



## Product Overview

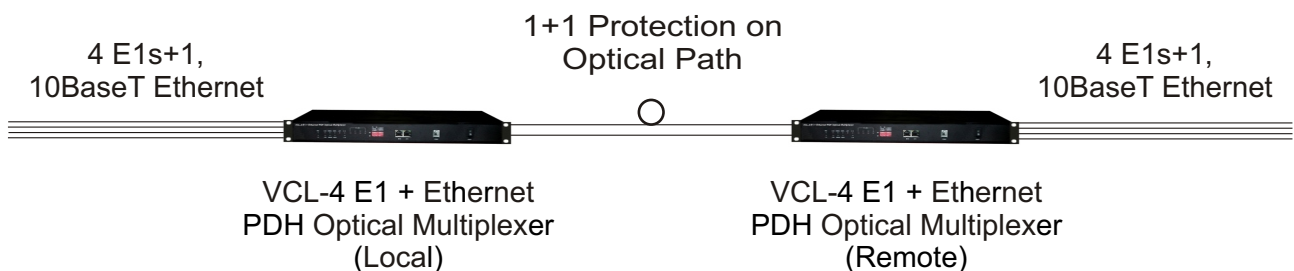
VCL-4 E1 + Ethernet PDH Optical Multiplexer is a point to point high performance optical line transmission equipment, combines 4, ITU-T G.703 compliant standard electrical E1s **plus** 100BaseT ethernet signal into an optical data stream for transport over fiber optic pairs. Several transmitter options for different cable types and wave-lengths are available. 1+1 optical path redundancy is offered and available as an option.



## Features and Highlights

- Integrated E1 Plus Ethernet Optical Multiplexer
- Compact design that performs E1 and Ethernet channel multiplexing & de-multiplexing to an optical output
- Provides visible and audible alarm indication
- Provide Remote power detection (RPD)
- Low power consumption
- Orderwire (EOW) channel for end to end installation and maintenance
- Local and remote loop back test for diagnostics
- 1+1 Fiber Path protection
- ALS (Auto Laser Shutdown) facility for eye safety
- 10/100M Ethernet Port - 100 Mbps Ethernet data transmission rate complies with IEEE802.3
- Supports auto negotiation and flow control (pause)
- Clock options: internal/loop-timed
- Provides visible and audible alarm indications
- Local & remote loopback controls for diagnostics and troubleshooting
- Local configuration management through RS232 Serial Port
- Provide a customer RS232 transparent data channel upto 115.2 Kbps
- Remote configuration and management through 10/100BaseT Ethernet Port - Telnet (english text commands)
- SNMP (V1 and V2C).

## Application Diagram



## Technical Specifications

### E1 Interface

Electrical Interface	E1
Channel Capacity	Upto 4E1
Bit Rate	2.048 Mbps $\pm$ 50 ppm
Line Code	HDB3
Frame Structure	As per G.704
Electrical Interface	As per G.703
Nominal Impedance	120 Ohms balanced / 75 Ohms unbalanced (optional)
Jitter Character	ITU-T G.742, G.823 compliant
Connectors	DB37 interface with RJ-45 connectors (120 Ohms balanced)
	DB37 interface with BNC coaxial connectors (75 Ohms unbalanced)

### Optical Interface

Type of Transmitter	Class 1 Laser
Transmitter power	$\geq$ - 3dBm, $\geq$ - 6dBm, $\geq$ - 9dBm options, as ordered
Bit rate	155 Mbps
Wavelength	850/1310/1550nm (optional)
Optical connector	FC/PC
Receiver Sensitivity	$\leq$ - 36 dBm
Typical output power	$\geq$ -9dBm
Fully Compliant with ITU-T G.957, G.958 Specification	
Class 1 Laser Product, Compliant with IEC 60825-1	
Compliant with Telcordia (Bellcore) GR-468-CORE	

### Safety

- Class 1 Laser
- Auto Laser Shut Down in the event of fiber break.

