

AT-2914SX/LC-001-AO

Allied Telesis® AT-2914SX/LC-001 Comparable 1Gbs Single Open SFP Port 550m MMF PCIe 2.0 x4 Network Interface Card w/1000Base-SX SFP Transceiver

Network Interface Card Features

- 1x Open SFP Port
- Intel 82576
- LEDS indicators for link/Activity Mode
- Supports 1000Base-LX, SX
- Deep packet buffer per channel lowers CPU utilization
- Controllers offload TCP/UDP/IP checksum calculations
- Small Form Factor Pluggable (SFP) Cage for SFP LC connector
- Virtual LANs-02.1q VLAN tagging
- Compliant with PCIe Rev.1.1 interface
- 802.x Flow control
- Connects over PCIe x1 bus

Transceiver Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- VCSEL transmitter and PIN receiver
- Multi-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- RoHS Compliant and Lead Free

Product Description

This is an Allied Telesis® AT-2914SX/LC-001 comparable Gigabit Ethernet PCIe 2.0 x4 network interface card with 1 included SX SFP transceiver that complies with IEEE 802.3 standards. It is based on an Intel 82574 chipset and is compatible with a variety of different applications and operating systems, including Windows, Linux and Unix-like systems. Providing 1Gbs of network speed, it fully supports high-end servers and various other networking applications. In addition, this card supports high level VLAN filtering. The single open SFP port accommodates multi-mode, providing a reach up to 550m. This product includes both half-height and full-height brackets. Our network interface cards are 100% compliant, and offer a cost effective solution for all of your network upgrade needs. With our certification test program, we guarantee your product will work right the first time.

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

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



Network Interface Card Specifications

| Parameter | Server Network Card | |
|-----------------------------|---|---|
| Bus Interface | PCIe X4 | |
| Operating Distance | Single-Mode: Multimode Fiber: | 10km at 9µm 550m at 50µm 550m at 62.5µm |
| Network Interface Type | 1x SFP Port (1000Base-SX, 1000Base-LX) LC fiber | |
| Transmission Speed (Mbps) | 1000 | |
| Transmission Medium Type | Fiber | |
| Network Standard | IEEE802.3 (1000Base-SX, 1000Base-LX) | |
| Compatible Operating System | Windows Linux FreeBSD VMware | |
| Working Temperature | -5°C - 40°C | |
| Storage Temperature | -40°C - 65°C | |

Transceiver Specifications

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 | % |

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

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|----------|---------|------|---------|------|-------|
| Transmitter | | | | | | |
| Input differential impedance | Rin | | 100 | | Ω | 1 |
| Single ended data input swing | Vin, pp | 250 | | 1200 | mV | |
| TX Disable-High | | Vcc-1.3 | | Vcc | V | |
| TX Disable-Low | | Vee | | Vee+0.8 | V | |
| TX Fault-High | | Vcc-0.5 | | Vcc | V | |
| TX Fault-Low | | Vee | | Vee+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 | | Vcc-0.5 | | Vcc | V | |
| LOS-Low | | Vee | | Vee+0.5 | 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 | | -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 | | | 200 | ps | |
| Optical Extinction Ratio | ER | 9 | | | dB | |
| Receiver | | | | | | |
| Receiver Sensitivity | RSENS | | | -18 | dBm | 3,4 |
| Maximum Received Power | RX _{MAX} | 0 | | | dBm | |
| Centre Wavelength | λ_C | 770 | | 860 | nm | |
| LOS De-Assert | LOSD | | | -26 | dBm | |
| LOS Assert | LOSA | -40 | | | dBm | |
| LOS Hysteresis | | 0.5 | | 5 | dB | |

Notes:

