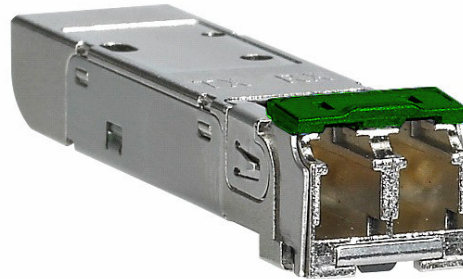


065-79EZXMG Small Form-factor Pluggable (SFP) Gigabit Interface Module



The Signamax 065-79EZXMG is a Small Form-factor Pluggable (SFP) multimode fiber module that supports Gigabit Ethernet over singlemode fiber cable at distances up to 110 kilometers. It adheres to the IEEE 802.3z standard for Gigabit Ethernet over singlemode fiber at 1550 nm, and is a cost-effective method of providing changeable Gigabit Ethernet singlemode interfaces to switches and media converters equipped with a standard SFP slot.

Applications

- Router / Server interface
- Distributed multi-processing
- Switch to switch interface
- High speed I/O for file server

Key Features

- Compliant with SFP MultiSource Agreement. Compliant with IEEE802.3Z
- SCA-2 Host connector
- Duplex LC connector
- 1550 nm DFB Laser
- 3.3V power supply

Ordering Information

Part Number	Description
065-79EZXMG	1000BaseEZ X SFP Module 1550 nm – SM/LC, 110 km

Summary Specification

PART NUMBER	Model / Spectrum	Light Source	Link Power Budget	Typical Max. Distance**	Supply Voltage	Operating Temp.
065-79EZXMG	EZX 1550 nm	DFB Laser	30 dBm	110 km	3.3V	0 ~ 70 °C

** Maximum distances attainable on singlemode fiber circuits are dependent upon a circuit's conditions; i.e., the number of splices and patch panels and the number of bends in the circuit path. For comparison with competing products, please use the Link Power Budget for meaningful comparisons.

DETAILED SPECIFICATIONS

• **APPLICABLE STANDARDS**

IEEE 802.3z (1000BaseZX Gigabit Ethernet)

• **ABSOLUTE MAXIMUM RATINGS**

Storage Temperature: TS -40 -- 85 °C

Supply Voltage: V_{CC} -0.5 -- 6.0 V

Input Voltage: V_{IN} 0 – 5.5 V

Operating Humidity: 0-85 %

• **RECOMMENDED OPERATING CONDITIONS**

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Ambient Operating Temperature	T _{AMB}	0	70	°C	
Supply Voltage	V _{CC}	3.1	3.5	V	
Supply Current (3.3V)	I _{TX + IRX}	200	300	mA	

• **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS**

V_{CC} = 3.1 V to 3.5V, T_A = 0 °C to 70 °C

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Output Optical Power 9/125 μm fiber	P _{out}	0		5	dBm	A
Extinction Ratio	ER	9			dB	A
Center Wavelength	λ _C	1520	1550	1580	nm	A
Spectral Width (20dB)	Δλ			<1	nm	A
Rise/Fall Time, (20~80%)	T _{r, f}			0.25	ns	20%~80%
Side Mode Suppression Ratio	SMSR			30	dB	A
Relative Intensity Noise	RIN			-120	dB/Hz	A
Total Jitter	TJ			227	ps	A
Output Eye	Compliant with IEEE802.3z					
Differential Data Input Swing	V _{IN}	200		1660	mV	A
Tx_Fault - High	V _{Fault H}	2		V _{CC}	V	A
Tx_Fault - Low	V _{Fault L}	V _{ee}		V _{ee} +0.5	V	A
Tx_Disable - High	V _{Disable H}	2		V _{CC}	V	A
Tx_Disable - Low	V _{Disable L}	V _{ee}		V _{ee} +0.8	V	A

Note A: All data measured at 1250 Mbps, PRBS 2⁷-1, NRZ.

