

*The handheld E1 Bit Error Rate (BER) tester is an ideal device for fast problem resolution, E1 PCM line access, maintenance and acceptance testing.*

## Overview

This E1 BER (Bit Error Rate) tester is a compact, multi-functional, handheld E1 line test instrument, specially designed for R&D, production, installation and maintenance of SDH, PDH, PCM, and DATA protocol conversion. It features self-check and keyboard testing, extensive error and alarm generation, detection and indication. This tester provides smart menu navigation and has a large color LCD screen allowing test results to be displayed clearly. Test results can be downloaded or printed via included software. It is an ideal device for fast problem resolution, E1 PCM line access, maintenance and acceptance testing.



## Features

- ✓ Easy-to-use, handheld design
- ✓ Full-featured measurements of E1, Datacom and Protocol Converter
- ✓ High resolution backlight LCD
- ✓ Smart menu navigation
- ✓ Extensive error and alarm generation, detection and indication
- ✓ Histogram analysis of alarm and error events
- ✓ Save/Recall of up to 10 user-defined set-ups and 10 sets of results
- ✓ More than 6 hours operation with a single battery charge
- ✓ Built-in Ni-MH rechargeable batteries and smart charger circuitry (automobile adaptor included)
- ✓ Upgradable embedded software via an integrated RS232C interface
- ✓ Test results can be uploaded and analyzed with software provided

## **Main Functions**

- 120  $\Omega$  and 75  $\Omega$  line interfaces
- HDB3 and AMI line codes
- Out-of-service framed and unframed testing
- Up to 99 days continuous test performance
- 2 Mb/s, N $\times$ 64 Kb/s BER testing
- Frame data and alarm monitoring
- Clock slip measurement
- Frequency and level measurement
- Testing pattern: PRBS, Fix Code, 16-BIT User Word
- Error injection: Single and Fixed Rate
- Real-time transmit circuit open/short indication
- Manual and auto-timer measurement
- ITU-T G.821, G.826, and M.2100 performance analysis
- In-service framed and unframed testing
- Hi-Z and through mode testing
- CODE, FAS, CRC4, E-Bit BER testing
- Frame data and timeslot activity

- Monitoring
- CAS and CCS signaling monitoring

## Technical Specifications

Internal Clock	2048 kb/s ± 10 ppm
Line Interfaces	75 Ω (Unbalanced), 120 Ω (Balanced); *High Input Impedance >2 KΩ
Line Code	HDB3, AMI
Framing	Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC
Level Measurement	-43 dB to -2.5 dB
TX Clock Source	Internal, Interface
Frequency Measurement	Accuracy: ± 1 Hz
Offset Measurement	Accuracy: ± 1 ppm; Range: -999 ppm to 999 ppm
Test Patterns	PRBS: 2 23 -1, 2 15 -1, 2 11 -1, 2 9 -1 Fixed Code: 1111, 0000, 1010 16BIT: Fully programmable 16-bit word
Alarm Indications	Signal Loss, AIS, Frame Loss, MFrame loss, Pattern Loss, Remote Alarm, Errors, Low Battery
Error Injection	Type: BIT, FAS, CODE, CRC4, E-BIT Single, OFF, Fixed Rate: 10 <sup>-2</sup> , 10 <sup>-3</sup> , 10 <sup>-4</sup> , 10 <sup>-5</sup> , 10 <sup>-6</sup> , 10 <sup>-7</sup>
Performance Analysis	ITU-T G.821, G.826 and M.2100
I/O	USB
Rechargeable Batteries	7.4 V Li battery, continuous working for 8 hours
Recharge Time	Approx. 2 hours
AC Power Adapter	Input: 100 V to 240 VAC, 50/60 Hz; Output: 12 VDC /1.5 A
Dimensions	230 mm × 72/11 mm × 33 mm
Weight	Approx. 500 g

### Packing List

Item	Qty	Item	Qty
E1 BER Tester	1	Embedded Software	1
AC Power Adaptor	1	Software CD	1
Automobile Battery Adaptor cable	1	Waterproof Package	1
75 Ω Unbalanced Test Cable	2	User Manual	1
120 ohm Balanced Test Cable	1	Quality Certificate Card	1
USB Cable	1	Maintenance Card	1
Rechargeable NiMH Battery	1	Packing List	1

### Additional Options

- In-service framed and unframed testing
- Hi-Z and through mode testing
- CODE, FAS, CRC4, E-BIT BER testing
- Frame data and timeslot activity monitoring
- CAS and CCS signaling monitoring

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