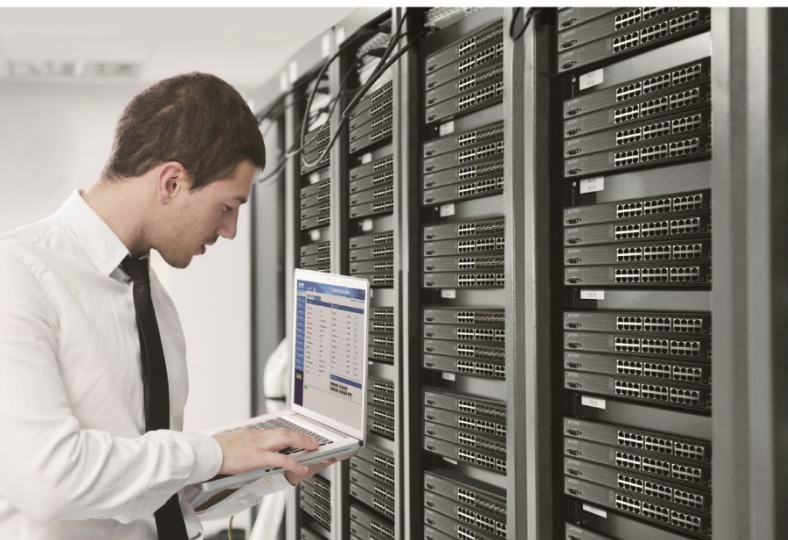




User's Manual

Gigabit PoE Network Interface Card

▶ ENW-9720P/ENW-9740P



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Revision

User Manual of PLANET Gigabit PoE Network Interface Card

Models: ENW-9720P and ENW-9740P

Revision: 2.0 (FEBRUARY 2023)

Part No.: EM-ENW9720P_ENW9740P_v2.0

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Chapter 1 Introduction

Thank you for purchasing PLANET ENW-9720P/ENW-9740P 2-/4-Port 10/100/1000T 802.3at PoE+ PCI Express (PCIe) server adapter. Both the ENW-9720P and ENW-9740P incorporate not only Intel server-grade GbE MAC Controller but also IEEE 802.3at with each port having up to 30W power. The 802.3at PoE+ PCI Express server adapter is a highly cost-effective solution to deliver Power over Ethernet to an industrial network of IP surveillance products such as cameras.



Simple Plug and Play PoE Solution for IPC System

Incorporated with Intel server-grade GbE MAC Controller, the ENW-9720P/9740P provides superb performance to fulfill the requirements of Industrial networks. Complied with PCIe standard, the ENW-9720P/9740P can be easily installed on any IPC or server motherboard with a PCIe socket to make the IPC or server able to communicate with other Ethernet devices and deliver power to PD devices.

Hassle-free Installation for PoE Deployment

PLANET ENW-9720P/9740P is backward compatible with both IEEE 802.3af/at PoE standards which allow users to flexibly deploy standard and high powered devices to transfer data and power simultaneously through one Ethernet cable for up to 100 meters. In addition, the ENW-9720P is powered by bus power without an external power input. Thus, an additional electrical outlet is not necessary.

With PoE application, the ENW-9720P/9740P frees the IP camera and wireless AP deployment from restrictions of power outlet locations and the additional AC wiring. It reduces cables and eliminates the need for electrical outlets on the wall, ceiling or any unreachable place, and most of all, it reduces installation time.

Standard 802.1Q VLAN Support

The ENW-9720P/9740P supports IEEE 802.1Q VLAN which allows it to operate in a flexible and secure network environment. With 9.5K jumbo frame ability and IEEE 802.3 flow control support, it further optimizes throughput and wire-speed packet transfer performance without the risk of packet loss. The high data throughput of the device makes it ideal for most Gigabit Ethernet environments.

Multiple OS Support

The ENW-9720P/ENW-9740P operates completely well with most of the popular and latest operating systems including **Microsoft Windows Server**, **Linux** and **VMware**, enabling simple integration into network designs. There is no need of any modification to the server's operating system or any special software required for the ENW-9720P/ENW-9740P to be integrated into the system.

Low Profile Design (only for ENW-9720P)

The ENW-9720P supports both full-height and low profile PCIe slot. The ENW-9720P provides a low profile bracket to fulfill IPC with low profile slot. The flexibility of low profile design can help the ENW-9720P meet various applications of industrial networks.

1.1 Package Contents

Make sure your package contains the following items:

- 1 x ENW-9720P/ENW-9740P 10/100/1000T 802.3at PoE+ PCIe Server Adapter (with full-height bracket)
- 1 x Quick Installation Guide
- 1 x Low Profile Bracket (only for ENW-9720P)

If any of these are missing or damaged, please contact your dealer immediately. If possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

1.2 Product Features

- Intel® server-grade GbE MAC Controller
- PCIe x4 slot
- Supports 2-/4-port Gigabit Ethernet MAC Controller
- IEEE 802.3at compliant with up to 30W power per port
- PCIe 12V power supply without external power input (only for ENW-9720P)
- Supports 12V DC 4-pin Molex input (only for ENW-9740P)
- Powered device (PD) auto detection and classification
- IEEE 802.1q VLAN ID tag
- 9.5K jumbo frame size
- Complies with Microsoft, Linux and Mac platforms
- Low profile and full-height brackets (only for ENW-9720P)

1.3 Product Specifications

Product	ENW-9720P	ENW-9740P
hardware Specifications		
Controller	Intel I350AM2	Intel I350AM4
Interface	2 x RJ45	4 x RJ45
LED Indicator	1000Mbps: LINK: Amber, ACT: Green 10Mbps/100Mbps: ACT: Green	
Data Rate	10/100/1000Mbps	
Dimensions (W x D x H)	169 x 121 x 19 mm	169 x 121 x 18 mm
Weight	161 g	251 g

