



## Loop-V 4200-28

### Integrated Multiservice Access Platform -

OC3/STM1 Access, DS3 Access, CSU/DSU, E1/T1 Converter, & DACS



Loop-V4200-28CH-ET



Loop-V4200-28CH

## Description

Loop-V 4200-28 IMAP series is available in two kinds of shelf: Loop-V 4200-28, which is ANSI standard with connectors front and back, and Loop-V 4200-28ET, which is ETSI standard with all connectors and plugging access from the front. Loop-V 4200-28 is a versatile device with 3 high speed and 28 low speed slots. Loop-V 4200-28ET supports all plug-in cards to be on one side. With one MUX card and one relay card, Loop-V 4200-28ET supports STM1 1+1 protection function, 1:6 T1/E1 interface card protection or 1:6 line protection function.

Depending on the plug-in cards selected, this unit can be configured (a) as an OC3 (STM1/STS3) access device, (b) as a T1/E1 CSU/DSU with drop and insert and voice capabilities, (c) as an E1 to T1 converter (or fractions of them), (d) as a digital cross-connect system (DACS), and (e) as a channel bank. As a CSU/DSU, data from the V.35 or X.21 port can occupy any fraction of an E1 or T1 port. As an E1 to T1 converter, A to  $\mu$  law coding and signaling conversions are correctly handled. For both E1 and T1 ports, continuous error checking, performance polling, and in-service diagnostics are provided. In any of the above combinations, full time slot interchange (TSI) among the ports are possible, making the Loop-V 4200-28 series a small DACS (digital access cross-connect system). All the low speed ports can be muxed to the high speed ports.

The Loop-V 4200-28 series supports local control and diagnostics by using a VT-100 terminal connected to the console port. The Loop-V 4200-28 also series supports Ethernet, Telnet, and SNMP, so it can be controlled and diagnosed from remote locations. The Loop-V 4200-28 series also supports inband Management, where management data is carried the same way as user data, traversing national networks.

Multicolor LEDs provide status indication for power, test condition, and alarm for each of the ports. Internal firmware is stored in flash memory for upgrading firmware by download.

## Features

- 28 low speed plug-in slots.
- 3 high speed plug-in slots for dual redundant OC3/STM1, DS3, or E3 services.
- Multiple plug-in types :
  - T1, E1 interface cards
  - V.35, EIA530, RS232, X.21 interface cards
  - QFXS, QFXO, E&M interface cards
  - MDSL, G.SHDSL interface cards
  - T1/ E1 ATM Frame Relay interface cards
  - Router interface card with Subnet management (SNMC)
  - Terminal server interface card
  - OCU DP interface cardMore are being developed.
- Support STM1 1+1 protection
- Support 1:6 T1/E1 interface card protection or 1:6 line protection
- Usable as an OC3/STM1 Access device, CSU/DSU, E1 to T1 converter, multiple CSUs, or a DACS.
- DS3 Interface supports G.747
- DCS between plug-in ports
- Full TSI capability among all low speed slots in main unit.
- Full time-slot assignment from low speed to high speed ports.
- Remote diagnostic capabilities.
- Management through Console port, Ethernet port, Telnet and SNMP agents.
- Support In-band management and out-band management
- Optional Sub-Net Management facility for remote, inband, management through national networks.
- Multicolor LED indicators for each of the ports.
- Redundant power supply, redundant CPU.
- Firmware field upgradable through download.
- Optional GUI NMS with LoopView.

