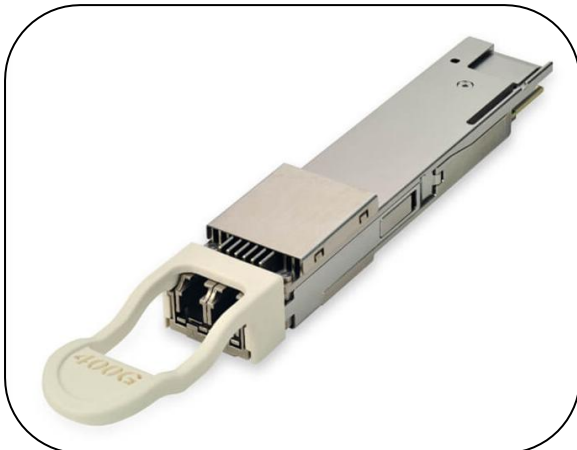


XenOpt

XKDH74-COLY and XKDH84-COLY

QSFP-DD ZR and ZR+ 400G High Power Coherent Transceivers

XKDH74-COLY QSFP-DD ZR 400G 120 km



Applications

- Data Center Interconnect and other connectivity up to 650km at 400 Gbps
- Supports unamplified operation on distances up to 90km (ZR+)

Description

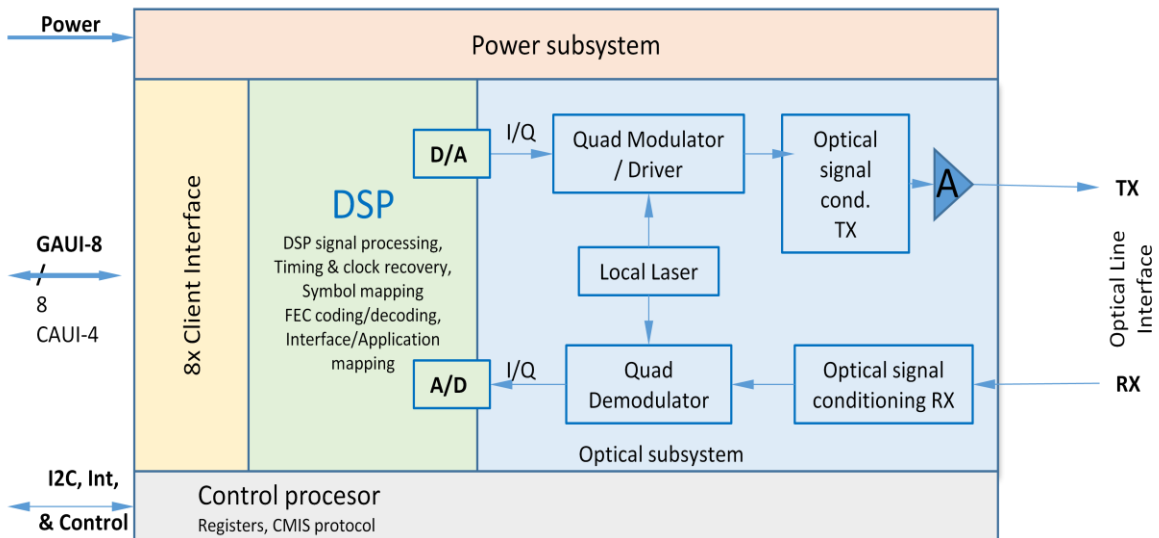
XenOpt High Power Coherent QSFP-DD 400G ZR and ZR+ modules combine all of the optical functions necessary for coherent optical transponder in a standard form factor compact pluggable module and is designed to be compliant with the Optical Internetworking Forum (OIF) Implementation Agreement and QSFP-DD ZR and ZR+ MSA with addition of integrated TX optical amplifier that allows more flexible use.

The module incorporates leading ultra-narrow linewidth external cavity tunable laser and its high performance COSA, exhibits low electrical power consumption and is suitable for multiple modulation formats. All signal digital processing is based on advanced, low power, high performance 7 nm DSP that provides QAM decoding/encoding, mapping and FEC functions on digital plane and provides embedded monitoring and analysis functions to ensure link and system level diagnostics compliant with the CMIS rev 5.1 and C-CMIS 1.2 requirements. Modules support multiple line side and client side configurations and provide for extensive line diagnostics that includes measured CD, Measured OSNR and pre FEC BERT statistics that enable early warnings of deteriorating line conditions during normal operations and fast initial connection setup.

