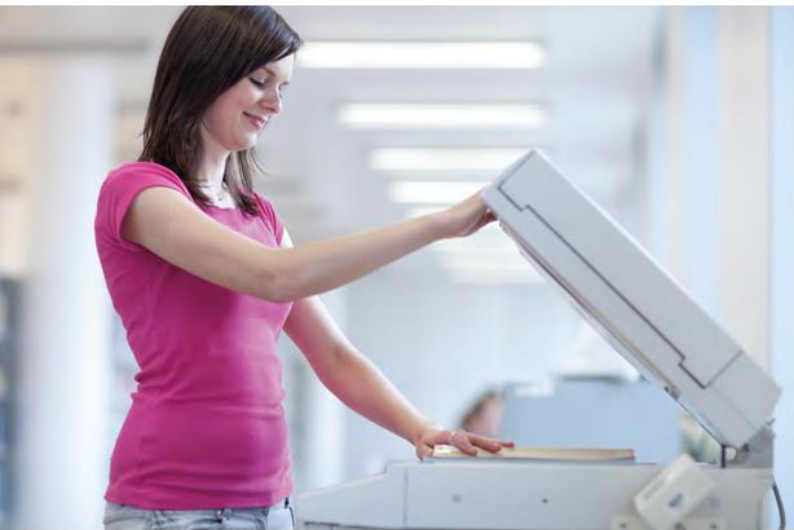




# User's Manual

## PCI Express 10G Ethernet Adapter

▶ ENW-9801/ENW-9803



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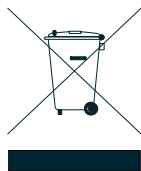
## FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at whose own expense.

## CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

## WEEE Warning



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

## Revision

User's Manual of PLANET 10Gbps SFP+ PCI Express Server Adapter

**FOR MODEL:** ENW-9801

**REVISION:** 3.0 (January 2022)

**Part No.:** EM-ENW-9801\_v3.0

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## Chapter 1: Introduction

Enhanced from the current highly-praised version, PLANET ENW-9801 10Gbps SFP+ PCI Express Server Adapter adopts Intel LAN controller solution. It comes with PCI Express rev. 2.0 specification x4 interface and other advanced features as shown below:

- **Smaller and compact in design**
- **Flexible 10G SFP+ module installation**
- **Supports iSCSI/FCoE/PXE/Other boot**
- **Low profile bracket**



### The Server Level Adapter to Expand Networking Environments

The ENW-9801 is a PCI Express 10Gbps Ethernet Adapter designed to meet high-performance system application requirements. With the innovative PCI Express Bus Architecture, the ENW-9801 provides superior performance than the network cards based on 32/64bit PCI architecture. It provides the best solution to one of the major issues of Server Farm Networks -- communication speed. Ten times faster than the existing 1000BASE-SX/LX fiber solutions, PLANET ENW-9801 is designed to connect your servers and workstations, guaranteeing extremely high throughput and excellent signal quality.

Moreover, the ENW-9801 supports IEEE 802.1Q VLAN which allows it to operate in a flexible and secure network environment. With 9K 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 10 Gigabit Ethernet environments.

## **10 Gigabit Performance Boosts Network Traffic**

The ENW-9801 is an optimal solution to Ethernet applications by providing low-power budgets and small form factor. It offers simple integration into any PCI Express x4 server slot via one SFP+ slot. The onboard controller featured on the ENW-9801 integrates embedded technology and a 10GbE MAC into a single chip that offers up to 10Gbps of network throughput. PLANET Network solution greatly reduces the TCP/IP packet processing tasks of the server's CPU by performing enhanced data-handling algorithms, thereby providing nearly 10Gb line speed performance with the simplicity of a conventional Network Interface Card (NIC).

## **Multiple OS Support**

The ENW-9801 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-9801 to be integrated into the system.

## 1.1 Package Contents

Thank you for purchasing PLANET ENW-9801 PCI Express 10 Gigabit Ethernet adapter. It supports x4 PCI Express interfaces. The 10 Gigabit Ethernet adapter provides a highly cost-effective solution that can upgrade your existing Ethernet infrastructure to the 10 Gigabit network.

