ORION TELECOM NETWORKS INC.

64 Port E1 VCL-MegaConnect Groomer for Hi-Z Non-Intrusive Monitoring

Product Brochure & Data Sheet

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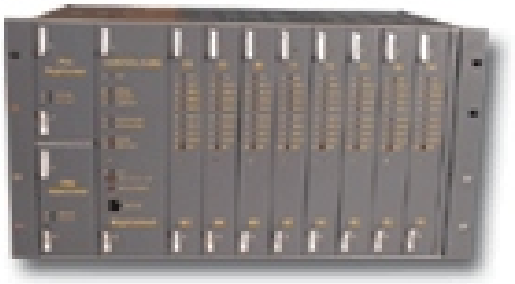
Introduction

64 Port E1 VCL-MegaConnect Groomer for Non-intrusive Monitoring



The 64 Port E1 VCL-MegaConnect Groomer is suitable for non-intrusive monitoring of upto 30, "live" E1 traffic links, bidirectionally (i.e. in both transmit and receive directions through it's 60 E1 receivers) through a high impedance (Hi-Z) path. Additionally the equipment also provides 4 E1 ports that shall connect the aggregated time-slots which have been non-intrusively "monitored" from the 30, "live" E1 traffic links to test equipment protocol analysers/test probes etc.

Description

The VCL-MegaConnect™, 64 Port E1 Groomer, occupies only a 6U high rack-space and is a compact 19-inch stand-alone unit. The unit operates on a -48VDC input power-supply. An AC input adapter is also optionally available for AC mains operation.

The equipment is provided with both, RS232 Serial Interface for COM Port connection and as well as a TCP/IP LAN Interface (10BaseT) for providing equipment access through telnet over a LAN/TCP/IP link. The user may select and use either of these ports for executing HyperTerminal text commands for configuration etc. 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 LAN/TCP/IP link, remotely. The system is also supplied with an easy to use Windows (95,98,Me,XP) Graphical User Interface that provides the user a complete control to prepare multiple configuration "maps" and store them. Dry contact relay alarm output is also available at rear of the system to connect the system to external audio/visual alarm output though a dry relay contact.

In bidirectional mode the groomer is capable of non-intrusively monitoring upto 30 "live" E1 links and then groom the selected time-slots to the 4 E1 Ports provided in the equipment. The 60, E1 receivers of the groomer shall connect to the 30, E1 "live traffic" links which are to be monitored, non-intrusively.

The Groomer is capable of monitoring a -20dBdsx (0.3Volt Pulse) E1 signal through a Hi-Z path, without in any way affecting or disturbing the "live" E1 traffic that is required to be monitored.

The equipment offers the user with complete flexibility to choose and select time-slots from each of the 30 E1 links that are being monitored, without limitation or restrictions, through the internal TSI non-blocking switch (data received by the equipment's 60 E1 receivers) and then aggregate the selected time-slots to the 4 E1 ports that shall connect to the test equipment, such as protocol analysers/test probes, billing servers etc.

In unidirectional mode the Groomer is capable of non-intrusively monitoring upto 60 "live" E1 links and then groom the selected time-slots to the 4 E1 Port provided in the equipment. The 60, E1 receivers of the Groomer shall connect to the 60, E1 "live traffic" links which are to be monitored, non-intrusively.

Applications

- Monitoring and billing-non-intrusive line traffic monitoring for “Listen-Only”
- Network monitoring, fraud management and billing applications

Highlights

- Stratum 3 Clock for extremely high clock stability
- Remote TCP/IP Access for configuration and monitoring
- Text based user friendly CLI for easy configuration
- Remotely accessible through Telnet

Features

- Scalable
- Provides DS0, "n"x64Kbps and Fractional E1 grooming for all 64 E1 ports without restriction
- Rear access
- User friendly CLI (text based) commands
- Telnet (10/100 BaseT) option
- Easy to install
- May be equipped from 8 E1 ports to 64 E1 ports depending on user requirements
- LED Indications on the front panel for alarms and status

