



# **||| Bhumika International Inc.**

## **16 Port, E1 Digital Access Cross Connect Switch**

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### **VCL-MegaConnect-Jr E1 DACS**

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### **Product Brochure & Data Sheet**

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## INTRODUCTION

The VCL-MegaConnect-Jr. 16 Port, E1 Digital Cross Connect Switch, is an E1 digital cross-connect switch, which presents its user an easy to use, yet a sophisticated platform to cross-connect up to 16, E1 ports. The VCL-DACS, E1 Digital Cross Connect Switch offers full cross-connect



functionality to cross-connect, and / or aggregate DS-0s, "n"x64Kbps consecutive data channels and, Fractional E1 channels to full E1 channels.

The VCL-DACS, E1 Digital Cross Connect Switch, occupies only a 2U high rack-space, and is a complete 19-inch stand-alone unit that provides connectivity of up to 16 E1 ports. The unit operates on a 48VDC input power-supply (AC input adapter is optional).

The system is supplied with a CLI text based, easy to use interface that offers the user complete control to prepare multiple configuration maps (and store them as data files) and the ease of downloading them from a PC. Dry contact relay alarms are also available at rear of the system to connect the system to external audio and visual alarms.

The VCL-DACS, E1 Digital Cross Connect Switch also has an optional TCP - IP Access feature which allows the DACS to be connected on a TCP - IP network (10/100 Base Interface) for Remote access for configuration and monitoring.

The VCL-DACS, E1 Digital Cross Connect Switch can also be ordered for special non - Intrusive (Hi-Z) monitoring applications in which (pre-assigned monitoring ports) E1 ports can be connected to monitoring/billing equipment for Live Traffic monitoring (non intrusive monitoring).

## APPLICATIONS:

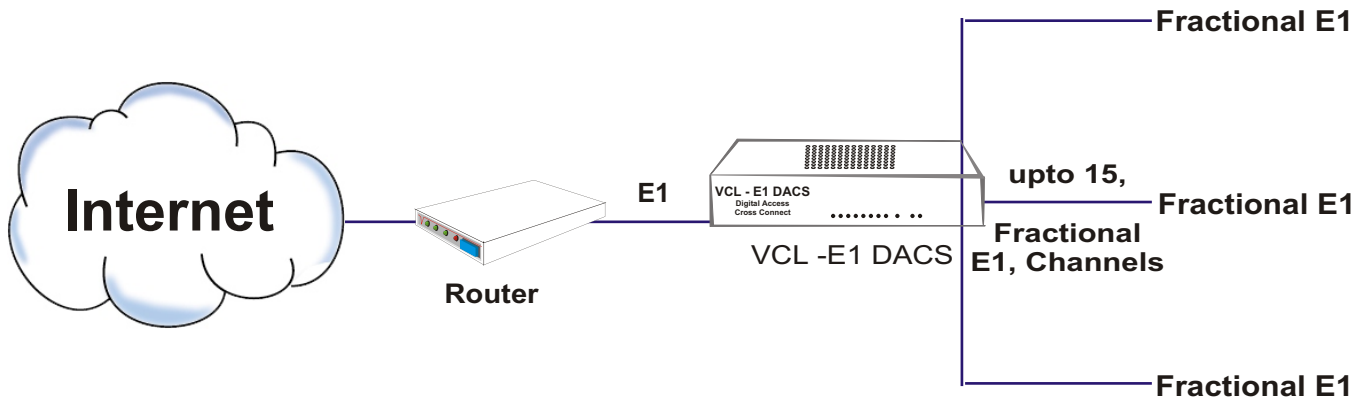
- ISP - Providing Fractional E1s to Subscribers
- Data - Aggregating Fractional E1 Data Circuits
- Monitoring & Billing - Non-Intrusive Line Traffic Monitoring for "Listen-Only" and Billing Applications
- Cellular - Extending Fractional E1 ports from MTSO to Cell-Sites.