### Package Contents

- 1 x ENW-9801 10Gigabit Ethernet Adapter (with long profile bracket)
- 1 x Quick Installation Guide
- 1 x Low Profile Bracket

<p>ENW-9801</p>  A photograph of the ENW-9801 10Gigabit Ethernet adapter. It is a green printed circuit board (PCB) with a long metal profile bracket attached to its front edge. The board features a gold-plated PCI Express connector on the right side and a large silver heat sink in the center.	<p>Quick Installation Guide</p>  The cover of the Quick Installation Guide. It features the PLANET logo at the top, followed by the text "Quick Installation Guide" and "10Gbps SFP+ PCI Express Server Adapter ENW-9801". A small image of the adapter is shown at the bottom right of the cover.
<p>Low Profile Bracket</p>  A photograph of a low profile metal bracket. It is a silver-colored metal piece with a rectangular cutout in the center and several small holes along its length.	

## **1.2 Features**

- PCI Express rev. 2.0 specification x4 interface
- IP, TCP, UDP checksum offloading
- IEEE 802.1Q VLAN ID Tagged/IEEE 802.1p CoS
- 9K jumbo frame size
- IEEE 802.3x full-duplex flow control
- IEEE 1588PTP (Precision Time Protocol) transparent clock mode
- iSCSI/FCoE/PXE/Other boot support
- Complies with Microsoft and Linux Platforms

## **1.3 Gathering Tools and Documentations**

To install the ENW-9801 PCI Express 10 Gigabit Ethernet adapter, you 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 faceplates of the ENW-9801, consisting of two LEDs: Link Speed and Link/ACT. Table 1 explains the function and state of the LEDs.



**Figure 1:** Long Profile Bracket of ENW-9801



**Figure 2:** Low Profile Bracket of ENW-9801

LED	Color	Description
Link Speed	Green	It indicates the link is established at 10Gbps full duplex mode.
LNK/ACT	Green	When it lights, it indicates a functional network link through the port. When it blinks fast, it indicates data is transmitting and receiving through the port.

**Table 1:** Descriptions of the ENW-9801 LED



## 2.2 Hardware Installation

### System Requirement

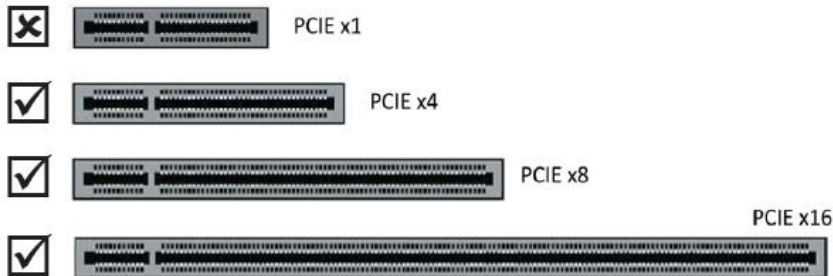
#### ■ PCI-Express support

ENW-9801: The Server/Workstation supports **PCI Express v2.0** (5GT/s) and PCI Express (PCIe) x4 interface.



Note

**Below are the different PCI Express Slots.  
The ENW-9801 is compatible with PCIe 2.0 x4 slots or larger.**

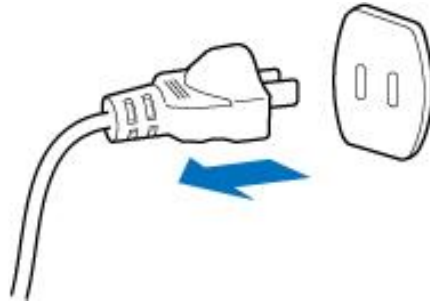


#### **Operating System Support:**

Windows Server 2008R2 64 bits  
Windows Server 2012R2 64 bits  
Windows Server 2016R2 64 bits  
Windows Server 2019R2 64 bits  
Windows 7 32/64 bits  
Windows 8 32/64 bits  
Windows 10 32/64 bits  
Linux Stable Kernel Version (2.6.32.x to 5.x)  
Linux CentOS/RHEL(6.x to 7.x)  
Ubuntu (14.x to 16.x)  
UOS V20  
VMware ESX/ESXi 4.x/5.x/6.x

## Hardware Installation

Step 1: Please turn off your PC.

