

Tellabs® 6350 Switch Node

Save on operating expenditures with the small footprint and modular structure of the world's most dense 4/4/3/1 digital cross-connect. It handles voice services from 2 Mbit/s and higher, leased line services, and new value-added data services.

Fast Services Provisioning Speeds Time to Revenue

The Tellabs® 6350 Switch Node is a high-capacity third-generation transport switch — a multi-service switching platform (MSSP) — specially designed for a wide range of data, voice and leased line applications. Its many convenient interfaces in addition to SDH include Fast Ethernet (FE), Gigabit Ethernet (GbE) and integrated DWDM. Further, the interface types can be extended also to include PDH using an extension sub-rack.

The high-density system cost-effectively grooms and consolidates backbone traffic in metro and regional networks. It also provides you with the flexibility required for faster services provisioning and delivery of new value-added services such as high-speed Ethernet and video-on-demand.

Pay as You Grow Capacity Upgrades

With our best-in-class products and our pay-as-you-grow model, Tellabs enables you to increase the capacity in your network and instantly provide new services when needed, thereby lowering initial capital investments.

The combination of very high-density, handling of various interface types and connectivity at both 4/4 and 4/3/1 makes the Tellabs 6350 node ideal for Distributed Transport Switching Network Architectures.

Our managed transport switching products have extremely small footprints to free up costly central office space. For example, the Tellabs 6350 node takes up only 1/4 of a European Telecommunications Standard Institute (ETSI) rack (back-to-back). It is a fully standardized SDH product developed according to ITU-T and ETSI recommendations.

The Tellabs 6350 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 Tellabs 6350 node, providing you with a flexible and upgradable network.



Tellabs supplies wireless providers worldwide with reliable and scalable mobile backhaul solutions.

The continuous availability necessary in a high-quality network can be obtained by using Tellabs 6350 network elements with the full redundant architecture (no single point of failure). Since the basic building blocks are common for all applications, spare parts, service and maintenance 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 Tellabs 6350 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.

By using the large cross-connect matrix of the Tellabs 6350 node, it's possible to create a flexible yet economical solution. Because the unit integrates both line-rate interfaces and colored interfaces within the switch node, there is no need for stand-alone terminal multiplexers.

Moreover, the high-capacity of the Tellabs 6350 node is ideal for ring-interworking applications in which multiple add/drop multiplexers can be configured within a single sub-rack, thereby avoiding external cabling and ensuring high MTBF.

The Tellabs 6350 node is based upon a single central switching module that connects at either 4/4 level or 4/3/1 levels. This is why this compact unit combines reliable and cost-efficient transmission with such a high degree of flexibility. In fact, it allows unlimited drop of up to 128 VC-4 signals from an STM-64 line or ring add/ drop multiplexer.

Configured as a VC-4 cross-connect, up to 640 STM-1 equivalent ports are available, and cross-connect and synchronization functions can be equipment protected. Moreover, two ADM64, giving four STM-64 interfaces and with drop of 8 x STM-16, are implemented within half a rack. Configured as a combined VC-4, VC-3 and VC-12 cross-connect, up to 640 STM-1 equivalent ports are available at 4/4 level and 128 ports at 4/1 level. Further, by adding high-density expansion shelves additional PDH and Ethernet interfaces are supported.

The available network protection schemes include SNC protection of VC-n signals as well as MSP 1+1 protection and MS-SPRing protection.

The Tellabs 6350 node is managed by the open Tellabs® 6300 Network Management System, which provides automatic end-to-end path set-up with grooming, synchronization and network views, plus a convenient graphic interface for configuring equipment and monitoring performance data.

Specifications:

Equipment/Configuration Types

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

Configuration Examples Within One Subrack

- Five ADM64 with full inter-ring connectivity at 4/4 level
- Ten ADM16 with full drop at STM-4 level

Expansion subrack offering

- PDH interfaces
- FE and GbE interfaces

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 (colored for DWDM)

Specifications

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

Electrical interfaces

- E-1, E-3, DS-3 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 interfaces

- Fast and Gigabit Ethernet with a wide range of electrical and optical application. Optical codes are available for both multimode and single-mode fibers and with wavelength specific colors (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 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), 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)
- Ethernet 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

- 640 VC-4 ports higher-order matrix
- 8064 VC-12 ports lower-order 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 fibre 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

Operating temperature range

- -5°C to +45°C

Environmental specifications

- ETS 300 019-1-3 class 3.2

Cooling

- Forced convection

EMC

- Emission immunity, ETSI 300 386-1

Dimensions

- Main subrack dimensions are 500 x 280 x 950 mm
- Trib. subrack dimensions are 445 x 266 x 474 mm (WxDxH). ETSI rack.

Management

Tellabs 6300 NMS

- Integrated Ethernet/MPLS, SDH and DWDM Network Management

Tellabs® 8100 Network Manager

- End-to-end network manager across Tellabs 6300/8100/8600 networks

Management interface

- Q-interface (Ethernet and ECC), F-interface (RS232)

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