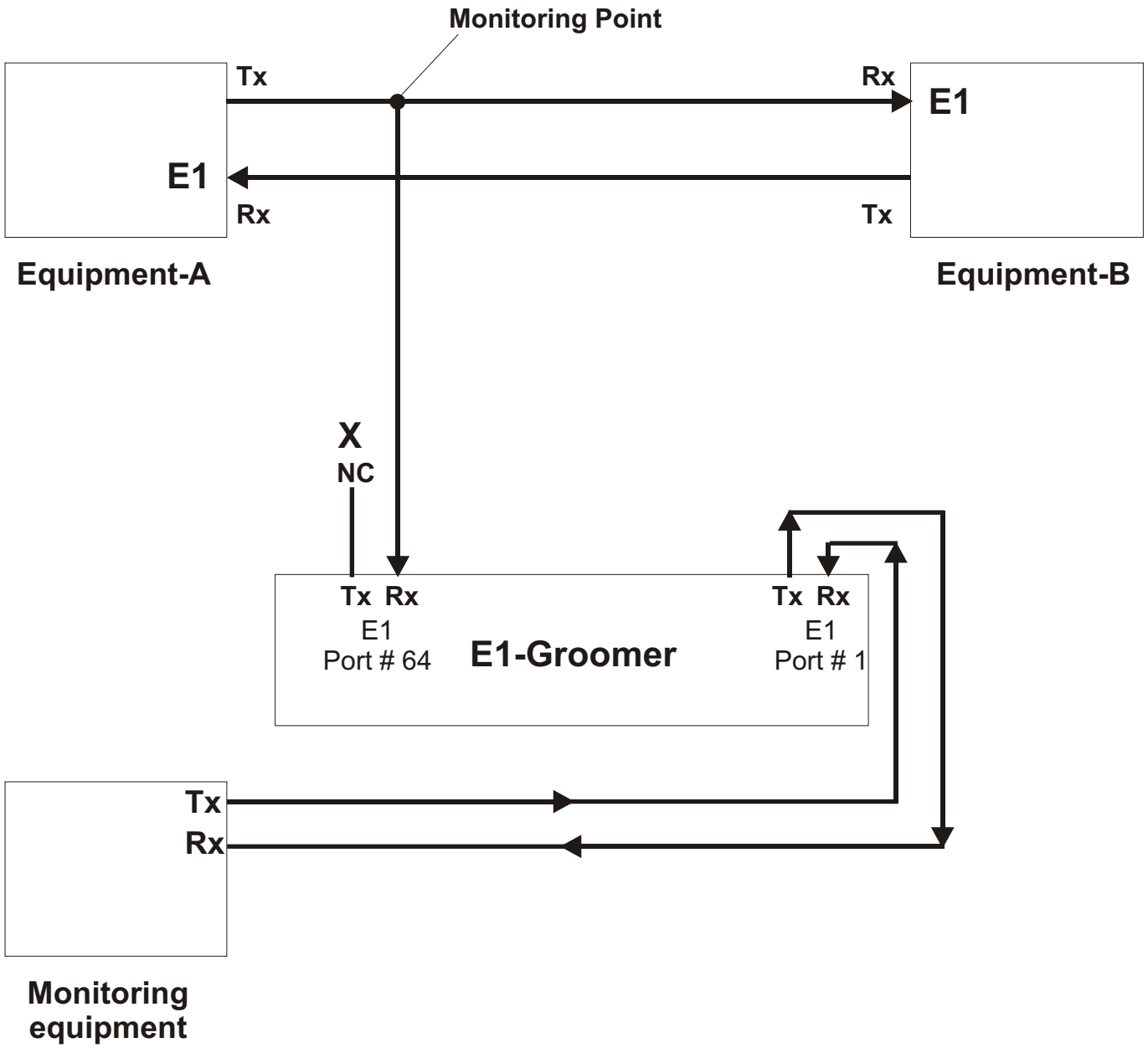
Benefits

- Reduce access costs by combining partially loaded E1s to a single E1
- Rear access wiring
- Improves wiring and cable management
- Support Nx64kbps fractional E1 operation and grooming
- For (non-intrusively) connecting to monitoring/billing equipment for Live-Traffic monitoring and cross connect functions
- Easy to install and simple to use

