

# Tellabs® 7100 Optical Transport System — True Next-Generation Transport Networking

Advanced services transport system supports multiple protocols on any port

## Overview

The Tellabs® 7100 Optical Transport System (OTS) combines the most advanced optical networking and services layer technologies on one seamless platform. Supporting up to 44 channels ranging from 100 Mbps to 40 Gbps, the Tellabs 7100 OTS offers service providers the scalability, service flexibility and cost effectiveness that enable true next-generation transport networking.

The Tellabs 7100 OTS features an integrated dynamic optical core and intelligent services interface that together deliver Add/Drop Multiplexer (ADM) capability on a single blade. Dynamic optical networking enables service providers to meet today's network needs while supporting the ability to effortlessly deploy additional nodes for future expansion via a multi-degree Reconfigurable Optical ADM (ROADM) and optical switching technologies. The intelligent services interface mimics currently installed ADM rings with a simple pair of modules, eliminating the costly implementation of stacked ADM rings. Coupled with software-configurable ports supporting SONET/SDH, Ethernet and Storage Area Network (SAN), the Tellabs 7100 OTS supports the service flexibility required in today's rapidly evolving networks.

The Tellabs 7100 OTS not only addresses current network requirements in a cost-effective, efficient manner, but supports strategic deployment of native packet-based solutions — simply equip the service endpoints with the appropriate interface modules. The Tellabs 7100 OTS offers a single, flexible platform that can support current ADM and Wavelength Division Multiplexing (WDM) ring capabilities and ensure a smooth migration to future packet-based services over mesh networks.

## Features that Deliver Immediate and Future Benefits

### Increased Network Flexibility and Service Delivery

The Tellabs 7100 OTS overcomes the shortcomings of early generation Dense Wavelength Division Multiplexer (DWDM) systems by introducing a multi-degree ROADM architecture based on Wavelength Selective Switching (WSS) technology. This architecture simplifies network engineering, solves the stranded capacity issues that can occur as a result of channel banding and eliminates re-engineering to accommodate moves and changes.



Figure 1. Tellabs 7100 Optical Transport System (rack view)



The Tellabs 7100 OTS ensures maximum network availability as your service offerings expand.



### Simplified Engineering & Planning

New services can be added on a “point and click” basis through the Tellabs® 7194 Network Management System (NMS), enabling rapid service rollout and the quick addition of new revenue streams. Using the Tellabs® 7196 Optical Subnet Planning (OSP) tool, both initial network design and future additions of new services can be easily planned and implemented. The planning tool can also be used to perform “what if” scenarios ahead of time, giving the network planner greater confidence that the most cost-effective solution will be deployed from the outset.

The Tellabs 7100 OTS supports hitless migration from a low-cost Optical Line Amplifier (OLA) node to a full add/drop system. OLA nodes can be placed in a span either to extend the span length or to provide a

low-cost method of prepositioning for future traffic growth. Expansion of an OLA node to a full add/drop system is accomplished by simply adding a ROADM module and output amplifier for each of the two fiber directions of the node.

### CapEx/OpEx Savings

With the use of ROADM network elements, transponders that tune across 44 different channels and an intelligent transport control plane, the Tellabs 7100 OTS offers significantly lower operational costs. The ADM on a single blade functionality of the 7100 OTS means that a separate ADM no longer needs to be installed and provisioned, shrinking both costs and physical footprint. These savings grow significantly when a common switch fabric is deployed, further reinforcing the “pay as you grow” architecture of the Tellabs 7100 OTS product family.

