

Tellabs® 5500 NGX-S Transport Switch

Overview

Reduce costs and migrate to a next-generation network with the Tellabs® 5500 NGX-S Transport Switch. The Tellabs 5500 NGX-S switch is your complete solution for bandwidth management. Tellabs can help you open new revenue streams, dramatically lower your capital and operating cost and simplify your migration into new service delivery. With the Tellabs 5500 NGX-S switch, service providers gain a high-density transport switch that can support 100 percent wideband and broadband in one powerful, compact system.

The Tellabs 5500 NGX-S switch enables service providers to:

- Save more than 30 percent in CapEx and OpEx over current network deployments by fully integrating bandwidth management and transport functions
- Shrink floor space by up to 75 percent compared to first-generation digital cross-connects and stacked ADMs
- Achieve 100 percent non-blocking, protected switching of up to 336 STS-1s/DS-3s or 9,408 VT1.5s/DS-1s in a single compact platform

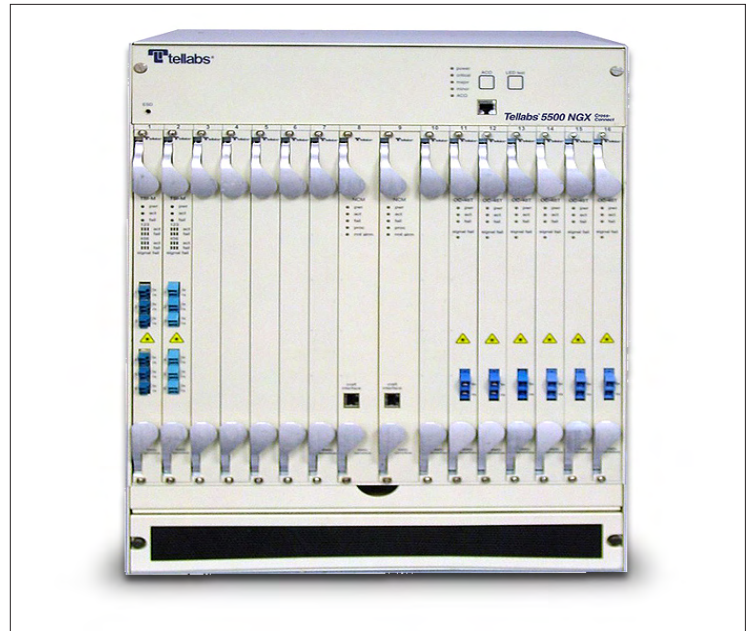
Features and Benefits

The Tellabs 5500 NGX-S switch is a multiservice metro edge device that integrates highly scalable VT/STS and M13 cross-connect technology and NG-SONET transport. The full-duplex, fully protected packet switch core in the Tellabs 5500 NGX-S switch provides a flexible architecture.

The Tellabs 5500 NGX-S switch is unique in its versatility, combining the following key features:

- High-density transport/ring gateway
- Nonblocking STS-N/VT1.5/DS-1 level grooming across all interfaces
- Full transmultiplexing on all interfaces
- High density interfaces — DS-1 to OC-48
- DCS-quality provisioning, test and maintenance functionality

The Tellabs 5500 NGX-S switch is a single-shelf architecture that supports up to 672 STS-1 equivalent grooming capacity (336 with 1+1 protection). This configuration provides nonblocking traffic switching up to the full system capacity, including wideband VT/DS-1 switching with M13 transmultiplexing. This equates to 18,816 VT/DS-1 equivalent grooming capacity in the Tellabs 5500 NGX-S system.



The Tellabs 5500 NGX-S switch combines integration of DCS, transport and data technology.

Speed Revenue Through Rapid Service Provisioning

The Tellabs 5500 NGX-S switch represents the next generation in service flexibility and provisioning. The fully universal slot architecture allows any-card-in-any-slot versatility, with no restrictions on traffic management options. This ensures straightforward planning, simple growth and 100 percent slot utilization without stranded, single-purpose slots. All slots have direct any-to-any connectivity at any circuit level from DS-1 to STS-Nc. Every slot can support dense, highspeed optical connectivity with full drill down visibility into VT and even M13 DS-1 payloads for maximum traffic control, monitoring and maintenance.

For a product with full DCS-level performance, the Tellabs 5500 NGX-S switch offers an amazingly cost-effective solution, with optimally matched pay-as-you-grow bandwidth management scalability. Just one common equipment board type is all that's needed to support a single-shelf that can handle an 18,816 VT1.5 or DS-1 cross-connect capacity. With the circuit-level TSI functionality distributed to the individual interface boards and perfectly matched for port speed and density, carriers need only pay for this cross-connect circuitry as they add port capacity.