Combine traffic from fractional E1's to a single fully utilized E1

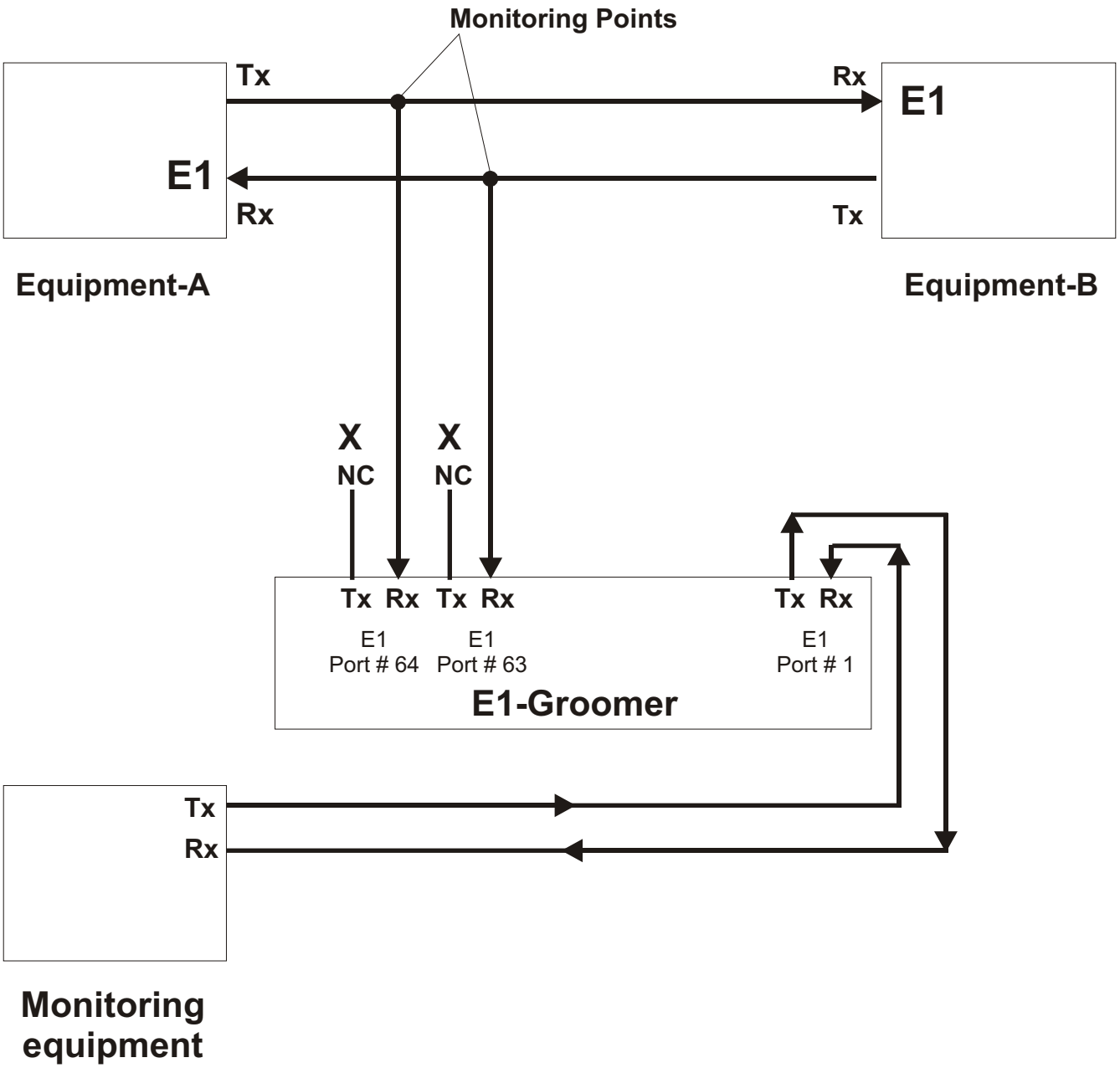
Hi-Z Non-Intrusive Monitoring Application

Hi-Z Unidirectional Monitoring



To monitor an E1 link in a single direction, you will need to connect one high impedence E1, RX pair of the Groomer, as it is only the Rx (**Receive**) pair that is capable of listening. Please leave the Tx (**Transmit**) pair un-connected.

