



377.1504.00

QSFP-DD OpenZR+ [400G][DD/coherent]

377.1508.00

QSFP-DD OpenZR+ HP+MR [100~400G][DD/coherent]

DESCRITIVO DE PRODUTO

1. CARACTERÍSTICAS

Este documento descreve as especificações para os produtos OpenZR+ QSFP-DD modelos 377.1504.00 - 400G e 377.1508.00 - 100G~400G.

Especificação (CMIS). Os módulos possuem o seguinte desempenho e recursos	
377.1504.00	377.1508.00
Support Flex-grid channel spacing DWDM in C-band	
Support Client-side Interfaces: <ul style="list-style-type: none"> ○ 1*400GAUI-8 ○ 4*100GAUI-2 	Support Client-side Interfaces: <ul style="list-style-type: none"> ○ 400GAUI-8/4*100GAUI-2 ○ 3*100GAUI-2 ○ 2*100GAUI-2/2*CAUI-4 ○ 100GAUI-2/CAUI-4
Support Line-side: <ul style="list-style-type: none"> ○ DP-16QAM with oFEC(OpenZR+) 	Support Line-side: <ul style="list-style-type: none"> ○ 400G DP-16QAM ○ 300G DP-8QAM ○ 200G DP-QPSK ○ 100G DP-QPSK
Standard QSFP-DD Type 2 form factor	
QSFP-DD MSA compliant connector	
Compliant to CMIS 5.0	
OpenZR+ Specifications, version 1.0, 4 September 2020	OpenZR+ Specifications, version 2.0, 29 July 2022
RoHS compliant	

2. HOST INTERFACE

Tabela 1: Host Interfaces

377.1504.00	377.1508.00	ID	Host Interface	Application Data Rate	Lane Count	Lane Signaling Rate	Modulation
✓	✓	1	1*400GAUI-8	425.00 Gb/s	8	26.5625 GBaud	PAM4
✓	✓	2	4*100GAUI-2	4*106.25 Gb/s	8	26.5625 GBaud	PAM4
	✓	3	3*100GAUI-2	3*106.25 Gb/s	3*2	26.5625 GBaud	PAM4
	✓	4	2*100GAUI-2	2*106.25 Gb/s	2*2	26.5625 GBaud	PAM4
	✓	5	2*CAUI-4	2*103.13 Gb/s	2*4	25.78125 GBaud	NRZ
	✓	6	100GAUI-2	1*106.25 Gb/s	2	26.5625 GBaud	PAM4
	✓	7	CAUI-4	103.13 Gb/s	4	25.78125 GBaud	NRZ

3. MEDIA INTERFACE

Tabela 2: Media Interface

377.1504.00	ID	Application Bit Rate	Baud Rate	Modulation	FEC	377.1508.00
✓	1	4*100 Gbe	60.1385468 GBd	DP-16QAM	oFEC	✓
	2	3*100 Gbe	60.1385468 GBd	DP-8QAM	oFEC	✓
	3	2*100 Gbe	60.1385468 GBd	DP-QPSK	oFEC	✓
	4	100 Gbe	30.069273 GBd	DP-QPSK	oFEC	✓

4. CONDIÇÕES DE OPERAÇÃO

377.1504.00	377.1508.00	PARÂMETRO	MÍNIMO	MÁXIMO	UNIDADE	Nota
✓	✓	Temperatura de operação	0	70	°C	
✓	✓	RX Optical Maximum Input Power	-	10	dBm	
✓	✓	RX Optical Input Power	-	0		
✓	✓	Low Power Consumption	-	1,5	W	
✓			-	21		
	✓	Power Dissipation		22		ZR400-OFEC-16QAM
	✓		ZR300-OFEC-8QAM			
	✓		ZR200-OFEC-QPSK			
	✓		ZR100-OFEC-QPSK			
				18		

