SV-QSFP-2x100G-CFR4

Starview QSFP28-DD 2x100Gbps module aggregating 8 x 25Gbps with 2 x CWDM4 SM (Dual CS) with DDM, distance up to 10km

Features

- Supports 206Gbps
- Single 3.3V Power Supply
- Power dissipation < 8.0W
- up to 10km over SMF
- RoHS-6 compliant (lead-free)
- QSFP-DD MSA Compliant
- 8x25G electrical interface
- Dual CS connector
- Commercial case temperature range of 0°C to 70°C
- 8*25Gbps DFB-based CWDM transmitter
- PIN and TIA array on the receiver side
- I2C interface with integrated Digital Diagnostic Monitoring
- Safety Certification: TUV/UL/FDA
- RoHS Compliant

Applications

- 2x100G QSFP-DD CWDM4 applications with FEC

Ordering Information

Part number	Description
SV-QSFP-2x100G-CFR4	Starview QSFP28-DD 2x100Gbps module aggregating 8 x 25Gbps with 2 x CWDM4 (1271/ 1291/ 1311/ 1331nm) SM (Dual CS) with Digital Diagnostic Monitoring (DDM), distance up to 10km

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	Ts	-40	+85	°C
Supply Voltage	Vcc	-0.5	3.6	V
Operating Relative Humidity	RH	5	85	%
Receiver Damage Threshold, per Lane	Rxdmg	5.5		dBm

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	Tc	0	25	70	°C
Power Supply Voltage	Vcc	3.135	3.3	3.465	V
Power Dissipation	P_D			8	W
Instantaneous peak current	Icc_ip			3200	mA
Sustained peak current	Icc_sp			2640	mA
Steady state current	Icc			2308	mA

* Power Supply specifications, Instantaneous, sustained and steady state current compliant with QSFP-DD MSA Power Classification.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
Differential data input swing per lane				900	mV_{p-p}	
Input Impedance (Differential)	Zin			10	%	
Stressed input parameters						
Eye width		0.46			UI	
Applied pk-pk sinusoidal jitter			IEEE 802.3bm Table 88-13			
Eye height		95			mV	
DC common mode voltage		-350		2850	mV	
Receiver						
Differential output amplitude		200		900	mV_{p-p}	
Output Impedance (Differential)	Zout			10	%	
Output Rise/Fall Time	t_r/t_f	12			ps	20%~80%
Eye width		0.57			UI	
Eye height differential		228			mV	
Vertical eye closure				5.5	dB	

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Signaling Speed per Lane	BRAVE		25.78		Gbps
Data Rate Variation		-100		+100	ppm
Lane_0/4 Center Wavelength	λC0	1264.5		1277.5	nm
Lane_1/5 Center Wavelength	λC1	1284.5		1297.5	nm
Lane_2/6 Center Wavelength	λC2	1304.5		1317.5	nm
Lane_3/7 Center Wavelength	λC3	1324.5		1337.5	nm
Total Average Output Power	Po			8.5	dBm
Average Launch Power each Lane*(Note3)	Peach	-6.5		2.5	dBm
Transmit OMA each Lane *(Note4)	TxOMA	-4.0		2.5	dBm
Launch power in OMA minus TDP, each lane	OMA-TDP	-5.0			dBm
Transmitter and Dispersion Penalty per Lane*(Note5)	TDP			3	dB
Side Mode Suppression Ratio	SMSR	30			dB
Optical Return Loss Tolerance				20	dB
Transmitter Reflectance*(Note6)				-20	dB
Extinction Ratio	ER	3.5			dB
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, $_{Y3}$}*(Note7)			{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}		
Receiver					
Signaling Speed per Lane	BR$_{AVE}$		25.78		Gbps
Data Rate Variation		-100		+100	ppm
Damage threshold	Rxdmg	3.5			dBm
Lane_0/4 Center Wavelength	λC0	1264.5		1277.5	nm
Lane_1/5 Center Wavelength	λC1	1284.5		1297.5	nm
Lane_2/6 Center Wavelength	λC2	1304.5		1317.5	nm
Lane_3/7 Center Wavelength	λC3	1324.5		1337.5	nm
Average receive power *(Note8)	Rxpow	-13		2.5	dBm
Receive Power (OMA) per Lane	RxOMA			2.5	dBm
Unstressed Receiver Sensitivity (OMA) per Lane *(Note9)	Rxsens			-11.5	dBm
Stressed Receiver Sensitivity (OMA) per Lane *(Note10)	RXSRS			-8.6	dBm
Optical Return Loss	ORL			-26	dB

Conditions of stressed receiver sensitivity test

Vertical Eye Closure Penalty*(Note11)	VECP	2.6		dB
Stressed J2 Jitter *(Note11)	J2	0.33		UI
Stressed J4 Jitter *(Note11)	J4	0.48		UI
SRS eye mask definition {X1, X2, X3, Y1, Y2, Y3} *(Note11)		{0.39, 0.5, 0.5, 0.39, 0.39, 0.4}		
LOS Assert	LOSA	-25		dBm
LOS De-Assert	LOSD		-15	dBm
LOS Hysteresis		0.5		dB

Note3: Average launch power, each lane (min) is informative and not the principal indicator of signal strength. A transmitter with launch power below this value cannot be compliant; however, a value above this does not ensure compliance.

Note4: Even if the TDP < 1.0dB, the OMA (min) must exceed this value.

Note5: TDP does not include a penalty for multi-path interference (MPI).

Note6: Transmitter reflectance is defined looking into the transmitter.

Note7: Hit ratio of 5x10-5

Note8: Average receive power, each lane (min) is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance.

Note9: Sensitivity is specified at 5x10-5 BER.

Note10: Measured with conformance test signal at TP3 for BER = 5x10-5.

Note11: Vertical eye closure penalty, stressed eye J2 Jitter, stressed eye J4 Jitter, and SRS eye mask definition are test conditions for measuring stressed receiver sensitivity. They are not characteristics of the receiver.