



ORION TELECOM NETWORKS INC.

VCL-DCME E1 Voice Compression

Product Brochure & Data Sheet

Headquarters: Phoenix, Arizona

Orion Telecom Networks Inc.

20100, N 51st Ave, Suite B240,
Glendale AZ 85308
Phone: +1 480-816-8672
Fax: +1 480-816-0115
E-mail: sales@oriontelecom.com
Website: <http://www.oriontelecom.com>

Regional Office: Miami, Florida

Orion Telecom Networks Inc.

4000 Ponce de Leon Blvd. Suite 470,
Coral Gables, FL 33146 U.S.A.
Phone: 1-305-777-0419,
Fax: 1-305-777-0201
E-mail: sales@oriontelecom.com
Website: <http://www.oriontelecom.com>

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Product Overview

Orion **VCL-DCME E1 voice compression** equipment is a voice trunking (voice compression) gateway that enables up to 8 E1 voice traffic channels to be extended over one single E1 link (Compressed Stream). It performs voice compression over TDM Network to

reduce bandwidth requirements up to 8:1 without causing any degradation in voice quality. It implements G.729 D compression algorithms to send up to 248 voice channels over a 2.048 Mbps E1 link with transparent Common Channel Signaling (CCS) support.



VCL-DCME E1 Voice Compression

The **VCL-DCME voice compression** equipment utilizes voice activity detection, silence suppression and echo cancellation and other techniques to enhance voice quality. It detects and transports DTMF signaling.

In addition, it supports Fax transmission and Voice Band Analog Data Modems. It can be managed locally via a Telnet/local craft (GUI) or remotely via Telnet or SNMP.

It will be present between two MSCs, Telco Switches or International Trunking Gateways to compress up to 8 E1 voice traffic voice channels to a single E1 link.

Working Mode

It includes up to 8 E1s as trunk inputs and one E1 output as the main link (aggregate link) and one E1 output as a backup link.

Version 1: To use our 8:1 DCME equipment to compress and transport up to 8 E1 un-compressed voice PCM voice channels over a single E1 link.

Version 2: To use our 8:1 DCME equipment to compress and transport up to 8 E1 un-compressed voice PCM voice channels over an IP link.

Features

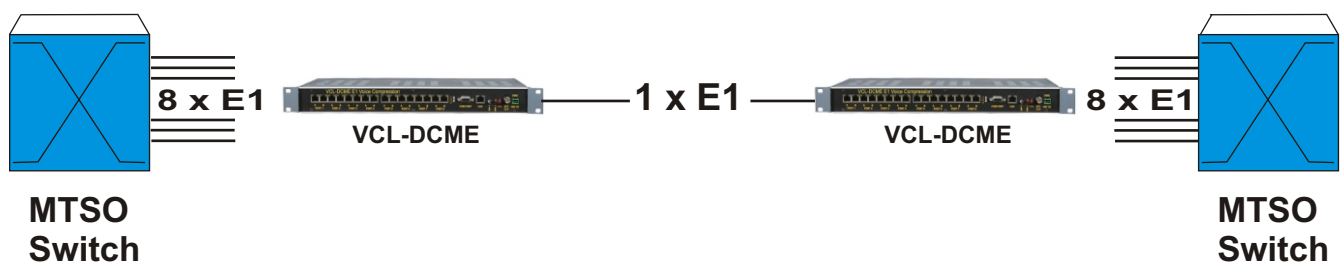
- Compresses up to 248, 64Kbps PCM A-Law Voice Channels (i.e. 8 E1s) to a single E1
- Uses G.729 D compression algorithms to provide toll-quality transmission
- Supports Voice, Fax and Analog Data Modems
- In-built Echo Canceller (@ 192 ms. on each channel) and Voice Quality Enhancement features
- Maximum bandwidth utilization
- Significant scalability - minimum up-front investment
- Increased revenue through improved network utilization
- Increased network capacity at minimum incremental cost
- Simplicity and speed of deployment
- High reliability
- Ease of management
- Quick ROI (Return Over Investment)
- Breaks all previously set price-performance barriers.

Key Benefits

- Provides to 8:1 compression ratio for Toll Quality voice traffic
- Supports Variable Bit Rate (VBR)
- In-built Echo Canceller (@ 192 ms. on each channel) and Voice Quality Enhancement features
- Hybrid Echo Cancellation
- Noise reduction
- Level control
- Adaptive Gain
- Supports all standard as well as proprietary Fax protocols
- Full and dynamic bearer bandwidth utilization
- Remote in-band management through the bearer

Application

The **VCL-DCME E1 voice compression** equipment terminals may be located at an international gateway, long distance switch or at a tandem switch site. The bandwidth is dynamically shared between the PSTN services (Voice, Fax, Analog Modem Data) for optimum use of bandwidth and transmission resources.



