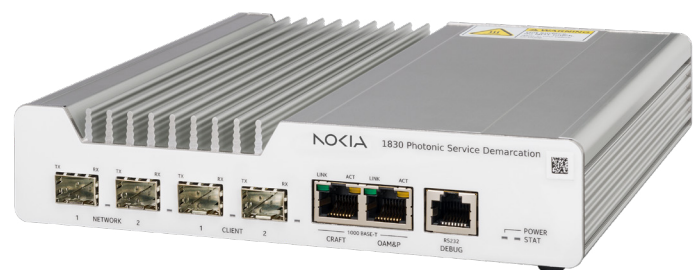


Nokia 1830 Photonic Service Demarcation

Managed Transport Demarcation NID

The Nokia 1830 Photonic Service Demarcation (PSD) provides network demarcation and optical transport for Carrier Ethernet and wavelength services. The 1830 PSD network interface device (NID) can be configured in either OTN or Ethernet mode, providing universal support for both Layer 1 subscriber and E-Line services demarcation for wholesale, business services, data center interconnect (DCI) and cloud services.

1830 PSD is tightly integrated with the Nokia 1830 Photonic Service Switch (PSS) product family using common OAM&P and management. It supports accelerated service activation with automated installation and commissioning capabilities afforded through a simple-to-use commissioning solution. In addition, the 1830 PSD supports encrypted end-to-end services, and when paired with the Nokia 1830 Security Management Server (SMS), the quantum-safe Layer 1 connectivity network solution is automated with secure key management.



Nokia 1830 Photonic Service Demarcation

Key applications

- 10G wavelength or Ethernet access for business retail/wholesale, DCI and cloud applications
- Cost-effective network extension to customer premise sites
- Media conversion and connection of dissimilar or legacy networks
- MEF E-Line and Layer 1 subscriber service demarcation supporting end-to-end service assurance
- End-to-end 10GE services (ODU2e) encrypted

Key benefits

- Carrier Ethernet or wavelength services support in one platform
- Multiservice support via SFPs
- Fast plug-and-play service activation
- Common operations with Nokia WS-NOC
- Dual network and client ports for protection or dual services
- Low power/very compact size
- Dual AC / DC power supply for PSD-2
- ETR -15°C to +65°C support for PSD-2

Product description

The Nokia 1830 PSD is a low-latency, compact and versatile NID designed for customer premises. It effectively extends the reach of the optical network in support of 10G wavelength or Ethernet services. It enables operators to deliver SLA-assured services for spur and ring access applications, where space and power consumption are constraints or where fanless operation is required. It supports optical uplinks for Ethernet (1G/10G), TDM (sub-2.5G, 2.5G), and OTN (OTU1, OTU2/2e) client services. ODUflex support allows mapping of 1G/10G Ethernet to OTU2 through GFP-F.

The product extends and simplifies the service provider solution by providing a demarcation point for fully managed, single/dual port services. It reduces carrier costs by eliminating the need to engineer, order, stock and spare different card types for each service type or optical rate. The client and line ports feature pluggable optics to facilitate service turn-up and maintenance. The 1830 PSD leverages the Nokia portfolio of small form-factor pluggables (SFPs) used in other 1830

products, including Smart SFPs for TDM network migration (TSoP, TPoP). It is fully SNMP-managed by the Nokia WaveSuite (WS), enabling seamless interworking with the Nokia 1830 PSS portfolio to deliver the ultimate in performance, flexibility, operational simplicity, and space/power savings.

The 1830 PSD (1830 PSD-2 variant) adds physical (Layer 1) encryption to optical data links, providing end-to-end protection against loss of confidentiality along the fiber. Using 10GE transparent mapping over ODU2e, it supports end-to-end AES-256 service encryption with GCM at OTN level. When paired with the Nokia 1830 SMS, the unique solution with the 1830 PSD-2 implements transparent physical layer quantum-safe encryption through symmetric key management architecture, which ensures that all transmitted data is encrypted and becomes unusable by unauthorized entities.

Nokia supported products

Two general variants are available: 1830 PSD and 1830 PSD-2, offering enhanced performance, including dual AC or dual DC power supplies and dual client support.

