



**ORION TELECOM NETWORKS INC.**

**VCL-MegaConnect-Jr.  
16 Port E1/T1 Mixed Configuration DACS  
and Interface Converter**

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**Product Brochure & Data Sheet**

**Orion Telecom Networks Inc.**

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## Introduction

VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter shall allow the user to cross connect between E1 and T1 interfaces at DS-0 (64 Kbps time-slot) level and use it for interface, frame and line-code conversion between 8 E1 interfaces and 8 T1 interfaces.

**VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter**



The VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter occupies only a 2U high rack-space and is a complete 19-inch stand-alone unit that provides connectivity of up to 16 E1/T1 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 VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter 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.

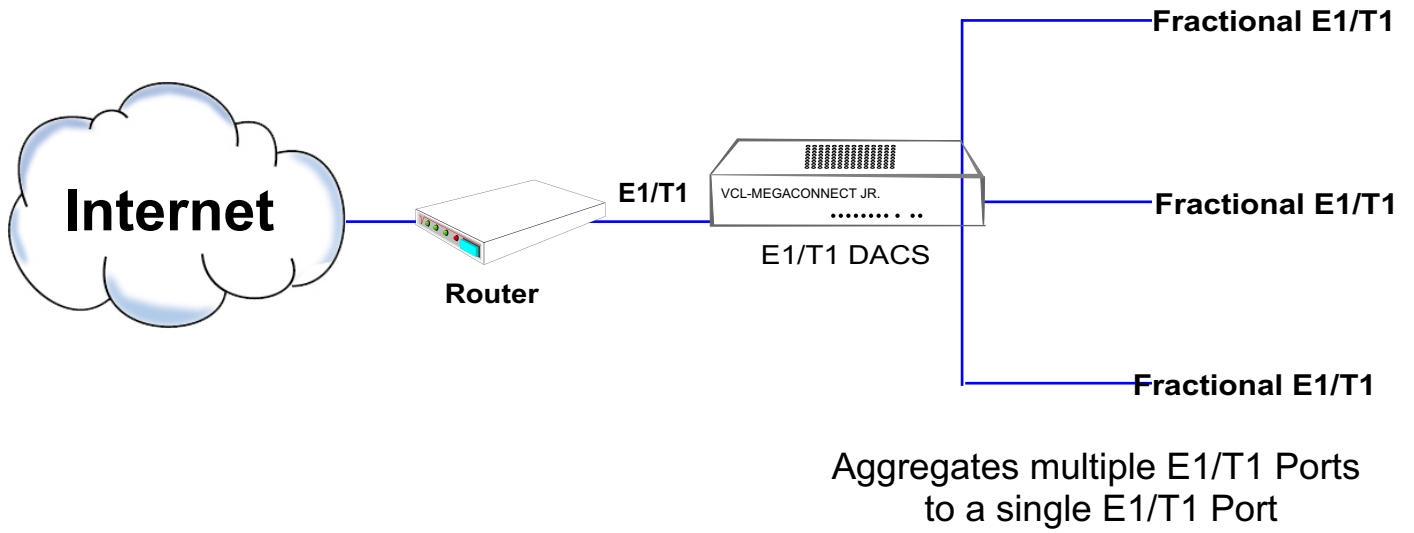
## Applications

- ISP providing fractional E1/T1s to subscribers
- Data aggregating fractional E1/T1 data circuits
- Cellular extending fractional E1/T1 Ports from MTSO to cell-sites
- DS-0 (64 Kbps) time-slot cross connect between E1 and T1 Ports.
- Interface conversion (only interface, frame and line-code conversion) between E1 and T1 Ports

