ORION TELECOM NETWORKS INC.

VCL-HSL (HIGH-SPEED SIGNALING LINK) 64 T1 PORT HI-Z MONITORING EQUIPMENT

Product Brochure & Data Sheet

Headquarters: Phoenix, Arizona

Orion Telecom Networks Inc.

20100, N 51st Ave, Suite B240,
Glendale AZ 85308
Phone: +1 480-816-8672
Fax: +1 480-816-0115
E-mail: sales@oriontelecom.com
Website: http://www.oriontelecom.com

Regional Office: Miami, Florida

Orion Telecom Networks Inc.

4000 Ponce de Leon Blvd. Suite 470,
Coral Gables, FL 33146 U.S.A.
Phone: 1-305-777-0419,
Fax: 1-305-777-0201
E-mail: sales@oriontelecom.com
Website: http://www.oriontelecom.com

Product Overview

The VCL-HSL (High-Speed Signaling Link) 64 T1 Port Hi-Z Monitoring Equipment is suitable for "non-intrusive" monitoring applications and may be used to monitor upto 32, "live" HSL T1 (High Signaling Link) traffic links in both transmit and receive directions.

VCL-HSL 64 T1 PORT HI-Z MONITORING EQUIPMENT

Description

The VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment is equipped with 64 T1 receive ports, through which the attenuated "tapped / monitored" signal of the 32 "live" HSL T1 links" is input from a high impedance (Hi-Z) point of a DDF / patch-panel. The equipment also provides 64 T1 transmit (output) ports from where the regenerated and reproduced T1 "monitored" link output is obtained by the user to connect to protocol analysers, test probes, billing servers etc. as a normal T1 output.

The VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment is capable of monitoring an attenuated -20dBdsx (0.3 Volt Pulse) T1 signal received through a Hi-Z path, without in any way affecting or disturbing the "live" T1 traffic on the "live" T1 links which are being monitored.

The VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment, occupies only a 2U high rack-space, and is a compact 19-inch stand-alone unit. The unit is powered by and operates from a -48V DC power supply.

An AC mains option is also available with an external AC-DC adapter.

The equipment is provided with an RS232 as well as a USB serial data interface for local equipment access and management through a serial data port. The equipment is also provided with a 10/100BaseT Ethernet interface for remote equipment access over a TCP/IP link.

The access for configuration and system management is provided through CLI (Command Line Interface) text commands which may be executed either from a serial (COM) Port of a PC or through the TCP/IP 10/100BaseT LAN Interface. The 10/100BaseT LAN Interface allows the equipment to be connected on a TCP/IP network for remote access for configuration and monitoring over a TCP/IP link.

The equipment supports SNMP V2 Trap monitoring.

The system is also supplied with an easy to use Windows XP and Windows 7 compatible Graphical User Interface for easy equipment control and management.

Dry contact relay alarm output is also available at rear of the system to connect the system to an external alarm output though a dry relay contact.

Internal resistive high-impedance isolation may also be used in the equipment to eliminate the requirement of an external patch panel with high-impedance Protective Monitoring Points (PMP).

Highlights, Features and Applications

- Monitors upto 32 bi-directional T1s, of up to -20dBdsx (0.3 Volt Pulse) isolated by Hi-Z protected monitoring points of a DDF / patch-panel
- Powered through dual - 48V DC power inputs for 1+1 power redundancy
- Remotely accessible and manageable over TCP/IP links
- User selectable resistive high impedance inputs eliminates the requirement of patch panel with external high-impedance Protective Monitoring Points (PMP)
- Compact 2U high, 19-inch rack mountable chassis
- Used in Billing, Network Quality Management, Fraud Management and Lawful Intercept applications
- SNMP V2 Monitoring
- RS232 and USB COM Port provide for the local access
- Windows XP / Windows 7 based GUI

Indications and Alarm Monitoring

- Loss of incoming signal at any T1 Port (LOS Alarm)
- All Ones Alarm (AIS Alarm)
- Configuration Error Alarm
- Status of the T1 Monitoring Port
- 3.3 V Volts Power Supply
- - 48V DC Input Voltage present

Programmable Features

- Enabling or disabling (masking) of the T1 Ports that are not in use

Status Monitoring

- Status of the T1 Ports in use
- Status of alarms on T1 Input Ports
- Status of Enabled / Disabled T1 Ports

Shelf Description:

VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment is a 19 Inch Shelf, fitted with a backplane that provides rear access of all external interfaces, including the T1 1.5 Mbps electrical I/Os, safety ground and external alarm extension connectors. The system management and control interfaces are provided on the front panel for easy operator access.

VCL-HSL 64 T1 Port is available in two options:

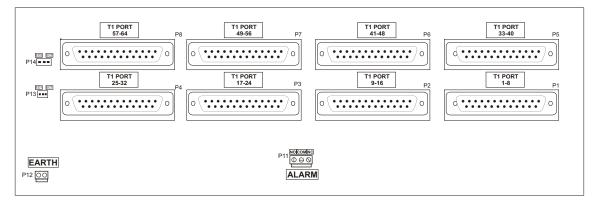### Option 1: With DB-37 (Female) Connector - 19 inch 2U high

The T1 1.544 Mbps, Input and the Output Interfaces are 100 Ohms, terminated on DB-37 connectors in the 19-inch 2U high version of the equipment.