PCIe Bus Type	PCIe v2.0 (2.5GT/s) x4	PCIe v2.1(5.0GT/s)x4
Power Supply	PCIe power supply 3.3V±9% / 12V±8%	
Typical Power Consumption	3 watts max	5 watts max
Single PoE Output	30 watts	
Advanced Functions		
Layer 2 Features	IEEE 802.1Q VLAN support	
Operating System Support	Windows Server 2008R2/2012R2/2016R2/2019R2/2022R2 64bits Windows 7/8/8.1/10 32/64bits Windows 11 64bits Linux (Kernel version 2.6.x/3.x/4.x or later) VMware® ESX/ESXi 2.6.x/3.x/4.x/5.x/6 .x or later	
Standards Conformance		
Standards Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.1Q VLANs IEEE802.3x Flow Control IEEE802.3af Power over Ethernet IEEE802.3at Power over Ethernet Plus	
Regulatory Compliance	FCC Part 15 Class B, CE	
Environment		
Operating Temperature	-10 ~ 60 degrees C	
Storage Temperature	-40 ~ 70 degrees C	
Operating Humidity	5 ~ 90%, relative humidity, non-condensing	
Storage Humidity	5 ~ 90%, relative humidity, non-condensing	

1.4 Gathering Tools and Documentations

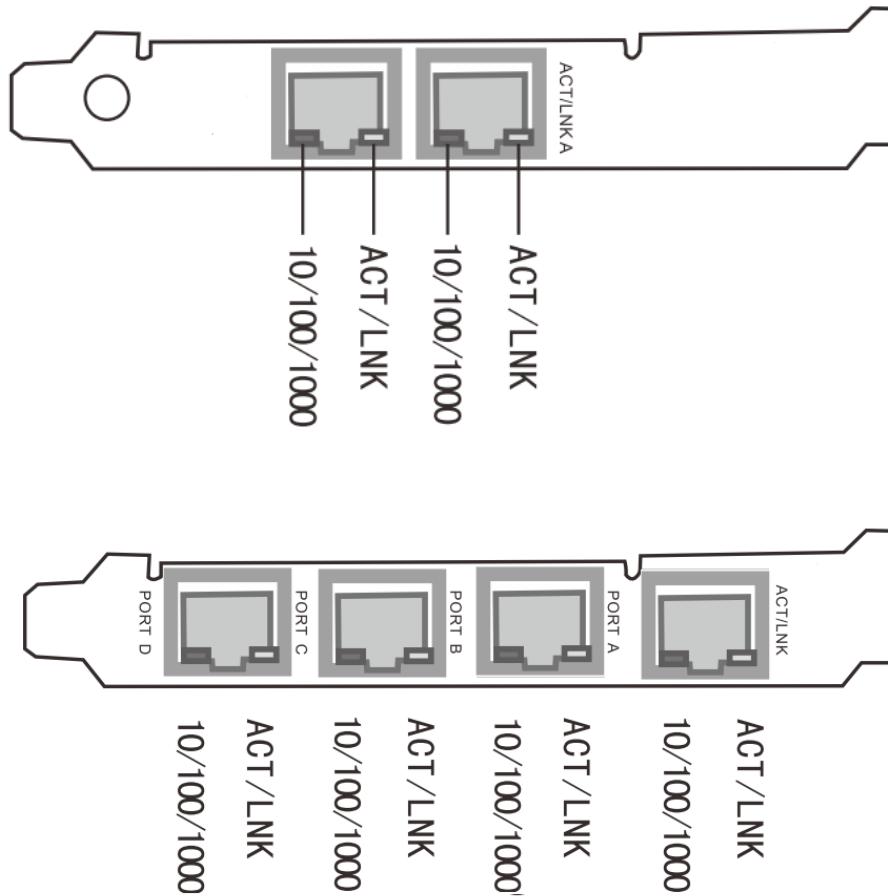
To install the ENW-9720P/ENW-9740P Gigabit PoE server adapter, you will need the following items:

- A suitable screw driver
- Your operating system documentation
- Your system unit documentation, including any service documentation

Chapter 2 Hardware Installation

2.1 LED Definition

Below are the pictures of the face plates of the ENW-9720P and 9740P, consisting of two LEDs: Speed and Link/ ACT.



LED	Color	Description
Speed	Amber	Indicates the link is established at 1 Gbps full duplex mode.
	OFF	Indicates the link is established at 10/100Mbps full duplex mode.
Link/Active	Green	Blinking to indicate it is transmitting and receiving data through the port.
PoE	Green	Indicates power is delivering through the port

2.2 System Requirement

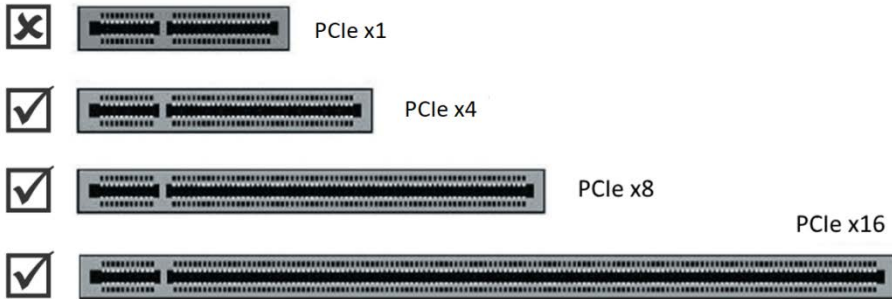
- PCIe support

ENW-9720P: The Server/Workstation supports PCIe v2.0 (2.5GT/s) x4 interface.

ENW-9740P: The Server/Workstation supports PCIe v2.1 (5GT/s) PCIe x4 interface.



Shown below are different PCIe Slots. The ENW-9720P/ENW-9740P is compatible with PCIe 2.0 x4 slot or larger.



- Power Supply support

The power requirement relies on the power usage of the total computer components. When you calculate power supply for PoE server adapter, we recommend you to reserve an additional **60W** power for the ENW-9720P and **120W** power for the ENW-9740P.

