

Nokia 1830 Photonic Service Interconnect – Line

The Nokia 1830 Photonic Service Interconnect – Line (PSI-L) is a compact, modular line system optimized for data center interconnect (DCI) and open line system applications. Its form factor, configuration and simplified management features meet operator needs for open and flexible architectures.

The Nokia 1830 PSI-L enables a migration from traditional telco platforms to smaller, flexible shelf sizes and form factors that are deeper in size, AC or DC powered, and with front-to-back airflow. While targeted at DCI applications, these new shelf sizes are equally suited for general purpose WDM deployments. As part of the Nokia optical networking portfolio, the 1830 PSI-L system supports common hardware units with existing 1830 Photonic Service Switch (PSS) systems.

The 1830 PSI-L is available in a 5RU, 8-slot version (PSI-8L) and a 3RU, 4-slot version (PSI-4L). The platforms support 1830 WDM line units, including integrated ROADM (iROADM) cards, Raman amplifier cards, plus colorless flexible grid (C-F) and colorless, directionless, contentionless, and flexible grid (CDC-F) add/drop units, enabling the latest generation of C-band and C+L-band ROADM configurations. These same line system units are also supported in traditional 1830 Photonic Service Switch (PSS) shelves, allowing operators to choose the preferred shelf type and cooling options for their application.



1830 PSI-8L



1830 PSI-4L

Features

- Supports common 1830 PSS hardware including iROADM, amplifier, CDC add/drop modules
- Front-to-back airflow design and AC or DC modular power supply options
- Flexible mounting options, including data center rack/cabinets, 19-in/23-in telco racks, ETSI racks/cabinets
- Field-replaceable single or dual equipment controllers (shelf CPU), redundant power supplies and fans
- Simplified management and software-defined networking (SDN) control with industry standard open APIs and protocols

Benefits

- Optimizes CAPEX with modular design supporting common 1830 hardware
- Reduces OPEX with simplified, open management and control
- Meets operator needs for both DCI and open line system applications with compact, minimal footprint design

Technologies

Scalable and flexible architectures

- Advanced C-F and CDC-F ROADM solutions enabling dynamic reconfigurable networks
- Range of iROADM cards optimized for edge to core applications

- Industry-leading Nokia 1830 C+L-band WDM line system doubles network fiber capacity
- Can be paired with transponders in the compact 1830 PSI Modular (PSI-M) platform or transponders in 1830 PSS shelves.

Protection and restoration options

- Layer 0 1+1 protection switching for ultra-fast <50ms per wavelength switching on reserved, dual paths enabled by Optical Protection Switches (OPS)
- Optical layer restoration capability enables automated service restoration without the 50% capacity penalty with wavelength steering and rerouting enabled by CDC-F and GMPLS
- Protection and restoration combined for the ultimate mission-critical services assurance, combining 1+1 protection switching with optical layer restoration



1830 PSI-8L



1830 PSI-4L



Figure 1. 1830 PSI-L shelf options



Technical specifications

Specifications	1830 PSI-8L	1830 PSI-4L
Slots (full height)	8	4
Dimensions	• Height: 221 mm (8.7 in) • Width: 449mm (17.7 in) • Depth: 461 mm (18.1 in)	• Height: 132 mm (5.2 in) • Width: 449 mm (17.7 in) • Depth: 461 mm (18.1 in)
Power	• AC or DC modules • 110 V/208 V/240 V AC • -48 V DC	• AC or DC modules • 110 V/208 V/240 V AC • -48 V DC
Power modules	2 or 4 - redundant	2 - redundant
Power consumption (typical WDM configuration)	325 W	325 W
Equipment controller	1 or 2	1 or 2
Modular fans	3	2
Operating environment	• Normal 5°C to 40°C (41°F to 104°F) • Short-term -5°C to 50°C (23°F to 122°F) • Humidity 5% to 85%	
Compliance	• UL/CSA 60950-1 • GR-3160 • IEC/EN 60950-1 • IEC/EN 60825-1, 60825-2 • AS/NZS 60950.1 • ROHS6 • CE Mark	

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