



# ORION TELECOM NETWORKS INC.

## 2 x VCL-E1 Over Ethernet Multiplexer (TDM Over IP)

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### Product Brochure & Data Sheet

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## Description

The 2 x VCL-E1 over Ethernet multiplexer (TDM over IP) product is used to provide 2 E1 communication channels over Ethernet or IP Networks. This product transmits information at E1 (2048kbit/s).



### 2 x VCL - E1 over Ethernet Multiplexer (TDM over IP)

To transport E1 channels over an Ethernet or an IP network, and to accelerate traditional telecom services to migrate to the IP packet networking technology, the 2 x VCL-E1 over Ethernet multiplexer product uses TDM over IP technology. This solution transports the legacy E1 data through the existing Ethernet or IP network.

2 x VCL-E1 over Ethernet multiplexer product is a new generation of TDM over IP technology with IP circuit emulation that supports transportation of 2 E1 over an Ethernet or an IP network. The uplink Ethernet port and user data port are IEEE 802.3 compliant, 10 / 100BaseT auto-sensed ports.

The state-of-art design provides the highest availability with the accurate timing signal and data bit stream reconstruction. Predefined system parameter profiles that according to different application requirements; ultimately simplifies the installation process and saving maintenance cost.

Telecom and Enterprise users can save significant access and equipment costs and generate new revenue resources by offering different types of legacy services over Ethernet networks. It is also suitable for connecting to the Ethernet based wireless equipment to achieve fast deployment of E1 services. One particular application is to provide a combination of Ethernet and E1 services using low cost Wireless LAN bridges, or over RPR Ethernet rings. Operators can use the 2 x VCL-E1 over Ethernet multiplexer to provide a provide a combination of Ethernet and legacy E1 (TDM) services over wired or wireless packet networks, or RPR rings.

TDM technology occupies fixed transmission bandwidth which is suitable for real-time applications such as voice and video. Ethernet technology is based on statistical multiplexing, transmitting and exchanging information in packets. It does not take up a fixed transmission bandwidth, which is good for achieving higher bandwidth utilization. But Ethernet technology does not provide adequate QoS for real time applications.

The 2 x VCL-E1 over Ethernet can be used to emulate transparent E1 channels over an Ethernet link with an acceptable QoS (Please see the note: QOS, below), so that a majority of the existing E1 based applications can be readily setup over Ethernet LANs and WANs.

**(Note:** QOS shall depend on the quality of the Ethernet link and packet losses)

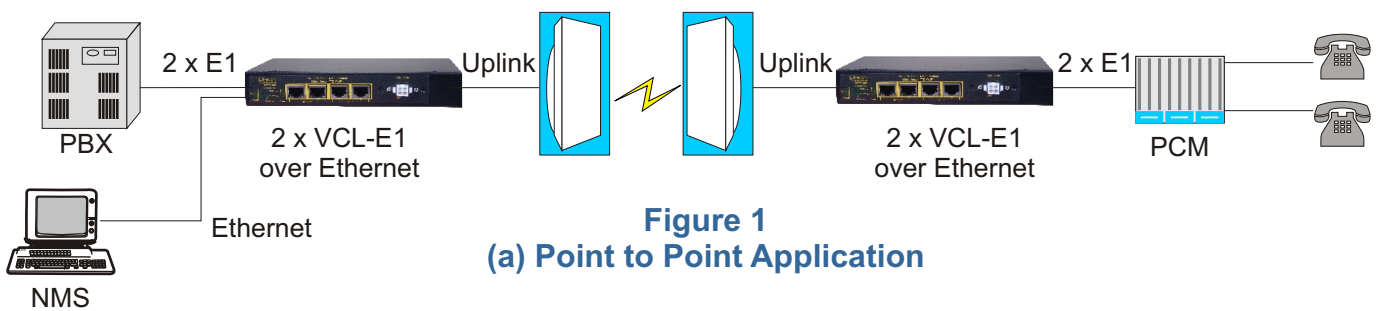
## Features

- User-friendly Web server supported for easy setup and maintenance
- 2 Uplinks, 2 E1/T1
- Stable E1 clock recovery, low jitter and wander
- Low processing delay for E1 channel, high bandwidth usage efficiency
- Resist to packet loss, with PCM frame synchronization protection
- User definable encapsulation packet size for different application
- Support Ethernet encapsulation and UDP/IP protocol encapsulation.
- Support VLAN settings for E1 service and in band VLAN management.
- Enough jitter buffer to resist packet delay variation (PDV)
- Local and remote E1 LOS and AIS and packet loss indication

