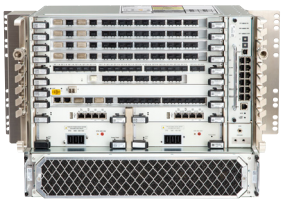
Nokia 1830 PSS-4II, PSS-8, PSS-16II, PSS-32 platforms

The Nokia 1830 Photonic Service Switch (PSS) systems consist of a wide array of shelf options providing optimized solutions for access, metro, regional and long-haul optical networks. With common optical networking cards supported across the shelf types, carriers can choose the shelf option optimized for each network application.

The 1830 PSS-4II, PSS-8, PSS-16II, and PSS-32 platforms support multiple transport applications including multiservice metro aggregation, metro, regional, long-haul WDM networks, data center interconnect (DCI), packet/OTN aggregation, as well as the most advanced colorless, directionless, Contentionless, Flexgrid (CDC-F) and colorless, Flexgrid (C-F) ROADM architectures.

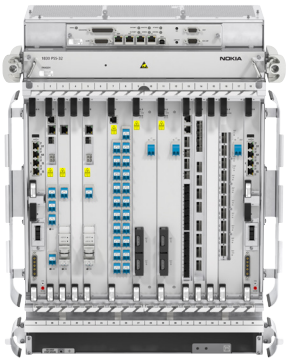
Nokia 1830 platforms ensure carriers have the intelligence, flexibility, and capacity to deliver modern, high-capacity services. The wide array of platform choices ensures cost efficient, optimized solutions for every carrier and network application.



1830 PSS-16II

1830 PSS-8

1830 PSS-4II



1830 PSS-32

Technologies

Nokia PSE coherent optics

- Latest generation of Nokia Photonic Service Engine (PSE) coherent optics
- Wide array of transponders supporting 100G to 2.4 Tb/s per card
- Support for multi-baud rate/modulation formats, ensuring maximum wavelength capacity over any optical route
- Advanced probabilistic constellation shaping (PCS) enabling performance to near Shannon limit
- Next-generation soft decision forward error correction (SD-FEC)
- Nokia designed and developed coherent DSP and silicon photonics

OTN switching

- Card based OTN aggregation and multi-card distributed OTN switching – ideal for metro applications
- Also available, Nokia centralized OTN switching platforms, 1830 PSS-8x, PSS-12x, PSS-24x.

Advanced ROADM architectures

- Advanced CDC-F and C-F ROADM solutions enabling dynamic reconfigurable networks
- Range of application-optimized integrated ROADM (iROADM) cards designated iR4, iR9, iRDM20, and iRDM32
- Industry leading Nokia 1830 PSS C+L band WDM line system doubles network fiber capacity

Integrated packet transport

- MEF-certified packet interface cards enable efficient metro/access, metro/regional packet aggregation networks
- Fully managed, end-to-end packet solution with common service, operations, and management model across optical and Ethernet/IP networks

Synchronization

- Support for ITU-T G.8262 SyncE for frequency synchronization distribution
- IEEE 1588v2 packet-based time/phase synchronization

Protection / Restoration

- Multiple service protection options, including per wavelength protection (1+1), optical line protection, OTN eSNCP protection, L0 GMPLS restoration, L1 GMPLS restoration
- Advanced L0/L1 GMPLS restoration options ensures efficient network protection, including coordinated multi-layer protection for combined WDM and OTN switch networks

Management

- Nokia WaveSuite tools to monitor, manage, and optimize networks, including WaveSuite NOC, Health & Analytics, Optimizer
- WaveSuite Planner for WDM simulation and network planning

Flexibility

- Reduce TCO through flexible, modular 1830 PSS-4II, PSS-8, PSS-16II, -32 shelves that utilize the same cards, software, and management across the 1830 portfolio

Quantum-safe secure optical networking

- Layer 1 encryption, monitoring, intrusion detection, and optical span protection
- Encryption muxponders
  - Per port encryption
  - AES-256 encryption
  - FIPS- and Common Criteria-certified

Product descriptions

1830 PSS-4II

The 1830 PSS-4II is a compact 2RU platform optimized for metro-access aggregation (Layer 0, 1, and 2) applications. The shelf provides (2) full-size card slots or (4) half-size card slots.