### Ethernet Interface

#### 10/100BaseT (optional)

Number of Interfaces	1
Interface	RJ45 Ethernet 10BaseT or 100BaseT-TX (auto sensing)
Compliance	Ethernet Version 2.0 IEEE802.3 10Base-T & 100Base-TX Activity, Full/half duplex.
Interface Rate	100 Mbps Ethernet data transmission rate
Connector	RJ-45
Flow Control	Pause

**Order Wire Interface**

Phone set	Standard 2-wire phone set
Bandwidth	64Kb/s
Coding	PCM

**RS232 Interface**

Bit Rate	9600b/s
Data Width	8 Bits
Stop Bit	1 Bit
Parity Check Bit	None
Connector	DB9

**System Management and Access**

- Windows XP and Windows 7 compatible Graphical User Interface (GUI)
- Telnet - CLI (Command Line Interface)
- SNMP V2 (MIB File provided with the equipment).

**Management and Control Ports**

- Serial Management Port (RS232) - COM Port
- 10/100BaseT for remote management over a LAN / TCP/IP network.

**Power Supply**

Power Input	AC, DC, AC + DC
DC Power	DC - 48V (-36~-72V) / DC 24V Optional
AC Power	AC 220V (100~240V)
Power Consumption	12 Watts Maximum

**Environment**

Temperature	- 5°C ~ +55°C for operation
	- 40°C to +70°C for storage
Humidity	5% to 95% (35°C)- non-condensing

**Mechanical**

Width	434 mm
Depth	155 mm
Height	44 mm
Weight	2 kg.
Rack Type	EIA 19-Inch

## Ordering Information

## VCL-4E1 + Ethernet PDH Optical (1+1) Multiplexer without PSUs

S. No.	Part No.	Description	Remarks
1	2041:1-4E1-120-ETH-1310SM-040	VCL-4E1 + Ethernet PDH Optical (1+1) Multiplexer 19" Metal box / case 1U High Rack Mount Version Supports: <ul style="list-style-type: none"> <li>- 4 x E1 [120 Ohm DB37 (M)]</li> <li>- 1 x Ethernet [100Mbps, Electrical RJ45 (F)]</li> <li>- 2 x Optical [155Mbps, Duplex FC, 1310nm, 40Km, Single-Mode, Dual-Fiber</li> <li>- 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set)</li> <li>- OAM: EOW (order wire), SNMP, NMS &amp; Telnet</li> </ul> * Add Power Supply Option from below	CORE UNIT Without PSUs
2	2041:1-4E1-075-ETH-1310SM-040	VCL-4E1 + Ethernet PDH Optical (1+1) Multiplexer 19" Metal box / case 1U High Rack Mount Version Supports: <ul style="list-style-type: none"> <li>- 4 x E1 [<b>75 Ohms DB37 (M)</b>]</li> <li>- 1 x Ethernet [100Mbps, Electrical RJ45 (F)]</li> <li>- 2 x Optical [155Mbps, Duplex FC, 1310nm, 40Km, Single-Mode, Dual-Fiber]</li> <li>- 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set)</li> <li>- OAM: EOW (order wire), SNMP, NMS &amp; Telnet</li> </ul> * <b>Add Power Supply Option from below</b>	
3	2041:1-4E1-120-ETH-1550SM-080	VCL-4E1 + Ethernet PDH Optical (1+1) Multiplexer 19" Metal box / case 1U High Rack Mount Version Supports: <ul style="list-style-type: none"> <li>- 4 x E1 [<b>120 Ohms DB37 (M)</b>]</li> <li>- 1 x Ethernet [100Mbps, Electrical RJ45 (F)]</li> <li>- 2 x Optical [155Mbps, Duplex FC, 1550nm, 80Km, Single-Mode, Dual-Fiber]</li> <li>- 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set)</li> <li>- OAM: EOW (order wire), SNMP, NMS &amp; Telnet</li> </ul> * <b>Add Power Supply Option from below</b>	
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