• **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS**

V_{CC} = 3.1 V to 3.5 V, T_A = 0 °C to 70 °C

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Optical Input Power-maximum	P _{IN}	-8			dBm	A, B
Optical Input Power-minimum (Sensitivity)	P _{IN}			-30	dBm	A, B
Operating Center Wavelength	λ _C	1270		1620	nm	
Loss of signal –Asserted	P _A	-40			dBm	B
Loss of signal –Deasserted	P _D			-30.5	dBm	B
Differential Data Output Swing	V _{out}	600	800		MV	B
Receiver Loss of Signal Output Voltage-Low	RX_LOS	0		0.5	V	B
Receiver Loss of Signal Output Voltage-High	RX_LOS	2.0		V _{CC}	V	B

Note A: BER better than or equal to 1×10⁻¹²

Note B: Measured in the center of the eye opening with 2⁷ -1 PRBS, NRZ

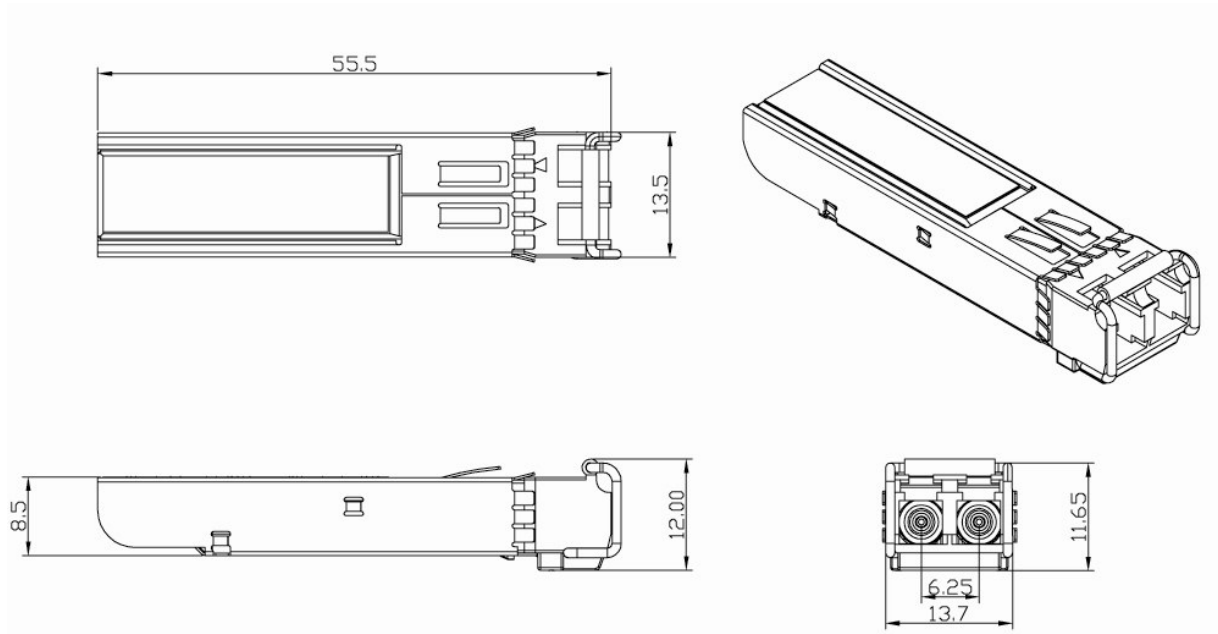
DETAILED SPECIFICATIONS (continued)

• **TIMING REQUIREMENTS**

V_{cc} = 3.1 V to 3.5V, T_A = 0 °C to 70 °C

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
TX_DISABLE Assert Time	t _{off}			10	μs	
TX_DISABLE Negate Time	t _{on}			1	ms	
Time to initialize, include reset of TX_FAULT	t _{init}			300	ms	
TX_FAULT from fault to assertion	t _{fault}			100	μs	
TX_DISABLE time to start reset	t _{reset}	10			μs	
Receiver Loss of Signal Assert Time (off to on)	t _{A,RX_LOS}			100	μs	
Receiver Loss of Signal Assert Time (on to off)	t _{D,RX_LOS}			100	μs	

• **DIMENSIONS (mm)**



• **REGULATORY COMPLIANCE**

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to optical connector	Variation of IEC 61000-4-2	Typically withstand at least 15kV without damage when port is contacted by Human Body Model probe.
Immunity	Variation of IEC 61000-4-3	Typically show no measurable effect from a 10 V/m field swept from 27 MHz to 1 GHz applied to the transceiver without a chassis enclosure.
Electromagnetic Interference (EMI)	FCC Class B CENELEC EN55022 Class B (CISPR 22A)	Margins are dependent on customer board and chassis design.
Laser Eye Safety	FDA21 CFR 1040.10 and 1040.11	Class 1 Laser Safety product.

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