400G OSFP DD Dual LR4

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Variants

Dual 10Km

Details

The **400G QSFP-DD LR4 Transceiver Module** is designed for high-speed 400G optical communication over single mode fiber. It supports transmission up to **10km** using **G.652 SMF** with KP-FEC, making it ideal for data center interconnect, cloud networks, telecom backbone, and high-capacity enterprise optical links.

This module converts **8 channels of 50Gb/s PAM4 electrical signals** into **4 channels of CWDM optical signals**, delivering a total 400Gb/s optical output through a compact QSFP-DD form factor with duplex LC connector.

Data Rate	**400G**
Distance	

10-40km

Connector

Duplex LC

Power

11W

Key Features

? QSFP-DD MSA and CMIS Compliant

? 400GBASE-LR4 Technical Specification

? 8 × 53.125Gbps PAM4 Electrical Interface

? 4 × 106.25Gbps Optical Architecture

? Up to 10km Over G.652 Single Mode Fiber

? CWDM4 Wavelengths: 1271 / 1291 / 1311 / 1331nm

? Built-in Digital Diagnostic Monitoring

? Low Power Consumption Less Than 11W

Product Description

The **DT-400GDD-LR4** module is a cost-effective and low-power 400G QSFP-DD optical transceiver designed for 10km optical communication applications. It integrates EML drivers, EML lasers, optical multiplexer, de-multiplexer, DSP, and photodiode array to deliver reliable 400GBASE-LR4 performance for data center and telecom networks.

Applications

- 400G-LR4-10 Optical Links
- CEI-56G-VSR-PAM4 Applications
- Data Center Networks
- Cloud Computing Infrastructure
- High-Speed Backbone Links
- Telecom Optical Networks

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	3.13	3.47	V
Operating Case Temperature	Tca	0	70	°C
Data Rate Per Lane	fd	106.25	106.25	Gbit/s

Parameter	Symbol	Min	Max	Unit
Humidity	Rh	15	85	%
Power Dissipation	Pm	—	11	W

Electrical Specifications

Parameter	Symbol	Min	Max	Unit
Differential Input Impedance	Zin	90	110	ohm
Differential Output Impedance	Zout	90	110	ohm
Differential Input Voltage	?Vin	900	—	mVp-p
Differential Output Voltage	?Vout	—	900	mVp-p
Bit Error Rate	BER	—	2.4E-4	—

Optical Characteristics

Parameter	Symbol	Min	Typical	M
Centre Wavelength ?0	?0	1264.5	1271	12

Parameter	Symbol	Min	Typical	M
Centre Wavelength ?1	?1	1284.5	1291	12
Centre Wavelength ?2	?2	1304.5	1311	13
Centre Wavelength ?3	?3	1324.5	1331	13
Side-mode Suppression Ratio	SMSR	30	—	
Average Launch Power	Pout	-2.7	—	5
Receiver Sensitivity	RXsen	—	—	-(
Average Receiver Power	Pin	-9	—	5

Regulatory Compliance

Feature	Standard
Laser Safety	IEC 60825-1:2014, IEC 60825-2, EN 60825-1, EN 60825-2
Electrical Safety	EN 62368-1, IEC 62368-1, UL 62368-1
Environmental Protection	Directive 2011/65/EU with amendment (EU)2015/863
CE EMC	EN55032:2015, EN55035:2017, EN61000-3-2:2014, EN61000-3-3:2013
FCC	FCC Part 15, Subpart B, ANSI C63.4-2014

Ordering Information

Part Number	Product Description
DT-400GDD-LR4	QSFP-DD, 400GBASE-LR4, 10km on Single Mode Fiber, with DSP, power consumption 11W, duplex LC connector

Note:
For stable 400G transmission, use high-quality G.652 single mode fiber, clean LC connectors properly, and confirm switch compatibility with QSFP-DD 400G LR4 modules before deployment.

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