

ENC-2201S

PCIE x4 Dual Gigabit Optical  
Fiber Interface Network Module

Version: C00



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## Safety Instructions

1. Please read this manual carefully before using the product;
2. Leave the board or card in the antistatic bag until you are ready to use it;
3. Touch a grounded metal object (e.g. for 10 seconds) before removing the board or card from the anti-static bag;
4. Before installing or removing a board, wear the ESD gloves or ESD wrist strap; handle the board by its edges only;
5. Before inserting, removing or re-configuring motherboards or expansion cards, first disconnect the computer and peripherals from their power sources to prevent electric shock to human bodies or damage to the product;
6. Remember to disconnect the AC power cord from the socket before removing the board or moving the PC;
7. For PC products, remember to disconnect the computer and peripherals from the power sources before inserting or removing a board;
8. Before connecting or disconnecting any terminal, peripheral or any device, be sure the system is powered off and all the power sources are disconnected;
9. After turning off the computer, wait at least 30 seconds before turning it back on.

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## Chapter 1 Product Introduction

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### Overview

ENM-2201S is a server-grade PCIe network adapter with two SFP Gigabit optical fiber connectors. It adopts Intel® 82576EB high-performance network card chip. It complies with PCIE short card standard and is configured with two types of slot covers: long and short, which supports vertical and horizontal installation modes. It is ideally suitable for network security, server products and common embedded and industrial computers.

### Mechanical Dimensions, Weight and Environment

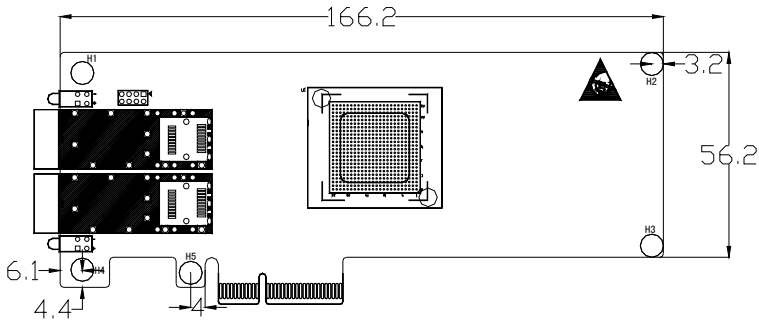
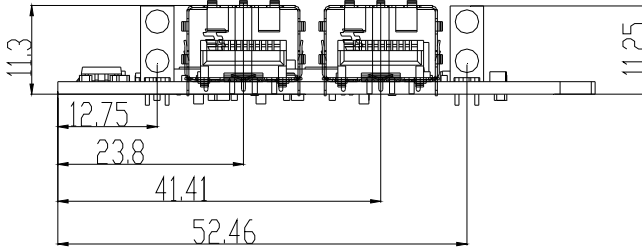
- Dimensions: 166.3mm (L) x 68.9mm (W) x 14mm (H);
- Net Weight: 0.07Kg;
- Operating Environment:
  - Temperature: 0°C ~ 55°C;
  - Humidity: 5% ~ 90% (non-condensing);
- Storage Environment:
  - Temperature: -20°C ~ 80°C;
  - Humidity: 5% ~ 90% (non-condensing);

### Network Function

Provides two 1000Mbps optical fiber network connectors.

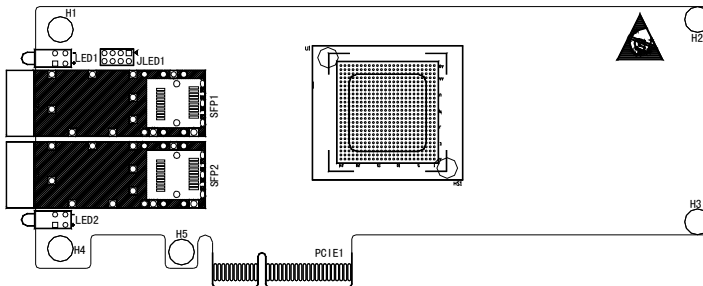
## Chapter 2 Installation

### Product Outline

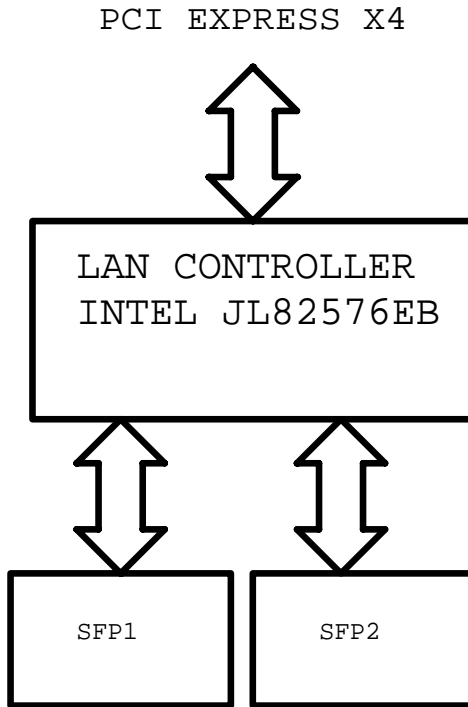


Unit: mm

### Locations of Connectors



**Structure**

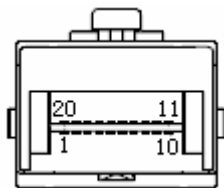


**Tip: How to identify the first pin of the jumpers and connectors**

1. Observe the letter beside the plug and the socket. The first pin is usually marked with “1” or bold lines or triangular symbols;
2. Observe the solder pad on the back; the square pad is the first pin.
3. The red line on the cable or other marks indicates that it shall connect with the first pin.

