AA1419001-OPC

Avaya/Nortel® AA1419001 Compatible TAA 1000Base-SX GBIC Transceiver (MMF, 850nm, 550m, SC)

Features

- SFF-8053 Compliance
- Duplex SC Connector
- Multi-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free

Applications:

- 1000Base-SX Ethernet
- 1x Fibre Channel
- Access and Enterprise

Product Description

This Avaya/Nortel® AA1419001 compatible GBIC transceiver provides 1000Base-SX throughput up to 550m over multi-mode fiber (MMF) using a wavelength of 850nm via an SC connector. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Avaya/Nortel®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	TS	-40	85	°C
Operating Humidity	RH	5	95	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	Vcc	3.13	3.30	3.47	V
Power Supply Current	Icc			250	mA
Case Operating Temperature – Commercial	Tc	0		70	°C
Case Operating Temperature – Industrial	Ti	-40		85	°C
Data Rate (Gigabit Ethernet)			1.25		Gbps
Data Rate (Fibre Channel)			1.063		Gbps
50/125µm MMF	L			550	m

Electrical Characteristics (TOP=25°C, Vcc=3.3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Input differential impedance	Rin	85	100	115	Ω	1
Single ended data input swing	Vin, pp	250		1200	mV	
TX Disable-High		2		3.45	V	
TX Disable-Low		0		0.8	V	
TX Fault-High		2		Vcc+0.3	V	
TX Fault-Low		0		0.5	V	
Receiver						
Single ended data output swing	Vout, pp	300	400	800	mV	2
Data output rise time	tr			175	ps	3
Data output fall time	tf			175	ps	3
LOS-High		2		Vcc+0.3	V	
LOS-Low		0		0.8	V	

Notes:

1. AC coupled.

2. Into 100 ohm differential termination.
3. 20% - 80%

Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Average Output Power	PO	-9.5		-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			56.5	ps	
Optical Extinction Ratio	ER	9			dB	
Receiver						
Receiver Sensitivity	RSENS			-18	dBm	3,4
Maximum Received Power	RX_{MAX}	0			dBm	
Centre Wavelength	λC	770		860	nm	
LOS De-Assert	LOSD			-19	dBm	
LOS Assert	LOSA	-35			dBm	
LOS Hysteresis		0.5		5	dB	

Notes:

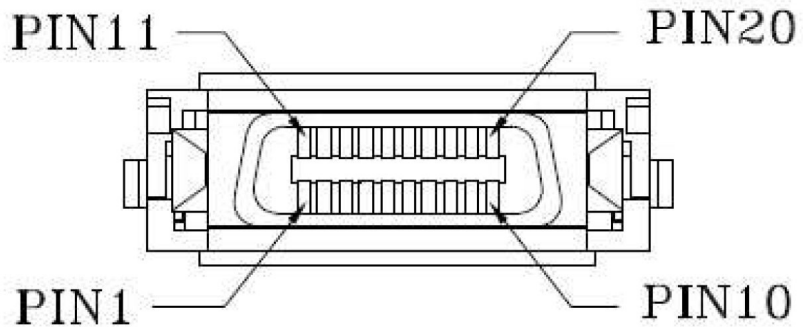
1. Class 1 Laser Safety.
2. Unfiltered, 20%-80%. Complies with GE and 1x FC eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 2^7-1 at 10^{-10} BER.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	RX_LOS	Receiver Loss of Signal, logic high, open collector compatible, 4.7K to 10K Ohm pullup to VDDT on host	2
2	RGND	Receiver Ground (may be connected with TGND in GBIC)	2
3	RGND	Receiver Ground (may be connected with TGND in GBIC)	2
4	MOD DEF (0)	GBIC module definition and presence, bit 0, 4.7K to 10K Ohm pullup to VDDT on host	2
5	MOD_DEF (1)	GBIC module definition and presence, bit 1, 4.7K to 10K Ohm pullup to VDDT on host	2
6	MOD_DEF (2)	GBIC module definition and presence, bit 2, 4.7K to 10K Ohm pullup to VDDT on host	2
7	TX_DISABLE	Transmitter Disable, logic high, open collector compatible, 4.7K to 10K Ohm pullup to VDDT on GBIC	2
8	TGND	Transmitter Ground (maybe connected with RGND internally)	2
9	TGND	Transmitter Ground (maybe connected with RGND internally)	2
10	TX_FAULT	Transmitter Fault, logic high, open collector compatible, 4.7K to 10K Ohm pullup to VDDT on host	2
11	RGND	Receiver Ground (may be connected with TGND in GBIC)	1
12	-RX_DAT	Receive Data, Differential PECL	1
13	+RX_DAT	Receive Data, Differential PECL	1
14	RGND	Receiver Ground (may be connected with TGND in GBIC)	1
15	VDDR	Receiver +5 volt (maybe connected with VDDT in GBIC)	2
16	VDDT	Transmitter +5 volt (maybe connected with VDDR in GBIC)	2
17	TGND	Transmitter Ground (maybe connected with RGND internally)	1
18	+TX_DAT	Transmit Data, Differential PECL	1
19	-TX_DAT	Transmit Data, Differential PECL	1
20	TGND	Transmitter Ground (maybe connected with RGND internally)	1

