

Product Overview

Valiant's VCL-MX Version 3-DLX (Deluxe Version) 4E1 Multiplexer is a carrier class and cost-effective bandwidth provisioning access multiplexer equipment.



VCL-MX Version 3-DLX (Deluxe Version) 4E1 Multiplexer may be used for inter-connecting legacy voice and data networks, provisioning and managing bandwidth on a E1 channelized level as well as 64Kbps, DS-0 time-slot level and as a Digital-Access Cross-Connect equipment. This 4 x E1 Multiplexer can be used in a Point-to-Point, Point-to-Multi point, Add-Drop (drop-insert), Tree and Star topology applications.

Key Features

VCL-MX Version 3-DLX (Deluxe Version) 4E1 Multiplexer provides the advanced features and capabilities, listed below:

- 2Mbps, 4 E1 non-blocking cross-connect at 64Kbps (DS-0) level
- Single Control Card
- 1+1 Redundant Power Supply
- May be used in a Point-to-Point, Point-to-Multi point, Add-Drop (drop-insert), Tree and Star topology
- Voice and Digital Data services
- Any combination ("mix-n-match") of Voice and Digital data services deployed from a single VCL-MX "Smart shelf" - 2 channels per card
- Digital Microwave Radio applications
- SCADA applications
- Powerful Network Management System for monitoring and network control
- Compliance with all relevant ITU-T recommendations
- Telnet
- SNMP V2
- In-band and Out-of-band management
- GUI
- 19-inch, 3U high construction.

Transmission Mediums

The VCL-MX offers an excellent flexibility on the choice of transmission medium over which it may be deployed. The transmission medium can be either of the following:

- Copper
- Optical Fiber
- Wireless.

Highlights

- Field upgradable to provide voice, data or both services
- Flexibility on use of transmission medium-copper, fiber or wireless
- Choice of Interfaces for Voice and Data Applications
- RS232 and USB, Interface for local connection through the serial interface to the "Network Control and Management Software"
- 10/100BaseT Ethernet Management port for local and remote connection to the "Network Control and Management Software"
- In-band and Out-of-band system configuration and management interface
- Channel assignment independent of slot position in the sub-rack
- Extensive set of alarms
- User Selectable Internal, External or Loop-timed Synchronization clock options
- OAM Card in the system
- Any interface card can plug in at assigned interface slot.

Multi-service platform

VCL-MX Version 3-DLX (Deluxe Version) 4E1 Multiplexer supports both data and voice traffic.

For voice traffic, it supports the following interfaces:

- FXO
- FXS
- E&M (2Wire / 4Wire)
- FXS-FXS (Hot-Line)
- Ring Generator (75V RMS)
- Magneto (GEN-GEN)

For data traffic, it supports the following interfaces:

- Channelized E1 / Fractional E1 data
- RS-232 asynchronous data
- V.24 asynchronous data
- G.703, @ 64 Kbps, co-directional synchronous data
- 10BaseT Bridge Interface Card
- Analog I/O Interface Card (Dry Relay Contacts)
- Digital I/O Interface Card (Digital TTL Signal Transfer Card)
- "N"x64Kbps Universal Data Interface Card (V.35, V.36, X.21, V.11, RS442, RS530, synchronous user configurable data interface)
- Complete Capability to Cross Connect Voice and Digital data between 4 incoming E1 ports (i.e. 4 separate connecting E1 links)

Synchronization

Timing Options	Internal Clock, Loop-Timed Clock, External Clock.
Synchronization Sources	Internal Clock, span clock timing derived from incoming HDB3 links (Loop-Timed), External Clock, 75 Ohms 2 MHz (TTL), 2.048 Mbps (BITS) clock
Default Option	Internal Clock (Stratum 3)

System Overview and Architectural Details

VCL-MX Version 3-DLX (Deluxe Version) 4E1 Multiplexer has a multi-slot chassis with TDM backplane. In the chassis, there are thirteen (13) traffic slots meant for tributary cards (line cards). The line cards can support various types of interface cards, which include E1, Voice and various types of serial synchronous data interface.

The VCL-MX Version 3-DLX (Deluxe Version) has 10 slots for the following interfaces:

- FXO
- FXS
- E & M (2-wire and 4-wire)
- Hotline
- RS232 / V.24 asynchronous
- G.703 @ 64 Kbps, co-directional
- Magneto (GEN-GEN)

The VCL-MX Version 3-DLX (Deluxe Version) has 3 slots for the following interfaces: @ "N"x64 Kbps

- Universal Data Interface Card (V.35, V.36, X.21, V.11, RS442, RS530)
- 10BaseT Bridge Interface Card
- Analog I/O Interface Card (Dry Relay Contacts)
- Digital I/O Interface Card (Digital TTL Signal Transfer Card)

The VCL-MX Version 3-DLX (Deluxe Version) has one slot for Ring Generator (75V RMS) Card, one slot for Control Card, one slot for OAM Card, one slot for the Power Supply and one slot for the Redundant Power Supply Card.

Analog I/O Interface Card (Dry Relay Contacts)

Description: This interface card provides 8 Analog I/Os which may be used to extend either Dry Relay Contacts (Relay Normally-Open or Relay Normally-Close) or operate switches remotely (using 2A Dry Relay Contacts) between any two multiplexers using a 64 Kbps time-slot. The Dry Relay Contacts are rated at maximum 2 Amps, 30 Volts DC.

Digital I/O Interface Card (Digital TTL Signal Transfer Card)

Description: This interface card provides 8 digital I/Os which may be used to either extend digital I/O's (logic high / low) signals between any two E1 Multiplexers or operate switches remotely (using logic high/low) signals between any two multiplexers. Drivers / Sense Logic operate using external voltage and ground references).

System Management

VCL-MX Version 3DLX (Deluxe Version) - 4 E1 Multiplexer offer a variety of management options, The VCL-MX E1 multiplexer management software can be configured using CLI (English text) commands and GUI (Graphical User Interface). The management and configuration commands may be executed from a VT100 terminal, Windows HyperTerminal, any DOS based system, Linux or Unix based system or Telnet (remote management).

The VCL-MX has an effective CLI (text) and GUI based "Network Management Interface", which may be used for configuring the system.

Management Port and Control Interfaces

- Serial Management Port - RS232 Interface
- USB Serial Port
- 10/100BaseT Telnet over a TCP/IP Network

System Access and Management

- Windows XP and Windows 7, Windows 10 compatible GUI (Graphical User Interface)
- Telnet - CLI (Command Line Interface)
- SNMP V2 (MIB File provided with the equipment)
- Inband Management of Remote Units over the E1 links
- NMS - Network Management System

Power Supply

VCL-MX Version 3-DLX (Deluxe Version) 4 E1 Multiplexer is powered by a -48V DC power supply, which drives the various sub-systems in it.

- Allows for power monitoring by LED
- Reverse polarity and inrush current limiting
- 1+1 Redundancy
- -48V DC (nominal), -36V to -72V DC
- Power Consumption \leq 25 watts

Protection

Central Office Terminal and Remote Terminal are protected against power surges and transients occurring from lightning and electric induction as per CCITT Rec. Table I/K-20 towards line side.

Technical specifications are subject to changes without notice.

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