## HIGHLIGHTS:

- Remote TCP/IP Access for configuration and Monitoring.
- Text based user friendly CLI for easy configuration.
- Telnet option.
- Available in 16 E1 ports configuration.

①

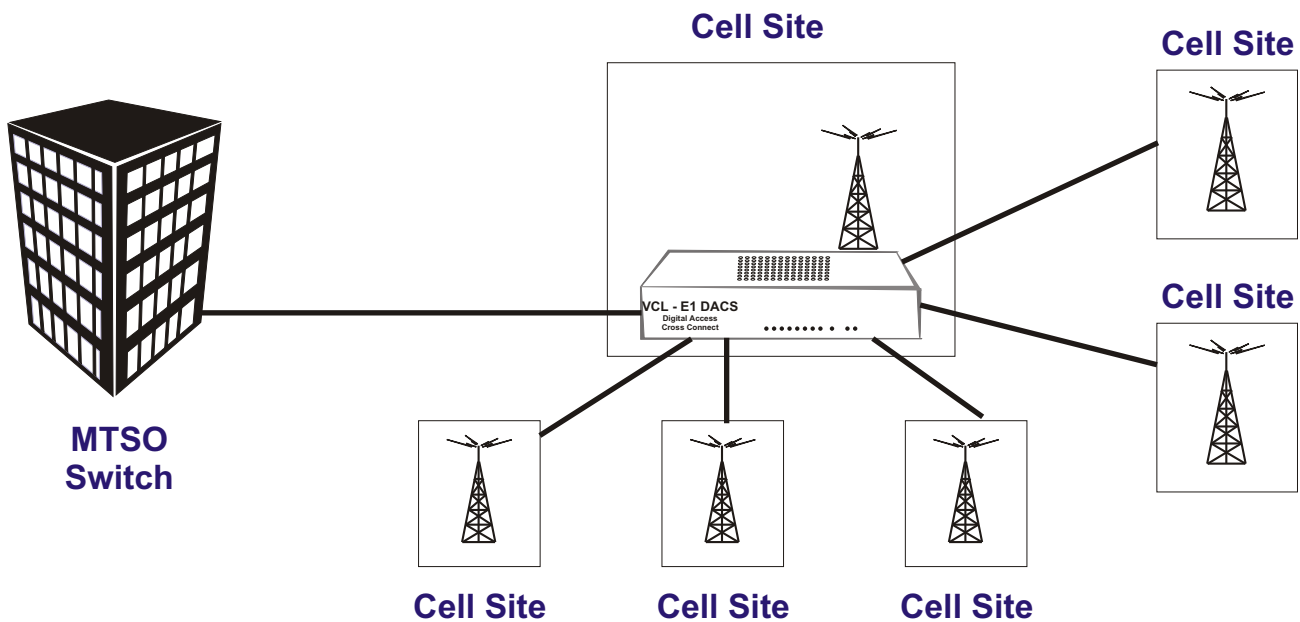
## ISP Digital Cross Connect Application Providing Fractional E1s' to Subscribers



