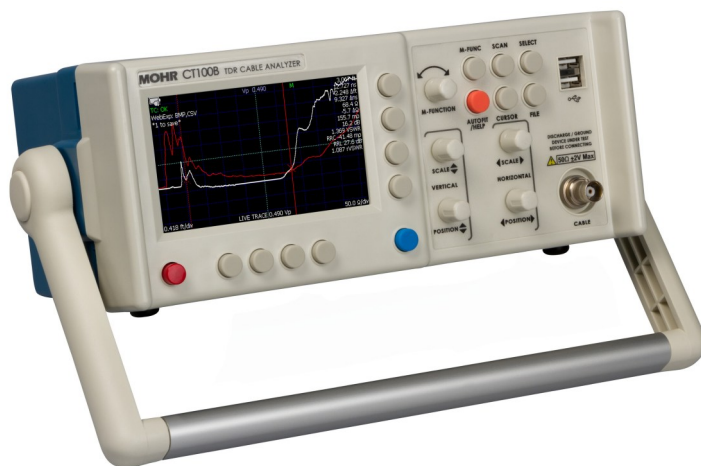


# MOHR™ CT100B Series TDR Cable Analyzers CT100B/CT100HF

## High-Resolution Portable TDR with Frequency-Domain Analysis Tools

Ideal for testing all types of metallic cables and connectors



### Key Specifications and Features

- DC to 8 GHz frequency equivalent
- Rugged portable TDR with S-parameter tools
- Captures transient and intermittent faults
- Resolves connector detail (< 1 cm separation)
- 0.76 ps cursor resolution (~ 25  $\mu$ m or 0.001 in.)
- Measures up to 250,000 samples per second
- Stores thousands of TDR waveforms
- Built-in help library
- Sunlight-readable color display
- Internet streaming and remote control

**MOHR CT100B TDR Cable Analyzers** provide state-of-the-art TDR measurements in a rugged portable package. These instruments are ideal for precision testing of all types of coaxial, twisted-pair, and multiconductor cables in the field or the lab.

### Features and Benefits

#### Industry's Best Cable Fault Sensitivity

- Detect subtle cable and connector faults with industry-leading vertical sampling resolution.
- Measure cable length and localize faults with 25 micron (approximately 0.001 in.) precision.
- Resolve cable, interconnect, and PCB features located less than 1 cm apart.

#### High-Resolution Cable Waveforms and Scanning

- View or scan a cable at high resolution.
- Store cable records of up to 1.5 million points.
- Compare multiple traces on the device or using the provided CT Viewer™ 2 software package.

#### Industry's Only Portable TDR with S-Parameters

- Measure S-parameters and estimate frequency-specific return loss ( $S_{11}$ ) and cable loss.<sup>†</sup>
- Measure return loss between cursors to isolate specific features (e.g., connector or cable fault).
- Visualize results using real-time frequency-domain plots, Smith charts, and normalized TDR traces.

### Capture Transient and Intermittent Faults

- Collect up to 500 waveforms per second.
- Identify and localize intermittent faults that other instruments would miss.
- Capture faults using the CT100B Envelope Plot mode.
- Record waveform movies with CT Viewer™ 2.

### Versatile Connectivity Options

- USB and Ethernet connectivity
- Live network streaming and remote control

### Measurement Features

- Digital filtering and exponential smoothing
- Dual cursors
- Pass/fail mask testing
- Cable systems with multiple Vps.
- Display-independent resolution

### Ergonomics for Easy Use

- Rugged, portable, and compact (< 5 lbs. / 2.2 kg)
- Long battery life with built-in charger
- Bright daylight-readable color display

### Applications

- Aerospace / Aviation
- Naval / Marine
- CATV, Power, Telephony
- Wireless Infrastructure
- PCB Impedance Measurements
- TDR Sensors (Soil Moisture, Geophysics)
- Tank Farms

<sup>†</sup> Availability of features and bandwidth may vary depending on application and on instrument configuration.