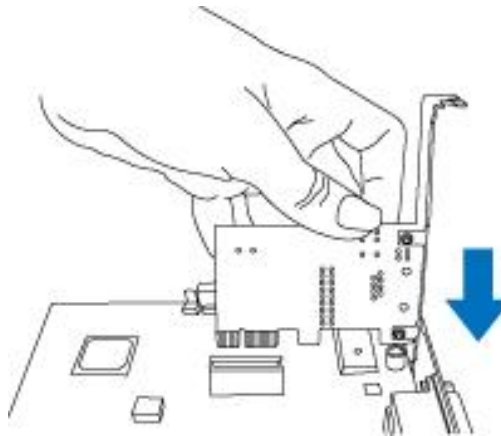


Step 2: Remove any metal decorations from your hands and wrists.

Step 3: Remove the cover from your PC.

Step 4: Locate an empty PCI Express slot and remove the corresponding back plate. Save the screw for use in Step 6.

Step 5: Carefully insert the 10 Gigabit Ethernet Adapter into the chosen slot and press firmly with proper push to ensure it is fully seated in the slot.



Step 6: Secure the 10 Gigabit Ethernet Adapter with the screw you saved in Step 4.

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

A device driver must be installed before your ENW-9801 can be used with your computer. This chapter describes how to install the driver for various operating systems. Before you begin the driver installation process, make sure you have the installation disks for your computer's operating system.

### Installation on Windows 10

Before installing drivers of ENW-9801 server adapter, please visit PLANET ENW-9801 web pages to download the drivers for your operation system.

<https://www.planet.com.tw/en/support/downloads?&method=keyword&keyword=ENW-98&view=4#list>




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1: Window 10 and other windows-based operating systems will detect server adapter and install driver automatically. However, if driver is not installed successfully, you have to install driver manually.