Features

- Hi TX power allows unamplified operation to medium distances and very high amplified distances
- XKDH74-COLY compliant with OIF 400G ZR IA with reach of 120km, 80km unamplified
- XKDH84-COLY compliant with OIF 400G ZR+ with reach of 600km+ amplified or up to 90km unamplified
- C-band flex grid spacing and 75GHz bandwidth support both 100 and 75 GHz channel spacing operation
- Duplex LC receptacles on line side
- Operating Case Temperature 0°C to 75°C
- Compliant to reliability requirements of Telcordia GR-468-CORE
- Hot-pluggable MSA Compliant QSFP-DD Type 2 extended form factor
- RoHS 6 compliant

Block Diagram



Absolute Maximum Ratings

Exceeding any individual absolute maximum rating parameter may cause permanent damage to module.

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Storage Temperature	Ts	-40		85	°C	
Relative Humidity	RH	5		95	%	1
Operating case temperature				80	°C	

Note

1. Non-condensing

Operating Conditions

Electrical and optical characteristics below are defined under following operating conditions, unless otherwise specified.

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	Vcc	3.135	3.3	3.465	V
Case Temperature	Top	0	25	75	°C
Total Power Consumption	Pt			19	W

Module Key Specifications

Mode Specific Specifications	Value	Comments
Compatibility	400G ZR	Per OIF 400 G ZR IA with extended performance
Frequency Range	C-Band: 191.3 to 196.1 THz	
Wavelength	Flex grid 6.25 GHz resolution	100 GHz spacing supported, bright tuning supported
Min channel bandwidth	75 GHz	Minimum channel spacing 75 GHz
Channel Tuning Time	180 seconds (max)	Power on and retuning
Supported line interface modes	400Gb-CFEC-16QAM (400G 16QAM ZR), 400Gb-OFEC-16QAM (400G 16QAM ZR+), 300Gb-OFEC-8QAM (400G 8QAM ZR+), 200Gb-OFEC-QPSK (200G QPSK ZR+), 100Gb-OFEC-QPSK (100G QPSK ZR+)	Interoperable with relevant OIF ZR and ZR+ compatible interfaces
Line side FEC	OFEC, CFEC	
Tx Output Power (Low Power)	-9 dBm (typ)	-10 dBm (min)
TX Power configurable (Hi Power devices)	-6 to 1 dBm	+1db tolerance
TX Power typical (Hi Power devices)	0dBm	
TX OSNR (in band)	40dB/0.1nm	also out-of-band at max output power
RX Sensitivity, unamplified	-22dBm	OSNR >35dB/0.1nm, 400G 16QAM
RX Signal range amplified	-15 to 0 dBm (-18 to 3dBm extended range)	for normal rx operation, OSNR limited
RX OSNR tolerance amplified	23,5 dB/0.1nm	for standard RX input range, 400G 16QAM ZR+, higher for other supported ZR+ modulations
CD Tolerance (ZR)	+2400 ps/nm	Up to 120 km on G.652 cable for 400G 16QAM, higher at lower speed modulations
CD Tolerance (ZR+)	12000 ps/nm	Up to 650 km on G.652 cable for 400G 16QAM, higher at lower speed modulations
Client Interface modes	400GE: 400 GAUI-8, 4x100GE: 4x100GAUI-2, 3x 100GE: 3x100GAUI-2, 2x100GE: 2x GAUI-2, 100GE: 100GAUI-2,100GE: CAUI-4	timing and electrical per IEEE Std 802.3 [5], Annex 83E, Table 83E-7

Ordering information¹

Part number	Product Description
XKDH74-COLY	QSFP-DD 400G ZR High Power, 120 km reach, LC, OFEC, 0°C~70°C, DDMI
XKDH84-JOLY	QSFP-DD 400G ZR+ High Power, 600 km reach, LC, OFEC, 0°C~70°C, DDMI

Notes

¹ For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. XenOpt does not guarantee errorless or outdated information.

Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by XenOpt before they become applicable to any particular order or contract. In accordance with the XenOpt policy of continuous improvement specifications may change without notice.

The product image is only for reference purpose

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