## Ordering Information

To specify options, choose from list below:

Model	Description	Note
<b>Main Unit</b>		
Loop-V 4200-28CH	Main unit w/ 7-set of Mux cards, w/o CPU and power	Basic Chassis
Loop-V 4200-28ET-CH	Main unit w/ one Mux card and one Relay card, w/o CPU and power	
Loop-V 4200-28ET-MUX	MUX card for Loop-V 4200-28ET-CH only	For Loop-V 4200-28ET-CH only
Loop-V 4200-28CC-T	CPU/DCS card w/ T1 External Clock	Order two for redundancy
Loop-V 4200-28CC-E	CPU/DCS card w/ E1 External Clock	
Loop-V 4200-28CC-SNMP-T	CPU/DCS card w/ SNMP and T1 External Clock	Order two for redundancy
Loop-V 4200-28CC-SNMP-E	CPU/DCS card w/ SNMP and E1 External Clock	
<b>High Speed Module</b>		
Loop-V 4228-STM1-T	1310 nm STM1 interface w/ T1 mapping	Other optical frequency and connector types are available.
Loop-V 4228-STM1-E	1310 nm STM1 interface w/ E1 I mapping	
Loop-V 4228-OC3-T	1310 nm OC3 interface w/ T1 mapping	
Loop-V 4228-OC3-E	1310 nm OC3 interface w/ E1 I mapping	
Loop-V 4228-STM1SEC-T	1310 nm STM1 interface w/ Shelf Expansion Card, w/ T1 mapping	
Loop-V 4228-STM1SEC-E	1310 nm STM1 interface w/ Shelf Expansion Card, w/ E1 mapping	
Loop-V 4228-OC3SEC-T	1310 nm OC3 interface w/ Shelf Expansion Card, w/ T1 mapping	
Loop-V 4228-OC3SEC-E	1310 nm OC3 interface w/ Shelf Expansion Card, w/ E1 mapping	
Loop-V 4228-STM1STC-T	STM1 interface w/ Shelf Terminator Card, w/ T1 mapping	
Loop-V 4228-STM1STC-E	STM1 interface w/ Shelf Terminator Card, w/ E1 mapping	
Loop-V 4228-OC3STC-T	OC3 interface w/ Shelf Terminator Card, w/ T1 mapping	
Loop-V 4228- OC3STC-E	OC3 interface w/ Shelf Terminator Card, w/ E1 mapping	
Loop-V 4228-CBL	Shelf Connection Cable supports up to 2 Expansion Shelves	
Loop-V 4228-HPCel	Hardware Protection Card for DS3/ E3	
Loop-V 4228-DS3-T	DS3 interface w/ T1 mapping	
Loop-V 4228-DS3-E	DS3 interface w/ E1 mapping	
Loop-V 4228-E3	E3 interface	

**Low Speed Module** (Select 1 to 28 cards.)

Loop-V 4200-T1	T1 interface card	
Loop-V 4200-E1	E1 interface card	
Loop-V 4200-E1-MON	E1 interface card (MON.)	
Loop-V 4200-V35	V.35/DB25 interface card	
Loop-V 4200-E530	EIA530 interface card	
Loop-V 4200-RS232	RS232 interface card	
Loop-V 4200-X21	X.21 interface card	
Loop-V 4200-QFXS-x	Quad FXS voice card	
Loop-V 4200-QFXS-M-x	Quad FXS with MP 16KHz voice card	■ GS = Ground Start ■ MP = Metering Pulse TX 12K/ 16KHz ■ For AC, -48Vdc power supply only.
Loop-V 4200-QFXS-M12-x	Quad FXS with MP 12KHz voice card	
Loop-V 4200-QFXS-G-x	Quad FXS with GS	
Loop-V 4200-QFXS-GM-x	Quad FXS with GS and MP voice card	
Loop-V 4200-QFXO-x	Quad FXO voice card	■ GS = Ground Start ■ MP = Metering Pulse RX 12K/ 16KHz
Loop-V 4200-QFXO-M-x	Quad FXO with MP 16KHz voice card	
Loop-V 4200-QFXO- M12-x	Quad FXO with MP 12KHz voice card	
Loop-V 4200-QFXO-G-x	Quad FXO with GS	
Loop-V 4200-QFXO-GM-x	Quad FXO with GS and MP voice card	■ For AC, -24Vdc, -48Vdc power supply only.

**NOTE:** If x is not selected from below table, the default setting for signaling bits is ETSI and for trunk condition is ON-HOOK.