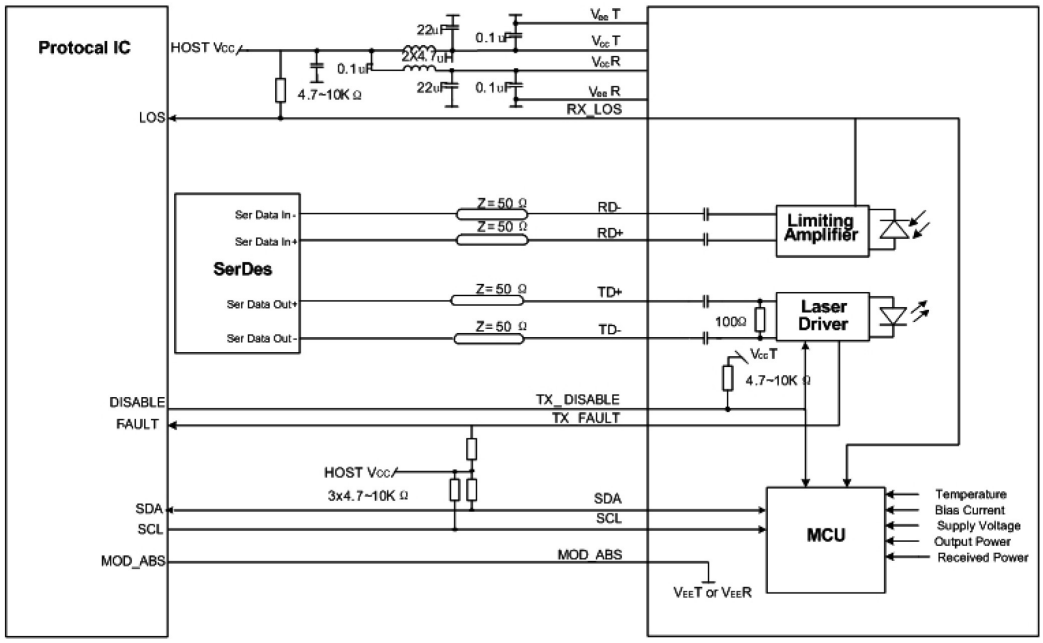
Notes:

1. TX Fault is open collector/drain output, which should be pulled up externally with a 4.7K – 10KΩ resistor on the host board to supply <VccT+0.3V or VccR+0.3V. When high, this output indicates a laser fault of some kind. Low indicates normal operation. In the low state, the output will be pulled to <0.8V.
2. TX Disable input is used to shut down the laser output per the state table below. It is pulled up within the module with a 4.7-10K resistor. Low (0V-0.8V): Transmitter on between (0.8V and 2V): Undefined High (2.0-VccT): Transmitter Disabled Open: Transmitter Disabled.

