ADD-FMC-FX-LC

10/100Base-TX(RJ-45) to 100Base-FX(LC) MMF 1310nm 2km Media Converter

Features

- 10 Mbps or 100 Mbps on TP port
- 10/100Mbps auto-sensed, facilitating network upgrade
- Built-in efficient switching core to implement flow control and reduce broadcast packets
- Auto-MDI/MDIX
- Supporting half /full-duplex of FX.
- DIP switch to set different configurations (LFP)
- Supporting 10/100Mbps store-and-forward and 100Mbps cut-through transmission.
- Supporting the transmission of 100Base-FX, compatible with other devices
- Supporting the transmission of extra-long packets up to1600 bytes
- Extremely low power consumption (less than 3W), reliable and stable performance
- Auto-Negotiation
- Automatic Link Restoration Extend network distance up to 120km
- Bridging devices will provide conversion and integration solutions for half and full-duplex environments

Product Description

This is a media converter that converts a 10/100Base-TX(RJ-45) to 100Base-FX(LC) via a 1310nm multi-mode fiber (MMF) LC connector, which allows distance reach up to 2km. This provides a cost effective conversion from 10/100Base-TX(RJ-45) to 100Base-FX 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	10/100Mbps
Standard	IEEE802.3, IEEE802.3u, IEEE802.3x, 100Base-FX
Wavelength	850m/1310nm/1550nm
Distance	Multi-Mode Fiber MM: 2km Single-Mode Fiber SM: 20/40/60/80/100/120km Cat5: 100m
Port Type	1 x RJ-45 to 1 x LC/SC/FC/ST
Conversion Means	Store-and-Forward Mode or Cut-Through Mode
Flow Control	Full Duplex: Flow Control Half Duplex: Back Pressure
Input Voltage	DC 5V
Power Consumption	<3W
Operating Temperature	0˚C to 50˚C
Storage Temperature	-40˚C to 70˚C
Relative Humidity	5-90%
Maintaining Humidity	5-90% (Non-Condensing)
Dimensions	71mm x 94mm x 26mm (W x D x H)

Transceiver Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		3.6	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Operating Humidity	RH			95	%
Receiver Power	R_{MAX}			-12	dBm
Data Rate			100/155		Mbps
50µm Core Diameter MMF	L		2		km

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		Vcc	3.15	3.30	3.45	V	
Power Supply Current		Icc			300	mA	
Transmitter							
LVPECL Differential Inputs		VIN	400		2000	mVp-p	1
Input Differential Impedance		ZIN	85	100	120	Ω	2
Tx_Disable	**Disable**		2		Vcc	V	
	Enable		0		0.8	V	
Tx_Fault	**Fault**		2		Vcc+0.3	V	
	Normal		0		0.5	V	
Receiver							
LVPECL Differential Outputs		VOUT	400		2000	mVp-p	1
Output Differential Impedance		ZIN	85	100	120	Ω	
Tx_Disable Assert Time		T_off			10	us	
Rx_LOS	**LOS**		2		Vcc+0.3	V	
	Normal		0		0.8	V	
MOD_DEF (0.2)		VOH	2.5			V	3
		VOL	0		0.8	V	3

Notes:

1. AC Coupled.
2. RIN>100kΩ @DC.
3. With Serial ID.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Average Output Power	POUT	-19		-14	dBm	1
Optical Extinction Ratio	ER	10			dB	2
Optical Wavelength	Tλ	1260	1310	1360	nm	
Spectral Width (RMS)	Δλ			4	nm	
Total Jitter	TJ			1	ns	2
Tx_Disable Asserted Time	T_off			10	us	
POUT @Tx_Disable Asserted	POUT			-45	dBm	
Rise/Fall Time (20-80%)	Tr/Tf			2	ns	
Output Optical Eye		IUT-T G.957 Compliant				
Receiver						
Receiver Sensitivity	P_{min}			-31	dBm	3
Receiver Overload	P_{max}	-12			dBm	
Optical Center Wavelength	λC	1260		1600	nm	

Notes:

