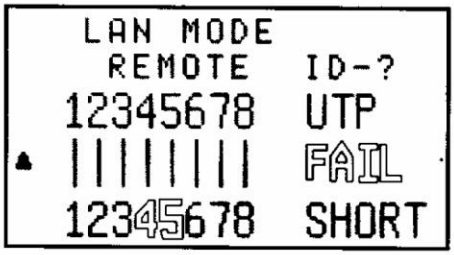
If the cable being tested was not faulty, the display will show the type of cable (***FTP*** *or* ***UTP***) the word ***PASS*** and the word ***REMOTE*** (indicating the test was performed in Remote Terminator Mode. An FTP cable will also show a wire ***0*** for the shield connection in addition to the 1 – 8 data wires. The screen-shot shows the result for a non-faulty FTP cable that was tested with Remote Terminator ID #1.



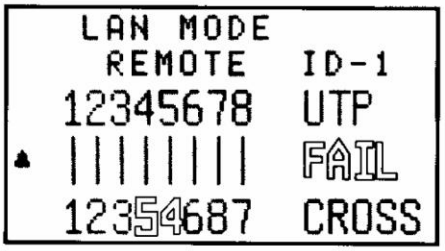
If one (or more) pairs are open circuit, the word ***FAIL*** is displayed along with the identity of the ***open pair(s)*** (in this case, wires 3 & 5) in blinking text. The ***distance*** from the MAIN socket to the open circuit is also displayed (± 5% accuracy). Other wires will be displayed in non-blinking text to indicate that they were not faulty. The Remote Terminator ID Number will be shown as "?".



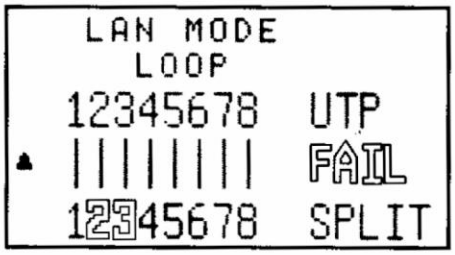
For a short circuit, the word ***FAIL*** is displayed along with the identity of the ***short circuited pair(s)*** (in this case, wires 4 & 5) in blinking text. The Remote Terminator ID Number will be shown as "?".



For crossed wires, the word ***FAIL*** is displayed along with the identity of the ***crossed wires*** (in this case, wires 4 & 5) in blinking text. Note that the crossed wires will also be displayed with an incorrect numbering sequence. The Remote Terminator ID Number will be shown.



For split wires, the word ***FAIL*** is displayed along with the identity of the split ***wires*** (in this case, wires 2 & 3) in blinking text.

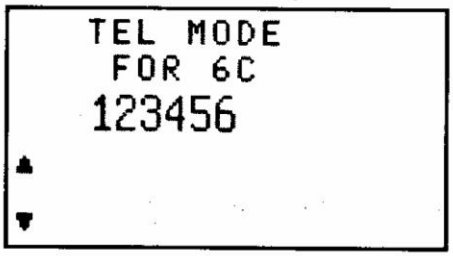


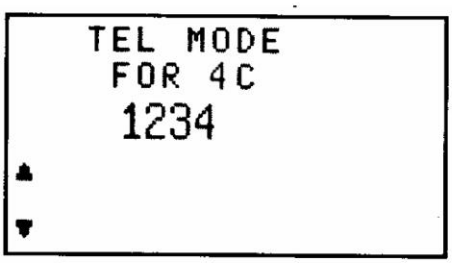
7 TEL MODE – Cable Selection

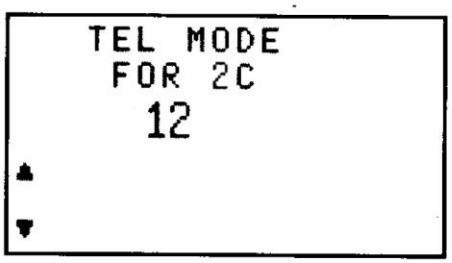
Tests can be performed for either 6, 4 or 2 conductor cables. Two 8P to 6P Modular Reducers are included to ensure correct cable plug mating with the testers' modular sockets. The Remote Terminator cannot be used in the TEL Mode.

