

1x Fiber Channel – 1.0625GBaud 850nm Media Interface Adapter (MIA)



Product Overview

The Emerson Network Power Connectivity Solutions MDB-9-6-1-V Extender module is a high performance integrated duplex data link for bi-directional communication over multimode optical fiber in Fiber Channel applications. It is compliant with the Media Interface Adapter (MIA) specification. The MDB-9-6-1-V Fiber Optic Extender is specifically designed to connect to electrical high speed data communications links that require extended distance performance. The previous limit of 25m in copper connections can easily be extended to 550m with 50µm multimode fiber at data rate of 1.0625GBaud. This optoelectronic transceiver module is a Class 1 Laser product compliant with FDA Radiation Performance Standards, 21 CFR Subchapter J. This component is also a Class 1 Laser compliant according to the International Safety Standard IEC-825-1.

Key Features & Benefits

- 1.0625 Gbps Fiber Channel compliant
- SC Duplex Optical Interface
- DB-9 Electrical Interface
- 150Ω differential PECL level inputs/outputs
- Die Cast Metal Housing
- Class 1 Laser Safety Compliant
- UL 1950 Approved

Ordering Information

MDB - 9 - 6 - 1 - V

Module Specifications – Electrical: 0°C<T_c<+70°C; +3.15V<V_{cc}<+5.5V

Parameter	Sym	MIN	Typ	MAX	Unit	Notes
Supply Current	I _{cc}		180	200 250	mA	T _c = 25°C, V _{cc} = +5.0V 0°C<T _c <+70°C; +3.15V<V _{cc} <+5.5V
In-Rush Current	I _{surge}			4	A	50µs duration – maximum
Transmitter						
PECL Inputs (Differential)		400		1600	mV _{pp}	AC Coupled Inputs
Input Impedance (Differential)	Z _{in}	135	150	165	Ω	R _{in} > 100K Ω @ DC
ODIS Input Voltage – High	V _{iH}	2		V _{cc}	V	
ODIS Input Voltage – Low	V _{iL}	0		0.8	V	
Receiver						
PECL Outputs (Differential)		600	1200	1860	mV _{pp}	AC Coupled Outputs
Output Impedance (Differential)	Z _{out}	135	150	165	Ω	
FAULT - Output Voltage – High	V _{oH}	2.4	3.0	V _{cc}	V	I _o = 400µA
FAULT - Output Voltage – Low	V _{oL}	0	0.25	0.6	V	I _o = -4.0mA
Total Jitter [Pk – Pk]	T _j			75 130	ps	Measured with 2 ⁷ – 1 PRBS @ 2.125GBaud Measured with 2 ⁷ – 1 PRBS @ 1.0625GBaud

MDB-9-6-1-V Media Interface Adapter (MIA)

Module Specifications – Optical: 0°C<T_c<+70°C; +3.15V<V_{cc}<+5.5V

Parameter	Sym	MIN	Typ	MAX	Unit	Notes
50µm Core Diameter MMF		550	1000		m	BER<1.0E-12 @ 1.0625GBaud
62.5µm Core Diameter MMF		300	500		m	BER<1.0E-12 @ 1.0625GBaud
Transmitter						
Optical Center Wavelength	λ	830	850	860	nm	
Spectral Width	Δλ			1.0	nm	RMS
Optical Transmit Power	P _{opt}	-10		-2 ¹	dBm	Average @ 850nm
Optical Modulation Amplitude	OMA	160			µW	pk-pk
Relative Intensity Noise	RIN			-117	dB/Hz	
Total Jitter [Pk – Pk]				170	ps	Measured with 2 ⁷ – 1 PRBS
Output Rise/Fall Time				320	ps	20%-80%; Measured unfiltered
Receiver						
Optical Input Wavelength	λ	770		860	nm	
Optical Input Power		-17		0		BER<1.0E-12 @ 1.0625GBaud
Optical Modulation Amplitude		31				pk-pk
Optical Return Loss	ORL	12			dB	
Link Fault- – Asserted				-17		Measured on transition – High to Low
Link Fault- – Deasserted	P _d	-29			dBm	Measured on transition – Low to High
Link Fault- – Hysteresis	Pa-P _d		1.5	5	dB	

1. Lessor of Class 1 Laser Safety Limits (CDRH and EN 60825) or receiver power, max.

For more information on this product consult the MDB-9-6-1-V product data sheet.

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