Hi-Z Bidirectional Monitoring



To monitor an E1 link in both directions, you will need to connect two high impedence E1, RX pairs of the Groomer, i.e. use 1, Hi-Z E1 ports.

64 Port E1 VCL-MegaConnect Groomer

Shelf Description:

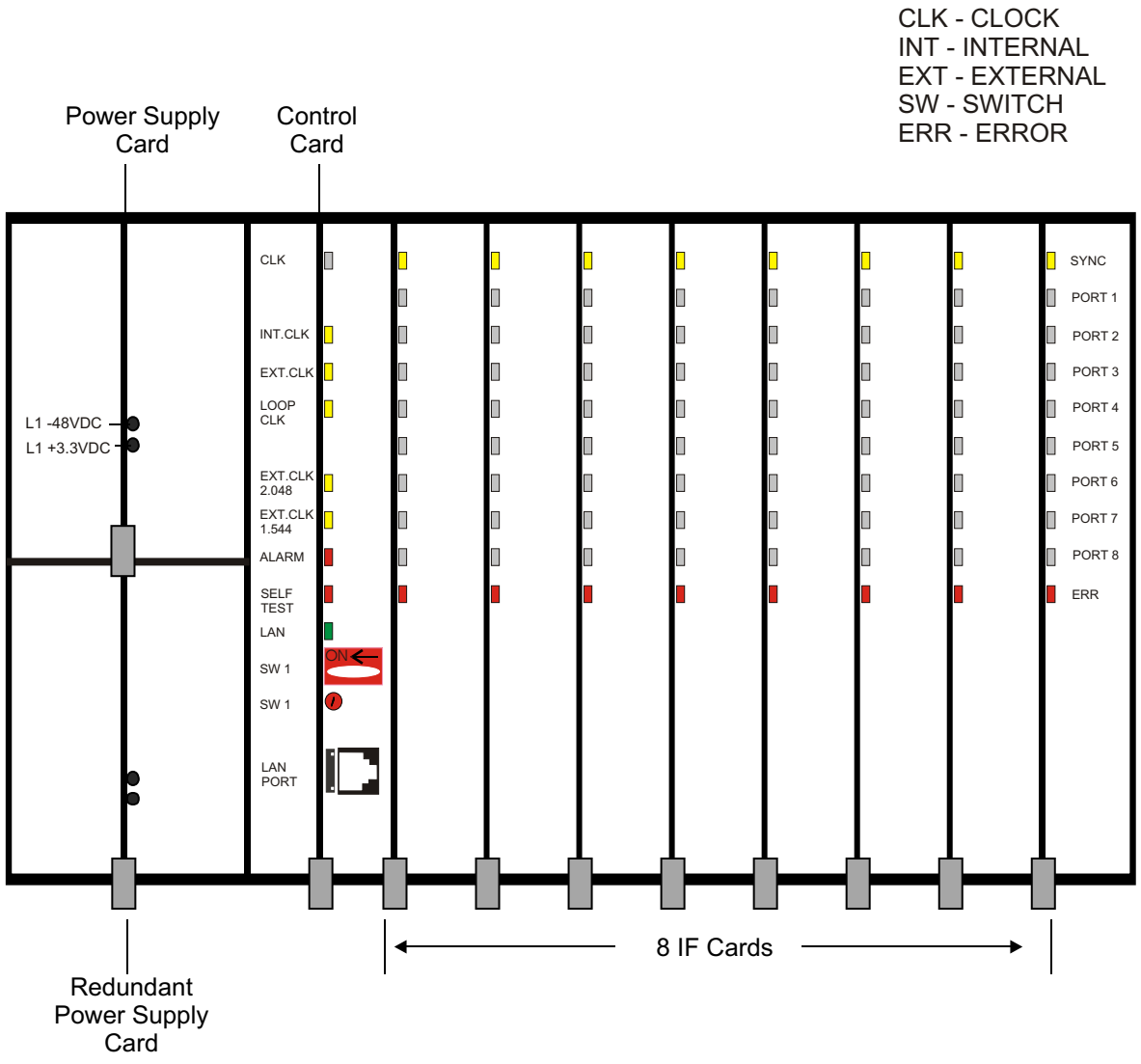
6U high standalone system

The 64 Port E1 VCL-MegaConnect Groomer unit is a 6U, 19 Inch Shelf, fitted with a backplane that provides rear access of all external interfaces. The 2Mbps electrical I/O, power input, alarm extention and the NMS port are all accessed from the backplane.