Enter TEL Mode from either the main menu on the screen or by pressing the blue coloured **TEL** button.

The initial TEL MODE screen is shown opposite and is set for a 6 conductor cable. Use the **UP / DOWN NAVIGATION** keys to toggle between the 6, 4 & 2 conductor modes (see screenshots below for the 4 and 2 conductor modes).







8 TEL MODE

The TEL Mode is capable of testing for the following faults:

- Open circuit
- Short circuit
- Crossed wires

Connect the cable between the **MAIN** and **LOOPBACK** sockets as shown in the diagram opposite using a modular reducer if required.

Press the **TEST** button.

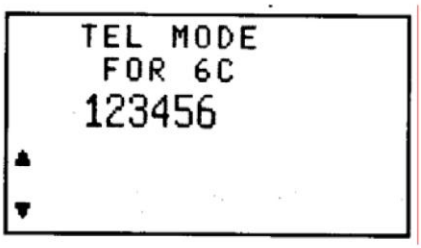
The display will indicate a *PASS* and the type of cable connected if there is no fault.

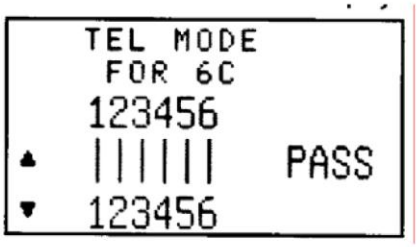
If there is a *FAIL* due to a Open-circuit, Short or Cross fault, the applicable wire pair(s) will blink).



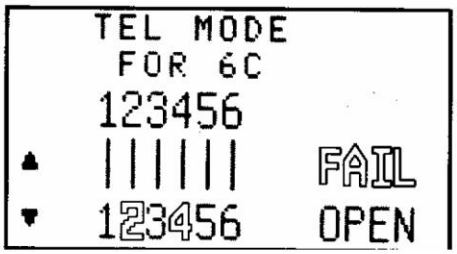
TEST RESULTS

If the cable being tested was not faulty, the display will show the number of conductors (in this example 6C) and the word ***PASS***. The following screen-shots show the initial and the result screens for a non-faulty 6 conductor cable.

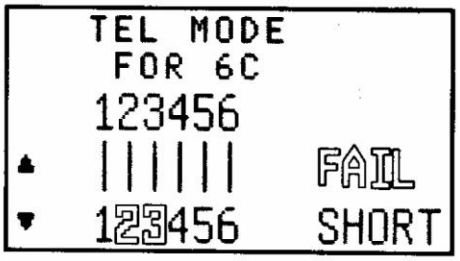




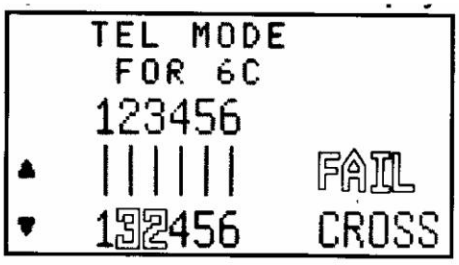
If one (or more) pairs are open circuit, the word ***FAIL*** is displayed along with the identity of the ***open pair(s)*** (in this case, wires 2 & 4) in blinking text. Other wires will be displayed in non-blinking text to indicate that they were not faulty.



For a short circuit, the word ***FAIL*** is displayed along with the identity of the ***short circuited pair(s)*** (in this case, wires 2 & 3) in blinking text.



For crossed wires, the word ***FAIL*** is displayed along with the identity of the ***crossed wires*** (in this case, wires 2 & 3) in blinking text. Note that the crossed wires will also be displayed with an incorrect numbering sequence.

