

# Tellabs® 7100 Nano™ Optical Transport System

Full-featured, packet-optical transport platform in a compact package

## Overview

The Tellabs® 7100 Nano™ Optical Transport System combines advanced optical networking technology with a full-featured integrated services layer, all in one small package. The result is a single transport platform that supports and protects your Time Division Multiplexing (TDM) network investment while providing full packet service and network support. The Tellabs 7100 Nano OTS can function independently or as part of a Tellabs® 7100 Optical Transport System network. Both the Tellabs 7100 Nano OTS and the Tellabs 7100 OTS use the same management system and interface modules.

The Tellabs 7100 Nano OTS features field-proven capabilities found on the Tellabs 7100 OTS, such as Add/Drop Multiplexer (ADM) on a blade and fixed or reconfigurable Dense Wavelength Division Multiplexing (DWDM) transport. It also supports 120 Gbps of Layer 2 and TDM switching, without the need for a dedicated switching module. Given its smaller size and lower power consumption than the Tellabs 7100 OTS, the Tellabs 7100 Nano OTS can extend its integrated ADM and Layer 2 technology to a greater part of your network.

The Tellabs 7100 Nano OTS offers the ability to add/drop any of 88 wavelengths remotely or amplify all 88 wavelengths in the Optical Line Amplifier (OLA) configuration. Intelligent service modules give you the capability to mimic currently installed ADM rings, reducing the need for stacked stand-alone ADMs. Integrated Ethernet functionality eliminates the need to use router ports for “dumb” Layer 2 aggregation. This frees up costly router ports to be used for their original intent, Layer 3 service delivery. The introduction of Layer 2 switching directly into the transport layer also reduces the practice of building overlay networks on dark fiber for each and every customer, simplifying management and speeding up the delivery of commercial services.

- Fully integrated Multiservice Provisioning Platform (MSPP), Multiservice Transport Switch (MSTS) and Layer 2 switch
- Multiservice 100 Mbps through 40 Gbps interfaces common to Tellabs 7100 OTS
- Same Network Management System (NMS) as the Tellabs 7100 OTS
- Dynamic optical control plane for connection management and protection



The Tellabs 7100 Nano™ OTS port shelf with 6 interface modules

## Benefits

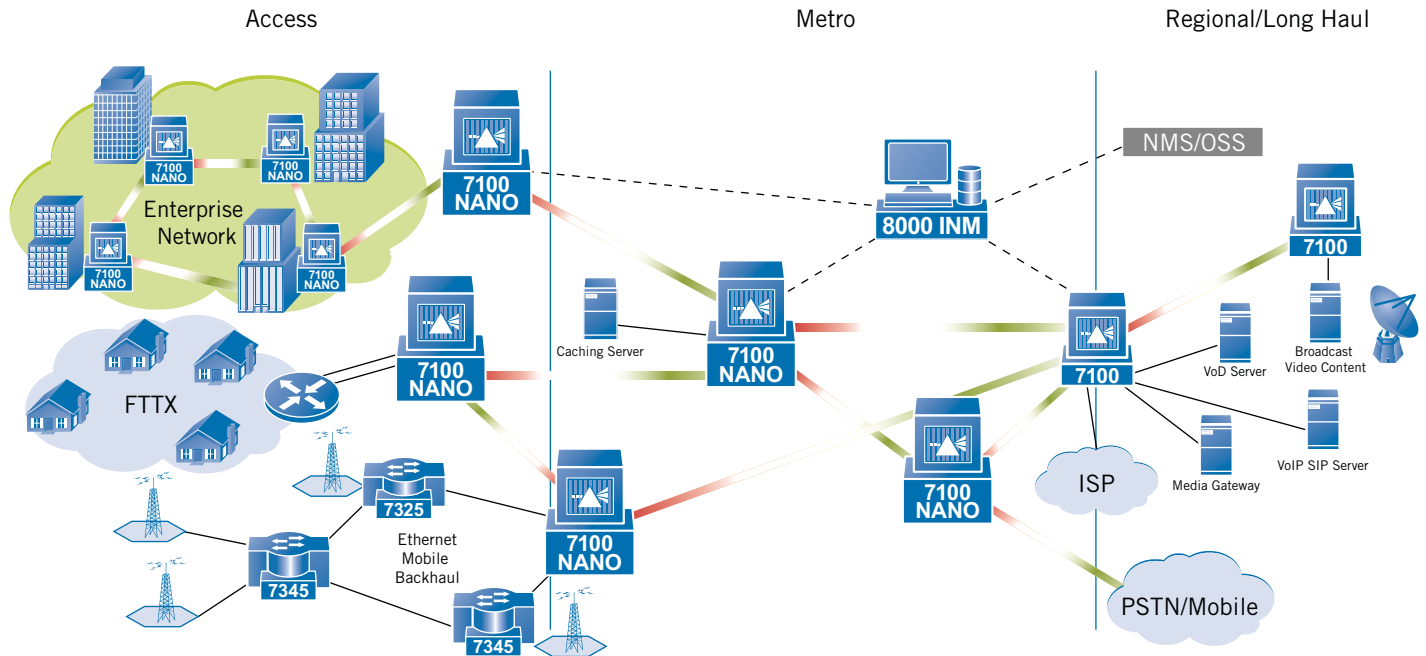
### Small size, low power, ease of installation and increased functionality at the network edge

