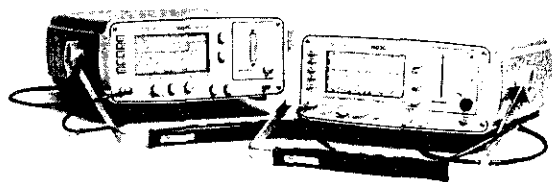




## METALLIC CABLE TESTERS

1503C • 1502C



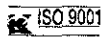
### FEATURES – BENEFITS

- Menu-Driven Operation for Easy Test Set-Up
- Help Screens Provide Information on Instrument Operation and Measurements
- Vertical and Horizontal Delta Modes Allow Easy Delta Measurements
- Waveform Storage Allows Comparison of the Current and Previously Recorded Waveform
- $\Omega$  at Cursor Allows Direct Readout of Characteristic Impedance

### APPLICATIONS

- Telephony
- Computer/LAN
- CATV
- Power Companies
- Agriculture
- PCB Manufacturers
- Cable Manufacturers
- Airlines

For your local Tektronix representative see the list in the back of this catalog or outside the U.S. call: 1-503-627-1916, inside the U.S. call: 1-800-462-2200.



Tektronix measurement products are manufactured in ISO registered facilities.

The 1500C Series is designed to quickly and easily locate opens, shorts, crimps, and other defects in metallic cables. The 1503C can measure cables up to 50,000 feet (15,000 meters) in length; 2,000 feet (625 meters) for the 1502C.

Using a process similar to radar, the 1500C Series transmits electrical pulses down the cable under test. Impedance changes in the cable reflect some of the pulse energy back to the MTDR. The reflections are displayed on a backlit, HyperTwist, high-contrast nematic LCD display. The characteristics of the displayed trace allow the user to determine the nature of the cable fault.

When testing 50  $\Omega$  cable with a  $V_p$  of 0.66, the 1502C allows the determination of 0.5  $\Omega$  cable faults. Multiple faults can be measured as close as 10 inches with the 1503C or 0.8 inch with the 1502C. The 1503C can measure cables with impedances of 50, 75, 93, and 125  $\Omega$ ; the 1502C measures 50  $\Omega$  impedance only.

## CHARACTERISTICS

### ELECTRICAL

#### Test Signal –

1503C: 1/2 sine.  
1502C: Step rise.

#### Amplitude –

1503C:  
Terminated: –2.5 V.  
Unterminated: –5.0 V.

1502C: 300 mV nominal into 50  $\Omega$  load.

**Pulse Widths (1503C) –** 2 ns, 10 ns, 100 ns, 1000 ns.

**System Rise Time (1502C) –** 10% to 90%, 200 ps (1.15 in./2.92 cm).

#### Output Impedance –

1503C: 50  $\Omega$ , 75  $\Omega$ , 93  $\Omega$ , 125  $\Omega$ .  
1502C: 50  $\Omega$ .

**Input Protection (1503C) –**  $\pm 400$  V (DC + peak AC) to a maximum of 440 Hz.

**Electrostatic Discharge Protection (1502C) –** 1 kV/500 pF/1 k $\Omega$ .

#### Maximum Range –

1503C: 50,000 ft. (15,000 m).  
1502C: 2,000 ft. (625 m).

#### Distance Readout Resolution –

1503C: 0.04 ft. (0.01 m).  
1502C: 0.05 in. (0.12 cm).

**Noise Filtering –** 1 to 128 averages.

#### Vertical Scale –

1503C: 0 dB to 63.75 dB.  
1502C: 0.5 mp/div to 500 mp/div.

**Vertical Accuracy –**  $\pm 3\%$  full scale.

#### Distance/Division –

1503C: 1 ft./div to 5000 ft./div (0.25 m/div to 1000 m/div).  
1502C: 0.1 ft./div to 200 ft./div (0.025 m/div to 50 m/div).

**Horizontal Accuracy –** 1.6 inches (0.041 m) or  $\pm 1\%$  of measured distance plus uncertainty in Vp, whichever is greater (for Vp = 0.66 and Dist/Div = 1 ft.).

### ENVIRONMENTAL

Meets capabilities of Type III, Class 3, Style C instruments (except EMI where it meets FCC; Part 15,3,A, and VDE 0871, Class B) as prescribed by MIL-T-28800C.

### POWER

#### Source Power –

AC Line: 115/230 V.  
Battery: Internal 12 V.