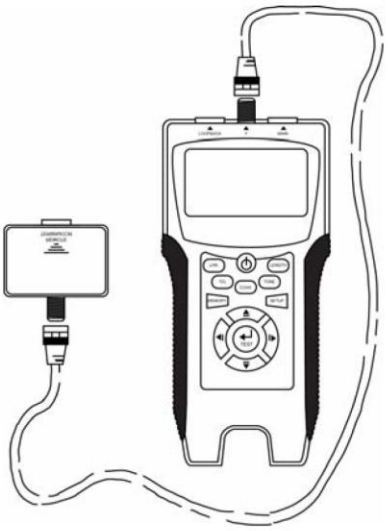


9 COAX MODE – MAIN TO REMOTE TERMINATOR

The COAX mode is capable of testing for the following faults:

- Open circuit
- Short circuit

Enter COAX Mode from either the main menu on the screen or by pressing the blue coloured **COAX** button.



Connect the cable between the **F-Connector** and a **Remote Terminator** as shown in the diagram opposite.

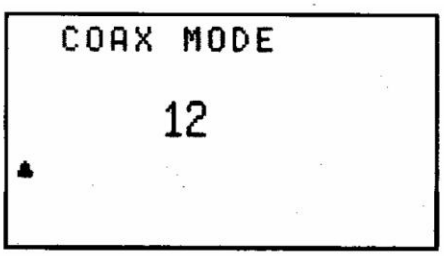
Press the **TEST** button.

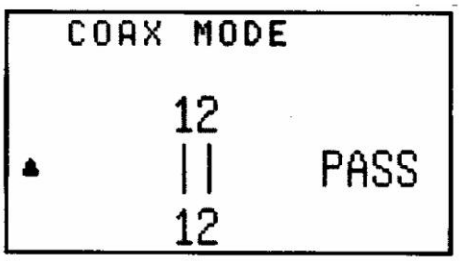
The display will indicate a *PASS* if there is no fault.

If there is a *FAIL* due to a open-circuit fault or a cross, the word **FAIL** and digits **1** & **2** (indicating the inner core conductor and the outer shield) will blink.

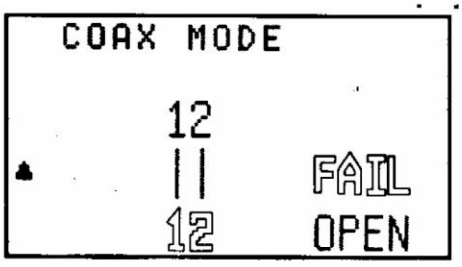
TEST RESULTS

If the cable being tested was not faulty, the word ***PASS*** *and digits* ***1*** & ***2*** **representing the inner core conductor and the outer shield.** The screen-shots show the initial and the result screens for a non-faulty Coaxial cable.

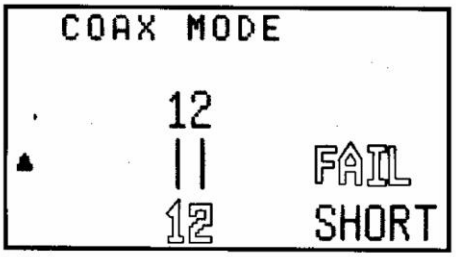




If either the inner conductor or the outer shield are open circuit, the word ***FAIL*** is displayed along with digits ***1*** & ***2*** in blinking text.



For a short circuit between the inner conductor and the outer shield, the word ***FAIL*** is displayed along with digits ***1*** & ***2*** in blinking text.



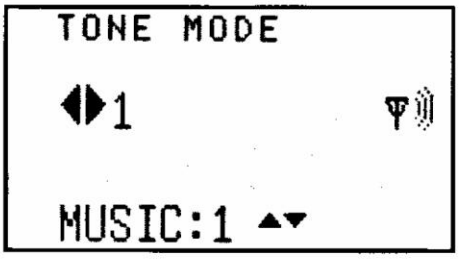
10 TONE MODE

This mode transmits an audio tone to a cable plugged into the **MAIN** socket to allow an F-set probe to be used to find a break in the conductor. There is a choice of two tones and the conductor that the tone is transmitted along is also selectable.

Enter TONE Mode from either the main menu on the screen or by pressing the blue coloured **TONE** button.

