

Fibcom 6315

Metro Ethernet Node

The 6315 metro Ethernet node is a standalone unit designed for Ethernet traffic aggregation. The 6315 node complements the growing range of Fibcom Ethernet interface modules for edge and switch nodes.

Maintain Strict Quality of Service While Optimizing Bandwidth Utilization

The 6315 metro Ethernet node is an ideal Ethernet traffic aggregation node and ideal in use, for example, in cases where multiple Fast Ethernet connections are aggregated into Gigabit Ethernet uplinks. Using the 6315 node for traffic aggregation, service providers can maximize the use of their available fiber infrastructure and do so much more efficiently in comparison to standard bandwidth over provisioning techniques. The 6315 metro Ethernet node facilitates all sorts of Ethernet based services such as triple play (data, voice over IP, and video), enterprise Ethernet services, wholesale services, etc.

Dynamic bandwidth provisioning also provides greater granularity in service offering. Small & medium sized companies can use Ethernet private lines for inexpensive connectivity between their head and branch offices - thus reducing complexity, increasing flexibility and saving money.

Dramatic Bandwidth Gains Without Jeopardizing VoIP Traffic

Combinations of the 6315 node with Fibcom Ethernet over SDH portfolio represents a strong blend of cost-effective Ethernet traffic aggregation and transport through SDH networks. This combination offers managed end-to-end hard QoS from ingress to egress.

The statistical gain can provide as much as 20 times bandwidth concentration, yet without jeopardizing Voice over IP (VoIP) traffic. Ethernet traffic from up to 38 end-users or customers is terminated at the 6315, and then concentrated in the 2 x Gigabit Ethernet uplinks. Simultaneous traffic policing and Pseudo-Wire (PW) MPLS (multi-protocol label switching) capability ensure adherence to individual customer Service Level Agreements (SLAs), including quality parameters such as CIR, PIR, and latency.

Wide Range of Ethernet Capabilities Provides Exceptional Performance and Flexibility

The 6315 metro Ethernet node provides two Gigabit Ethernet uplink interfaces, up to eight Gigabit Ethernet user interfaces, and up to 32



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Fast Ethernet user interfaces. All interfaces are SFP pluggables for optimum flexibility. Here are just some of the other key 6315 features:

- Strict Quality of Service via physical port or VLAN
- Complete separation of customer traffic using MPLS tagging at Layer 2
- Integrated network management of the 6315 node and Fibcom Ethernet over SDH network nodes
- VLAN stacking capability, 802.1p, and IP DS awareness support a wide range of service implementation scenarios
- Rapid Spanning Tree and 1:1 LSP protection

Enterprise networks using VLANs with traffic prioritization, for example for voice over IP, can interconnect local sites to head ends using the 6315 node, also in combination with Fibcom Ethernet over SDH nodes. The 802.1p and IP DiffServ traffic prioritization-awareness ensure that VLAN- or IP-based traffic prioritization is supported in the Layer 2 Ethernet services provided via the 6315. The VLAN stacking capabilities of the node ensure that operators can use provider-VLANs to separate customer traffic and service classes. Even so, the PW/MPLS capability enhances security and enables efficient traffic separation between customers.

The 6315 node offers a managed Ethernet end-to-end solution that reaches further into the metro Ethernet than the 6300 managed SDH network. When combined with 6305 Ethernet Media Converters the reach can be extended even further out into the first mile. The 6315 is managed by a set of comprehensive network management features, including the open 6300 network manager, which provides automatic path set-up and grooming, synchronization and network views, plus a convenient graphic interface for configuring equipment and monitoring per-path performance.



Feature Summary

- Ethernet Switch for Metro Area Network applications
- Efficient aggregation of traffic from several business customers
- MAC, VLAN and MPLS Ethernet switching & protection
- Hard QoS, L2 and L3-aware differentiated services
- Efficient bandwidth utilization for triple play
- Cost-effective Ethernet first mile solution
- Ethernet and MPLS Fault and Performance Monitoring
- Remote software download
- Advanced network and element management support
- Local configuration with craft terminal

Interfaces

- Network (Uplink)
 - 2 x Gigabit Ethernet
- Service I/F (Client)
 - Mode 1: 6 x Gigabit Ethernet + 32 x Fast Ethernet
 - Mode 2: 8 x Gigabit Ethernet + 16 x Fast Ethernet
 - All interfaces are realized with SFP pluggables

A wide range of Fast and Gigabit Ethernet Interfaces are supported using pluggable transceivers (SFPs). The interface can be either electrical or optical. Optical interfaces are available for both multimode and single mode fibers and with wavelength specific colours (CWDM)

Connector

- 100 BASE-FX: LC SFP (Optical)
- 1000 BASE-SX, LX: LC SFP (Optical)
- 1000 BASE-T: RJ-45 SFP (Electrical)

Ethernet features

- IEEE 802.3 for Standard Ethernet functionality
- IEEE 802.1D for MAC switching
- IEEE 802.1Q/1p for VLAN and VLAN priority
- IEEE 802.1ad for Stacking VLAN (Q-in-Q)
- IEEE 802.3ah for Ethernet Link OAM
- IEEE 802.1ad for Link Aggregation
- IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)
- IEEE 802.1w for Rapid Spanning Tree Protocol (RSTP)
- IGMP v1, v2 and v3 Snooping according to IETF RFC3376
- MPLS switching in accordance with IETF PW3E
- ITU-T Y.1711 for MPLS OAM
- ITU-T Y.1720 for 1:1 LSP Protection
- Certified according to Metro Ethernet Forum Certification Program MEF-9 and MEF-14 for Ethernet Private Lines (EPL), Ethernet Virtual Private Lines (EVPL), and Ethernet Local Area Networks (E-LAN)

Ethernet Switching capacity

- 5 Gbps Ethernet switch
- 128k MAC addresses in MAC table

The switching capacity can provide up to 1024 virtual private Ethernet switches (shared VLAN learning), to be allocated by customers, or it can be provided as VLAN switches (independent VLAN learning) in applications where customers are separated using VLANs.

PW/MPLS Encapsulation

- PWE3 Martini encapsulation of Ethernet frames provides statistical multiplexing and traffic policing/shaping. Label Switched Paths are set up throughout the network, ensuring privacy and adherence to agreed service parameters for each customer traffic stream, either separated by VLAN ID or physical port

- 1:1 LSP protection. The protecting LSP does not take up bandwidth during normal operation

Quality of Service

- QoS support with four traffic classes
- QoS determined by port ID, IEEE 802.1Q, and/or IEEE 802.1p tagging, IPv4 type of service/Differentiated services (DiffServ) and IPv6 traffic class

VLAN

- 802.1Q VLAN support for up to 4094 VLANs per port
- 802.1Q VLAN processing per port and VLAN tagging, untagging and remapping
- PW/MPLS for scalability
- Stacking VLAN (Q-in-Q) supported

Fault and Performance monitoring

- Ethernet and MPLS performance data including availability measurements
- Operations, Administration, and Maintenance (OAM) is supported on Ethernet links in accordance to IEEE 802.3ah

Maintenance

- Loopback at Ethernet ports

Management

- 6300 network manager
- Integrated Ethernet/MPLS, SDH and DWDM Network Management

Power

- 48 VDC in two redundant power supply units
- Power consumption 125 Watts

Dimensions

- Compatible with 19" and ETSI systems
- 433 x 213 x 80 mm (W x D x H)

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