

# COMARRA

TELECOM TRANSMISSION SOLUTION



## 16 Port T1 VCL-MegaConnect-Jr Groomer for Hi-Z Non-Intrusive Monitoring

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Product Brochure & Data Sheet

# COMARRA

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## Introduction

The 16 Port T1 VCL-MegaConnect-Jr Groomer is suitable for non-intrusive monitoring of upto 7, "live" T1 traffic links, bidirectionally (i.e. In both transmit and receive directions through

## 16 Port T1 VCL-MegaConnect-Jr Groomer for Non-intrusively Monitoring



it's 14 T1 receivers) through a high impedance (Hi-Z) path. Additionally the equipment also provides 2 T1 ports that shall connect the aggregated time-slots which have been non-intrusively "monitored" from the 7, "live" T1 traffic links to the user's protocol analysers/test probes etc.

## Description

The 16 Port T1 VCL-MegaConnect-Jr Groomer occupies only a 2U high rack-space, and is a compact 19-inch stand-alone unit. The unit operates on a -48V DC 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 as easy to read data files. Dry contact relay alarm output is also available at rear of the system to connect the system to external audio/visual alarm output through a dry relay contact.

The Groomer is capable of non-intrusively monitoring upto 7 "live" T1 links and then groom the selected time-slots to the 2 T1 Ports provided in the equipment. The 14, T1 receivers of the Groomer shall connect to the 7, T1 "live traffic" links which are to be monitored, non-intrusively.

The Groomer is capable of monitoring a -20dBdsx (0.3Volt Pulse) T1 signal through a Hi-Z path, without in any way affecting or disturbing the "live" T1 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 14 T1 links that are being monitored, without limitation or restrictions, through the internal TSI non-blocking switch (data received by the equipment's 14 T1 receivers) and then aggregate the selected time-slots to the 2 T1 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 15 "live" T1 links and then groom the selected time-slots to the 1 T1 Port provided in the equipment. The 15, T1 receivers of the Groomer shall connect to the 15, T1 "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

- Remote TCP/IP Access for configuration and monitoring
- Text based user friendly CLI for easy configuration
- Telnet option
- Available in 16 T1 ports configuration

## Features

- Provides DS0, "n"x64Kbps and Fractional T1 grooming for up to 16 T1 ports
- Rear access
- User friendly CLI (text based) commands
- Telnet (10/100 BaseT) option
- Easy to install
- Configurable from 2, T1 ports to 16, T1 ports depending on user requirements
- LED Indications on the front panel for alarms and status

