Tellabs® 8660 Edge Switch

Reliable, cost-efficient controller and aggregation site solution provides switching capacity up to 240 Gbps

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

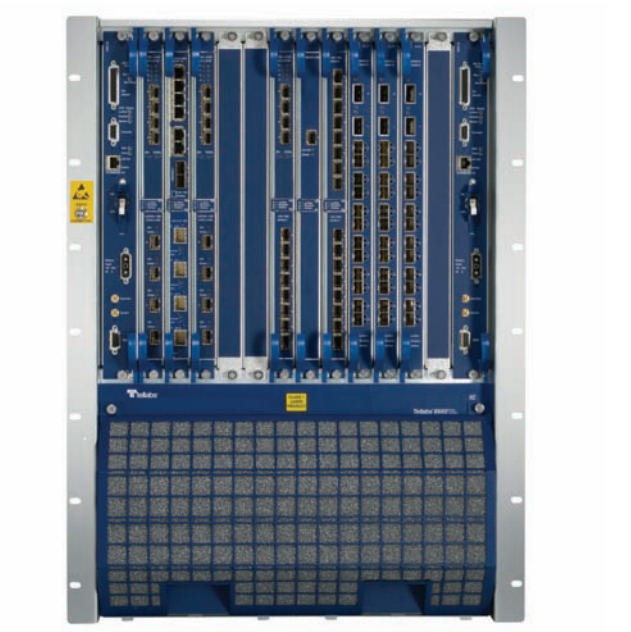
The Tellabs® 8660 Edge Switch is an IP/MPLS-based switch designed to fulfill carriers' most demanding requirements. The main applications of the Tellabs 8660 switch are managed traffic aggregation in LTE, 3G and 2G mobile networks and the native delivery of Ethernet and IP VPN services. Thanks to its distributed switching and modular architecture, it has a low initial cost of deployment and excellent scalability. The Tellabs 8660 switch can be deployed to all locations between the core network and local exchange sites in a mobile network, typically close to a RNC/BSC site or gateway site.

Features and Benefits

The Tellabs 8660 edge switch has all the features needed for both 2G and 3G and it also supports mobile evolution towards LTE and the requirements of Fixed Mobile Convergence (FMC).

Distributed Switching Architecture

The architecture of the Tellabs 8660 switch is based on a distributed switching design and a fully passive backplane. This provides cost-efficiency with a low entry cost even for small configurations. The element fits into a standard 19-inch rack and can be equipped with a maximum of 2 CDC cards, 12 Ethernet Line Cards (ELC1) or Interface Module Concentrators (IFC) that contain 2 interface modules (IFM). A wide selection of interface modules can be used with a mixture of protocols, for example 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 8660 edge switch is a reliable, cost-efficient controller and aggregation site switch with switching capacity up to 240 Gbps

Great Selection of Interfaces

The Tellabs 8660 switch supports various interfaces, from channelized TDM and POS to Ethernet, and offers the full redundancy needed in carrier networks. With the new R2 sub-rack, Power Input Module (PIM) and Ethernet Line Card (ELC1) the bi-directional switching capacity is up to 240 Gbps. The platform provides the latest in QoS-aware bandwidth control, queuing, policing and shaping techniques.

The Tellabs 8660 switch is designed for the carrier-class environment and is the most scalable element in the Tellabs 8600 system. It provides full element and network-level redundancy functionality. The switch delivers real-time voice and video, QoS-aware data and best effort services through a wireless or wireline infrastructure.

Specifications

Physical Dimensions

- 425 x 642 x 357 mm / 16.73 x 25.28 x 14.06 in (W x H x D). Width is without the integrated side adapter front flange. Width with the integrated side adapter front flange is 483 mm / 19.02 in.
- Standard 19-inch rack mounting

Power and Cooling

- 48 VDC power feed with optional protection
- Power consumption: maximum 2200W (typical value dependent on the element configuration)
- 6 fans in 3 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
- 240 Gbps with fully equipped system

Chassis Configuration

- Two slots for CDCs (CDC1-A or CDC1-B)
- Twelve slots for line cards (ELC1, IFC1-A, IFC1-B, IFC2-B)
- Two slots for Power Input Modules (PIM)

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)
- 1+1 PIM protection (DC power)
- 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

North America

Tellabs
1415 West Diehl Road
Naperville, IL 60563
U.S.A.
+1 630 798 8800
Fax: +1 630 798 2000

Asia Pacific

Tellabs
3 Anson Road
#14–01 Springleaf Tower
Singapore 079909
Republic of Singapore
+65 6215 6411
Fax: +65 6215 6422

Europe, Middle East & Africa

Tellabs
Abbey Place
24–28 Easton Street
High Wycombe, Bucks
HP11 1NT
United Kingdom
+44 871 574 7000
Fax: +44 871 574 7151

Latin America & Caribbean

Tellabs
Rua James Joule No. 92
EDIFÍCIO PLAZA I
São Paulo – SP
04576-080
Brasil
+55 11 3572 6200
Fax: +55 11 3572 6225