Tellabs® 8600 Managed Edge System
8-Port 1000BASE-X Gigabit Ethernet Interface Module

Overview

The Tellabs® 8600 Managed Edge System consists of a range of modular IP/MPLS-based network elements and an integrated network and service management system.

The 8-Port 1000BASE-X Ethernet Interface Module (IFM) may be used with Tellabs 8600 system elements, including the Tellabs® 8660 Edge Switch, Tellabs® 8630 Access Switch and Tellabs® 8620 Access Switch. The module is mounted in the Interface Module Concentrator (IFC) of the Tellabs 8660/8630 switches or in the Tellabs 8620 switch enclosure.

The module provides a cost-effective solution for connecting eight partially filled GE interfaces in one module or, alternatively, two wire-speed GE interfaces.

Applications

Optical Gigabit Ethernet interfaces are used widely in today's networks. This solution is used even though the actual bandwidth requirement constitutes only a fraction of the gigabit, since optical Fast Ethernet interfaces are not commonly supported.

The 8-Port 1000BASE-X Ethernet IFM is a cost-optimized solution for connections that are known not to require full 1 Gbps capacity.

This product can be used in the mobile transport network to connect base stations with Ethernet connectivity to the access network. Additionally, the wire-speed mode enables its use for uplinks and backhaul.

In wireline applications, it can be used for attachment circuits to VPN services, since the access bandwidth for a site is often below 1Gbps. The 8-Port 1000BASE-X IFM can also be used to provide Internet access in multi-tenant unit applications where an Ethernet switch resides in the basement of the building.

Product description

The 8-Port 1000BASE-X Ethernet IFM provides the Tellabs 8600 system element with a high-density GE interface, which supports both electrical and optical physical media with Small Form Factor Pluggable (SFP) transceivers.

The module is mounted to the IFC or to the Tellabs 8620 Access Switch. An IFC can be equipped with any two modules and then placed in any free slot in the Tellabs 8660 Edge Switch and Tellabs 8630 Access Switch.

The Tellabs 8600 system 8-Port 1000BASE-X Ethernet IFM provides 2.5 Gbps throughput, which is shared among the eight ports. The capacity can be allocated among the eight interfaces with a granularity of 20 Mbps. The capacity allocation changes can be made in service, with no card reload required. The module can also be configured to have two wire speed GE interfaces.

In the ingress direction, the interface guarantees the minimum capacity according to the allocated bandwidth. Traffic with higher bandwidth than that allocated can be received by one interface if the rest of the interfaces are not being utilized fully, congesting the IFM.

Figure 1. 8-Port 1000BASE-X Gigabit Ethernet IFM

The interface ingress buffer is monitored, and the interface can be configured to generate PAUSE frames upstream from the interface if the fill level is increasing, to prevent unwanted packet drops. In the egress direction, the traffic is shaped to the allocated bandwidth.

The module supports DiffServ-based traffic management and per-VLAN shaping.

Network management

As part of the Tellabs 8600 system, the 8-Port 1000BASE-X Gigabit Ethernet IFM is fully managed with the Tellabs® 8000 Network Manager. All interface-, service- and connection-level parameters are configured remotely through the Tellabs 8000 manager's GUI-based tools. This is the primary and easiest way to configure the unit and the network.

The Tellabs 8000 manager also provides centralized fault and performance monitoring, as well as in-built testing capabilities.

Alternatively, CLI can be used for setting up the parameters for the module. SNMP is supported for monitoring purposes – e.g., for fault and performance management for other systems.

The Tellabs 8000 manager takes care of maintaining full consistency between the network elements and the database.

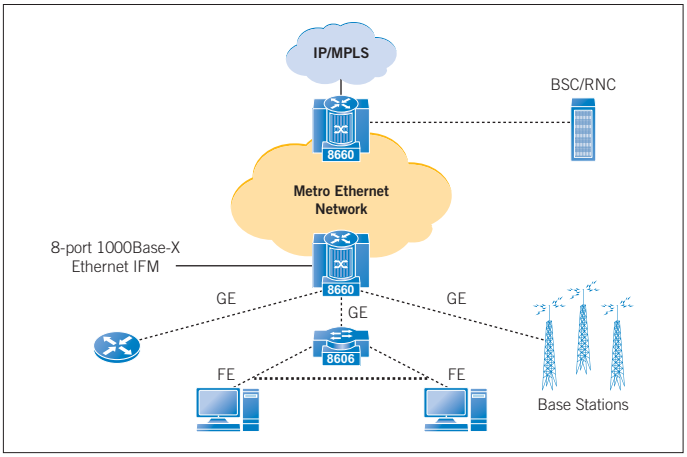

Figure 2. Network management

Specifications

Physical Interface

- Replaceable SFP modules with multiple reaches and types including electrical interface

Encapsulations

- IPv4/VLAN/Ethernet (RFC 894)
- IPv4/LLC_SNAP/VLAN/Ethernet (RFC 1042)
- MPLS/VLAN/Ethernet (RFC 3032)
- MPLS/IP (RFC 4023)

Functionality

- IEEE 802.3-compliant MAC functionality with PAUSE frame support
- 802.1Q VLAN support (4096 VLAN IDs per module)
- IP VPN (RFC 4364, obsoletes RFC 2547 bis)
- RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks
- Port-based and VLAN-based Pseudo Wires
- VLAN stacking for Ethernet PWE3n
- Hierarchical shaping
- Synchronous Ethernet support (TX direction)

Quality of Service

- Strict Priority and Weighted Fair Queuing (WFQ) scheduling
- DiffServ traffic policing with two-rate three-color marker (RFC 2698)
- RED and WRED queue management
- Traffic shaping per VLAN
- DiffServ Aware MPLS traffic engineering (E-LSP and L-LSP)
- Traffic classification based on ingress port, 802.1Q (VLAN), 802.1P (PRI) MPLS EXP, L-LSP, DSCP or L3/L4 header fields
- RSVP-TE CAC with overbooking option

Power Consumption

- Typical: 16.5 W
- Maximum: 20 W

Environment

- Storage: ETS 300 019-1-1:2003-04 Class 1.1, temperature: –5° C to +45° C / 23° F to 113° F
- Transportation: ETS 300 019 1 2:2003-04 Class 2.3, temperature: –40° C to +70° C /-40° F to +158° F
- Normal operating conditions: ETS 300 019-1-3:2003-04 Class 3.2 (non condensing), temperature: –40° C to +65° C / -40° F to +149° F, relative humidity: 5% to 95%

Regulations and Standards

- Safety: EN 60950-1:2001
- EMC: EN 300 386:2005
- FCC 47 CFR Part 15, Subpart B, Class A
- RTTE Directive 1999/5/EC
- NEBS Level 3

Ordering and availability

This is a general-availability product.

For more information, please contact your local Tellabs sales representative or local Tellabs sales office, or see http://www.tellabs.com.

* For future release

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