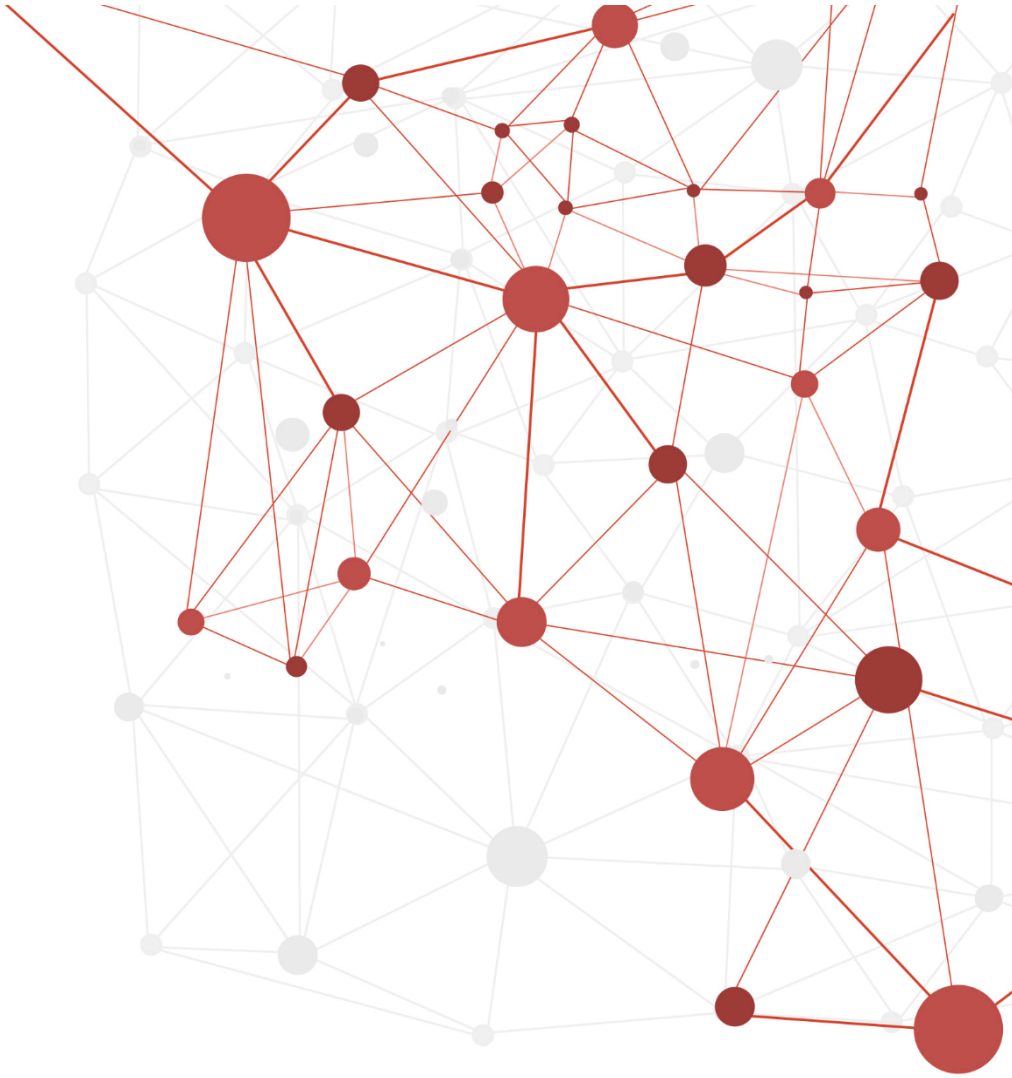

Huawei OptiX OSN 500 and Boards Datasheet

CONTENT

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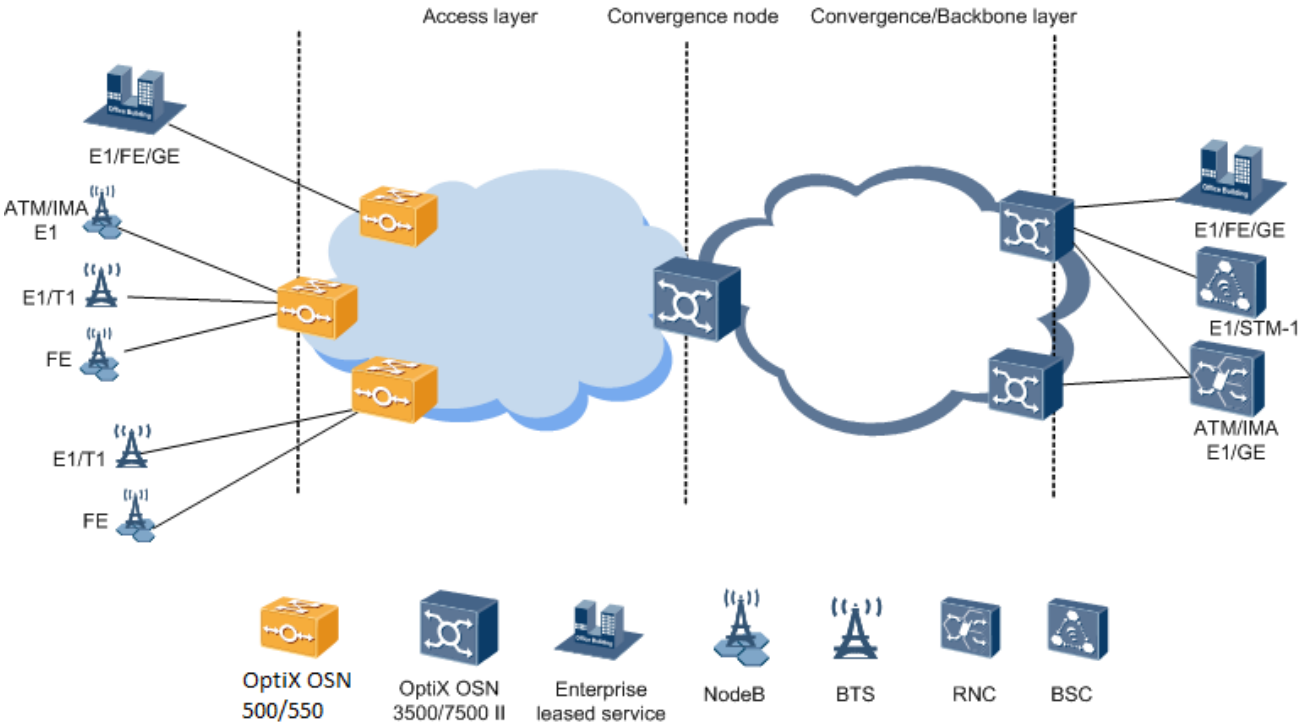
Overview

Huawei OptiX OSN 500 is of a pure packet architecture, and supports a variety of service access modes. It completes Huawei's optical transmission system, and sharpens the competitive edges of Huawei's optical transmission products.

OptiX OSN 500 Appearance & Application

OptiX OSN 500



Network Application of The Optix OSN 500/550

OptiX OSN 500 Highlights

★ **High Availability, Low Power Consumption, and Compact Structure**

The OptiX OSN 500 is a device used at the access layer, which features high availability, low power consumption, and compact structure. The OptiX OSN 500 supports:

Network-level protection such as tunnel automatic protection switching (APS), PW APS, MPLS-TP Ring Protection Switching (MRPS) (MPLS-TP is short for multiprotocol label switching transport profile), Multiple Spanning Tree Protocol (MSTP), Ethernet ring protection switching (ERPS), link aggregation group (LAG), Multi-Link Point-to-Point Protocol (ML-PPP), linear multiplex section protection (LMSP), and link-state pass through (LPT), to improve equipment reliability

- A maximum power consumption of 100 W, and a typical power consumption of only 44.7 W

- Dimensions (H x W x D) of 44 mm x 442 mm x 220 mm, and installation in a cabinet (including ETSI and 19-inch cabinets), on a wall or desk, or in an open rack

★ **Pure Packet Architecture and Multi-service Transmission**

The OptiX OSN 500 supports service bearing in the PTN domain. This solution evolves based on the service changes that take place due to radio mobile network evolution. Therefore, this solution can meet the transmission requirements of not only 2G and 3G networks, but also the future LTE and 4G networks. Specifically, the OptiX OSN 500 can process and transport ATM, Ethernet, MPLS, and MPLS-TP services.

★ **End-to-End Service Configuration, One-Click Commissioning, and One-Click Fault Locating (TP-Assist)**

Compared with legacy TDM networks, PTN networks have the following characteristics in terms of O&M:

- Lack of as many overhead bytes that indicate physical states of networks as TDM networks. When a fault occurs on a PTN network, no visual and fast indicator is available to locate the fault.

