



# ORION TELECOM NETWORKS INC.

## VCL-4 E1 + Ethernet PDH Optical Multiplexer

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### Product Brochure & Data Sheet

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## Product Description

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.

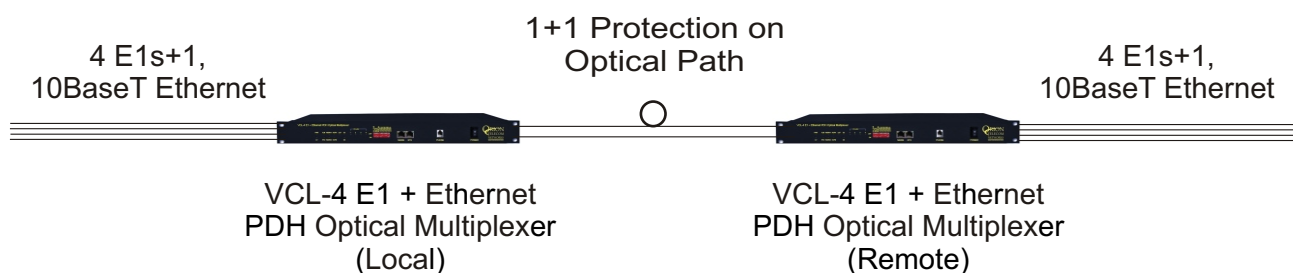
### VCL-4 E1 + Ethernet PDH Optical Multiplexer



## 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 IEEE8 02.3
- 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 VCL-4 E1 + Ethernet PDH Optical Multiplexer



## Technical Specifications

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 $\Omega$ balanced / 75 $\Omega$ unbalanced (optional)
Jitter character	ITU-T G.742, G.823 compliant
Connectors	DB37 interface with RJ-45 connectors (120 $\Omega$ balanced) DB37 interface with BNC coaxial connectors (75 $\Omega$ unbalanced)

## Optical

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	8bits
Stop bit	1bit
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

## Physical

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

## Ordering Information

S. No.	Part No.	Product 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 : - 4 x E1 [ <b>120 Ohms DB37 (M)</b> ] - 1 x Ethernet [100Mbps, Electrical RJ45 (F)] - 2 x Optical [155Mbps, Duplex FC, 1310nm, 40Km, Single-Mode, Dual-Fiber] - 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set) - OAM: EOW (order wire), SNMP, NMS & Telnet <b>* Add Power Supply Option from below</b>	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 : - 4 x E1 [ <b>75 Ohms DB37 (M)</b> ] - 1 x Ethernet [100Mbps, Electrical RJ45 (F)] - 2 x Optical [155Mbps, Duplex FC, 1310nm, 40Km, Single-Mode, Dual-Fiber] - 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set) - OAM: EOW (order wire), SNMP, NMS & Telnet <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 : - 4 x E1 [ <b>120 Ohms DB37 (M)</b> ] - 1 x Ethernet [100Mbps, Electrical RJ45 (F)] - 2 x Optical [155Mbps, Duplex FC, 1550nm, 80Km, Single-Mode, Dual-Fiber] - 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set) - OAM: EOW (order wire), SNMP, NMS & Telnet <b>* Add Power Supply Option from below</b>	
4.	2041:1-4E1-075-ETH-1550SM-080	VCL-4E1 + Ethernet PDH Optical (1+1) Multiplexer 19" Metal box / case 1U High Rack Mount Version Supports : - 4 x E1 [ <b>75 Ohms DB37 (M)</b> ] - 1 x Ethernet [100Mbps, Electrical RJ45 (F)] - 2 x Optical [155Mbps, Duplex FC, 1550nm, 80Km, Single-Mode, Dual-Fiber] - 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set) - OAM: EOW (order wire), SNMP, NMS & Telnet <b>* Add Power Supply Option from below</b>	

**Power Supply Options**

S. No.	Part	Description	Remarks
1	AC220	1 x 100-240V AC Power Supply Input	Any one option.
2	DC048	1 x (-) 48V DC Power Supply Input	
3	ACDC	1 x 100-240V AC Power Supply Input 1 x (-) 48V DC Power Supply Input	

**Cables and Accessories Options**

S. No.	Part	Description	Remarks
1	VCL-HRNS 1260	4E1 120 Ohms Connectorized Cable [DB37F-4RJ45F]	As per Site requirement.
2	VCL-HRNS 1245	4E1 75 Ohms Connectorized Cable [DB37F-8BNCF]	
3	VCL-HRNS 1240	Optical Patch Cord Connectorized Cable [FC-FC, 10m, SM]	
4	VCL-HRNS 1242	Optical Patch Cord Connectorized Cable [FC-LC, 10m, SM]	
5	VCL-HRNS 1276	Optical Patch Cord Connectorized Cable [2FC-2FC, 10m, SM]	
6	VCL-HRNS 1243	Optical Patch Cord Connectorized Cable [2FC-2LC, 10m, SM]	
7	VCL-HRNS 1257	Optical Patch Cord Connectorized Cable [2FC-2SC, 10m, SM]	
8	VCL-ECON 1173	Connector (Attenuator LC-LC (20 db.))	
9	VCL-ECON 1187	Connector (Attenuator FC-FC (20 db.))	
10	VCL-ECON 1198	Connector (Attenuator SC-SC (20 db.))	

Technical specifications are subject to changes without notice.

All brand name and trademarks are the property of their respective owners.

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