- Operating Systems Supported:

Windows Server 2008R2/2012R2/2016R2/2019R2/2022R2 64bits

Windows 7/8/8.1/10 32/64bits

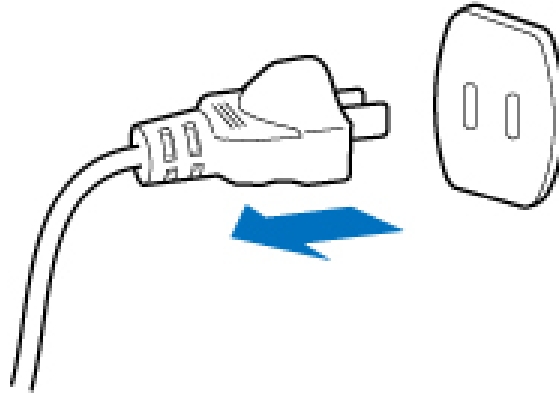
Windows 11 64bits

Linux (Kernel version 2.6.x/3.x/4.x or later)

VMware® ESX/ESXi 2.6.x/3.x/4.x/5.x/6 .x or later

2.3 Hardware Installation

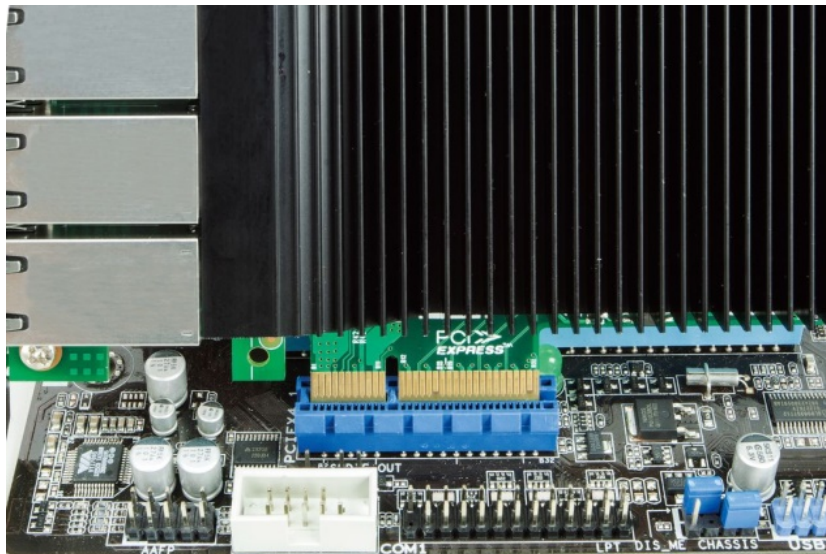
Step 1: Please **turn off** your PC.



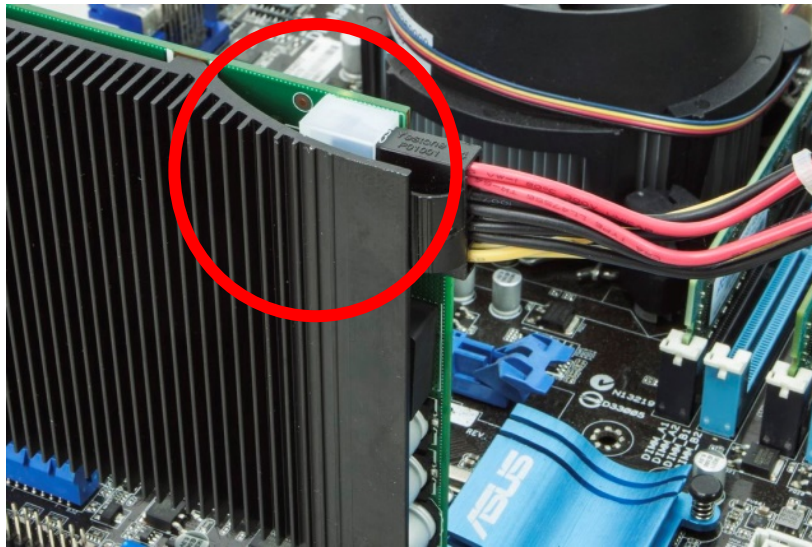
Step 2: Remove any metal decorations from your hands and wrists.

Step 3: Remove the cover from your PC.

Step 4: Locate an empty PCIe slot and carefully insert the 802.3at PoE+ PCIe server adapter into the chosen slot firmly.



Step 5: If the ENW-9740P is installed, please plug in firmly the 4 Molex plug from power supply.



When installing the ENW-9720P, there is no need for an additional 4 Molex power

Step 6: Secure the 802.3at PoE+ PCIe server adapter with the screw.

Step 7: Replace the PC cover.

Step 8: Power on your PC and refer to the next section to install driver.

Chapter 3 Driver Installation

Before installing drivers of the ENW-9720P and ENW-9740P server adapters, please visit PLANET ENW-9720P and ENW-9740P web pages to download the drivers for your operating system. The ENW-9720P and ENW-9740P come with an Intel chip.

