

ADD-GMC-SX-LC

10/100/1000Base-TX(RJ-45) to 1000Base-SX(LC) MMF 850nm 550m Mini Media Converter

Features

- Conversion between auto-adaptation 10Base-T, 100Base-TX or 1000Base-T and 1000Base-SX/LX, full duplex 1000M working pattern.
- With distinct HIC solution, low-temperature-rise chip, no need of cooling system, realization of flow control, decrease of broadcast storm.
- With famous brand optical-electronic-integration module providing excellent optical and electrical properties to ensure reliable data transmission and long working life.
- Supporting broadcast filtering, address auto-learning and auto-updating, and store-and-forward operating mechanism.
- Supporting full-duplex flow control or half-duplex back pressure working pattern, along with Auto-negotiation.
- Providing indicator lamps for link-loss, electrical and optical link diagnosing, dynamic data transmission and full/half duplex, data rate.
- With more than 50,000 hours MTBF, complying with telecom operating standard.
- Supporting choosing optical ports from dual fiber(MM), dual fiber(SM), single fiber(SM).



Product Description

This is a media converter that converts a 10/100/1000Base-TX(RJ-45) to 1000Base-SX(LC) via a 850nm multi-mode fiber (MMF) LC connector, which allows distance reach up to 550m. This provides a cost effective conversion from 10/100/1000Base-TX(RJ-45) to 1000Base-SX fiber, while extending the network reach beyond the 100m reach limitation of copper. Our media converters are 100% compliant for all of our networking needs. Now you have a cost effective solution to your network upgrade needs.

Media Converter Specifications

Parameter	Specifications
Access Method	10/100/1000Mbps
Standard	IEEE802.3, IEEE802.3u, IEEE802.3ab, IEEE802.3z, IEEE802.1q, IEEE802.1p, IEEE802.1d
Wavelength	850m/1310nm/1550nm
Distance	Dual-Fiber MM: 550m Dual-Fiber SM: 10/20/30/50/80km Single-Fiber SM: 20/40/60km Cat5: 100m
Conversion Method	Media Conversion
Time Delay	<10us
BER	<1/1000000000
LED Indicator Lamps	1000M, 100M, FX LINK/ACT, TP LINK/ACT, FDX, Power
Power Supply	DC5V 1A (External Power)
Power Dissipation	3W
Operating Temperature	0°C to 50°C
Storage Temperature	-10°C to 70°C
Humidity	10-90% (Non-Condensing)
Dimensions	94mm x 71mm x 26mm

Transceiver Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V _{cc}	-0.5		4.0	V
Storage Temperature	T _{stg}	-40		85	°C
Operating Case Temperature	T _c	0		70	°C
Operating Humidity	RH	5		95	%
Data Rate (Gigabit Ethernet)			1.25		Gbps
Data Rate (Fibre Channel)			1.063		Gbps
50/125µm MMF	L			550	m

Electrical Characteristics (T_c=25°C, V_{cc}=3.3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V _{cc}	3.13	3.30	3.47	V	
Power Supply Current	I _{cc}			250	mA	
Transmitter						
Input Differential Impedance	R _{IN}		100		Ω	1
Single-Ended Data Input Swing	V _{IN,pp}	250		1200	mV	
Tx_Disable - High		V _{cc} -1.3		V _{cc}	V	
Tx_Disable - Low		V _{ee}		V _{ee} +0.8	V	
Tx_Fault - High		V _{cc} -0.5		V _{cc}	V	
Tx_Fault - Low		V _{ee}		V _{ee} +0.5	V	
Receiver						
Single-Ended Data Output Swing	V _{OUT,pp}	300	400	800	mV	2
Data Output Rise Time	T _r			175	ps	3
Data Output Fall Time	T _f			175	ps	3
LOS - High		V _{cc} -0.5		V _{cc}	V	
LOS - Low		V _{ee}		V _{ee} +0.5	V	

Notes:

1. AC coupled.
2. Into 100Ω differential termination.
3. 20-80%.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Average Output Power	PO	-9		-4	dBm	1
Optical Wavelength	λ	830	850	860	nm	
Spectral Width	σ			0.85	nm	
Optical Rise/Fall Time	Tr/Tf			260	ps	2
Total Jitter	TJ			200	ps	
Optical Extinction Ratio	ER	9			dB	
Receiver						
Receiver Sensitivity	RSENS			-18	dBm	3,4
Maximum Received Power	RX _{MAX}	0			dBm	
Center Wavelength	λ_C	770		860	nm	
LOS De-Assert	LOSD			-26	dBm	
LOS Assert	LOSA	-40			dBm	
LOS Hysteresis		0.5		5	dB	

Notes:

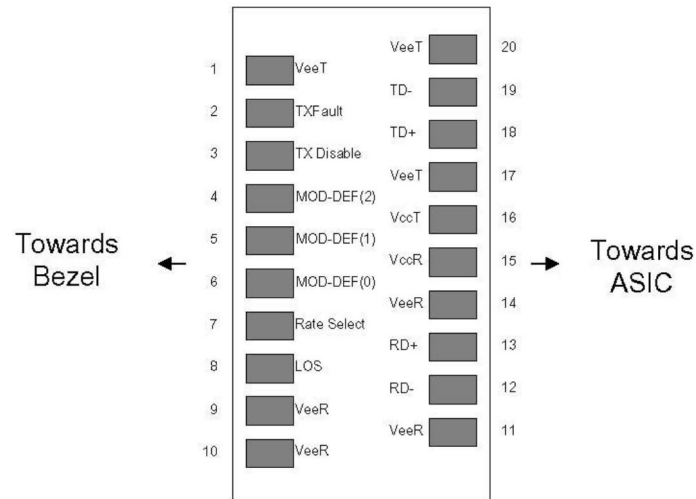
1. Class 1 Laser Safety.
2. Unfiltered, 20-80%. Complies with GE and 1x FC eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 2⁷-1 at 10⁻¹⁰ BER.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on "high" or "open."	2
4	MOD_DEF (2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF (1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF (0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