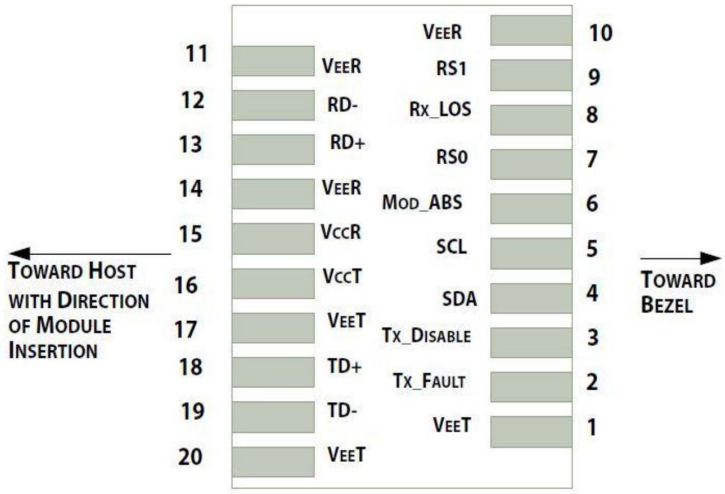
1. Output power is measured by coupling into a 50/125µm multi-mode fiber.
2. Filtered. Measured with a PRBS 2^{23}-1 test pattern @155Mbps.
3. Minimum average optical power is measured at BER less than $1E^{-12}$ with 2^{23}-1 PRBS and ER=9dB.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault. LVTTL-O.	2
3	Tx_Disable	Transmitter Disable. Laser output disabled on "high" or "open." LVTT-I.	3
4	SDA	2-Wire Serial Interface Data (Same as MOD-DEF2 in INF-8074i). LVTTL-I/O.	
5	SCL	2-Wire Serial Interface Clock (Same as MOD-DEF2 in INF-8074i). LVTTL-I.	
6	MOD_ABS	Module Absent. Connect to the VeeT or VeeR in the module.	4
7	RS0	Rate Select 0. Not Used.	5
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation. LVTTL-O.	2
9	RS1	Rate Select 1. Not Used.	5
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. CML-O.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled. CML-O.	
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. CML-I.	
19	TD-	Transmitter Inverted Data In. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

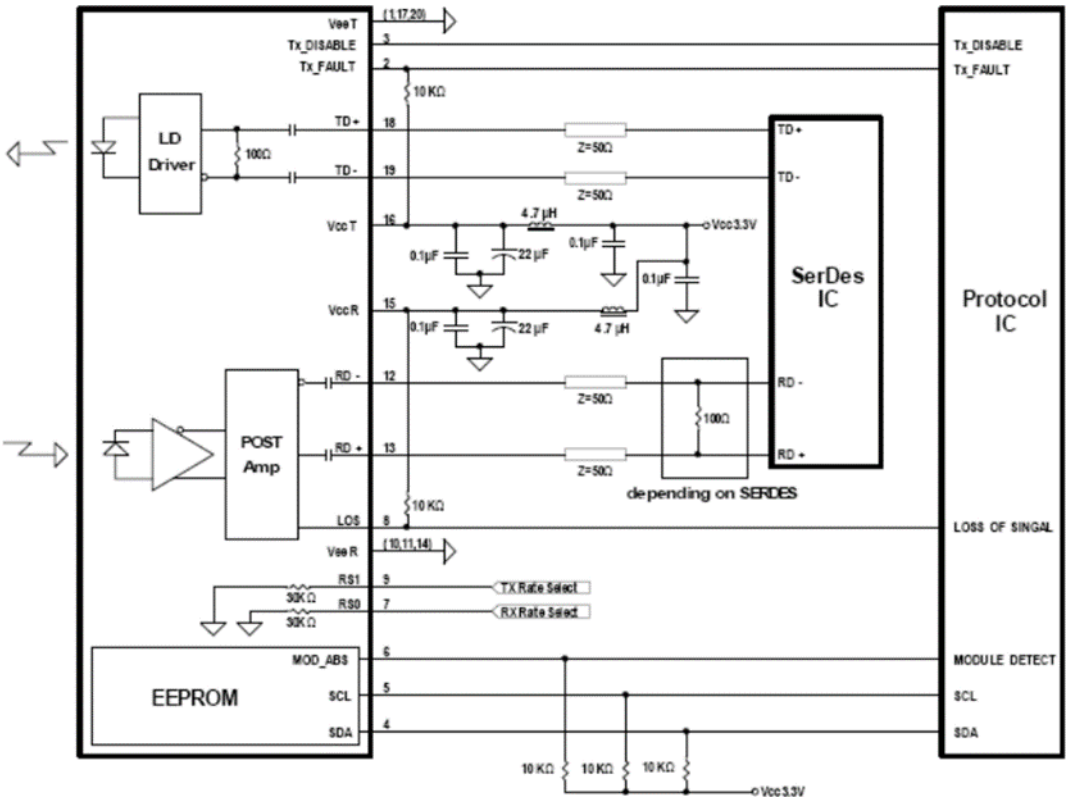
Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Host_Vcc with a resistor in the range 4.7kΩ to 10kΩ. Pull-ups can be connected to one or several power supplies; however, the host board design shall ensure that no module contact has a voltage exceeding the module VccT/R+0.5V.
3. Tx_Disable is an input contact with a 4.7kΩ to 10kΩ pull-up resistor to the VccT inside the module.
4. MOD_ABS is connected to the VeeT or VeeR in the SFP+ module. The host may pull the contact up to the Host_Vcc with a resistor in the range from 4.7kΩ to 10kΩ. MOD_ABS is asserted “high” when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431.



