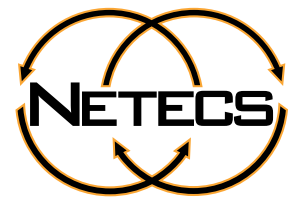


GLC-T-NT

Cisco 1000Base-TX SFP Module
Copper Interface RJ45, 100m, RoHS6



GLC-T-NT 1.25Gbps SFP Transceiver

Features

- Support 1000BASE-T operation in host systems with SGMII interface
- Up to 1.25Gbps bi-direction data links
- Fully metallic enclosure for low EMI
- Low power dissipation (1.05 W typical)
- Compact RJ-45 connector assembly
- Hot-pluggable SFP footprint
- 100m transmission over unshielded twisted pair(UTP) Category 5 Cable
- Access to physical layer IC via 2-wire serial bus

Product Description

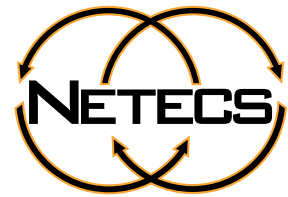
The GLC-T-NT 1000BASE-T Copper Small Form Pluggable (SFP) is based on the SFP Multi Source Agreement (MSA). It is compatible with the Gigabit Ethernet and 1000BASE-T standards as specified in IEEE Std 802.3.

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Max. | Unit |
|------------------------|--------|------|------|------|
| Maximum Supply Voltage | Vcc | -0.5 | 4.0 | V |
| Storage Temperature | Ts | -40 | +85 | °C |

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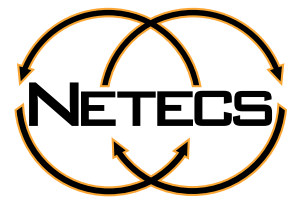
Normal Operating Conditions

| Parameter | Symbol | Min. | Typical | Max. | Unit |
|-----------------------|--------|------|---------|------|------|
| Operating Temperature | TA | 0 | | +70 | °C |
| Supply Voltage | VCC | 3.14 | 3.3 | 3.46 | V |

| Parameter | Symbol | Min | Typ | Max | Units | Notes/Conditions |
|---|--------------------------------|---------------------------|-----|---------------------------|-------|--|
| +3.3 Volt Electrical Power Interface | | | | | | |
| Supply Current | I _{cc} | | 300 | 350 | mA | |
| Input Voltage | V _{cc} | 3.13 | 3.3 | 3.47 | V | |
| Surge Current | I _{surge} | | | 30 | mA | |
| Low-Speed Signals, Electronic Characteristics | | | | | | |
| SFP Output LOW | V _{OL} | 0 | | 0.5 | V | 4.7k to 10k pull-up to host_V _{cc} , measured at host side of connector |
| SFP Output HIGH | V _{OH} | host_V _{cc} -0.5 | | host_V _{cc} +0.3 | V | 4.7k to 10k pull-up to host_V _{cc} , measured at host side of connector |
| SFP Input LOW | V _{IL} | 0 | | 0.8 | V | 4.7k to 10k pull-up to V _{cc} , measured at SFP side of connector |
| SFP Input HIGH | V _{IH} | 2 | | V _{cc} +0.3 | V | 4.7k to 10k pull-up to V _{cc} , measured at SFP side of connector |
| High-Speed Electrical Interface, Transmission Line-SFP | | | | | | |
| Line Frequency | f _L | | 125 | | MHz | 5-level encoding, per IEEE 802.3 |
| Tx Output impedance | Z _{out,TX} | | 100 | | Ohm | Differential, for all frequencies between 1MHz and 125MHz |
| Rx Input Impedance | Z _{in,RX} | | 100 | | Ohm | Differential, for all frequencies between 1MHz and 125MHz |
| High-Speed Electrical Interface, Host-SFP | | | | | | |
| Single ended data input swing | V _{in} | 250 | | 1200 | mV | Single ended |
| Single ended data output swing | V _{out} | 350 | | 800 | mV | Single ended |
| Rise/Fall Time | T _r ,T _f | | 175 | | psec | 20%-80% |

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| | | | | | | |
|---------------------|------|--|----|--|-----|--------------|
| Tx Input Impedance | Zin | | 50 | | Ohm | Single ended |
| Rx Output Impedance | Zout | | 50 | | Ohm | Single ended |

General specification

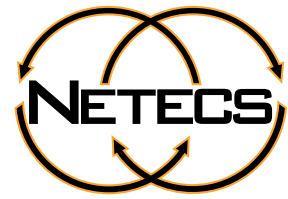
| Parameter | Symbol | Min | Typ | Max | Units | Notes/Conditions |
|-----------|--------|-----|------|-----|-------|----------------------------|
| Data rate | | | 1000 | | Mbps | |
| Distance | | | | 100 | m | Category 5 UTP. BER <10-12 |

Pin Descriptions

| Pin Num. | Name | FUNCTION | Plug Seq. | Notes |
|----------|-------------|------------------------------|-----------|----------|
| 1 | VeeT | Transmitter Ground | 1 | |
| 2 | TX Fault | Transmitter Fault Indication | 3 | Not used |
| 3 | TX Disable | Transmitter Disable | 3 | 1 |
| 4 | MOD-DEF2 | Module Definition 2 | 3 | 2 |
| 5 | MOD-DEF1 | Module Definition 1 | 3 | 2 |
| 6 | MOD-DEF0 | Module Definition 0 | 3 | 2 |
| 7 | Rate Select | Not Connected | 3 | |
| 8 | LOS | Loss of Signal | 3 | Not used |
| 9 | VeeR | Receiver Ground | 1 | |
| 10 | VeeR | Receiver Ground | 1 | |
| 11 | VeeR | Receiver Ground | 1 | |
| 12 | RD- | Inv. Received DataOut | 3 | |
| 13 | RD+ | Received Data Out | 3 | |
| 14 | VeeR | Receiver Ground | 1 | |
| 15 | VccR | Receiver Power | 2 | |
| 16 | VccT | Transmitter Power | 2 | |
| 17 | VeeT | Transmitter Ground | 1 | |
| 18 | TD+ | Transmit Data In | 3 | |
| 19 | TD- | Inv. Transmit Data In | 3 | |
| 20 | VeeT | Transmitter Ground | 1 | |

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NOTES:

1. PHY disabled on TDIS > 2.0V or open, enabled on TDIS < 0.8V, used to reset the module
2. Should be pulled up with 4.7k – 10k Ohms on host board to a voltage between 2.0V and 3.6 V. MOD_DEF(0) pulls line low to indicate module is plugged in.

Serial Communication Protocol

This Copper SFP supports the 2-wire serial communication protocol outlined in the SFP MSA. These SFP use a 128 byte EEPROM with an address of A0h. The 1000BASE-T physical layer IC can also be accessed via the 2-wire serial bus at address ACh.

Mechanical Specifications

