

Fibcom 6345

Switch Node

By grooming and consolidating both voice traffic and the increasing amounts of carrier-class data traffic at the network edge, the 6345 Switch Node reduces the bandwidth and switching capacity needed in the core of the network, creating a truly converged voice and data network and lowering your costs substantially.

Fast Services Provisioning Speeds Time to Revenue

The 6345 node is a high-capacity third-generation transport switch. As a multi-service transport platform (MSTP), the unit has been specially designed to enable a wide range of data, voice and leased line applications.

The high-density cost-effective system grooms and consolidates backbone traffic in metro and regional networks. It also provides the flexibility required for faster service provisioning, plus delivery of new value-added services including high-speed Ethernet and video-on-demand.

Pay As You Grow Capacity Upgrades

Thanks to our pay-as-you-grow modular design, the 6345 node lets you increase the capacity in your network and instantly provide new services when needed. This, in turn, helps lower initial capital investments. The combination of very high density, the ability to handle a wide range of interface types and connectivity at both 4/4 and 4/3/1 makes the 6345 node ideal for Distributed Transport Switching Network Architectures.

All of our best-in-class transport switching products are remarkably compact, which frees up costly central office space. The 6345 node takes up only 1/8 of a European Telecommunications Standard Institute (ETSI) rack (back-to-back). It is a fully standardized SDH product developed according to ITU-T, IEEE and ETSI recommendations.

The unique combination of high-capacity and small footprint makes the unit ideal for compact ADM64 or STM-16 ring-interworking applications since multiple add/drop multiplexers can be configured within a single sub-rack, thus avoiding external cabling and ensuring high uptime.

Convenient Modular Design

The 6345 node features a modular structure that enables you to have add/drop multiplexers and cross-connects within the same platform. For example, a full SDH network with multiple rings at STM-1 to STM-64 level can be configured from the 6345 node, thus providing you with a flexible and upgradable network. Moreover, since 6345 network elements have no single point of failure, they ensure the continuous availability necessary in a high-quality network. Finally, as the basic building blocks are common for all applications, spare parts, service and maintenance



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costs are kept to a minimum. Also the use of pluggable optical SFP and tunable optics for the interfaces add to this.

Flexible Solution with Superb Functionality

The 6345 node is ideal for implementing STM-16 and STM-64 regional/metropolitan rings with nodes that drop off a mixture of SDH, PDH and data signals. Thanks to the unit's 4/4 cross-connect matrix, the system is remarkably flexible, and because the unit integrates both line rate interfaces and coloured interfaces within the switch node, there is no need for stand-alone terminal multiplexers so the solution is economical too.

The 6345 node is based on 1+1 protected central switching at 4/4 or 4/3/1 levels. This is why we are able to provide transmission with such a high degree of flexibility.

Cross-connect matrix of 6345 Node is 60 G. Cross-connect and synchronization functions can be equipment protected. Further by adding high density expansion shelves additional PDH and Ethernet interfaces are supported.

Available network protection schemes include SNC protection of VC-n signals as well as MSP 1+1 protection and MS-SPRing protection. The 6345 node is managed by the 6300 NMS/F6300EMS, which provides automatic end-to-end path set-up and grooming, synchronization & network views, plus a convenient graphic interface for configuring equipment and monitoring performance data.

For solutions requiring even higher capacity, please refer to the 6350 Switch Node data sheet.



Equipment/Configuration types

- ADM, TM, SDXC 4/4/3/1

Configuration Examples Within One Subrack

- ADM64 with full connectivity at both 4/4 and 4/3/1 levels
- Multiple ADM16s with full connectivity between rings

Expansion subrack offering

- PDH interfaces
- FE and GbE interfaces
- CWDM / DWDM

Interfaces

Optical SDH interfaces

- STM-1, STM-4, STM-16 and STM-64 (155, 622, 2488, and 9953 Mbit/s)

Application codes

- S-1.1, L-1.1, L-1.2, S-4.1, L-4.1, L-4.2, S-16.1, L-16.2, V-16.2 I-64.1, S-64.2, L 64.2 WL-64.2, WL-16.2 (coloured for DWDM)

Specifications

- According to ITU-T G.957, G.691 and G.692

Electrical interfaces

- E1, E3, DS3 and STM-1 (2, 34, 45 and 155 Mbit/s)

Transmission characteristics

- According to ITU-T G.703

Jitter transfer

- ITU-T G.783, G.823 and G.825

Ethernet interface

- Fast and Gigabit Ethernet with a wide range of electrical and optical application. Optical codes are available for both multimode and singlemode fibers and with wavelength specific colours (CWDM)

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
- 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), IEEE 802.3ad (Link Aggregation), IEEE 802.1s (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)
- Pseudowire support (PWE3)

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)

System Parameters

Cross-connect levels

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

Cross-connect size

- 60 G cross-connect matrix

Multiplexing specification

- ITU-T G.707

Synchronization sources

- STM-N interfaces (T-1), 2 MHz/2 Mbit/s station clock ports (T-3)

Synchronization outputs

- 2 MHz/2 Mbit/s station clock ports (T-4)

User channels

- 64 kbit/s channels, V.11 interface, DTMF-EOW (point-to-point, selective calling, group call)

Features

Synchronization management

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

Performance monitoring

- According to ITU-T G.784

Network protection

- SNC according to EN 300 417-4-1
- MSP 1+1 according to ITU-T G.841
- 2 fiber MS-SPRing according to ITU-T G.841
- LCAS protection (Ethernet) according to G.7042

Equipment Protection

Equipment protection modularity

- 1:n protection of 2 Mbit/s
- 1+1 protection of 34 and 45 Mbit/s
- 1:n protection of STM-1 electrical
- 1+1 protection of the cross-connect and synchronization function
- 1+1 protection of power supply filters

Power Specifications

System power supply

- 2 inputs at -48V with 1+1 redundancy

Operation

- 40.5V to -72V DC

Environmental Conditions

Environmental specifications

- ETS 300 019-1-3 class 3.2

Cooling

- Forced convection

EMC

- Emission immunity, ETSI 300 386-1

Safety

- According to EN 60950-1

Dimensions

- Main subrack dimensions are 500 x 280 x 474 mm
- Trib. subrack dimensions are 445 x 266 x 474 mm (WxDxH). ETSI rack, or 6335 /6325 node as trib subrack

Management

6300 NMS / F6300 EMS

- Integrated Ethernet/MPLS, SDH and DWDM Network Management
- Management interface
- Q-interface (Ethernet and ECC), F-interface (RS232)

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