



**ORION TELECOM NETWORKS INC.**

**VCL-MegaConnect  
64 Port E1/T1/10 BaseT Ethernet  
Digital Access Cross Connect**

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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>

# VCL-MegaConnect™

## 64 Port E1/T1/ 10 BaseT Ethernet Digital Access Cross Connect



### Description

The VCL-MegaConnect, 64 Port E1/T1/10 BaseT Ethernet Digital Cross Connect Switch is a E1/T1/10 BaseT Ethernet digital cross connect switch, which presents its user an easy to use, yet a sophisticated platform to cross connect up to 64, E1/T1/10 BaseT Ethernet ports. The VCL-MegaConnect, 64 Port E1/T1/10 BaseT Ethernet 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/T1 channels to full E1/T1 channels or between the 64, E1/T1/10 BaseT Ethernet ports.

The VCL-MegaConnect, 64 Port E1/T1/10 BaseT Ethernet Digital Cross Connect Switch occupies only a 6U high rack-space, and is a complete 19-inch stand-alone unit that provides connectivity for up to 64 Port E1/T1 ports. The unit operates on a -48VDC input power supply (AC input adapter is optional for AC mains operation).

The system is 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 data files. It may be accessed using CLI (Command Line Interface) through a Serial (COM) Port of a PC using HyperTerminal text commands. It may be also accessed remotely over a 10BaseT interface by assigning a unique IP Address to the DACS. Password protection to prevent un-authorized access is also available (*please see Note<sup>1</sup>*). Dry contact relay alarms are also available at rear of the system to connect the system to an external alarm output.

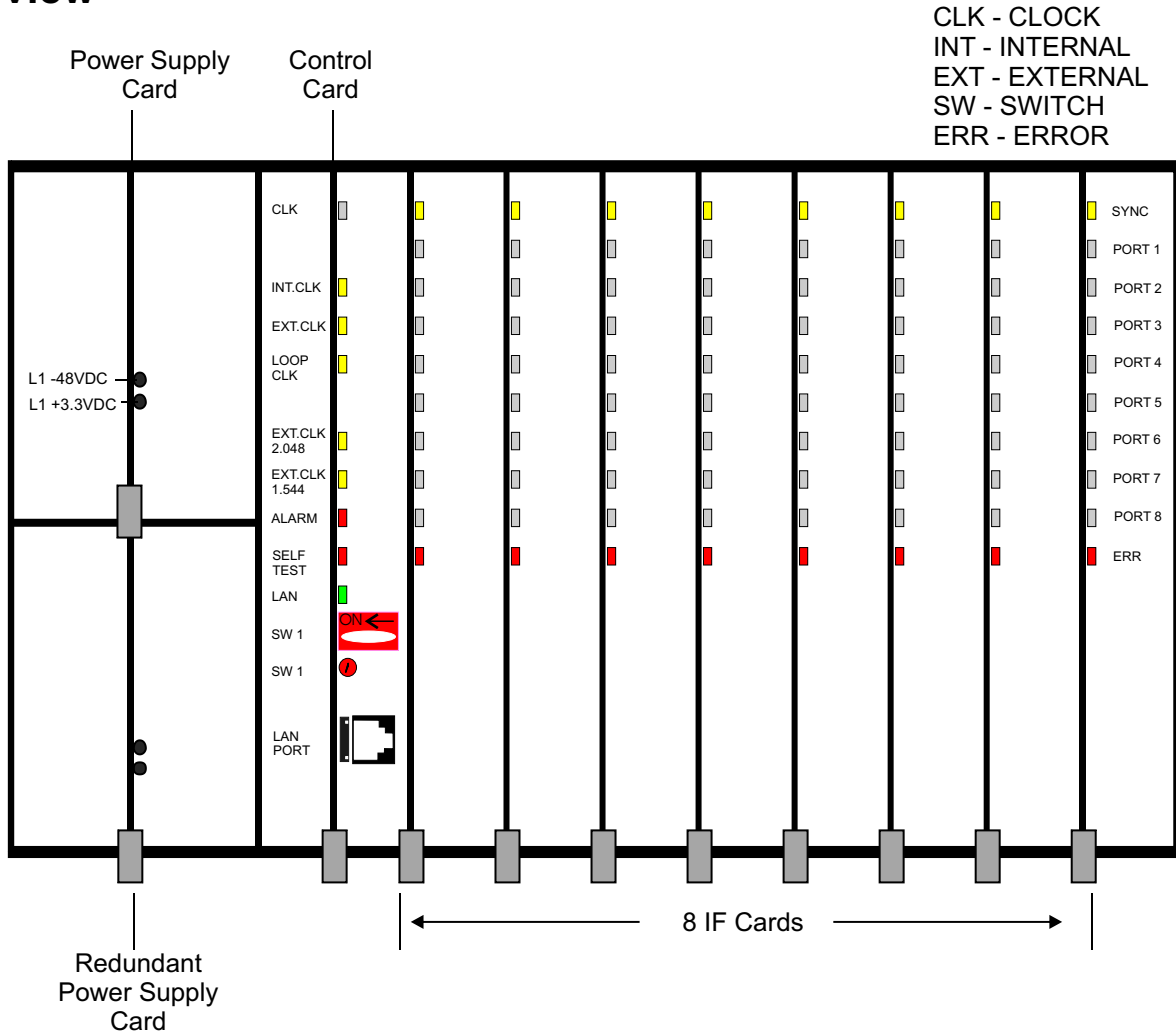
The VCL-MegaConnect, 64 Port E1/T1/10 BaseT Ethernet Digital Cross Connect Switch also allows remote access for configuration and monitoring using Telnet.

