

# Tester Series

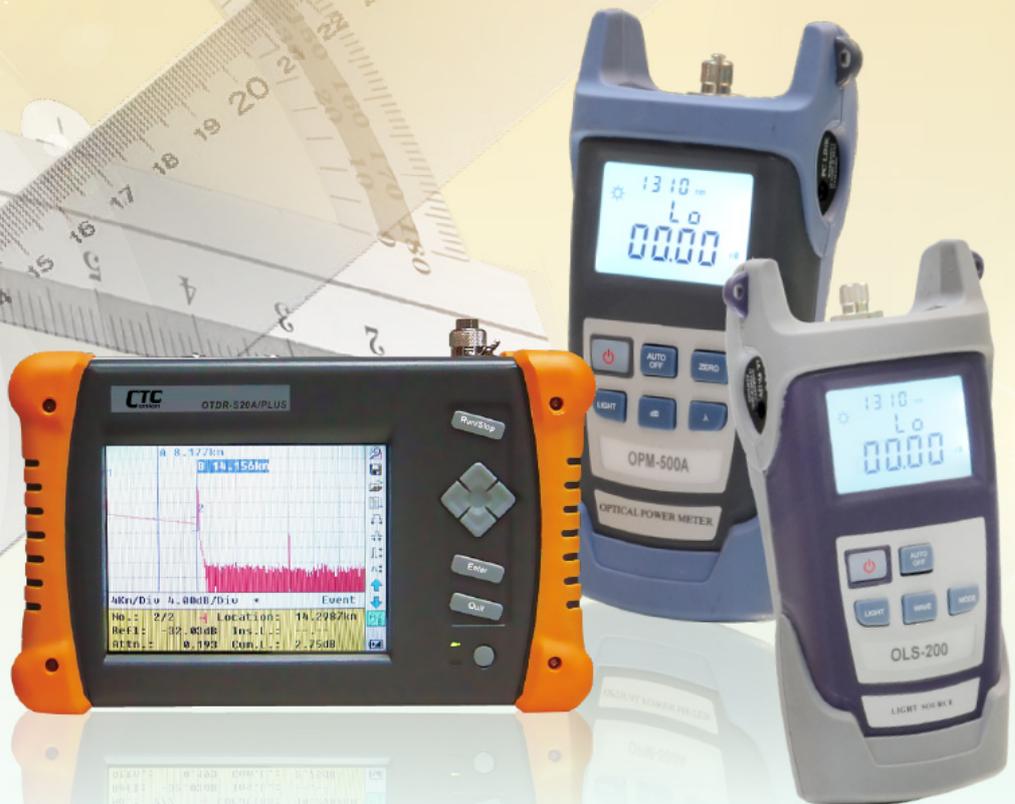
Offers the reliability necessary

Optical Fiber Tester

(OTDR, Optical light source & power meter)

E1 BERT

Protocol Analyzer





# OTDR-30A

## Single Mode Optical Time Domain Reflectometer

The OTDR-30A is an OTDR (Optical Time Domain Reflectometer) based optical fault locator and analysis tool for optical fiber networks. The OTDR-30A supports Single mode 1310nm, 1550nm with Dynamic Range 28/26dB. The OTDR features a light, compact, hand-held design with an intelligent user interface that is easy and quick to use. The color LCD display with bright backlight makes testing work more comfortable and convenient, whether during daylight or in low light conditions. As a fault locating and analyzing tool, the OTDR-30A is much more economical than traditional OTDRs. In addition to its 1000 plus internal curve storage, the OTDR-30A can save and transfer the measurement curves data to a PC via serial or USB port for further analysis or printing with Window based "Trace Manager" software. When set in auto measurement mode, the user can activate the measurement operations easily by the push of only one button. The OTDR-30A is ideal for optical fiber installation, maintenance, field construction, and other on-site fault-location analysis.

