



# ORION TELECOM NETWORKS INC.

## **VCL-E3 OLTE 34Mbps OPTICAL LINE TRANSMISSION EQUIPMENT**

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### Product Brochure & Data Sheet

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## VCL-34Mbps E3, OLTE (Optical Line Transmission Equipment)

### Product Description

The VCL- E3-OLTE is a 34Mbps Optical Line Transmission Equipment which converts and transports a ITU-T compliant standard E3, 34Mbps signal on optical fiber. The optical link, between two OLTE terminals is established on one pair of optical fibers. One fiber link is used for Transmit and the other fiber link is used for Receive.

A complete optical line transmission system comprises of two OLTE terminals one at each end of the optical fiber cable.

Both the Local and the Remote terminals can be monitored and controlled by a Windows based GUI (Graphical User Interface), from a single location. TCP-IP option for remote access is also available.

### Front View

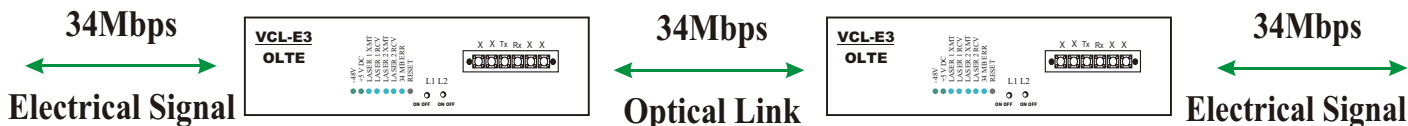


**VCL-34Mbps E3, OLTE  
(Optical Line Transmission Equipment)**

The VCL- E3-OLTE is available in the configuration.

- 34Mbps E3, OLTE (Optical Line Transmission Equipment)

### Front View of Shelf



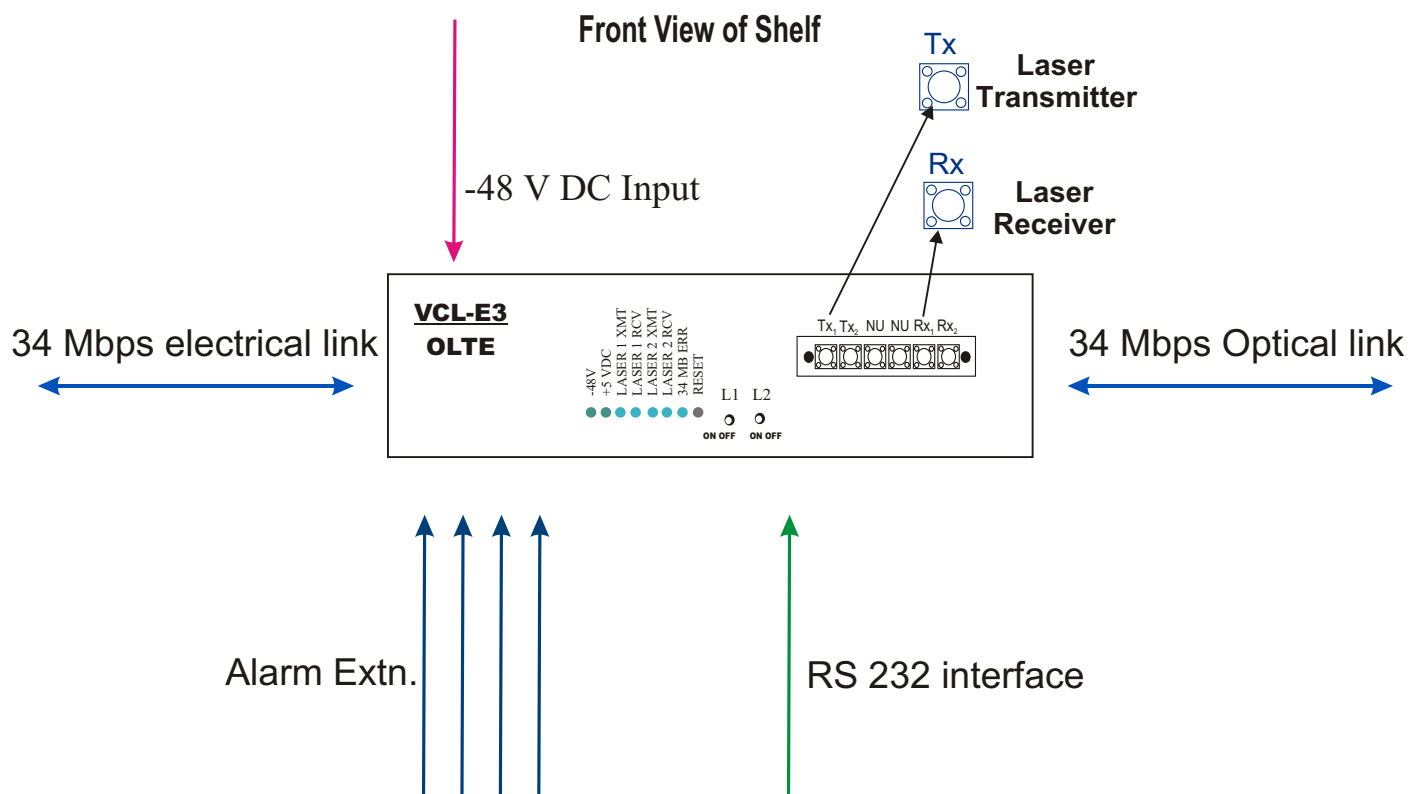
### Features and Highlights

- Single - card implementation
- Standard CCITT (ITU-T) compliant interfaces
- Auto Laser Shut Off facility
- Remote and local terminal monitoring and control through back panel by a Network Management System
- Optional TCP/IP Remote Access for monitoring alarms and management
- Extensive alarms and status indication facility
- Operates on nominal -48V DC input
- Distributed on-board power supply
- Microprocessor controlled with powerful diagnostic facilities for both remote and local systems
- Powered by STM-1 grade Class I Laser - by Lucent Technologies
- Stored program controlled
- Highly reliable and compact

## External Interfaces

VCL-OLTE unit provides the following interfaces to the external world:

- 1, 34Mbps, 75 W unbalanced electrical interface
- 2, 34Mbps, optical interface(s) - only one link is active at a time (optional)
- - 48V input for VCL-OLTE on-board power supply
- RS232 interface for connection to Network Management System, used for configuration and monitoring of VCL-OLTE system.
- 2 alarm extensions for visual and audible alarms.