### Optional System Configurations:

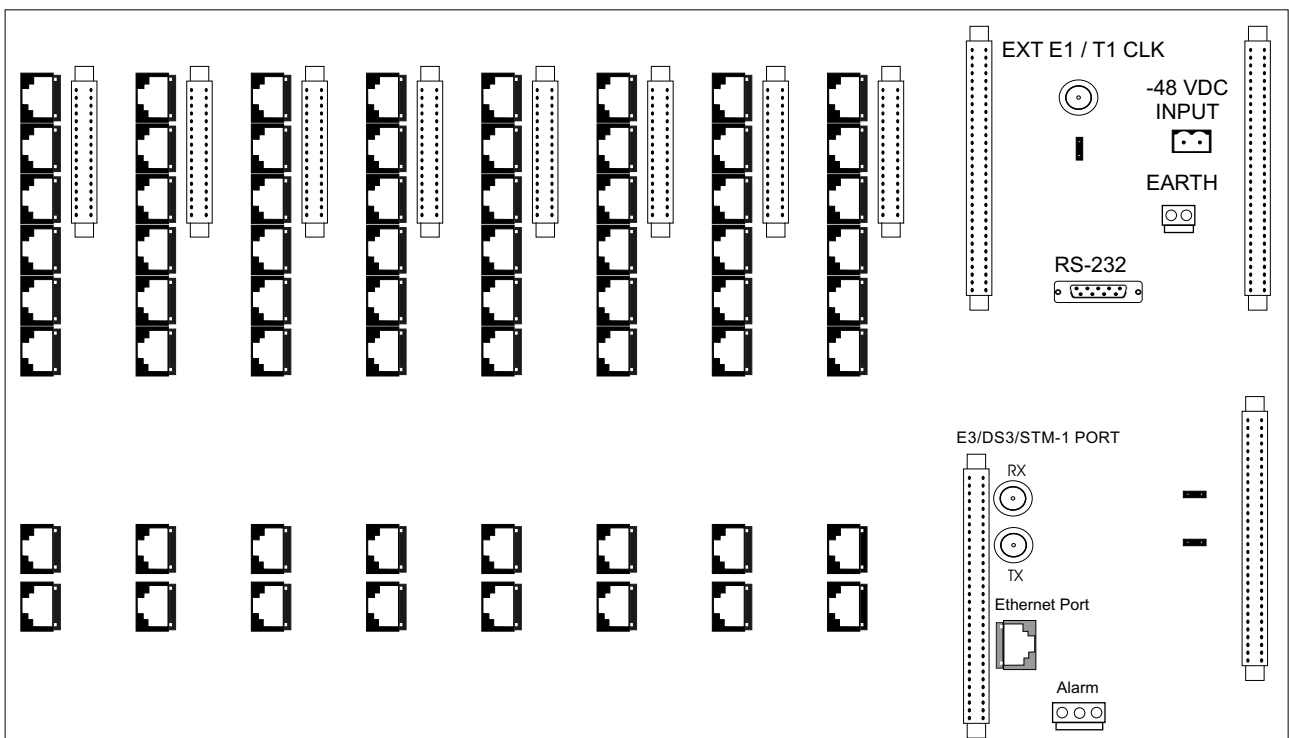
- DS-0 Cross Connect 64 Port E1/T1/10 BaseT Ethernet Cross Connect provides a full (non-blocking) cross connect capability at DS-0 (64Kbps time slot level) between all E1s, T1s and 10/100 BaseT Ethernet ports.
- DS-0 Cross Connect 48 Port E1/T1/10 BaseT Ethernet Cross Connect with and E3 Interface provides the capability to convert cross connect upto 48 E1s, T1s and 10/100 BaseT Ethernet ports to an E3 interface. Useful for transporting E1s, T1s and Ethernet links over an E3 channel.
- DS-0 Cross Connect 32 Port E1/T1/10 BaseT Ethernet Cross Connect with a DS3 (T3) Interface provides the capability to convert cross connect upto 32 E1s, T1s and 10/100 BaseT Ethernet Ports to a DS3 interface. Useful for transporting E1s, T1s and Ethernet links over a DS3 (T3) channel.