## Specifications

### TDR System Characteristics

Front Panel Connector (CT100B): self-shorting BNC  
Front Panel Connector (CT100HF): SMA  
Excitation Signal: Step-rise, 300 mV into 50  $\Omega$  load  
System Risettime (20-80%, typ.): 50 ps  
Timebase Resolution: 0.76 ps  
Timebase Random Jitter (typ.): < 1 ps rms  
Timebase Non-Linearity (typ.): < 0.1%  
Sample Resolution: 16 bits  
Sequential Sample Rate: 2 kHz - 250 kHz  
TDR Framerate: up to 500 waveforms/second

### Velocity of Propagation (Vp)

Vp Range: 0.250000 to 1.000000  
Vp Resolution: 0.000001

### Horizontal Measurements

Range: 0 - 48,000 ft. (0 - 14.6 km) at Vp of 0.66  
No dead zone. No soft zone.  
Scales: 0 - 3800 ft./div (0 - 1158 m/div)  
Cursor Resolution: ~ 0.001 in. (25  $\mu$ m) at Vp of 0.66  
Accuracy (max): < 1% of measured distance,  
typ. < 1 mm

### Vertical Measurements

Range: < 0.1  $\Omega$  to > 1500.0  $\Omega$   
Available Units: mRho, VSWR  
Resolution:  $\leq$  0.1  $\Omega$ , depending on scale  
Accuracy:  $\pm$ 3% full scale, short to open

### Measurements and Transforms

Measurements: time-to-fault, distance-to-fault, ohms-at-cursor, reflection coefficient, return loss,  $\Delta$ time,  $\Delta$ distance,  $\Delta$ ohms,  $\Delta$ reflection coefficient, relative return loss  
Waveform Processing: smoothing, subtraction, 1st derivative, FFT,  $S_{11}$  parameter, impedance

### Special Features

Functions: AutoFit™, Envelope Plot mode, Masks  
Documentation: Built-in help library, on-device manual  
Libraries: Waveform library, cable-type library

### Data Storage

4+ GB flash memory, stores thousands of high-resolution cable scans and thousands of custom cable types

### Connectivity

USB host/client  
10/100 Mb Ethernet  
Live streaming and remote control of any CT100 Series TDR over Ethernet  
Python-based remote control library

### Display

Sunlight-readable 4.3 in. color display

### Power System

Power: 90-264 VAC, 50-60 Hz using supplied AC adapter  
Battery Power: Internal 2700 mAh 14.4 VDC NiMH battery  
Battery Life: > 6 hours (typical use)  
Battery Charging: < 4 hours (2.5 hours typ.)

### Environmental and Mechanical

Operating Temp.: -30°C to +50°C  
Storage Temp.: -20°C to +60°C  
Dimensions: 4.3 x 11.5 x 6.9 in. (10.9 x 29.2 x 17.5 cm)  
Weight: 4.7 lbs. (2.2 kg), 5.1 lbs. (2.3 kg) with cover

### Regulatory



Complies with all applicable EU directives, as specified by the instrument's Declaration of Conformity.

Complies with Canadian ICES-003

EMC: MIL-PRF-28800F. MIL-STD-461F RE102, CE102. IEC 61000

Shock/Vibration: MIL-PRF-28800F (Class 3)

Temperature/Humidity: MIL-PRF-28800F (Class 3)

Explosive Atmosphere: MIL-STD-810G 511.5 Procedure 1 (+55°C, 0-4600 m)

## Ordering Information

### Models

CT100B  
CT100HF

### Options

CT100-OP-SMA – CT100B SMA test port option  
Region-specific power supplies

### Standard Accessories (Included)

One (1) License CT Viewer™ 2 Software (CT100-S-CTV2-xxx\*)  
Standard Adapters  
Digital Operator's Manuals (CT100B-M-OM-xxx\*)  
Rugged Soft-Sided Carrying Case (CT100-AC-CS)  
External AC Power Adapter / Charger Cable (CT100-AC-PS)  
NIST-Traceable Calibration Certificate (CT100-AC-NISTCC)  
12-Month Standard Limited Warranty

### Optional Accessories

#### General

Small Form-Factor Keyboard (CT100-AC-KBD)  
Hard Carrying Case (CT100-AC-CH)

#### Adapter Kits

SMA Adapter Kit (CT100-AK-SMA)  
BNC Adapter Kit (CT100-AK-BNC)  
Impedance Matching Kit (CT100-IK-BNC)  
MIL-STD-1553B Data Bus Adapter Kit (1553-TRBKIT)  
Ethernet Adapter Kit (CT100-AK-ETH)  
Pin and Socket Probe Kit (CT100-AK-PSP)

\* xxx applies to revision number. Accessory part is incremented per revision.

**MOHR™**

Test and Measurement Solutions for Industry™

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