



**ORION TELECOM NETWORKS INC.**

**16 Port E1 VCL-MegaConnect-Jr  
Digital Access Cross Connect Switch (DACS)**

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**Product Brochure & Data Sheet**

**Orion Telecom Networks Inc.**

16810, Avenue of Fountains, Suite # 108,  
Fountain Hills,  
AZ 85268 USA

PH: (+1) 480-816-8672, FAX: (+1) 480-816-0115  
E-mail: [sales@oriontelecom.com](mailto:sales@oriontelecom.com)  
Web Site: <http://www.oriontelecom.com>

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## Introduction

The 16 Port E1 DACS - VCL-MegaConnect-Jr is an E1 digital cross connect switch, presents its user an easy to use, platform to cross connect up to 16 E1 ports. 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.

### 16 Port E1-Digital Access Cross Connect VCL-MegaConnect-Jr™



The 16 Port 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 - 48V DC 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 an external alarm.

The 16 Port E1 Digital Cross Connect Switch also has a 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.

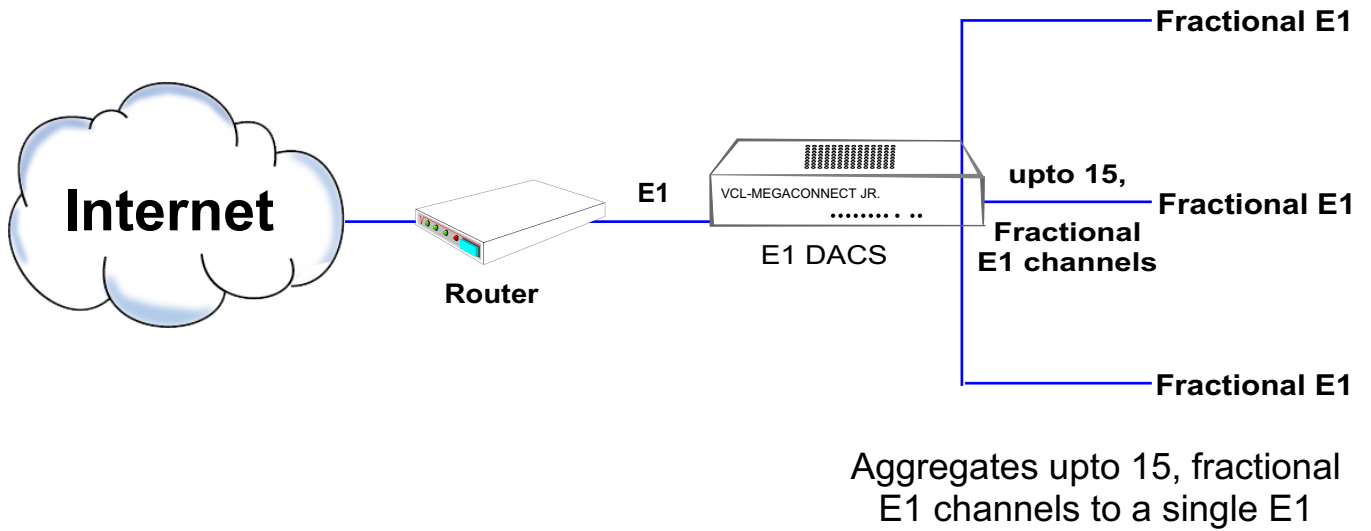
## Applications

- Providing fractional E1s to subscribers
- Data aggregation from fractional E1 channels
- Cellular extending fractional E1 ports from MTSO to cell-sites

