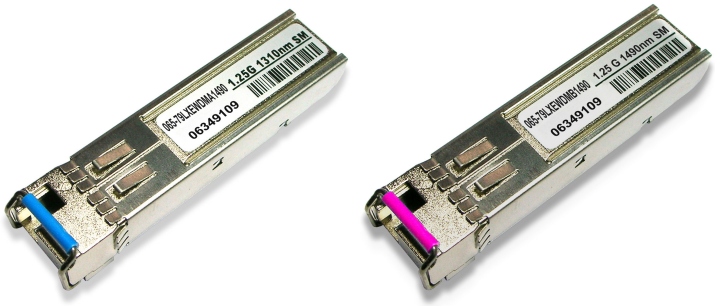
SIGNAMAX™
CONNECTIVITY SYSTEMS
An AESP Company

Network Connectivity Systems

065-79LXEWDMx1490 Singlemode Fiber Wave Division Multiplexing Small Form-factor Pluggable (SFP) 1.25 Gbps Single-Fiber Interface Modules



The Signamax 065-79LXEWDMx1490 models are Small Form-factor Pluggable (SFP) multimode fiber modules that support Gigabit Ethernet or SONET OC-12 over a single strand of singlemode fiber cable at distances up to 20 kilometers. There are two models in this series: one transmits at 1310 nm and receives at 1490 nm (model 065-79LXEWDMA1490), and the other transmits at 1490 nm and receives at 1310 nm (model 065-79LXEWDMB1490). These modules are designed to be used in pairs facing each other across a single stand of singlemode fiber. They are a cost-effective method of providing changeable Gigabit Ethernet or SONET OC-12 single-fiber singlemode interfaces to switches and media converters equipped with a standard SFP slot.

Applications

- Metro Access Rings
- Point-to-Point networking
- 1x Fiber Channel
- Gigabit Ethernet
- Suitable for Fast Ethernet and OC-12 transmission

Key Features

- RoHS Compliant
- Operation Temperature: -5~+70℃
- Model 065-79LXEWDMA1490: 1310 nm uncooled FP Laser Diode transmitter;1490 nm Photo Diode receiver
- Model 065-79LXEWDMB1490: 1490 nm uncooled DFB Laser Diode transmitter;1310 nm Photo Diode receiver
- 20 Km link distance (indicative only**)
- Hot pluggable
- Metal enclosure, low EMI
- Single 3.3V power supply
- Low Power Dissipation

Ordering Information

Part Number	Description
065-79LXEWDMA1490	WDM 1.25 Gbps SFP Module Tx: 1310 nm / Rx: 1490 nm – SM/LC Simplex, 20 km
065-79LXEWDMB1490	WDM 1.25 Gbps SFP Module Tx: 1490 nm / Rx: 1310 nm – SM/LC Simplex, 20 km

Summary Specification

PART NUMBER	Tx / Rx Spectrum	Light Source	Link Power Budget	Typical Max. Distance**	Supply Voltage	Operating Temp.
065-79LXEWDMA1490 (Blue Clasp)	Tx: 1310 nm Rx: 1490 nm	FP Laser	17 dBm	20 km	3.3V	0 ~ 70 ℃
065-79LXEWDMB1490 (Violet Clasp)	Tx: 1490 nm Rx: 1310 nm	DFB Laser	17 dBm	20 km	3.3V	0 ~ 70 ℃

** **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.**

SPECIFICATIONS

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DETAILED SPECIFICATIONS

- **ABSOLUTE MAXIMUM RATINGS, MODELS 065-79LXEWDMA1490 & 065-79LXEWDMB1490**
  Storage Temperature: TS –40 -- 85 ℃
  Supply Voltage: Vcc -0.5 -- 6.0 V
  Input Voltage: VIN 0 – 5.5 V
  Operating Humidity: 0-85 %

- **RECOMMENDED OPERATING CONDITIONS**

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

- **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXEWDMA1490**
  ***Vcc* = 3.1 V to 3.5V, T_A = 0 ℃ to 70 ℃**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Transmitter Differential Input Voltage	TD +/-	400		2000	mVp-p	A
Optical Output Power	P_O	-7		0	dBm	A
Optical Extinction Ratio	E_R	9			dB	A
Center Wavelength	λ_C	1280	1310	1355	nm	A
Spectral Width	$\Delta\lambda$			<4	nm	A
Optical Rise / Fall Time	t_r / t_f			0.25	nsec	A,B
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 2^7-1, NRZ.
Note B: 20% to 80%

- **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXEWDMB1490**
  ***Vcc* = 3.1 V to 3.5V, T_A = 0 ℃ to 70 ℃**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Transmitter Differential Input Voltage	TD +/-	400		2000	mVp-p	A
Optical Output Power	P_O	-7		0	dBm	A
Optical Extinction Ratio	E_R	9			dB	A
Center Wavelength	λ_C	1480	1490	1500	nm	A
Spectral Width	$\Delta\lambda$			<1	nm	A
Side Mode Suppression Ratio	SMSR	30			dB	A
Optical Rise / Fall Time	t_r / t_f			0.25	nsec	A,B
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 2^7-1, NRZ.
Note B: 20% to 80%

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DETAILED SPECIFICATIONS (continued)

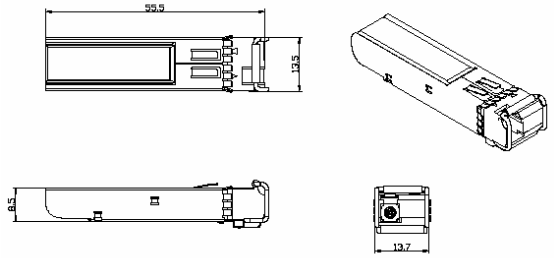
- **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXEWDMA1490**
  ***Vcc* = 3.1 V to 3.5V, T_A = 0 ℃ to 70 ℃**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Receiver Differential Output Voltage	RD +/-	600	800		mV_{P-P}	
Receiver Overload	$P_{IN}MAX$	-3			dBm	A,B
Receiver Sensitivity	$P_{IN}MIN$			-24	dBm	A,B
Operating Center Wavelength	λ_c	1480		1500	nm	
Receiver LOS Assert Level	$P_{RX\ LOS\ A}$	-35			dBm	B
Receiver LOS Deassert Level	$P_{RX\ LOS\ D}$			-24.5	dBm	B
Receiver Loss of Signal Hysteresis		0.5	2		dB	B
Note A: BER better than or equal to 1×10^{-12} **Note B:** Measured in the center of the eye opening with 2^7 -1 PRBS, NRZ						

- **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXEWDMB1490**
  ***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}	
Receiver Overload	$P_{IN}MAX$	-3			dBm	A,B
Receiver Sensitivity	$P_{IN}MIN$			-24	dBm	A,B
Operating Center Wavelength	λ_c	1260		1360	nm	
Receiver LOS Assert Level	$P_{RX\ LOS\ A}$	-35			dBm	B
Receiver LOS Deassert Level	$P_{RX\ LOS\ D}$			-24.5	dBm	B
Receiver Loss of Signal Hysteresis		0.5	2		dB	B
Note A: BER better than or equal to 1×10^{-12} **Note B:** Measured in the center of the eye opening with 2^7 -1 PRBS, NRZ						

- **DIMENSIONS (mm), MODELS 065-79LXEWDMA1490 & 065-79LXEWDMB1490**



- **REGULATORY COMPLIANCE, MODELS 065-79LXEWDMA1490 & 065-79LXEWDMB1490**

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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