

# Fibcom 6325

## Edge Node / Wavelength Division Multiplexing Node

The 6325 Edge / WDM Node is a compact Multi-Service Provisioning Platform supporting DWDM/CWDM, SDH, Ethernet and PDH Services. Multi Service Provisioning, high reliability and redundancy qualify the node to be used not only in access networks, but also in regional and core networks.

### Small, fast and dense...

...Are 3 key attributes of Fibcom' latest Multi-Service Provisioning Platform; the 6325 Edge Node. It not only handles multiple services, but also fits into multiple applications and can be deployed anywhere in the WDM and SDH transport network.

Although it is just 1U (44mm) in height, the 6325 node is a complete, full-scale transport node. It offers speeds of up to 2.5Gbps (STM-16) and enables a wide mix of services from traditional SDH and PDH to coloured xWDM and Ethernet interfaces. With single slot CWDM, DWDM Multiplexer, OAD, Transponder and Repeater modules the node fits perfectly as WDM add/drop node in access, metro, regional and core transport networks. SDH cross-connection matrices are all fully non-blocking. In addition, redundant cross-connect matrix and Ethernet switching capabilities are included. This provides an extremely powerful MSPP (Multi Service Provisioning Platform) which supports all grooming and transport needs for the networks of the future.

### Fits anywhere

Thanks to the compact design of the 6325 node, which is the ideal choice for customer-located equipment. The combination of PDH and Ethernet capabilities fulfill the need for leased line services for most small and medium sized businesses. For companies with several branches, the 6325 node offers efficient utilization of the SDH transport network. Combining VoIP PABXs with the 6325 node's Ethernet switching and traffic policing, leased line capacity can be reduced to a minimum without affecting the service quality.

The 6325 node works perfectly as a POP node serving residential and business customers. When combined with Ethernet Media Converters in the first mile, triple play is not just the future – it is a reality! Supported Quality of Service (QoS) classes ensure the quality of the IP telephony. IGMP snooping is fully supported for the distribution of radio and TV signals in an effective way without overloading the transport network. At the same time, the 6325 node easily switches and grooms traffic for business customers.



Fibcom 6325

CWDM has become a mature technology used in access networks to distribute a high number of TV channels. With the future growth of Video-on-Demand (VoD), CWDM is a very efficient technology used to energize the capacity of the existing fibre infrastructure.

Redundant cross-connection matrices make the 6325 node well suited to be deployed in access networks and customer locations as well as in regional & core networks. Cross-connection redundancy makes the 6325 node reliable as a HUB node handling high traffic load. Thus the 6325 node can be configured as ADM16, which is able to drop up to 16 x STM-1. Formed in ring or meshed networks, all traffic going through the 6325 node is fully protected against any single point of failure. With its Ethernet switching capabilities, the 6325 node can be used as a HUB node to offload Ethernet traffic (e.g., IP core networks). Equipped with DWDM interfaces, the node easily connects directly to the DWDM transport networks.

The 6325 node is modular and flexible and can be delivered pre-configured as plug & play. The only thing needed would be power – and 44 mm space. All in all the compact design combined with advanced feature set is making 6325 node the world's smallest fully-featured MSPP.



## Feature Summary

- Compact Multi-Service Provisioning Platform
- Standard SDH as well as xWDM interfaces
- Standard PDH and Ethernet interfaces
- Redundant cross-connecting matrices and Power Supplies
- Ethernet MAC, VLAN and MPLS switching & protection
- SDH, Ethernet and MPLS fault and performance monitoring
- Hard QoS, L2 and L3-aware differentiated services
- Efficient bandwidth utilization for triple play
- Cost-effective Ethernet first mile solution
- Standard SDH ECC channels
- Embedded DCN channels for remote access across third-party networks
- Remote software download
- Advanced network and element management support
- Local configuration with craft terminal

## Interfaces

### Optical SDH interface

- STM-1, STM-4, STM-16, CWDM, DWDM according to ITU-T G.957, ITU-T G.959.1, ITU-T G.691, ITU-T G.694.2, and ITU-T G.995

### Electrical PDH and SDH interface

- E1, E3, DS3 and STM-1 according to ITU-T G.703
- E1 performance monitoring according to ITU-T G.704
- Jitter transfer ITU-T G.783, G.823 and G.825

