

# SV-GB-ESXx

1Gbps 1310nm TX/1550nm RX(1550nm TX/1310nm RX) SM (SC), 2km



## Features

- Up to 1.25Gb/s data links
- FP laser transmitter and PIN photo-detector
- Up to 2km on 9/125µm SMF
- GBIC footprint
- BIDI SC/UPC type pluggable optical interface
- Low power dissipation
- Metal enclosure, for lower EMI
- RoHS compliant and lead-free
- Single +5V power supply
- Compliant with SFF-8472
- Case operation Temperature: 0°C to +70°C

## Applications

- Switch to Switch Interface
- Gigabit Ethernet
- Switched Backplane Applications
- Router/Server Interface
- Other Optical Links

## Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
<b>SV-GB-ESX1</b>	Starview Single Fiber Bi-Directional GBIC module, 1Gbps Fiber Channel/ 1000Base-LX 1310nm TX/ 1550nm RX single fiber Extended SM (SC), distance up to 2km	-11 to -3	-20 to -3	9	2	NO
<b>SV-GB-ESX2</b>	Starview Single Fiber Bi-Directional GBIC module, 1Gbps Fiber Channel/ 1000Base-LX 1550nm TX/ 1310nm RX single fiber Extended SM (SC), distance up to 2km	-11 to -3	-20 to -3	9	2	NO

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	Ts	-40		85	°C
Storage Ambient Humidity	HA	5		95	%
Power Supply Voltage	VCC	0		6	V
Signal Input Voltage		0		Vcc	V
Receiver Damage Threshold		5			dBm

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0		70	°C	
Ambient Humidity	HA	5		70	%	Non-condensing
Power Supply Voltage	VCC	4.75	5	5.25	V	
Power Supply Current	ICC			300	mA	
Power Supply Noise Rejection				100	mVp-p	100Hz to 1MHz
Data Rate			1250/1250		Mbps	TX Rate/RX Rate
Transmission Distance				3	KM	
Coupled Fiber			Single mode fiber			9/125um SMF

## Specification of Transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Average Output Power	POUT	-11		-3	dBm	Note (1)
Extinction Ratio	ER	9			dB	
Center Wavelength	$\lambda_C$	1290	1310	1330	nm	SV-GB-ESX1
Spectrum width(RMS)	$\sigma$	1530	1550	1570		SV-GB-ESX2
Spectrum Width (RMS)	$\sigma$			3.5	nm	FP Laser (TX:1310nm)
Transmitter OFF Output Power	POff			-45	dBm	
Differential Line Input Impedance	RIN	90	100	110	Ohm	
Output Eye Mask		Compliant with IEEE802.3 z (class 1 laser safety)				

Note (1): Measure at 2<sup>7</sup>-1 NRZ PRBS pattern

## Specification of Receiver

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Input Optical Wavelength	$\lambda_{IN}$	1530	1550	1570	nm	SV-GB-ESX1
		1290	1310	1330		SV-GB-ESX2
Receiver Sensitivity	PIN			-20	dBm	Note (1)
Input Saturation Power (Overload)	PSAT	-3			dBm	
Los Of Signal Assert	PA	-38			dBm	
Los Of Signal De-assert	PD			-20	dBm	Note (2)
LOS Hysteresis	PA-PD	0.5	2	6	dB	

Note (1): Measured with Light source 1490nm(1310nm), ER=9dB; BER =  $<10^{-12}$  @PRBS=2<sup>7</sup>-1 NRZ

Note (2): When LOS de-asserted, the RX data+/- output is High-level (fixed)

## Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Total Supply Current	ICC			A	mA	Note 1
Transmitter Disable Input-High	VDISH	2		V <sub>CC</sub> +0.3	V	
Transmitter Disable Input-Low	VDISL	0		0.8	V	
Transmitter Fault Input-High	VTxFH	2		V <sub>CC</sub> +0.3	V	
Transmitter Fault Input-Low	VTxFL	0		0.8	V	
Receiver						
Total Supply Current	ICC			B	mA	Note 1
LOSS Output Voltage-High	VLOSH	2		V <sub>CC</sub> +0.3	V	
LOSS Output Voltage-Low	VLOSL	0		0.8	V	LVTTL

Note 1: A (TX) + B (RX) = 300mA (Not include termination circuit)