**SFP Optical Fiber Connector**

Two 1000Mbps SFP optical fiber connectors on-board; the detailed instructions are as follows:



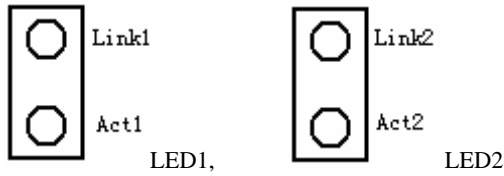
SFP1/SFP2

| Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|
| 1   | T_GND       | 11  | R_GND       |
| 2   | TX_FAULT    | 12  | RX-         |
| 3   | TX_DISABLE  | 13  | RX+         |
| 4   | MOD_DEF(2)  | 14  | R_GND       |
| 5   | MOD_DEF(1)  | 15  | VCC_RX      |
| 6   | MOD_DEF(0)  | 16  | VCC_TX      |
| 7   | RATE SELECT | 17  | T_GND       |
| 8   | RX_LOS      | 18  | TX+         |
| 9   | R_GND       | 19  | TX-         |
| 10  | R_GND       | 20  | T_GND       |

**Network Indicator**

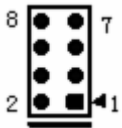
The product provides two 1x2 indicators on-board: the upper one is the Link LED and the silkscreens on slot covers are Link1 and Link2; the lower one is the Activity LED and the silkscreens on the slot covers are Act1 and Act2.





| <b>LILED<br/>(Green)</b> | <b>LAN Linked<br/>Status Indicator</b> | <b>ACTLED<br/>(Green)</b> | <b>LAN Activity<br/>Status Indicator</b> |
|--------------------------|--|---------------------------|--|
| On                       | Linked                                 | Blink                     | Data being transmitted                   |
| Off                      | Unlinked                               | Off                       | No data being transmitted                |

2x4 Pin Gigabit optical fiber network indicator (Pitch: 2.0mm)



| <b>Pin</b> | <b>Signal Name</b> | <b>Pin</b> | <b>Signal Name</b> |
|------------|--------------------|------------|--------------------|
| 1          | +3.3V              | 2          | LAN1_ACTIVITY      |
| 3          | +3.3V              | 4          | LAN1_LINK          |
| 5          | +3.3V              | 6          | LAN2_ACTIVITY      |
| 7          | +3.3V              | 8          | LAN2_LINK          |

JLED1

## PCIe x4 Gold Finger

The module provides one PCIe x4 gold finger, marked as PCIE1. The pin definitions are as follows:

| <b>Pin</b> | <b>Signal Name</b> | <b>Pin</b> | <b>Signal Name</b> | <b>Pin</b> | <b>Signal Name</b> | <b>Pin</b> | <b>Signal Name</b> |
|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|
| A1         | PRSNT1#            | A2         | +12V               | B1         | +12V               | B2         | +12V               |
| A3         | +12V               | A4         | GND                | B3         | RSVD               | B4         | GND                |
| A5         | TCK                | A6         | TDI                | B5         | SMCLK              | B6         | SMDATA             |

|     |              |     |         |     |          |     |         |
|-----|--------------|-----|---------|-----|----------|-----|---------|
| A7  | TDO          | A8  | TMS     | B7  | GND      | B8  | +3.3V   |
| A9  | +3.3V        | A10 | +3.3V   | B9  | TRST#    | B10 | 3.3Vaux |
| A11 | PWRGD/PERST# | A12 | GND     | B11 | WAKE#    | B12 | RSVD    |
| A13 | REFCLK+      | A14 | REFCLK- | B13 | GND      | B14 | PETp0   |
| A15 | GND          | A16 | PERp0   | B15 | PETn0    | B16 | GND     |
| A17 | PERn0        | A18 | GND     | B17 | PRSNT2#  | A18 | GND     |
| A19 | RSVD         | A20 | GND     | B19 | PETp1    | B20 | PETn1   |
| A21 | PERp1        | A22 | PERn1   | B21 | GND      | B22 | GND     |
| A23 | GND          | A24 | GND     | B23 | PETp2    | B24 | PETn2   |
| A25 | PERp2        | A26 | PERn2   | B25 | GND      | B26 | GND     |
| A27 | GND          | A28 | GND     | B27 | PETp3    | B28 | PETn3   |
| A29 | PERp3        | A30 | PERn3   | B29 | GND      | B30 | RSVD    |
| A31 | GND          | A32 | RSVD    | B31 | PRSNT2#A | B32 | GND     |