

SmartClass™ E1

E1 Service Installation and Maintenance Tester



Key Features

- Easy to use, lightweight, and rugged—ideal for E1 service installation and maintenance
- “Smart” AutoConfig feature means minimal training for field technicians
- Works with PC software—download results for report preparation
- Dual ports for bidirectional monitoring and troubleshooting
- Color Graphical User Interface (GUI) is available in multiple languages
- Pulse shape for extra E1 testing capability

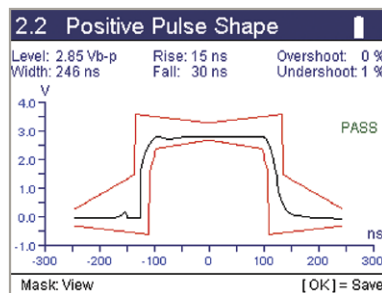


Applications

- Terminate, monitor, bridge, and local loopback modes
- G.703 – 2 Mb/s testing
- 2 M (Bulk), nx64 kb/s BERT
- Performance G.821, G.826, and M.2100
- Audio monitor (VF drop)
- Transmit frequency offset
- VF level and frequency measurements, VF tone insert
- E1 signal-level measurement
- ABCD/Sa monitoring
- Round trip delay
- Alarms (defects) and errors (anomalies) insert
- Pulse shape (optional)
- Remote control (optional)

The JDSU SmartClass E1, the latest member of the SmartClass product family, addresses today’s E1 Service Testing demands. It is an economical, yet easy-to-use handheld point solution suitable for tier-1 field technicians. With its AutoConfig feature and color display, the lightweight, rugged, battery operated tester enables providers and contractors to install and commission service. It also meets the needs of mobile operators in the construction of E1 backhaul infrastructure.

To view the online demonstration of the tester, please visit http://www.jdsu.com/test_and_measurement/products/demos/SMARTCLASS_E1/index.html.



Pulse shape for extra E1 testing capability

Specifications

E1 Circuit Testing

Interfaces

Dual RJ-48 ports (port 1 Rx/Tx, port 2 Rx only)	
120 balanced RJ-48 (by default)	
120 balanced CF, 75 unbalanced BNC (via adapter cable)	
Line Code	AMI, HDB3
Tx Timing	Internal
	Recovered
	External (via adapter cable on Port 2)
Tx Frequency Offset	±100 ppm in 1 ppm intervals
Framing	Unframed, PCM31, PCM31C, PCM30, PCM30C
Test Mode	Terminate, monitor, bridge, local loopback
2M (Bulk), n x 64 kbps BERT	
AutoConfig for framing and test pattern	
LED Indicators	SYNC, ALARM, ERROR, DATA, LPBK, BATT

Performance Monitoring

G.821, G.826 and M.2100
ABCD/Sa monitoring
Round trip delay

Test Patterns

All ones, All zeros
 1:1, 1:3 (1 in 4), 1:4 (1 in 5), 1:7 (1 in 8),
 63 (2⁶-1), 511 (2⁹-1), 2047 (2¹¹-1), ITU INV2¹⁵-1,
 ITU2¹⁵-1, ITU INV2²⁰-1, ITU2²⁰-1, ITU INV2²³-1,
 ITU2²³-1, QBF, QRSS, LIVE, user
 User bit pattern (3 to 32 bits)
 User byte pattern (1 to 64 bytes)

Key Results

Loss alarms, LOS seconds
 code error count, code error rate, timing slips, frame slips,
 LOF alarms, LOF seconds, AIS alarms, AIS seconds, RDI alarms
 RDI seconds, MF AIS alarms, MF AIS seconds, MF RDI alarms,
 MF RDI seconds
 FAS bit error count, FAS bit error rate, FAS word error count,
 MFAS word error count, MFAS word error rate, CRC error Count,
 CRC error rate, CRC sync loss count
 FAS sync loss count, MFAS sync loss count, remote end block
 error (E-Bit/REBE), NFAS word, MFAS word, NMFAS word
 Si bit, A bit, Sa-bit sequence (Sa4-Sa8)
 TSE/bit error count, TSE/bit error rate, block error count
 pattern slips, pattern slip seconds
 pattern synchronization loss count, pattern synchronization
 loss seconds, round trip delay (µs), elapsed time, time, date/
 time-slot Rx byte, time-slot signaling data

Errors (Anomalies) Insert

2M code	Single
2M FAS	Single, 2, 3, 4
2M MFAS	Single, 2
2M CRC	Single
BERT pattern slip	Single
E-Bit/REBE	Single, Continuous
Bit (TSE)	Single-rate 1e-2, 1e-3, 1e-4, 1e-5, 1e-6, 1e-7, Multiple 1 to 50

Alarms (Defects) Insertion

LOS	Continuous
Loss of frame (LOF)	Continuous
AIS	
RDI / FAS Dist	
MF AIS	
MF RDI / MFAS dist	

VF Tests

VF level and frequency measurement	
VF tone insert	404 Hz, 1004 Hz, 2713 Hz, 2804 Hz, -13.0 dBm, -3.0 dBm, 0.0 dBm, 3.0 dBm
VF drop to built-in speaker	

Pulse Shape (optional)

Parameter Specification

Results	Pulse shape graph
G.703 mask	Pass/Fail
Pulse width resolution	2.75 ns
Rise time resolution	1 ns
Fall time resolution	1 ns
Undershoot resolution	1% of nominal level
Overshoot resolution	1% of nominal level
Signal level in [V] base-peak	

Remote Control (optional)

This option allows the user to use command lines to control the tester via serial interface. Command guide is available with the option.

General Specifications

Languages

English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Simplified Chinese, and Spanish

Power

4 AA field-replaceable batteries (NiMH or Alkaline)
 Battery operating (at 25°C) under typical conditions should provide 5 hours of continuous use
 Supports sleep mode
 AC line operation via external adapter
 Charging time (at 25°C) under typical conditions for empty to full charge: with unit OFF up to 5 hours; with unit ON up to 7 hours

Permissible Ambient Temperature

Nominal range of use 0°C to +50°C
 Storage and transport -10°C to +60°C

Humidity

Operating humidity 10% to 90%

Physical Specifications

Size (H x W x D)	230 x 120 x 50 mm
Weight, including batteries	<1 kg (2 lbs)
Display	320 x 240 color display

CE Marked

Ordering Information

Order Number	Description
CSC-E1-P1	SmartClass E1 Package

Accessories Included

AC power adapter with plug kit (USA, UK, Australia, Europe)
 4 x AA NiMH batteries
 CD-ROM (including PC utility, USB driver, and user guide)
 1 x RJ-48 (M) to RJ-48 (M/F) cable
 1 x USB cable
 Small carrying bag

Optional Accessories

RJ-48 to CF-Y cable
 RJ-48 to dual BNC cable
 2M external clock reference cable
 Large carrying bag
 Large strand hook
 Car adapter kit

Software Options

CSC-E1-PS	Pulse Shape
CSC-E1-RC	Remote Control

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