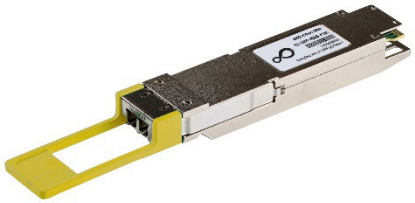
SV-OSFP-400G-PSR8

Starview 400G-SR8 aggregating 8 x 50Gbps 850nm MM (MPO-16 APC) with DDM, distance up to 100m



Features

- OSFP MSA compliant
- 8 parallel lanes on 850nm center wavelength
- Compliant to IEEE 802.3bs Specification
- Up to 100m transmission on multi-mode fiber (MMF) OM3 with FEC
- Operating case temperature: 0 to 70°C
- 8x53.125Gb/s electrical interface (400GAUI-8)
- Data Rate 53.125Gbps (PAM4) per channel.
- Maximum power consumption 12W
- MPO-16 connector
- RoHS compliant

Applications

- Data Center Interconnect
- 400G Ethernet
- Infiniband interconnects
- Enterprise networking

Part number	Description
SV-OSFP-400G-PSR8	Starview OSFP 400Gbps module 400G-SR8 aggregating 8 x 50Gbps 850nm MM (MPO-16 APC) with Digital Diagnostic Monitoring (DDM), distance up to 100m on 50/125um MM OM4

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units	Notes
Storage Temperature	TS	-40	85	degC	
Operating Case Temperature	TOP	0	70	degC	
Power Supply Voltage	VCC	-0.5	3.6	V	
Relative Humidity (non-condensation)	RH	0	85	%	

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Units	Notes
Operating Case Temperature	TOP	0		70	degC	
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Data Rate, each Lane			26.5625		GBd	PAM4
Data Rate Accuracy		-100		100	ppm	
Pre-FEC Bit Error Ratio				$2.4x10^{-4}$		
Post-FEC Bit Error Ratio				$1x10^{-12}$		1
Link Distance with OM3	D	0.5		100	m	2

Notes:

1. FEC provided by host system.
2. FEC required on host system to support maximum distance.

Electrical Characteristics

Parameter	Test Point	Min	Typical	Max	Units	Notes
Power Consumption				12	W	
Supply Current	Icc			3.63	A	
Transmitter (each Lane)						
Signaling Rate, each Lane	TP1		26.5625 ± 100 ppm		GBd	
Differential pk-pk Input Voltage Tolerance	TP1a	900			mVpp	1
Differential Termination Mismatch	TP1			10	%	
Differential Input Return Loss	TP1	IEEE 802.3- 2015 Equation (83E-5)			dB	

Differential to Common Mode Input Return Loss	TP1	IEEE 802.3-2015 Equation (83E-6)		dB	
Module Stressed Input Test	TP1a	See IEEE 802.3bs 120E.3.4.1			2
Single-ended Voltage Tolerance Range (Min)	TP1a	-0.4 to 3.3		V	
DC Common Mode Input Voltage	TP1	-350	2850	mV	3
Receiver (each Lane)					
Signaling Rate, each lane	TP4	26.5625 ± 100 ppm		GBd	
Differential Peak-to-Peak Output Voltage	TP4		900	mVpp	
AC Common Mode Output Voltage, RMS	TP4		17.5	mV	
Differential Termination Mismatch	TP4		10	%	
Differential Output Return Loss	TP4	IEEE 802.3-2015 Equation (83E-2)			
Common to Differential Mode Conversion Return Loss	TP4	IEEE 802.3-2015 Equation (83E-3)			
Transition Time, 20% to 80%	TP4	9.5		ps	
Near-end Eye Symmetry Mask Width (ESMW)	TP4	0.265		UI	
Near-end Eye Height, Differential	TP4	70		mV	
Far-end Eye Symmetry Mask Width (ESMW)	TP4	0.2		UI	
Far-end Eye Height, Differential	TP4	30		mV	
Far-end Pre-cursor ISI Ratio	TP4	-4.5	2.5	%	
Common Mode Output Voltage (Vcm)	TP4	-350	2850	mV	3

Notes:

1. With the exception to IEEE 802.3bs 120E.3.1.2 that the pattern is PRBS31Q or scrambled idle.
2. Meets BER specified in IEEE 802.3bs 120E.1.1.
3. DC common mode voltage generated by the host. Specification includes effects of ground offset voltage.

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Units	Notes
Transmitter						
Center Wavelength	λC	840	850	860	nm	
Data Rate, each Lane			26.5625 ± 100 ppm		GBd	
Modulation Format			PAM4			
RMS Spectral Width	Δλrms			0.6	nm	Modulated
Average Launch Power, each Lane	PAVG	-6.5		4	dBm	1
Outer Optical Modulation Amplitude (OMAouter), each Lane	POMA	-4.5		3	dBm	2
Launch Power in OMAouter minus TDECQ, each Lane		-5.9			dB	
Transmitter and Dispersion Eye Clouser for PAM4, each Lane	TDECQ			4.5	dB	
Extinction Ratio	ER	3			dB	
Optical Return Loss Tolerance	TOL			12	dB	
Average Launch Power of OFF Transmitter, each Lane	Poff			-30	dBm	
Encircled Flux			≥ 86% at 19 μm ≤ 30% at 4.5 μm			
Receiver						
Center Wavelength	λC	840	850	860	nm	
Data Rate, each Lane			26.5625 ± 100 ppm		GBd	
Modulation Format			PAM4			
Damage Threshold, each Lane	THd	5			dBm	3
Average Receive Power, each Lane		-7.9		4	dBm	4
Receive Power (OMA_{outer}), each Lane				3	dBm	
Receiver Sensitivity (OMA_{outer}), each Lane	SEN			-6.5	dBm	5
Stressed Receiver Sensitivity (OMA_{outer}), each Lane	SRS			-3	dBm	6

Receiver Reflectance	R_R			-12	dB
LOS Assert	LOSA	-30			dBm
LOS De-assert	LOSD			-12	dBm
LOS Hysteresis	LOSH	0.5			dB
Stressed Conditions for Stress Receiver Sensitivity (Note 7)					
Stressed Eye Closure for PAM4 (SECQ), Lane under Test			4		dB
OMA_{outer} of each Aggressor Lane			3		dBm

Notes:

1. 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.

2. Even if the TDECQ < 1 dB , the OMAouter (min) must exceed the minimum value specified here.

3. The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level.

4. 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.

5. Receiver Sensitivity OMAouter, each lane (max) is informative and is defined for a BER of 2.4x10-4.

6. Measured with conformance test signal at receiver input for the BER of 2.4x10-4.

7. These test conditions are for measuring stressed receiver sensitivity. They are not characteristics of the receiver.