ORION TELECOM NETWORKS INC.

VCL - 2/34 Mbps PDH Multiplexer

E3, PDH MULTIPLEXER

Product Specifications

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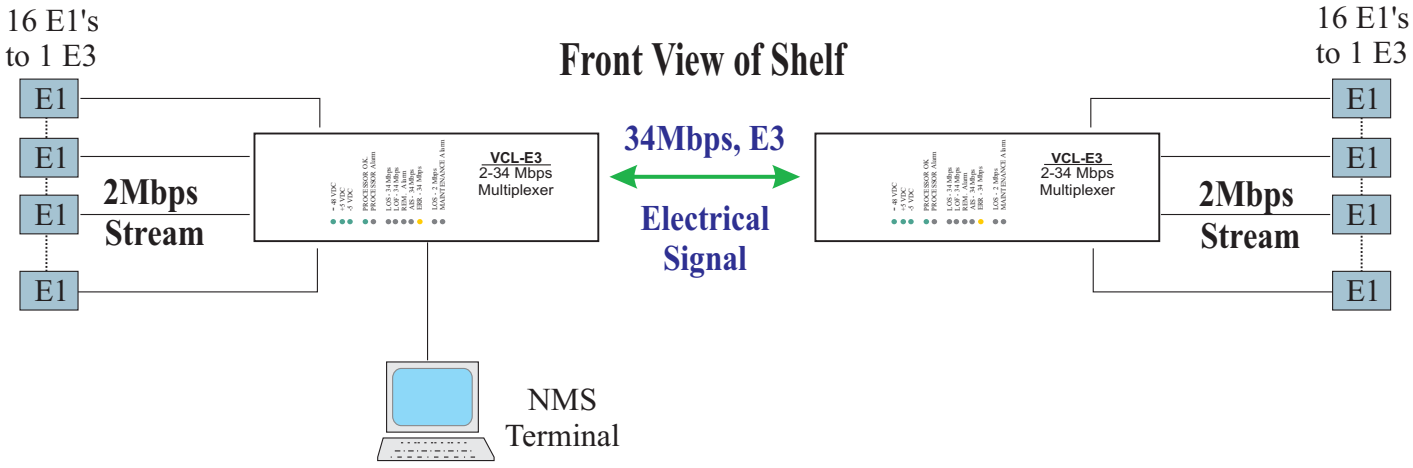
VCL - E3, 2/34 Mbps PDH Multiplexer

Product Description

VCL E3-2/34Mbps, PDH Multiplexer is a third order skip multiplexer / demultiplexer unit, based on PDH (Plesiochronous Digital Hierarchy) technology. It multiplexes sixteen 2.048Mbps (hereafter referred to as 2Mbps) E1 tributaries into a single 34.368Mbps (hereafter referred to as 34Mbps) E3 tributary. The multiplexer / demultiplexer also does the reverse processing i.e. demultiplexing a received 34Mbps stream into sixteen 2Mbps E1 tributaries.

VCL-2/34 Mbps Multiplexer system consists of two VCL-2/34 Mbps terminals, one each at the local and remote ends, connected through a 34Mbps stream, providing end to end services for sixteen, 2Mbps streams. Both local and remote terminals can be monitored and controlled by a Network Management System (NMS) connected to the local terminal.