The LEDs provide the following indications:

Led 1 - -48V

Led 2- +5V DC

Led 3- 34Mbps Link 1 Optical Transmitter

Led 4- 34Mbps Link 1 Optical Receiver

Led 5- 34Mbps Link 2 Optical Transmitter

Led 6- 34Mbps Link 2 Optical Receiver

Led 7- 34Mbps electrical interface (Error)

TX1 Transmit port - Optical link1

TX2 Transmit port - Optical link2

RX1 Receive port - Optical link 1

RX2 Receive port - Optical link 2

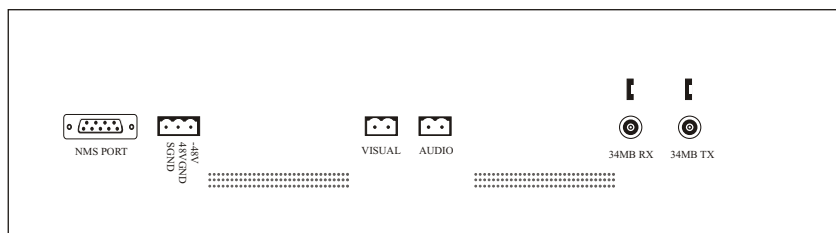
NU Not Used

- L1 is for switching ON/OFF optical transmitter - Link 1

- L2 is for switching ON/OFF optical transmitter - Link 2

## Rear View of Shelf

Mechanical Specification	
Width	480 mm
Depth	280 mm
Height	90 mm
Weight	4.20 kg



## Programming and Monitoring

VCL-OLTE offers programming via an RS232 port for control and monitoring of the terminals. Both local and remote terminals can be monitored and controlled using a PC loaded with the NMS software connected to the local terminal.

### Programming Features

- Programming of 1+1 protection switching
- Auto Laser Shut Off Enable/Disable
- Setting local or remote loopbacks on 34Mbps electrical stream
- Configuring of alarms
- Alarm acknowledgment option

### Alarm Status Monitoring

- Loss of electrical signal at 34 Mbps port
- Auto Laser shut off disabled alarm
- Prompt maintenance alarm
- Status of audible alarm
- Loss of optical signal
- Loss of auxiliary frame signal
- Laser loss alarm
- Laser power alarm
- Laser switched off
- Bit error rate out of limit

### Status Monitoring

- Status of alarms
- Presence or absence of loop-back on 34 Mbps electrical stream
- Enabled/Disabled state of Auto laser Shutoff facility
- Viewing the currently active receiver and reason for switch over to that receiver
- Previous configuration files

### Monitoring VCL-OLTE via LED Indications

- Optical transmitter inactive
- Loss of incoming signal at 34Mbps electrical port
- Loss of incoming signal at 34 Mbps optical port
- +5V failure
- - 48V input failure

In addition to the above monitoring facilities, VCL-OLTE is provided with LEDs, which indicate various fault conditions.

## System Specifications

### Technical Specifications

#### 34Mbps, E3 Electrical Interface

Number	1
Nominal bit rate	34368kbps
Bit rate tolerance	$\pm 20$ ppm
Line code	HDB3
Frame structure	As per G.751
Interfaces	As per G.703
Input Jitter Acceptance	100Hz to 1KHz - $\leq 1.5$ UI 10KHz to 800KHz - $\leq 0.15$ UI
Maximum Output Jitter	$\leq 0.05$ UI
Connectivity	via spinner type connectors
Cable	75W unbalanced
Permissible attenuation	12dB at 17184KHz

#### 34Mbps, Optical Interface

Type of Transmitter	Class 1 Laser
Number	1 (+1) with optical redundancy option
Nominal bit rate	34368kbps
Transmit wavelength	1310nm (standard) 1550nm (optional)
Transmit output	-12dBm (min at *EOL - End of Life) -8dBm (typical) -5dBm (maximum) (other outputs available on request)
Transmit Spectral Width	<4nm
Receive wavelength	1310nm (standard) 1550nm (optional)
Operating wavelength range	Transmitter: 1260nm - 1360nm Receiver: 1100nm - 1600nm
Receiver dynamic range	$\leq 30$ dBm
Receiver sensitivity	-38dBm (typical) -36dBm (min)
Optical Connectors	FC-PC connectors

**Safety**

• Class I Laser
• Meets the optical safety requirements: G958, IEC-825-1 and IEC 825-2
• Auto Laser Shut Down in case of fiber break
• Enabled/Disabled by user

**System Management**

Windows 95 based system Management and control system supplied with the system.
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**Power Consumption**

Power Consumption	9.60 Watt
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**Ordering Information**

Sr. No.	Product Description	Part No.
1.	E3, 34 Mbps Optical Line Transmission Equipment, OLTE/OLTU (-48 V DC input) - Stand Alone - 19-inch Rack Mount Version	234100-RK

Technical specifications are subject to change without notice.  
All brand names and trademarks are the property of their respective owners.  
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