

Tellabs® 7100 Optical Transport System: Fully Integrated Transport and Services Delivery Platform

Advanced packet-optical transport system to reduce total cost of ownership and increase revenue.

Overview

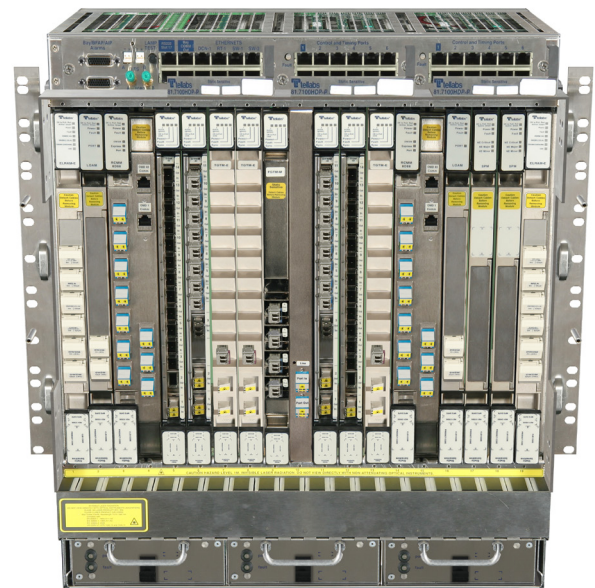
The Tellabs® 7100 Optical Transport System combines the most advanced optical networking and services layer technologies on one seamless packet-optical transport platform. Supporting up to 88 channels, with interfaces ranging from 100 Mbps to 40 Gbps, the Tellabs 7100 OTS offers you the scalability, 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 interfaces that together deliver Add/Drop Multiplexer (ADM) capability, Layer 2 packet switching on a single blade, and OTN multiplexing and switching. Dynamic optical networking enables you 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. One of the intelligent services interfaces 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) interfaces, the Tellabs 7100 OTS supports the service flexibility required in today's rapidly evolving networks.

The Tellabs 7100 OTS not only addresses traditional network requirements in a cost-effective, efficient manner, but also supports strategic deployment of native packet-based solutions. Ethernet modules support efficient packet aggregation switching and service delivery while enabling cost-effective transport of IP. The Tellabs 7100 OTS offers a single, flexible platform that can support current ADM Wavelength Division Multiplexing (WDM) ring capabilities and packet-based services over mesh networks.

Leveraging the many advantages of OTN technology solutions over traditional SONET/SDH, the Tellabs 7100 OTS also supports OTN multiplexing and switching. It can transparently carry many services, like native video signals, which may be corrupted when carried over SONET/SDH. The OTN also transparently carries SONET/SDH links, preserving the SONET/SDH OAM and protection schemes for existing topologies or customer circuits.

- Integrated Multiservice Provisioning Platform (MSPP), Multiservice Transport Switch (MSTS), Layer 2 switch, and Optical Cross Connect (OXC)
- Multiservice 100 Mbps through 40 Gbps interfaces with a seamless migration to 100 Gbps interfaces



The Tellabs 7100 OTS

- ASON/GMPLS control plane for connection management and mesh restoration
- Managed by Tellabs® 8000 Intelligent Network Manager

Features that Deliver Immediate and Future Benefits

Increased Network Flexibility and Service Delivery

The Tellabs 7100 OTS overcomes the shortcomings of point-to-point 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.

Simplified Engineering & Planning

New services can be added on a “point and click” basis through the Tellabs 8000 intelligent manager, enabling rapid service rollout and the quick addition of new revenue streams. Using the Tellabs® 7196 Optical Subnet Planner, 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 pre-positioning 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. The addition of new shelves at existing nodes to support greater add/drop capacity and the addition of new nodes to a network can both be accomplished without impacting existing traffic. All of these features contribute to the tremendous flexibility and scalability of the Tellabs 7100 OTS.