### Ethernet interface

- Fast and Gigabit Ethernet with a wide range of optical and electrical interfaces. This also includes CWDM and bi directional transmission on single fiber

### Fiber Channel interface

- FC-100, FC-200 and FC-400 are supported in both CWDM and DWDM according to ANSI and ITU-T G.691 and ITU-T G.694.2

## Packet Switching features

### Ethernet Services

- Ethernet Private Lines (EPL), Ethernet Virtual Private Lines (EVPL) and Ethernet Local Area Networks (E-LAN) in accordance with MEF (MEF-9, MEF-14 certified)

### Layer 3 agnostics

- IP DSCP aware QoS
- IGMP v1, v2 and v3 Snooping according to IETF RFC3376

### Layer 2 – Ethernet

- IEEE 802.3, IEEE 802.1D (MAC switching), IEEE 802.1Q/1p (priority bit), IEEE 802.1ad (Q-in-Q), IEEE 802.3ah (Ethernet Link OAM), ITU T Y.1731 (Ethernet Flow OAM), IEEE 802.3ad (Link Aggregation), IEEE802.1s (MSTP), and IEEE 802.1w (RSTP)

### Layer 2 – T-MPLS

- T-MPLS in accordance with ITU-T G.8110.1 (Architecture), ITU-T G.8112 (Interfaces), ITU-T G.8121 (Functional blocks), ITU-T Y.1711 (MPLS OAM), ITU-T Y.1720 (1:1 LSP Protection)
- Pseudo wire support (PWE3)
- MPLS-TP upgrade

### Layer 1

- Encapsulation according to ITU-T G.7041(GFP mapping into SDH), ITU-T G.8040 (GFP mapping into PDH), Link Fault Pass-Through
- LCAS according to ITU-T G.7042 (SDH) and G.7043 (PDH)

## xWDM Features

- Up to 15 bi-directional CWDM and DWDM channels
- Add/drop of single or dual color with remaining colors passing through in single slot modules
- Transponders, Repeaters, Muxponders and Optical Amplifiers

## Protection

### Network protection

- SNC/I and SNC/N according to ITU T G.783 and G.841
- MSP1+1 according to ITU-T G.841

### Equipment protection

- 1+1 Cross-connection matrix protection
- 1:1 and 1+1 power supply protection (configurable)

## Connectivity

### Cross-connect levels

- VC-12, VC-3, VC-4

### Cross-connect size

- 80 x 80 VC-4 (HO), 8 X 8 VC-4 (LO)
- 80 x 80 VC-4 (HO), 16 X 16 VC-4 (LO)

### Multiplexing specification

- ETSI: ETS 300 147

## Synchronization

### Synchronization sources

- STM-N interface (T1)
- 2 Mbit/s tributaries (T2)
- 2 MHz station clock ports (T3)

### Synchronization outputs

- 2 MHz station clock ports (T4)

### Synchronization management

- SSM support according to ETS 300 417-6-1

## Other Features

### Fault and Performance monitoring

- SDH According to ITU-T G.784
- Ethernet and MPLS performance data including availability measurements.
- Operations, Administration, and Maintenance (OAM) is supported on Ethernet links in accordance to IEEE 802.3ah.

### User channels

- V.11/V.28 interfaces
- DTMF-EOW

## Management

### 6300 NMS / F6300EMS

- Integrated Ethernet/MPLS, SDH and DWDM Network Management

## Power Specifications

### DC power supply

- 2 inputs at -48V with 1+1 redundancy
- Operation range: -40.5V to -72V DC AC power supply with external AC/DC adaptor
- Nominal inputs: 100V or 240V AC
- Operation range: 96V to 264V AC
- Frequency range: 47Hz to 63Hz

### Power Consumption

- Maximum consumption: 80W
- Consumption of typical configuration: 25W

## Environmental Conditions

### Environmental specifications

- According to ETS 300 019-1-3 class 3.3
- 60°C street cabinet operation (Typical configuration)

### EMC

- According to EN 300 386

### Safety

- According to EN 60950-1

## Dimensions

Compatible with 19" and ETSI system installations

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