The 2Mbps E1 Interfaces are 120 Ohms twisted pair RJ-45 connectors.

64 Port E1 VCL-MegaConnect Groomer

Front view of the shelf

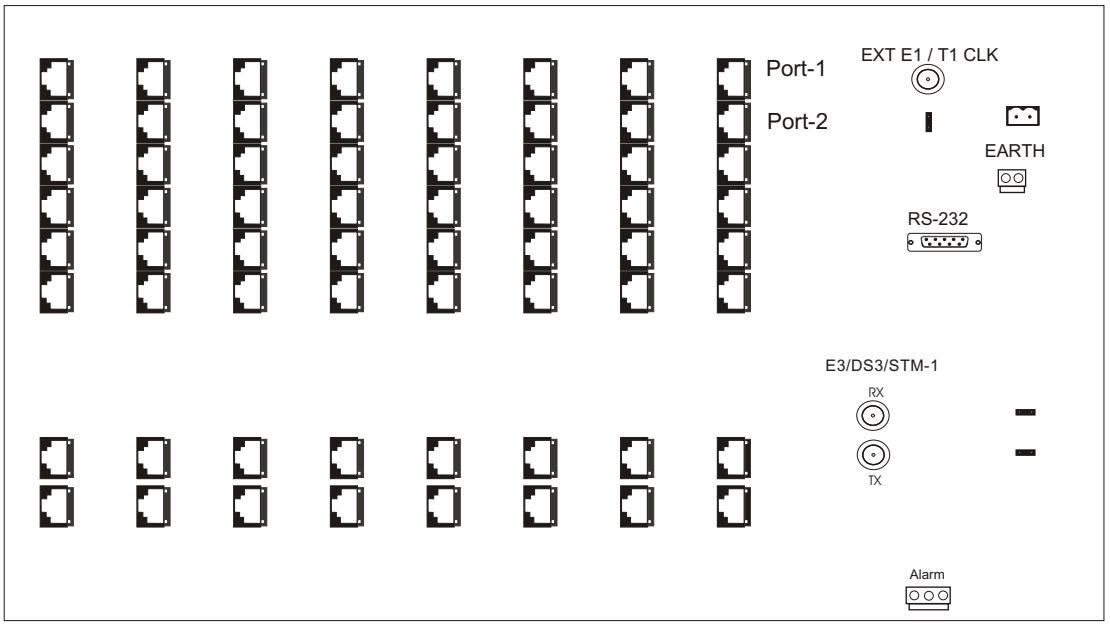


Accessing 64 Port E1 VCL-MegaConnect Groomer Standalone Shelf

2Mbps streams are accessible at the backplane. Access is also available for 2 alarm extensions, -48V power input is provided at the rear of the 6U shelf. The RS232 interface for monitoring and control is also taken from the rear panel of the stand-alone 64 Port VCL-MegaConnect Groomer unit.

