

SV-SFPP-16GLRD1

16G FC 14.025/8.5/4.25G Fibre Channel
 Optical Transceiver, 1310nm, SM, 10km,
 with DDM



Features

- Operating data rate up to 14.025Gbps
- 1310nm DFB-LD Transmitter
- Distance up to 10km
- Single 3.3V Power supply and TTL Logic Interface
- Duplex LC Connector Interface
- Data rate 16x Fiber Channel with Dual CDR
- Hot Pluggable
- Power Dissipation < 1.2W
- Compliant with MSA SFP+ Specification SFF-8431
- Compliance with Fiber Channel FC-PI-5
- Compliant with 16G/8G/4G Fiber Channel
- Operating Case Temperature Standard: 0°C~+70°C

Applications

- Multi-rate 16x / 8x / 4x Fiber Channel

Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFPP-16GLRD1	Starview SFP+ Fiber Channel 4G/ 8G/ 16Gbps module 1310nm SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 10km	-5.0 to 2.0	-12.0 to 2.0	7.0	10	YES

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	VCC	-0.5	3.6	V
Input Voltage	Vin	-0.5	Vcc	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	Tc	0		70	°C
Power Supply Voltage	VCC	3.15	3.3	3.45	V
Power Supply Current	ICC			380	mA
Surge Current	ISurge			+30	mA
Baud Rate			4.25/8.5/14.025		Gbps

Performance Specifications – Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
CML Inputs(Differential)	Vin	150		1200	mVpp	AC coupled inputs
Input AC Common Mode Voltage		0		25	mV	RMS
Input Impedance (Differential)	Zin	85	100	115	ohms	Rin > 100 kohms @ DC
Differential Input S-parameter	SDD11			-10	dB	
Differential to Common Mode Conversion	SDD11			-10	dB	
Tx_DISABLE Input Voltage – High		2		3.45	V	
Tx_DISABLE Input Voltage – Low		0		0.8	V	
Tx_FAULT Output Voltage – High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Tx_FAULT Output Voltage – Low		0		0.5	V	Io = -4.0Ma
Receiver						

CML Outputs(Differential)	Vout	370	900	mVpp	AC coupled outputs
Output AC Common Mode Voltage		0	15	mV	Rms
Output Impedance (Differential)	Zout	90	100	110	ohms
Differential Output S-parameter	SD22		-10	dB	
Rx_LOS Output Voltage – High		2	Vcc+0.3	V	Io = 400µA; Host Vcc
Rx_LOS Output Voltage – Low		0	0.8	V	Io = -4.0Ma
MOD_DEF (2:0)	VoH	2.5		V	With Serial ID
	VoL	0	0.5	V	

Performance Specifications – Optical

Parameter	Symbol	Min.	Typical	Max.	Unit
9µm Core Diameter SMF			10		Km
Data Rate			4.25/8.5/14.025		Gbps
Transmitter					
Centre Wavelength	λ_C	1295	1310	1325	nm
Spectral Width (-20dB)	$\Delta\lambda$			1	nm
Average Output Power@14.025Gb/s*Note4	Pout	-5		+2	dBm
Extinction Ratio@14.025Gb/s	ER	3.5			dB
Average Power of OFF Transmitter	Poff			-30	dBm
Side Mode Suppression Ratio	SMSR	30			dB
Transmitter Dispersion Penalty	TDP			4.4	dB
Input Differential Impedance	ZIN	90	100	110	Ω
TX Disable Assert Time	t_off	-	-	10	us
TX_DISABLE Negate Time	t_on	-	-	1	ms
TX_BISABLE time to start reset	t_reset	10	-	-	us
Time to initialize, include reset of TX_FAULT	t_init	-	-	300	ms
TX_FAULT from fault to assertion	t_fault	-	-	100	us
Receiver					
Centre Wavelength	λ	1260		1370	nm
Sensitivity@14.025Gb/s*Note5	Pmin			-12	dBm
Receiver Overload	Pmax	2			dBm
Optical Return Loss	ORL			-12	dB
LOS De-Assert@14.025Gb/s	LOSD			-19	dBm

LOS Assert@14.025Gb/s	LOSA	-30	dBm
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Note4: Output is coupled into a 9/125um SMF.

Note5: Minimum average optical power measured at the BER less than 1E-12, back to back.

The measure pattern is PRBS $2^{31}-1$.