**SFP-TX**

MSA Compliant 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45)

**Features:**

- INF-8074 Compliance
- RJ-45 Connector
- Commercial Temperature 0 to 70 Celsius
- Copper Media Type
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



**Applications:**

- 1000Base Ethernet
- Access and Enterprise

**Product Description**

This MSA compliant SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. It is built to meet or exceed the specifications of MSA Compliant, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

**Absolute Maximum Ratings**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Supply Current** | Is | | 320 | 375 | mA | 1 |
| **Input Voltage** | Vcc | 3.13 | 3.3 | 3.47 | V | 2 |
| **Maximum Voltage** | Vmax | | | 4 | V | |
| **Surge Current** | Isurge | | | 30 | mA | 3 |

**Notes:**

1. 1.2W max power over full range of voltage and temperature. Power consumption and surge current are higher than the specified values in SFP MSA.
2. Referenced to GND
3. Hot plug above steady state current. Power consumption and surge current are higher than the specified values in SFP MSA.

**Recommended Operating Conditions**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Data Rate** | BR | 10 | | 1000 | Mb/sec | 3-5 |
| **Distance Supported** | L | | | 100 | m | 1 |
| **Operating Temperature** | Top | 0 | | 70 | °C | |
| **Storage Temperature** | Tsto | -40 | | 85 | °C | |

**Notes:**

1. Category 5 UTP. BER <10-12
2. Clock tolerance is +/- 50 ppm
3. By default, the GE-GB-P is a full duplex device in preferred master mode
4. Automatic crossover detection is enabled. External crossover cable is not required
5. 1000Base-T operation requires the host system to have an SGMII interface with no clocks, and the module PHY to be configured per Application Note AN-2036. With a SERDES that does not support SGMII, the module will operate at 1000Base-T only.

**Low-Speed Signals**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **SFP Output LOW** | VOL | 0 | | 0.5 | V | 1 |
| **SFP Output High** | VOH | Host_Vcc-0.5 | | Host_Vcc+0.3 | V | 1 |
| **SFP Input LOW** | VIL | 0 | | 0.8 | V | 2 |
| **SFP Input HIGH** | VIH | 2 | | Vcc+0.3 | V | 2 |

**Notes:**

1. 4.7k to 10k pull-up to Host_Vcc, measured at host side of connector
2. 4.7k to 10k pull-up to Vcc, measured at SFP side of connector

**High-Speed Signals**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Transmission Line-SFP** | | | | | | |
| **Line Frequency** | fL | | 125 | | MHz | 1 |
| **TX Output impedance** | Zout, TX | | 100 | | Ohm | 2 |
| **Rx Input Impedance** | Zin, RX | | 100 | | Ohm | 2 |
| **Host-SFP** | | | | | | |
| **Single ended data input swing** | Vinsing | 250 | | 1200 | mV | 3 |
| **Single ended data output swing** | Voutsing | 350 | | 800 | mV | 3 |
| **Rise/Fall Time** | Tr,Tf | | 175 | | Psec | 4 |
| **Tx Input Impedance** | Zin | | 50 | | Ohm | 3 |
| **Rx Output Impedance** | Zout | | 50 | | Ohm | 3 |

**Notes:**

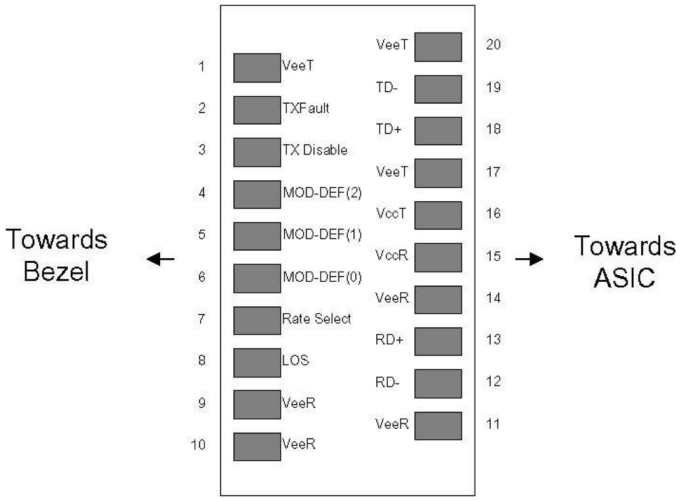
1. 5-level encoding, per IEEE 802.3
2. Differential, for all Frequencies between 1MHz and 125MHz
3. Single ended
4. 20%-80%

