Nokia S13X100 100G Transponder

The Nokia 1830 Photonic Service Switch (PSS) product family enables cost-effective, efficient aggregation and optical transport for Ethernet, optical transport network (OTN), time division multiplexing (TDM), and wavelength services over access, metro, regional and long-haul networks. The Nokia 1830 product portfolio consists of common hardware units, software, and management to offer seamless operations across carrier networks.

The Nokia 1830 PSS 100G card (S13X100) supports transponder, muxponder, uplink, and add-drop multiplexer (ADM) applications for 10G, 40G and 100G client services. The product reduces carrier costs by eliminating the need to engineer, order, stock, and spare different card types for each service type or optical rate. All client ports feature pluggable optics, so only the client ports and services that are provisioned need to be populated. Powered by Nokia Photonic Service Engine 2 Compact (PSE-2c), it delivers the ultimate combination of performance, density and low power consumption.

Benefits

- Reduces costs and simplifies network operations with a single card for all 10G, 40G and 100G services
- Integrated OTN switch with 1G granularity ensures efficient grooming of services onto a 100G coherent wavelength division multiplexing (WDM) network port
- 100G coherent WDM network port supports full C-band tuning
- Compatible with both 50 GHz (fixed) or flexible grid networks
- Industry-leading density
- Secures transport with Layer 1 encryption
- Availability of a wide array of protection options
- Versatility to support business, mobile, data center interconnect (DCI) and cloud services

Table 1. Configurations

Configuration	Application
Transponder	• Transparent transport (100 GigE, OTU-4) • Synchronous Ethernet (SyncE) transparency • Encrypted services
Muxponder	• Sub-100G client aggregation • Encrypted services
Uplink	• Cross connect • Sub-10G/Ethernet aggregation
OTN ADM	• Aggregation rings • Cross-connect interworking

Layer 1 encryption

The S13X100E card supports physical encryption (Layer 1) optical data links to provide end-to-end data protection. The module supports any service (8G/10G/16G Fiber Channel [FC], 10 GigE, 40 GigE, 100 GigE) and provides Advanced Encryption Standard (AES) 256 enabled through software licenses. Encryption is a key component of the 1830 PSS portfolio that allows secure transport for mission-critical operations.

Figure 1. S13X100 Block Diagram

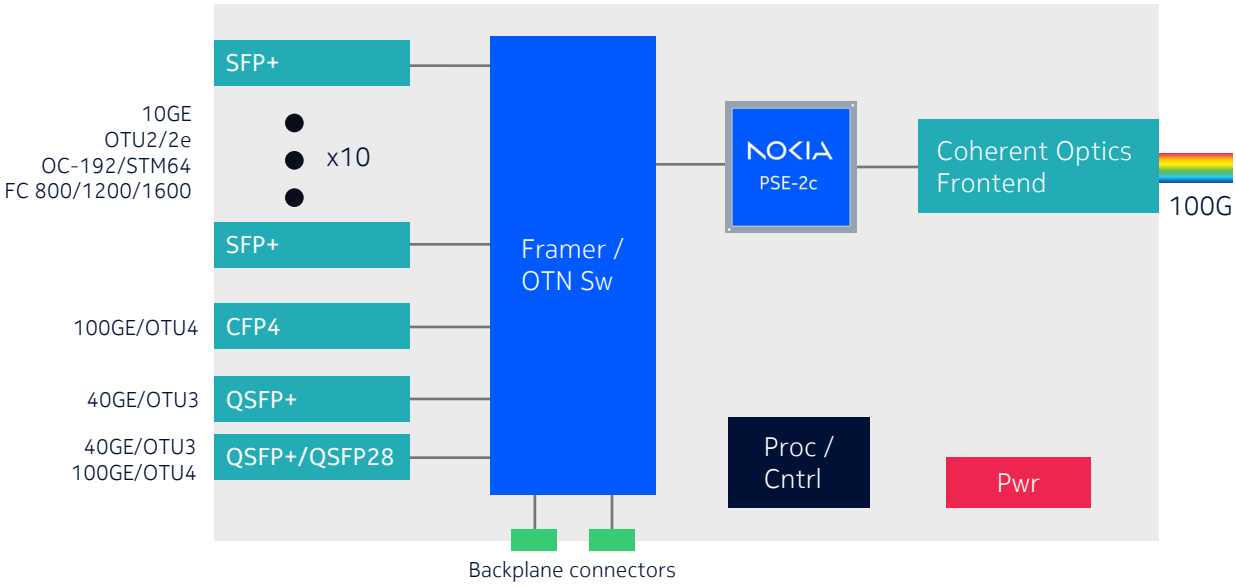

Figure 2. Faceplate interface ports

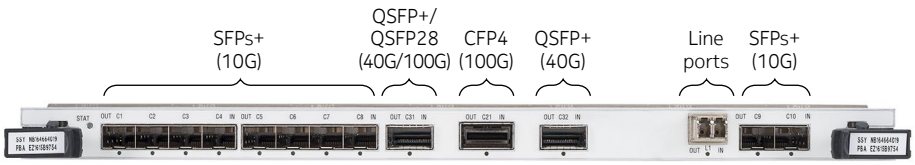

Table 2. S13X100 Part List

Unit	Part #	Description
S13X100R	8DG63207AA	100G Transponder / Muxponder
S13X100E	8DG63988AA	100G Transponder / Muxponder - Encryption

Table 3. Technical specifications

Specifications		
Line port	1 x 100G WDM coherent	
Client ports	10 x SFP+ 1 x CFP4 1 x QSFP+ 1 xQSFP+/QSFP28	10GE, OTU2/2e, OC-192/STM64, FC800/1200/1600 100GE/OTU4 40GE/OTU3 40GE/OTU3, 100GE/OTU4
Forward error correction (FEC) options	SD-FEC (25%) HD-FEC	
OTN switching	Integrated OTN switch with ODU0/1/2 grooming	
Encryption (S13X100E)	Low latency, 100G wire speed encryption (AES-256)	
Maintenance functions	Integrated pseudo random binary sequence (PRBS) test signal and loopback functions G.709 latency measurements OTN overhead processing and PMs	
Protection	O-SNCP via Y-cable or OPSB OCH protection via OPSA OTN subnetwork connection protection (SNCP) Optical multiplex section protection/Optical layer protection (OMSP/OLP)	
Operating environment	Normal: 5°C to 40°C (41°F to 104°F) Humidity: 5% to 85%	
Power consumption	162W (typ)	
Physical	1 slot, full height	
1830 PSS shelves	PSS-32, PSS-16ii, PSS-8	

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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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