

Nokia 1830 PSS-8x/12x 500G Programmable Uplink Card 1UX500

Nokia's 1UX500 uplink card for the PSS-8x/12x platforms offers the highest levels of wavelength performance for maximum optical reach and capacity. Based on Nokia's fifth generation super coherent Photonic Service Engine (PSE-Vs), the 1UX500 enables better network utilization, while supporting 200G to 500G wavelengths. The 500G programmable high-speed uplink card provides an ideal solution for high-capacity applications over regional and long-haul networks.

The high-performance uplink card 1UX500 is a member of Nokia's 1830 PSS-x family. The 1830 PSS-x platforms deliver multi-terabit switching scale along with integrated high-capacity wavelength division multiplexing (WDM) transport optics, and expanded range of service options using high-density, multi-rate client interfaces. The 1830 PSS-8x and 1830 PSS-12x are OTN switching solutions, optimized for both metro aggregation and metro core applications. The platforms share common cards and provide the flexibility and efficiency that operators need to support an evolution to higher-capacity services, while minimizing space and power requirements.



Benefits

- High-performance, programmable 200G to 500G coherent WDM line
- Maximum optical reach and capacity based on Nokia fifth generation PSE-Vs technology
- Advanced probabilistic constellation shaping (PCS) and soft decision forward error correction (SD-FEC)
- Compact single slot size, 500 Gb/s capacity per slot
- Superior resiliency with line and channel protection
- Secure transport with protocol-agnostic, wire-speed Layer 1 encryption

Applications

- High-capacity regional and long-haul applications
- Business services, wholesale services, and multiservice transport applications
- Efficient, large-scale aggregation of low-speed services to high-speed WDM coherent lines
- Beyond 100G applications, including OTUCn line structure
- Transport wavelength of 400GE client services

Product description

The 1UX500 is a programmable, single carrier uplink card for the PSS-8x and PSS-12x platforms with 500 Gb/s per slot switching capacity. The high-performance uplink card offers optimized optical reach and capacity for regional and long-haul applications.

The high-speed card provides a programmable 200G-500G coherent WDM line interface, with configurable modulation and baud rate modes. The WDM line port is fully tunable across C-Band, Flexgrid-capable, and supports N x OTU4 and OTUCn line structures.

Based on the Nokia PSE-Vs super coherent DSP, the WDM line interface utilizes the latest generation probabilistic constellation shaping (PCS), and advanced forward error correction (FEC). The 1UX500 provides monitoring features like enhanced optical channel performance monitoring and trail (TCM) based latency measurements.

The 1UX500 offers efficient and reliable multi-layer networking with ODUk switching and protection, including ODUFlex. In addition, the card supports robustness features like optical line and optical channel protection with GMPLS control plane.

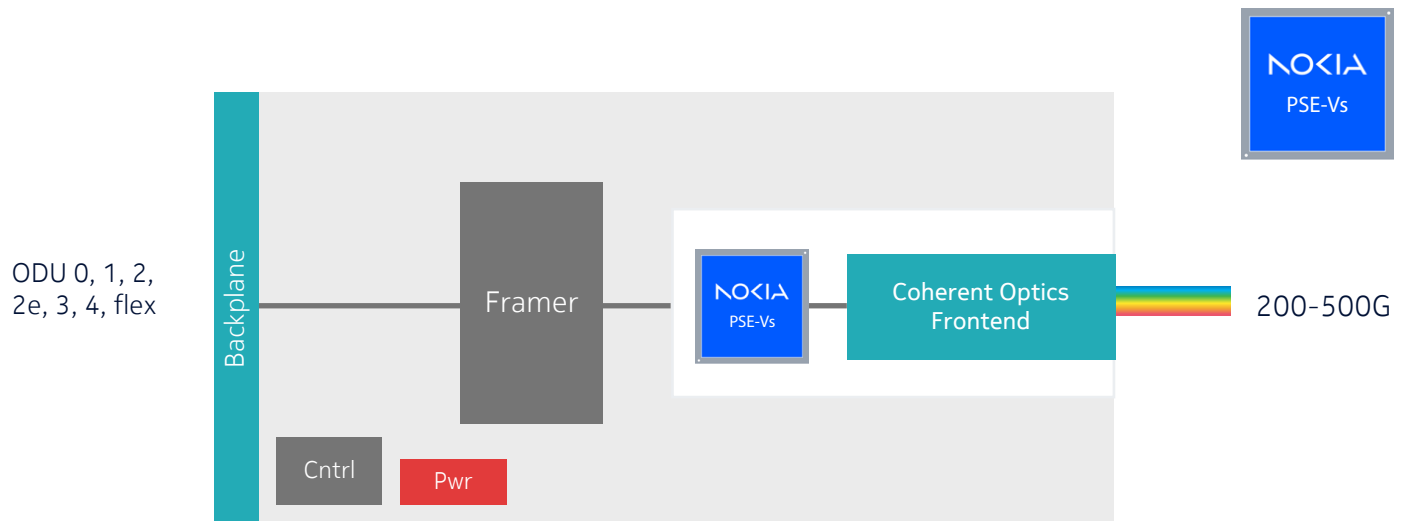
The 1UX500 supports Beyond 100G (B100G) applications including 400GE transport and OTUCn line structure. OTUCn is automatically configured where needed to transport 400GE clients resulting in operational continuity and seamless integration.

The 1UX500E version of the card supports protocol-agnostic, wire-speed Layer 1 encryption. Advanced Encryption Standard (AES) 256 can be provisioned per ODU4 or per ODUCn line payload to provide end-to-end data protection.

Nokia supported products

The 1UX500 uplink card is supported on Nokia 1830 PSS-8x and PSS-12x platforms.

Figure 1. 1830 PSS-8x/12x 1UX500



Unit	Part #	Description
1UX500	3TD00929AA	500G programmable regional/LH uplink card
1UX500E	3TD08124AA	500G programmable regional/LH uplink card with encryption



Specifications	1UX500
Application	Metro, Regional, LH
Line Port	1 x coherent integrated WDM line port 200G – 500G provisioned (QPSK, QAM16, sQAM16) 33 – 90 Gbaud Nokia PSE-Vs DSP
Transmission Capacity	500 Gb/s
Power consumption	170 W (typ)
Features	200G to 500G Metro to LH transport applications High-performance coherent line port based on Nokia PSE-Vs Probabilistic Constellation Shaping Gen 2 Nokia SD-FEC-G3 Line structure: N x OTU4, OTUCn ODUk switching (ODU0/1/2/2e/3/4/flex) Enhanced OCH PM monitoring Trail (TCM) based latency measurement Beyond 100G (B100G) applications GMPLS control plane
Protection and restoration	OLP/OMSP 1+1 optical line side protection OCHP (OPSUM) 1+1 protection ODUk/ODUflex 1+1 SNC protection L1, MRN restoration
Encryption (1UX500E)	Low latency, ODU4/ODUCn configurable line encryption (AES-256)
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%
Physical	1-slot, full height
1830 PSS shelves	8x, 12x
Compliance	UL/CSA 62368-1 IEC/EN 62368-1 AS/NZS 62368.1 IEC/EN 60825-1, 60825-2 GR-63 NEBS, GR-1089 ROHS6 CE Mark

About Nokia

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Document code: 2285853 (June) CID213143