1830 Photonic Service Demarcation versions

Unit	Part #	Description
1830 PSD AC / DC	8DG64036AA / 3KC68345AA	Universal network demarcation
1830 PSD-2 AC / DC	3KC68375AA / 3KC68376AA	Universal network demarcation, dual AC/DC, dual client, 10GE encryption



Nokia 1830 PSD-2 Dual AC rear view



Nokia 1830 PSD-2 Dual DC rear view

Technical specifications

Specification	OTN Network Mode	Ethernet Network Mode
Network interfaces	OTN: OTU1, OTU2/2e, ODUflex OTU2 B&W, bi-directional, CWDM, DWDM colored Second interface for protection or second service (on PSD-2)	Ethernet: 10GE B&W, bi-directional, CWDM, DWDM colored Second interface for protection (optional)
Client interfaces	Ethernet: 1GE, 10GE (LANPHY) - Dual client on PSD-2 SDH/SONET: sub-2.5G, 2.5G OTN: OTU1, OTU2/2e	Ethernet: 1GE, 10GE SDH/SONET: 2.5G PDH: E1/T1
Services and protection	10GE/STM-16 encrypted services - (ODU2e) AES256 Service Encryption with GCM MEF Layer 1 subscriber services ITU-T G.709 Mapping for all supported clients (BMP, GFP, GMP, etc.) ODUk, ODUflex SNCP PRBS support Line and Service OAM, IEEE 802.1ag, ITU-T Y.1731 SyncE & PTP protocol transparency OTN path delay measurement G.798 defect, supervision, and monitoring Section, path, and tandem connection monitoring	E-Line, E-Access, spoke for E-LAN/Tree Wire-speed TPMR A/S LAG on client and network Link and Service OAM, IEEE 802.1ag, ITU-T Y.1731 SyncE and PTP protocol transparency Ethernet path delay measurement
Management, DCN	SNMPv3, CLI, WebUI, plug-and-play commissioning WS-NOC support, 1830 SMS for Encryption management SNMPv3 trap, Syslog event notifications SSHv2 security Standard MIBs and 1830 PSS MIBs Allows integration in operator's OSS/BSS GCC-0/1/2 management RADIUS authentication with 2-Factor-Authentication	SNMPv3, CLI, WebUI, plug-and-play commissioning WS-NOC support SNMPv3 trap, Syslog event notifications SSHv2 security Standard MIBs and 1830 PSS MIBs Allows integration in operator's OSS/BSS Ethernet in-band management VLAN RADIUS authentication with 2-Factor-Authentication
Regulatory and standards compliance (1830 PSD DC version is certified only for ETSI market)	EMC compliance: • FCC 47 CFR Ch.1 Part 15 • ETSI EN 300 386 Class A • Telcordia GR-1089-CORE (clause 2, 3) Environmental/safety compliance: • IEC/EN 62368-1, IEC/EN 60950-1 • Optical safety – IEC 60825-1 – IEC 60825-2	North America Region: • Telcordia GR-1089-CORE • Telcordia GR-63-CORE, Earthquake zone 4 • Telcordia GR-78-CORE • UL 60950-1, CAN/CSA-C22.2 No. 60950-1 European Region: • ETSI EN 300 019 -2-3 Class 3.1 • ETSI EN 300 019 -2-1 Class 1.2 • ETSI EN 300 019 -2-2 Class 2.3
Dimensions and weight	Height: 43 mm (1.69 in) Width: 199 mm (7.83 in) Depth: 200 mm (7.87 in) Net weight: • 1830 PSD: 2.1 kg (4.63 lb) • 1830 PSD-2: 1.7 kg (3.75 lb)	



Specification	OTN Network Mode	Ethernet Network Mode
Environmental	Operating temperature range: • 1830 PSD: -5°C to 55°C (23°F to 131°F), max altitude 2,000 m (6,561 ft) • 1830 PSD-2: -15°C to +65°C (5°F to 149°F), max altitude 4000 m (13,123 ft) Humidity: 5% to 90%, non-condensing AC Power: • 1830 PSD: 115 V / 230 V AC • 1830 PSD-2: 100 V to 240 V AC DC Power: • 1830 PSD: 24/48/60 V DC • 1830 PSD-2: 48/60 V DC • <17 W typical consumption (2x10G SFPs)	

About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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