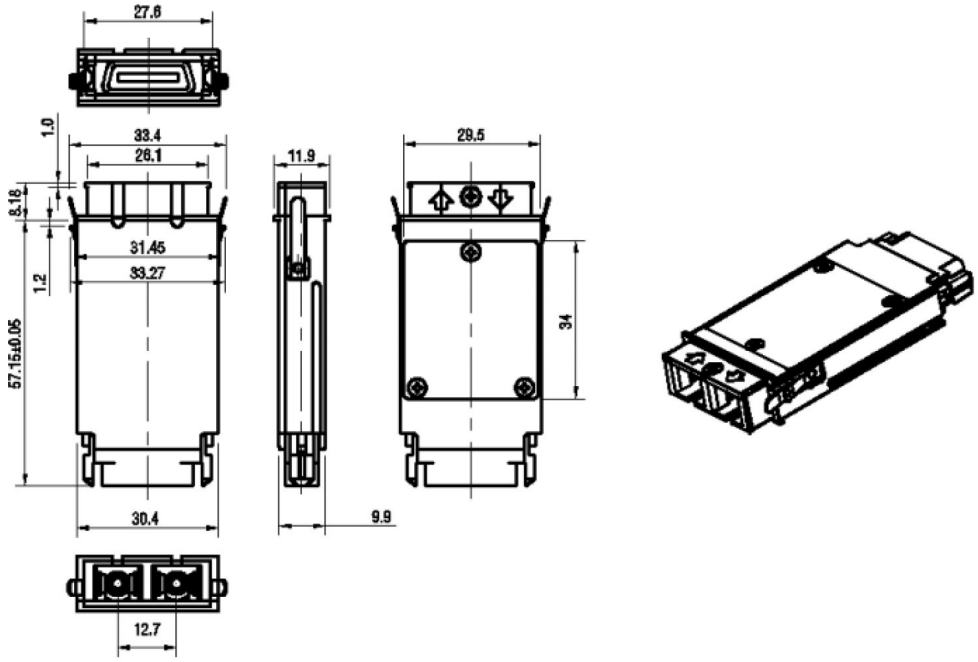


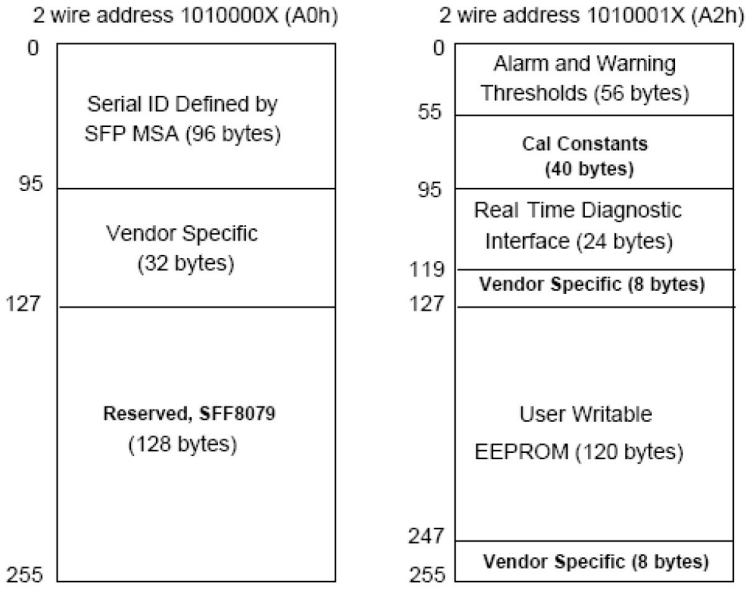
Pin-out of connector Block on Host board

Recommended Circuit Schematic



Mechanical Specifications



EEPROM Information

EEPROM memory map specific data field description is as below: