



## OSFP-CLT-800G-DR8-M16-5

800GBASE, OSFP, DR8, SMF TRANSCEIVER  
1310nm, 500m REACH, MPO-16 APC CONNECTOR

### Features

- Hot-pluggable OSFP form factor
- 8 channels of 100G-PAM4 electrical and optical parallel lanes
- MPO-16 connector receptacle
- Selectable data rate: 106.25Gbps, 53.125Gbps
- Single +3.3V power supply
- Maximum link length of 500m on SMF fiber
- Power dissipation:<16W
- Operating temperature range: 0°C-70°C
- CMIS-compliant management interface with full module diagnostics and control through I<sup>2</sup>C

### Applications

- 800GBASE-DR8 Ethernet
- Switch & Router Connections
- Data Centers
- Other 800G Interconnect Requirements

#### Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature Range	Ts	-40	85	°C
Relative Humidity	RH	5	85	%
Power Supply Voltage	VCC	-0.3	3.6	V

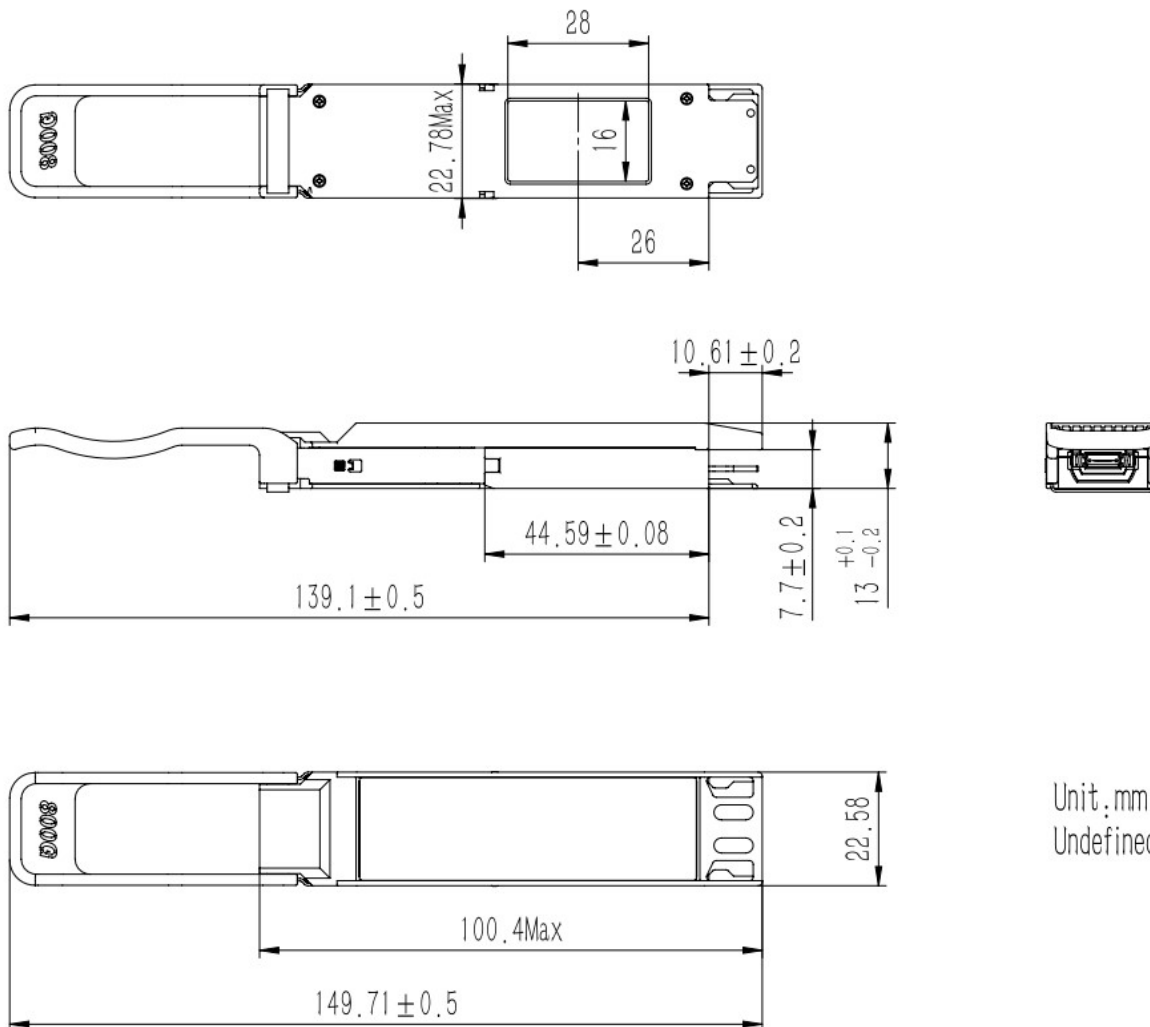
#### Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Case Temperature Range	Tc	0	/	70	°C
Power Supply Voltage	VCC	3.135	3.3	3.465	V
Baud Rate (Per channel)	BR	53.125-100ppm	53.125	53.125+100ppm	GBd

