

# SV-QSFP-400G-LR8

Starview QSFP56-DD 400G-LR8 aggregating 8 x 50Gbps LWDM SM (LC) with DDM, distance up to 10km



## Features

- QSFP-DD MSA compliant
- Compliant to IEEE 802.3bs 400GBASE-LR8
- Digital diagnostic monitoring support
- Hot pluggable 76 pin electrical interface
- 8 LAN-WDM lanes MUX/DEMUX design
- 53.125Gbit/s PAM4 Channel Electrical Serial Interface (400GAUI-8)
- Maximum power consumption 14.5W
- LC duplex connector
- Supports 425Gb/s bit rate
- Up to 10km transmission on single mode fiber
- Operating case temperature: 0°C to 70°C
- Single 3.3V power supply
- RoHS 2.0 compliant

## Applications

- 400GBASE-LR8 Ethernet
- Telecom networking
- Data Center Interconnect

Part number	Description
<b>SV-QSFP-400G-LR8</b>	Starview QSFP56-DD 400Gbps module 400G-LR8 aggregating 8 x 50Gbps LWDM SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 10km

## Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	Vcc	-0.5	3.3	3.6	V	
Storage Temperature	Ts	-40		85	°C	
Relative Humidity	RH	10		85	%	1
Damage Threshold, each lane	THd	6.3			dBm	

### Notes

1. Non-condensing

## Operating Environments

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	Vcc	3.135	3.3	3.465	V
Case Temperature	Top	0		70	°C
Link Distance with G.652				10	km

## Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Note
Power dissipation			13.4	14.5	W	
Supply Current	Icc			4.185	A	Steady state
400GAUI-8 Electrical Characteristics						
Transmitter						
Signaling Rate, each lane			26.5625		GBd	PAM4
Differential Voltage pk-pk	Vin, pp			880	mV	
Common Mode Voltage	Vcm	-0.3		2.8	V	
Common Mode Noise	RMS			17.5	mV	
Differential Termination Re- sistance Mismatch				10	%	
Transition time	Trise/Tfall	12			ps	20%~80%
Eye Width at 10 <sup>-6</sup> probability	EW6	0.2			UI	

Eye Height at at 10 <sup>-6</sup> probability	EH6	32		mV
Eye Linearity		0.85		
Receiver				
Signaling Rate, each lane		26.5625	GBd	PAM4
Differential Voltage pk-pk	Vout, pp		900	mV
Transition time	Trise/Tfall	9.5	ps	20%~80%
Near-end eye width at 10 <sup>-6</sup> probability	EW6	0.265		UI
Near-end eye height at 10 <sup>-6</sup> probability	EH6	70		mV
Far-end eye width at 10 <sup>-6</sup> probability	EW6	0.2		UI
Far-end eye height at 10 <sup>-6</sup> probability	EH6	30		mV
Near-end Eye Linearity		0.85		

Notes

1. 400GAUI-8 Electrical Characteristics refers to CEI-56G-VSR-PAM4 of OIF-CEI-04.0

**Optical Characteristics**  
(EOL, TOP = 0 to +70°C, VCC = 3.135 to 3.465 Volts)

Parameters	min	type	max	Unit	Note
Transmitter					
Signaling Speed per Lane		26.5625 ±100 ppm		GBd	
Transmit wavelengths	1272.55	1273.54	1274.54	nm	
	1276.89	1277.89	1278.89		
	1281.25	1282.26	1283.27		
	1285.65	1286.66	1287.68		
	1294.53	1295.56	1296.59		
	1299.02	1300.05	1301.09		
	1303.54	1304.58	1305.63		
	1308.09	1309.14	1310.19		

Total Average Launch Power		13.2	dBm		
Average launch power, each lane	-2.8	5.3	dBm		
Optical Modulation Amplitude (OMA), each lane	0.2	5.7	dBm		
Extinction Ratio (ER)	3.5		dB		
Side-Mode Suppression Ratio (SMSR)	30		dB		
Launch power in OMA minus TDECQ, each lane			dBm		
For ER>4.5dB	-1.2				
For ER<4.5dB	-1.1				
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ), each lane		3.1	dB		
Average launch power of OFF transmitter, each lane (max)		-30	dBm		
RIN <sub>15.6OMA</sub>		-132	dB/Hz		
Optical return loss tolerance		15.6	dB		
Transmitter reflectance		-26	dB		
Receiver					
Signaling Speed per Lane		26.5625 ±100 ppm	GBd		
Receive wavelengths		1272.55	1273.54	1274.54	nm
		1276.89	1277.89	1278.89	
		1281.25	1282.26	1283.27	
		1285.65	1286.66	1287.68	
		1294.53	1295.56	1296.59	
		1299.02	1300.05	1301.09	
		1303.54	1304.58	1305.63	
		1308.09	1309.14	1310.19	
Average receiver power, each lane	-9.1	5.3	dBm		
Receiver power, each lane (OMA)		5.7	dBm		
Difference in receive power between any two lanes(OMA)		4.5	dB		
Damage threshold, each lane	6.3		dBm		
Receiver sensitivity (OMA), each lane		RS	dBm 1		
LOS Assert	-25.1		dBm		

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LOS Deassert		-11.1	dBm
LOS Hysteresis	0.5		dB
Receiver reflectance		-26	dB

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#### Notes

1,  $RS = \max(-6.6, SECQ-8)$  dBm, BER@2E-4