

Nokia 400G multi-haul coherent module

Nokia's 400G multi-haul coherent modules (CFP2-DCO) provide the capacity and optical reach of coherent optics in a flexible, small-sized CFP2-DCO module. Supporting 100G to 400G capacities, the Nokia CFP2-DCO is ideal for 400ZR+ optical transport applications over metro, regional and long-haul distances.

The latest generation of Nokia 1830 Photonic Service Switch (PSS) transponders and OTN switch interfaces incorporate the new 400G multi-haul CFP2-DCO module, enabling cost-effective, efficient aggregation and transport of client services over access, metro, regional and long-haul optical networks. Backward compatibility with prior Nokia coherent optical interfaces ensures seamless network evolution to the latest industry technology.



Benefits

- Compact size, cost-optimized coherent WDM line interface
- Simplified integration of coherent WDM interfaces into transponders, switch interfaces, and routing blades
- Modular: can be installed and deployed as needed for the ultimate plug-and-play
- Flexible, coherent interface can be provisioned from 100G – 400G
- Optimized sparing: CFP2-DCO module incorporated into multiple transponder cards

Applications

- High-capacity metro, regional, and long-haul applications
- Data center interconnect (DCI) applications
- Cost-optimized n x 100G service aggregation
- Applicable for both fixed and flex-grid WDM line systems
- Supports high-capacity ZR+ applications

Product description

The Nokia CFP2-DCO provides a multi-haul 100G to 400G coherent WDM line interface in a compact, CFP2-DCO pluggable module.

Incorporating the latest generation Nokia PSE-Vc coherent DSP, the CFP2-DCO provides a true plug-and-play option supporting coherent WDM line optics on transponder cards, switch interfaces, and routers.

Integration of coherent digital signal processors (DSPs) into optical modules has long been an industry objective, but only recently become viable with the introduction of low-power 7nm CMOS technology.

The small size and lower costs of the CFP2-DCO module enable a wide array of applications, including use on the latest generation of Nokia transponder cards, OTN switch interfaces, and router interfaces. In addition, backward compatibility with existing Nokia PSE coherent interfaces ensures efficient, seamless network evolution.

The multi-modulation and multi-baud rate CFP2-DCO module can be provisioned for 100G to 400G capacities using QPSK, 8QAM, or 16QAM modulation formats, and baud rates from 28 to 67 Gbaud. The provisioning flexibility ensures the CFP2-DCO supports optimum capacity over any metro to long-haul route. High-capacity 400G applications are supported with the latest industry ZR+ interface.

The 400G coherent module is available in three options: a standard CD2DCO4 module utilizing Nokia soft-decision FEC, a new C2DCO4 high performance version supporting higher output powers up to +3 dBm providing improved OSNR performance, and a version compliant with open FEC (oFEC) and industry OpenROADM specifications.

The CFP2-DCO is ideal for DCI application using the PSI-M and DD2M4 module, as well as traditional n x 100GE and 400GE applications using transponder cards, such as the Nokia S5AD400H.

Figure 1. Nokia CFP2-DCO module



CFP2-DCO	Part number	Description
C2DCO4	3KC93809AA	CFP2-DCO coherent module, 100G-400G, Nokia SDFEC
C2DCO4 High Perf	3KC93911AA	CFP2-DCO module, 100G-400G, Nokia SDFEC
C2DCO4O	3KC93826AA	CFP2-DCO module, 100G-400G, oFEC



Technical specifications

Specifications	C2DCO4	C2DCO4O
Application	WDM coherent pluggable module – metro, LH, DCI, OTN applications	
Line port	1 x CFP2-DCO WDM line port 100G – 400G provisioned (QPSK/8QAM/16QAM) 28 – 67 Gbaud Nokia PSE-Vc coherent optics	
FEC options	Nokia SDFEC	oFEC
OpenZR+ compliant	–	Yes
OpenROADM compliant	–	Yes
Power consumption	~27W (typical)	~24W (typical)
Operating environment	Normal -5°C to 70°C (23°F to 158°F) Humidity 5% to 90%	
Physical	CFP2	
1830 PSS applications	PSI-M (DD2M4 module) S5AD400H transponder (PSS-8/16ii/32) 2UX500 (PSS-8x/12x OTN interface) 4UC1T (PSS-24x OTN interface)	

About Nokia

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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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