- Networking diversity and complication, which require powerful O&M capabilities

Specification

Table 1. OptiX OSN 500 Specification

Indicator and Specifications		**OptiX OSN 500**
Dimensions (H x W x D)		44 mm x 442 mm x 220 mm
Number of valid slots		2 (excluding the slots for system control, switching, and time boards)/3 (including the slots for system control, switching, and time boards)
Equipment capacity	**Packet**	7.2 Gbit/s
	TDM	/

Indicator and Specifications		OptiX OSN 500
Service type supported		ATM/IMA, CES, Ethernet and others
Network topology		Point-to-point, chain, star, ring, ring with chain, intersecting rings, tangent rings
Backup and protection	**Network-level protection (packet)**	Tunnel 1:1 APS, PW 1:1 APS/FPS, packet linear MSP, LPT, LAG, MSTP, MRPS, ML-PPP, ERPS
	Network-level protection (TDM)	/
	Device-level protection	1+1 protection for the power supply board Fan protection (The failure in a single fan does not affect the operation of the other fans.)
Maintenance	**MPLS OAM**	CV, FFD, BDI, FDI, Ping, Traceroute
	MPLS-TP OAM	Continuity check (CC), RDI, alarm indication signal (AIS), loopback (LB), linktrace (LT), loss measurement (LM) (only PW-based single-ended LM), LCK (The LCK for PWs and bidirectional tunnels is supported), TST (packet loss test only), PW CSF, two-way delay measurement (DM)
	ETH OAM (packet)	Ethernet service OAM: CC, LB, LT, AIS, LM (only single-ended LM), DM (only two-way DM), RDI Ethernet port OAM: OAM auto-discovery, link performance monitoring, remote loopback, fault detection, self-loop detection

Indicator and Specifications		OptiX OSN 500
	ETH OAM (TDM)	/
Synchronization	**Packet**	Synchronous Ethernet Clock IEEE 1588 ACR CES ACR
	TDM	/
DCN	**Outband DCN**	/
	Inband DCN	HWECC, IP
TP-Assist		Service configuration: supports end-to-end service configuration and automatic deployment of alarm management. Service commissioning: supports the one-click service connectivity test, one-click service performance test, and automatic test without any instrument. Routine maintenance: supports performance statistics and monitoring and E-Line and E-LAN service path visualization. Fault diagnosis: supports intelligent fault locating, IP ping initiation and response, and service loopback detection.
Standard working voltage		-48 V/-60 V DC power input 110 V/220 V AC power input
Installation method		In a cabinet (including ETSI and 19-inch cabinets), in an outdoor cabinet

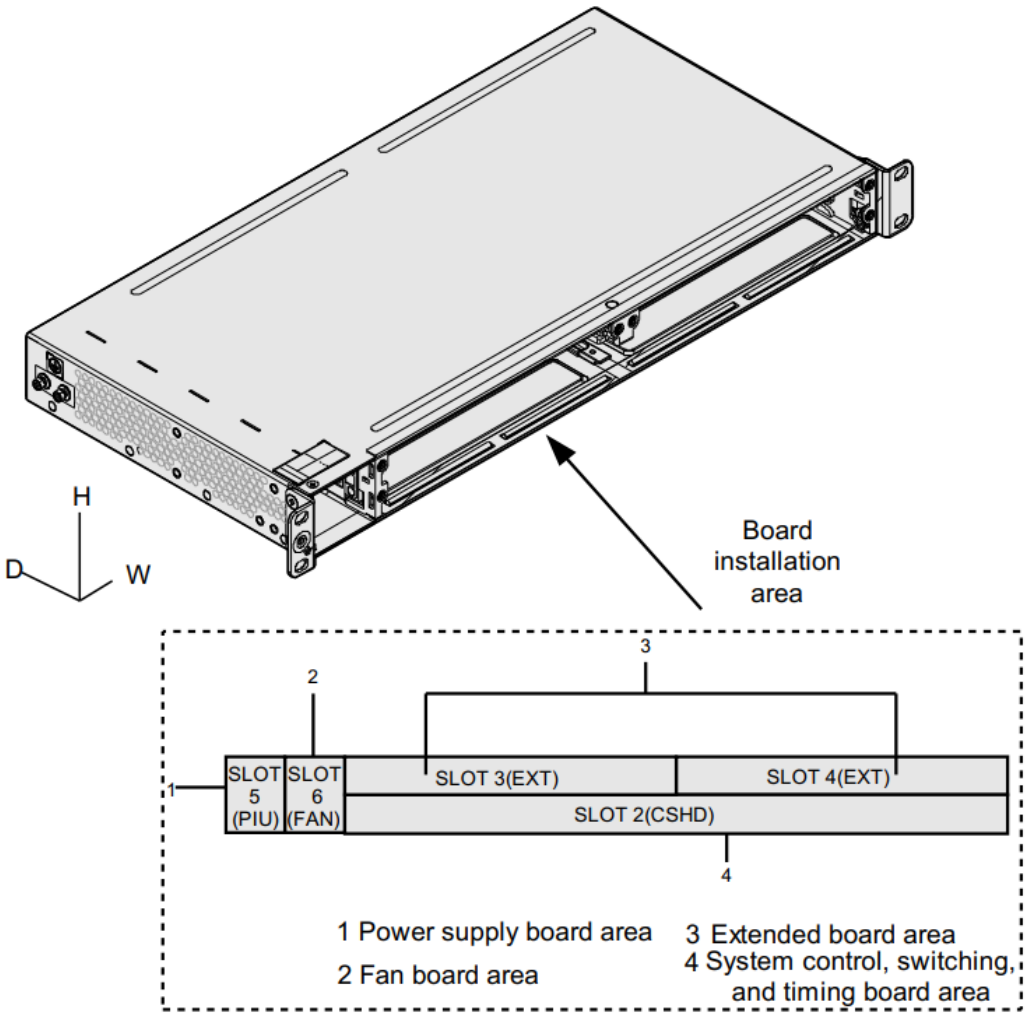
Indicator and Specifications		OptiX OSN 500
Equipment running environment	**Subrack temperature**	Long-time operation: -5°C to +50°C Short-time operation: -10°C to +55°C
	Subrack humidity (relatively)	Long-time operation: 5%-85% Short-time operation: 5%-95%
Reliability specifications	**System availability**	0.999998866
	Annual average repair rate	< 1.85%
	Mean time to resolution (MTTR)	1 h
	Mean time between failures (MTBF)	100.69 years

