

1503B METALLIC TIME DOMAIN REFLECTOMETER (MTDR)

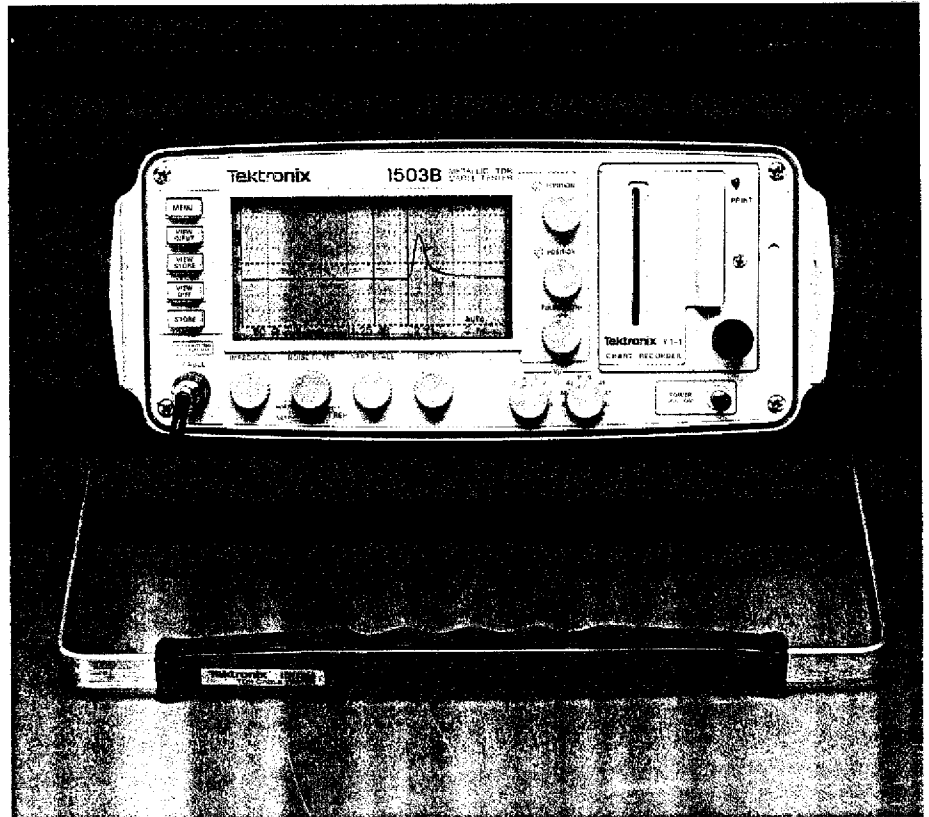
The 1503B is designed to quickly and easily locate opens, shorts, crimps and other defects in metallic cables up to 50,000 feet (15,000 meters) in length.

Through a process similar to radar, the 1503B transmits electrical pulses down the cable under test. Impedance changes in the cable reflect some of the pulse energy back to the 1503B. 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.

The 1503B has 2, 10, 100, and 1000 nanosecond pulse widths. When using the 2 ns pulse width on 50 ohm cable with a V_p of .66, multiple faults as close as 10" can be detected. Cable impedances of 50, 75, 93, and 125 ohms are selectable for testing different types of cable.

The 1503B features include:

- Rugged and portable, designed for field use.
- Menu-Driven Operation for easy test set-up.
- Help Screens provide information on instrument operation and measurements.
- Information Screens provide cable impedance and V_p values.
- Distance measurements in feet or meters.
- 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.
- Option 06 allows testing on an active Ethernet bus.
- Optional Printer provides hard copies of test results.
- Optional DC Operation eliminates the need for outlets and extension cords.
- Input protection to 400 volts.



TYPICAL CABLE MEASUREMENTS

Cable Return Loss in dB
 Cable Propagation Velocity
 Distance to damage from Opens,
 Shorts, Frays, Crimps and Water
 Faulty Taps and Unterminated Lines
 in LAN and CATV Networks
 Characterizing LAN installations

REPRESENTATIVE USERS

Telephony
 Computer/LAN
 CATV
 Power Companies
 Third Party Maintenance
 Cable Manufacturers
 Airlines

1503B METALLIC TDR SPECIFICATIONS

Test Signal:

1/2 Sine

Amplitude:

-2.5V Terminated
-5.0V Unterminated

Pulsewidths:

2nsec, 10nsec, 100nsec, 1000nsec

Output Impedance:

50 ohm, 75 ohm, 93 ohm, 125 ohm

Input Protection:

±400 Volts (DC – peak AC)

Maximum Range:

50,000 ft/15,000 m

Distance Readout Resolution:

.04 ft/.01 m

Noise Filtering:

1 to 128 averages

Vertical Scale:

0 dB to 63.75 dB gain

Vertical Accuracy:

±3% of Full Scale

Dist/Div:

1 ft/div to 5000 ft/div
.25 m/div to 1000 m/div

Horizontal Accuracy:

2% ± 1 ft/div of measured distance
plus uncertainty in V_d.