Driver for the ENW-9720P and ENW-9740P

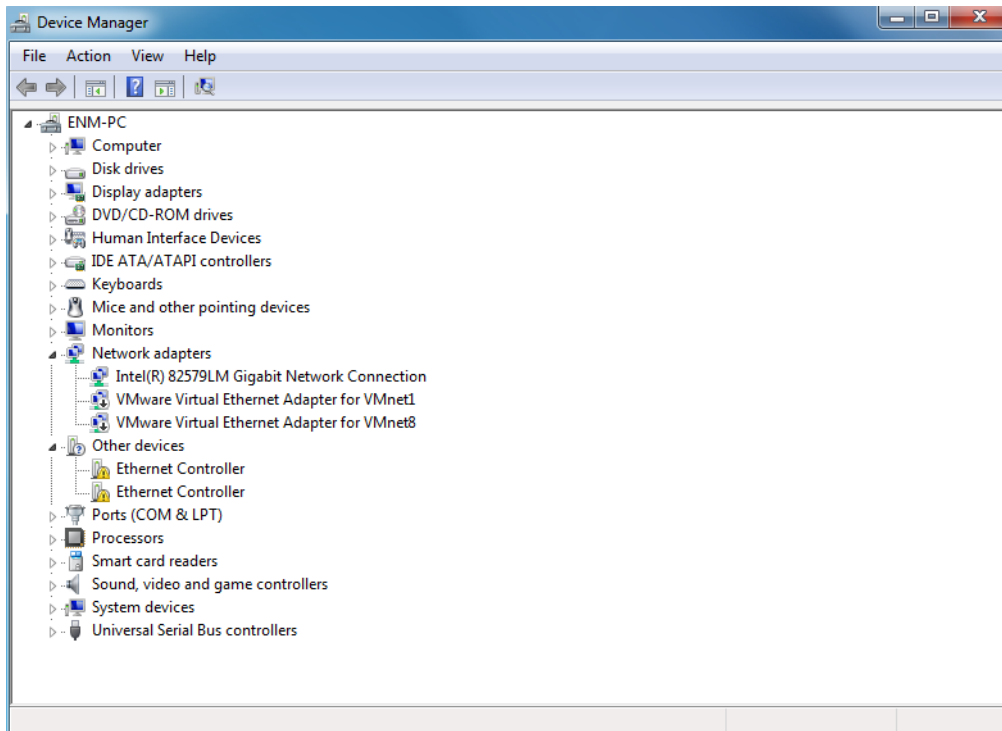
<https://www.planet.com.tw/en/support/downloads?&method=keyword&keyword=ENW-97&view=4#list>



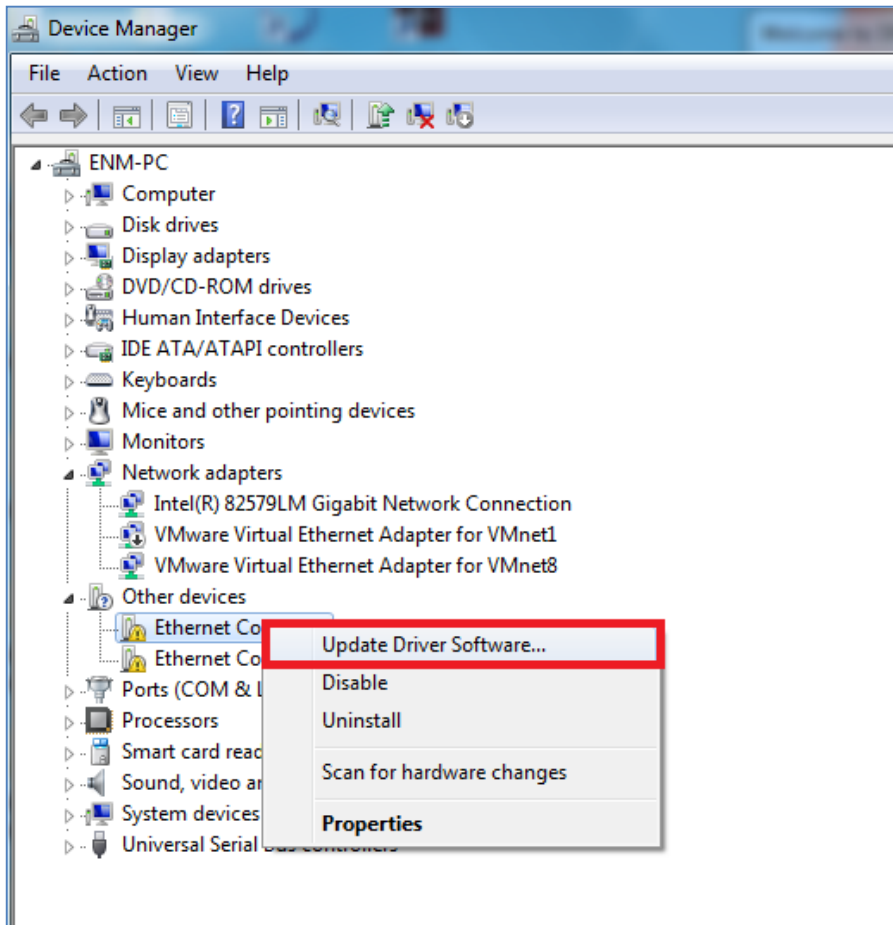
For Windows 7 and later operating system, the operating system will detect server adapter and install driver automatically. However, if driver is not installed successfully, you have to install driver manually.

3.1 Installing Driver on Windows 7/8/10/Server 2008/2012 and 2016

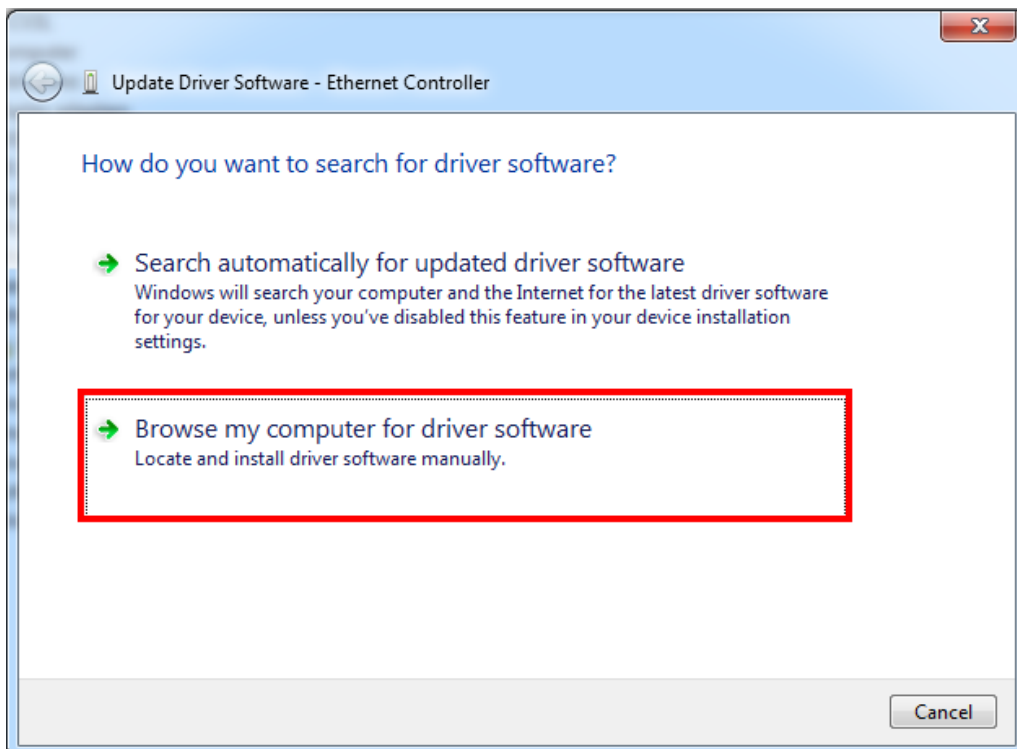
1. This operation is under Win7 which it is similar to Win8/10/Windows Server 2008/Windows Server 2012/Windows Server 2016.