This scalable platform supports muxponding, Add Drop Multiplexing (ADM), Layer 2 ADM, and ROADM configurations. The front access, 300mm deep shelf features dual AC and DC power for enterprise and telco deployments. Its Extendable Temperature Range (ETR) design is suitable for indoor and outdoor applications. The shelf has enhanced cooling with side to side airflow and front to back airflow using baffles/deflectors.

The 1830 PSS-4II enables end-to-end automation and synchronization distribution to the network edge. It leverages common line cards and operations of the 1830 PSS family.

1830 PSS-8

The 1830 PSS-8 shelf is ideal for access and metro packet / OTN aggregation applications, point to point WDM applications such as interconnecting data centers, as well as metro ROADM applications. The 3RU shelf provides (4) full-size cards slots or (8) half-size card slots.

OTN and packet aggregation is supported by a pay-as-you-grow distributed switching fabric that scales with the number of services, from single card aggregation to multi-card aggregation via the 1.6T distributed switching fabric.

The 1830 PSS-8 is a front access shelf that is 300mm deep and supports both DC and AC power options. Additional slot capacity can be added using interconnected extension shelves to create a single node.

1830 PSS-16II

The mid-size 1830 PSS-16II shelf is 8RU high and supports (8) full-sized cards or (16) half-sized cards.

The 1830 PSS-16II supports OTN and packet aggregation at the card level, as well as across the entire shelf via a distributed switching fabric supporting up to 3.2T of capacity.

In addition to the packet/OTN applications, the slightly larger shelf size and additional slot capacity of the 1830 PSS-16II is ideal for WDM networks, ROADM application, in-line amplifier (ILA) sites.

The 1830 PSS-16II is a front access shelf that is 300mm deep and supports both DC and AC power options. Multiple shelves can be interconnected to create a single node

1830 PSS-32

The full-size 1830 PSS-32 shelf is 14RU high and supports (16) full-sized cards or (32) half-sized cards. The large shelf is ideal for large ROADM configurations with large numbers of transponder cards.

Technical specifications

Specifications	1830 PSS-4II	1830 PSS-8	1830 PSS-16II	1830 PSS-32
Interface card slots (full height)	2 (full)/4 (half)	4	8	16
Dimensions (HxWxD)	• 87.5 x 442.0 x 243.7mm • 3.4 x 17.4 x 9.6 in	• 133 x 438 x 259mm • 5.2 x 17.2 x 10.2 in	• 399 x 440 x 290mm • 15.7 x 17.3 x 11.4 in	• 622 x 439 x 279mm • 24.5 x 17.2 x 11 in
Weight	4.4 Kg (9.7 lbs)	7.2 kg (15.9 lb)	13.10 kg (28.87 lb)	15.77 kg (34.77 lb)
Unit / Card support	WDM/ROADM Muxponders Packet / OTN	WDM/ROADM Transponders Packet/OTN (distributed sw)	WDM/ROADM Transponders Packet / OTN (distributed sw)	WDM/ROADM Transponders Packet / OTN (card level)
Controller card slots	1	2 protected	2 protected	2 protected
Power modules	Redundant power modules	Redundant power modules	Redundant power modules	Redundant power modules
Power options	Dual DC -48V/-60V (800W) Dual AC 110/220V (500W)	48V DC, 110/220V AC	48V DC, 10/220V AC	48V DC
Operating temperature	–5°C to +65°C* (-23°F to +149°F)	–40°C to +65°C* (-40°F to +149°F)	5°C to 40°C (41°F to 104°F)	5°C to 40°C (41°F to 104°F)
Humidity	5% to 85% RH	5% to 85%	5% to 85%	5% to 85%
Multi-shelf extensions	Up to 3 shelves per NE node	Up to 24 1830 PSS shelves per NE	Up to 24 1830 PSS shelves per NE	Up to 24 1830 PSS shelves per NE

*Note: Some cards may limit the overall operating temperature range. Please refer to user documentation for additional details.

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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