64 Port E1 VCL-MegaConnect Groomer

Back View



64 Port E1 VCL-MegaConnect Groomer offers programming via an RS232 port for control and monitoring of the unit.

Programming Features

- Specifying the priority sequence for clock selection
- Enabling or Disabling 2Mbps Ports (masking) of the 2Mbps Ports that are not in use
- Creating a cross connect between E1s at DS-O level (single time-slot level) using the easy to use CLI (text-based) commands

Status Monitoring

- Clock Selection
- Status of alarms
- Enabled/Disabled status of 2 Mbps Ports
- Monitoring of the 64Port E1 VCL-MegaConnect Groomer status and configuration

Alarm Status Monitoring

- Loss of incoming signal at all 2Mbps ports
- Configuration Error Alarm

In addition to the above monitoring facilities, 64 Port E1 VCL-MegaConnect Groomer is provided with LED's, which indicate various fault conditions.

Monitoring 64 Port E1 VCL-MegaConnect Groomer via LED indications

- 1 to 64 E1 Ports LED indicators
- +3 VDC present
- -48VDC present
- Configuration Error

Technical Specifications

Equipment

E1 Port (shall connect to the Monitoring Equipment/Test Equipment)	
Connector	RJ-45
Impedance	120 Ohms
Pulse Shape Compliance	G.703
Signal Pulse	3.0 Volt - as per G.703
Framing	G.704
Number of E1 Ports	4
Monitored E1 Port (shall connect to the E1 links that are be Monitored)	
Connector	RJ-45 - with “Y” Cable
Impedance	Hi-Z for non-intrusive monitoring
Compliance	G.703
Framing	G.704
Compliance (for Hi-Z Monitoring)	G.772
Receive Signal Senstivity	Upto -20dBdsx (0.3 Volt Pulse)
Number of E1 Ports to connect to the Monitored Equipment	Minimum 3 E1 Ports Maximum 30 E1 Ports for bidirectional Maximum 60 E1 Ports for unidirectional Incremental in multiples of 4 E1 Ports

Time-slot selection

Any-to-any, through an internal, best byte, non-blocking TSI switch.

Clock

Internal	(Stratum3 level)
Loop-timed External	75 Ohms - 2.048 Mhz - 1.544 Mhz

Management and Control

Serial management port (RS232)-COM Port
10/100 BaseT for remote management over a LAN
10/100 BaseT telnet over a TCP/IP network

Command Language

Command Line Interface (English text commands)
Windows based GUI (optional)

Telnet specification and regulation compliance

Meets CE requirements
Complies with FCC, Part 68 and Part 15 sub part A specifications
Safety - UL 1459 Issue 2

Alarm contact closures

1 Alarm relay
Type - form "C" relay

Temperature

Operating	0^{o}C to 50^{o}C
Humidity	5% to 95% Non-condensing

Power consumption

Power consumption	30 watts (with all 64 E1 ports)

Mechanical Specifications

Width	480 mm
Depth	280 mm
Height	270 mm
Weight	9.0 kg.

Ordering Information

64 Port E1 VCL-MegaConnect Groomer for Non-Intrusive Monitoring

Sr. #	Part #	Product Description	Qty
		Common Equipment	
1.	E1 000-005 -Mon-DACS	19" Shelf 6U High (Sub-rack) to accommodate 64 E1 Ports with Connectorized Backplane 6U High	1
2.	VCL-1295 -PSU-E1	- 48VDC Input Power-Supply Card(s) for Redundant Operation	2
3.	VCL-1294-CC -E1-MON	E1 Control Card with TSI (time-slot selection) and and with serial LAN Management Ports (10BaseT - LAN Management Card for connecting the Groomer to be managed in a LAN)	1
4.	E1-01048 -150W-RK	Power Supply (External) AC to DC Converter Portable External Converter Universal AC Input [93VAC-276VAC, 47Hz-63Hz] to DC Output [(-) 48VDC]	1
		VCL-MegaConnect-User Interfaces	
Sr. #	**Part #**	**Product Description**	**Qty**
1.	VCL-1492 -E1-MON	8 Port E1 Interface Card with 3 meter cables (provides 8 E1 interfaces per card)	8 max.
2.	Manual	User Manual and Configuration Software	1

Technical specifications are subject to changes without notice.
Revision 04 - October 23, 2006.

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