**Pin Descriptions**

| Pin | Symbol | Name/Descriptions | Ref. |
|---|---|---|---|
| **1** | VeeT | Transmitter Ground (Common with Receiver Ground). | 1 |
| **2** | TX Fault | Transmitter Fault. Not Supported | |
| **3** | TDIS | Transmitter Disabled. PHY 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. | 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 |

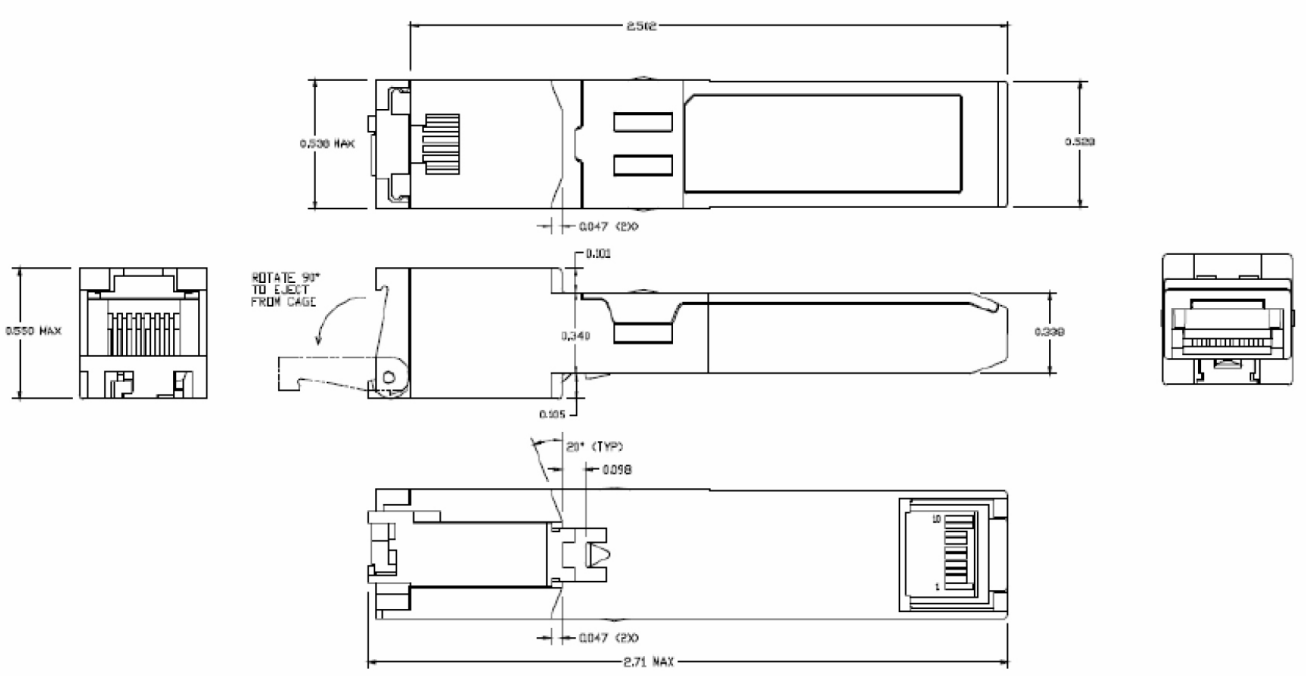
**Notes:**

1. Circuit ground is connected to chassis ground
2. PHY disabled on TDIS > 2.0V or open, enabled on TDIS <0.8V
3. Should be pulled up with 4.7k-10k Ohms on host board to a voltage between 2.0V and 3.6V.MOD_DEF (0) pulls line low to indicate module is plugged in.
4. LVTTL compatible with a maximum voltage of 2.5V. Not supported on GE-GB-P




Pin-out of connector Block on Host board

**Mechanical Specifications**



**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 ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.




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