



## Features:

- DSU functionality integrated with an intelligent CSU in a compact package.
- Supports up to 2 customer equipment interfaces including E1 ICSU, serial DTE, router, and G.703 (Co-directional).
- Up to 31 WAN ports with aggregate data rate of 2.048M bps
- Supports SNMP Network Management Systems.
- Supports In-band Management
- Connection to LAN/WAN, CAD/CAM, or Hosts to E1 Network Services.
- Local control and diagnostic via RS232 port or 2-line by 16-character LCD & keypad.
- Router - 10/100 BaseT auto selection. Multicolor LED indicators.

# Loop-E1500 CSU/DSU Series Standalone

## Description






Loop Telecom's Loop-E1500 CSU/DSU product series provide an economic solution to E1 network access cost, when only a partial of 31 DS0 channels is needed. Clear channel (32 DS0 channels) is also available. This product series support HDB3 (High Density Bipolar 3) coding and provide continuous error checking, performance polling, and in-service diagnostics. Customer equipment interface include E1 ICSU, serial DTE, Co-directional DTE, and router. With DTE port operating from 56 Kbps to 2048 Kbps, Loop-E1500 CSU/DSU allows users to interconnect LANs and WANs, CAD and CAM, video conference, mainframe hosts, and others. With router interface, users can connect LAN to WAN directly without additional bridge/router.

Loop-E1500 CSU/DSU series support local control and diagnostics using a 2-line by 16-character LCD display and keypads or RS232 console port. This allows users to execute in-service diagnostics and fault isolation. An in-band management channel with GUI is available. The Loop-E1500 CSU/DSU also provides multicolor LED indicators on the front panel. Using SNMP Network Management Systems and Telnet connection, users can remotely control and diagnose Loop-E products from anywhere.

## Ordering Information

To specify options, choose from the list below.

**Note:** RoHS compliant units are identified by the letter **G** appearing immediately at the end of the ordering code.

Model (non RoHS compliant)	Model (RoHS compliant)	Description
Loop-E1500-2S-port-ww-SNMP-pp	Loop-E1500-2S-port-ww-SNMP-pp-G	Base Unit with In-band, 1-Interface port, and SNMP
Loop-E1500-2S-port-port-ww-SNMP-pp	Loop-E1500-2S-port-port-ww-SNMP-pp-G	Base Unit with In-band, 2-Interface ports, and SNMP
<b>Accessories</b>		
<b>Tray</b>		
61.000015.A00	61.000015.A00-G	19" Tray (One tray for two base units)
81.TRAY23.000	81.TRAY23.000-G	23" Tray (One tray for two base units)
<b>Power Cord (All power cords are RoHS compliant.)</b>		
Loop-ACC-PC-USA	AC power cord for Taiwan/USA	
Loop-ACC-PC-EU	AC power cord for Europe	
Loop-ACC-PC-UK	AC power cord for UK	
Loop-ACC-PC-AUS	AC power cord for Australia	
Loop-ACC-PC-CH	AC power cord for China	
<b>User's Manual</b>		
Loop- E1500-2S-UM	User's Manual (paper, hard copy-optional). A CD version of the manual is already included as standard equipment.	

Where **port=**

port	non RoHS compliant	RoHS compliant	Description
<b>11</b>	Available	Available	V.35 DTE interface with M34 connector <b>NOTE:</b> With M34 connector, only one interface port allowed.
<b>22</b>	Available	Available	V.35 DTE interface with DB25 connector
<b>33</b>	Available	Available	EIA530 DTE interface
<b>44</b>	Available	Available	X.21 DTE interface
<b>55</b>	Available	Available	RS232 DTE interface
<b>66</b>	Available	Available	RS449/V.36 DTE interface via one conversion cable
<b>E1</b>	Available	Available	E1 interface
<b>RT</b>	Available	Available	Router interface <b>NOTE:</b> Two Router interfaces for one base unit are available for special orders.
<b>CD</b>	Available	Available	Co-directional interface with RJ48 connector
<b>BR</b>	Available	Available	Bridge interface

Where **ww=** (For E1 option only)

ww	non RoHS compliant	RoHS compliant	Description	Note
<b>75</b>	Available	Available	75 ohm BNC E1 interface	<b>NOTE:</b> All 75 ohm BNC E1 interface and 120 ohm Twisted Pair RJ48C E1 interface are RoHS compliant.
<b>120</b>	Available	Available	120 ohm Twisted Pair RJ48C E1 interface	
<b>RF</b>	Available	Not available	75 ohm RF-coaxial E1 interface	

**pp** = **DC** for 20 to 60 Vdc power source  
**AC** for 90 to 250, 50/60 Hz Vac (For AC, choose an appropriate power cord.)