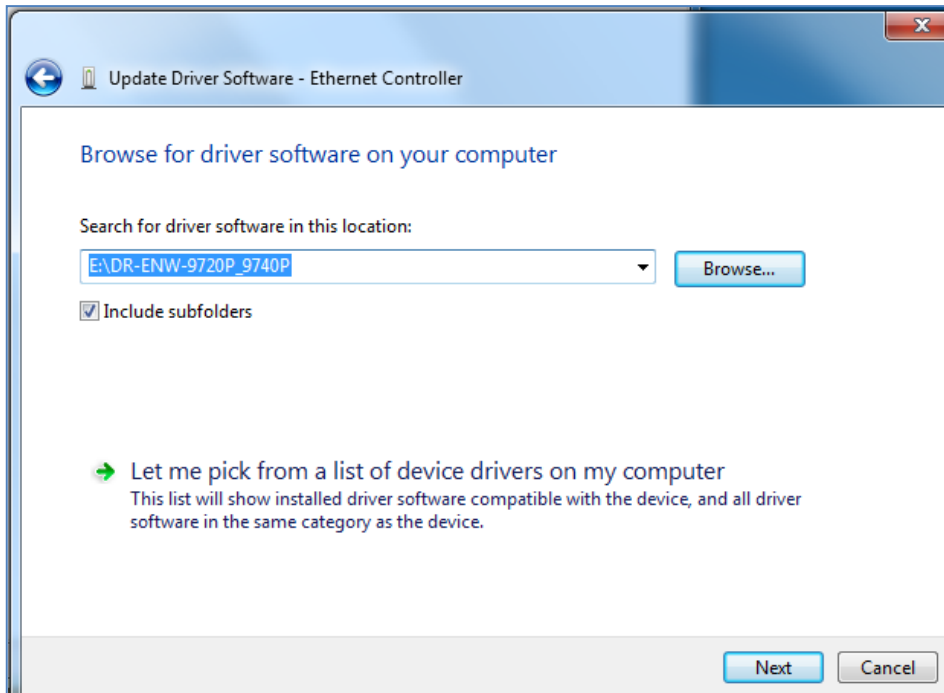
2. Please move and right-click the mouse button for Ethernet Controller item and select “**Update Driver Software**”.



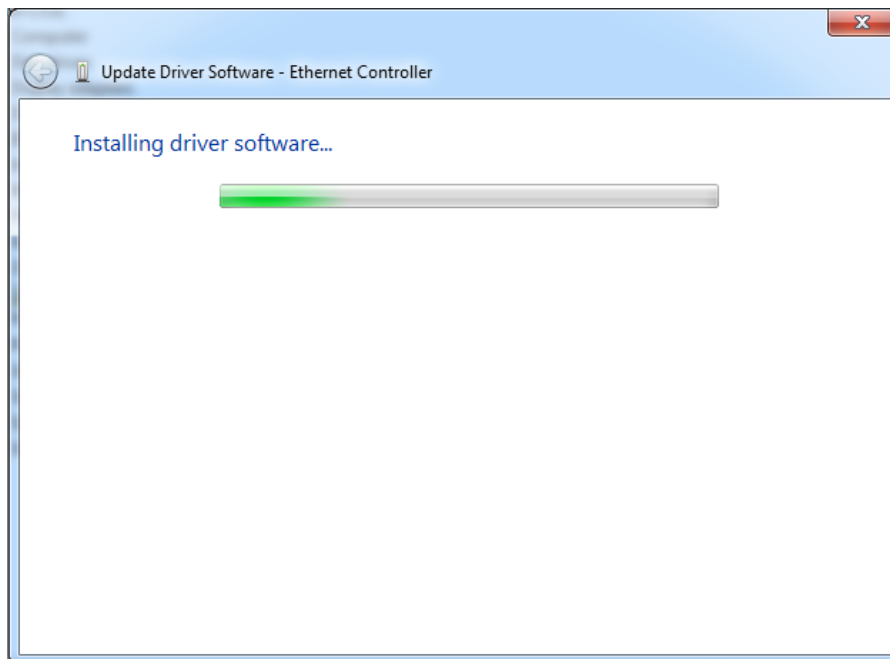
3. Next select “**Browse my computer for driver software**”.



- Please click "Browse" to specify the driver location to install. (Assume "E:\DR-ENW-9720P_9740P" is the directory where driver files are located.) Click "Next" to continue.