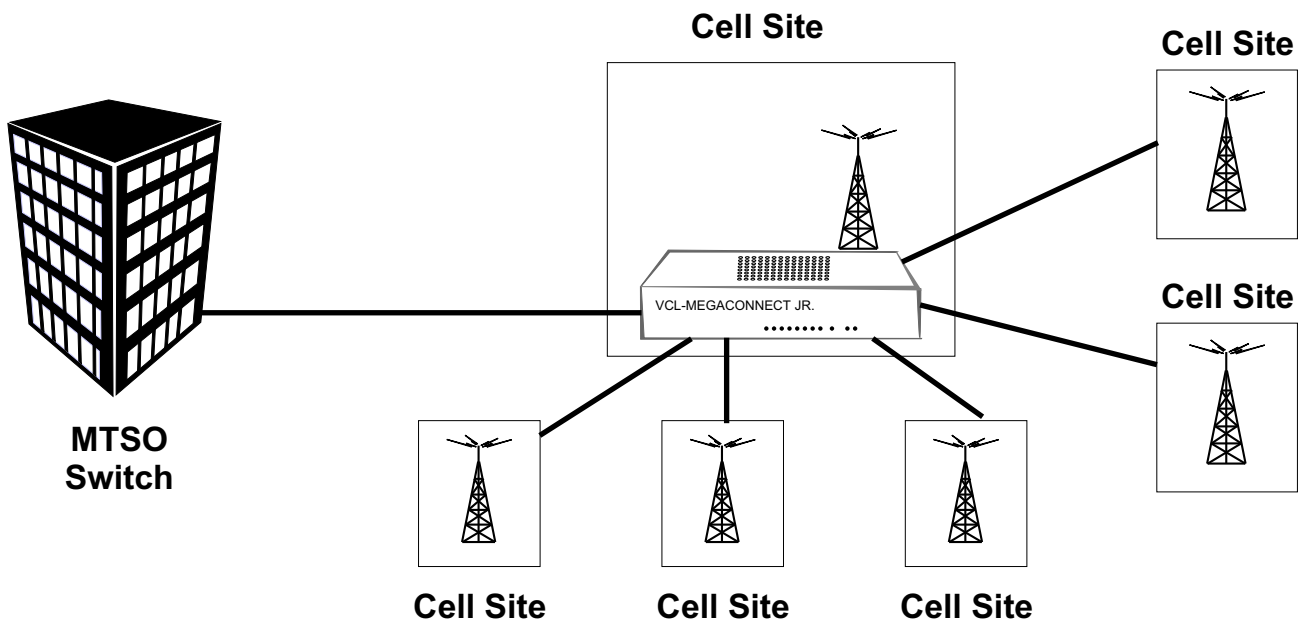
## Highlights

- Stratum 3 clock
- 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



**2** **Backhaul-Cellular Application using E1-DACS**



## 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)
- 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
- Easy to install and simple to use

## 16 Port E1 DACS - VCL-MegaConnect Jr

### Shelf Description

#### 2U high standalone system

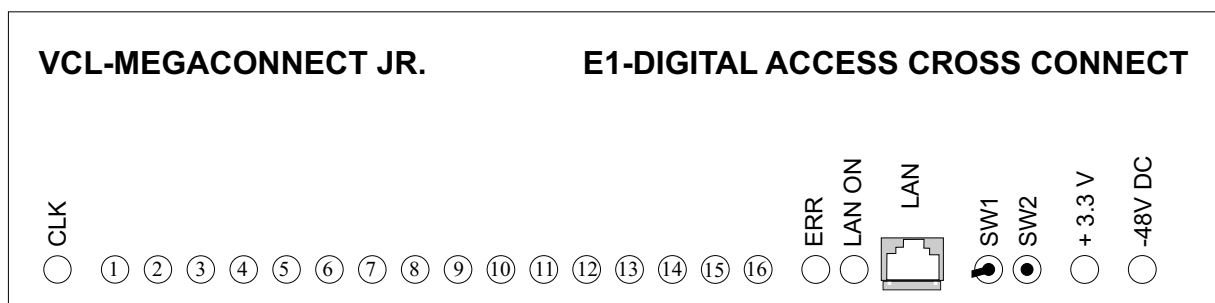
The 16 Port E1 DACS - VCL-MegaConnect Jr unit is a 2U, 19 Inch Shelf, fitted with a backplane that provides rear access of all external interfaces. The 2Mbps electrical I/O, power input, alarm extension and the NMS port are all accessed from the backplane.