## Application

### Point to Point 2 x VCL-E1 over Ethernet

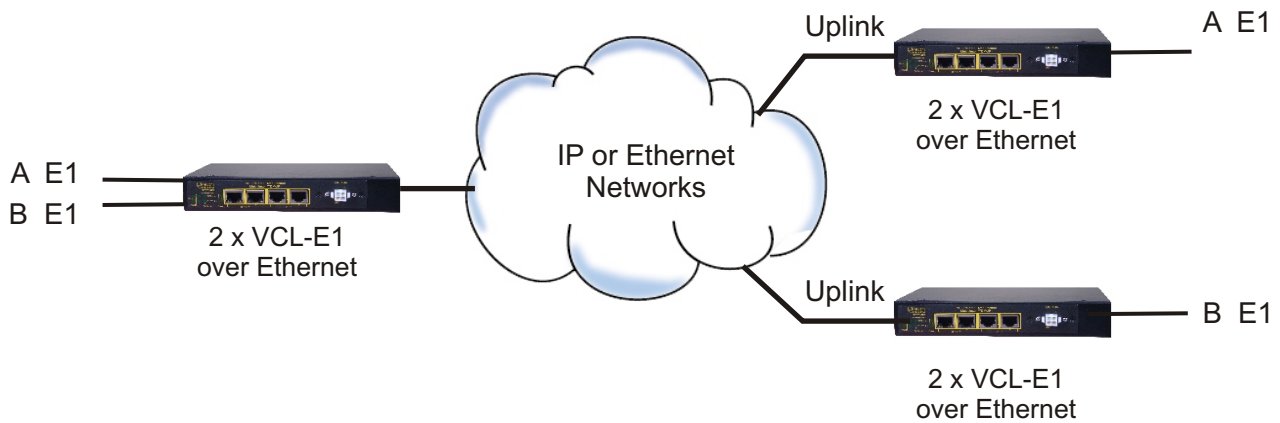
#### Application Diagram



**Figure 1**  
**(a) Point to Point Application**

### Point to Multi point 2 x VCL-E1 over Ethernet

#### Application Diagram








**Figure 2**  
**(b) Point to Multi point 2 x VCL-E1 over Ethernet Application**

## Technical Specifications

Item	Description	
Model	2 x VCL-E1 Over Ethernet Multiplexer (TDM Over IP)	2 Uplinks(1+1), 2 E1/T1
Interfaces	Uplink	2 Uplink Ports Comply with IEEE 801.3 Speed and duplex auto-negotiation or manual Web Manager Supported
	E1 Port	2 E1 Ports Comply with G.703 Impedance: E1-120 /T1-100 or 75
Power	Supply	A DC -48V (-36V ~ -72V)
		B AC ~220V (100V ~ 260V)
	Consumption	≤ 4W
Working Environment	Temperature	0°~ 50°C
	Relative Humidity	≤90% (non-condensing)
Dimension	W x H x D (mm):	185 x 35 x 136.5

## Interoperability Table with Wireless Bridges

LOGO	Manufacturer	Place	Model
	MOTOROLA	USA	CANOPY 5700BH, 5700BH20, BH45, Gemini series, Spectra series etc.
	Alvarion	Israel	BREEZENET DS.11, 28B, LB etc
	Proxim	USA	Tsunami™ series, QuickBridge20 etc
	Wi-Comm United	Canada	Ultima 3 series Libra 5800 series
	Infinet Wireless	Russia	RWR 5000 mini

Note: More wireless bridges are supported

