



## VCL100MC-16 STM-1/4/16 Multi-Service Provisioning Platform

COMARRA VCL100MC-16 is a cost-effective and compact STM-16 SDH multiplexer equipment designed to manage and derive services from the optical core to access. The product 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 product is well suited for backbone and high-speed links. As traffic demand grows, the product ensures a smooth upgrade by allowing support for DWDM interfaces as well.

The VCL100MC-16 can be configured as a Terminal Multiplexer (TMUX), Add-Drop Multiplexer (ADM), or as a Regenerator in various configurations with E1, E3/DS3, STM-1e/1o, STM-4 and 10/100/1000 Mbps Ethernet tributary interfaces and trunk interfaces at STM-16 rates. The product has built-in non-blocking cross connect at VC-3, VC-4 and VC-12 granularity equivalent to 7.5/10Gig and supports drop-and-continue functionality.

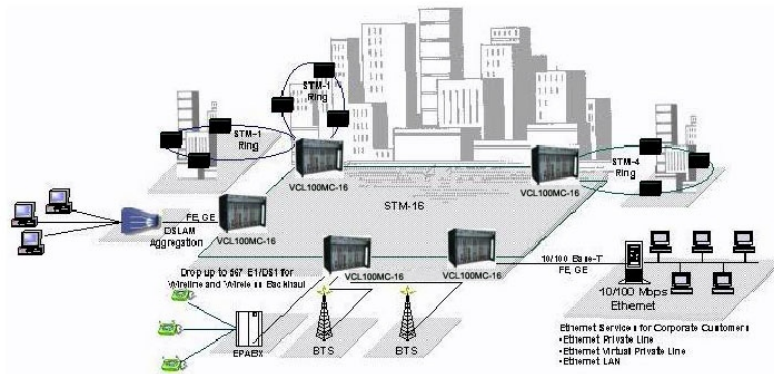
As transmission networks are being gradually dominated by data traffic, VCL100MC-16 provides 10/100 Base-T & GigE interfaces to carry inter-office data traffic from a corporate LAN, traffic from an ISP, DSL or cable networks.



**VCL100MC-16**

Features	Advantages	Benefits
<ul style="list-style-type: none"> <li>DSL or cable networks</li> <li>Integrated multi-service Delivery</li> <li>Redundant cards with hot insertion capability</li> <li>Point to point, linear, ring and mesh topologies</li> <li>Multi-level protection schemes MSP, SNCP or MS-SPRing</li> <li>Advanced networking software with support for open standards such as GMPLS and OSPF.</li> </ul>	<ul style="list-style-type: none"> <li>Flexibility, modularity and scalability in configurations</li> <li>Provision both voice and data services from the same platform.</li> <li>Efficient use of transport bandwidth by supporting per-port rate adaptive Ethernet services.</li> <li>Guaranteed availability and superior network resilience</li> <li>Diverse topology support to cater to all customer network scenarios</li> <li>Advanced protection schemes enable you to cater to differing customer protection requirements</li> <li>Enables automatic topology discovery, shared mesh restoration and Point- and-Click Provisioning (PNCP). User friendly GUI based(PNCP). User friendly GUI based and remote provisioning.</li> </ul>	<ul style="list-style-type: none"> <li>"Build as you grow". Pay for capabilities you require today. Provides improved cashflow with minimum capital outlay</li> <li>Future-proof architecture protecting investment</li> <li>Carrier-class redundancy and high network uptime with minimum loss of revenue</li> <li>Flexible and cost-effective network solutions</li> <li>Creation of differentiated services to enhance the portfolio of service offerings</li> <li>Reduction in operational costs and increase in efficiency through lower provisioning time and operator intervention.</li> </ul>

## Application Diagram



## Technical Specifications

### Network Topology

- Linear, Ring

### Network Element Configurations

- Add-Drop Multiplexer (ADM)
- Terminal Multiplexer (TMUX).

### Aggregate Interfaces

- STM-16: S16.1, L16.1, L16.2, DWDM
- STM-4: S4.1, L4.1, L4.2 compliant)
- STM-1: S1.1, L1.1, L1.2.

### Electrical Interfaces

- PDH Interfaces: E1, E3/DS3, STM-1e
- Data Interfaces: 10/100/1000 Ethernet Interfaces (both transport and Switching).

### Cross Connect

- Up to 48 x 48 STM1 equivalent
- Upgradeable to 10G
- Fully non-blocking at VC-12, VC-3 and VC-4 granularity
- Line-to-Line, Line-to-Tributary, Tributary-to-Line, Tributary-to-Tributary.

### Power Supply

- - 48V DC nominal, - 36V to - 60V
- Power consumption – less than 300W.

### Physical Dimensions

- (H x W x D): 354 x 482 x 300 mm
- Can be mounted on a 19" or 23" or 600 mm rack.

### Network Protection

- SNCP, 1+1 MSP
- MS-SPRing
- VC-12, VC-3 level path protection.

### Operations Interface

- NES (Network Element Software) supports full FCAPS functionality via web browser Interface
- SNMP interface for NMS
- RS-232 port for craft interface
- V.24/V.28 modem interface for remote management
- In-band control (IBC) supported using SDH Overhead
- 10/100 Base-Tx (RJ-45) management interface
- 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
- Support of SSM byte
- Internal & External Timing interfaces: Two E1 BITS interfaces (as per ITU-T G.703)
- Accepts/provides 2 Mbps/2 MHz clock references.

### OrderWire Support, Alarms and User Data Channel

- E1/E2 bytes for Express OrderWire
- F1 byte for user data channel
- Five potential-free outputs and five potential-free inputs.

### Environmental

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

Technical specifications are subject to changes without notice.

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# COMARRA