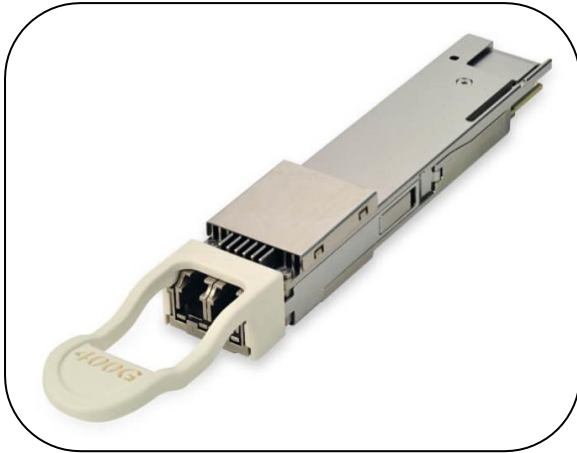


XenOpt



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 Open ZR+ MSA with addition of integrated low noise TX optical amplifier that allows for more flexible use – in unamplified connections, in standard WDM systems designed for low speed transceivers and in long distance amplified systems (ZR+).

The module incorporates leading ultra-narrow linewidth external cavity tunable laser and its high performance COSA, exhibits low electrical power consumption and supports 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 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.

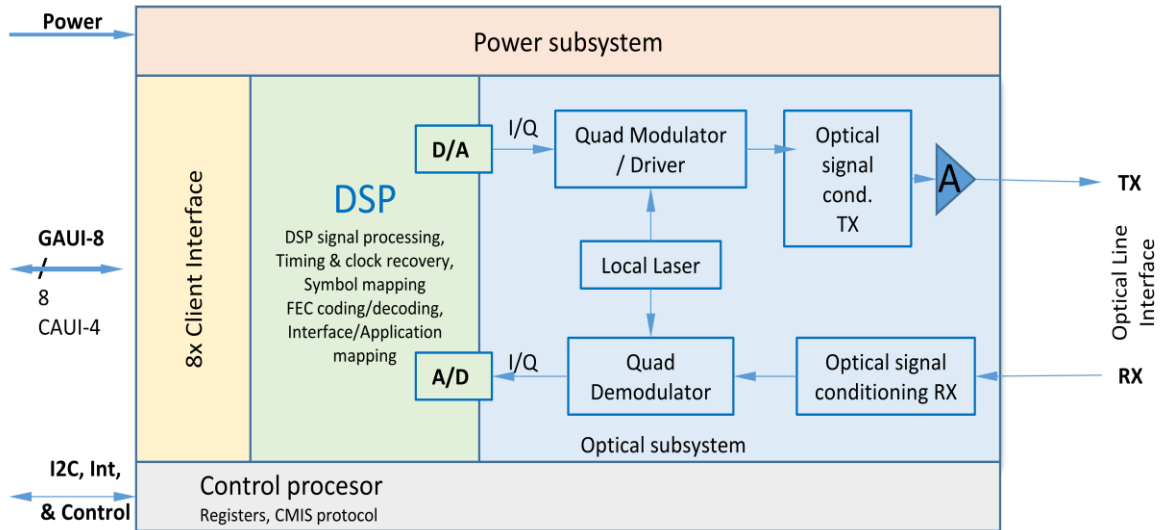
XKDH74-C0LY and XKDH84-J0LY

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

Features

- Hi TX power allows unamplified operation to medium distances and very high amplified distances
- XKDH74-C0LY compliant with OIF 400G ZR IA with reach of 120km amplified and 80km unamplified operation
- XKDH84-C0LY compliant with Open ZR+ MSA with reach of 600km+ in amplified systems or up to 90km unamplified operation
- 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 400G ZR+ (XKDH84-COLY only)	Per OIF 400G ZR IA for ZR Per Open ZR+ MSA for ZR+ both 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 Open ZR+ compatible interfaces
Line side FEC	OFEC, CFEC	
TX Power configurable	-6 to 1 dBm	+1db tolerance
TX Power typical	0 dBm	
TX OSNR (in band)	40 dB/0.1nm	also out-of-band at max output power
RX Sensitivity, unamplified	-22 dBm	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 extended range with OSNR penalty 2 dB
RX OSNR tolerance amplified	23.5 dB/0.1nm	RX power > -12 dBm, 400G 16QAM ZR+, higher for other supported ZR+ modulations
CD Tolerance (ZR mode)	+/-2400 ps/nm	Up to 120 km on G.652 cable for 400G 16QAM, higher at lower speed modulations
CD Tolerance (ZR+ modes)	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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