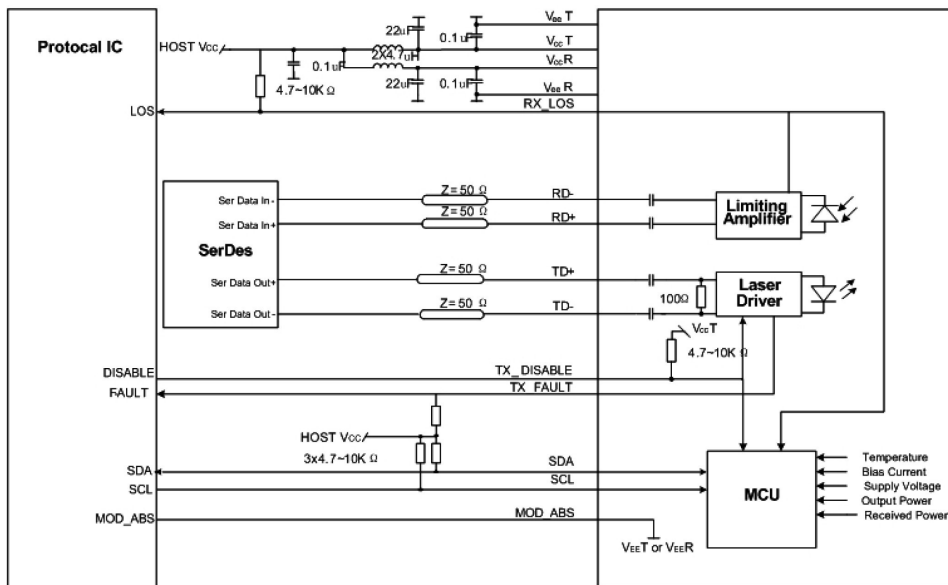
Notes:

1. The circuit ground is internally isolated from the chassis ground.
2. Laser output disabled on Tx_Disable>2.0V or open, enabled on Tx_Disable<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2.0V and 3.6V. MOD_DEF (1) pulls the line low to indicate that the module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2.0V and 3.6V. "Logic 0" indicates normal operation, and "logic 1" indicates loss of signal.



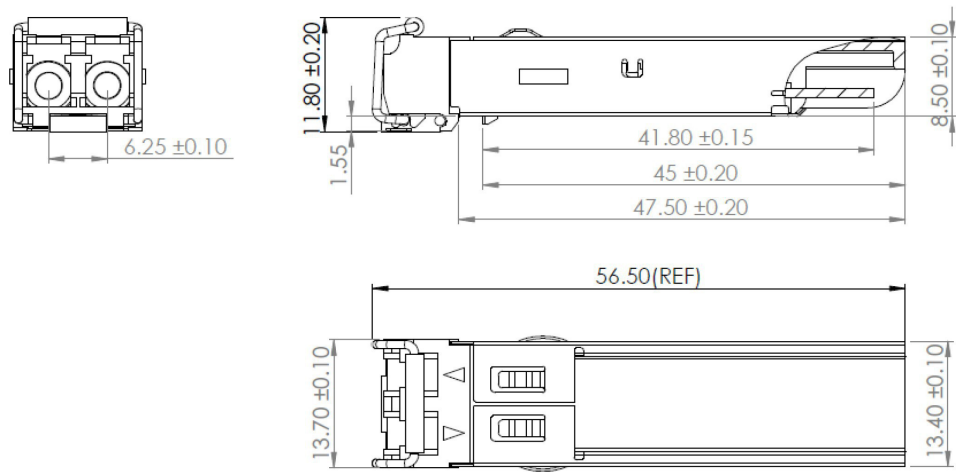
Pin-Out of Connector Block on the Host Board

Recommend Circuit Schematic



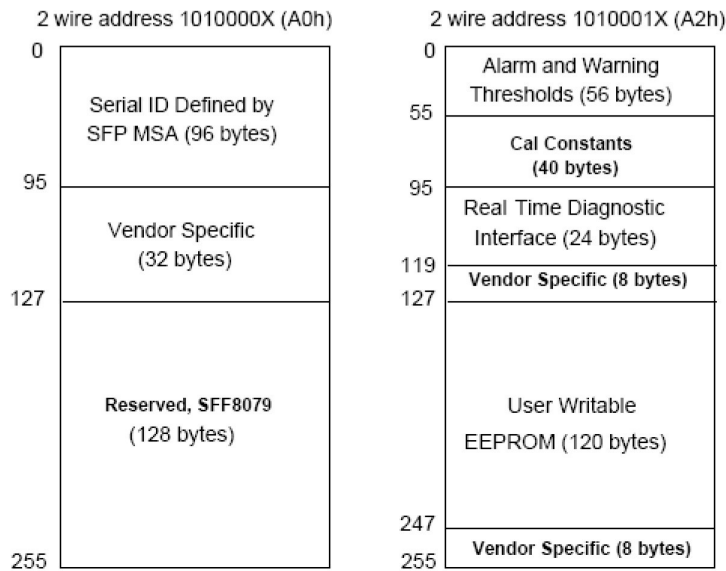
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map-specific data field description is as below:



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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