Option 2: With RJ-45 (Female) Connector - 19 inch 3U high

The T1 1.544 Mbps, Input and the Output Interfaces are 100 Ohms, terminated on RJ-45 (F) connectors in the 19-inch 3U high version the equipment.
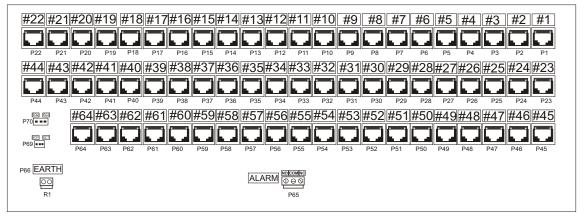
Option 1

Rear View - with 2U high, rack-mountable DB-37 (F) 19-inch shelf

Option 2

Rear View - with 3U high, rack-mountable RJ-45 (F) 19-inch shelf

Application Diagram
32 HSL T1 link(s) monitoring

MSC

MSC

Hi-Z "Monitoring Tap" from a patach-panel

Hi-Z "Monitoring Tap" from a patach-panel

Upto 32 T1 links

Upto 32 T1 links

Tx to Rx

Tx to Rx

Rx to Tx

Rx to Tx

Rx

Rx

Rx

Rx

VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment

64 T1 outputs

32 Rx to Tx (west to east) HSL T1 links

32 Tx to Rx (east to west) HSL T1 links

Rx

Rx

SS7 analyser with upto 32 T1 signalling inputs

Note:
The T1 link is "tapped" through a Hi-Z "Tapping" Port of a DDF Patch Panel.

Technical Specifications

**Monitoring T1 Ports (shall connect to the T1 links that are to be Monitored) -
Monitored Port (MP)**

Line Rate	T1 (1.544 Mbps ± 50 bps)
Connector	DB-37 (19-inch 2U high version)
Impedance	Hi-Z for Non-Intrusive Monitoring
Compliance	G.703
Jitter	ITU-T G.823, ITU-T 1.431
Framing	Transparent. Suitable for both framed And un-framed T1 signals.
Line Coding	Transparent. Suitable for both AMI and B8ZS T1 signals.
Compliance (for Hi-Z Monitoring)	G.772
Receive Signal Sensitivity	Upto -20dBdsx (0.3 Volt Pulse)
Number of T1 Receivers	64 T1 Receivers to monitor the 32 T1 bi-directional links that are being monitored.

**Test T1 Port (shall connect to the Test Equipment) -
Test Port (TP)**

Line Rate	T1 (1.544 Mbps ± 50 bps)
Connector	DB-37 (19-inch 2U high version)
Impedance	100 Ohms
Jitter	ITU-T G.823
Pulse Shape Compliance	G.703
Framing	Transparent. Suitable for both framed and un-framed T1 signals.
Line Coding	Transparent. Suitable for both AMI and B8ZS T1 signals.
Number of T1 Receivers	64 T1 Transmitters / 64 T1 Outputs (to connect to the 32 T1 links which are being monitored) to Protocol Analysers, Test Equipment etc.

Power Supply

Power Supply	-48V DC (-18V DC to -72V DC)
Power Consumption	≤15 watts

Clock Synchronization Options:

Loop-Timed	T1s synchronized to respective loop-timed clock(s) from the "monitored" / "input" T1 signals

Management and Control Interfaces

Serial Management Port (RS232) - (COM Port)
USB Serial Port
10/100BaseT Telnet over a TCP/IP Network

System Access and Management

Windows XP and Windows 7 compatible GUI
Telnet - CLI (Command Line Interface)
SNMP V2 (MIB File provided with the equipment)

Command Language

Command Line Interface (english text commands)

NMS (with Telnet) OAM Port Specifications

Network interface	RJ-45 Ethernet 10BaseT or 100BaseTx (auto sensing),MDI-X.
Compatibility	Ethernet Version 2.0 IEEE802.3
Protocols supported	ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP
LEDs	10Base-T and 100Base-TX Activity, Full/half duplex.
Management	SNMP , Serial login, Telnet login
EMI Compliance	Radiated and conducted emissions – complies with Class B limits of EN55022:1998
	Direct and Indirect ESD – complies with EN55024:1998
	RF Electromagnetic Field Immunity – complies with EN55024:1998
	Electrical Fast Transient/Burst Immunity – complies with EN55024:1998
	Power Frequency Magnetic Field Immunity – complies with EN55024:1998
	RF Common Mode Conducted Susceptibility – complies with EN55024:1998

Option 1 - 2U high, rack-mountable DB-37 (F) 19-inch shelf

Depth	260 mm
Width	485 mm
Height	2U (90 mm)

Option 2 - 3U high, rack-mountable RJ-45 (F) 19-inch shelf

Depth	292 mm
Width	485 mm
Height	3U (133.33 mm)

Ordering Information			
S. No.	Part #	Product Description	Qty
1.	VCL-HSLMON-64T1-1469-DB37	VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment DB-37 Connector 2U version	1
2.	VCL-HSLMON-64T1-1469-RJ45	VCL-HSL 64 T1 Port Hi-Z Monitoring Equipment RJ-45 Connector 3U version	1

Technical specifications are subject to changes without notice.
Revision 06 - June 18, 2011.

Headquarters: Phoenix, Arizona

Orion Telecom Networks Inc.

20100, N 51st Ave, Suite B240,
Glendale AZ 85308
Phone: +1 480-816-8672
Fax: +1 480-816-0115
E-mail: sales@oriontelecom.com
Website: http://www.oriontelecom.com

Regional Office: Miami, Florida

Orion Telecom Networks Inc.

4000 Ponce de Leon Blvd. Suite 470,
Coral Gables, FL 33146 U.S.A.
Phone: 1-305-777-0419,
Fax: 1-305-777-0201
E-mail: sales@oriontelecom.com
Website: http://www.oriontelecom.com