Example:

Loop-E1500-2S-22-RT-75-SNMP-DC

V.35 DTE interface with DB25 connector, Router interface, 75 ohm BNC, and SNMP. Power is DC.

## **LOOP-E1500 CSU/DSU SERIES PRODUCT SPECIFICATIONS (Standalone)**

### **Network & Customer Interface (E1)**

Line Rate	2.048 Mbps $\pm$ 50 ppm
Line Code	AMI / HDB3 (selectable)
Framing	ITU G.704, Unframed clear channel
Input Signal	ITU G.703
Output Signal	ITU G.703
Jitter	ITU G.823
Electrical	75 $\Omega$ coax/120 $\Omega$ twisted pair
Connector	BNC/RJ48C (specify on order)

### **Data Port Interface**

Data Port	Single port per card, DCE
Data Rate	n * (56 or 64) Kbps ( n = 1 - 31)
Connector	M34 for V.35 DB25S for V.35, RS232, and EIA530 DB15S for X.21 DB37 for <a href="#">RS449/V.36</a> via conversion cable

### **Co-directional Interface**

Interface	ITU G.703 64 Kbps co-directional interface
Line Distance	Up to 500 meters
Loopback	DTE Payload Loopback, DTE to Line Loopback
Impedance	120ohm
Connector	RJ48

### **Router Interface**

Number of port	1
Physical Interface	10/100 BaseT
Routing Protocol	RIP-I, RIP-II
Data Rates	n x 64 Kbps up to E1 capacity (n=1 to 31)
Supporting Protocols	TCP/IP, PPP, NAT
Management	VT-100, SNMP, LCD Panel
Function	Natural Mask/ Non-natural Mask
Connector	RJ45

### **WAN Interface**

Number of ports	Up to 31 WAN ports
Date Rate	Each WAN port has data rate nX64K bps, 1 $\leq$ n $\leq$ 32
Protocol	Layer-two protocol: HDLC, PPP
Functions	The total bandwidth of all 31 WAN ports is up to 2.048Mbps Each interface can be configured as a bridge port or router port

### **Bridge Interface**

Number of port	1
Physical Interface	10/100 BaseT; IEEE802.3
Bridge protocol	HDLC encapsulation without Ethernet FCS
Data Rates	N x 64 Kbps up to full E1 capacity (N = 1..32)
Ethernet functions	Auto MDI/MDIX Auto-negotiation (10/100M) Full/half duplex IEEE802.1d self learning, up to 4K MAC addresses
VLAN	Transparent and extended frame size of 1532bytes
Connector	RJ45

### **DS0 Mapping**

Maps	2 sets of DS0 maps with provision for timed automatic switching between the 2 maps
Remote Send	Send active DS0 maps to remote site

### **Inband Management**

Management Protocols	HDLC, PPP
Channel	Channel selectable

### **Performance Monitor**

Performance Store	Last 24 hours performance in 15-minute intervals and last 7 days in 24-hour summary line, user, and remote site
Performance Reports	Date & Time, Errored Second, Degraded Minutes, Unavailable Second, Bursty Errored Second, Severe Errored Second, Controlled Slip Second, and Loss of Frame Count
Alarm History	Date & Time, Alarm Type (i.e. Master Clock Loss, RAI, AIS, LOS, BPV, ES, CSS), and Location (i.e. line, DTE)
Alarm Queue	Maximum 40 alarm records which record the latest alarm type, location, and date & time
Threshold	Bursty Seconds, Severely Errored Second, Degraded Minutes

### **System Configuration Parameters (All in non-volatile memory)**

Active Configuration	Current working configuration
Stored Configuration	User stored configuration
Default Configuration	Manufacture default configuration (permanent)

### **Console Port**

Connector	DB9S at front panel
Electrical	RS232 interface
Protocol	Menu driven VT-100 terminal, or Embedded SNMP (optional)
Baud Rate	1200, 2400, 4800, 9600, 19200, 38400

### **Diagnostics Test**

Loopbacks	Line Loopback, Payload Loopback, Local Loopback, DTE Loopback, and Router Loopback
Test Pattern	15-bit PRBS, 3-in-24, 1-in-8, 2-in-8, 1:1 patterns
Idle Channel	Use of idle channel to perform PRBS diagnostic test
Remote Loopback	Line Loopback, Payload Loopback, and DTE Channel Loopback (V.54 or Loop proprietary)

### **Front Panel**

Keypad	4-key: left arrow, right arrow, ESC, and ENTER
LCD	2 lines by 16 characters
LED Indicators	

### **Physical/Electrical**

Dimensions	216 x 55 x 285 mm (WxHxD)
Power	100-240Vac, 20 to 60 Vdc, 50/60 Hz, 5 watts
Power consumption	15 Watts (maximum)
Temperature	0 -50°C
Humidity	0-95% RH (NON-CONDENSING)
Mounting	Desk-top stackable

