Nokia 1830 Photonic Service Interconnect – Modular

The 1830 Photonic Service Interconnect – Modular (PSI-M) provides flexible, modular and scalable optical networking solutions for data center interconnect (DCI) applications.

The Nokia PSI-M is a compact, modular optical networking platform, optimized for data center interconnect applications over metro, regional and long-haul distances. As the software industry transitioned to cloud-based applications, the shift created a tremendous need for optical networks and bandwidth to interconnect data centers, as well as to connect local data caching sites to their respective metro point of presence locations. The 1830 PSI-M modular architecture allows carriers to configure the interfaces and capacities needed for each application—the ultimate pay as you go modularity.

Benefits

- Compact size and blade optimized form factor
- Four modular I/O slots allow flexible I/O configurations. Mix-and-match modular interfaces
- Simple plug-and-play operations, with auto-discovery/auto-provisioning, saves time and operations costs
- Modular AC or DC power supplies, allowing deployment in any location
- Integration with 1830 PSS and 1830 PSI-L platforms, providing a wide array of optical transport solutions from simple, low-cost terminal nodes to advanced CDC-F ROADMs

Applications

- Optimized for metro, regional and long-haul DCI applications
- Metro data center expansion
- Local data caching to metro point of presence
- Data center interconnections over long haul or ultra-long haul distances
- General purpose access, metro, regional WDM optical networks

Product description

The PSI-M provides easy-to-use, cost-efficient, compact optical transport for nx10G, 100GE, OTU4, and 400GE client services. With its modular architecture, additional capacity and client interfaces can be added as needed.

The PSI-M modules incorporate the latest generation Nokia Photonic Service Engine (PSE) coherent optics. The PSI-M supports four I/O interface modules. Each module incorporates both client optics and WDM line optics, functioning as an entire muxponder per module.

The single width DD2M4 module supports dual 400ZR+ WDM line ports in a single-width module, using the new Nokia CFP2-DCO coherent multi-haul module. The DD2M4 is ideal for transporting 100G and 400G client interfaces over metro, regional, and LH networks.

Based on the Nokia PSE-Vs coherent optics, the SFM6 is a high-performance 600G muxponder module supporting a mix of up to six 100G and 400G client ports.

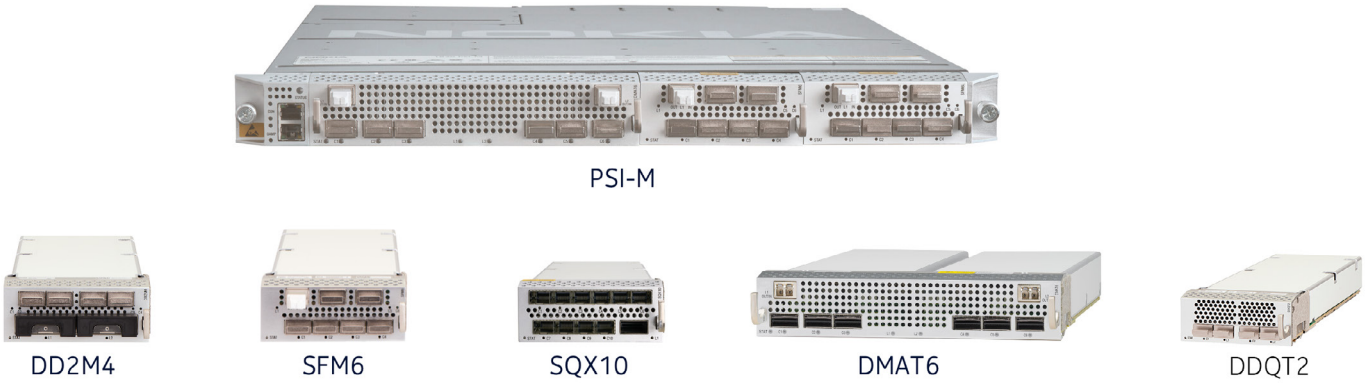
The new SQX10 muxponder module provides 10x10G client interfaces, supporting Ethernet, OTN, SONET/SDH, and Fibre Channel client services. The SQX10 can be paired with DD2M4 or SFM6 to provide coherent line optics

Based on Nokia's latest generation PSE-6s coherent optics, the DMAT6 high capacity transponder includes 2 x WDM line ports, supporting up to 2.4 Tb/s bandwidth. The DMAT6 is ideal for 400GE/800GE applications. Please see DMAT6 data sheet for additional product details.

