

TEKTRONIX

1502B

The Tektronix 1502B is a rugged, portable Metallic Time-Domain Reflectometer (TDR) designed for high-resolution fault location in dual-conductor metallic cables. Operating on a step-pulse system with a fast 200 ps rise time, it is optimized for short-range precision testing of 50 , cables (and others via calibration or impedance adapters) at distances of up to 2,000 feet (625 m).

SPECIFICATIONS

General

Interfaces	Optional RS-232 (Option 05), GPIB (Option 06), or Chart Recorder (Option 04)
Display	High-contrast LCD with electroluminescent (EL) backlighting, 256 × 128 pixels

Physical

Power Supply	90 - 132 VAC or 180 - 250 VAC, 45 - 440 Hz; 12 - 15 VDC; optional Option 03 internal battery
Operating Temperature	-15 to +55 °C °C
Dimensions (W×H×D)	292 × 127 × 432 mm mm

RF and Frequency Specifications

TDR Pulse Rise Time	200 ps
Pulse Type	Step rise
TDR Amplitude	300 mV nominal (into 50 Ω load)

Measurement Performance

Noise Filtering	1 to 128 averages
Ohms-at-Cursor Function	Menu selectable direct impedance readout

Distance-to-Fault (DTF) and TDR Specifications

Maximum Distance Range	2000 ft (625 m)
Distance Readout Resolution	0.004 ft (0.001 m)
Propagation Velocity (Vp) Range	0.30 to 0.99

Test Port and System Interfaces

RF Port Connector Type	BNC female
RF Port Impedance	50 Ω nominal
Option 04 Strip Chart Recorder	Direct printout of displayed waveforms

Data Storage and Software

Internal Waveform Storage	Standard non-volatile trace storage
PC Controllability	Supported via Option 05 (RS-232) or Option 06 (GPIB)

Physical and Environmental Characteristics

Storage Temperature Range	-62°C to +85°C (without internal battery)
Shock and Vibration Compliance	MIL-T-28800 Type III, Class 3, Style C
Relative Humidity Range	95% RH, non-condensing
Weight with Option 03 Battery	10 kg (22 lbs)

Performance

Vertical Sensitivity Range	1 mp/div to 500 mp/div
Horizontal Scale Range	0.1 ft/div to 200 ft/div (0.025 m/div to 50 m/div)

Environmental

Maximum Operating Altitude	4,570 m (15,000 ft)
Maximum Non-Operating Altitude	15,240 m (50,000 ft)

Compliance

Environmental and Ruggedness Compliance	MIL-T-28800D, Type III, Class 3, Style C
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Pulse Characteristics

Step Amplitude	300 mV (into 50 Ω)
Step Rise Time	≤ 200 ps

Time Base

Velocity of Propagation (Vp) Resolution	0.01
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Display

Display Resolution	256 $\times$ 128 pixels
Display Backlight	Electroluminescent

Power Specifications

AC Input Voltage	90 to 132 VAC / 180 to 250 VAC
AC Line Frequency	45 to 440 Hz
Power Consumption	30 W max

Standards & Compliance

Military Specifications	MIL-T-28800D, Class 3, Style C
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TECHNOLOGY

Metallic Time-Domain Reflectometry (MTDR)

APPLICATIONS

Cable fault location, impedance mismatch testing, and length verification for dual-conductor metallic lines