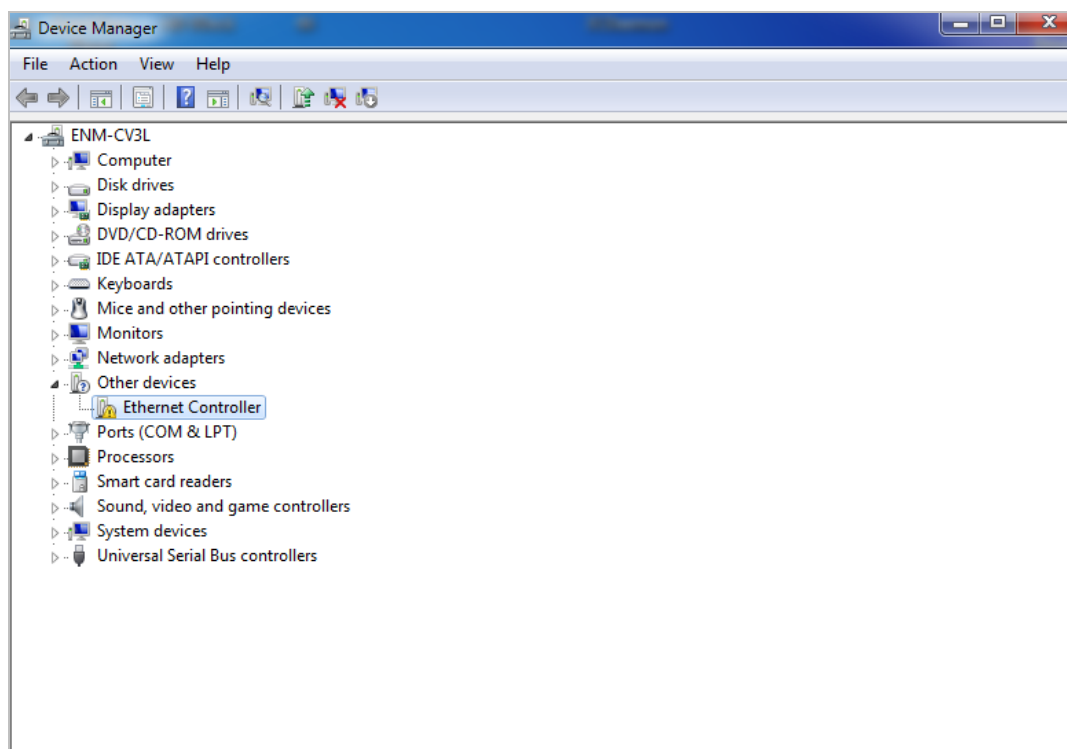


Note

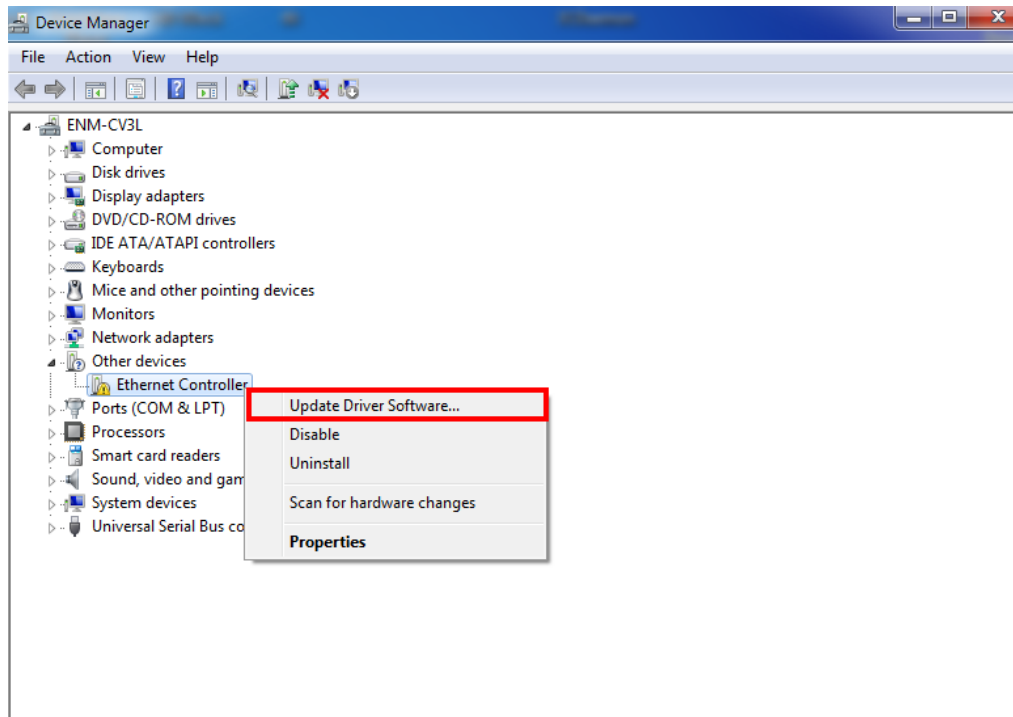
2: This operation is under Win10 which it is similar to Win7/8/Windows Server 2008/Windows Server 2012/Windows Server 2016/Windows Server 2019.

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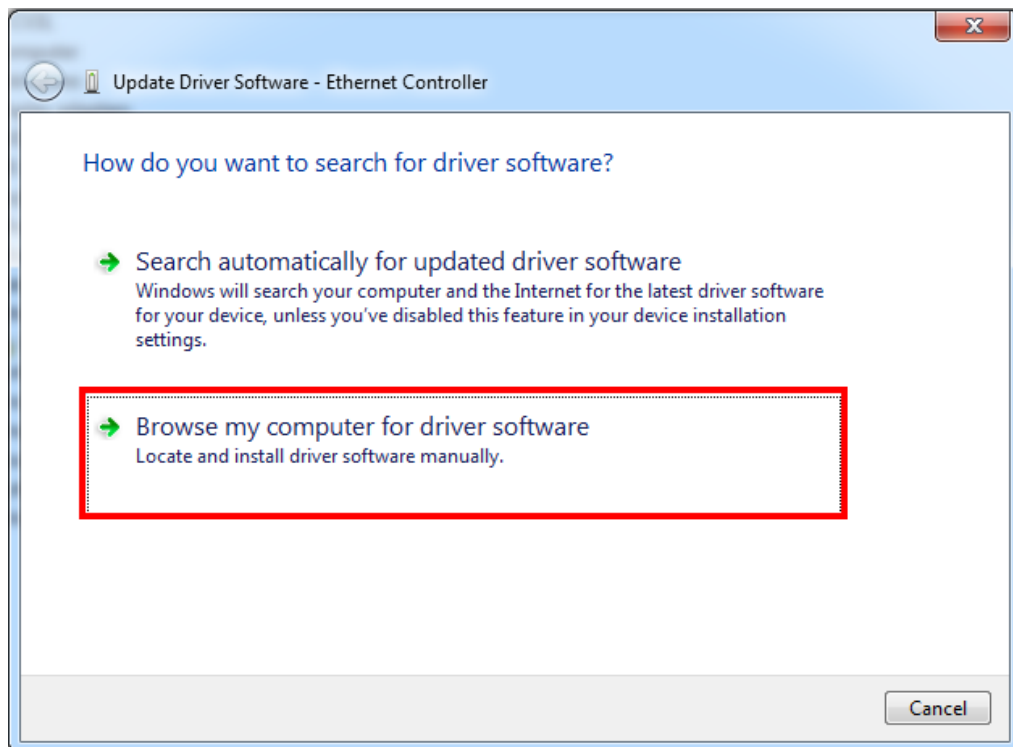
1. After installing the ENW-9801 to your PC and booting it up, Windows 10 will detect it and you have to install driver.