### Features

- Ideal for LAN/WAN certification & trouble-shooting
- Fiber length/splice/fiber-end detection
- Handheld & lightweight
- Overall fiber applications:
  - SM: 1310/1550nm(with filter), up to 28dB
  - Quick start: <5 seconds
  - Hotkeys: Easiest operation in the world, push-and-test
  - High precision measurement, 1000 test records storage
- USB/RS-232 data interface
- Bellcore file format (.sor)
- PC software for traces batch editing & flexible printing
- Multilanguage: EN/DE/FR/ES/PT/RU/KR/CN
- 8 hrs continuous operation/20 hrs standby
- Dust-shock proof (2m drop test)

### Specifications

Model Name	Wavelength (±20nm)	Dynamic Range	Event DeadZone(m)	Attenuation DeadZone(m)
OTDR-30A	1310/1550	28/26dB	1.8	8

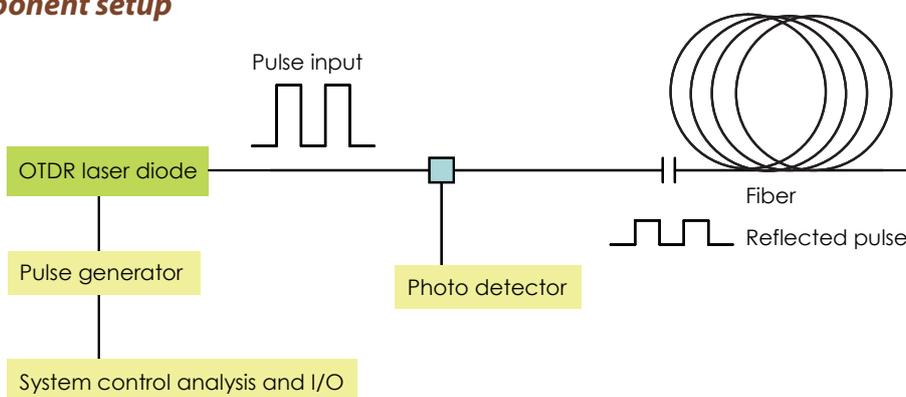
<b>Selectable Range (Km)</b>	0.3,1.3, 2.5, 5, 10, 20, 40, 80, 120	<b>Connector</b>	FC/PC (Interchangeable SC, ST)	
<b>Pulse Width</b>	5ns, 12ns, 30ns, 100ns, 275ns, 1µs, 2.5µs, 10µs	<b>Power Supply</b>	NiMH Battery / AC Adapter	
<b>Averaging Time</b>	15s, 30s, 1min, 2min, 3min	<b>Battery Life</b>	8 hours continuous operation; 20 hours standby (on one charge)	
<b>Distance Measure Accuracy</b>	±(1m + 5×10-5×distance + sampling space)	<b>Operating Temperature</b>	0 ~ 50°C	
<b>Attenuation Detect Accuracy</b>	±0.05 dB/ dB	<b>Storage Temperature</b>	-20 ~ 70°C	
<b>Reflection Detect Accuracy</b>	±4 dB	<b>Relative Humidity</b>	0 ~ 95% (non-condensing)	
<b>Data Storage</b>	1000 records	<b>Weight</b>	1kg (2.2 lbs)	
<b>Connectivity</b>	USB/RS-232	<b>Dimensions</b>	100 x 196 x 60mm (D x W x H)	

#### Visible Fault Locator (Only available with Type B/N and C/N)

Output Power (dBm) ≥ -3

Max Measurement Range 5 Km

### An OTDR component setup



### Ordering Information

Model Name	Description
OTDR-30A	28/26dB, 1310/1550nm, Single mode OTDR tester

# OLS-200

## Optical Light Source



OLS-200, a compact, handheld tester, provides stable laser light source in two different wavelengths for fiber cable testing. By providing the two most popular wavelengths, 1310nm and 1550nm, the OLS-200 is an ideal tester designed for optical fiber networks. When used in conjunction with any third party optical power meter or the OPM-500A from CTC Union, the actual optical attenuation of a fiber link can be determined during pre-installation of active devices or for troubleshooting in-field fiber problems.

### Features

- Highly stable multi-wavelength single mode laser output
- Industry standard and easily adapted FC connector
- Continuous Wave (CW) or Modulation modes
- Selectable wavelengths 1310nm or 1550nm
- Built-in Lithium Ion rechargeable battery
- Works up to 45 hours on full charge
- Auto power off after 10 minutes idle
- Easy to operate via keys and LCD display
- Portable and light weight
- Use with OPM-500A or other third party power meter

### Specifications

<b>Working Wavelength(nm)</b>	1310/1550 (Selectable)
<b>Laser Type</b>	FP-LD
<b>Optical Power Output</b>	-7 dBm
<b>Modulation Frequencies</b>	0 (CW), 270, 1000, 2000Hz
<b>Connector</b>	FC/PC
<b>Temperature</b>	-10 ~ 60°C (Operating) , -25 ~ 70°C (Storage)
<b>Auto shutoff(min)</b>	10