Aggregates upto 15, Fractional E1 Channels to a Single E1

②

## Backhaul - Cellular Application using VCL-DACS

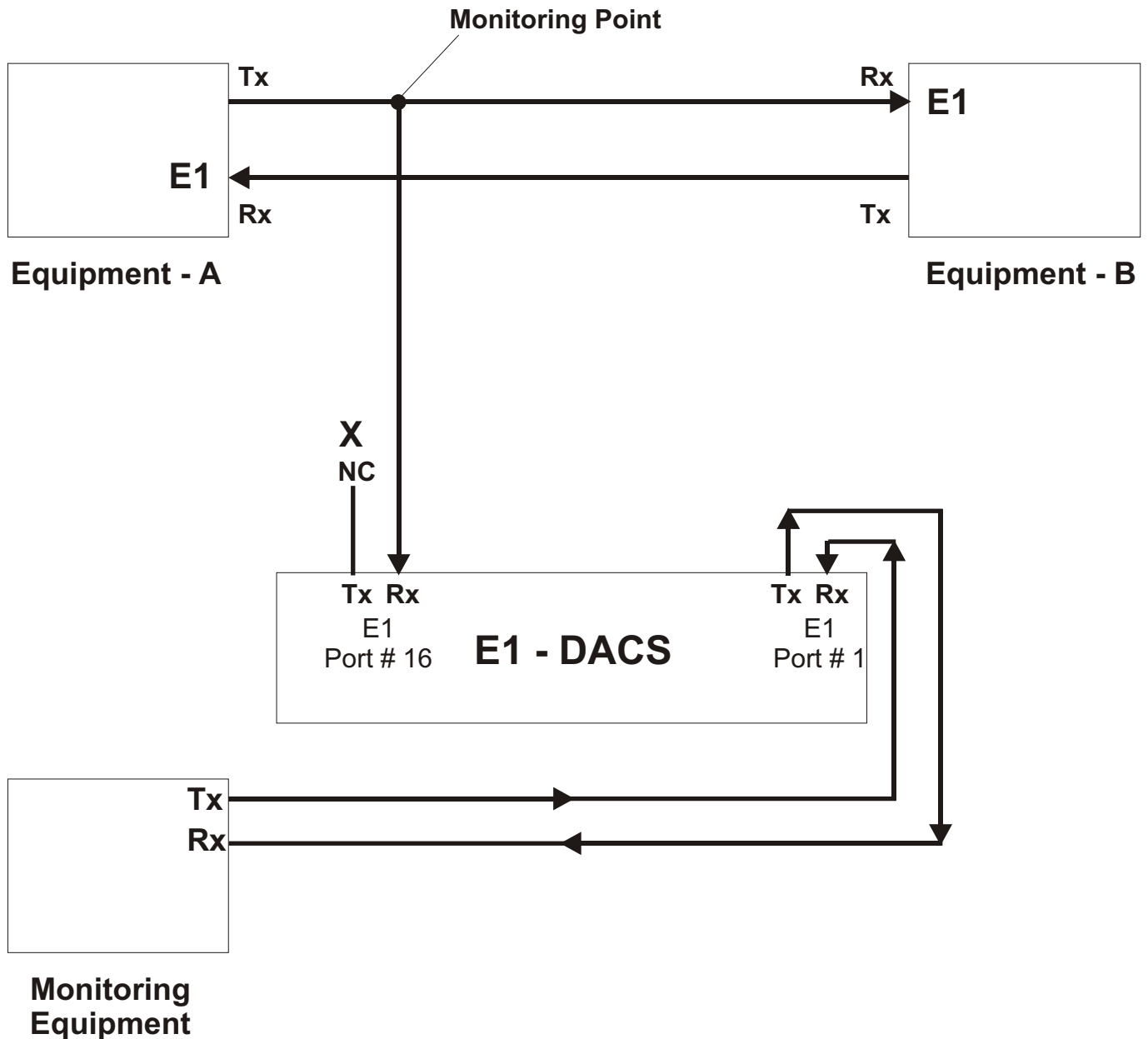


③

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

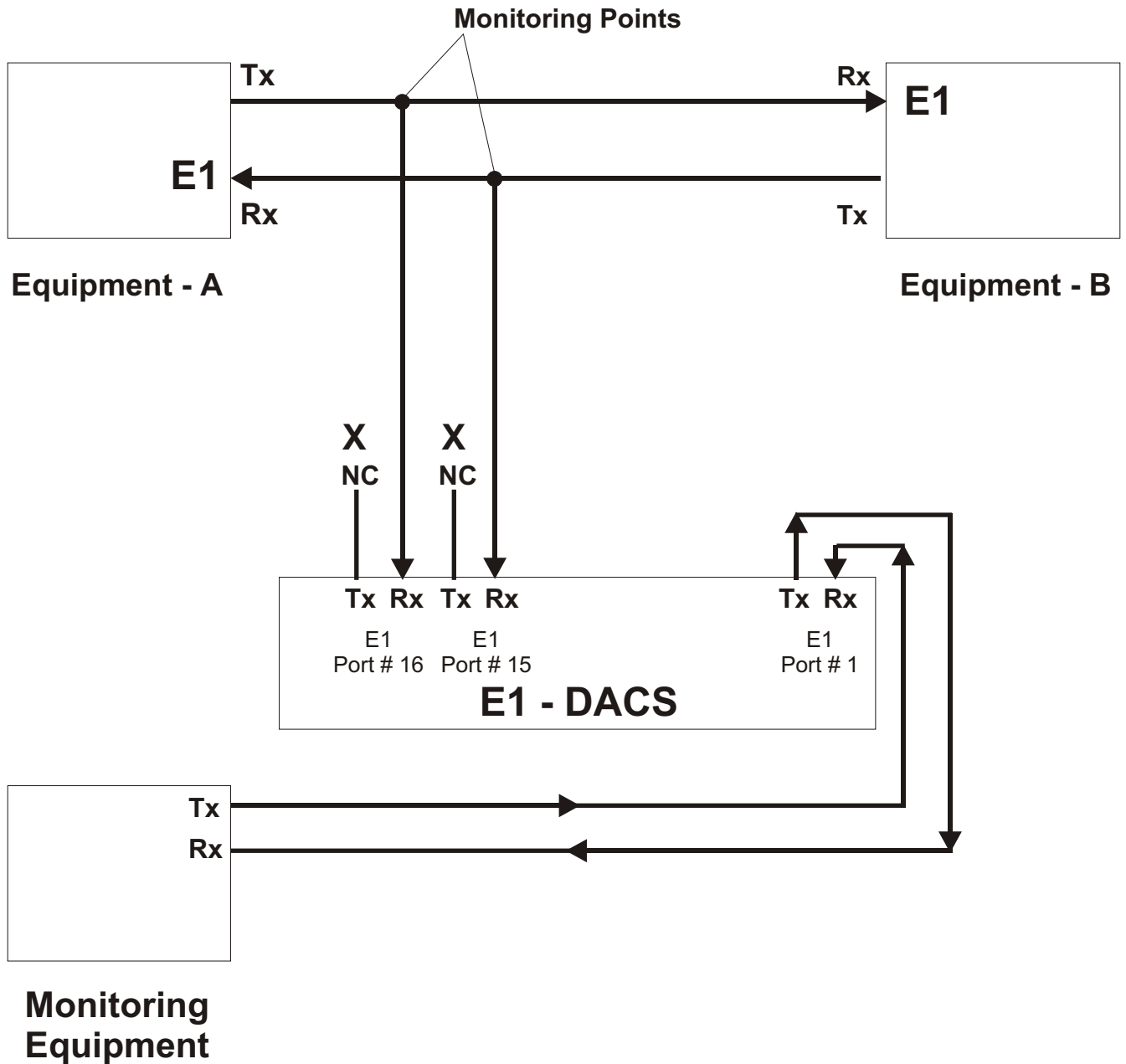
**Hi-Z Non - Intrusive Monitoring Application**

**Hi-Z Uni-directional Monitoring**



To monitor an E1 link in a single direction, you will need to connect ONE high impedance E1, RX pair of the DACS, as it is only the Rx (RECEIVE) pair that is capable of listening. Please leave the Tx (TRANSMIT) pair un-connected.