**Note<sup>1</sup>:** This does not however substitute Firewall protection which must be installed separately.

# Front view



# Rear view



## Applications

- E1 Cross Connect
- T1 Cross Connect
- E1 to T1 Cross Connect (E1<>T1 Converter for data applications)
- E3 to E1/T1/10/100 BaseT Ethernet Cross Connect
- DS3 to E1/T1/10/100 BaseT Ethernet Cross Connect

## Indications and Alarm Monitoring

- E3 Loss of signal
- DS3 Loss of signal
- Loss of incoming signal at any E1/T1 Port
- Configuration error alarm
- Clock status
- 1 to 8 channel LED indicators to indicate the status of each E1/T1 channel
- +3 Volts power supply
- -48VDC present
- Configuration error

## Programmable Features

- Specifying the priority sequence for clock selection
- Enabling or disabling E1/T1 channels (masking) of the E1/T1 channels that are not in use
- Creating a cross connect between E1s at DS-O level (single time-slot level) using the Windows based, easy to use GUI
- Telnet interface for remote programming by using text commands

## Status Monitoring

- Clock selection
- Status of alarms
- Enabled/Disabled status of E1/ T1 channels
- Monitoring of the VCL-MegaConnect status and configuration

## Technical Specifications

### 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 Ohms
Connector	RJ-45 (F)
Clock	
Internal	(Stratum3 level)
Loop-timed	
External	75 Ohms - 2.048 MHz - 1.544 MHz

### 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)
Clock	
Internal	(Stratum3 level)
Loop-timed	
External	75 Ohms - 2.048 MHz - 1.544 MHz

**10/100BaseT Interface**

Number of interfaces	8 per interface card
Interface types	10BaseT
Standards compliance	IEEE 802.3-2002 RFC1662 RFC2615 X.86 RMII
Interface rate	Programmable in steps of 512 Kbps upto 1920 Kbps per 10/100BaseT Interface (512/1024/1536/1920 Kbps)
Protocol	User Programmable HDLC and LAPS mapping
Connectors	RJ-45 (10/100 BaseT Electrical)

**E3 Interface**

Number of E3 interfaces	1
Bit rate	34.368 Mbps
Bit rate tolerance	<sup>+/-</sup> 20ppm
Line Code	HDB3
Frame structure	As per G.751
Interfaces	As per G.703
Connectors	BNC, Co-axial Un-balanced
Impedance	75 Ohms
Permissible Attenuation	12dB @ 17184 KHz
Signal level to declare loss of signal condition	-35dB (maximum)
Signal level to clear loss of signal condition	-15dB (minimum)

**DS3 (T3) Interface**

Number of DS3 interfaces	1
Bit rate	44.736 Mbps
Bit rate tolerance	+/- 20ppm
Line code	B3ZS
Framing	* Meets ANSI T1.404 * M13 or C-bit parity
Pulse shape	Meets ANSI T1.102-1993 and Bellcore GR-499-CORE
Connectors	BNC, Co-axial Un-balanced
Impedance	75 Ohms
Signal level to declare loss of signal condition	$\leq 20\text{mV}$
Signal level to clear loss of signal condition	$\geq 90\text{mV}$

**Power supply**

Power supply	-48VDC (-40VDC to -60VDC)
Power supply	Redundant (1+1 Protected)
Power consumption	21 watts (maximum)

**Chassis**

6U High
19-inch rack-mounting shelf

**Time-slot selection**

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

Clock Internal	AT&T TR62411, Telcordia GR-1244-CORE, Stratum 3, Stratum 4, Enhanced and Stratum 4, ETSI ETS 300 011, ITU-T G.813 Option 1
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)

**Core System: All items of the Core System must be ordered. The Core System consists of:**

a)	19 inch chassis
b)	Control card and TSI with serial and LAN management ports
c)	2 x -48VDC input power-supply card(s) for Redundant operation
d)	AC to -48VDC DC converter for universal AC mains input (if required to connect the equipment on AC mains)
e)	GUI - configuration software
f)	User manual

**Interface cards**

g)	8 Port E1 Ports/Interface card, 120 ohms, balanced RJ-45	VCL-1282-E1
h)	8 Port T1 Ports/Interface card, 100 ohms, balanced RJ-45	VCL-1282-T1
i)	8 X 10/100 BaseT Ethernet Interface cards	VCL-1412-1413-BaseT

## **System Management**

- Windows 95, Windows 98, Windows ME and Windows XP based GUI
- CLI (Command Line Interface)

Technical specifications are subject to changes without notice.  
Windows is the registered Trademark of Microsoft Corporation, USA.  
Revision 06 - December 20, 2006

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