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



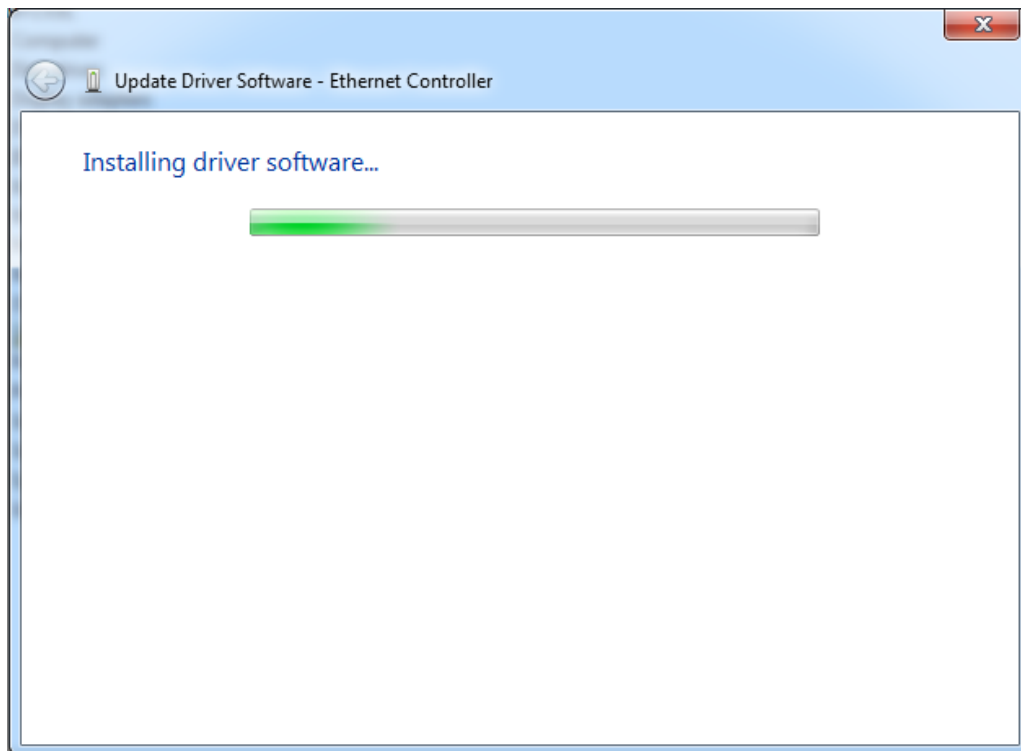
3. Please select **“Browse my computer for driver software”** for the next step.



