

Features

- Up to 11.1Gbps Data Links
- Up to 80km transmission on SMF
- Power dissipation < 1.5W
- CWDM EML Laser and APD receiver
- Metal enclosure, for lower EMI
- 2-wire interface with integrated Digital Diagnostic monitoring
- Hot-pluggable SFP+ footprint
- Specifications compliant with SFF 8472
- Compliant with SFP+ MSA with LC connector
- Single 3.3V power supply
- Case operating temperature range: 0°C to 70°C



Applications

- 10GBASE-ZR/ZW & 10G Ethernet
- Compliant to 802.3ae 10GBASE-ZR/ZW
- Compliant to SFF-8431
- RoHS Compliant

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	°C	
Storage Ambient Humidity	HA	5	-	95	%	
Operating Relative Humidity	RH	-	-	85	%	
Power Supply Voltage	VCC	-0.3	-	4	V	
Signal Input Voltage		Vcc-0.3	-	Vcc+0.3	V	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0	-	70	°C	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		450	mA	
Data Rate	BR		10.3125		Gbps	
Transmission Distance	TD		-	80	km	
Coupled fiber	Single mode fiber					9/125um SMF

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Transmitter						
Output Opt. Pwr	POUT	0		4	dBm	1
Optical Wavelength	λ	$\lambda-6.5$		$\lambda+6.5$	nm	2
Spectral Width (-20dB)	σ			1	nm	
Optical Extinction Ratio	ER	6			dB	
Transmitter and Dispersion Penalty	TDP			3	dB	
Side mode Suppression ratio	SMSR	30			dB	
RIN	RIN			-128	dB/Hz	
Output Eye Mask		Compliant with IEEE 802.3ae				
Receiver						
Receiver Sensitivity	Psen			-23	dBm	3
Input Saturation Power (Overload)	PSAT	-7			dBm	
Input Optical Wavelength	λ_{IN}	1270		1610	nm	
LOS -Assert Power	PA			-26	dBm	
LOS -Deassert Power	PD	-35			dBm	
LOS -Hysteresis	PHys	0.5			dB	

Notes:

- Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
- λ 's: 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610,
- Measured with a PRBS 2³¹-1 test pattern, @10.325Gb/s, BER < 10⁻¹².

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Supply Voltage	Vcc	3.14	3.3	3.46	V	
Supply Current	Icc			450	mA	
Transmitter						
Input differential impedance	Rin		100		Ω	1
Differential data input swing	Vin,pp	180		1200	mV	
Transmit Disable Voltage	VD	Vcc-1.3		Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+ 0.8	V	2

Transmit Disable Assert Time				10	us	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	3
Data output rise time	tr	30			ps	4
Data output fall time	tf	30			ps	4
LOS Fault	VLOS fault	Vcc-1.3		VccHOST	V	5
LOS Normal	VLOS norm	Vee		Vee+0.8	V	5
Power Supply Rejection	PSR	100			mVpp	6

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Input 100 ohms differential termination.
4. These are unfiltered 20-80% values
5. Loss Of Signal is LVTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
6. Receiver sensitivity is compliant with power supply sinusoidal modulation of 20 Hz to 1.5 MHz up to specified value applied through the recommended power supply filtering network.

Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFPP-10GERD8C##	Starview SFP+ module with Digital Diagnostic Monitoring (DDM), 1G/10G LAN, 1/2/4/8/10G FC, OC-192/STM-64 CWDM SM (LC), distance up to 80km, where ## denotes 47=1470nm 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm, 57=1570nm, 59=1590nm, 61=1610nm	0 to 4	-23 to -7	23	80	YES