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 the configuration.

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

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)

- L1 is for switching ON/OFF optical transmitter - Link 1
- L2 is for switching ON/OFF optical transmitter - Link 2
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

### 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

### 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

### 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.
## Technical Specifications

### 34Mbps, E3 Electrical Interface

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>1</td>
</tr>
<tr>
<td>Nominal bit rate</td>
<td>34368kbps</td>
</tr>
<tr>
<td>Bit rate tolerance</td>
<td>± 20ppm</td>
</tr>
<tr>
<td>Line code</td>
<td>HDB3</td>
</tr>
<tr>
<td>Frame structure</td>
<td>As per G.751</td>
</tr>
<tr>
<td>Interfaces</td>
<td>As per G.703</td>
</tr>
<tr>
<td>Input Jitter Acceptance</td>
<td>100Hz to 1KHz - ≤ 1.5UI</td>
</tr>
<tr>
<td></td>
<td>10KHz to 800KHz - ≤ 0.15UI</td>
</tr>
<tr>
<td>Maximum Output Jitter</td>
<td>≤ 0.05UI</td>
</tr>
<tr>
<td>Connectivity</td>
<td>via spinner type connectors</td>
</tr>
<tr>
<td>Cable</td>
<td>75W unbalanced</td>
</tr>
<tr>
<td>Permissible attenuation</td>
<td>12dB at 17184KHz</td>
</tr>
</tbody>
</table>

### 34Mbps, Optical Interface

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Transmitter</td>
<td>Class 1 Laser</td>
</tr>
<tr>
<td>Number</td>
<td>1 (+1) with optical redundancy option</td>
</tr>
<tr>
<td>Nominal bit rate</td>
<td>34368kbps</td>
</tr>
<tr>
<td>Transmit wavelength</td>
<td>1310nm (standard)</td>
</tr>
<tr>
<td></td>
<td>1550nm (optional)</td>
</tr>
<tr>
<td>Transmit output</td>
<td>-12dBm (min at *EOL - End of Life)</td>
</tr>
<tr>
<td></td>
<td>-8dBm (typical)</td>
</tr>
<tr>
<td></td>
<td>-5dBm (maximum)</td>
</tr>
<tr>
<td></td>
<td>(other outputs available on request)</td>
</tr>
<tr>
<td>Transmit Spectral Width</td>
<td>&lt;4nm</td>
</tr>
<tr>
<td>Receive wavelength</td>
<td>1310nm (standard)</td>
</tr>
<tr>
<td></td>
<td>1550nm (optional)</td>
</tr>
<tr>
<td>Operating wavelength range</td>
<td>Transmitter: 1260nm - 1360nm</td>
</tr>
<tr>
<td></td>
<td>Receiver: 1100nm - 1600nm</td>
</tr>
<tr>
<td>Receiver dynamic range</td>
<td>≤ 30dBm</td>
</tr>
<tr>
<td>Receiver sensitivity</td>
<td>-38dBm (typical)</td>
</tr>
<tr>
<td></td>
<td>-36dBm (min)</td>
</tr>
<tr>
<td>Optical Connectors</td>
<td>FC-PC connectors</td>
</tr>
</tbody>
</table>
Safety

- Class I Laser
- Meets the optical safety requirements: G.958, 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.

Power Consumption

| Power Consumption | 9.60 Watt |

Ordering Information

<table>
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<th>Sr. No.</th>
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<tr>
<td>1.</td>
<td>E3, 34 Mbps Optical Line Transmission Equipment, OLTE/OLTU (-48 V DC input) - Stand Alone - 19-inch Rack Mount Version</td>
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Technical specifications are subject to changes without notice.
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