<b>Battery working time(hrs)</b>	45
<b>Dimensions</b>	33 x 100 x 185 mm (D x W x H)
<b>Battery Power</b>	Internal 7.4V 800mAh rechargeable battery 100~240AC Power Adapter/Charger, 8.4VDC@1A output
<b>Weight</b>	295g

### An OTDR component setup



### Ordering Information

Model Name	Description
OLS-200	Optical Light Source, -7 dBm (1310/1550nm)



# OPM-500A/500B

## Optical Power Meter

OPM-500, a compact, handheld tester, provides stable laser light power measurement in five different wavelengths for fiber cable testing. By measuring the most popular wavelengths, 850nm, 980nm, 1300nm, 1310nm, 1490nm and 1550nm, the OPM-500 is an ideal tester designed for active optical fiber networks. When used in conjunction with any third party optical light source or the OLS-200 from CTC Union, the actual optical attenuation of a fiber link can be determined during pre-installation of active devices or for troubleshooting in-field fiber problems.

### Features

- Highly stable laser light level & power measurement
- Industry standard fiber connector adapters for FC
- Backlit LCD display with auto shutoff
- Selectable wavelengths 850 ~ 1550nm
- Built-in Lithium Ion rechargeable battery
- Works up to 48 hours on full charge
- Auto power off after 10 minutes idle
- Easy to operate via keys and LCD display
- Portable and light weight
- Use with OLS-200 or any other third party light source

### Specifications

<b>Model</b>	OPM-500A	OPM-500B
<b>Dynamic Range</b>	-70 ~ +3	-50 ~ +26
<b>Wavelength range(nm)</b>	800 ~ 1700	
<b>Connector</b>	FC/PC (optional SC, ST)	
<b>Working Wavelength(nm)</b>	850, 980, 1300, 1310, 1490, 1550	
<b>Resolution(dB)</b>	0.01	
<b>Temperature</b>	-10 ~ 60°C (Operating), -25 ~ 70°C (Storage)	
<b>Diode Type</b>	InGaAs PIN ph	

<b>Auto shutoff time(min)</b>	10
<b>Battery working time(hrs)</b>	48
<b>Dimensions</b>	33 x 82 x 172 mm (D x W x H)
<b>Power</b>	Internal 7.4V 800mAh rechargeable battery 100~240AC Power Adapter/Charger, 8.4VDC@1A output
<b>Weight</b>	295g



### Ordering Information

Model Name	Description
OPM-500A	850, 980, 1300, 1310, 1490, 1550, -70 ~ +3dBm
OPM-500B	850, 980, 1300, 1310, 1490, 1550, -50 ~ +26dBm

OPM - □□□□  
Example: OPM - 500A

# HCT-BERT/C

## E1/Datacom BER Tester



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E1 BERT

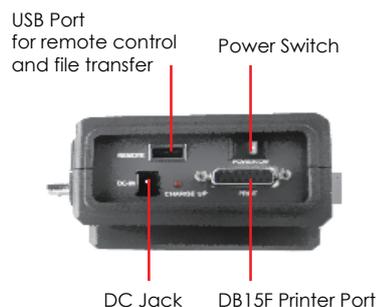
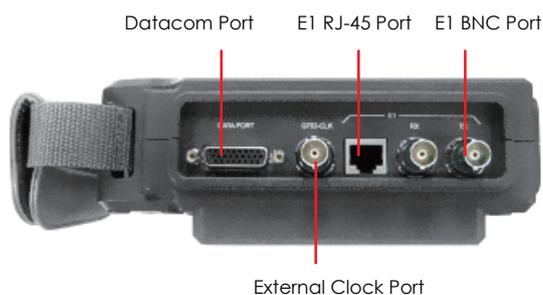
The HCT-BERT/C tester is a compact, color-LCD, graphic-user-interface, single hand E1 Bit error rate tester designed for field use in analysis and maintenance of data communications (V.35, RS530, X.21, RS232) and E1 (2.048Mbps) lines. The HCT-BERT/C performs framed, unframed drop and insert Nx64Kbps, or nx56Kbps data into any time slot. The HCT-BERT/C tester also provides a variety of E1 line statuses, transmission performance testing (BERT) and monitoring. On the E1 line, the HCT-BERT/C may be used as a generator or receiver.

