

SFP Transceivers

1-Gb/s Singlemode Modules

258-SFPA1G04320 SFP Transceiver Module • SFP • 1Gb/s • LC • 1310 nm • 20 km • DDM

CHARACTERISTICS

Applications:	1.25-Gb/s 1000BASE-SX Ethernet; 1.0625-Gb/s Fibre Channel, dual-rate.		
Performance:	data transmission rate:	1.0625 Gb/s (Fibre Channel, 1GFC (Gen 1), FC-PI-2 Rev. 7.0); 1.25 Gb/s (Gigabit Ethernet, IEEE 802.3);	
	bit error rate ¹ :	10 ⁻¹² max;	
	transmission distance ^{2,3} :	20 km typ (1.25-Gb/s Ethernet); 20 km typ (1.0625-Gb/s Fibre Channel);	
General construction:	format:	SFP footprint;	
	light source:	1310-nm Fabry-Perot laser;	
	plugging:	hot-pluggable;	
	connector type:	duplex LC;	
	encasing:	metal, EMI-screening;	
	power supply:	single.	
Electrical:	supply voltage (Vcc):	3.0 V–3.6 V;	
	limit supply voltage:	min: -0.5 V; max: 4.0 V;	
	supply current:	300 mA max.	
	grounding:	circuit/chassis grounds internally isolated.	
	TRANSMITTER:		
	input differential impedance ⁴ :	100 Ohm;	
	single-ended data input swing:	250 mV–1200 mV;	
	transmit disable voltage:	2 V–Vcc;	
	transmit enable voltage:	0 V–0.8 V.	
	RECEIVER:		
	single-ended data output swing:	min: 300 mV; typ: 400 mV; max: 800 mV;	
	data output rise and fall time ⁵ :	300 ps max;	
	LOS fault:	min: 2 V; max: Vccp;	
	LOS normal:	min: 0 V; max: 0.8 V;	
	power supply rejection:	100 mVpp min;	
Optical:	TRANSMITTER:		
	output optical power ⁶ :	-9 dBm--3 dBm;	
	optical wavelength ⁷ :	1270 nm–1360 nm;	
	spectral width ⁷ :	3 nm max;	
	optical rise/fall time ⁸ :	260 ps max;	
	extinction ratio:	9 dB min;	
	RECEIVER:		
	average receiver sensitivity ⁹ :	-24 dBm max @ 1.25 Gb/s;	
	average receiver power:	0 dBm max;	
	optical center wavelength:	min: 1265 nm; max: 1600 nm;	
	LOS de-assert:	-24 dBm max;	
	LOS assert:	-35 dBm min;	
LOS hysteresis:	min: 0.5 dB; max: 4.0 dB.		
Environmental:	case operating temperature:	min: 0 °C (32 °F); max: 70 °C (158 °F);	
	storage temperature:	min: -40 °C (-40 °F); max: 85 °C (185 °F).	
	operating humidity:	85 % RH max, non-condensing.	
Mechanical:	dimensions comply with the SFP Multi-Source Agreement (MSA) specifications.		
Compliance:	IEEE Std 802.3, Clause 38, PMD Type 1000BASE-SX.		
	Fibre Channel Physical and Signaling Interface (FC-PH, FC-PH2, FC-PH3).		
	Fibre Channel Physical Interface Specification (FC-PI-2 Rev. 10.0). European Directive 2002/95/EC (RoHS).		
Compatibility:	Cisco Systems tagged.		



- ¹ Tested with PRBS 2⁷-1 test pattern.
- ² Dispersion-limited per FC-PI-2 Rev. 10.
- ³ Attenuation of 0.55 dB/km was used in the link length calculations. Distances shown are for reference only. Use optical characteristics listed further and specific application data to calculate more accurate link budget.
- ⁴ AC-coupled.
- ⁵ 20 %–80 %.
- ⁶ Class 1 Laser Safety per FDA/CDRH, IEC, and EN60825-1 laser safety standards.
- ⁷ Also specified to meet curves in FC-PI-2 Rev. 10.0 Figure 18, which allow trade-off between wavelength, spectral width and OMA.
- ⁸ Also specified to meet curves in FC-PI-2 Rev. 10.0 Figure 18, which allow trade-off between wavelength, spectral width and OMA.
- ⁹ Measured with PRBS 2⁷-1 test pattern at 10⁻¹² BER.

		VeeT	20	
1	VeeT	TD-	19	
2	TXFault	TD+	18	
3	TXDisable	VeeT	17	
4	MOD-DEF(2)	VccT	16	ASIC
5	MOD-DEF(1)	VccR	15	
6	MOD-DEF(0)	VeeR	14	
7	RateSelect	RD+	13	
8	LOS	RD-	12	
9	VeeR	VeeR	11	
10	VeeR			