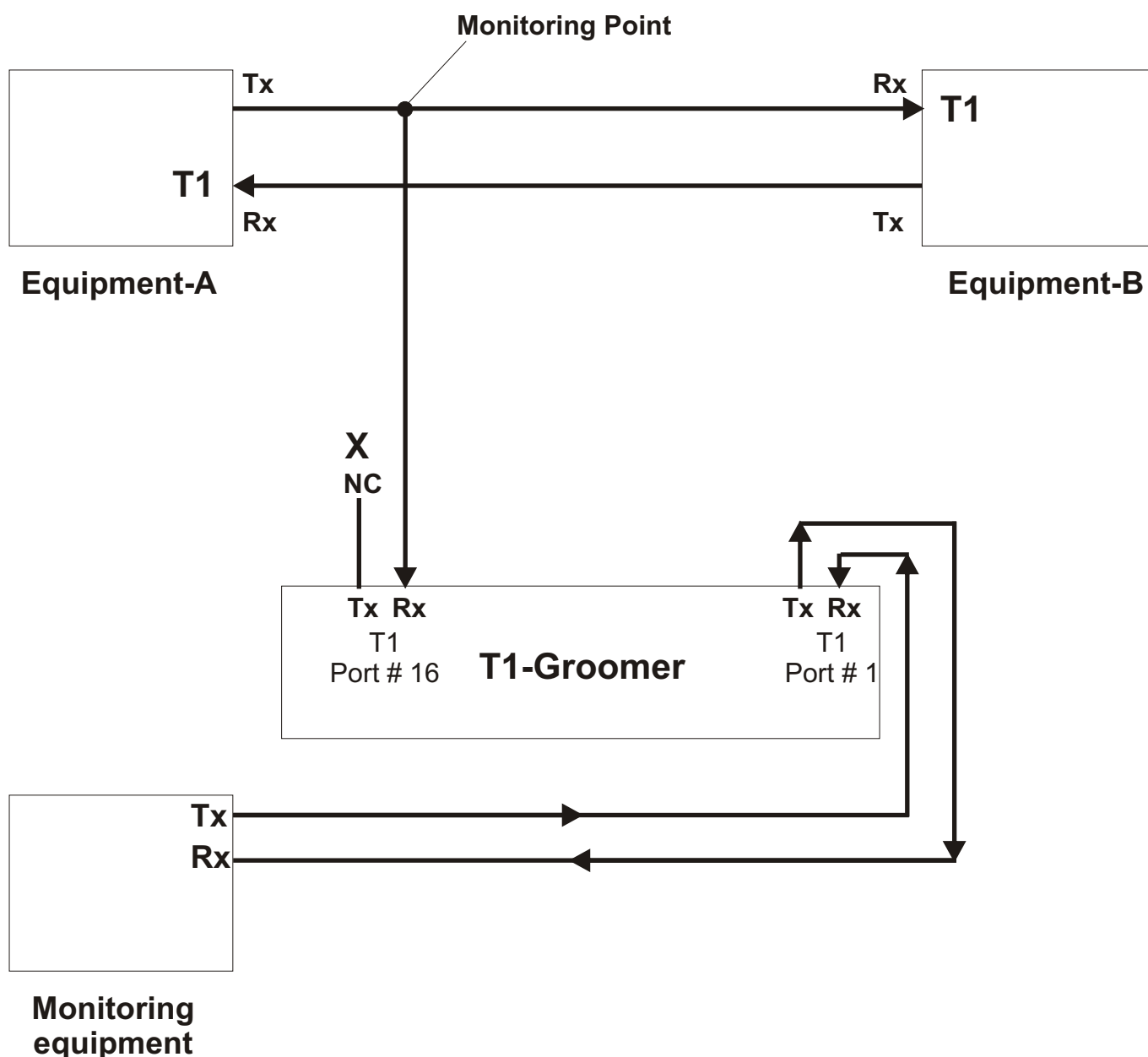
## Benefits

- Reduce access costs by combining partially loaded T1s to a single T1
- Rear access wiring. Improves wiring and cable management
- Support Nx64kbps fractional T1 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 T1's to a single fully utilized T1