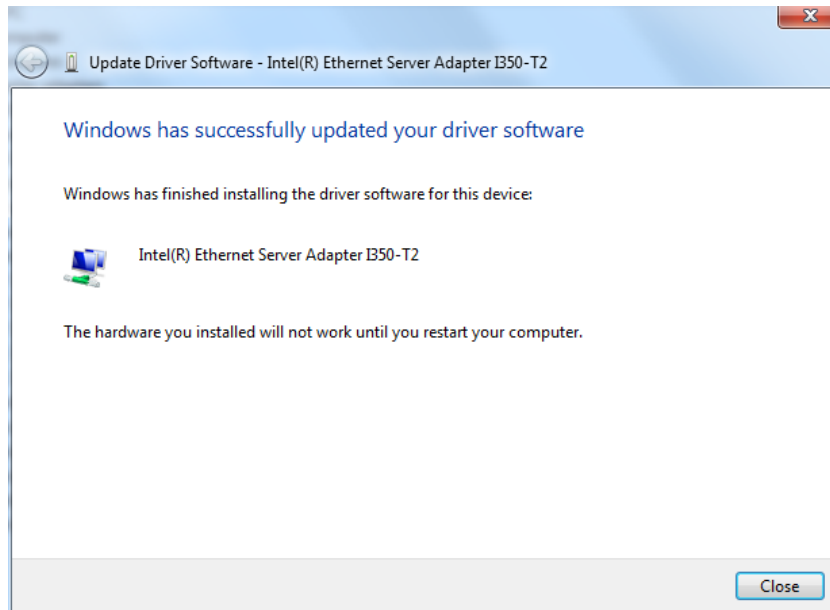


The driver is being installed.

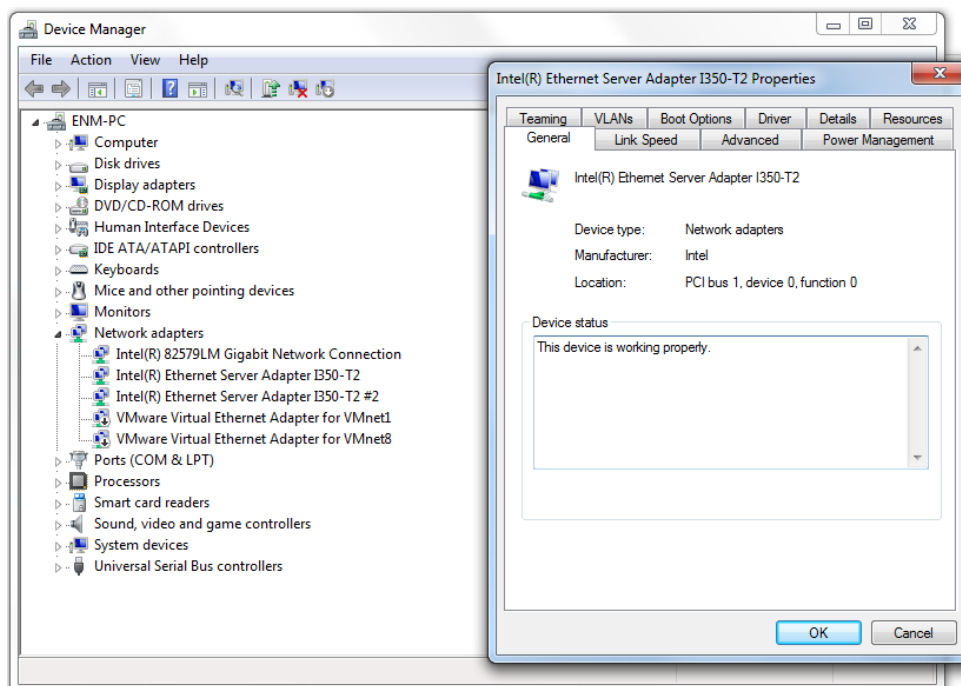


5. Click the “Close” button to complete the driver installation.

675jxj



For more details, please refer to the manual found on the website.



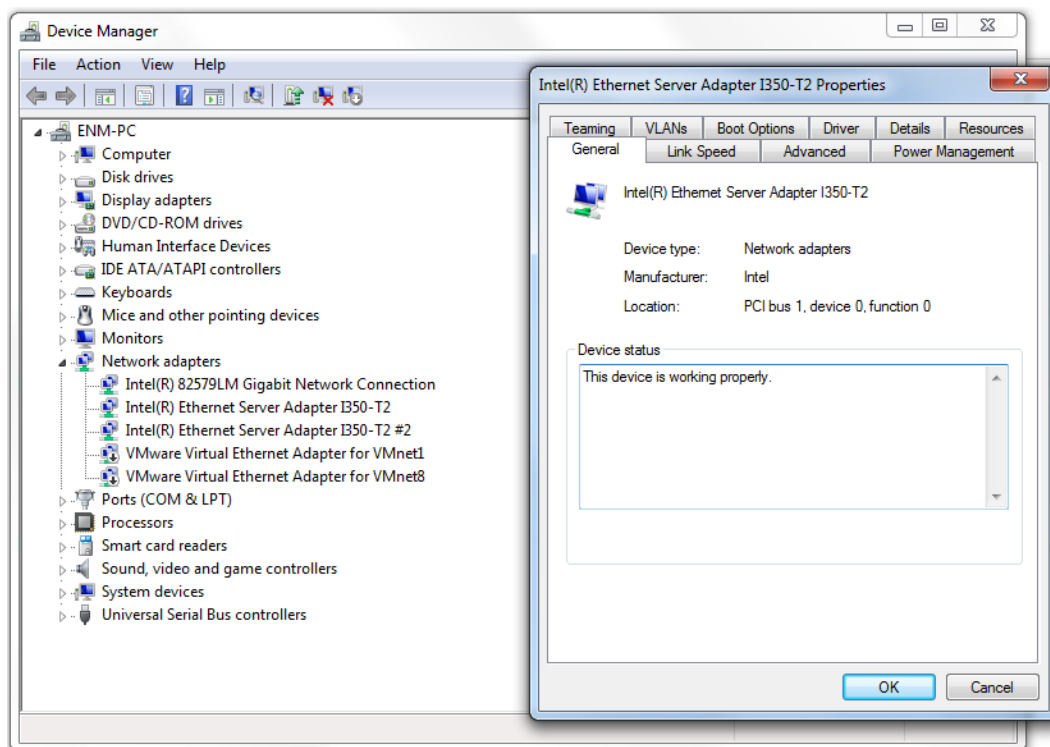
Chapter 4 Driver Configuration

The ENW-9720P and ENW-9740P provide Gigabit Ethernet connectivity with Intel I350 GbE controller. When connecting to high-speed PoE devices, such as a Gigabit camera or 802.11ac access point, we recommend that you can configure some driver settings to have better performance and connection stability.