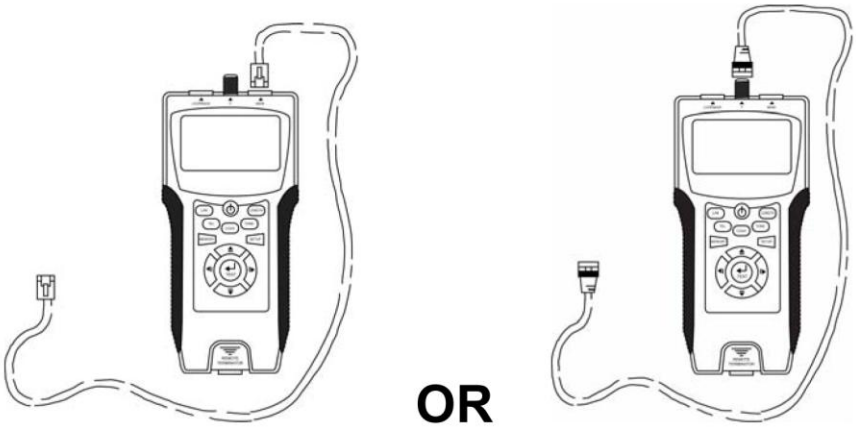
Use the **UP / DOWN NAVIGATION** keys to select either ***Music 1*** or ***Music 2*** tone and use the **LEFT / RIGHT NAVIGATION** keys to select which conductor the tone is sent out on.

The screenshot opposite shows the ***Music 1*** tone being transmitted over conductor #***1***.



11 LENGTH MODE

The length of a LAN or COAX cable can be measured using this mode. It is important that the other end of the cable is **not** terminated. Use the **MAIN** socket for a LAN cable and the **F-Connector** for a Coaxial cable as shown:



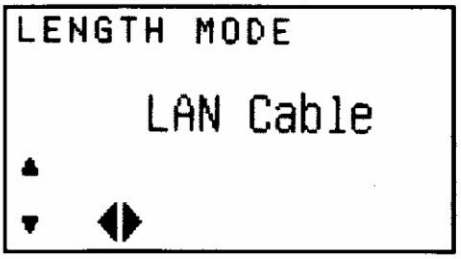
Enter LENGTH Mode from either the main menu on the screen or by pressing the blue coloured **LENGTH** button.

Use the **UP / DOWN NAVIGATION** keys to toggle between LAN Cable & COAX Cable tests.

11.1 LENGTH MODE – LAN CABLE

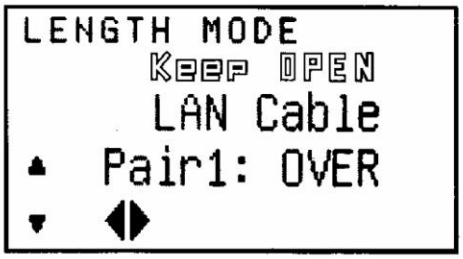
The initial screen is shown opposite.

Push either the **LENGTH** key or the **TEST** key to start the test.



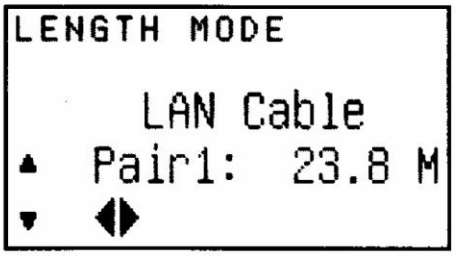
If a Remote Terminator is connected to the far end of the cable, the test cannot be performed and an error message advising you to keep the remote end of the cable open is shown.

Remove the Remote Terminator and re-test.



The length (± 5%) of Pair 1 (in this example 23.8 metres) will displayed.

Use the **LEFT / RIGHT NAVIGATION** keys to see the test result for another pair. It is usual to see slightly different results for each pair in the same cable.

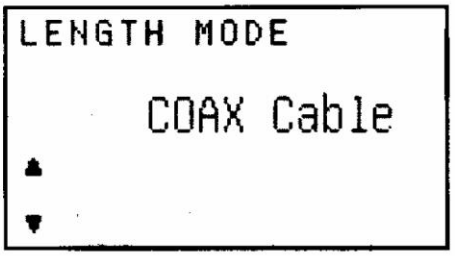


Use the **UP / DOWN NAVIGATION** keys to toggle between LAN and COAX Length Modes.

