

Tellabs® 8630 Access Switch

Fully redundant and flexible hub and aggregation site network element with great scalability options

The Tellabs® 8600 Managed Edge System is a scalable and versatile backhaul solution for evolving access networks. It is designed to meet the ever-growing requirements of data hungry mobile users. This LTE-ready platform provides an extensive Ethernet and IP feature set. Simultaneous support of MPLS, TDM, ATM and FR protects previous network investments. The Tellabs 8600 product family is fully supported by the Tellabs® 8000 Intelligent Network Manager, which is an easy to use end-to-end network management solution. The Tellabs 8000 intelligent manager minimizes operational and maintenance costs and scales up to tens of thousands of network elements.

Main Application

The Tellabs® 8630 Access Switch is an IP/MPLS-based switch integrating a complete set of carrier-class functions. The main applications of the Tellabs 8630 switch are managed traffic aggregation in LTE, 3G and 2G mobile networks and the delivery of Ethernet and IP VPN services. The cost-efficient Tellabs 8630 access switch has been specifically designed to offer the functionality needed in mobile networks. Its optimized size makes it ideal for use in operators' hub and aggregation sites taking care of traffic grooming and transport in 3G and 2G networks from base stations to the RNC/BSC.

Features and Benefits

The Tellabs 8630 switch has all the features needed for both 3G and 2G and it supports mobile evolution towards LTE and the requirements of Fixed Mobile Convergence (FMC).

It has a hardware-based forwarding architecture that enables high and predictable performance despite complex service requirements. The network element is 5RU high and it fits into a standard 19-inch rack. It can be equipped with a maximum of two CDC cards and with up to four line cards. These line cards can be either Ethernet Line Cards (ELC1) or Interface Module Concentrator cards (IFC). The IFC may have up to two Interface Modules (IFMs). A wide selection of interface modules can be used with a mixture of protocols, e.g., IP, MPLS, Ethernet, ATM, Frame Relay and TDM. The integrated Control and DC power Card (CDC) provides management, routing, signaling, timing and powering for the network element.



The Tellabs 8630 is an IP/MPLS-based switch/router integrating a complete set of carrier-class functions

The Tellabs 8630 access switch supports various interfaces from 10G Ethernet to channelized TDM and POS and offers full redundancy needed in carrier networks. With four Ethernet Line Cards (ELC1) the bi-directional switching capacity is up to 80 Gbps.

Extensive Protection Functionality

The Tellabs 8630 switch has an extensive set of element and system-level protection functions. At the hardware level, the element supports a broad set of carrier-class functions, such as power and control card redundancy, distributed switching architecture and stored configuration backups of all line cards.

Specifications

Physical Dimensions

- 450 x 224 x 300 mm / 17.7 x 8.8 x 11.8 in (W x H x D). Width is without the integrated side adapter front flange
- Standard 19-inch rack mounting

Power and Cooling

- 48 VDC power feed with optional protection
- Power consumption: maximum 740W (typical value dependent on the element configuration)
- 4 fans in 2 modules, fan speed controlled by control cards

Architecture

- Hardware-based forwarding
- Distributed switching architecture

Forwarding Plane

- IPv4 routing
- MPLS switching (LSR and LER)
- Ethernet MAC switching

Functionality

- IP VPN (RFC4364)
- Integrated Routing and Bridging
- Ethernet/VLAN, SAToP, CESoPSN, ATM, Frame Relay and HDLC pseudowires
- Single and multi-segment pseudowires
- TDM cross connection
- ATM VP/VC switching
- ATM cell concatenation
- ATM IMA
- MC / MLPPP, PPPmux
- Y.1731 frame loss, frame delay and frame delay variation support
- IEEE802.1ag Ethernet OAM loopback, continuity check, ping and link trace
- IP header compression
- BFD (Static routes, OSPF, ISIS, RSVP-TE)