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

75 Ohms E1 option is also available.

## 16 Port E1 DACS - VCL-MegaConnect Jr

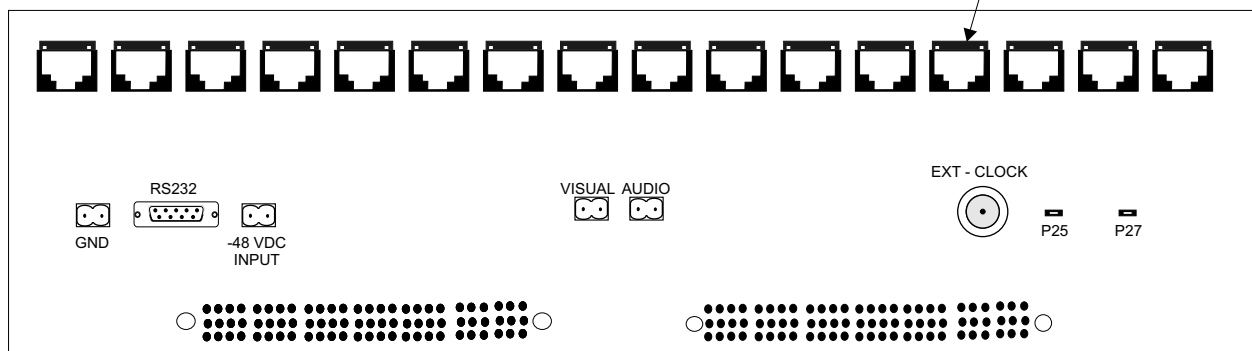
### Front view of the shelf



### Rear view of the shelf

#### RJ-45 Version

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

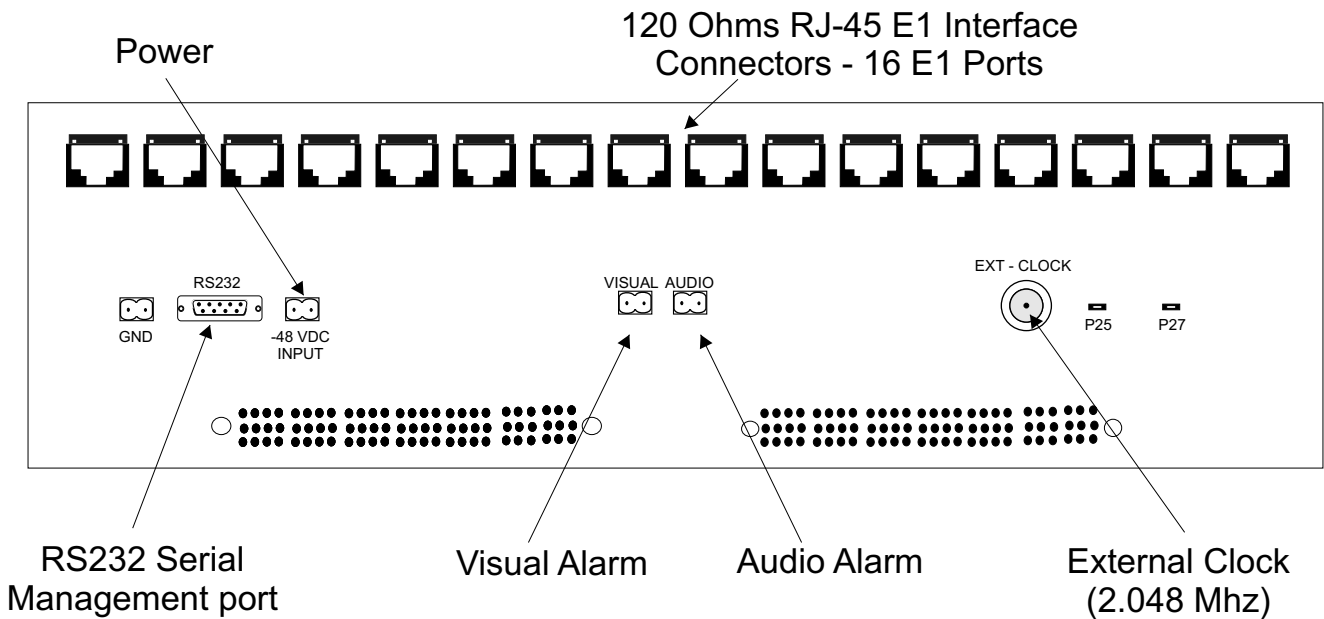


## Accessing 16 Port E1 DACS -VCL-MegaConnect-Jr Standalone Shelf

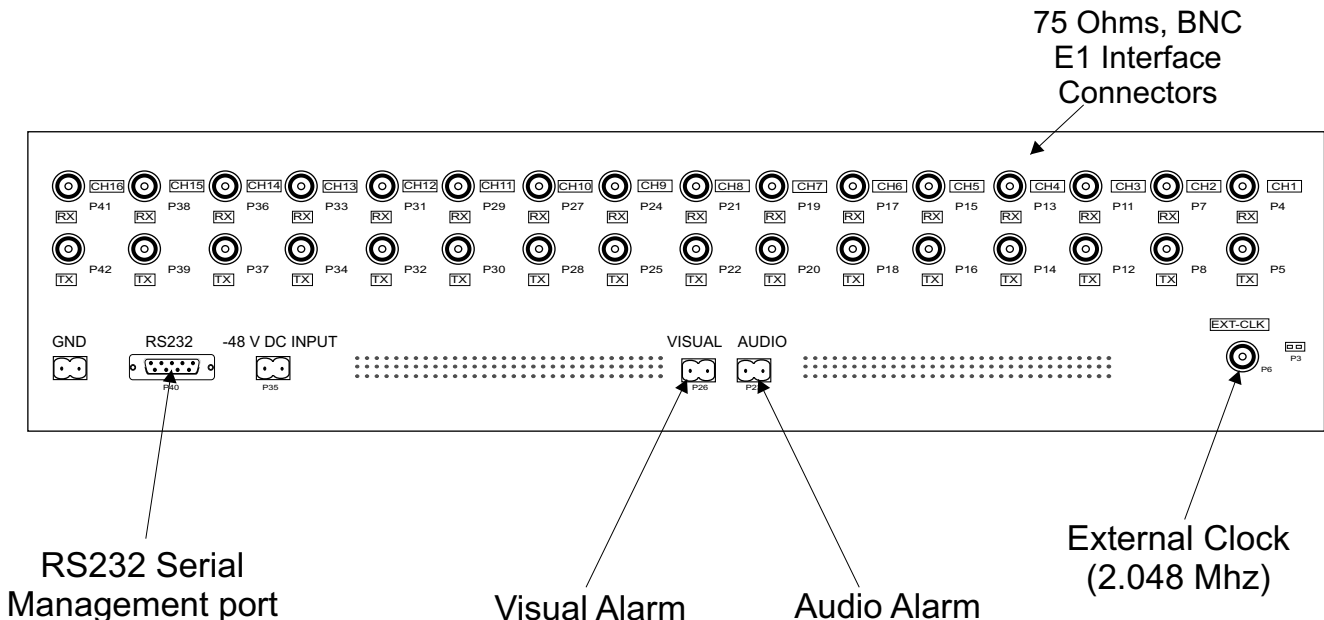
2Mbps streams are accessible at the backplane. Access is also available for 2 alarm extensions  
48V power input is provided at the rear of the 2U shelf. The RS232 interface for monitoring and control is also taken from the rear panel of the stand-alone VCL-DACS unit.

16 Port E1 DACS - VCL-MegaConnect-Jr offers programming via an RS232 port for control and monitoring of the unit.

### Rear view of shelf 120 Ohms - (RJ-45 Version)



### Rear view of the shelf 75 Ohms - (BNC Version)



**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 16 Port E1 DACS - VCL-MegaConnect -Jr status and configuration

**Alarm status, monitoring**

- Loss of incoming signal at all 2 Mbps ports
- Configuration error alarm

In addition to the above monitoring facilities, 16 Port E1 DACS - VCL-MegaConnect-Jr is provided with LEDs, which indicate various fault conditions.

**Monitoring 16 Port E1 DACS - VCL-MegaConnect-Jr via LED indications**

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

**Technical Specifications - E1 Interface:**

Number of E1 Ports	16
Available Time-Slots per E1	1-31
Conformity	G. 703
Bit rate	2048Kbps $\pm$ 50ppm