11.2 LENGTH MODE – COAX CABLE

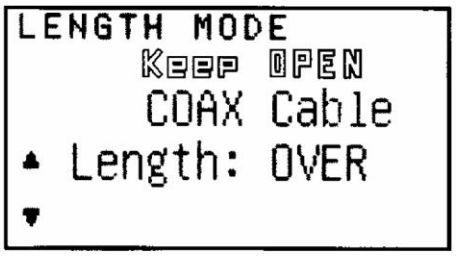
The initial screen is shown opposite.

Push either the **LENGTH** key or the **TEST** key to start the test.



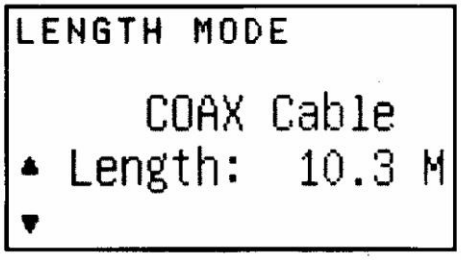
If a Remote Terminator is connected to the far end of the cable, the test cannot be performed and an error message advising you to keep the remote end of the cable open is shown.

Remove the Remote Terminator and re-test.



The length (± 5%) of the coaxial cable (in this example 10.3 metres) will displayed.

Use the **LEFT / RIGHT NAVIGATION** keys to see the test result for another pair. It is usual to see slightly different results for each pair in the same cable.



Use the **UP / DOWN NAVIGATION** keys to toggle between LAN and COAX Length Modes.

12 MEMORY FUNCTION

There are 24 memory locations:

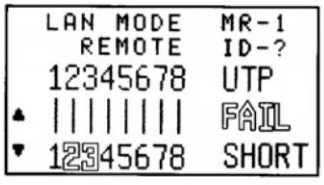
- 8 for LAN mode
- 8 for TEL Mode
- 4 for COAX Mode
- 4 for LENGTH Mode

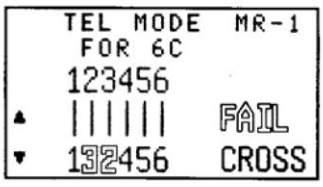
12.1 STORING A SCREEN TO MEMORY

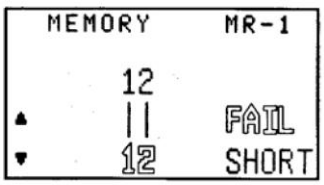
Whilst a test result is being displayed, it can be saved into memory by briefly pressing the **MEMORY** key. The memory location is momentarily displayed on the top right hand side of the screen.

12.2 RECALLING A SCREEN FROM MEMORY

To recall a screen from memory, enter the appropriate mode (by pressing one of the blue coloured **MODE** buttons) and then press and hold the **MEMORY** key for at least three seconds. The results of the first memory location will be displayed. Typical memory screens are shown below:





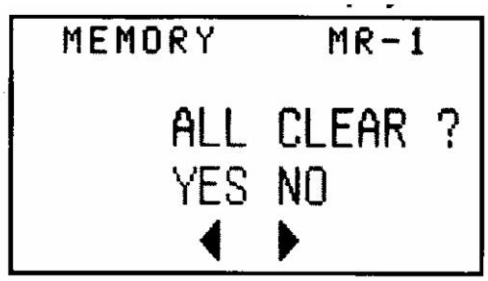


Use the **UP / DOWN NAVIGATION** keys to toggle between memory locations.

12.3 TO CLEAR SCREENSHOTS FROM MEMORY

Whilst viewing any screen in memory mode, press the **TEST** key and the screen opposite will be displayed.

Use the **LEFT / RIGHT NAVIGATION** keys to either cancel or retain the data stored in memory.



If desired, enter another mode (by pressing one of the blue coloured mode selection buttons) and repeat the procedure.

13 BATTERY ALARM & REPLACEMENT

When the voltage of the battery drops to 6 volts, the **battery icon** on the left center of the screen will start to blink.

Undo the Philips-head screw on the battery compartment lid on the rear of the tester and replace the battery.

