SIGNAMAX™
CONNECTIVITY SYSTEMS
An AESP Company

Network Connectivity Systems

065-73FXMM5MG Small Form-factor Pluggable (SFP)
Fast Ethernet / SONET OC-3 / SDH STM-1 Multimode Fiber Interface Module

The Signamax 065-73FXMM5MG is a Small Form-factor Pluggable (SFP) multimode fiber module that supports Fast Ethernet, SONET OC-3, or SDH STM-1 over multimode fiber cable at distances up to 5 kilometers. It adheres to the IEEE 802.3u standard for Fast Ethernet over multimode fiber at 1310 nm, and is a cost-effective method of providing changeable Fast Ethernet / OC-3 / STM-1 multimode interfaces to switches and media converters designed for these applications that are equipped with a standard 100Base SFP slot.

Applications

- Metro Access Rings
- Point-to-Point networking
- SONET OC-3 / SDH STM-1 over multimode fiber
- 100BaseFX Fast Ethernet over multimode fiber

Key Features

- Compliant with SFP MultiSource Agreement. Compliant with IEEE802.3u.
- RoHS Compliant.
- Duplex LC connector.
- 1300 nm uncooled FP LD.
- 3.3V power supply.
- Hot-Pluggable capability.
- Extended EMI & ESD protection.
- Suitable for Fast Ethernet (100BaseFX), SONET OC-3, and SDH STM-1 applications.

Ordering Information

Part Number	Description
065-73FXMM5MG	100BaseFX / OC-3 / STM-1 SFP Module – MM/LC, 5 km

Summary Specification

PART NUMBER	Model / Spectrum	Light Source	Link Power Budget	Typical Max. Distance**	Supply Voltage	Operating Temp.
065-73FXMM5MG	1300 nm nominal	Uncooled LED	10.5 dBm	5 km	3.3V	0 ~ 70 ℃

** **Maximum distances attainable on multimode 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.**

SPECIFICATIONS

www.signamax.com

16295 N.W. 13th Avenue • Miami, FL 33169 • 800.446.2377 • 305.944.7710 • Fax: 305.949.4483

DETAILED SPECIFICATIONS

- **APPLICABLE STANDARDS**
  IEEE 802.3u (100BaseFX Fast Ethernet)
  SONET OC-3
  Synchronous Digital Hierarchy (SDM) STM-1

- **ABSOLUTE MAXIMUM RATINGS**
  Storage Temperature: TS –40 -- 85 ℃
  Supply Voltage: Vcc -0.5 -- 6.0 V
  Input Voltage: VIN -0.5 -- *Vcc* V
  Operating Humidity: 0-85 %

- **RECOMMENDED OPERATING CONDITIONS**

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Ambient Operating Temperature	T_{AMB}	0	70	℃	
Supply Voltage	*Vcc*	3.1	3.5	V	
Supply Current (3.3V)	$I_{TX} + I_{RX}$		300	mA	200 mA typical

- **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS**
  ***Vcc* = 3.1 V to 3.5V, T_A = 0 ℃ to 70 ℃; all data is measured at 155.52 Mbps, PRBS 2^{23}-1, NRZ.**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Transmitter Differential Input Voltage	TD +/-	400		2000	mV p-p	BER < 10^{-12}
Output Optical Power (50/125 µm or 62.5/125µm fiber)	P_{out}	-15		-8	dBm	Average
Extinction Ratio	ER	8.2			dB	BER < 10^{-12}
Center Wavelength	λ_C	1280	1310	1355	nm	BER < 10^{-12}
Spectral Width (20dB)	$\Delta\lambda$			<4	nm	BER < 10^{-12}
Rise/Fall Time, (20–80%)	$T_{r,\,f}$			3	ns	BER < 10^{-12}
Output Eye	Compliant with IEEE802.3u					
Transmit Fault Output-Low	TX_FAULT	*Vee*		*Vee* + 0.5	V	BER < 10^{-12}
Transmit Fault Output-High	TX_FAULT	2.0		*Vcc*	V	BER < 10^{-12}
Transmit Disable-Low	TX_FAULT	*Vee*		*Vee* + 0.8	V	BER < 10^{-12}
Transmit Disable-High	TX_FAULT	2.0		*Vcc*	V	BER < 10^{-12}

- **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS**
  ***Vcc* = 3.1 V to 3.5 V, T_A = 0 ℃ to 70 ℃**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Receiver Differential Output Voltage	RD +/-	600	800		mV p-p	
Optical Input Power-maximum	P_{IN}	-3			dBm	A BER < 10^{-12}
Optical Input Power-minimum (Sensitivity)	P_{IN}			-34	dBm	A BER < 10^{-12}
Operating Center Wavelength	λ_C	1270		1620	nm	
Loss of signal –Asserted	P_A	–45			dBm	A
Loss of signal –Deasserted	P_D			–34.5	dBm	A
Receiver Loss of Signal Hysteresis		0.5	2		dB	A
Note A: measured in the center of the eye opening with 2^{23} -1 PRBS, NRZ						

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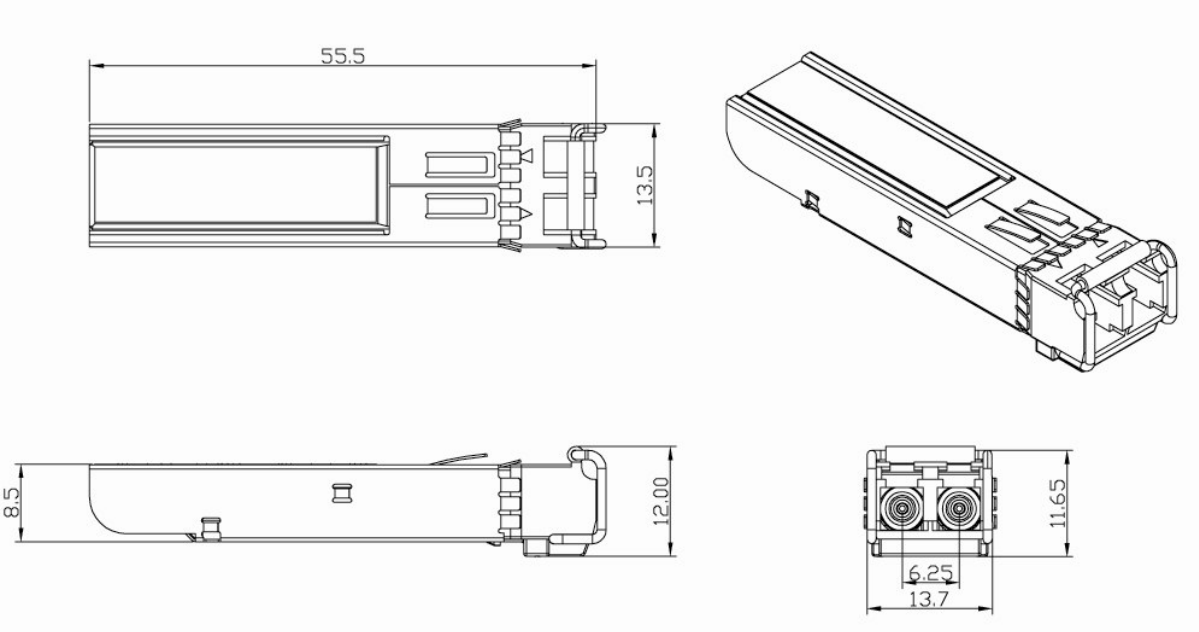
DETAILED SPECIFICATIONS (continued)

- **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.

- **WARRANTY**
  Lifetime

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