Front View



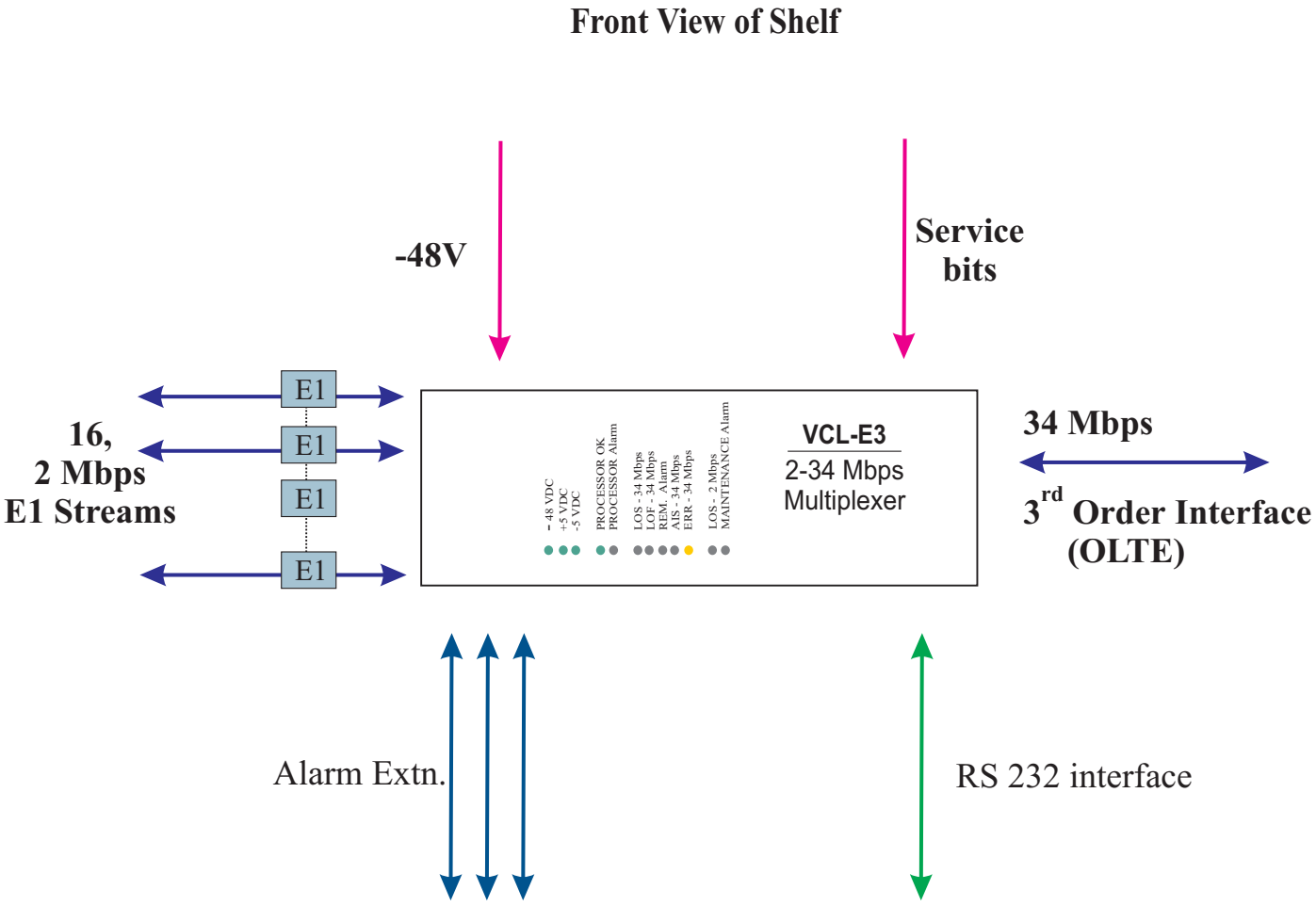
FEATURES & HIGHLIGHTS

- Single - card implementation
- Plug and Play
- Modular 2Mbps transmission units
- Standard CCITT (ITU-T) compliant interfaces
- Remote and local terminal monitoring and control by Network Management System
- Optional TCP/IP Remote Access for monitoring alarms and management
- Extensive alarms and status indication facility
- Service bit monitoring and insertion
- Operates on nominal -48V DC input
- Distributed on-board power supply
- Microprocessor controlled with powerful diagnostic facilities for both remote and local systems
- Local and remote loopback facility for 34Mbps stream
- Stored program controlled
- Highly reliable and compact

EXTERNAL INTERFACES

VCL-E3 unit provides the following interfaces to the external world:

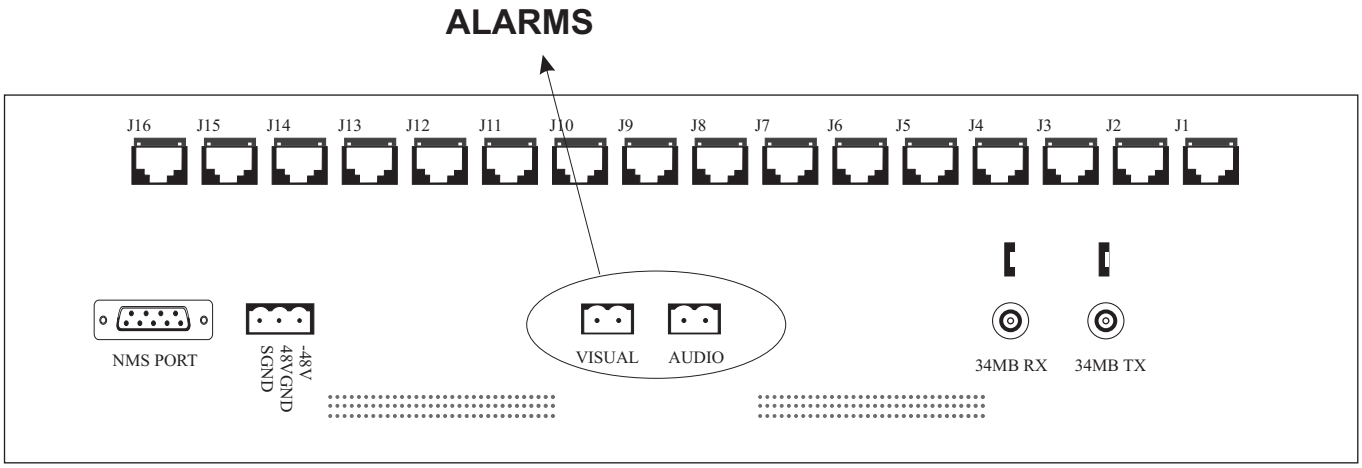
- 16, primary rate, 2Mbps, 120 balanced interface
- 1, third order, 34Mbps, 75 unbalanced interface
- -48V input for VCL-2/34 on-board power supply
- RS232 interface for connection to Network Management System, used for configuration and monitoring of the VCL-2/34 multiplexer.
- 2 alarm extensions for visual and audible alarms.



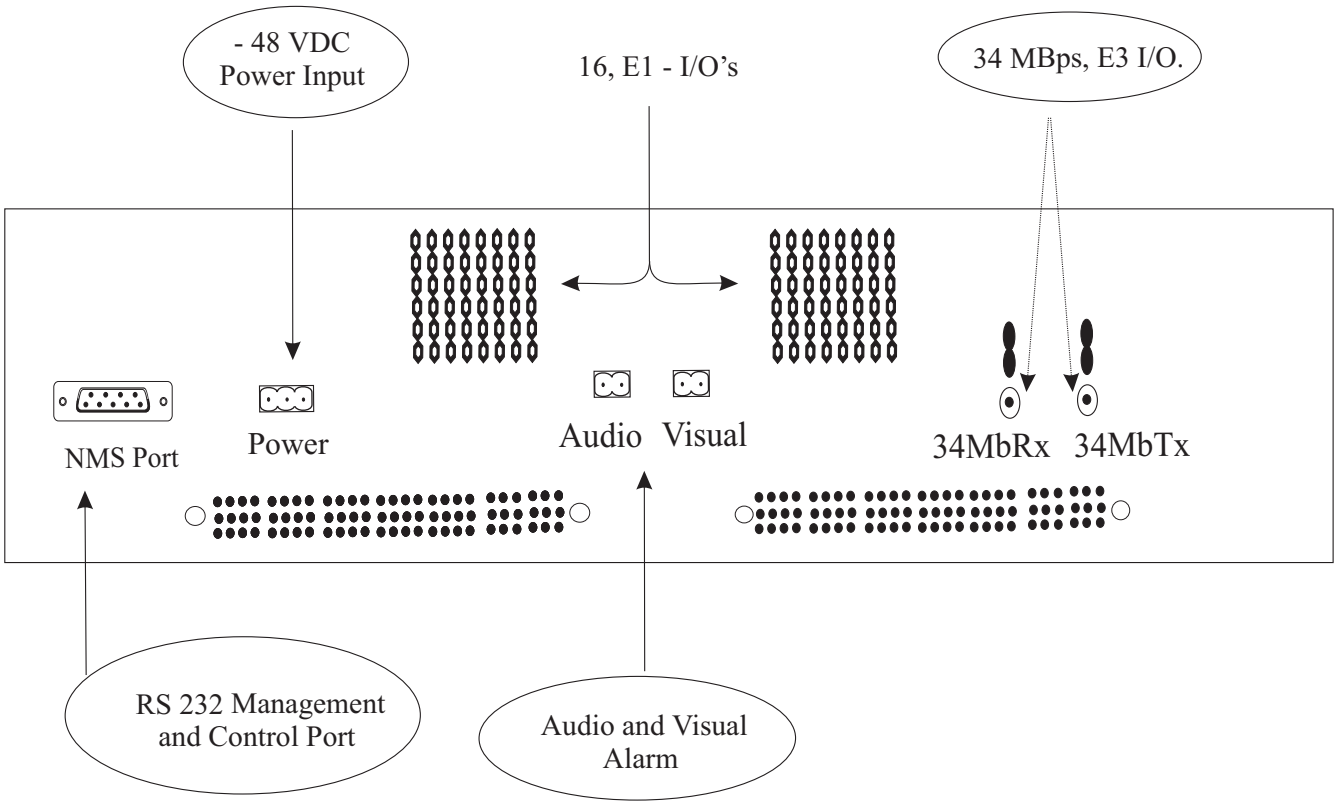
The front panel LEDs provide the following indications:

