MIL-810F & MIL-461E Qualified, Handheld Time Domain Reflectometer

Wire Test Solutions: PCI-3160R Handheld TDR

The PCI-3160R high-performance TDR, an improved replacement for the popular Tektronix 1502 series, is packaged in a lightweight, MIL-810F & MIL-461E qualified, handheld form-factor.

TEST SIGNAL

- Step pulse; variable amplitude (up to 5 volts into 50 ohms)
- Variable pulse width, automatically selected with range
- 50 ohm output impedance; standard BNC/SMA connection

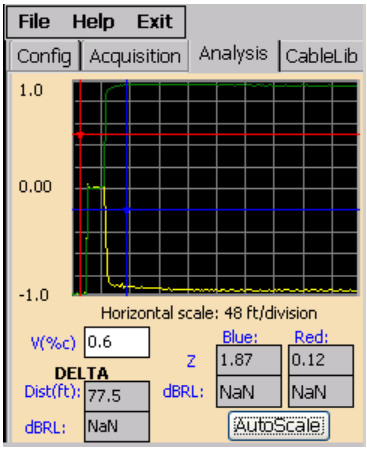
HORIZONTAL PRECISION (TIME BASE)

- 8 selectable ranges: 0 to 60,000 feet (18,000m)
- 0.1% distance resolution (e.g., +/- 3cm for 30m long cable)
- 4,096 data point waveform record

VERTICAL PRECISION (REFLECTION RATIO)

- 10 bit A/D; 1,024 impedance/reflection values

SOFTWARE



- Two versions included: PDA and PC companion program
- PDA software
  - Acquires data; saves and labels waveforms for storage
  - Superimpose up to four stored signatures
  - Built-in cable library stores V_p and characteristic impedance
  - Single cursor reads distance, impedance, and dBRL values
  - Stored signatures transferred to another PC using USB, Bluetooth or wireless 802.11B LAN
- Companion program
  - Superimpose up to eight stored waveforms
  - Two cursors read distance, impedance, and return loss (dBRL)
  - Zoom and pan functions
  - Built-in cable library stores V_p and characteristic impedance
  - Z-template function displays distributed impedance values
  - Print hardcopies of waveforms

BATTERY OPERATION

- Internal rechargeable battery pack provides over 6 hours of continuous operation

PHYSICAL AND ENVIRONMENTAL

- Weight: 1.25 lbs (<1kg)
- Size: 10 in. x 4 in. x 2 in. (250mm x 100mm x 50mm); convenient, ergonomic handle
- Operating temperature -4°F to +140°F (-20°C to +60°C)
- Storage temperature -60°F to +158°F (-50°C to +70°C)
- Qualified to MIL-STD-810F and MIL-STD-461E; CE Mark

OPTIONAL TRANSIT CASE includes an external charger and test lead adapter kit

- MIL-810F qualified transit case organizes all the gear needed to support testing in the field

A Precision TDR in a Handheld Form-Factor

PCI-3160R Specifications

Characteristic	PCI-3160R Handheld TDR System
Test Signal	♦ Step pulse; 50 ohm output impedance ♦ Variable amplitude; 1 V to 5 V ♦ Variable pulse width; automatically selected with range
Range and Horizontal Resolution*	8 selectable ranges; 0 to 61,440 feet (0 to 18.74 km) 4,096 point data record ♦ 0 to 61,440 feet (0 to 18.74 km) – Resolution 15 feet/point (4.6 m/point) ♦ 0 to 30,720 feet (0 to 9.36 km) – Resolution 7.5 feet/point (2.3 m/point) ♦ 0 to 15,360 feet (0 to 4.68 km) – Resolution 3.75 feet/point (1.15 m/point) ♦ 0 to 7,680 feet (0 to 2.34 km) – Resolution 1.8 feet/point (0.55 m/point) ♦ 0 to 3,840 feet (0 to 1.17 km) – Resolution 0.93 feet/point (0.28 m/point) ♦ 0 to 1,920 feet (0 to 585 m) – Resolution 5.5 inches/point (14 cm/point) ♦ 0 to 960 feet (0 to 292 m) – Resolution 2.8 inches/point (7 cm/point) ♦ 0 to 480 feet (0 to 146 m) – Resolution 1.4 inches/point (3.55 cm/point)
Vertical Resolution	10 bit A/D converter; 1,024 values
Software Features	♦ Standard software includes two programs: PDA and companion software ▪ The PDA program performs data acquisition, temporary storage of signatures and limited analysis on the smaller, handheld display. ▪ The companion program is loaded on a notebook or desktop PC to provide advanced analysis features in a convenient desktop environment. ♦ User can define and save up to 10 test configurations (number of averages, range, amplitude) to simplify testing ♦ Cursors are available to automatically calculate distance, impedance, and return loss (dBRL) ♦ Cable Library ▪ Used in PDA and companion software ▪ Contains characteristic impedance and velocity data for military and commercial cables ▪ Users can define additional entries ♦ TDR signatures are saved using in a pseudo-XML format and are self-documenting. Information such as test date, test time, and user comments are stored to capture all test critical parameters.
Controller Features	♦ 625 MHz processor (Intel Bulverde PXA270) ♦ 128 MB RAM; 128 MB Compact Flash for operating system ♦ 4-inch sunlight readable, touch sensitive transflective TFT liquid crystal display ♦ Windows Mobile 6 operating system ♦ Sealed magnesium case ♦ Battery pack provides over 6 hours of continuous operation
Environmental Features	♦ Operating temperature -4°F to +140°F ♦ Storage temperature -60°F to +160°F ♦ CE Mark, IP65 (Dustproof; Splashproof) ♦ Certified to MIL-STD-810F (Environmental) ♦ Certified to MIL-STD-461E (EMI)
Physical	♦ Weight : 20oz (<1kg) ♦ Size: 10 in. x 4 in. x 2 in. (250mm x 100mm x 50mm)

*** Assuming a velocity of propagation (V_p) of 60% of the speed of light**

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