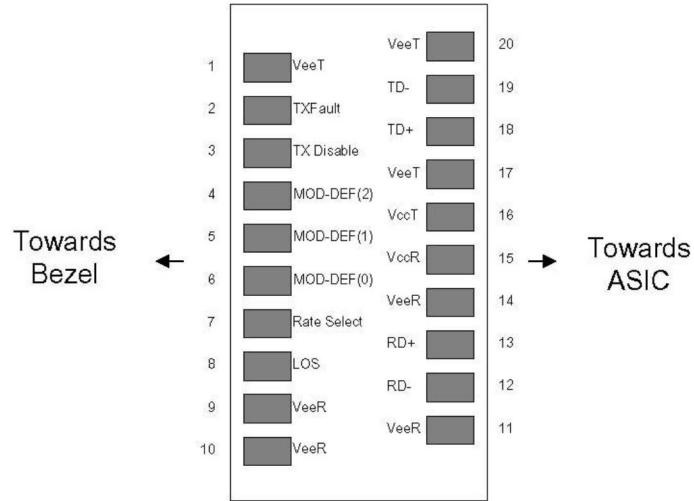
1. Class 1 Laser Safety.
2. Unfiltered, 20%-80%. Complies with GE and 1x FC eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 2⁷-1 at 10⁻¹⁰ BER.

Pin Descriptions

| Pin | Symbol | Name/Descriptions | Ref. |
|-----|-------------|--|------|
| 1 | VeeT | Transmitter Ground (Common with Receiver Ground) | 1 |
| 2 | TX Fault | Transmitter Fault. | |
| 3 | TX Disable | Transmitter Disable. Laser output 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. Logic 0 indicates normal operation. | 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 |

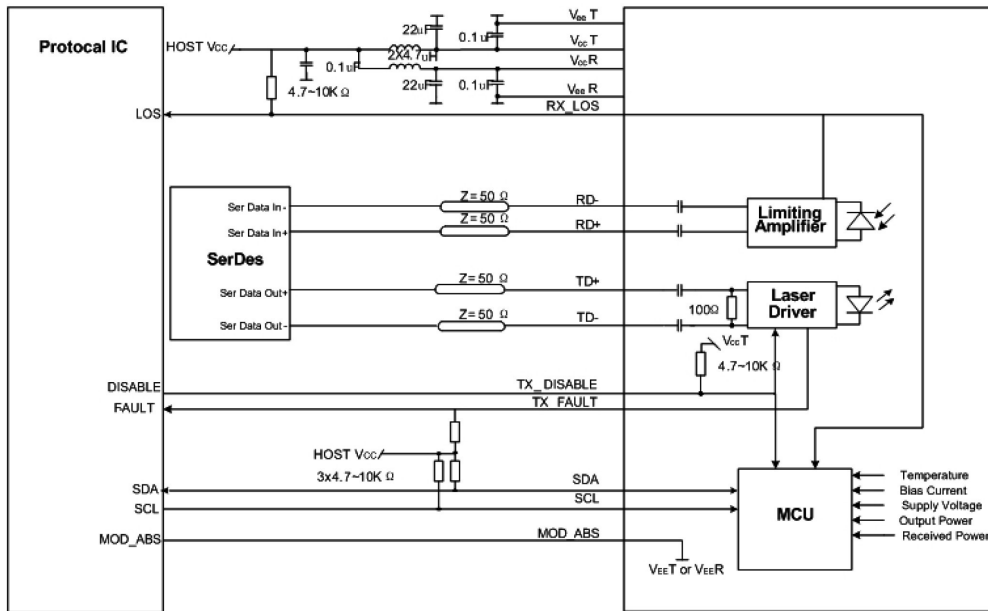
Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TX Disable >2.0V or open, enabled on TX Disable <0.8V.
3. Should be pulled up with 4.7k-10kohms 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. LOS is open collector output. Should be pulled up with 4.7k-10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.



Pin-out of connector Block on Host board

Recommend Circuit Schematic

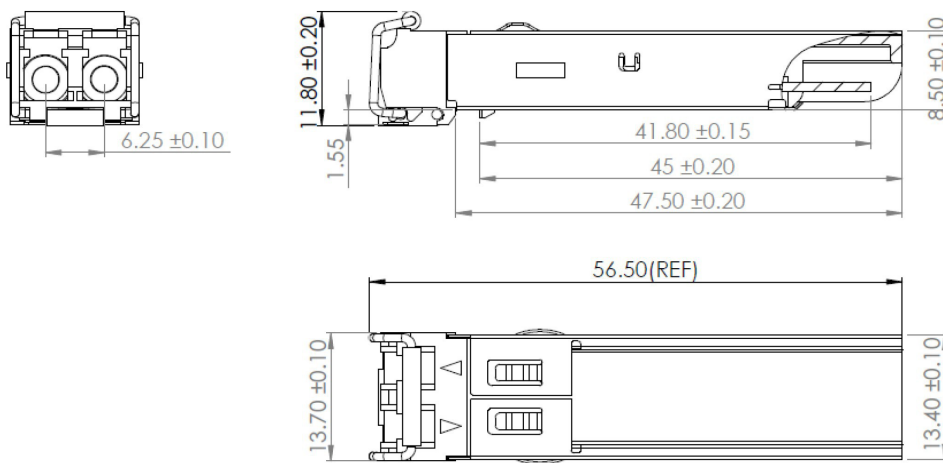


Recommended Operating Conditions

| 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 |
| Data Rate (Gigabit Ethernet) | | | 1.25 | | Gbps |
| Data Rate (Fibre Channel) | | | 1.063 | | Gbps |
| 50/125µm MMF | L | | | 550 | m |

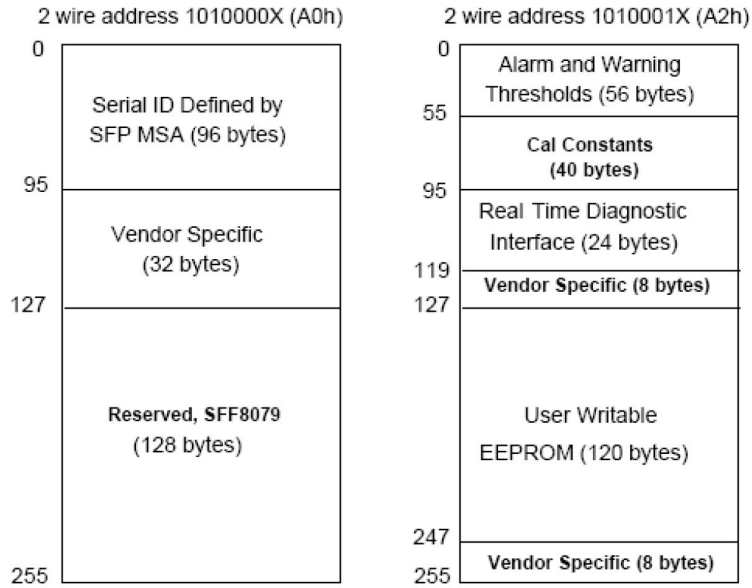
Mechanical Specifications

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:



Digital Diagnostic Monitoring Interface

Five transceiver parameter values are monitored. The following table defines the monitored parameter's accuracy.

| Parameter | Range | Accuracy | Calibration |
|--------------|-------------------|----------|-------------|
| Temperature | 0°C to 70°C (C) | ±3°C | Internal |
| | -40°C to 85°C (I) | | |
| Voltage | 2.97V to 3.63V | ±3% | Internal |
| Bias Current | 0mA to 100mA | ±10% | Internal |
| TX Power | -9dBm to -4dBm | ±3dB | Internal |
| RX Power | -18dBm to 0dBm | ±3dB | Internal |

Contact Information

Founded in 1999, AddOn Networks is North America's leading provider of transceivers and high speed cabling. With a reputation for high quality products as well as an extensive custom design portfolio, AddOn has the connectivity solution regardless of the requirement.

At AddOn, 100% of the products we ship every day are tested in the specific application for which they are intended—never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.

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