4.1 Jumbo Frame

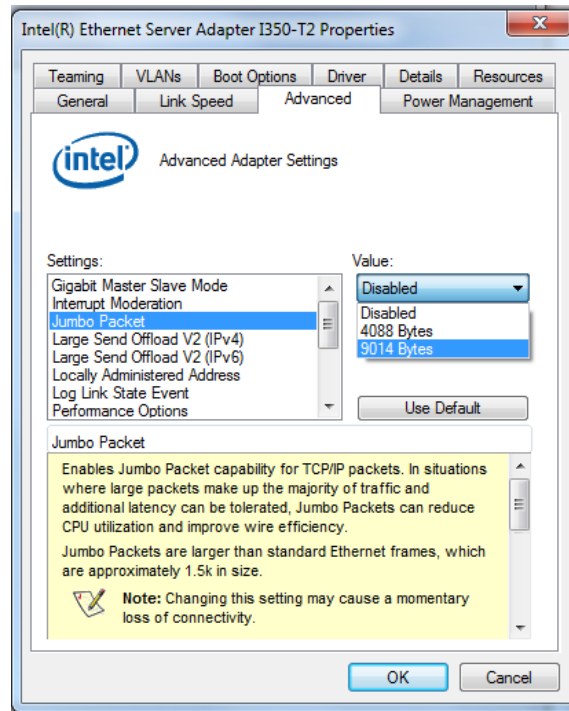
Jumbo frames are Ethernet frames with more than 1500 bytes of payload. By increasing the payload size, a certain large amount of data can be transferred with less interruption generated, thus reducing the CPU utilization and increasing overall data throughput. You can modify the jumbo frame settings when connecting a high-speed PoE device.

Step 1: Open the Device Manager of Computer Management and click the right button of **Intel(R) Ethernet Server Adapter I350-T2** and select Property.



Step 2: Click on the **Advanced** tab and select the **Jumbo Packet** settings

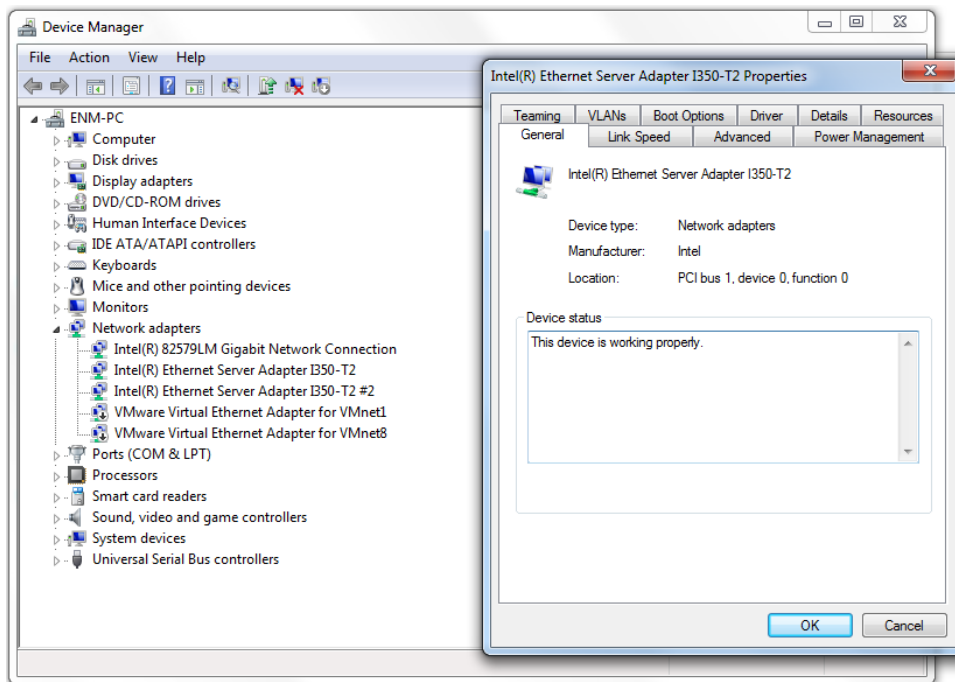
Step 3: Select the expected jumbo frame size (for connecting a Gigabit Ethernet device; 9014 bytes is suggested.).



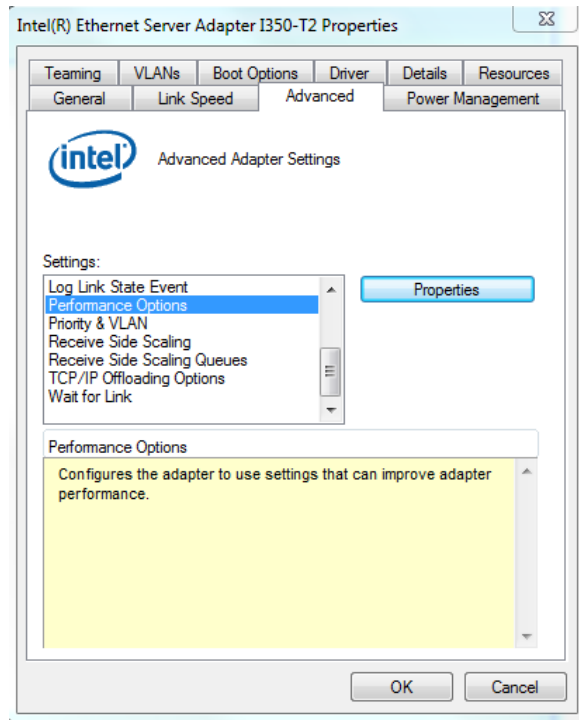
4.2 Receive Buffer

Receive Buffers is the buffer size of system memory that can be used by the adapter for received packets, which can be increased to help improve the performance of outgoing network traffic, but it consumes system memory. The default settings of receive buffer is 256 bytes. You can set this option to a larger value (maximal 2048 bytes) for better performance.

