

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



The Signamax 065-79SXEDMG is a Small Form-factor Pluggable (SFP) multimode fiber module that supports Gigabit Ethernet over 62.5 micron and 50 micron multimode fiber cable at distances up to 2 kilometers. It adheres to the IEEE 802.3z standard for Gigabit Ethernet over multimode fiber at 1300 nm, and is a cost-effective method of providing changeable Gigabit Ethernet interfaces to switches and media converters equipped with a standard SFP slot. Note: The 065-79SXEDMG must face another 065-SXEDMG on the multimode fiber pair for proper operation.

### 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
- 1310 nm FP Laser
- 3.3V power supply
- Hot-Pluggable capability
- Extended EMI & ESD protection
- Class 1 laser product complies with EN 60825-1

### Ordering Information

| Part Number  | Description                         |
|--------------|-------------------------------------|
| 065-79SXEDMG | 1000BaseSX SFP Module – MM/LC, 2 km |

### Summary Specification

| PART NUMBER  | Model / Spectrum | Light Source | Link Power Budget | Typical Max. Distance** | Supply Voltage | Operating Temp. |
|--------------|------------------|--------------|-------------------|-------------------------|----------------|-----------------|
| 065-79SXEDMG | MLX<br>1310 nm   | FP Laser     | 11 dBm            | 2 km                    | 3.3V           | 0 ~ 70 °C       |

\*\* Maximum distances attainable on multimode Gigabit Ethernet fiber circuits are primarily dependent upon multimode distortion, also known as modal dispersion. Larger aperture fiber optic cable allows more modes to be generated at the launch point; these modes cause the pulse width to spread across a Gigabit Ethernet bit time interval to a point where accurate determination of data (i.e., ones and zeroes) is not possible. These are physical properties that are not specific to this product. These properties also apply to competing products operating in the same frequency spectrum over multimode fiber cable having the same modal bandwidth.



**DETAILED SPECIFICATIONS**

• **APPLICABLE STANDARDS**

IEEE 802.3z (1000BaseSX Gigabit Ethernet)

• **ABSOLUTE MAXIMUM RATINGS**

**Storage Temperature:** TS -40 -- 85 °C

**Supply Voltage:** V<sub>CC</sub> -0.5 -- 6.0 V

**Input Voltage:** V<sub>IN</sub> -0.5 -- V<sub>CC</sub> V

**Operating Humidity:** 5-95 %

• **RECOMMENDED OPERATING CONDITIONS**

| PARAMETER                     | SYMBOL                            | MIN | MAX | UNITS | NOTE |
|-------------------------------|-----------------------------------|-----|-----|-------|------|
| Ambient Operating Temperature | T <sub>AMB</sub>                  | 0   | 70  | °C    |      |
| Supply Voltage                | V <sub>CC</sub>                   | 3.1 | 3.5 | V     |      |
| Supply Current (3.3V)         | I <sub>TX</sub> + I <sub>RX</sub> |     | 85  | mA    |      |

• **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS**

V<sub>CC</sub> = 3.1 V to 3.5 V, T<sub>A</sub> = 0 °C to 70 °C

| PARAMETER                           | SYMBOL                    | MIN  | TYP. | MAX             | UNITS | NOTE    |
|-------------------------------------|---------------------------|------|------|-----------------|-------|---------|
| Output Optical Power 9/125 μm fiber | P <sub>out</sub>          | -9   |      | -3              | dBm   | Average |
| Extinction Ratio                    | ER                        | 9    |      |                 | dB    |         |
| Center Wavelength                   | λ <sub>c</sub>            | 1280 | 1310 | 1355            | nm    |         |
| Spectral Width (20dB)               | Δλ                        |      |      | 4               | nm    |         |
| Rise/Fall Time, (20–80%)            | T <sub>r, f</sub>         |      |      | 260             | ps    |         |
| Total Jitter                        | TJ                        |      |      | 227             | ps    |         |
| Output Eye                          | Compliant with IEEE802.3z |      |      |                 |       |         |
| Differential Data Input Swing       | V <sub>IN</sub>           | 200  |      | 1660            | mV    |         |
| Transmit Fault Output-Low           | TX_FAULT                  | 0.0  |      | 0.5             | V     |         |
| Transmit Fault Output-High          | TX_FAULT                  | 2.0  |      | V <sub>CC</sub> | V     |         |

• **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS**

V<sub>CC</sub> = 3.1 V to 3.5 V, T<sub>A</sub> = 0 °C to 70 °C

| PARAMETER                                      | SYMBOL           | MIN  | TYP. | MAX             | UNITS | NOTE                    |
|--|------------------|------|------|-----------------|-------|-------------------------|
| Optical Input Power-maximum                    | P <sub>IN</sub>  | -3   |      |                 | dBm   | BER < 10 <sup>-12</sup> |
| Optical Input Power-minimum (Sensitivity)      | P <sub>IN</sub>  |      | -24  | -20             | dBm   | BER < 10 <sup>-12</sup> |
| Operating Center Wavelength                    | λ <sub>c</sub>   | 1260 |      | 1610            | nm    |                         |
| Receiver Electrical 3dB Upper Cutoff Frequency |                  |      |      | 1500            | MHz   |                         |
| Loss of signal –Asserted                       | P <sub>A</sub>   | -35  |      |                 | dBm   |                         |
| Loss of signal –Deasserted                     | P <sub>D</sub>   |      |      | -20             | dBm   |                         |
| Differential Data Output Swing                 | V <sub>out</sub> | 370  |      | 2000            | MV    |                         |
| Receiver Loss of Signal Output Voltage-Low     | RX_LOS           | 0    |      | 0.5             | V     |                         |
| Receiver Loss of Signal Output Voltage-High    | RX_LOS           | 2.0  |      | V <sub>CC</sub> | V     |                         |



