1830 PSS 2.4T Dual-line Muxponder

D6AD2T4H, D6AD2T4L, D6A2T4E, D6A2T4EL

The high-capacity, high-performance Nokia D6AD2T4H, D6AD2T4L, D6A2T4E and D6A2T4EL muxponders provide an ideal solution for 400GE/800GE aggregation applications over metro, regional, long-haul and subsea networks. Based on Nokia's latest-generation Photonic Service Engine (PSE-6s) coherent optics, these muxponders include 2 x 1.2T WDM line ports, supporting up to 2.4 Tb/s of aggregate bandwidth.

The Nokia 1830 Photonic Service Switch (PSS) product family provides versatile solutions for aggregation and transport of client services over metro, regional, long-haul and subsea networks. The 2.4T muxponder variants are supported in the 1830 PSS-16II system, providing aggregation of 400GE/800GE client services, as well 100GE/OTU4 clients via breakout cable.

Benefits

- High-performance transport for 400GE/800GE interfaces, along with 100G clients via breakout cable
- Advanced probabilistic shaped modulation (PCS) and FEC based on Nokia latest generation PSE-6s technology
- Client bandwidth sharing across 2 x WDM line ports
- High-capacity transport from metro to LH/ULH distances
- Backward compatibility with existing PSE-Vs based transponders
- Secure transport with protocol-agnostic, wire-speed Layer 1 encryption

Applications

- High-capacity (2.4 Tb/s) muxponder for DCI, metro, regional, long haul, subsea applications
- Aggregation and transport of 400GE/800GE router interfaces over optical networks
- Aggregation of 24x100GE/OTU4 interfaces, via breakout cable
- Mixed 100GE/OTU4, 400GE, and 800GE services over same line wavelength – up to 1.2 Tb/s per WDM line port

Product description

The D6AD2T4H/L and D6A2T4E/EL are high-performance muxponders for aggregating 400GE/800GE client services. These cards support two WDM coherent line ports, incorporating the latest generation Nokia PSE coherent optics.

The 2.4T muxponder variants are designed for use in 1830 PSS -16II platforms. The units include four 400G client ports and two dual-rate 400G/800G ports. In addition, up to 24x100GE/OTU4 services are supported via breakout cables. The two WDM line ports each support line rates of up to 1.2 Tb/s, with provisioned baud rate and probabilistic constellation shaping (PCS) to maximize wavelength capacity over each network route. The WDM line ports are fully tunable across both C-band and L-band with the respective module variants.

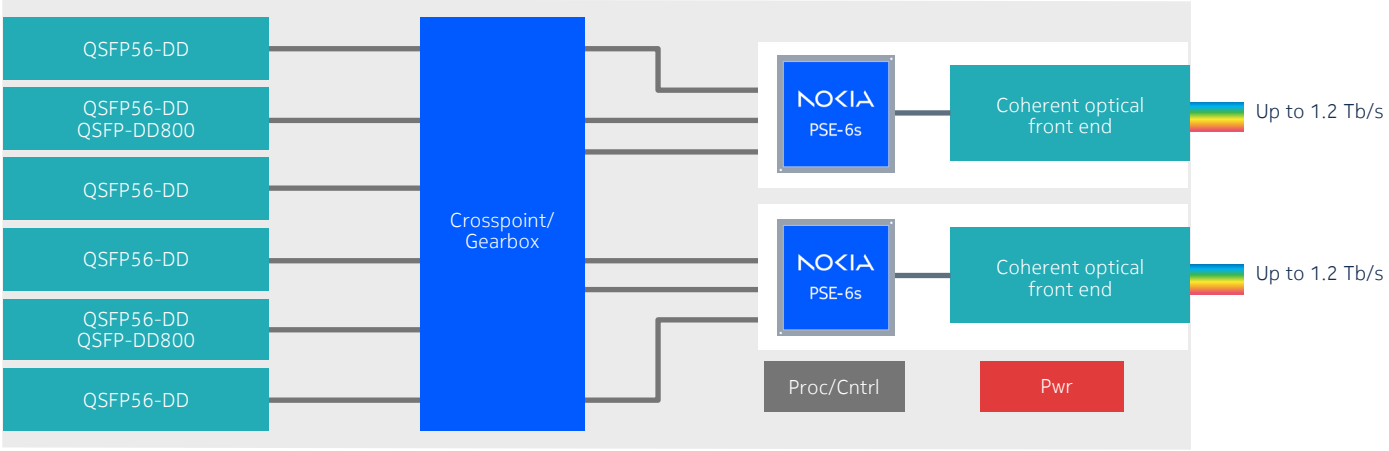
The WDM coherent line interfaces utilize Nokia's latest-generation photonic service engine, incorporating Nokia's sixth-generation coherent DSP and cutting-edge photonics technology. The PSE-6s incorporates advanced PCS, advanced forward error correction (FEC), and granular baud rate tuning. The PSE-6s also supports bandwidth sharing between client ports and the two WDM line ports. Client bandwidth sharing maximizes optical reach, especially when transporting odd numbers of client interfaces. As an example, 3x400GE clients can transported as 2x600G line wavelengths. The 2.4T muxponder variants are optimized for metro, regional, long-haul, and subsea applications where high-capacity, high-performance optical reach are required.