Forwarding Capacity

- 20 Gbps per ELC1
- 3.5 Gbps per IFC
- 80 Gbps with fully equipped system **

Chassis Configuration

- Two slots for CDCs (CDC1-A or CDC1-B)
- Four slots for line cards (ELC1, IFC1-A, IFC1-B, IFC2-B)

Interface Modules (IFM)

- 8-Port Ethernet 10/100/1000BASE-TX R2 IFM
- 8-Port Ethernet 100/1000BASE-X R2 IFM
- 1-Port 10GBASE-R R2 IFM (3 Gbps)
- 8-Port Ethernet 10/100BASE-TX IFM
- 8-Port Ethernet 100BASE-X IFM
- 2+6-Port Ethernet 10/100/1000BASE-COMBO IFM
- 2-Port Ethernet 1000BASE-X IFM
- 8-Port Ethernet 1000BASE-X IFM
- 8-Port STM-1/OC-3 POS IFM
- 4-Port STM-4/OC-12 POS IFM
- 1-Port STM-16/OC-48 POS IFM
- 4-Port STM-1/OC-3 ATM IFM
- 1-Port chSTM-1/OC-3 Multiservice IFM
- 4-Port chSTM-1/OC-3 Multiservice IFM
- 24-Port chE1/T1 Multiservice IFM

Resiliency

- 1+1 CDC protection (DC power, control and timing)
- Switching distributed to all line cards
- 1+1 MSP/APS protection
- Ethernet Link Protection
- Ethernet Link Aggregation
- 1:1 RSVP-TE LSP protection
- Fast Reroute (FRR)
- Pseudowire redundancy (ATM, TDM)
- VRRP
- IP load balancing (Equal Cost Multipath - ECMP)
- IPv4 and IP VPN load balancing to RSVP-TE tunnels
- Non-stop forwarding with control plane redundancy and graceful restart

Synchronization

- ITU-T [G.813] option 1
- ITU-T [G.8262]
- Telcordia [GR-1244] Stratum-3
- Station Clock Input and Output ports on CDC
- E1/T1, SDH/SONET line synchronization
- Synchronous Ethernet
- SSM over Ethernet [G.8264]
- Adaptive synchronization from SAToP and CESoPSN pseudowires

IPv4 Routing and MPLS Label Distribution Protocols

- OSPF-TE, ISIS-TE, BGP and MP-BGP
- LDP, RSVP-TE



Traffic Management

- DiffServ support for up to 7 traffic classes
- DiffServ aware MPLS Traffic Engineering (DS-TE)
- IEEE802.1P/Q mapping for IP or MPLS
- Policing and shaping
- VLAN shaping
- Strict Priority and WFQ scheduling
- Access Control Lists (ACL)
- ATM service categories: CBR, rt-VBR, nrt-VBR, UBR+, UBR
- ATM VC queuing/shaping

Management

- CLI with SSH2, FTP with SSH2
- SNMPv1 and SNMPv2 monitoring
- Tellabs® 8000 Intelligent Network Manager

Standards

- Safety: EN 60950-1:2006 and IEC60950-1:2005
- EMC: EN 300 386:2008
- RTTE Directive 1999/5/EC
- FCC 47 CFR Part 15, Subpart B, Class A
- NEBS level 3 compliance: SR-3580 *
- GR-1089-CORE: Issue 3, October 2002 *
- GR-63-CORE: Issue 2, April 2002 *
- MEF 9 and 14 compliance

Environmental Conditions

- Storage: ETSI EN 300 019-1-1, Class 1.1,
Temperature: -5°C to 45°C / 23°F to 113°F
- Transportation: ETSI EN 300 019-1-2, Class 2.3,
Temperature: -40°C to 70°C / -40°F to 158°F
- Operating conditions: ETSI EN 300 019-1-3, Class 3.2
(non-condensing), Temperature: -5°C to 45°C / 23°F to 113°F,
Relative humidity: 5% to 95%

* Tested to be compliant with NEBS level 3 according to GR-1089-CORE Issue 3 and GR-63-CORE Issue 2 in 2006

** For maximum configurations temperature range defined in manuals

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