

### Features:

- Up to 53.125Gbps data rate per channel by PAM4 modulation
- 8 duplex channels transmitters and receivers
- Integrated 850nm VCSEL array and PD array
- Single MPO-16 APC connector receptacle optical interface compliant
- Single +3.3V power supply
- DDM function implemented
- Hot-pluggable QSFP-DD form factor
- Maximum link length of 100m on 16 core MPO OM4 (MMF) fiber
- Low power dissipation:<11W
- International class 1 laser safety certified
- Operating temperature range: 0°C ~ +70°C
- Compliant with ROHS10

### Applications:

- 400GBASE-SR8 Ethernet



- Switch & Router Connection

- Data Centers

Other 400G Interconnect Requirements.

### Standards:

- IEEE 802.3cd
- OIF-CEI-04.0
- QSFP-DD MSA
- QSFP-DD-CMIS-Rev4.

### 1. Specifications

(Tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min.	Typ.	Max.	Notes
<b>Transmitter (per Lane)</b>						
Signaling Speed per Lane		GBd		26.5625±100ppm		
Modulation format				PAM4		
Center wavelength		nm	840	850	860	
RMS Spectral Width	SW	nm			0.6	
Average Launch Power per Lane	TXPx	dBm	-6.5		4	
Tx OMA per lane	TxOMA	dBm	-4.5		3	

Launch power in OMAouter minus TDECQ (min)		dBm	-5.9			
Optical Extinction Ratio	ER	dB	3			
Optical Return Loss Tolerance	ORL	dB			12	
Encircled Flux	FLX	dBm	>86% at 19um			
			<30%at 4.5um			
Transmitter and dispersion eye closure (TDECQ), each lane		dB			4.5	
Average launch power of OFF						
Transmitter, each lane		dBm			-30	
<b>Receiver (per Lane)</b>						
Signaling Speed per Lane		GBd		26.5625±100pm		
Modulation format				PAM4		
Center wavelength		nm	840		860	
Damage Threshold	DT	dBm	5			
Average receive Power per Lane	RXPx	dBm	-8.4		4	
Receive power, each lane (OMAouter)		dBm			3	
Receiver reflectance	Rfl	dB			-12	
Stressed receiver sensitivity (OMAouter), each lane		dBm			-3.4	
Receiver sensitivity (OMAouter) each lane (SECQ=0.9dB)		dBm			-7	

## 2. Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	+85
Relative Humidity	RH	%	5	95
Power Supply Voltage	Vcc	V	-0.5	+4.0

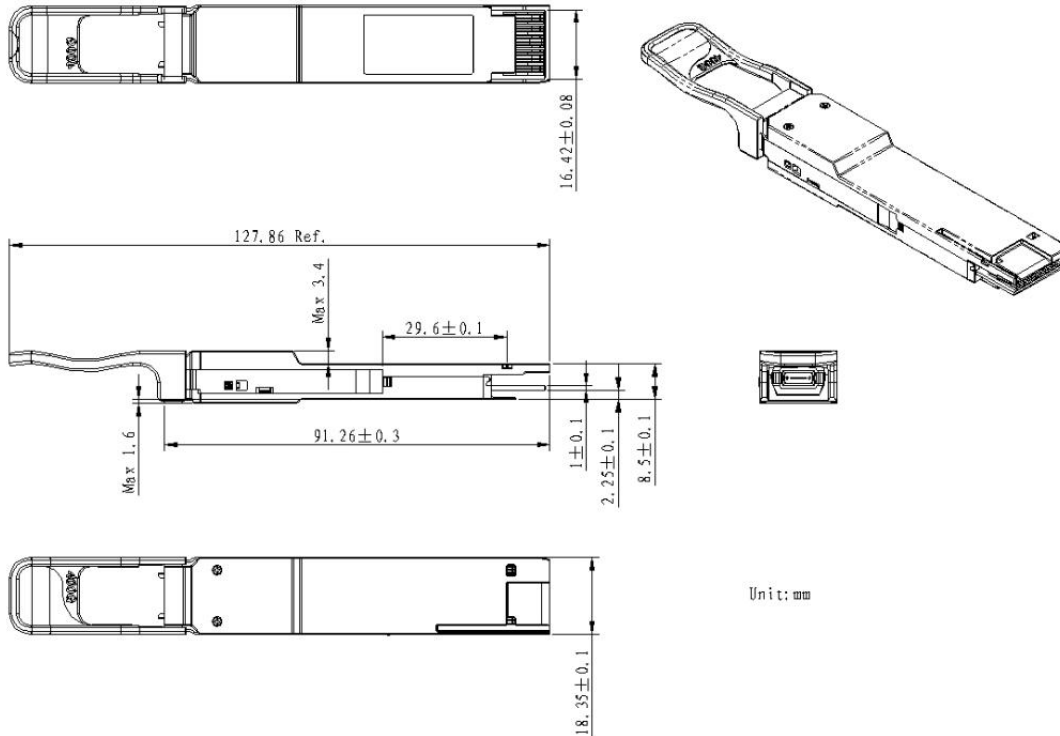
## 3. Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature Range	Tc	°C	0	/	70
Power Supply Voltage	Vcc	V	3.135	3.3	3.465
Bit Rate (Per channel)	BR	GBd		26.5625	

### 4. Electric Ports Definition

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Supply Voltage	VCC VCC3.3-Tx VCC3.3-Rx	V	3.135	3.3	3.465	
Power Consumption	Pc	W			11	
Transceiver Power-on Initialize Time		ms			2000	
Transmitter						
Differential peak-to-peak input voltage tolerance		mV	900			
Differential termination mismatch					10%	
Differential input return loss (SDD11)		dB			See CEI-56G -VSR	
Common-mode to differential conversion and differential to common-mode conversion (SCD11,SDC11)		dB			See CEI-56G -VSR	
Receiver						
Differential peak-to-peak output voltage		mV	0		900	
DC Common Mode Voltage	Vcm	mV	-350		2850	
Common Mode Noise, RMS	VcmAC	mV			17.5	
Differential termination mismatch		%			10	
Differential output return loss (SDD22)		dB			See CEI-56G -VSR	
Common-mode to differential conversion and differential to common-mode conversion (SCD22,SDC22)		dB			See CEI-56G -VSR	
IIC communication						
IIC Clock frequency	-	KHZ	/	400	1000	
clock stretching	-	us	/	/	500	
Data hold time	-	ns	/	/	/	

### 5. Mechanical Diagram



**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.

### 6. Ordering Information

OEM	Part Number	OEM	Part Number
MSA Champion ONE	400GQSFPDDE-SR8-MPO16	Nokia	3HE15211AA-A
MSA Generic	AN-QSFPDD-SR8		

### 7. Contact Information

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