

065-79LX4WDMx1550 series Singlemode Fiber Wave Division Multiplexing Small Form-factor Pluggable (SFP) 1.25 Gbps Single-Fiber Interface Modules



The Signamax 065-79LX4WDMx1550 series 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 10 kilometers. There are two types of models in this series: one transmits at 1310 nm and receives at 1550 nm (model 065-79LXnWDMA1550), and the other transmits at 1550 nm and receives at 1310 nm (model 065-79LXnWDMB1550). These modules are designed to be used in pairs facing each other across a single stand of singlemode fiber. The “n” in the part number refers to the first digit of the typical distance spanned in kilometers (4 = 40 km). 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: 0~+70°C
- Model 065-79LX4WDMA1550: 1310 nm uncooled DFB Laser Diode transmitter;1550 nm receiver
- Model 065-79LX4WDMB1550: 1550 nm uncooled DFB Laser Diode transmitter;1310 nm receiver
- Up to 60 Km link distance models are also available (indicative only**)
- Hot pluggable
- Metal enclosure, low EMI
- Single 3.3V power supply
- Low Power Dissipation

Ordering Information

Part Number	Description
065-79LX4WDMA1550	WDM 1.25 Gbps SFP Module Tx: 1310 nm / Rx: 1550 nm – SM/LC Simplex, 40 km
065-79LX4WDMB1550	WDM 1.25 Gbps SFP Module Tx: 1550 nm / Rx: 1310 nm – SM/LC Simplex, 40 km

Summary Specification

PART NUMBER	Tx / Rx Spectrum	Light Source	Link Power Budget	Typical Max. Distance**	Supply Voltage	Operating Temp.
065-79LX4WDMA1550 (Blue clasp)	Tx: 1310 nm Rx: 1550 nm	DFB Laser	20 dBm	40 km	3.3V	0 ~ 70 °C
065-79LX4WDMB1550 (Green clasp)	Tx: 1550 nm Rx: 1310 nm	DFB Laser	20 dBm	40 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.

SPECIFICATIONS

DETAILED SPECIFICATIONS

• **ABSOLUTE MAXIMUM RATINGS, MODELS 065-79LX4WDMA1550 & 065-79LX4WDMB1550**

Storage Temperature: TS -40 -- 85 °C

Supply Voltage: V_{CC} -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	°C	
Supply Voltage	V _{CC}	3.1	3.3	3.5	V	
Supply Current (3.3V)	I _{TX} + I _{RX}		200	300	mA	

• **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LX4WDMA1550**

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

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Transmitter Differential Input Voltage	TD +/-	400		2000	mVp-p	A
Optical Output Power	P _O	-3		+3	dBm	A
Optical Extinction Ratio	E _R	9			dB	A
Center Wavelength	λ _C	1290	1310	1330	nm	A
Spectral Width	Δλ			<1	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 2⁷-1, NRZ.

Note B: 20% to 80%

• **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LX4WDMB1550**

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

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Transmitter Differential Input Voltage	TD +/-	400		2000	mVp-p	A
Optical Output Power	P _O	-9		-3	dBm	A
Optical Extinction Ratio	E _R	9			dB	A
Center Wavelength	λ _C	1530	1550	1570	nm	A
Spectral Width	Δλ			<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 2⁷-1, NRZ.

Note B: 20% to 80%

DETAILED SPECIFICATIONS (continued)

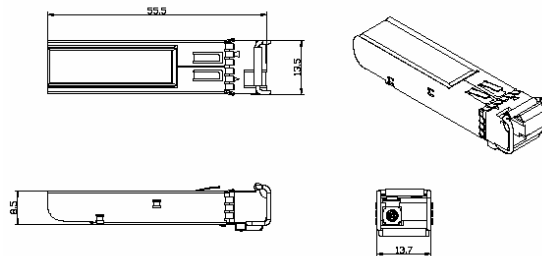
- **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LX4WDMA1550**
 $V_{cc} = 3.1\text{ V to }3.5\text{ V}$, $T_A = 0\text{ }^\circ\text{C to }70\text{ }^\circ\text{C}$

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			-23	dBm	A,B
Operating Center Wavelength	λ_c	1480		1580	nm	
Receiver LOS Assert Level	P _{RX LOS A}	-35			dBm	B
Receiver LOS Deassert Level	P _{RX LOS D}			-23.5	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 065-79LX4WDMB1550**
 $V_{cc} = 3.1\text{ V to }3.5\text{ V}$, $T_A = 0\text{ }^\circ\text{C to }70\text{ }^\circ\text{C}$

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			-23	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}			-23.5	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 065-79LX4WDMA1550 & 065-79LX4WDMB1550**



- **REGULATORY COMPLIANCE, MODELS 065-79LX4WDMA1550 & 065-79LX4WDMB1550**

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.