The Tellabs 5500 NGX-S switch simplifies service delivery and helps reduce operating costs.

SONET transport, wideband and broadband traffic provisioning are consolidated in a single network element, with powerful traffic testing, and performance monitoring capabilities down to the single DS-1 circuit level, vastly simplifying and automating circuit turn-up, testing and delivery. The Tellabs 5500 NGX-S switch also performs Level 2 performance and alarm monitoring to simplify operational practices for higher speed interfaces. Manual labor associated with legacy equipment is reduced via point-and-click provisioning through the Tellabs® MetroWatch™ NGX Element Manager. The Tellabs 5500 NGX-S switch is also compatible with existing OSS management systems including Telcordia OSMINE elements.

Exceptional Performance and Scalability

- Packet switch core supports TDM cross-connect capability down to a T-1 granularity
- Integration of SONET ADM, wideband and broadband DCS with data migration capabilities
- Flexible scalability — 18,816 VT/ 672 STS-1 traffic switching per shelf
- Restriction-free universal slots yield tremendous flexibility and density
- Robust SONET-based protection and ring support
- Speeds revenue through rapid service provisioning
- Flexible Management interoperability via provisionable OSI or IP-based DCC

Tellabs 5500 NGX-S Switch Traffic Switching

- Fully nonblocking
- 64 Gbps switch fabric
- Full TDM support including full transmultiplexing on every interface,

time slot interchange, bridge and roll, and test access

Specifications

DS-1 Interface

- 28 ports per board
- Jitter performance: Per ANSI T1.102, GR-253

DS-3/STS-1/EC-1 Interface

- 24 ports per high-density DS-3 module
- DS-3 format: M13, DS-3 clear, C-bit parity
- 8 ports per DS-3/EC-1 module
- DS-3 format: M13, DS-3 clear, C-bit parity
- EC-1/STS-1 format support: VT1.5 mapped
- Jitter performance: Cat. I per GR-499, Cat. II per GR-253

SONET Optical Interface Boards

- 8-port OC-3, 155.52 Mbps
- 4-port OC-12, 622.08 Mbps
- 1-port OC-48, 2.488 Gbps
- 1310nm IR, LR; 1550nm LR
- Traffic loading: 100% TDM, 100% data or any traffic mix
- Jitter performance: Category II per GR-253
- 1+1 APS and UPSR ring support

Interfaces per Shelf

- DS-1: 392
- HD DS-3: 336
- DS-3/EC-1: 112
- OC-3: 112
- OC-12: 56
- OC-48: 14

Equipment Protection

- Configurable protection groups, any slot optional for protect/nonprotect
- DS-1, DS-3/EC-1: 1:N, N<13 (optional)
- OC-3, OC-12, OC-48: 1+1 (optional)
- Network control board/switch fabric: 1+1
- Switch to protection time: GR-253 compliant

Synchronization

- Internal stratum 3 clock (\pm 4.6 ppm) with holdover
- Synchronization status messaging on SONET S1 byte and ESF BITS interface
- Primary and redundant BITS IN/OUT
- Loop/line timing to any SONET interface

Physical

- 81 issue HD-336 Shelf:
 - Size: 23.6" h x 17" w x 12" d (3 per 7-ft rack)
 - Mounting options: 19" or 23" rack
- 82 issue HD-336 Shelf:
 - Size: 23.6" h x 17" w x 12" d (3 per 7-ft rack)
 - Mounting options: 19" or 23" rack

Environmental

- Operating temperature: 0° to +50° C
- Storage temperature: -20° to +70° C

DC Power Requirements

- Dual independent feeds
- Input voltage: -48V DC
- Operating range: -42.0 to -56.0V DC

Alarms and OS Interface

- OS interface: Local RS-232 craft, 100-Base-T LAN
- External alarms: Reserved — 6 outputs, Definable — 8 inputs, 6 outputs
- Three RS-232 ports

Agency Approvals

- NEBS: GR-63-Core, GR-1089-Core (Level 3)
- Safety: UL 1950, CSA C22.2 No. 950
- EMI: FCC Class A, FCC Part 15

Element Management Support

- Sun Solaris Platforms or Windows NT
- TL-1
- FTP software download
- Automated facility test access — monitor and split modes

Telcordia OSMINE Support

- TIRKS
- NMA

Ordering and Availability

The Tellabs 5500 NGX-S switch is available now. Please contact your Tellabs sales representative or visit tellabs.com to learn more.

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