Code	HDB3
Nominal Impedance	120 $\Omega$ balanced/75 $\Omega$ unbalanced
Peak Voltage of a mark For 120 $\Omega$ balanced interface For 75 $\Omega$ unbalanced interface	3.0 V $\pm$ 0.3 V 2.37 V $\pm$ 0.237 V
Connector	RJ-45 (F) for 120 $\Omega$ impedance and BNC for 75 $\Omega$ impedance
Peak Voltage of a space For 120 $\Omega$ balanced interface For 75 $\Omega$ unbalanced interface	0 V $\pm$ 0.3 V 0 V $\pm$ 0.237 V
Nominal Pulse Width	244ns
Pulse Mask	As per CCITT rec. G.703

**Time-slot selection / cross - connect:**

Any time-slot to any time-slot, through an internal, best byte, non-blocking TSI switch.
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**Clock**

Internal	(Stratum3 level)
Loop-timed	From any E1 Port (with automatic fallback)
External	75 Ohms - 2.048 MHz

**Management and Control**

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

**Command Language**

Command Line Interface (English text commands)
Windows based GUI

**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**

<b>16 Port E1 DACS - VCL-MegaConnect-Jr</b>			
<b>S.No.</b>	<b>Part No.</b>	<b>Product Description</b>	<b>Qty</b>
1.	VCL-1249-16E1-120E	16 Port E1 DACS - VCL-MegaConnect Jr Digital Access Cross Connect Switch (DACS) 19 inch 2U Rack Mount Version, 120 ohms, RJ-45 version.	1
2.	VCL-1249-16E1-75E	16 Port E1 DACS - VCL-MegaConnect Jr Digital Access Cross Connect Switch (DACS) 19 inch 2U Rack Mount Version, 75 ohms, BNC version.	1

Technical specifications are subject to changes without notice.  
Revision 06 - August 25, 2008.

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