

# SV-QSFP-100G-eZR4+

Starview QSFP28 100G module LWDM wavelengths SM (LC) DDM, distance up to 100km



## Features

- Supports 100GBASE 100GE
- Lane bit rate 25.78 Gb/s 100GE
- Up to 100km transmission on SMF
- LAN WDM laser and PIN receiver with SOA
- Support Multi-Pin function with IntL/RxLOSL and LPMODE/TxDIS
- High speed I/O electrical interface (CAUI-4)
- I2C interface with integrated Digital Diagnostic monitoring
- QSFP28 MSA package with duplex LC connector
- Single +3.3V power supply
- Typical power consumption 6.5 W
- Operating case temperature: 0 to +70 °C
- Compliant to IEEE 802.3bm and ITU-T G.959
- Compliant to SFF-8636 and SFF-8679
- Complies with EU Directive 2015/863/EU
- High-quality BOX packaging

## Applications

- 100GBASE-ZR4 plus

## Ordering Information

Part number	Description
<b>SV-QSFP-100G-eZR4+</b>	Starview QSFP28 100Gbps module 100GBase aggregating 4 x 25Gbps duplex LWDM (1295.6 nm, 1300.1 nm, 1304.6 nm, and 1309.1nm) wavelengths SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 100km, supporting 100GE

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Storage Temperature	T <sub>s</sub>	-40	-	+85	°C	
Supply Voltage	V <sub>CC</sub>	-0.5	-	+4.0	V	
Operating Relative Humidity	RH	-	-	+85	%	

## Operating Environments

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T <sub>c</sub>	0	-	+70	°C	
Power Supply Voltage	V <sub>CC</sub>	3.13	3.3	3.47	V	
Power Supply Current	I <sub>CC</sub>	-	-	1.97	A	
Typical Power Dissipation	P <sub>D</sub>	-	-	6.5	W	
Aggregate Bit Rate	BR <sub>AVE</sub>	-	103.125	-	Gb/s	
Lane Bit Rate	BR <sub>LANE</sub>	-	25.78	-	Gb/s	
Transmission Distance	TD	-	-	100	km	Over SMF

## Optical Characteristics

Transmitter						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength Lane 0	λ <sub>0</sub>	1294.53	1295.56	1296.59	nm	
Center Wavelength Lane 1	λ <sub>1</sub>	1299.02	1300.05	1301.09	nm	
Center Wavelength Lane 2	λ <sub>2</sub>	1303.54	1304.58	1305.63	nm	
Center Wavelength Lane 3	λ <sub>3</sub>	1308.09	1309.14	1310.19	nm	
Total Launch Power, 100GE	P <sub>ALL</sub>	-	-	14	dBm	1
Average Launch Power per Lane, 100GE	P <sub>TX,LANE</sub>	4	-	8	dBm	1
Difference in launch power between lanes	P <sub>TX,DELTA,LANE</sub>	-	-	3.6	dB	
Average Output Power (Laser Turn off)	P <sub>OUT-OFF</sub>	-	-	-30	dBm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	

Extinction Ratio, 100GE	ER	6	-	-	dB	
Optical Eye Mask	IEEE 802.3 {0.25,0.4, 0.45, 0.25, 0.28, 0.4}					
Receiver						
Center Wavelength Lane 0	$\lambda_0$	1294.53	1295.56	1296.59	nm	
Center Wavelength Lane 1	$\lambda_1$	1299.02	1300.05	1301.09	nm	
Center Wavelength Lane 2	$\lambda_2$	1303.54	1304.58	1305.63	nm	
Center Wavelength Lane 3	$\lambda_3$	1308.09	1309.14	1310.19	nm	
Damage threshold	Pdamage	5.5	-	-	dBm	
Average Rx Power per Lane, 100GE	P <sub>PRX_LANE</sub>	-30	-	4.5	dBm	2
Difference in launch power between lanes	P <sub>PRX_DELTA_LANE</sub>	-	-	4.5	dB	
Los Assert	LosA	-40	-	-	dBm	
Los De-assert	LosDA	-	-	-31	dBm	
Los Hysteresis	LosH	0.5	-	5	dB	

Notes:

1. The optical power is launched into SMF.
2. Measured with a PRBS 2<sup>31</sup>-1 test pattern @25.78125 Gb/s, BER≤5E-5.

## Electrical Characteristics

**High-Speed Signal: Compliant to CAUI-4 (IEEE 802.3bm)**

**Low-Speed Signal: Compliant to SFF-8679.**

Transmitter (Module Input)						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Differential Data Input Amplitude	V <sub>IN,P-P</sub>	85	-	900	mVpp	
Differential Termination Mismatch		-	-	10	%	
Differential input return loss(min)	RLd(f)	Compliance with IEEE802.3ba Equation (83A-5)			dB	

Differential to common mode input return loss (min)	RLdc(f)	Compliance with IEEE802.3ba Equation (83A-6)			dB
LPMoDe, Reset and ModSelL, V in low	V <sub>IL</sub>	-0.3	-	0.8	V
LPMoDe, Reset and ModSelL, V in high	V <sub>IH</sub>	2.0	-	V <sub>CC</sub> +0.3	V
Receiver (Module Output)					
Differential Data Output Amplitude	V <sub>OUT,P-P</sub>	200	-	900	mVpp
Differential Termination Mismatch (1MHZ)		-	-	10	%
Transition time, 20% to 80%	Tr Tf	12	-	-	ps
Differential output return loss (min)	RLd(f)	Compliance with IEEE802.3ba Equation (83A-7)			dB
Common to differential mode conversion return loss (min)	RLdc(f)	Compliance with IEEE802.3ba Equation (83A-8)			dB
ModPrsL and IntL, V out low	V <sub>OL</sub>	0	-	0.4	V
ModPrsL and IntL, V out high	V <sub>OH</sub>	V <sub>CC</sub> -0.5	-	V <sub>CC</sub> +0.3	V