The DDQT2 module is a dual transponder supporting 400GE and 4x100GE clients over pluggable 400ZR coherent line optics. The DDQT2 is ideal for transporting 400GE router services.

The PSI-M includes embedded controllers and dual power supplies for redundancy, along with modular fans, all of which are field replaceable. Both AC and DC modular power supplies are available. Data security is supported via optional "E" versions of each module that provide AES-256 encryption of the line ODU payload.

Figure 1. 1830 PSI-M and I/O modules



Unit name	Part#	Description
PSI-M Kit	3KC81770BA	PSI-M Kit, single controller, order power supplies, blanks separately
DD2M4	3KC82113AA	Dual 400G Muxponder
SFM6	3KC82212AA	600G Muxponder
SFM6 Subsea	3KC82212AB	600G Muxponder for subsea applications
SFM6E	3KC82231AA	600G Muxponder w/ encryption
SFM6L	3KC82353AA	600G Muxponder, L-Band
SQX10	3KC82315AA	10x10G Muxponder
DMAT6	3KC82399AA	2.4T Muxponder – please see DMAT6 data sheet
DMAT6 Subsea	3KC82780AA	n x 400GE/800GE Muxponder, subsea
DMAT6L	3KC82671AA	n x 400GE/800GE Muxponder, L-Band
DDQT2	3KC82134AC	Dual 400ZR+ Transponder

Specifications—Base unit	
Base unit	1RU 4 modular slots Single or dual controllers Redundant AC or DC power supplies (ordered separately) Modular fan units Front-to-back air flow
Management interfaces	Front: 2 x RJ-45 (1 LAN, 1 serial) Rear: 2 x RJ-45, USB
Management	CLI, SNMP, WebUI NETCONF/YANG models Streaming telemetry IPv4/IPv6 LLDP snooping
Operational features	Nokia Commissioning Expert Zero Touch Provisioning In-band (GCC0) management AES-256 encryption option on “E” versions
Operating environment	Temperature: 0°C to 40°C (32°F to 104°F) Humidity: 5% to 85%
Power consumption	80 W (typical)

Specifications—Modules			
DD2M4 module			
Line port	2 x CFP2-DCO WDM line ports, 100G – 400G		
Line port modulation	QPSK / 8QAM / 16QAM modulation, per port		
FEC options	Nokia SDFEC-G2		
Client ports	2 x QSFP28 (100GE/OTU4) 2 x QSFP28/QSFP56-DD (100GE/OTU4, 400GE)		
Power	90 W (typical)		
SFM6 module			
Line port	1 x WDM line port, 100G–600G		
Line port modulation	QPSK – 16QAM with PCS 33 – 90 Gbaud		
FEC options	Nokia SDFEC (15%, 25%)		
Client ports	5 x QSFP28 (100GE/OTU4) 1 x QSFP28/QSFP56-DD (100GE/OTU4, 400GE)		
Power	150 W typical		
SQX10 module			
Line port	100G OTU4 (B&W aggregation port)		
Line port optics	QSFP28-SR4, -LR4		
Client ports	10 x SFP+ 10GE, OTU2/2E, OC-192/STM-64, 8G/10G/16G FC		
Power	60 W typical		
DMAT6 module			
Line port	2 x 1.2T WDM line port, 130 GBaud		
Line port modulation	Shaped-QAM16, Shaped-QAM64 (PCS - probabilistic constellation shaping)		
FEC options	Nokia SD-FEC (15%, 25%, variable)		
Client ports	4 x QSFP56-DD	400GE	(4x100GE/OTU4 via breakout cable)
	2 x QSPF-56DD/QSFP800	400GE/800GE	
Power	346 W typical		
DDQT2 module			
Line port	2 x 400ZR+ coherent pluggable line ports		
Line port modulation	100G - 400G (QPSK, 8QAM, 16QAM)		
FEC options	OFEC		
Client ports	2 x QSFP56-DD	400GE / nx100GE	
Power	75 W typical		

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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Document code: 1144200 (November) CID201662