## Highlights

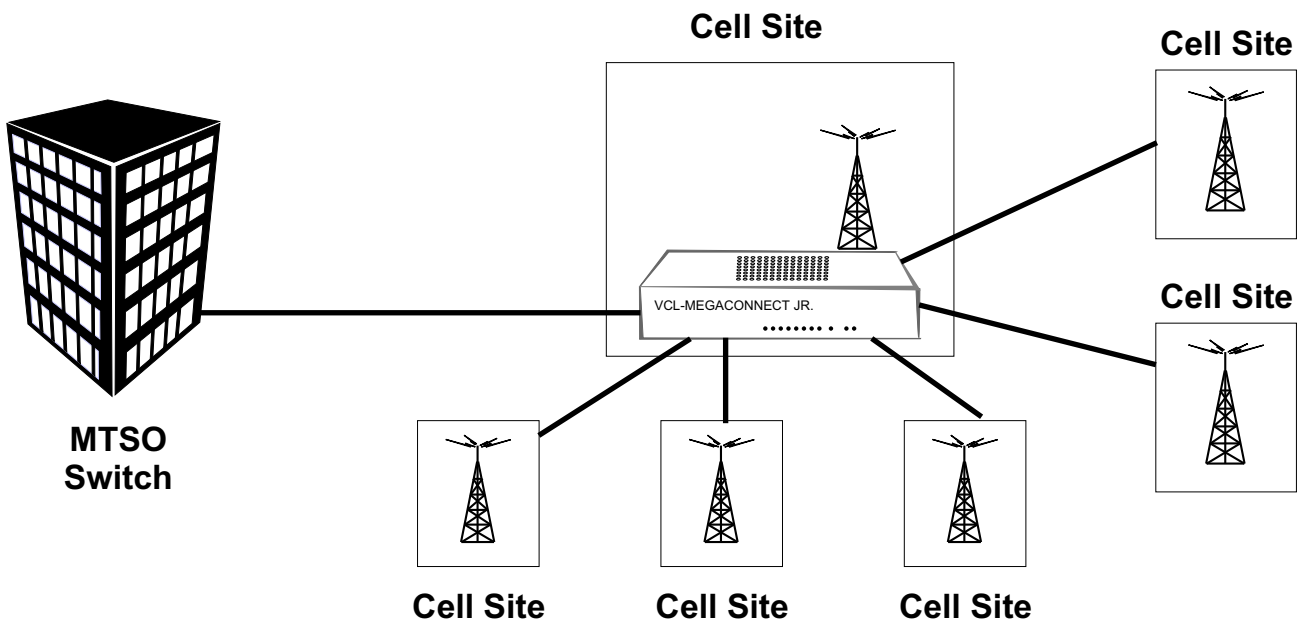
- Stratum 3 clock
- Remote TCP/IP access for configuration and monitoring
- Text based user friendly CLI for easy configuration
- Telnet option
- Available in mixed 16 E1/T1Ports (8 E1 interfaces and 8 T1 interfaces) configuration
- Allows cross connect between E1 and T1 interfaces at DS-0 (64Kbps) time-slot level.

### ISP Digital Cross Connect Application providing fractional E1/T1s' to subscribers



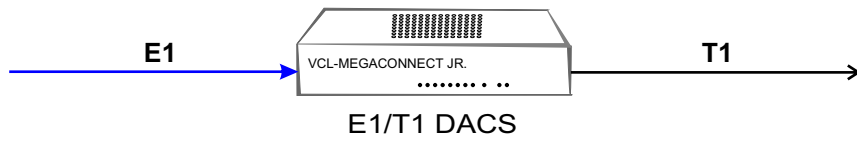
Application 1

### Backhaul-Cellular Application using E1/T1 DACS



Application 2

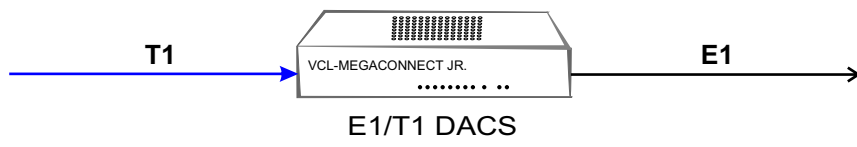
### Providing E1 interface to T1 interface conversion



**Application 3**

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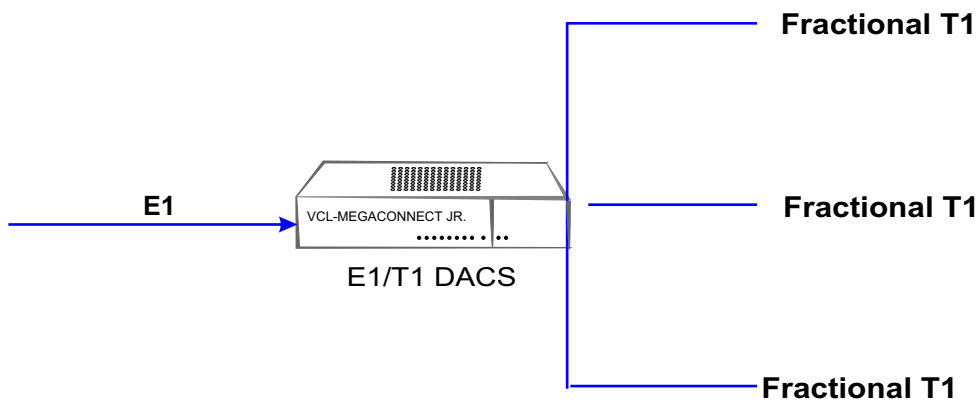
### Providing T1 interface to E1 interface conversion