### Features

- Color LCD display graphic mode
- USB port for remote control
- Results Report
- Supports G.821/826, M.2100 BERT analysis
- Sa bits setup and monitor
- Internal Memory storage of test result; Direct display on LCD screen
- Print out via Parallel Printer port
- Portable for field use
- Upgradeable for advanced features
- Rechargeable battery with battery low indicator
- Supports CRC & BPV performance analysis
- Datacom BERT analysis available for V.35, RS-530, X.21 and RS-449
- V.35/ V.24/RS-232/449/530/ X.21

### Specifications

<b>E1 interface</b>	<b>E1 Receiving Interface</b>	<ul style="list-style-type: none"> <li>• Line code: HDB3/AMI</li> <li>• Pulse feature: ITU G.703</li> <li>• Jitter tolerance: ITU G.823</li> <li>• Input port: BNC (non-balance), RJ45 (balanced)</li> <li>• Input mode: Impedance: 75ohm (unbalanced), 120ohm (balanced)</li> <li>• Bridging mode: impedance &gt; 1000 ohm</li> </ul>	<b>Error Rate Test (BERT Test)</b>	BERT Patterns	<ul style="list-style-type: none"> <li>• 511, 2047, 2E15-1, 2E15-1 (reverse), 2E20-1, 2E20-1 (reverse), QRSS, 2E23-1, 2E23-1 (inverted), all 1, all 0, alternate, 1100, 3 IN 24, 1 IN 16, 1 IN 8, 1 IN 4, User programmable 1/2/3</li> </ul>
	<b>E1 Transmission Interface</b>	<ul style="list-style-type: none"> <li>• Line code: HDB3/AMI</li> <li>• Pulse shape: ITU G.703</li> <li>• Pulse amplitude: Nominal 2.37V for BNC 75 ohm Nominal 3.00V for RJ45 120 ohm</li> <li>• Zero amplitude: <math>\pm 0.1</math> V at max</li> <li>• Jitter tolerance: ITU G.823</li> <li>• Output port model: BNC (non-balance), RJ45 (balanced)</li> <li>• Source of clock transmission:               <ul style="list-style-type: none"> <li>Internal clock: 2.048 MHz <math>\pm 50</math>ppm, <math>\pm 100</math>ppm.</li> <li>External clock: receive clock from external clock interface</li> <li>Recovery clock: take clock from received E1 Signal</li> </ul> </li> </ul>		BERT Display Format	<ul style="list-style-type: none"> <li>• Error counting, Alarm counting, ITU G.821, ITU G.826</li> <li>• M.2100, Histogram</li> </ul>
<b>Other Functions</b>	<b>E1 Frame Format</b>	<ul style="list-style-type: none"> <li>• PCM31, PCM31+CRC, PCM30, PCM30+CRC</li> <li>• Unframed mode, Automatic detection</li> </ul>	BERT Transmission Error Rate	<ul style="list-style-type: none"> <li>• Insert one forced error</li> <li>• Fixed error rate of 10<sup>-3</sup>~10<sup>-7</sup></li> </ul>	
	<b>Color Display Screen: Character/graphic mode</b>		Quality Analysis	<ul style="list-style-type: none"> <li>• Receiving seconds, Error seconds, Alarm seconds</li> <li>• Error Free seconds, Error rate, Valid seconds</li> <li>• Severely error seconds, G.821 error seconds</li> <li>• G.826 error seconds, Unavailable seconds</li> </ul>	
	<b>Test Results Report</b>	<ul style="list-style-type: none"> <li>• 100 test results max available in storage</li> <li>• Direct display on LCD screen</li> <li>• Print via printer port available</li> </ul>	Data Port BERT Test	<ul style="list-style-type: none"> <li>• Data rate of the multiple of 64Kbps: N*64Kbps (N=1~36)</li> </ul>	
	<b>Modular Design for Easy Update</b>		<b>Indications</b>	LEDs (DTE, DCE, DATA PORT, TD, RD, DCD, RTS, CTS, DTR, DSR, TC, RC XTC)	
			<b>Power Input</b>	AC100 ~ 240V Adapter to DC 9V 2A	
			<b>Dimensions</b>	179 x 134 x 68 mm (D x W x H)	
			<b>Weight</b>	0.8kg	
			<b>Temperature</b>	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)	
			<b>Humidity</b>	10 ~ 90% non-condensing	
			<b>MTBF</b>	35,000 hrs	



### Ordering Information

Model Name	Description
HCT-BERT/C	E1 / Datacom analyzer

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.



