

# VALIANT COMMUNICATIONS LIMITED



## **VCL100 STM-1/4/16 SDH Multiplexer Multi-Services Provisioning Platform**

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### **Product Brochure & Data Sheet**

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## Product Overview

The VCL100 is an ultra-compact, carrier class and cost effective bandwidth provisioning STM-1/4/16 SDH Multiplexer equipment designed to manage and deliver services from the optical core to the access.

The STM-1/4/16 SDH Multiplexer equipment supports end-to-end provisioning and management of services across all segments of the optical network.

It combines innovative optical networking software with the resilience of SDH to deliver a flexible solution to today's service providers.

The latest Multi-Service Switching Platforms (MSSPs) and Multi-Service Provisioning Platforms (MSPPs), speeds up provisioning of new services and optimize network efficiency through better utilization of networks.

The VCL100 can be configured as a Terminal Multiplexer (TMUX), Add-Drop Multiplexer (ADM), Regenerator, In-Line Amplifier or as a stand-alone Cross-Connect. A variety of service interfaces such as E1/DS1, E3/DS3, STM-1e/o and 10/100/1000 Mbps Ethernet tributary interfaces and trunk interfaces at STM-1/4/16 rates are supported. The product features non-blocking cross-connect at VC-3, VC-4 and VC-12 granularity and supports drop and continue functionality.

As transmission networks are gradually being dominated by data traffic, VCL100 provides 10/100/1000 Ethernet interface to efficiently carry inter-office data traffic from a corporate LAN, traffic from an ISP, DSL or cable networks.



**STM-1/4/16 SDH Multiplexer  
Multi-Services Provisioning Platform**

## Features

- Compact size
- Integrated multi-service delivery
- Redundant cards with hot insertion capability
- Multi-level protection schemes MSP, or SNCP
- Advanced networking software with support for open standards such as GMPLS and OSPF.

## Advantages

- Half depth rack allows two VCL100s to be placed back-to-back on a standard rack
- Provision both voice and data services from the same platform. Efficient use of transport bandwidth by supporting per-port rate adaptive Ethernet Services
- Guaranteed availability and superior network resilience
- Advanced protection schemes enable you to cater to differing customer protection requirements
- Enables automatic topology discovery, shared mesh restoration and Point- and-Click Provisioning (PNCP) User friendly GUI based Network Element Software for local and remote provisioning
- Comes with Small Form-factor Pluggable (SFP)-based optical line interfaces with digital diagnostics capability for SFPs
- One of the most compact STM-4/16 (OC-12/48) products available in the market.

## Benefits

- Better utilization of available rack space
- Future-proof architecture protecting investment
- Carrier-class redundancy and high network uptime with minimum loss of revenue
- Creation of differentiated services to enhance the portfolio of service offerings
- Reduction in operational costs and increase in efficiency through lower provisioning time and operator intervention.

## Applications

- Telco networks providing voice and data services
- Cable triple play
- Utilities communications networks