■ where x is used to select version type:

x =	Description	Note
<b>A</b>	follows ANSI signaling bits	
<b>S</b>	follows customer's special bits assignment	
<b>T</b>	trunk condition OFF-HOOK	■ T, AT, ST are for QFXO only
<b>AT</b>	follows ANSI signaling bits w/ trunk condition OFF-HOOK	
<b>ST</b>	follows customer's special bits assignment w/ trunk condition OFF-HOOK	

Loop-V 4200-PLAR	PLAR voice card	
Loop-V 4200-Q2EM-m-Tn	Quad 2 Wire E&M voice card	■ For AC, -24Vdc, -48Vdc power supply only. ■ Where m = B for normal E&M, or TO = A for tandem operation n = 1 to 5 of E&M Signaling Type = O for TO
Loop-V 4200-Q4EM-m-Tn	Quad 4 Wire E&M voice card	
Loop-V 4200-PLM(A)	Phone Line Monitor card (A)	■ For AC, -24Vdc, -48Vdc power supply only.
Loop-V 4200-PLM(B)	Phone Line Monitor card (B)	
Loop-V 4200-MDSL	Multi-rate SDSL	
Loop-V 4200-GH	G.SHDSL interface card	
Loop-V 4200-AFRT	T1 Frame Relay to ATM inter-working or Frame Relay to Frame Relay concentration	
Loop-V 4200-AFRE	E1 Frame Relay to ATM inter-working or Frame Relay to Frame Relay concentration	
Loop-V 4200-RT	Dual LAN port (10 & 10/100 BaseT) Router card, w/ Subnet management (SNMC)	
Loop-V 4200-ODP	OCU DP interface card	

**Power Module**

Loop-V 4228-DC48	Single DC supply (48Vdc)	Order two for redundancy
Loop-V 4228-AC	Single AC supply	

## **Loop-V 4200-28 Integrated Multiservice Access Platform Product Specification**

**NOTE:** See separate data sheets for additional interface cards.

### **CPU & TSI**

Optional redundancy

### **Time Slot Interchange**

Less than 400  $\mu$ s delay

Four available maps (Only one is active)

### **Voice Channel Conversion**

A-law to  $\mu$ -law G.711

CAS Signaling Transparent, (A=0 from E1 becomes A=0 to T1, etc.)

### **Physical**

Dimensions	For V4200-28CH: 43.8 x 22 x 35 cm, 17.24" x 8.66" x 13.78", 10U x 5U x 8U (WxHxD) For V4200-28ET-CH: 43.8 x 26 x 35 cm, 17.24" x 10.14" x 13.78", 10U x 6U x 8U (WxHxD)
Temperature Range	0 – 50 °C
Humidity	0 – 95% RH (non-condensing)
Mounting	Desk-top stackable, 19/23 inch rack mountable
Weight	44.44 lb., (20 Kg) without plug-in cards

### **Electrical Power**

Field changable AC or DC, optional redundant mixed AC or DC

200 Watts

DC : 48 Vdc

AC : 95 to 240 Vac, 50/60 Hz

### **Performance Monitor**

Performance Store	The last 24 hours performance in 15-minute intervals
Monitor Registers	Line, user
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, CS)
Threshold	Bipolar Violation, Errored Second, Unavailable Second, Controlled Slip Second

### **Network Management**

Connector	DB9 at front panel
Electrical	RS232 interface
Protocol	Menu driven VT-100 terminal