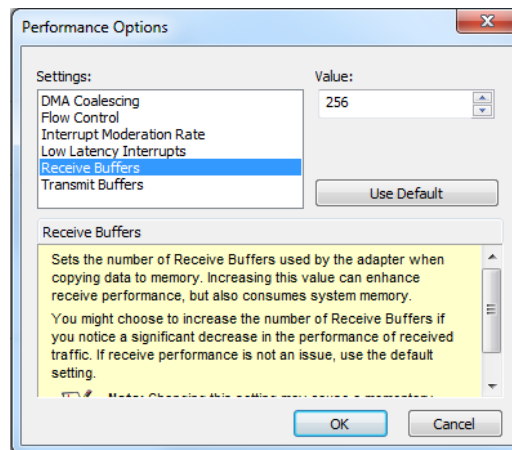
Step 1: Open the Device Manager of Computer Management and click the right button of **Intel(R) Ethernet Server Adapter I350-T2** and select Property.



Step 2: Click on the **Advanced** tab and select the **Performance Options** settings



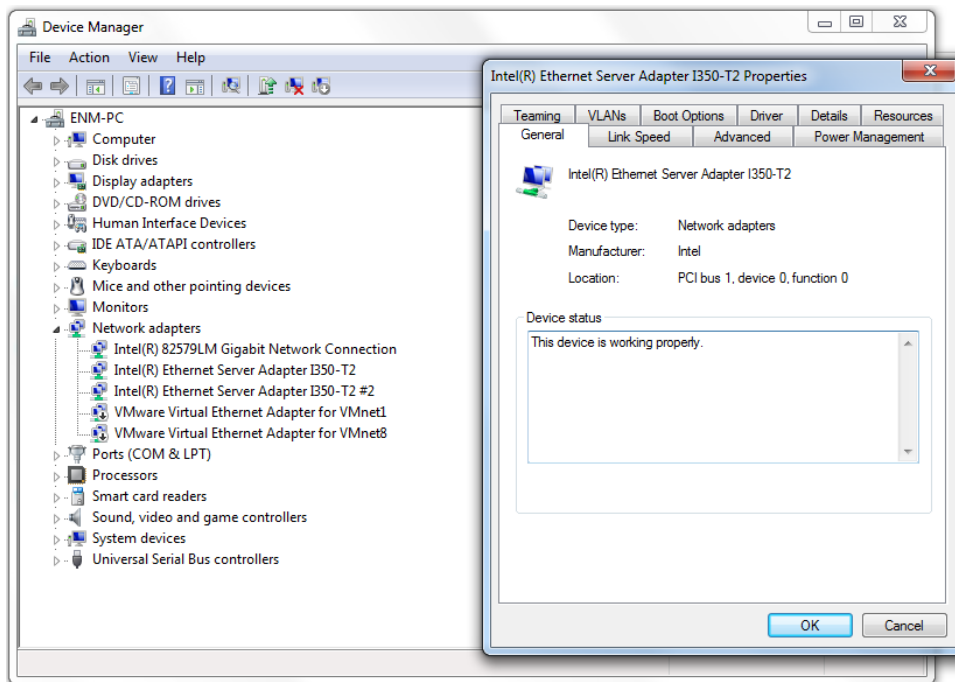
Step 3: Adjust the value of **Receive Buffers** (for connecting a Gigabit Ethernet device; 2048 bytes is suggested.).



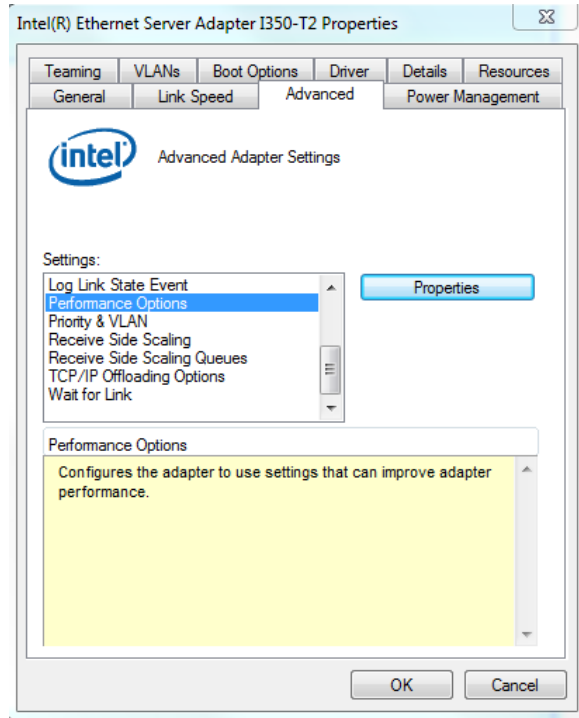
4.3 Transmit Buffers

Transmit Buffers is the buffer size of system memory that can be used by the adapter for sending packets, which can be increased to help improve the performance of outgoing network traffic, but it consumes system memory. The default settings of receive buffer is 512 bytes. You can adjust the size of transmit buffer to a larger value (maximal 2048 bytes) for better performance.

Step 1: Open the Device Manager of Computer Management and click the right button of **Intel(R) Ethernet Server Adapter I350-T2** and select Property.



Step 2: Click on the **Advanced** tab and select the **Performance Options** settings.



Step 3: Adjust the value of **Transmit Buffers** (for connecting a Gigabit Ethernet device; 2048 bytes is suggested.).