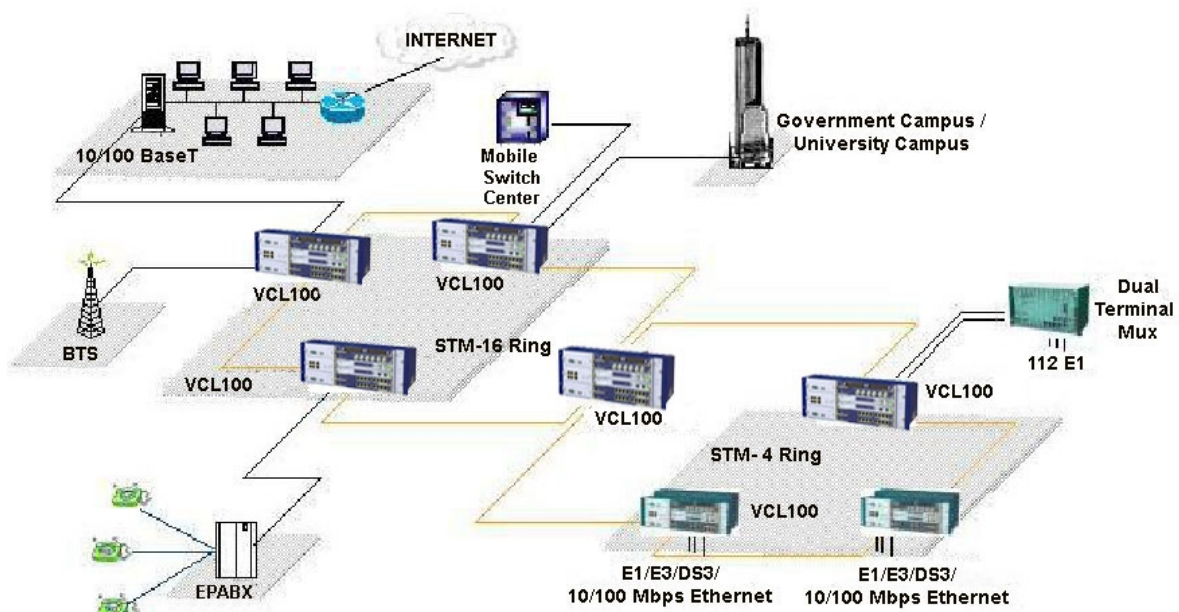
## Synchronization and Timing

- **Line-timed mode:** Derives its clock from any one of the E1/DS1 tributaries or STM-1/4/OC-3/12 signals
- **Externally timed mode:** External 2048 KHz or 2.048/1.544 Mbps signal could be used as the clock source
- **Holdover mode:** Uses the stored timing data to control the output frequency for a short duration (of around 24 hrs) beyond this it uses its own internal oscillator in a free-running mode.

## Power Supply

- -48 VDC power supply, which drives the various sub-systems in it
- Allows for power monitoring
- Reverse polarity and inrush current limiting
- 1+1 Redundancy

## Application Diagram



## Technical Specifications

### Network Topology

- Linear, Ring

### Network Element Configurations

- Digital Cross-Connect (DXC)
- Add-Drop Multiplexer (ADM)
- Terminal Multiplexer (TMUX)
- In-Line Amplifier
- Regenerator

### Aggregate Interfaces

- 1/2 x STM-1/4/16 1310 or 1550 nm (ITU-T G.967 compliant)
- S/L 1.1, L 1.2, S/L 4.1, L 4.2, S/L 16.1, L 16.2

### Tributary Interfaces

- 28xE1/DS1
- 3xE3/DS3
- 2xSTM-1/OC-3 (S1.1, L1.1, L1.2)
- 8x10/100 Base Ethernet
- 2xGigE Transport card
- 8x10/100 Base-T and 2 x GigE switching card

### Cross Connect

- 1008 x 1008 VC-12 equivalent or 64 x 64 STM-1 equivalent
- Fully non-blocking
- Line-to-Line, Line-to-Tributary, Tributary-to-Line, Tributary-to-Tributary.

### Power Supply

- Power Input: -48V DC
- Power consumption less than 85W

### Protection

- MSP/APS, SNCP/UPSR

### Physical Dimensions

- HxWxD: 176 mm x 442 mm x 238 mm (with protection panel)
- 152 mm x 442 mm x 238 mm (without protection panel)
- 19", 21" and 23" rack mountable
- Weight: 11.60 Kg

## Technical Specifications

### Network Management

- RS-232 Port for craft interface
- V.24/V.28 Modem interface for remote management
- In-band channel control
- 10/100 Base-Tx (RJ45) management interface
- SNMP interface for NMS
- External Alarm interface and indicators

### Maintenance

- Higher-order and Lower-order POH, SDH level alarms
- Performance monitoring as per ITU-T Rec. G.826 and G.784
- Local and remote loop-back
- Remote software download.

### Optional Hardware Redundancy

- Power Supply redundancy
- Cross Connect, Timing and Control System Redundancy.

### Timing & Synchronization

- Timing & Synchronization of System as per ITU-T Rec. G.813
- Internal oscillator capable of supplying a G.813 compliant Stratum-3 SEC
- SSM support on S1 byte
- External Timing interfaces: Two E1 BITS interfaces (G.703)
- Accepts/provides 2 Mbps/2 MHz clock References.

### Order Wire Support

- E1/E2 bytes for Express Order Wire
- F1 byte for user data channel
- 7 input alarms and 4 output alarms

### Environmental

- Operating Temperature: -5°C to 50°C
- Relative Humidity: 10% to 90%, non condensing.