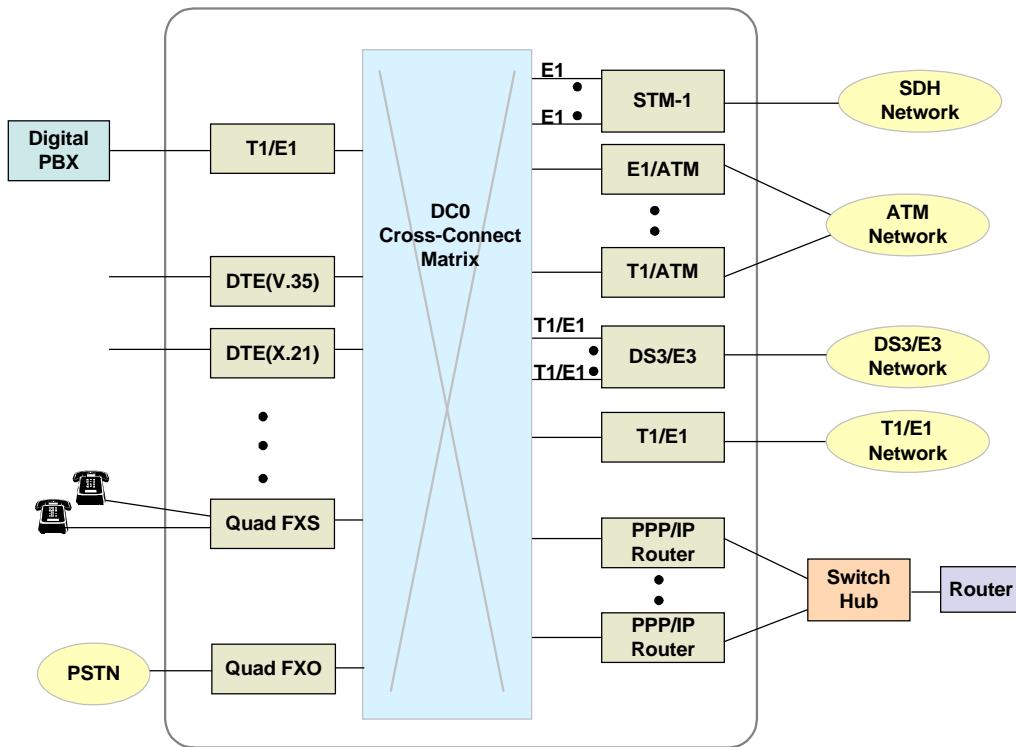
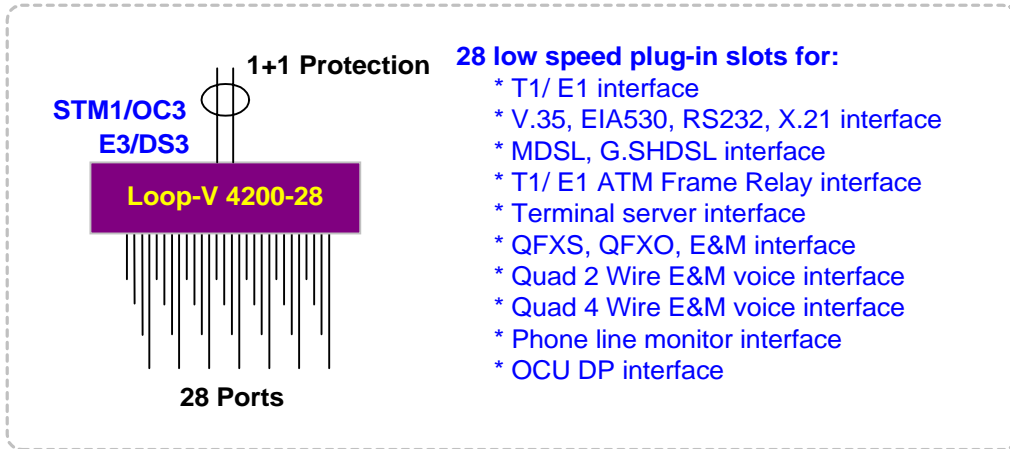
### **Ethernet Port (optional)**

Connector	RJ45 at front panel
Protocol	Telnet and Embedded SNMP

### **Compliance**

EMC/ EMI	EN 55022 Class A, CISPR22 Class A, EN 50082, EN 50081, FCC 15, C-tick
Safety	EN 60950, UL1950, CAN/CSA 22.2 NO. 950, Australia-TS001 & AS/ NZS 60950
Telecom	FCC68, CS-03, CE168X, BABT, Australia TS016 & TNA117
NEBS	GR-1089-CORE, GR-63-CORE

# Application Illustrations



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