



||| Bhumika International Inc.

VCL-E3 OLTE 34Mbps OPTICAL LINE TRANSMISSION EQUIPMENT

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.

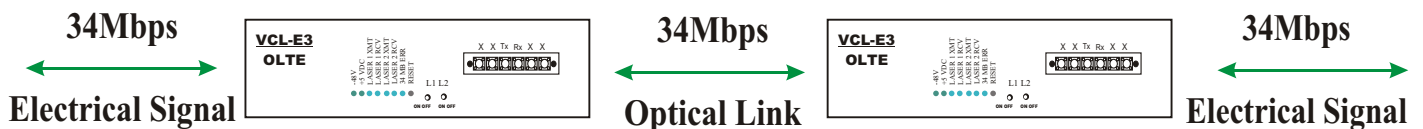
The VCL, E3-OLTE is available in two configurations:

- i) With the option of 1+1 Optical Redundancy (Protection Switching), in which the transmission automatically switches to a STANDBY optical link in the event of a failure of the PRIMARY optical link.
- ii) Without the option of Optical Redundancy (Protection Switching).

Front View



Front View of Shelf



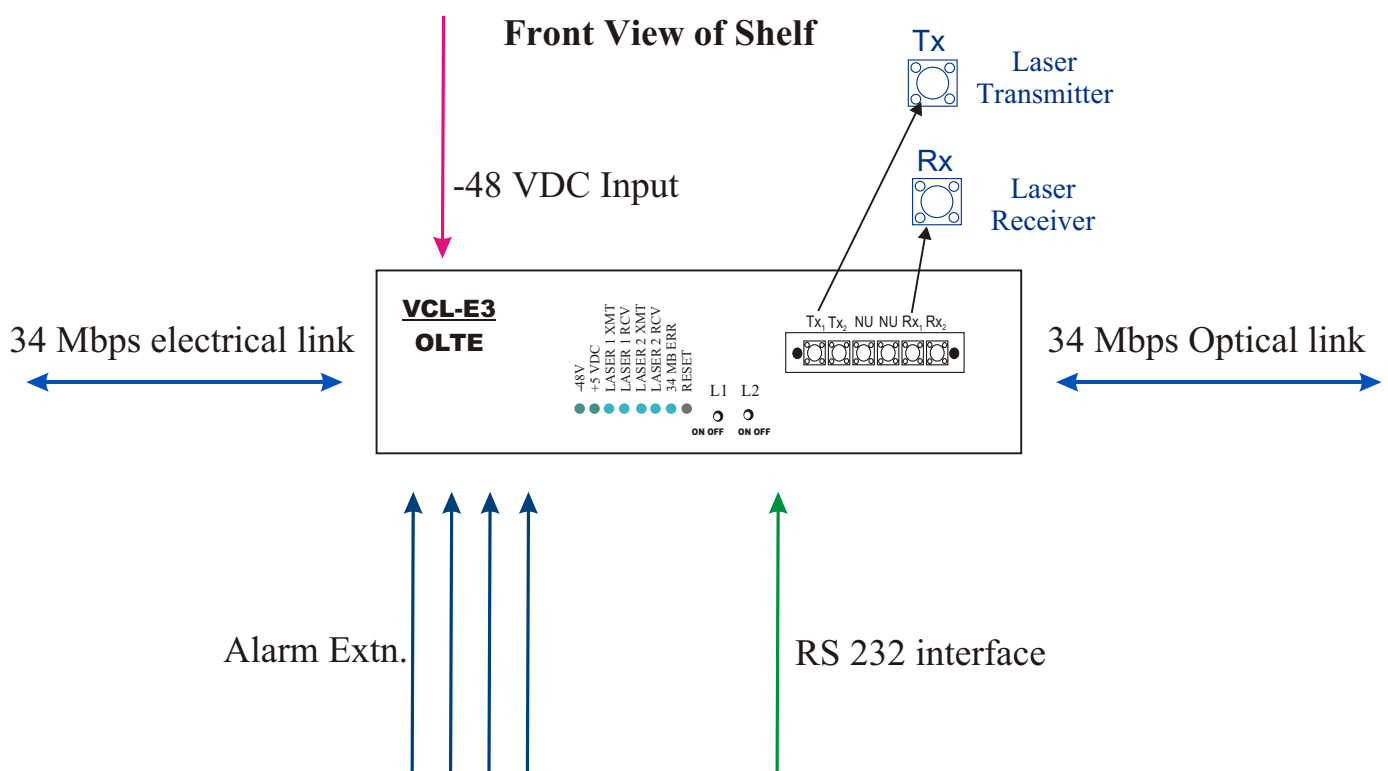
Features & Highlights

- Single - card implementation
- 1+1 Optical Redundancy (Protection Switching) option
- 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 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- +5VDC

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 link 1

TX2 Transmit port - Optical link 2

RX1 Receive port - Optical link 1

RX2 Receive port - Optical link 2

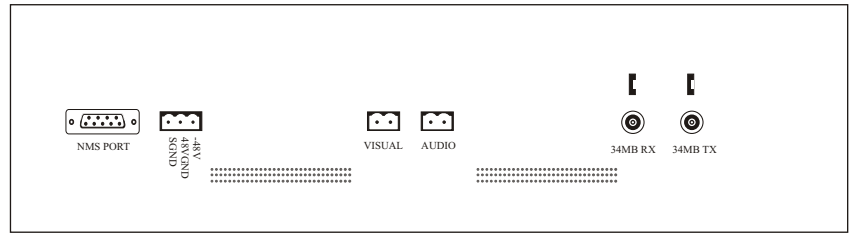
NU Not Used

- 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	20ppm
Line code	HDB3
Frame structure	as per G.751
Interfaces	as per G.703
Input Jitter Acceptance	100Hz to 1KHz - 1.5UI 10KHz to 800KHz - 0.15UI
Maximum Output Jitter	0.05UI
Connectivity	via spinner type connectors
Cable	75 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	30dBm
Receiver sensitivity	-38dBm (typical) -36dBm (min)
Optical Connectors	FC-PC connectors