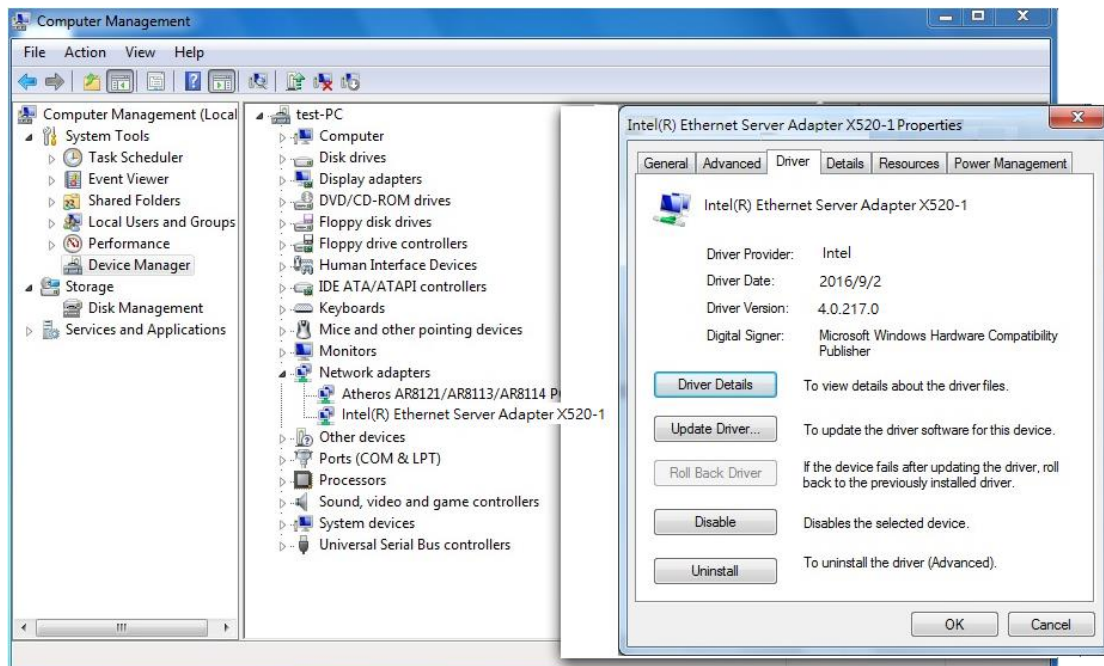
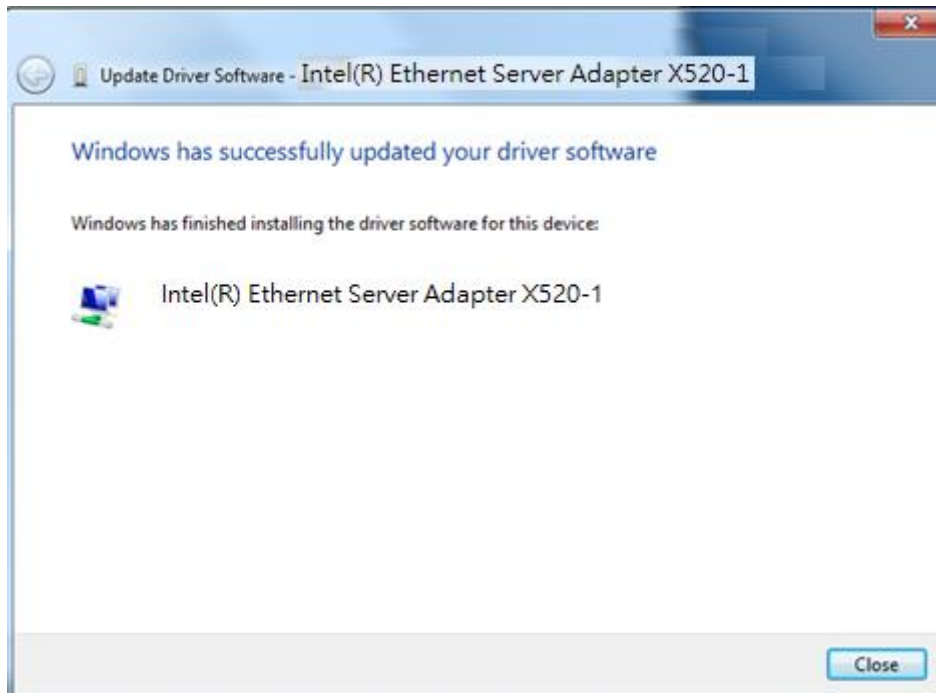
4. Please click “**Browse**” to specify the driver location to install. Click “**Next**” to continue.



The driver is being installed.