**Safety –** UL1244, CSA231, EN61010-1.

### PHYSICAL CHARACTERISTICS

Dimensions	cm	in.
Height	17	6.5
Width	30	12
Depth	48	19
<b>Weight</b>	<b>kg</b>	<b>lb.</b>
Net	10	23

### WARRANTY

One year parts and labor.

## ORDERING INFORMATION

For price information: Outside the U.S. contact your local Tektronix representative, inside the U.S. see the price list in the back of this catalog.

### 1502C

Metallic TDR.

**Includes:** Operator's Manual (070-7169-01), 50  $\Omega$  BNC Terminator (011-0123-00), Precision 50  $\Omega$  Cable (012-1350-00), BNC Female-to-Female Adapter (103-0028-00), Accessory Pouch (016-0814-00), Option Port Cover (200-3737-00), Calculator Slide Rule (003-0700-00), AC Power Cord, Spare Fuse, Internal Battery (040-1276-01).

### 1503C

Metallic TDR.

**Includes:** Operator's Manual (070-7323-02), 50  $\Omega$  BNC Terminator (011-0123-00), Precision 93  $\Omega$  Cable (012-1351-00), BNC Female-to-Female Adapter (103-0028-00), BNC Female-to-Clip Leads Adapter (013-0261-00), Accessory Pouch (016-0814-00), Option Port Cover (200-3737-00), Calculator Slide Rule (003-1419-00), AC Power Cord, Spare Fuse, Internal Battery (040-1276-01).

### OPTIONS

**Opt. 04 –** YT1 chart recorder.

**Opt. 05 –** Metric default.

**Opt. 06 (1503C) –** Live Ethernet testing.

**Opt. 08 (1503C) –** Token ring adapter.

**Opt. 09 (1503C) –** USOC/EIA568/Token ring (RJ45) adapter.

**Opt. 10 (1503C) –** Token ring interface.

### INTERNATIONAL POWER PLUGS

**Opt. A1 –** Universal Euro 220 V, 50 Hz.

**Opt. A2 –** UK 240 V, 50 Hz.

**Opt. A3 –** Australian 240 V, 50 Hz.

**Opt. A4 –** North American 240 V, 60 Hz.

**Opt. A5 –** Switzerland 220 V, 50 Hz.

See page 619 for description.

### RECOMMENDED ACCESSORIES

**Additional Internal Battery –** 040-1276-01.

**YT1 Chart Recorder –** YT1S.

**SP232 RS-232 Interface Module –** SP232.

**Chart Paper, 1 Roll –** Order 006-7647-00.

**Chart Paper, 25 Rolls –** Order 006-7677-00.

**Chart Paper, 100 Rolls –** Order 006-7681-00.

**1502C Service Manual –** Order 070-7168-02.

**1503C Service Manual –** Order 070-7170-03.

**BNC Female-to-Twisted Pair Clip Leads Adapter (1503C) –** Order 012-0671-02.

**BNC Female-to-Dual Banana Plug Adapter –** Order 103-0090-00.

**BNC Male-to-Dual Binding Post Adapter –** Order 103-0035-00.

**BNC Female-to-N Male Adapter –** Order 103-0045-00.

**BNC Female-to-F Male Adapter –** Order 103-0158-00.

**BNC Male-to-N Female Adapter –** Order 103-0058-00.

**BNC Male-to-UHF Female Adapter –** Order 103-0032-00.

**BNC Female-to-UHF Male Adapter (1503C) –** Order 103-0015-00.

**BNC Male-to-GR Adapter (1502C) –** Order 017-0064-00.

**BNC Female-to-GR Adapter (1502C) –** Order 017-0063-00.

**BNC Male-to-BNC Male Adapter (1503C) –** Order 103-0029-00.

**BNC Termination, 75  $\Omega$  –** Order 011-0102-01.

**BNC 50  $\Omega$ /75  $\Omega$  Adapter (1502C) –** Order 017-0091-00.

**BNC 50  $\Omega$ /93  $\Omega$  Adapter (1502C) –** Order 017-0092-00.

**BNC 50  $\Omega$ /125  $\Omega$  Adapter (1502C) –** Order 017-0090-00.

**Token Ring Adapter (1503C) –** Order 015-0500-00.

**USOC/EIA568/Token Ring (RJ45) Adapter (1503C) –** Order 015-0579-00.

**Token Ring Interface (1503C) –** Order 015-0600-00.

**10 Base T/Starlan Adapter (1503C) –** Order 015-0578-00.

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