



# Loop-E1500 FE1 CSU/DSU Series Rack Card



## Description

Loop Telecom's Loop-E1500 FE1 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 provide continuous error checking, performance polling, and in-service diagnostics. With DTE port operating from 56 Kbps to 1984 Kbps, Loop-E1500 FE1 CSU/DSU enables users to interconnect LANs and WANs, CAD and CAM, video conference, mainframe hosts, and others.

## Features

- DSU functionality integrated with an intelligent CSU in a compact package
- Connection to LAN/WAN, CAD/CAM, or Hosts to E1 Network Services
- Up to 31 WAN ports with aggregate data rate of 2.048Mbps
- Remote configuration and diagnostics capabilities
- 16 cards per rack
- Multi-color LED indicators per card.
- Compliance with:  
ITU G.703, G.704, G.706, G.732, G.736, G.823  
ETSI ETS 300420, and ETS300419  
EMI/EMC - EN50082-1 EN55022 Class A  
Safety - EN60950

This FE1 CSU/DSU rack card is intended to be plugged into Loop's Loop-C5500 rack cage for central office use. A standalone version is also available and is intended for customer premises installation. For central LAN to several remote LANs over E1s, a low cost solution is also available. Thus, the E1500 bridge or router card can work with Loop IP6610 providing end-to-end enterprise internetworking solution with central SNMP capabilities over E1 or fractional E1.

From the shared common controller card of the rack cage, Loop-E supports configuration and diagnostics using keypads and the LCD display on the front panel, or with a local or remote terminal. This enables users to execute in-service diagnostics and fault isolation. Ten LEDs on the front panel provide both line side and DTE side with status indicators. 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-IR-dte-ww	Loop-E1500-IR-dte-ww-G	Plug-in card for C5500 shelf
<b>Accessories</b>		
<b>User's Manual</b>		
Loop-E1500-IR-UM	User's Manual (paper, hard copy-optional). A CD version of the manual is already included as standard equipment.	

Where **dte** =

dte	non RoHS compliant	RoHS compliant	Description
11	Available	Available	V.35 DTE interface with M34 connector
22	Available	Available	V.35 DTE interface with DB25S connector
33	Available	Available	EIA530 DTE interface
44	Available	Available	X.21 DTE interface
55	Available	Available	RS232 DTE interface
66	Available	Available	RS449/V.36 DTE interface via conversion cable
E1	Available	Available	E1 interface
CD	Available	Available	Co-directional interface with RJ48 connector
RT	Available	Available	Router interface
BR	Available	Available	Bridge interface

**NOTE:** These options, **dte = E1, CD, RT, and BR** are for Loop-E1500-IR plug-in card only.

**ww** =

75 for 75 ohm E1 interface

120 for 120 ohm E1 interface

**Example:**

Loop-E1500-IR-RT = Router interface

**NOTE:** If BNC E1 interface is needed, order Loop-C5500 rack shelf with BNC connectors.

## Loop-E1500 FE1 CSU/DSU SERIES PRODUCT SPECIFICATIONS (Rack Card)

### Network Line Interface (E1)

Line Rate	2.048 Mbps ± 50 ppm	Jitter	ITU G.823
Data Rate	User configurable: n x 64Kbps (n=1 to 31) – ITU G.704 2048Kbps (clear channel) – ITU G.703	Connector	BNC (75 ohm), RJ48C (120 ohm, twisted pair) – see ordering option
Line Code	AMI/ HDB3 (selectable)	Compliance	ITU G.703, ITU G.704 (E1 unframed, E1 framed)
Framing	ITU G.704, Unframed clear channel		
Output Signal	ITU G.703		
Input Signal	ITU G.703		

### Data Port Interface

Data Port	Single DTE per card, 16 cards per rack
Data Rate	n * (56 or 64) Kbps ( n = 1 - 32 )
Connector	M34 for V.35 M34 for V.35 via conversion cable DB25S for V.35, RS232, and EIA530 DB15S for X.21 DB37S for RS449/V.36 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 1
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
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 Transparent and extended frame size of 1532bytes
VLAN	
Connector	RJ45
Compatibility	E1500 standalone, IP-6610 bridge/router

### 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

### 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)

### Diagnostics Test

Loopbacks	Line Loopback, Payload Loopback, Local Loopback, DTE Loopback, Router Loopback
Test Pattern	$2^{15-1}$ 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 and Loop proprietary)

### Front Panel

Multicolor LED indicators
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**Physical/Electrical**

Dimensions 29.5 x 2.7 x 17 cm, 12" x1 " x 7" (WxHxD)  
Power 24 - 48 Vdc, 5 watts per card  
Mounting Plugs into Loop-C 5500 each rack cage can have 16 plug-in units,  
plus controller card  
Temperature 0-50°C  
Humidity 0-95% RH (non-condensing)

**Standard Compliance**

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

**Certification Compliance**

EMI/EMC EN55022 Class A, FCC15 Class A , EN55024  
Safety EN60950



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