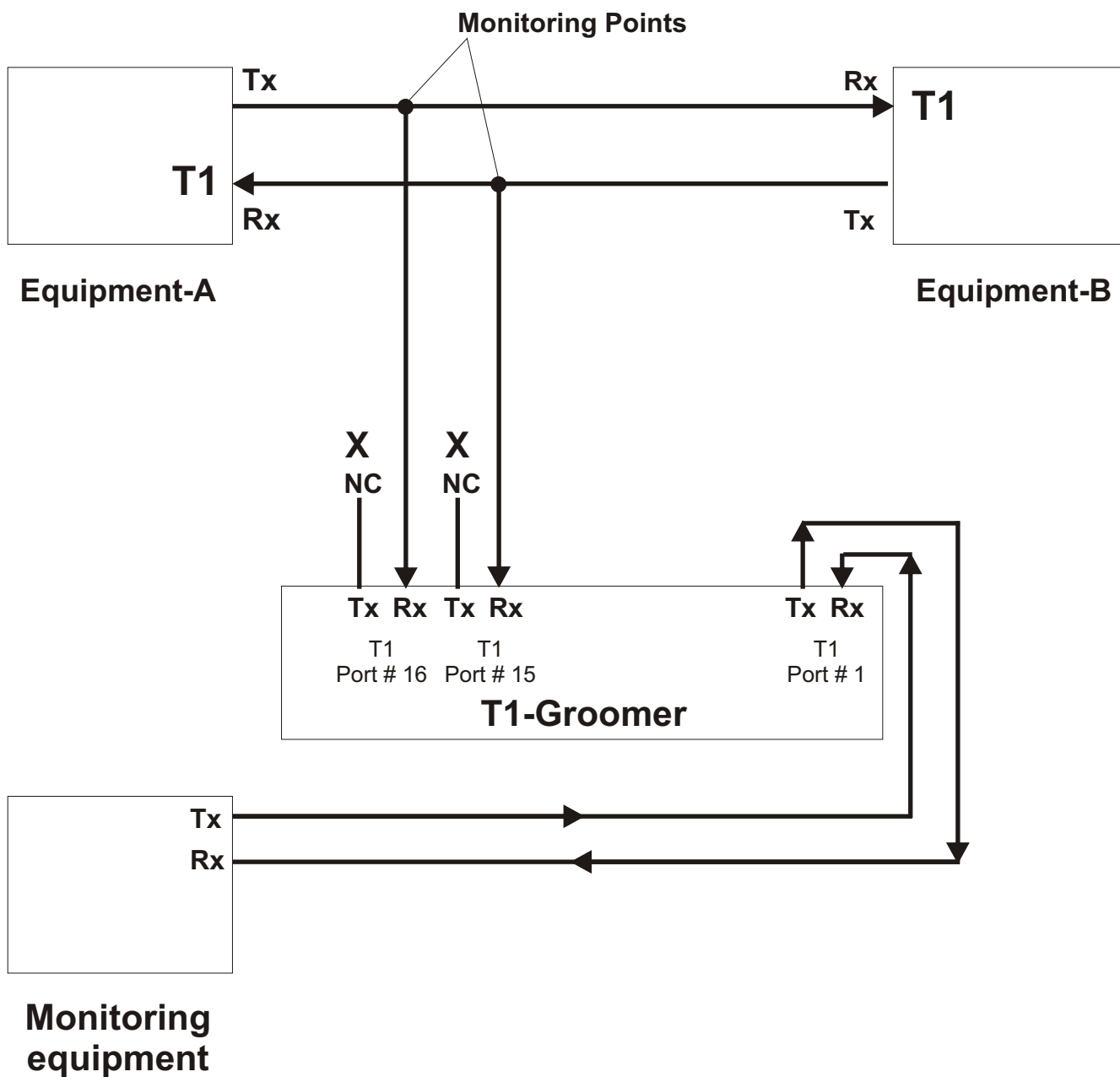
### Hi-Z Non-Intrusive Monitoring Application

#### Hi-Z Unidirectional Monitoring



To monitor an T1 link in a single direction, you will need to connect one high impedance T1, 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 T1 link in both directions, you will need to connect two high impedance T1, RX pairs of the Groomer, i.e. use 1, Hi-Z T1 ports.

## 16 Port T1 VCL-MegaConnect-Jr. Groomer

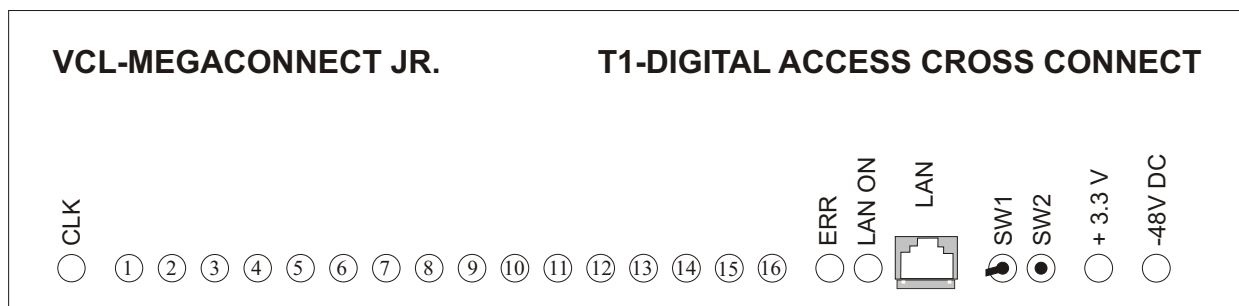
### Shelf Description

#### 2U high standalone system

The VCL-MegaConnect Jr. T1-Groomer unit is a 2U, 19 Inch Shelf, fitted with a backplane that provides rear access of all external interfaces. The 1.5 Mbps electrical I/O, power input, alarm extension and the NMS port are all accessed from the backplane.