Hardware Description

The OptiX OSN 500 is a 1U chassis. It can be deployed in a variety of scenarios and on several different types of cabinets and surfaces.

Chassis Structure

Chassis Structure and Board Area



NOTE:

An OptiX OSN 500 NE can automatically save its NE ID, extended ID, IP address, and subnet mask to its backplane. After a new system control, switching, and timing board replaces an original one, the NE automatically uses the saved information. Therefore, you do not need to set the NE ID, extended ID, IP address, or subnet mask for the substitute board.

Installation Mode

The equipment can be deployed in a variety of scenarios and on several different types of cabinets and surfaces. such as installation in a cabinet (including ETSI and 19-inch cabinets), on a wall or desk, or in an open rack.

Boards Description

There are various boards for Huawei OptiX OSN 500.

Slot Layout

Table 2. Slot layout in an OptiX OSN 500 NE.

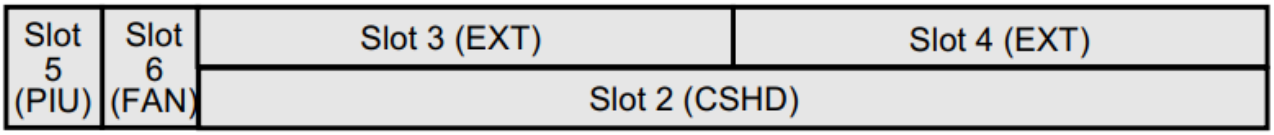


Table 3. System control, switching, and timing board.

Board Acronym	Board Name
TNH1CSHD	The packet system control, switching, and timing board supports: - A packet switching capacity of 7.2 Gbit/s - Two GE/FE SFP optical/electrical ports, four FE electrical ports, and sixteen E1 ports - System control and communication

Table 4. Packet processing board.

Board Acronym	Board Name
TNM1MD1	32xSmart E1 service processing board
TNM1EM6T	6xRJ45 FE/GE processing board
TNM1EM6F	4xRJ45 and 2xSFP FE/GE processing board
TNM1EF8F	8xFE processing board
TNM1CQ1	4xChannelized STM-1 service processing board

Table 4. Power supply board.

Board Acronym	Board Name
UPM	Uninterruptible power module
TNC1PIU	Power supply board

Basic Ordering Information

Table 6. Ordering information of Huawei OptiX OSN 500 chassis.

Model	Description
Huawei Optix OSN 500	Huawei OptiX OSN 500 is of a pure packet architecture, and supports a variety of service access modes. It completes Huawei's optical transmission system, and sharpens the competitive edges of Huawei's optical transmission products.

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Huawei OptiX OSN 9800	Huawei OptiX OSN 8800
Huawei OptiX OSN 6800	Huawei OptiX OSN 3800

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Sources

https://support.huawei.com/enterprise/en/transmission-network/optix-osn-500-pid-16103