

## **ABCU-5740RZ-OPC**

Avago® Compatible TAA 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45)

### **Features**

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



### **Applications:**

- 1000Base Ethernet

### **Product Description**

This Avago® compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. It can operate at temperatures between 0 and 70C. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Avago®. 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. | Typ. | Max. | Unit | Notes |
|-------------------|--------------------|------|------|------|------|-------|
| Supply Current    | I <sub>cc</sub>    |      | 320  | 375  | mA   | 1     |
| Input Voltage     | V <sub>cc</sub>    | 3.13 | 3.3  | 3.47 | V    | 2     |
| Maximum Voltage   | V <sub>max</sub>   |      |      | 4    | V    |       |
| Surge Current     | I <sub>surge</sub> |      |      | 30   | mA   | 3     |
| Power Consumption |                    |      |      | 1.5  | W    |       |

#### Notes:

1. 1.2W maximum power over the full range of voltage and temperature. Power consumption and surge current are higher than the specified values in the 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 the SFP MSA.

### Recommended Operating Conditions

| Parameter             | Symbol           | Min. | Typ. | Max. | Unit | Notes   |
|-----------------------|------------------|------|------|------|------|---------|
| Data Rate             | DR               | 10   |      | 1000 | Mbps | 3, 4, 5 |
| Distance Supported    | L                |      |      | 100  | m    | 1       |
| Operating Temperature | T <sub>c</sub>   | 0    |      | 85   | °C   |         |
| Storage Temperature   | T <sub>stg</sub> | -40  |      | 85   | °C   |         |

#### Notes:

1. Category 5 UTP. BER<10<sup>-12</sup>.
2. Clock tolerance is +/- 50ppm.
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 $\Omega$  to 10k $\Omega$  pull-up to the Host\_Vcc, measured at the host side of the connector.
2. 4.7k $\Omega$  to 10k $\Omega$  pull-up to the Vcc, measured at the SFP side of the connector.

## High-Speed Signals

| Parameter                      | Symbol    | Min. | Typ. | Max. | Unit     | Notes |
|--------------------------------|-----------|------|------|------|----------|-------|
| Transmission Line - SFP        |           |      |      |      |          |       |
| Line Frequency                 | LF        |      | 125  |      | MHz      | 1     |
| Tx Output impedance            | ZOUT, TX  |      | 100  |      | $\Omega$ | 2     |
| Rx Input Impedance             | ZIN, RX   |      | 100  |      | $\Omega$ | 2     |
| Host - SFP                     |           |      |      |      |          |       |
| Single-Ended Data Input Swing  | VIN,sing  | 250  |      | 1200 | mV       | 3     |
| Single-Ended Data Output Swing | VOUT,sing | 350  |      | 800  | mV       | 3     |
| Rise/Fall Time                 | Tr/Tf     |      | 175  |      | Psec     | 4     |
| Tx Input Impedance             | ZIN       |      | 50   |      | $\Omega$ | 3     |
| Rx Output Impedance            | ZOUT      |      | 50   |      | $\Omega$ | 3     |

### Notes:

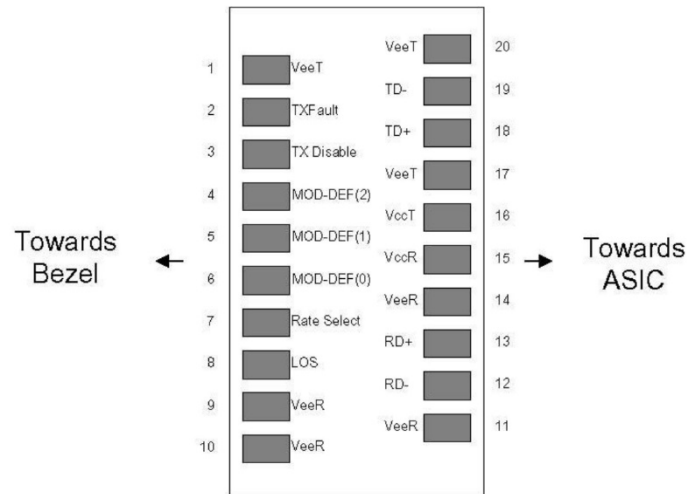
1. 5-level encoding, per IEEE 802.3.
2. Differential, for all frequencies between 1MHz and 125MHz.
3. Single-ended.
4. 20-80%.

## Pin Descriptions

| Pin | Symbol      | Name/Description  | Notes |
|-----|-------------|---|-------|
| 1   | VeeT        | Transmitter Ground (Common with Receiver Ground).       | 1     |
| 2   | Tx_Fault    | Transmitter Fault. Not Supported.                       |       |
| 3   | Tx_Disable  | 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. The circuit ground is connected to the chassis ground.
2. PHY is disabled on TDIS>2.0V or open, enabled on TDIS<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(0) pulls the line “low” to indicate that the module is plugged in.
4. LVTTTL is compatible with a maximum voltage of 2.5V. Not supported on GE-GB-P.



Pin-Out of Connector Block on the Host board

## Mechanical Specifications