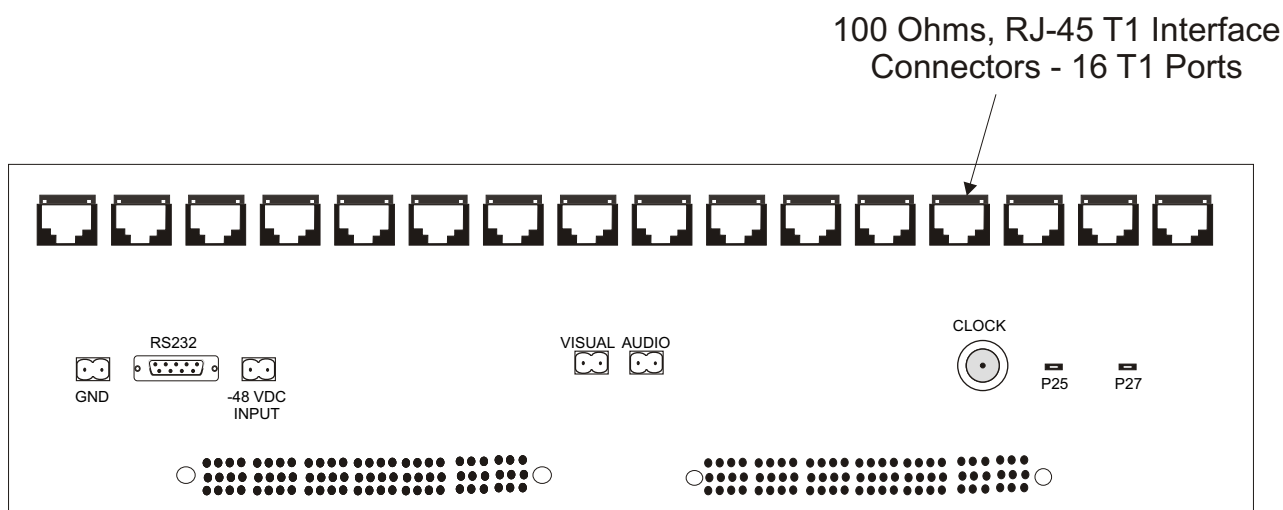
The 1.5 Mbps T1 Interfaces are 120 Ohms twisted pair RJ-45 connectors.