**Application 4**

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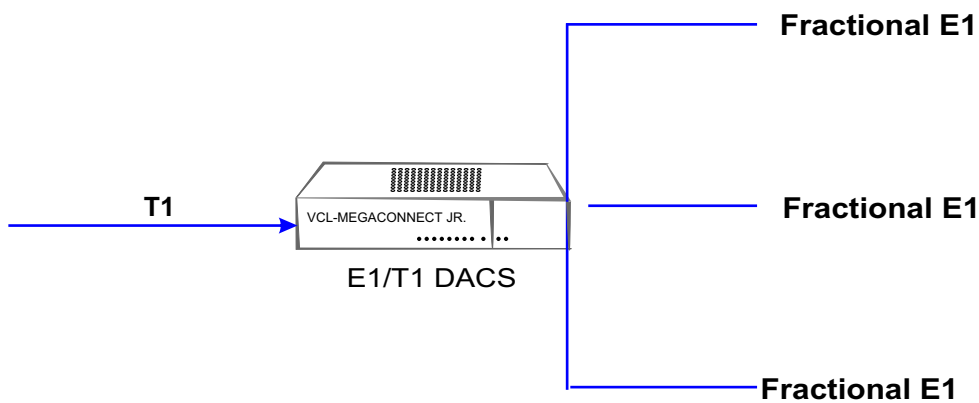
### Converting /Cross Connecting E1 Interface to multiple T1 Interfaces



**Application 5**

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### Converting /Cross Connecting T1 Interface to multiple E1 Interfaces



**Application 6**

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## Features and Uses

- Provides DS0, "n"x64Kbps and fractional aggregation between 8 E1 and 8 T1Ports
- Provides conversion between E1 and T1 interfaces
- Rear access
- User friendly CLI (text- based) commands
- Telnet (10/100 BaseT)
- Easy to install
- Configurable from 2 E1/T1 Ports to 8 E1/T1 Ports depending on user requirements
- LED Indications on the front panel for alarms and status.

## Benefits

- Reduce access costs by combining partially loaded E1/T1 s to a single E1/T1
- Rear access wiring improves wiring and cable management
- Support Nx64kbps fractional E1/T1 operation and grooming
- Easy to install and simple to use.

## VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter

### Shelf Description

#### 2U high standalone system

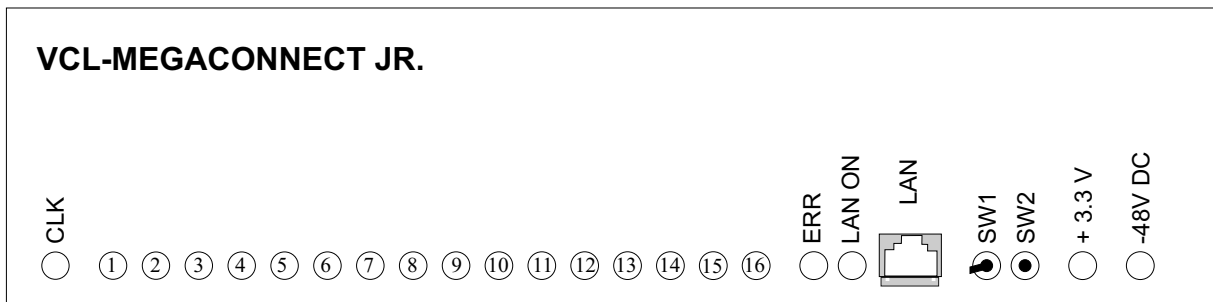
The VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter is a 2U, 19 Inch Shelf, fitted with a backplane that provides rear access of all external interfaces. The 2 Mbps (E1) Ports and the 1.5 Mbps (T1) Ports, power input, alarm extension and the local configuration and management port are all accessible from the rear/system backplane.

The 2 Mbps, 8E1 Interfaces are, 120 Ohms twisted pair RJ-45 connectors.