The D6A2T4E/EL muxponders build on the capabilities of the D6AD2T4H/L, offering several key enhancements. They support higher-performance profiles in 150 GHz channels, higher baud rates, extended optical reach, and additional client bandwidth sharing configurations to maximize bandwidth efficiency. The D6A2T4E/EL also incorporate optional L1 line-side encryption using Advanced Encryption Standard (AES)-256, ensuring robust end-to-end data protection.

Nokia supported products

The D6AD2T4H, D6AD2T4L, D6A2T4E and D6A2T4EL units are supported on the Nokia 1830 PSS-16II platform.

Figure 1. 1830 PSS D6AD2T4H, D6AD2T4L, D6A2T4E and D6A2T4EL



Unit	Part #	Description
D6AD2T4H	3KC71964AA	2.4T dual-line coherent Muxponder
D6AD2T4L	3KC72384AA	2.4T dual-line coherent Muxponder, L-band
D6A2T4E	3KC73070AA	2.4T dual-line coherent Muxponder, enhanced
D6A2T4EL	3KC73072AA	2.4T dual-line coherent Muxponder, enhanced, L-band

Specifications	D6AD2T4H, D6AD2T4L, D6A2T4E, D6A2T4EL		
Application	DCI, Metro, Regional, LH, Subsea n x 400GE/800GE Muxponder Up to 24 x 100GE/OTU4 support, via breakout cables Mixed 100G /400G / 800G transport		
Line Port	2 x WDM line ports, 130 Gbaud (D6AD2T4H/L), 130-140 Gbaud within 150 GHz (D6A2T4E/EL) 100G - 1.2T configurable line rates Probabilistic Constellation Shaping (PCS Gen3), QPSK, Shaped-QAM16, Shaped-QAM64 Nokia SD-FEC (15%, 25%, variable) Continuous baudrate adjustment via baudrate flexible profiles Non-linear compensation Bandwidth line port sharing Unidirectional 3R mode with recoloring Full C-band (D6AD2T4H, D6A2T4E) and L-band (D6AD2T4L, D6A2T4EL) with 0.1 GHz central frequency tuning		
Client ports	4 x QSFP56-DD	400GE	(4x100GE/OTU4 via breakout cable)
	2 x QSFP56-DD/QSFP800	400GE/800GE	(4x100GE/OTU4 via breakout cable)
Features	Integrated test signal with loopbacks Comprehensive analog and digital PMs with fast telemetry Client/Line GCC0 LLDP snooping		
Protection	O-SNCP (OPSB5)/OCHP (OPSUM) optical client and channel protection OLP / OMSP optical line protection L0 Restoration (GMPLS)		
Encryption (D6A2T4E, D6A2T4EL)	Low latency, 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	2-slot, full-height		
Power consumption	386 W (typical)		

About Nokia

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