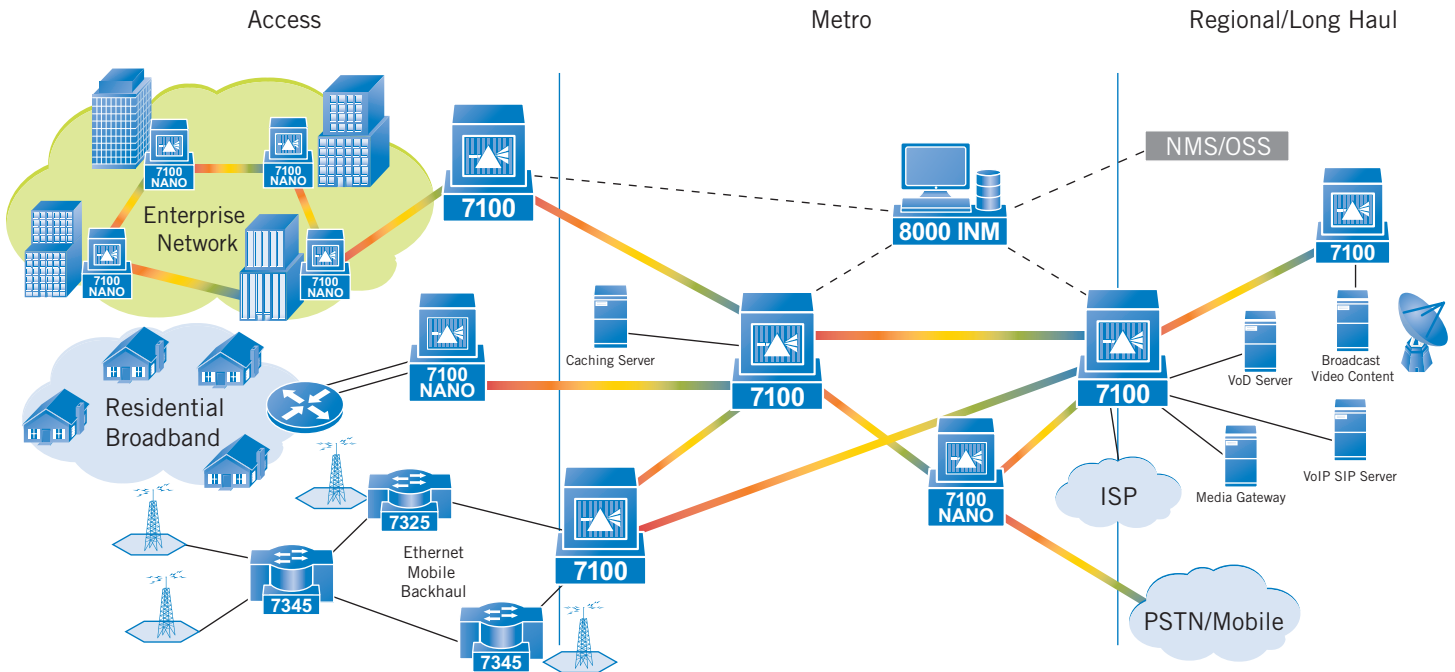
CapEx/OpEx Savings

Most important is the significant capital and operational savings that are achievable with the Tellabs 7100 OTS. With the use of ROADM

network elements, transponders that tune across 88 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. Utilizing the packet interface module means that a standalone switch is no longer needed to support packet aggregation, switching and service delivery. Line side interfaces on point-to-point, ADM and packet modules are all DWDM channels into the ROADM for maximum utilization of transport fibers.

These savings grow significantly when a common TDM/packet switch fabric is deployed to inter-connect traffic across multiple interface modules, eliminating the need for a separate cross-connect element or switch. For nodes in which there is less traffic demand, the Tellabs® 7100 Nano™ Optical Transport System (OTS) offers a low-cost alternative that fits into the same architecture and uses the same interface modules. Extensive use of pluggable interface transceivers (SFPs and XFPs) further reinforce the “pay as you grow” architecture of the Tellabs 7100 OTS product family.



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

Key Applications

- Metro/Regional packet-optical transport
- Residential triple play services aggregation
- Mobile backhaul for 2G/3G/4G
- Business and enterprise services transport & delivery
- Next generation ADM for SONET/SDH transport
- Digital cross-connect for aggregation and grooming of TDM traffic
- Layer 2 aggregation and switching for optimized Ethernet and IP service delivery
- All-optical cross connect
- Data Center connectivity
- OTN multiplexing and switching for tunneling of all services

Key Technical Features

Topologies

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

Interfaces

- 100BaseFX
- OC3, OC12, OC48, OC192, OC768
- STM-1, STM-4, STM-16, STM-64, STM-256
- 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, OTU3
- Any generic rate 100 Mbps to 3.4 Gbps
- SD-SDI, HD-SDI, Dual Link, 3G-SDI Network

Network

- Up to 88 wavelengths at 10 Gbps and 40 Gbps
- Up to eight degree ROADM
- All-optical pass-through for transit wavelengths
- Cost optimized variable gain amplifier options for different fiber span losses and distances
- Transponders widely tunable across entire 88 waves
- Multiple protection & restoration options

Management & Planning

- Dynamic control plane for connection management and protection
- Tellabs® 8000 Intelligent Network Manager
- Tellabs® 7191 Craft Station
- Tellabs® 7196 Optical Subnet Planning tool

Certifications

- MEF9 and MEF14 certified for EPL, EVPL and E-LAN service delivery
- SAN: Brocade certified, EMC qualified, IBM qualified

Physical

- Shelf Dimension:
 - 600 x 475 x 300mm,
 - or 19.5 x 18.7 x 12 inches (W x H x D)
- Power: -48 V DC nominal (-40 V DC to -75 V DC) voltage

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

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