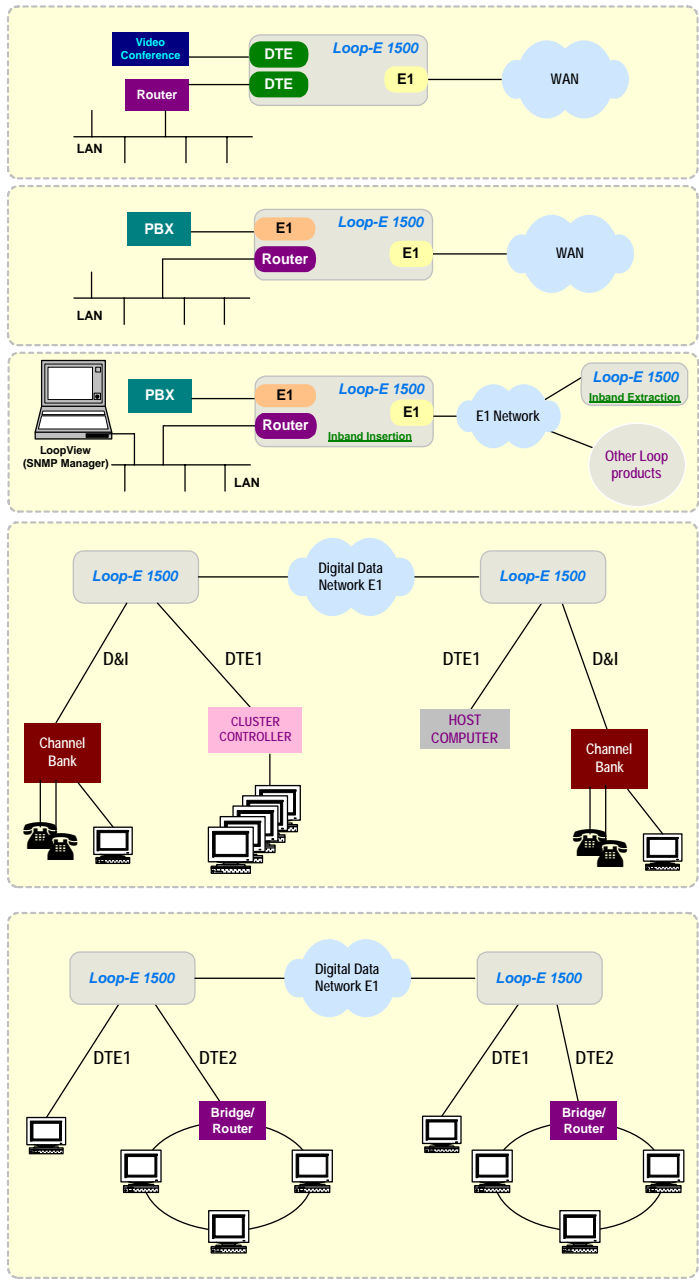
### **Standard Compliance**

ETSI	ETS 300420, ETS 300419
ITU	G.703, G.704, G.706, G.732, G.736, G.823, G.826

### **Certification Compliance**

EMI/EMC	EN55022 Class A, FCC 15 Class A, EN55024
Safety	EN60950

# Application Illustrations



**Loop Telecom**  
LoopTelecom.com

**LOOP TELECOMMUNICATION INTERNATIONAL, INC.**  
**ISO 9001/ISO 14001**

**Worldwide**  
8F, No. 8, Hsin Ann Road,  
Science-Based Industrial Park  
Hsinchu, Taiwan 30078  
Tel:+886-3-578-7696  
Fax:+886-3-564-6272  
www.LoopTelecom.com  
sales@loop.com.tw

**Taipei, Taiwan**  
6F, No. 36, Alley 38, Lane 358,  
Rueiguang Road,  
Neihu, Taiwan 11492  
Tel:+886-2-2659-0399  
Fax:+886-2-2659-2325  
michael\_tzeng@loop.com.tw

**North America**  
8 Carrick Road  
Palm Beach Gardens  
Florida 33418, U.S.A.  
Tel:+1-561-627-7947  
Fax:+1-561-627-6615  
jimber561@aol.com

**Tianjin China**  
No. 240 Baidi Road  
Nankai District  
Tianjin 300192 China  
Tel:+86-22-8789-4027  
Fax:+86-22-8789-0344  
wym@loop-tj.com

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**P.K.T.**  
**P.K. Technologies**  
4 rue Edouard Branly - Immeuble Hermès II  
**78190 TRAPPES - FRANCE**  
Tel: +33 134 521 480 - Fax: +33 134 521 489  
[www.pkt-net.com](http://www.pkt-net.com)