

# SV-XFP-LR8xx

9.95Gbps to  
11.1Gbps, 1490nmTX/1550nmRX  
(1550nmTX/1490nmRX), SM, 80km



## Features

- Up to 11.1Gbps Data Links
- Up to 80km transmission on SMF
- Power dissipation < 1.5W
- 1490nm EML laser and APD receiver  
For SV-XFP-LR83  
1550nm EML laser and APD receiver  
for SV-XFP-LR84
- 2-wire interface with integrated Digital Diagnostic monitoring
- EEPROM with Serial ID Functionality
- Hot-pluggable SFP+ footprint
- Compliant with SFP+ MSA with LC connector
- Single + 3.3V Power Supply
- Case operating temperature: -10°C~+70°C

## Applications

- 10GBASE-BX
- Compliant with SFF-8472
- Compliant to SFF-8431
- RoHS Compliant

## Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
<b>SV-XFP-LR83</b>	Starview Single Fiber Bi-Directional XFP module Multi-rate 9.95Gbps to 11.3Gbps supporting OC192/ STM64/ 10G LAN/ 10G FC 1490nm TX/ 1550nm RX single fiber SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km	0 to 5	-23 to -6	23	80	YES
<b>SV-XFP-LR84</b>	Starview Single Fiber Bi-Directional XFP module Multi-rate 9.95Gbps to 11.3Gbps supporting OC192/ STM64/ 10G LAN/ 10G FC 1550nm TX/ 1490nm RX single fiber SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km	0 to 5	-23 to -6	23	80	YES

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	Ts	-40	-	85	°C
Relative Humidity	RH	5	-	95	%
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	-5	-	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						
Average Launched Power	PO	0	-	5	dBm	
Average Launched Power(Laser Off)	Poff	-	-	-30	dBm	Note (1)
Center Wavelength Range	$\lambda_C$	$\lambda-6.5$	$\lambda$	$\lambda+6.5$	nm	Note (2)
Side mode suppression ratio	SMSR	30	-	-	dB	
Spectrum Bandwidth(-20dB)	$\sigma$	-	-	0.3	nm	
Extinction Ratio	ER	8.2		-	dB	Note (3)
Output Eye Mask		Compliant with IEEE 802.3ae				Note (3)
Receiver						
Input Optical Wavelength	$\lambda_{IN}$	1480	1490	1500	nm	SV-XFP-LR83
		1540	1550	1560	nm	SV-XFP-LR84
Receiver Sensitivity	Psen	-	-	-23	dBm	Note (4)
Input Saturation Power (Overload)	PSAT	-6	-	-	dBm	Note (4)
LOS Assert	LOSA	-35	-	-	dBm	
LOS De-assert	LOSD	-	-	-24	dBm	
LOS -Hysteresis	PHys	0.5	-	5	dB	

Note (1): The optical power is launched into SMF

Note (2):  $\lambda$  is wavelength of room temperature

Note (3): Measured with RPBS 2^31-1 test pattern @10.3125Gbs

Note (4): Measured with RPBS 2^31-1 test pattern @10.3125Gbs BER=<10^-12

## Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Total power supply current	I <sub>cc</sub>	-	-	450	mA	
Transmitter						
Differential Data Input Voltage	V <sub>DT</sub>	180	-	700	mVp-p	
Differential line input Impedance	R <sub>IN</sub>	85	100	115	Ohm	
Transmitter Fault Output-High	V <sub>FaultH</sub>	2.4	-	V <sub>cc</sub>	V	
Transmitter Fault Output-Low	V <sub>FaultL</sub>	-0.3	-	0.8	V	
Transmitter Disable Voltage- High	V <sub>DisH</sub>	2	-	V <sub>cc</sub> +0.3	V	
Transmitter Disable Voltage- low	V <sub>DisL</sub>	-0.3	-	0.8	V	
Receiver						
Differential Data Output Voltage	V <sub>DR</sub>	300	-	850	mVp-p	
Differential line Output Impedance	R <sub>OUT</sub>	80	100	120	Ohm	
Receiver LOS Pull up Resistor	R <sub>LOS</sub>	4.7	-	10	KOhm	
Data Output Rise/Fall time	t <sub>r</sub> /t <sub>f</sub>		-	38	ps	
LOS Fault	V <sub>LOS fault</sub>	V <sub>cc</sub> -1.3		V <sub>cc</sub> H <sub>OST</sub>	V	
LOS Normal	V <sub>LOS norm</sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V	