

**Features**

- Up to 11.1Gbps Data Links
- Up to 2km transmission on SMF
- FP Laser and PIN 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:  
Standard: 0°C to +70°C  
Industrial: -40°C to +85°C
- Power dissipation < 1.5W



**Applications**

- 10GBASE-LR/LW & 10G Ethernet
- Compliant to 802.3ae 10GBASE-LR/LW
- 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	
		-40		85		
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		350	mA	
Data Rate	BR		10.3125		Gbps	
Transmission Distance	TD		2		km	
Coupled fiber	Single mode fiber					9/125um SMF

## Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
<b>Transmitter</b>						
Output Opt. Power	POUT	-8.2		0.5	dBm	1
Optical Wavelength	$\lambda$	1260	1310	1355	nm	
Spectral Width (RMS)	$\sigma$			3	nm	
Optical Extinction Ratio	ER	3.5			dB	
Transmitter and Dispersion Penalty	TDP			3.2	dB	
RIN	RIN			-128	dB/Hz	
Output Eye Mask	Compliant with IEEE 802.3ae					
<b>Receiver</b>						
Rx Sensitivity	RSNS			-14.4	dBm	2
Input Saturation Power (Overload)	Psat	0.5			dBm	
Wavelength Range	$\lambda_c$	1270		1610	nm	
LOS De -Assert	LOSD			-17	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5	1.0		dB	

### Notes:

- Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
- Measured with a PRBS  $2^{31}-1$  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			350	mA	
<b>Transmitter</b>						
Input differential impedance	Rin		100		$\Omega$	1
Differential data input swing	Vin,pp	180		1200	mV	

Transmit Disable Voltage	VD	V <sub>cc</sub> -1.3		V <sub>cc</sub>	V	
Transmit Enable Voltage	VEN	V <sub>ee</sub>		V <sub>ee</sub> + 0.8	V	2
Transmit Disable Assert Time				10	us	
<b>Receiver</b>						
Differential data output swing	V <sub>out,pp</sub>	300		850	mV	3
Data output rise time	t <sub>r</sub>	30			ps	4
Data output fall time	t <sub>f</sub>	30			ps	4
LOS Fault	VLOS fault	V <sub>cc</sub> -1.3		V <sub>cc</sub> HOST	V	5
LOS Normal	VLOS norm	V <sub>ee</sub>		V <sub>ee</sub> +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 LVTTTL. 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
<b>SV-SFPP-10GLRD</b>	Starview SFP+ module with Digital Diagnostic Monitoring (DDM), 1G/10G LAN, 1/2/4/8/10G FC, OC-192/STM-64 1310nm SM (LC), distance up to 2km	-8.2 to 0.5	-14.4 to 0.5	6.2	2	YES
<b>SV-SFPP-10GLRDH</b>	Starview SFP+ module with Digital Diagnostic Monitoring (DDM), 1G/10G LAN, 1/2/4/8/10G FC, OC-192/STM-64 1310nm SM (LC), distance up to 2km. Industrial temperature range	-8.2 to 0.5	-14.4 to 0.5	6.2	2	YES