L1 - Negative 48V input present	L7- Loss of frame alignment at 34Mbps
L2- Positive 5V present	L8- Remote Alarm at 34Mbps
L3- Negative 5V present	L9- AIS at 34Mbps
L4- Processor healthy	L10- Excessive Error Rate at 34Mbps
L5- Processor failed	L11- Loss of signal at 2Mbps
L6- Loss of signal at 34Mbps	L12- Prompt Maintenance Alarm

BACK PANEL OF E3, 2/34Mbps Multiplexer
RJ-45 Version



BACK PANEL OF E3, 2/34Mbps Multiplexer
Wire Wrap Version



PROGRAMMING AND MONITORING

VCL-2/34 Mbps Multiplexer offers programming via an RS232 port for control and monitoring of the terminals. Both local and remote multiplexer can be monitored and controlled using a PC loaded with the NMS software connected to the local terminal.

Programming Features

- Setting master / slave identity for each VCL-2/34Mbps Multiplexer system
- Setting local / remote identity for each VCL - 2/34Mbps Multiplexer system
- Setting local or remote loopbacks on 2Mbps or 34Mbps
- Enabling or disabling 2Mbps channels
- Initiating self tests
- Alarm acknowledgment option

Status Monitoring

- Presence or absence of remote terminal
- Priority sequence of clock selection and current clock on which the system is working
- Status of alarm
- Presence or absence of loop-back on 34Mbps and 2Mbps streams
- Enabled / disabled status of 2Mbps channels
- Master / Slave status
- Monitoring healthy / unhealthy state of microcontroller and 2Mbps line interface units
- Previous configuration files

Alarm Status Monitoring

- Loss of incoming signal at all 2Mbps ports
- Loss of incoming signal at 34Mbps port
- Loss of frame alignment at 34Mbps
- Remote Alarm at 34Mbps
- AIS at 34Mbps
- Excessive Error Rate at 34Mbps
- Status of audible alarm

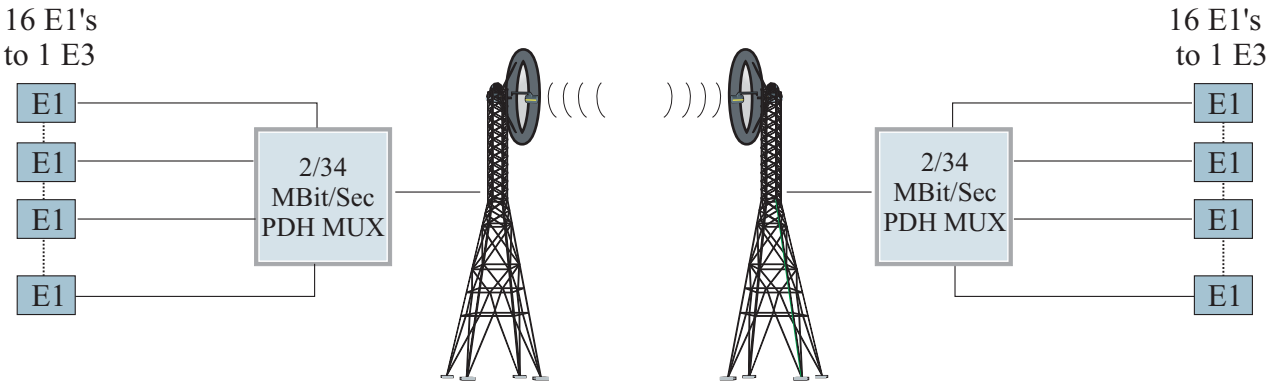
Monitoring VCL-E3 via LED Indications

- Loss of signal at 2Mbps
- Loss of signal at 34Mbps
- Loss of frame alignment at 34Mbps
- Remote Alarm at 34Mbps
- AIS at 34Mbps
- Excessive Error Rate at 34Mbps
- +5V failure
- -48V input failure
- Processor unhealthy alarm
- Prompt Maintenance alarm