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



## Chapter 4: Specifications

<b>Product</b>	<b>ENW-9801</b> 10Gbps SFP+ PCI Express Server Adapter
<b>Hardware Specifications</b>	
<b>Hardware Version</b>	3
<b>Attachment Interface</b>	PCI Express rev. 2.0 specification x4 Interface
<b>Media Interface</b>	SFP+ Connector
<b>Optical Module Options</b>	LRM, LR, SR
<b>Jumbo Frame</b>	4K/9K Bytes
<b>LED Indicators</b>	LNK Speed (Green) LNK/ACT(Green)
<b>Dimensions (W x D x H)</b>	120 x 133 x 68 mm
<b>Weight</b>	93g
<b>Typical Power Consumption</b>	4.8 watts/16.3BTU
<b>Advanced Functions</b>	
<b>Layer 2 Features</b>	IEEE 802.3x Flow Control support IEEE 802.1Q VLAN support IEEE 802.1p CoS support
<b>Internet Small Computer System Interface (iSCSI)</b>	Yes
<b>Fiber Channel over Ethernet (FCoE)</b>	Yes
<b>Pre-boot Execution Environment (PXE)</b>	Yes
<b>Data Plane Development Kit (DPDK)</b>	Yes
<b>Operating System Support</b>	Windows Server 2008R2 64 bits Windows Server 2012R2 64 bits Windows Server 2016R2 64 bits Windows Server 2019R2 64 bits Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits Linux Stable Kernel Version (2.6.32.x to 5.x) Linux CentOS/RHEL (6.x to 7.x) Ubuntu (14.x to 16.x) UOS V20 VMware ESX/ESXi 4.x/5.x/6.x
<b>Standards Conformance</b>	
<b>Regulatory Compliance</b>	FCC Part 15 Class A, CE
<b>Standards Compliance</b>	IEEE 802.3ae 10Gbps Ethernet IEEE 802.3x Flow control and back pressure IEEE 802.1Q VLAN tagging IEEE 802.1AS Timing and synchronization IEEE 802.3ad Link aggregation

	IEEE 1588 Precision Time Protocol IEEE 802.3az Energy Efficient Ethernet (EEE)
<b>Environment</b>	
<b>Operating</b>	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
<b>Storage</b>	Temperature: -10 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
<b>Package</b>	
<b>Package Contents</b>	<ul style="list-style-type: none"><li>● ENW-9801 Server Adapter</li><li>● Quick Installation Guide</li><li>● Low Profile Bracket</li></ul>



## Chapter 5: Available 10Gbps Modules

<b>MTB-RJ</b>	<b>1-Port 10GBASE-T SFP+ Copper Fiber Optic Module - 30m</b>
<b>MTB-SR</b>	<b>1-Port 10GBASE-SR SFP+ Fiber Optic Module - 300m</b>
<b>MTB-SR2</b>	<b>1-Port 10GBASE-SR SFP+ Fiber Optic Module – 2km</b>
<b>MTB-LR</b>	<b>1-Port 10GBASE-LR SFP+ Fiber Optic Module - 10km</b>
<b>MTB-LR20</b>	<b>1-Port 10GBASE-LR SFP+ Fiber Optic Module - 20km</b>
<b>MTB-LR40</b>	<b>1-Port 10GBASE-LR SFP+ Fiber Optic Module - 40km</b>
<b>MTB-LR60</b>	<b>1-Port 10GBASE-LR SFP+ Fiber Optic Module - 60km</b>
<b>MTB-LR80</b>	<b>1-Port 10GBASE-LR SFP+ Fiber Optic Module - 80km</b>
<b>MTB-LA10</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 10km (TX:1270nm RX:1330nm)</b>
<b>MTB-LB10</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 10km (TX:1330nm RX:1270nm)</b>
<b>MTB-LA20</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 20km (TX:1270nm RX:1330nm)</b>
<b>MTB-LB20</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 20km (TX:1330nm RX:1270nm)</b>
<b>MTB-LA40</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 40km (TX:1270nm RX:1330nm)</b>
<b>MTB-LB40</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 40km (TX:1330nm RX:1270nm)</b>
<b>MTB-LA60</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 60km (TX:1270nm RX:1330nm)</b>
<b>MTB-LB60</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 60km (TX:1330nm RX:1270nm)</b>
<b>MTB-LA70</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 70km (TX:1270nm RX:1330nm)</b>
<b>MTB-LB70</b>	<b>1-Port 10GBASE-BX SFP+ Fiber Optic Module - 70km (TX:1330nm RX:1270nm)</b>