The 1.5 Mbps, 8T1 Interfaces are, 100 Ohms twisted pair RJ-45 connectors.

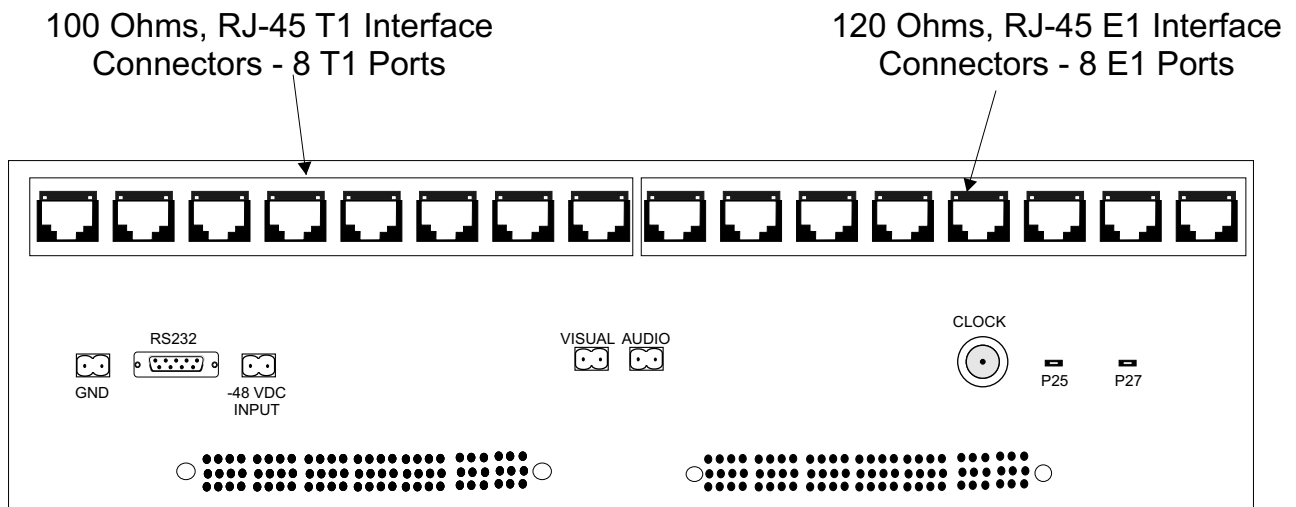
### VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter

#### Front view of the shelf



#### Rear view of the shelf

##### RJ-45 Version



### Alarm status, monitoring

- Loss of incoming signal at all E1/T1 Ports
- Configuration error alarm

In addition to the above monitoring facilities, VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converters is provided with LEDs, which indicate various fault conditions.

### Monitoring VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converters via LED indications.

- 1 to 16 E1/T1 Ports LED indicators
- +3 V DC present (internal power supply)
- -48V DC present (external power input)
- Configuration error

## Technical Specifications

### E1 interface

Available Time-Slots	1-31
Number of Ports	8
Conformity	G.703
PCM sampling rate	8000 samples/ sec
Encoding law	A law as per CCITT G.711
Bit rate	2048kbps $\pm$ 50ppm
Code	HDB3
Nominal Impedance	120 $\Omega$ balanced
Peak Voltage of a mark For 120 $\Omega$ balanced interface	3.0 V $\pm$ 0.3 V
Connector	RJ-45 (F) for 120 $\Omega$ impedance
Peak Voltage of a space For 120 $\Omega$ balanced interface	0 V $\pm$ 0.3 V
Nominal Pulse Width	244ns
Pulse Mask	As per CCITT rec. G.703

## Technical Specifications

### T1 interface

Line Rate	T1 (1.544 Mbps $\pm$ 50 bps)
Number of Ports	8
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)

### 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 (BNC Connector)

### 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°C to 50°C
Humidity	5% to 95% Non-condensing

### Power consumption

Power consumption	5 Watts
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### Mechanical Specifications

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

**Ordering Information**

<b>VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter</b>			
<b>S.No.</b>	<b>Part No.</b>	<b>Product Description</b>	<b>Qty</b>
1.	VCL-1249-8E1-8T1	VCL-MegaConnect Jr., 16 Port E1/T1 mixed configuration DACS and interface converter 19 inch 2U Rack Mount Version	1

Technical specifications are subject to changes without notice.  
Revision 03 - July 25, 2007.

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