## Hi-Z Bi-directional Monitoring



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

## FEATURES

- Provides DS0, "n"x64Kbps and Fractional E1 grooming for up to 16 E1 ports.
- Rear Access
- User friendly CLI (text based) commands.
- Telnet (10 / 100 BaseT) option
- Easy to install
- Configurable from 2, E1 ports to 16, 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.
- Can be ordered for (non - intrusively) connecting to monitoring/billing equipment for Live - Traffic monitoring and cross connect functions.
- Easy to install and simple to use.

## VCL-DACS, E1 DIGITAL CROSS CONNECT SWITCH - SHELF DESCRIPTION:

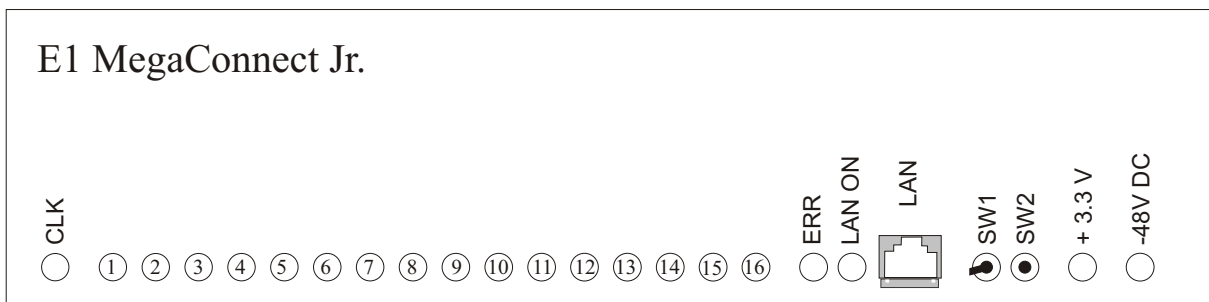
*2U high standalone system.*

The VCL-DACS, E1- Digital Cross Connect Switch unit is a 2U, 19 Inch Shelf, fitted with a backplane that provides rear access of all external interfaces. The 2Mbps electrical i/o, power input, alarm extension and the NMS port are all accessed from the backplane.