Typical Application - Cellular / Radio / Satellite

Technical Specifications

Traffic Processing

- Signal Classification (Voice, Fax, VBD, DTMF)
- Silence Suppression (Voice Activity Detection and Comfort Noise Injection)
- Fax and VBD call protection Forward Error Correction (FEC)
- G3 Fax
- Supports VBR - Variable Bit Rate
- Analog Modem Data transmission
- Supports DSI - Digital Speech Interpolation
- Bandwidth efficient CCS Signaling transmission mechanism

Echo Cancellers

- ITU-T G.168 compliant
- Up to 192 ms echo tail offset in steps of $N \times 32$ ms.

Fax support

- ITU Group 3 faxes (up to 14.4 Kbps)

Voice Band Data (modem) support

- ADPCM 40Kbps

Trunk Interfaces (PSTN)

- E1 2.048 Mb/s Balanced 120 ohms
- E1 2.048 Mb/s Unbalanced 75 ohms (Optional)

Trunk Signaling

- Common Channel Signaling
- SS7
- PRI ISDN
- ISDN QSIG

Trunk Signaling

- Common Channel Signaling
- SS7
- PRI ISDN
- ISDN QSIG

Availability Target %

- 99.999%

Network Interface (TDM)

- Physical-TDM-E1

Redundancy

- Power input redundancy
- TDM link (Output) redundancy

Power

- Max power supply consumption: 50 Watts
- DC power input: -42 to -60 VDC
- Power input (1+1) redundancy

Dimensions

- Height: 1 U
- Width: 482 mm
- Depth: 220 mm

Monitoring and Management

- GUI
- Remote in-band management through the bearer
- Physical Interface (RJ-45, USB)
- Telnet over TCP/IP
- SNMP V2C

Modes of operation

- Single destination, point-to-point only

Voice Quality Enhancement

- Echo Canceller @ 192 ms. on each channel
- Noise reduction
- Hybrid Echo Cancellation

E1 Interface Specifications

Line Rate	E1 - 2.048 Mbps
Line Code	HDB3
Framing	Framed
Frame Structure	As per ITU-T G.704
Electrical	As per ITU-T G.703
Jitter	As per ITU-T G.823
E1 Impedance	120 Ohms (Default) / 75 Ohms (Optional)
Connector	RJ45 (Default) / BNC (optional)

DC Power Supply Specifications

Power supply	- 48V DC (-40V DC to -60V DC)
Input voltage reversal protection	Provided in the Card
Power supply	1+1 Redundancy
Power consumption	14 watts

Command Language

Command Line Interface (English text commands)
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System Management and Access

Windows XP and Windows 7 compatible GUI
Telnet - CLI (Command Line Interface)
SNMP V2 (MIB File provided with the equipment)

Environmental

Working temperature	- 0°C ~ 50°C for operation
Cooling	Forced Air

Management and Control Port

USB Serial Interface COM Port
10/100 BaseT for remote management over a LAN
10/100 BaseT Telnet over a TCP-IP network

Ethernet Management Port (Telnet and SNMP) Specifications

Network Interface	RJ-45 Ethernet 10BaseT or 100BaseT-TX (auto sensing) MDI-X.
Compatibility	Ethernet Version 2.0 IEEE802.3
Protocols Supported	ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP
Management	SNMP, Telnet
EMI Compliance	<ul style="list-style-type: none"> - Radiated and conducted emissions - complies with Class B limits of EN55022:1998 - Direct & Indirect ESD - complies with EN55024:1998 - RF Electromagnetic Field Immunity - complies with EN55024:1998 - Electrical Fast Transient/Burst Immunity - complies with EN55024:1998 - Power Frequency Magnetic Field Immunity - complies with EN55024:1998 - RF Common Mode Conducted Susceptibility - complies with EN55024:1998

Chassis

1U High (44mm)
19-inch standard DIN rack-mounting shelf

Compliance/Regulatory

Meets CE requirements
Complies with FCC Part 68 and EMC FCC Part 15 Class 2
Operation ETS 300 019 Class 3.2
Storage ETS 300 019 Class 1.2
Transportation ETS 300 019 Class 2.3

Ordering Information

Sr. #	Product Description	Part #
1.	VCL-DCME E1 Voice Compression: 8E1 to 1E1 Voice compression equipment	VCL-DCME-E1-8:1-TDM

Notes: _____

Technical specifications are subject to changes without notice.
All brand name and trademarks are the property of their respective owners.
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20100, N 51st Ave, Suite B240,
Glendale AZ 85308
Phone: +1 480-816-8672
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