5. PARÂMETROS ÓPTICOS DE TRANSMISSÃO

PARÂMETRO	UNIDADE	377.1504.00	377.1508.00	NOTAS
Transmitter Frequency Range	THz	191,3 a 196,1		C band 75GHz ITU-T grid. Frequency range over which the specifications hold unless noted otherwise.
Laser Frequency Stability	GHz	±1,8		Frequency stability relative to ITU grid
Output Power Stability	dB	±0,5		Difference over temperature, time, wavelength and aging
Output Power Accuracy	ps/nm	±2		
Transmitter Turn-up Time from Cold Start	s	<120		
Transmitter OSNR (Inband)	dB/0,1nm	>34		
Transmitter Output Power Range	dBm	-10 a -6	-5 a 3	

6. PARÂMETROS ÓPTICOS DE RECEPÇÃO

PARÂMETRO	UNIDADE	377.1504.00	377.1508.00	NOTAS
Receiver Frequency Range	THz	191,3 a 196,1		
Input Power Reading Accuracy	dB	±2		
Input Power Range	dBm	-12 a 0		Signal power of the channel at the OSNR Penalty < 0.5dB for ZR400-OFEC-16QAM
			-15 a 0	Signal power of the channel at the OSNR Penalty < 0.5dB for ZR300-OFEC-8QAM
			-18 a 0	Signal power of the channel at the OSNR Penalty < 0.5dB for ZR200-OFEC-QPSK
			-18 a 0	Signal power of the channel at the OSNR Penalty < 0.5dB for ZR100-OFEC-QPSK
OSNR Sensitivity	dB/0,1nm	<24		ZR400-OFEC-16QAM
			<21	ZR300-OFEC-8QAM
			<16	ZR200-OFEC-QPSK
			<12,5	ZR100-OFEC-QPSK
Receiver Sensitivity	dBm	-20		Input power needed to achieve post FEC BER < 1E-15 when OSNR Tolerance > 26dB/0.1nm
			-22	ZR400-OFEC-16QAM
			-26	ZR300-OFEC-8QAM
			-28	ZR200-OFEC-QPSK

			-32	ZR100-OFEC-QPSK
CD Tolerance	ps/nm	>9000		Tolerance to CD with 0.5 dB penalty to OSNR sensitivity when change in SOP is 1 rad/ms.
			>12000	Tolerance to CD with ≤ 0.5 dB penalty to OSNR sensitivity when change in SOP is ≤ 1 rad/ms for ZR400-OFEC-16QAM.
			>20000	Tolerance to CD with ≤ 0.5 dB penalty to OSNR sensitivity when change in SOP is ≤ 1 rad/ms for ZR300-OFEC-8QAM.
			>30000	Tolerance to CD with ≤ 0.5 dB penalty to OSNR sensitivity when change in SOP is ≤ 1 rad/ms for ZR200-OFEC-QPSK.
			>50000	Tolerance to CD with ≤ 0.5 dB penalty to OSNR sensitivity when change in SOP is ≤ 1 rad/ms for ZR100-OFEC-QPSK.
PMD Tolerance	ps	>20		Tolerance to PMD with < 0.5 dB penalty to OSNR sensitivity
			>25	Tolerance to PMD with ≤ 0.5 dB penalty to OSNR sensitivity when change in SOP is ≤ 1 rad/ms for ZR300-OFEC-8QAM
			>30	Tolerance to PMD with ≤ 0.5 dB penalty to OSNR sensitivity when change in SOP is ≤ 1 rad/ms for ZR100-OFEC-QPSK.
Optical Return Loss	dB	>-20		Optical reflectance at Rx connector input
			>20	

7. LASER SAFETY

Este é um produto laser Classe1.

Não olhe diretamente para o conector de fibra do transmissor em nenhum momento enquanto o módulo estiver em operação.

DATACOM

Rua América, 1000 | 92990-000 | Eldorado do Sul | RS | Brasil

+55 51 3933 3000

www.datacom.com.br