

Metallic Cable Testers

1503C • 1502C



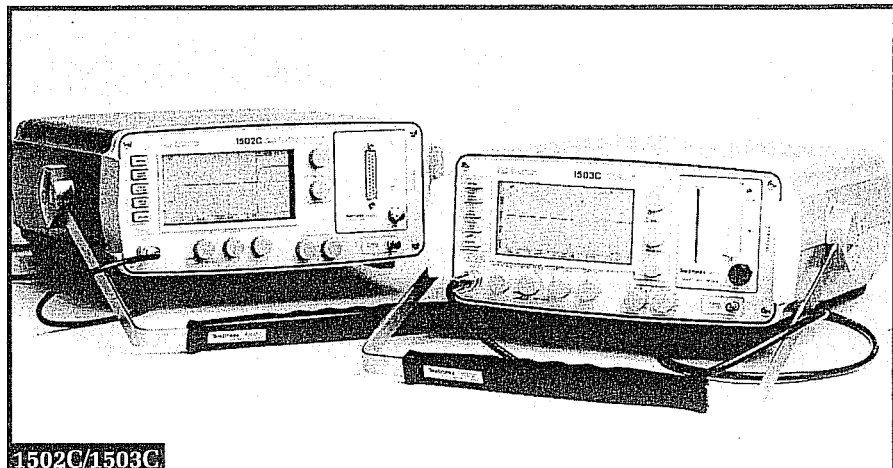
Features

- Backlit LCD Display Assures Sharp Images in any Lighting Condition
- Menu-Driven Operation for Easy Test Set-Up
- Help Screens Provide Information on Instrument Operation and Measurements
- Information Screens Provide Cable Impedance and Vp Values
- Digital Filtering Reduces Displayed Noise, Resulting in a Cleaner Waveform Display
- Vertical and Horizontal Delta Modes Allow Easy Delta Measurements
- Waveform Storage Allows Comparison of the Current and Previously Recorded Waveform
- Ohms at Cursor Allows Direct Readout of Characteristic Impedance
- Rugged and Portable – Designed for Field Use
- Optional Chart Recorder Provides Hard Copies of Results



Applications

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



1502C/1503C

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 Ω cable with a Vp of 0.66, the 1502C allows the determination of 0.5 Ω 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 Ω ; the 1502C measures 50 Ω impedance only.

TYPICAL CABLE MEASUREMENTS

- Distance to faults
- Cable propagation velocity
- Cable return loss in dB
- Faulty taps and unterminated line in LAN and CATV networks

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 Ω load.

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

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

Output Impedance –

1503C: 50 Ω , 75 Ω , 93 Ω , 125 Ω .

1502C: 50 Ω .

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

Electrostatic Discharge Protection (1502C) – 1 kV/500 pF/1 k Ω .

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).

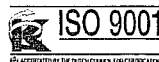
1502C: 0.05 in. (0.12 cm).

Noise Filtering – 1 to 128 averages.

For your local Tektronix representative see the list in the back of this catalog or outside the U.S. call: 1-503-627-1933, inside the U.S. call: 1-800-426-2200.



See Tektronix on the World Wide Web:
<http://www.tek.com>



Tektronix measurement products are manufactured in ISO registered facilities.

Metallic Cable Testers

1503C • 1502C

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.

PHYSICAL CHARACTERISTICS

Dimensions	cm	in.
Height	17	6.5
Width	30	12
Depth	48	19
Weight	kg	lb.
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 Ω BNC Terminator (011-0123-00), Precision 50 Ω 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 Ω BNC Terminator (011-0123-00), Precision 93 Ω 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).

1500C SERIES OPTIONS

Option 04 - YT1 chart recorder.

Option 05 - Metric default.

Option 06 (1503C) - Live Ethernet testing.

Option 08 (1503C) - Token ring adapter.

Option 09 (1503C) - USOC/EIA568/Token ring (RJ45) adapter.

Option 10 (1503C) - Token ring interface.

INTERNATIONAL POWER CORD OPTIONS

Option A1 - Universal Euro 220 V, 50 Hz.

Option A2 - UK 240 V, 50 Hz.

Option A3 - Australian 240 V, 50 Hz.

Option A4 - North American 240 V, 60 Hz.

Option A5 - Switzerland 220 V, 50 Hz.

1500C SERIES RECOMMENDED ACCESSORIES

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 Ω - Order 011-0102-01.

BNC 50 Ω /75 Ω Adapter (1502C) - Order 017-0091-00.

BNC 50 Ω /93 Ω Adapter (1502C) - Order 017-0092-00.

BNC 50 Ω /125 Ω 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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ISO 9001 Tektronix measurement products are manufactured in ISO registered facilities.