# HCT-7000

## Dual Port E1/Datacom Protocol Analyzer and BERT

The HCT-7000, our flagship tester, is a portable, battery powered E1 and data communication tester, designed for a wide range of protocol analysis and BERT (Bit Error Rate Test) at full E1 speeds (2.048Mbps) and is fully suitable for equipment installations, on-line or off-line diagnostics, debugging, and interface development. The HCT-7000 features a backlit Liquid Crystal Display (LCD), push-button switch keyboard, interface lead indicator LEDs, user replaceable data port interface modules and internal rechargeable Li-Ion battery. The unit includes the Basic Interfaces, basic operational firmware, comprehensive User Guide, universal AC power adapter (100~240 VAC) and a sturdy hard shell carry case.

### Features

- E1, Datacom, Protocol Analyzer and BERT
- Protocols: Frame Relay, SS#7, X.25, PPP (Sync.), V5.1, V5.2, ISDN-D, Sync (BSC), HDLC, SDLC, Async
- Dual pluggable interface ports with available modules:
- Datacom Module: RS-232C/D (V.24), RS-449 (V.36), RS-530, X.21, V.35, E1 Module: G.703 E1 (2048K)
- Supports Centronics printer & control serial port.
- LCD Display: 320x240 graphic (30 lines x 40 characters), with backlight
- Auto Configuration
- Menu driven setup
- ASYNC terminal Emulation
- File Management
- Self Tests and Diagnostics
- Display Modes: Full /Half Duplex Data, Frame / Packet and Lead Status
- Error Check: None, Parity, LRC, CRC-16, CRC-CCITT
- Capture Buffer: SDRAM
- Line Monitor: DTE; DCE; DTE & DCE
- Emulation: DTE; DCE; MONITOR only
- Counters & Timers: 5 each internal counters and timers
- MUX/DEMUX BERT (E1 & Datacom BERT)

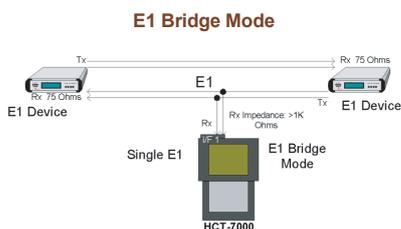
### Specifications

<b>Ports</b>	Data Rate	Async (50 ~ 256Kbps); Sync (150 ~ 2048Kbps)	<b>Indications</b>	System	External power, I/F 1 Error, I/F 2 Error, Paused
	Data Code	ASCII, EBCDIC, HEX, IPARS, Transcode, EBCD		Datacom I/F Module	TD, RD, RTS, CTS, DSR, DTR, DCD, RI, XTC, TC, RC, RL, LL, TM
	Data Length	ASYN Mode: 5,6,7, or 8 bits SYNC Mode: 8 bits		<b>Power Input</b>	AC100~240V adapter to DC 19V/2.9A
	Parity Bit	ASYN Mode:None, Odd, Even, Mark, Space		<b>Dimensions</b>	220 x 275 x 65mm (D x W x H)
	Stop Bits	ASYN Mode: 1, 2		<b>Weight</b>	2.5 Kg
	E1 I/F Module	Signal Present, HDB3, Signal Loss, FAS Loss, AIS, RAI, MRAI, MFAS Loss, CAS Loss, Pattern Loss, Excess Zero, Error		<b>Temperature</b>	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)
		<b>Humidity</b>	10 ~ 90% non-condensing		
		<b>Certification</b>	CE, FCC		
		<b>MTBF</b>	35,000 hrs		

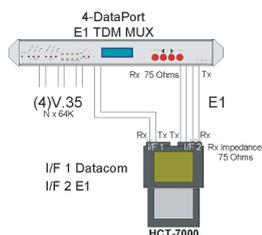
#### Product Overview (Misc.)



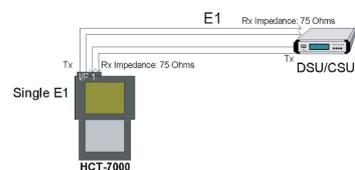
#### Product Overview (Connectors)



#### MUX feature - E1 BERT & Datacom BERT



#### E1 Terminal Mode



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