The Tellabs 7100 Nano OTS brings integrated optical networking and Ethernet switching technology to the edge of the network at a much lower price point than other currently available solutions. The Tellabs 7100 Nano OTS supports a wide range of service modules. It is also capable of operating as an OLA and a node for reconfigurable or fixed optical add/drop of up to 88 wavelengths (supporting up to 4 fiber degrees for junction nodes). The Tellabs 7100 Nano OTS uses a 5RU shelf equipped with all the necessary deployment hardware - power feeds, fiber trough, fans and management connections.

### Programmable at the optical layer

Using Reconfigurable Add/Drop Multiplexer (ROADM) technology, the Tellabs 7100 Nano OTS is able to add/ drop any of the 88 wavelengths at a node. Support for multiple degrees also enables the Tellabs 7100 Nano OTS to function at optical junction sites. Combine this capability with service delivery modules that are 100% tunable across the band and there are no restrictions to provisioning services on the network at the optical layer.

Input and output amplifiers are integrated into the ROADM module, simplifying network turn-up and planning. The Tellabs 7100 Nano OTS network element is fully supported by the Tellabs® 7196 Optical Subnet Planner and seamlessly interoperates with the Tellabs 7100 OTS at the optical layer. Management support for the Tellabs 7100 Nano OTS is provided by the Tellabs® 8000 Intelligent Network Manager.



The Tellabs 7100 Nano OTS seamlessly interoperates with the Tellabs 7100 OTS at the optical layer

### CapEx/OpEx Savings

With its ADM on a blade and Layer 2 switching/aggregation functionality, the Tellabs 7100 Nano OTS eliminates the need to install or provision separate ADM or Layer 2 switches, helping to reduce costs and physical footprint and improve network manageability.

Unlike large multiservice platforms, the Tellabs 7100 Nano OTS further reduces costs by supporting the TDM and Layer 2 switching across the shelf backplane and interface cards without the need for a dedicated switching module. Operational costs can also be significantly reduced via the use of optical network elements; transponders that tune across 88 different wavelengths, colorless add/drop ports and an intelligent transport control plane. For highly cost-sensitive applications in which reconfigurability is not required, Fixed Optical Add/Drop Multiplexers (FOADMs) add another dimension to the Tellabs 7100 Nano OTS options. FOADMs can access any 4 wavelengths up to 44 wavelengths at a node and are available to meet the needs of almost any application.

The Tellabs 7100 Nano OTS offers additional investment protection by providing future expansion through convergence at the optical layer. Sites utilizing the Tellabs 7100 Nano OTS can support future 100 Mbps to 40 Gbps services without adding a whole new system or network connection. New services are simply provisioned over an existing optical wavelength or over a new wavelength established with the insertion of an additional interface card.

### 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 for trunking of all services

## Key Technical Features

### Topology

- 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

- Up to 88 wavelengths at 10 Gbps and 40 Gbps
- Up to four 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
- OTN multiplexing

### Management & Planning

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

### Certifications

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

### Physical

- Shelf Dimension:
  - 472.4 x 220.9 x 299.7mm, or 18.6 x 8.7 x 11.8 inches (W x H x D)
  - 5RU
- Power: -48 V DC nominal (-40 VDC to -75 V DC) voltage

### Environmental

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

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