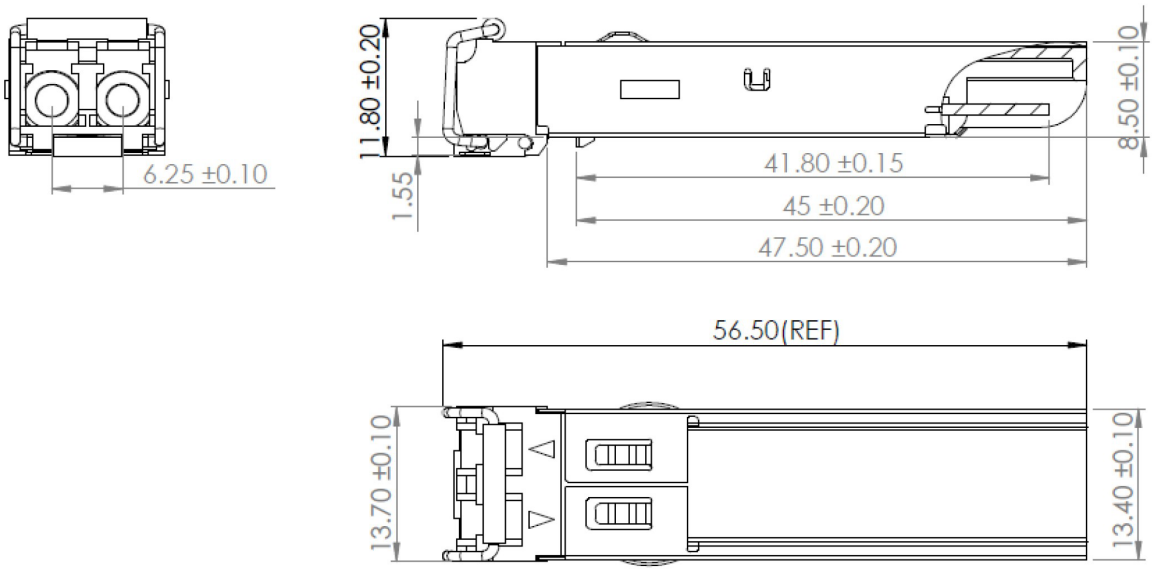
Pin-Out of Connector Block on the Host Board

Recommended Circuit Schematic



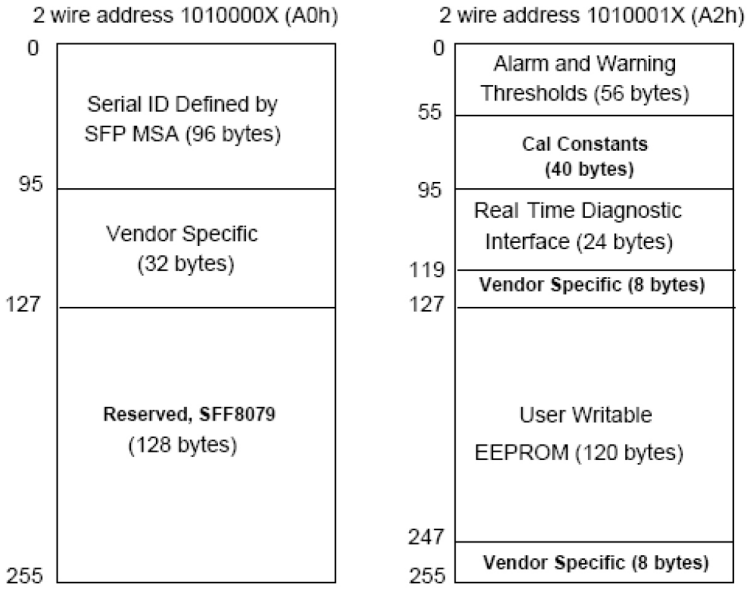
Mechanical Specifications

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 in engrained 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.

U.S. Headquarters

Email: sales@addonnetworks.com

Telephone: +1 877.292.1701

Fax: 949.266.9273

Europe Headquarters

Email: salessupportemea@addonnetworks.com

Telephone: +44 1285 842070