### Front view of the shelf



### Rear view of the shelf

#### RJ-45 Version

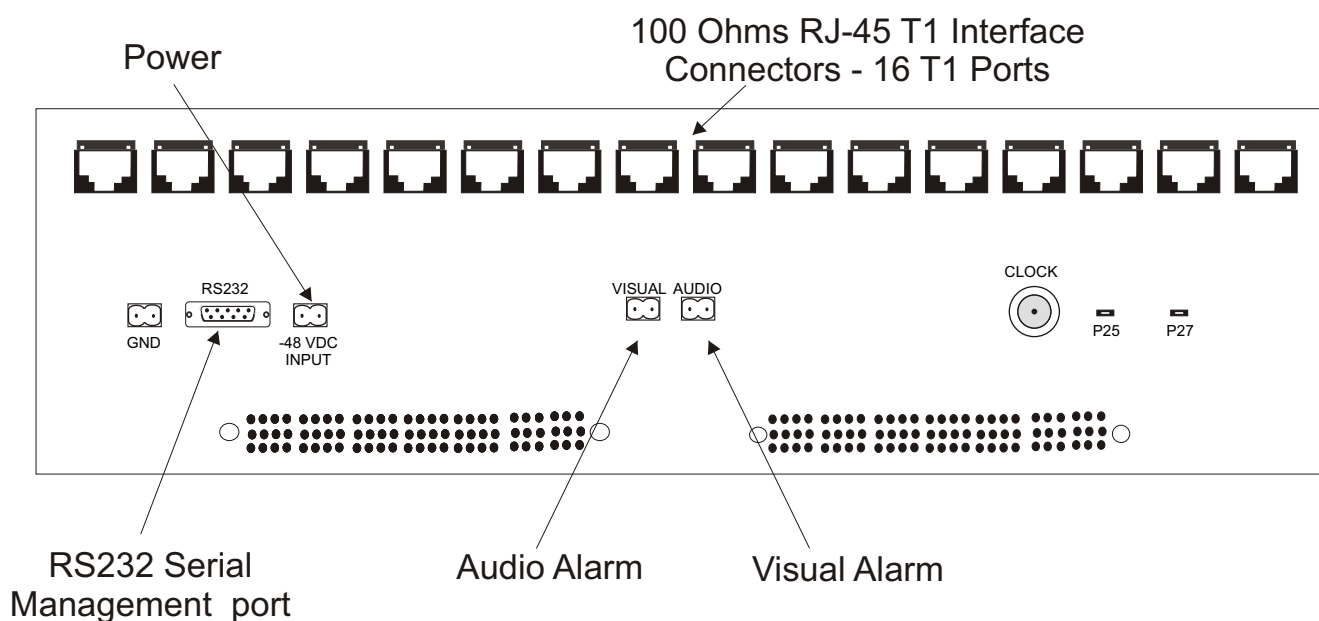


## Accessing 16 Port T1 VCL-MegaConnect-Jr. Groomer Standalone Shelf

1.5 Mbps streams are accessible at the backplane. Access is also available for 2 alarm extensions, -48V power input is provided at the rear of the 2U shelf. The RS232 interface for monitoring and control is also taken from the rear panel of the stand-alone 16 Port T1 VCL-MegaConnect-Jr. Groomer unit.

### 16 Port T1 VCL-MegaConnect-Jr. Groomer

#### Back View



16 Port T1 VCL-MegaConnect-Jr. 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 1.5 Mbps Ports (masking) of the 1.5 Mbps Ports that are not in use
- Creating a cross connect between T1s 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 1.5 Mbps Ports
- Monitoring of the 16 Port T1 VCL-MegaConnect-Jr. Groomer status and configuration

## Alarm Status Monitoring

- Loss of incoming signal at all 1.5 Mbps ports
- Configuration Error Alarm

In addition to the above monitoring facilities, 16 Port T1 VCL-MegaConnect-Jr. Groomer is provided with LED's, which indicate various fault conditions.

## Monitoring 16 Port T1 VCL-MegaConnect-Jr. Groomer via LED indications

- 1 to 16 T1 Ports LED indicators
- +3 VDC present
- -48VDC present
- Configuration Error

## Technical Specifications

### T1 Interface

Line Rate	T1 (1.544 Mbps $\pm$ 50 bps)
Available Time-Slots	1-24
Framing Structure	As per ITU(CCITT) G.704
Framing Options	D4, ESF (Selectable)
Line Coding	AMI, B8ZS (Selectable)
Electrical	ITU-T G.703
Jitter	ITU-T G.823, ITU-T 1.431
Impedance	100 Ohms
Connector	RJ-45 (F)
Receive signal sensitivity	Upto -20 dBdsx (0.3 Volt Pulse)

### 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 partA specifications
Safety - UL 1459 Issue 2

## Alarm contact closures

1 Alarm relay
Type - form "C" relay

## Temperature

Operating	0°C to 50°C
Humidity	5% to 95% Non-condensing

## Power consumption

Power consumption	5 Watts
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## Mechanical Specifications

Width	480mm
Depth	280mm
Height	90 mm
Weight	4.20 kg.

## Ordering Information

16 Port T1 VCL-MegaConnect-Jr. Groomer			
S.No.	Part No.	Product Description	Qty
1.	VCL-1449-16T1-MON	16 Port T1 VCL-MegaConnect-Jr Groomer for Non-Intrusively Monitoring upto 7 E1 links, plus 2 additional T1 ports to connect to the measurement-probe/billing servers. Includes telnet access for remote management and control. 19 inch 2U Rack-Mount Version.	1

Technical specifications are subject to changes without notice.  
Revision 04 - March 10, 2007.

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