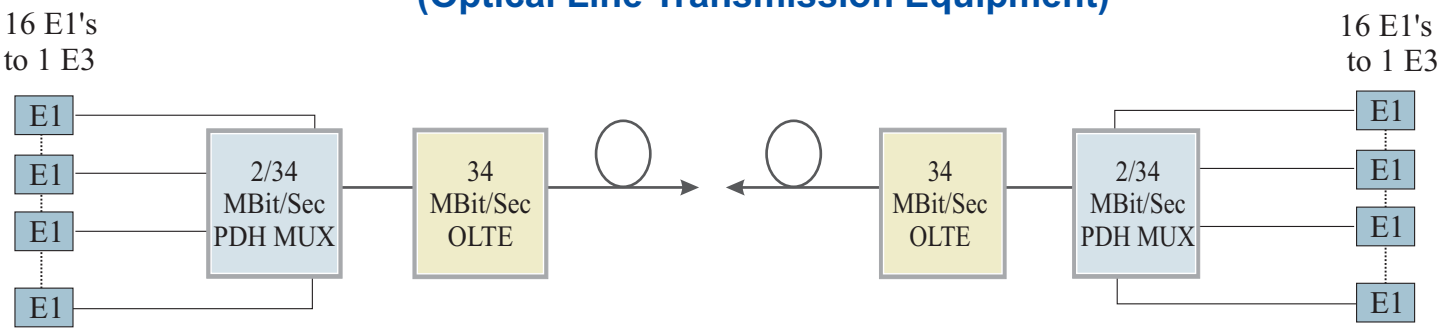
In addition to the above monitoring facilities, VCL-2/34Mbps Multiplexer is provided with LEDs on the front panel of the multiplexer, which indicate various fault conditions.

APPLICATION DIAGRAM OF VCL-2/34 Mbps PDH Multiplexer

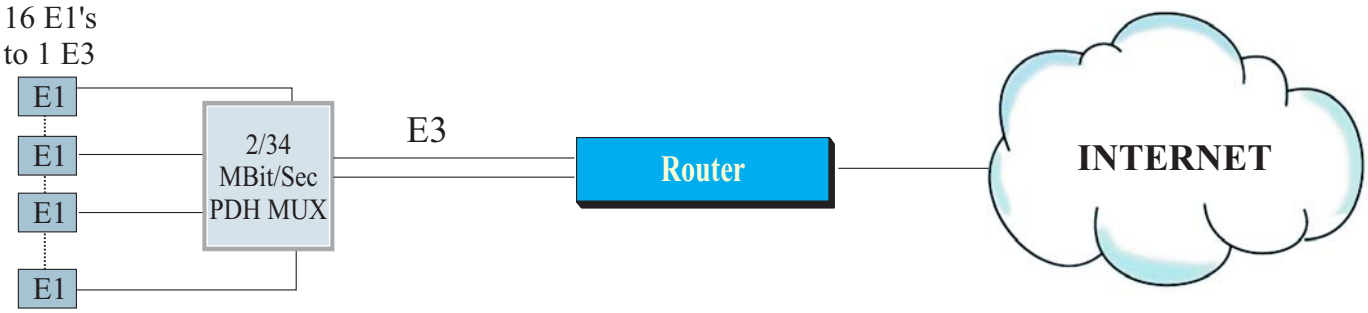
VCL 2/34 Mbps multiplexer with Digital Microwave Radio



VCL 2/34 Mbps multiplexer with 34 Mbps OLTE (Optical Line Transmission Equipment)



VCL 2/34 Mbps multiplexer - Internet Access Application



TECHNICAL SPECIFICATIONS

34Mbps, third order Interface

Number	1
Nominal bit rate	34368kbps
Bit rate tolerance	20ppm
Line code	HDB3
Frame structure	as per G.751
Intefaces	as per G.703
Connectivity	via spinner type connectors
Cable	75 unbalanced
Permissible attenuation	12dB at 17184kHz

2Mbps primary rate interface

Number	16
Nominal bit rate	2048kbps
Bit rate tolerance	50ppm
Line code	HDB3
Frame structure	as per G.704
Interfaces	as per G.703
Connectivity	via wire wrapping pins or RJ-45 (optional)
Cable	120 balanced
Permissible attenuation	6dB at 1024 kHz

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