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-28800D.

Power:

AC 115/230 volts/DC 12V Battery
Pack or External Options

For further information, contact:

Tektronix, Inc.,
Communications Network
Analyzers Division
P.O. Box 1197
625 S.E. Salmon Street
Redmond, OR 97756, U.S.A.
(503) 923-4415
(800) 833-9200
TLX: 296557
FAX: (503) 923-4434

Africa, Asia, Australia, Canada, Central & South America

Tektronix, Inc.
U.S. Export Sales
P.O. Box 500 D/S 73-323
Beaverton, OR 97077, U.S.A.
Phone: (503) 627-1916
Telex: 4742110 TEK EXP
Fax: (503) 627-6905

Eastern Europe, Near and Middle East

Tektronix Ges.m.b.H.
Doerenkampgasse 7
A-1100 Vienna, Austria
Phone: 43 (222) 68-66-02-0
Telex: 111461 TEK A
Fax: 43 (222) 68-66-00

Tektronix sales and service offices around the world:

Algeria, Argentina, Australia, Austria, Bahrain, Bangladesh, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, People's Republic of China, Colombia, Costa Rica, Cyprus, Czechoslovakia, Denmark, Ecuador, Egypt, Finland, France, Federal Republic of Germany, Ghana, Greece, Hong Kong, Iceland, India, Indonesia, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, South Korea, Kuwait, Lebanon, Malaysia, Mauritius, Mexico, The Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Qatar, Saudi Arabia, Senegal, Singapore, Republic of South Africa, Spain, Sri Lanka, Sweden, Switzerland, Syria, Taiwan, Thailand, Tunisia, Turkey, United Arab Emirates, United Kingdom, Uruguay, U.S.S.R., Venezuela, Yugoslavia, Zimbabwe.

Copyright © 1986, Tektronix, Inc. All rights reserved. Printed in U.S.A. Tektronix products are covered by U.S. and foreign patents, issued and pending, information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks. For further information, contact: Tektronix, Inc., P.O. Box 500, Beaverton, OR 97077, Phone: (503) 627-7111; TWX (910) 467-8708; TLX: 151754; Cable TEKWSGT. Subsidiaries and distributors worldwide.

ORDERING INFORMATION

1503B Metallic TDR
Option 03 Battery Pack
Option 04 YT1 Chart Recorder
Option 05 Metric
Option 06 Ethernet Testing
Option A1 Universal Euro
220V/16A, 50 Hz
Option A2 UK 240v/13A, 50 Hz
Option A3 Australian 240v/10A,
50 Hz
Option A4 North American
240v/15A, 60 Hz
Option A5 Switzerland 220v/10A,
50 Hz

Included Accessories

1 Operator's Manual (070-6268-00)
1 AC Power Cord
1 50 Ohm BNC Terminator
(011-0123-00)
1 Precision 50 Ohm Cable
(012-0482-00)
1 BNC Connector, Female-to-Female
(103-0028-00)
Accessory Pouch (016-0814-00)
1 Option Port Cover (200-3453-00)
1 Battery Pack Port Cover
(200-3452-00)
1 Calculator Slide Rule (063-1419-00)
1 Spare Fuse

Optional Accessories

Battery Pack (016-0813-00)
YT1 Chart Recorder
Chart Paper (1 roll) (006-7647-00)
Chart Paper (25 rolls) (006-7677-00)
Chart Paper (100 rolls)
(006-7681-00)
Service Manual (070-6269-00)
Adapter, Direct Current
(015-0327-00)
Adapter 50/25 Ohm (017-0090-00)
Adapter 50/75 Ohm (017-0091-00)
Adapter 50/93 Ohm (017-0092-00)
BNC Female-to-N Male
(103-0045-00)
BNC Female-to-Crimp Leads
(013-0076-01)
BNC Female-to-Dual Banana Plug
(103-0090-00)
BNC Female-to-F Male
(103-0158-00)
BNC Male-to-N Female
(103-0058-00)
BNC Male-to-UHF Female
(103-0032-00)
BNC Male-to-Dual Binding Post
(103-0035-00)
Connector, GR-to-BNC Male
(017-0064-00)
Connector, GR-to-BNC Female
(017-0063-00)
Terminator, 75 Ohm BNC
(011-0102-00)

Tektronix
COMMITTED TO EXCELLENCE