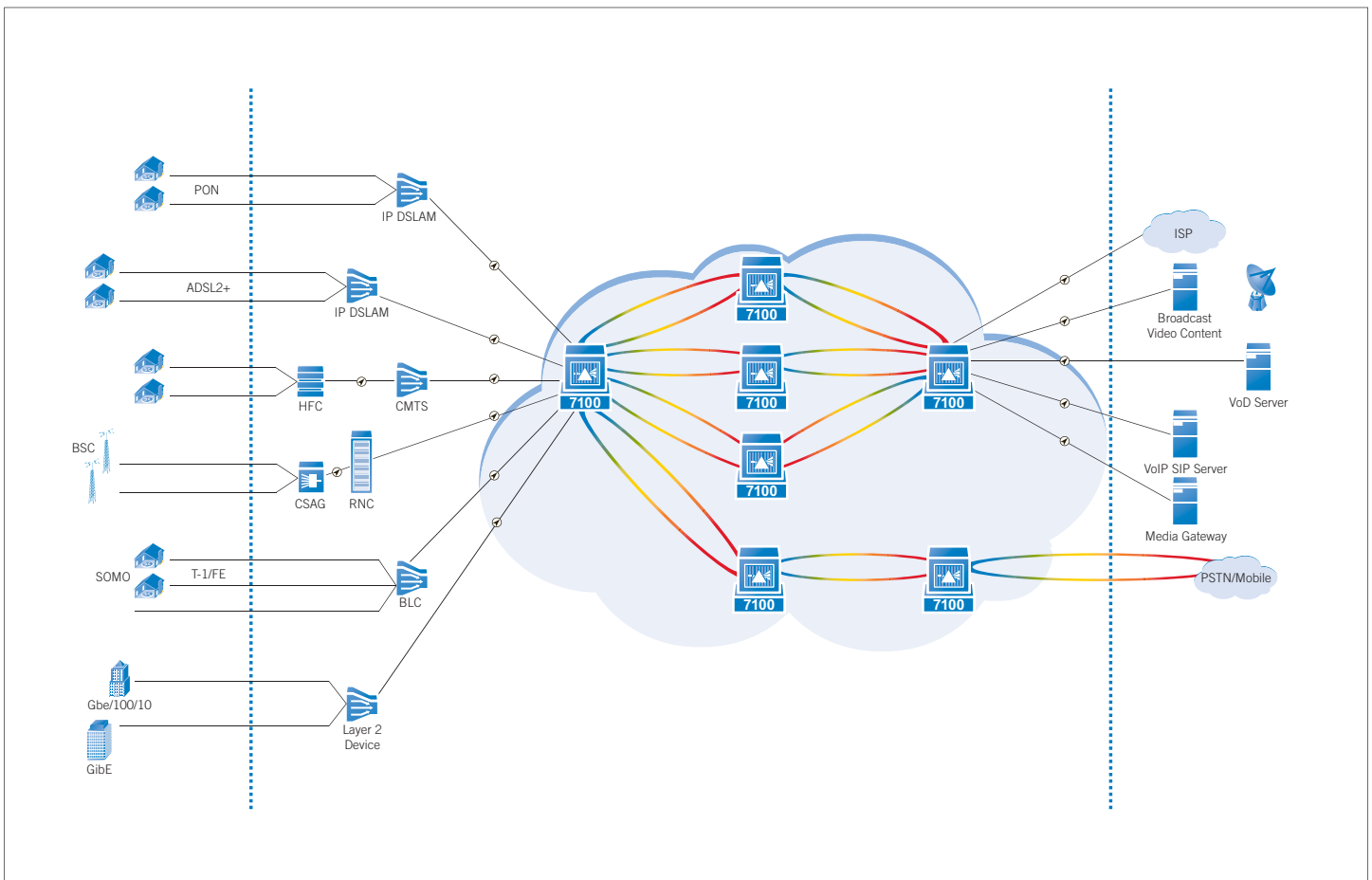


Figure 2. The Tellabs 7100 OTS seamlessly integrates ADM and Layer 2 functionality onto a single unified optical transport platform.

## Key Technical Features:

### Topology

- Ring
- Multi-ring interconnect
- Mesh
- Linear add/drop

### Management & Planning

- Tellabs® 7194 Network Management System (NMS)
- Tellabs® 7190 Element Management System (EMS)
- Tellabs® 7191 Craft Station
- Tellabs® 7196 Optical Subnet Planning (OSP) tool

### Interfaces

- ETR/CLO
- 100BaseFX
- OC3, OC12, OC48, OC192
- STM-1, STM-4, STM-16, STM-64
- ESCON/SBCON, FC/2, FC/4, FC/8
- DVB-ASI
- 1G/2G/4G/10G FC, 1G/2G FICON, 1G/2G ISC
- 1 GbE, 10 GbE (LAN/WAN)
- OTU1, OTU2
- Any generic rate 100 Mbps to 2.5 Gbps
- SD-SDI, HD-SDI, 3G-SDI\*

### Network

- Up to 44 wavelengths with 2.5 Gbps, 10 Gbps and 40 Gbps\* support
- Up to eight degree ROADM with WSS technology
- Full optical PM and TCA support for all 44 waves
- Auto balancing and wavelength turn-up support
- Alien wavelengths
- G.709 FEC, EFEC
- Distances in excess of 1000 km
- Transponders widely tunable across entire 44 waves
- Built-in Pseudo Random Bit Sequence (PRBS) generation with loopback capability for testing
- Up to 32 network elements per ring
- Protection:
  - UPSR
  - APS (1+1)
  - OCh-DPring
  - Resilient Packet Ring (RPR)

### Physical

- Shelf Dimension:
  - Height: 18.7 in. (475 mm)
  - Width: 19.5 in. (600 mm)
  - Depth: 12 in. (300 mm)
- Rack Dimension:
  - U.S. NEBS rack: 84 in. H x 26 in. W x 12 in. D
  - International ETSI rack: 2,200 mm. H x 600 mm. W x 300 mm. D
- Power: -48 V DC nominal (-40 V DC to -75 V DC) voltage

### ADM Functions

- STS-1, STS-3, STS-12, STS-48 and VC-4 grooming
- STS-1/3c Virtual Concatenation for Ethernet over SONET
- ADM on a blade (SONET/SDH)
- Any-to-any service delivery
- Eliminates back-back and stacked ADM rings
- DCC OSI support for management of third-party network elements

### Integrated Digital Cross-Connect Functions

- STS-1/3c/12c/48c cross-connections
- Test access
- Bridge and roll

### L2 Functions

- LAN bridging (802.1Q)
- Link-level OAM (802.3ah)
- Link aggregation (802.3ad)
- Synchronized links (ITU-T G.8261)
- Provider bridging (802.1ad)\*
- End-to-end OAM (802.1ag)\*
- QoS for physical interfaces
- QoS for logical interfaces (VLANs)
- MEF services support\*

### Environmental

- Operating Temperature: 5° C to 40° C (41° F to 104° F) normal; -5° C to 50° C (23° F to 122° F) temporary
- Relative Humidity: 5%–85%, non-condensing

### Ordering and Availability

The Tellabs 7100 OTS is available now. Please contact your Tellabs sales representative or visit [tellabs.com](http://tellabs.com) for more information.

*\*Future release*

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