

# Tellabs® 8100 Managed Access System

## Tellabs® 8188 Access Switch

A high-capacity managed network element offering a great level of modularity to fulfill the service needs in access networks with multiple services

### Overview

The Tellabs® 8100 Managed Access System is a flexible and fully managed access solution for service providers. It is primarily used for providing fixed line services as well as building reliable mobile transport solutions. The Tellabs® 8100 system consists of various modular cross-connect elements, a number of Network Terminating Units (NTU) and an intelligent network management system, the Tellabs® 8000 Network Manager.

The Tellabs® 8188 Access Switch is a high-capacity network element part of the Tellabs 8100 system. The main functionality is based on a new cross-connection unit, the GMX2, which is a Tellabs® 8184 and Tellabs® 8188 Access Switch specific plug-in unit. The Tellabs 8188 switch is a modular and scalable 4/1/0 cross-connect node supporting most of the interface units used in other Tellabs 8100 system network elements. Due to its important role in carrier transport networks, the node can be fully protected. Element and service management operations can be easily executed through the Tellabs 8000 manager's GUI-based tools.

### Features and Benefits

#### ■ Cross-connections at 4/4, 4/1 and 1/0 levels

The Tellabs 8188 switch can combine all the cross-connection levels including 4/4, 4/1 and 1/0 in a double sub-rack. This eliminates the need for multiple separate network elements on the site. All the cross-connection functionalities reside on the GMX2 card.

#### ■ High capacity SDH interfaces form part of cross-connect unit

Five SDH interfaces form part of the GMX2 unit which improve the node density and cost-efficiency. There is more space left for the user-selectable interface units. When the GMX2 is duplicated there are in total ten independent SDH interfaces in the basic configuration. The supported interface types are STM-16, STM-4 and STM-1. The service provider can choose and plug the right SFP type for each interface.

#### ■ Compatible with the existing interface units

Since the Tellabs 8188 switch supports most of the interface units generally available for the Tellabs 8100 system nodes, there is no need for building a special inventory of spares.

#### ■ End-to-end network and service management

With the help of the Tellabs 8000 manager tools, remote configurations, semi-automated service provisioning, testing and service level fault and performance reporting are enabled. This can result in significant savings in operational expenses and shortens the response times throughout the network and service lifecycle.



Figure 1. The Tellabs® 8188 Access Switch

### Applications

Due to its high flexibility, the Tellabs 8188 switch can be deployed to different network topologies. It can function as a multiservice access grooming element or purely as a 1/0 cross-connect element, or as a combination of these.

A typical way to deploy the Tellabs 8188 switch is to use it for access grooming and consolidate various services over copper, fiber or leased lines from the access towards the network. The Tellabs 8188 switch provides 23 slots for various Tellabs 8100 system XBUS compatible interface units, which range from framed PDH and SDH interfaces to a number of data and voice interface options. The high number of user configurable interfaces makes the Tellabs 8188 switch optimal for use at access sites with various services, growing capacities and increasing amount of customers.

Another possibility deployment option is to exploit the vast 1/0 cross-connection capacity of the GMX2 and utilize the Tellabs 8188 switch as a 1/0 cross-connection server on a site where traffic optimization at time slot level is justified. The Tellabs 8188 switch could be collocated with an SDH node to perform the 1/0 traffic optimization and provide savings in port and transport related costs and at the same time perform access grooming.

### Network Management

As part of the Tellabs 8100 system, the Tellabs 8188 switch is fully managed with the Tellabs 8000 Network Manager R16A. All interface, service and connection level parameters are configured remotely via the Tellabs 8000 manager's GUI-based tools. The same management processes used with any Tellabs 8100 system elements apply to the Tellabs 8188 switch.

## Specifications:

### Basic

#### Physical dimensions

- 19 inch and ETSI rack installations
- 436 mm x 736 mm x 239 mm (W x H x D)
- 32 units slots in total

#### Power and cooling

- Power feed: -48 VDC with optional protection
- Power consumption: 80...400 W with redundant configuration (configuration dependant)
- Forced cooling with fans (3)

### Functionality

#### GMX2 (10T) functionality

- 4/1/0 cross-connections and VC-4 and VC12/P12s terminations
- 1 x STM-16 and 4xSTM-4/STM-1 with SFP connectors
- ETSI SEC G.813 timing reference and synchronization input/output

#### Cross-connections

Independent cross-connections at different levels

- 760 2M 1/0 ports cross connection (504 VC-12/P12S from 4/1 direction and 256 2M 1/0 from XBUS (double sub-rack)
- 16 ports (VC-4,TUG) 4/1 cross connection (8\*VC-4 Terminations )
- 72 ports (AU-4) 4/4 cross connection with 2\*GMX2 (2 \* STM-16 and 8 \* STM-1/STM-4)

### Equipping and Interfaces

#### Common units

- SCU-H: Control unit
- PFU-H: Fuse unit, -48 VDC (can be protected)
- GMX2 (can be protected)

#### GMX2 interfaces

- 1 x STM-16 (SFP)
- 4 x STM-1/STM-4 (SFP) (can be independently configured)
- 1+1 MSP/APS with equipment protection
- SNC/N and SNC/I at VC-4 and VC-12 level

#### Supported XBUS interface units

The Tellabs 8188 switch provides eight XBUSes and 23 slots for the following units:

- GMU-A (STM-1 interface unit)
- E3C (framed E3 interface unit)
- ESU (Ethernet switching unit)
- QMH (E1/DSL unit)
- GMH (E1/E2/DSL unit)
- GMM (T1 interface unit)
- OMH-A (8-port DSL unit)
- VCM-5T-A (data interface unit)
- VCM-10T-A (data interface unit)
- CAE (analogue VF unit)
- CCS-UNI (POTS interface unit)
- CCO-UNI (POTS interface unit)

### Environment

#### Storage

- ETS 300 019-1-1: V2.1.4 (2003-04) Class 1.1

#### Transportation

- ETS 300 019-1-2: V2.1.4 (2003-04) Class 2.3

#### Operating conditions

- ETS 300 019-1-3: V2.2.2 (2004-07) Class 3.2

### Regulatory

#### Safety

- EN60950-1:2001

#### EMC

- EN 300 386 V1.3.3: 2005

### Management

Tellabs 8000 Network Manager R16A SP2

### Ordering and Availability

The Tellabs 8188 Access Switch is in General Availability.

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