Optical Characteristics						
Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Link power budgets						
Power budget (for max TDECQ)			6.5		dB	
Operating distance			500		m	
Channel insertion loss			3		dB	
Allocation for penalties (for max TDECQ)			3.5		dB	
Transmitter (Per Lane)						
Signaling Speed per Lane		53.125-100ppm	53.125	53.125+100ppm	GBd	
Modulation format			PAM4			
Lane wavelength		1304.5	-	1317.5	nm	
Side-mode suppression Ratio	SMSR	30			dB	
Optical output power	PAVG	-2.9		4	dBm	1
Outer Optical Modulation Amplitude for TDECQ < 1.4 dB for 1.4 dB < TDECQ < 3.4 dB	OMA <sub>outer</sub>	-0.8 - 2.2 +TDECQ		4.2	dBm	
Transmitter and dispersion eye closure for PAM4	TDECQ			3.4	dB	
Transmitter eye closure for PAM4   TDECQ-TECQ	TECQ			3.4 2.5	dB	
Transmitter overshoot and undershoot				22	%	
Extinction Ratio, each lane	ER	3.5			dB	
Transmitter transition time				17	ps	
Average Launch Power of Off Transmitter				-15	dBm	
RIN <sub>21.4OMA</sub>				-136	dB/Hz	
Optical Return Loss Tolerance				21.4	dB	
Transmitter reflectance				-26	dB	2
Receiver (Per Lane)						
Signaling Speed per Lane		53.125-100ppm	53.125	53.125+100ppm	GBd	
Modulation format			PAM4			
Lane Wavelength		1304.5	-	1317.5	nm	
Damage threshold, each lane		5			dBm	
Average receive power, each lane		-5.9		4	dBm	
Receive power (OMA <sub>outer</sub> ), each lane				4.2	dBm	
Receiver sensitivity (OMA <sub>outer</sub> ) for TDECQ < 1.4 dB for 1.4 dB < TDECQ < 3.4 dB				-3.9 -5.3+TECQ	dBm	
Receiver reflectance				-26	dB	
Stressed receiver sensitivity (OMA <sub>outer</sub> )				-1.9	dBm	3
Conditions of stressed receiver sensitivity test						
Stressed eye closure for PAM4 (SECQ), lane under test			3.4		dB	
OMA <sub>outer</sub> of each aggressor lane			4.2		dBm	
<b>Notes:</b>						
1. Optical output power, each lane (min) is informative and not the principal indicator of signal strength						
2. Transmitter reflectance is defined looking into the transmitter						
3. Measured with conformance test signal at TP3.						

Electrical Characteristics						
Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Supply Voltage	VCC	3.135		3.465	V	
Power Consumption	Pc			16	W	
Module Input						
Differential peak-to-peak input voltage tolerance		750			mV	TP1a
Peak-to-peak AC common-mode voltage tolerance						
Low-frequency	VCM <sub>LF</sub>	32			mV	TP1a
Full-band	VCM <sub>FB</sub>	80				
Differential-mode to common-mode return loss	RL <sub>cd</sub>	See IEEE Std 802.3ck™-2022, 120G.3.3.3			dB	TP1
Effective return loss	ERL	8.5			dB	TP1
Differential termination mismatch				10	%	TP1
Module stressed input tolerance	See IEEE Std 802.3ck™-2022, 120G.3.4.3					TP1a
Single-ended voltage tolerance		-0.4		3.3	V	TP1a
DC common-mode voltage tolerance		-0.35		2.85	V	TP1
Module Output						
Differential peak-to-peak output voltage						
short mode				600	mV	TP4
long mode				845		
Peak-to-peak AC common-mode voltage tolerance						
Low-frequency	VCM <sub>LF</sub>			32	mV	TP4
Full-band	VCM <sub>FB</sub>			80		
Eye height		15			mV	TP4
Vertical eye closure	VEC			12	dB	TP4
Common-mode to differential-mode return loss	RL <sub>dc</sub>	See IEEE Std 802.3ck™-2022, 120G.3.1.1			dB	TP4
Effective return loss	ERL	8.5			dB	TP4
Differential termination mismatch				10	%	TP4
Transition time		8.5			ps	TP4
Common Mode Voltage	V <sub>cm</sub>	-0.35		2.85	V	TP4
Low Speed Signal						
SCL and SDA	VOL	0		0.4	V	IOL <sub>max</sub> = 3 mA
	VOH	V <sub>c</sub> -0.5		VCC+0.3	V	
	VIL	-0.3		VCC*0.3	V	
	VIH	VCC*0.7		VCC+0.5	V	

Mechanical Diagram



Unit:mm  
Undefined tolerances: ± 0.1

**Note:**  
External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

Ordering Information			
OEM	Part Number	OEM	Part Number
Arista	OSFP-800G-2DR4-M16-A	MSA	AN-O800G-CLT-DR8-M16
Nvidia	MMS4X00-NM16-A		

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