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

### VCL-DACS, E1 Digital Cross Connect

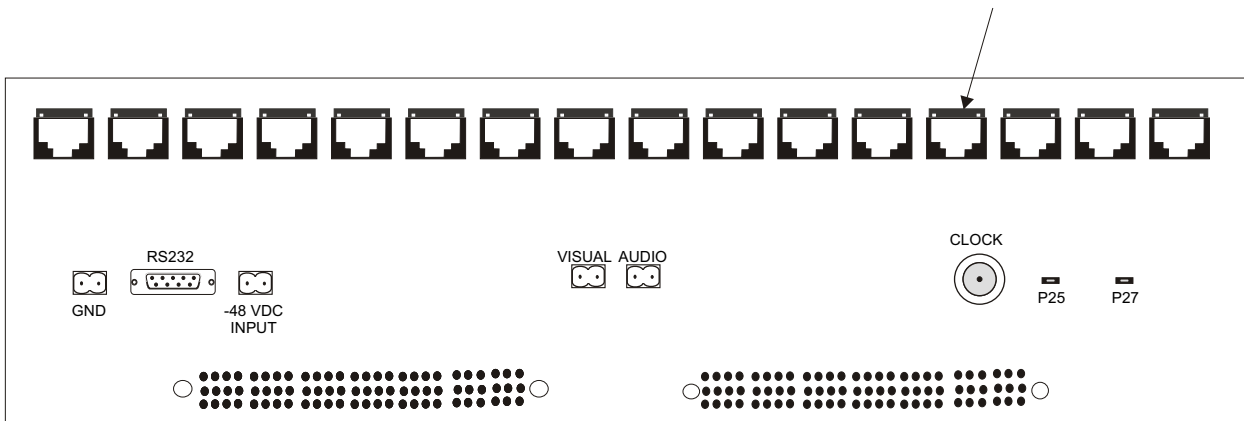
#### Front View of the Shelf



#### Rear View of the Shelf

##### RJ-45 Version

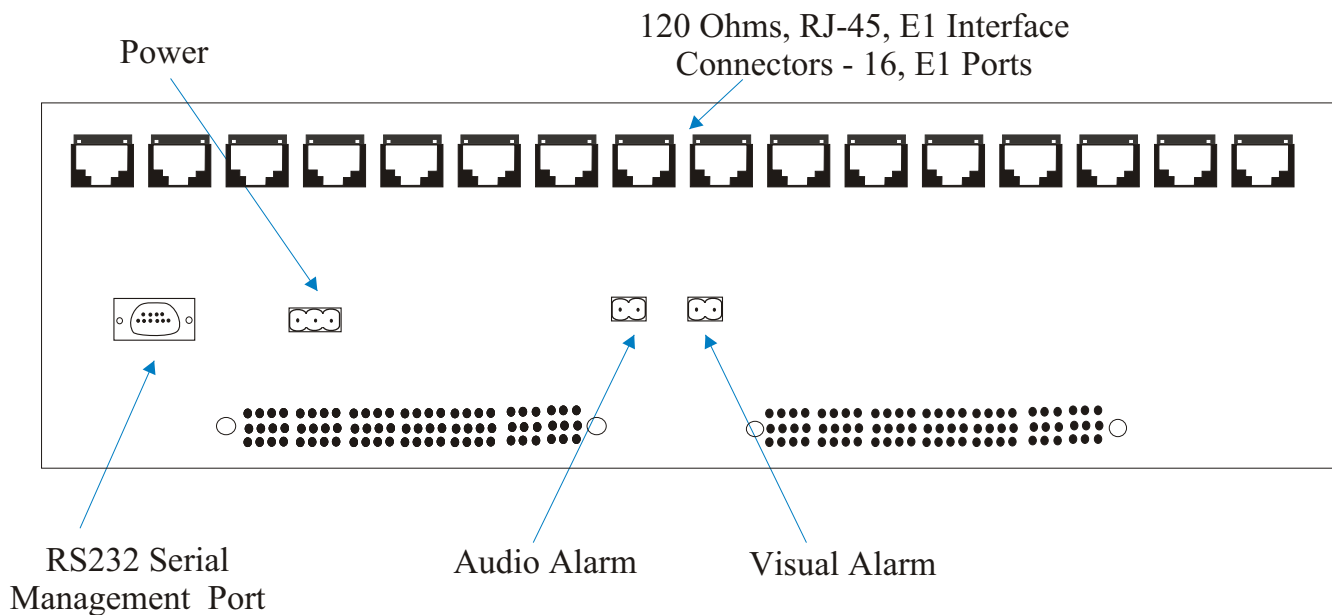
100 Ohms, RJ-45, E1 Interface Connectors - 16, E1 Ports



## ACCESSING VCL-DACS - STANDALONE SHELF

2Mbps streams are accessible at the backplane. Access is also available for 2 alarm extensions, - 48V power input are 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 VCL-DACS unit.

### VCL-DACS Back View



VCL-DACS 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 2Mbps Ports
- Monitoring of the VCL-DACS status and configuration.

## Alarm Status Monitoring

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

In addition to the above monitoring facilities, VCL-DACS is provided with LED's, which indicate various fault conditions

## Monitoring VCL-DACS via LED Indications

- 1 to 16 E1 Ports LED indicators
- +3 VDC present
- -48VDC present
- Configuration Error

## Technical Specifications -

### Mechanical Specification

Width :	480mm
Depth :	280mm
Height :	90 mm
Weight:	4.20 Kg.

### E1 Interface

Line Rate	E1 (2.048 Mbps $\pm$ 50 bps)
Available Time-Slots	1-31
Framing	G.704
Electrical	G.703
Jitter	G.823
Impedance	120 Ohm
Connector	RJ-45 (F)

### 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 subpart A 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

Technical specification are subject to change without notice.

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