

N-TGE-SFP-02

PCIe 10 Gigabit Ethernet Fiber NIC

User Guide

Part Number 33819

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Revision History

Date	Rev	Notes
6/30/20	A	Initial release at Rev A.
2/9/22	B	Initial Lantronix re-brand; add MTBF.

Contents

1	Introduction.....	4
	Features.....	4
	Feature Descriptions.....	5
	Specifications.....	6
	Reset Signals.....	6
	Application Example	7
	Product Views.....	7
	Changing the Bracket (Optional)	8
2	Installation.....	9
	Package Contents	9
	Cautions and Warnings	9
	Safety Warnings.....	9
	Install Process	10
	System Requirements	10
	Installing the N-TGE-SFP-02	10
	Downloading and Installing the Driver	12
	Installing the Drivers from the Intel CD or Installer Package.....	12
	Install Drivers and Software.....	12
	Manually Install Intel® Network Adapter Drivers in Windows.....	13
	Additional Driver Information	14
	Windows 10	14
	Complete Driver Pack (Windows, Linux, and FreeBSD)	14
	Update Both NVM and Driver Simultaneously.....	14
	Copper SFPs and Copper Cable	16
	SFP/SFP+ Optical Modules.....	16
	Inserting the SFP/SFP+ Module	17
	Removing the SFP/SFP+ Module.....	17
	For More Fiber/SFP Information	17
3	LEDs.....	18
4	Troubleshooting.....	19
	Product and Box Label Information	20
	Record Device and System Information	21
5	Compliance Information.....	22
	Declaration of Conformity	22
	Electronic Emission Notices	22
	Federal Communications Commission (FCC) Statement	22
	European Community (CE) Electromagnetic Compatibility Directive.....	22

1 Introduction

The N-TGE-SFP-02 is a 2-port PCIe bus fiber NIC that supports a 1Gbps/10Gbps link. The open SFP slots can be used with 1000Base-X SFPs or 10GBase-SR/LR SFP+ modules. The NIC fully complies with IEEE 802.3ae and IEEE 802.3z standards. It provides up to 20 Gbps full duplex bandwidth capacity to support high-end servers. It is suitable for data center, SMB and Cloud computing applications. Two LED indicators per port (LINK/ACT and SPEED) on the bracket provide board link and activity status.

Features

- PCIe v3.0 x8 bus
- Two open SFP ports that support 1G or 10 SFP/SFP+ modules (1Gbps SFP modules must support DMI)
- Supported transmission distance based on SFP/SFP+ modules and fiber type used
- Windows 8 Professional, Windows 10 Professional, Windows Server 2012 Standard, Windows Server 2012 R2, Windows Server 2016, and Windows Server 2019
- Windows Server 2008 R2 standard, Windows 7 Professional (with Intel Network Connections Software v25.0 or earlier)
- Linux support
- IPv4 and IPv6
- PXE remote boot, Remote boot (please inquire if UEFI or iSCSI boot are required)
- IEEE 802.3x Full-Duplex Flow Control support
- LACP (Link Aggregation Control Protocol)
- IEEE 802.1Q VLAN support
- IEEE 802.1p QoS
- Jumbo Frames - 9014 and 4088 byte options in Windows > Advanced Properties tab
- Commercial operating environment (0 to +50°C)
- Checksum offload (IP/TCP/UDP)
- Virtualization/Hypervirtualization
- VMWare compatible
- SR-IOV support
- RSS/TSS
- MSI/MSI-X
- LED status indicators
- RoHS compliance
- Standard bracket attached; low-profile bracket included
- Teaming options in Windows are available using the Intel PROSet Adapter Utility. Adapter teaming with Intel® Advanced Network Services (Intel® ANS) uses an intermediate driver to group multiple physical ports. You can use teaming to add fault tolerance, load balancing, and link aggregation features to a group of ports.
 - Adapter Fault Tolerance (AFT)
 - Adaptive Load Balancing (ALB)
 - IEEE 802.3ad Dynamic Link Aggregation
 - Switch Fault Tolerance (SFT)
 - Static Link Aggregation (SLA)
 - Virtual Machine Load Balancing (VMLB)

Feature Descriptions

MR-IOV (Multi-Root IOV) allows I/O PCI Express to share resources among different VMs on different physical machines.

MSI (Message Signaled Interrupts) can allocate 1, 2, 4, 8, 16 or 32 interrupts.

MSI-X allows up to 2048 interrupts.

RSS/TSS (total sum of squares (TSS) = explained sum of squares (ESS)+ residual sum of squares (RSS)).
Linux: 64 RSS PF queues / 4 VF queues²; Windows: 32 RSS PF queues / 4 VF queues.

SRIOV (single root input/output virtualization): In virtualization, the SR-IOV specification allows the isolation of PCI Express resources for manageability and performance reasons. A single physical PCI Express bus can be shared in a virtual environment using the SR-IOV specification. SR-IOV allows different virtual machines (VMs) in a virtual environment to share a single PCI Express hardware interface.

Teaming options in Windows are available using the [Intel PROSet Adapter Utility](#). Adapter teaming with Intel® Advanced Network Services (Intel® ANS) uses an intermediate driver to group multiple physical ports. You can use teaming to add fault tolerance, load balancing, and link aggregation features to a group of ports.

Advanced Networking Services (ANS) team names are limited to 48 characters. Team names must be unique within the system. At Type, select the team type.

Adapter Fault Tolerance (AFT) provides redundancy through automatic failovers from an active adapter to a standby adapter in the case of switch port, cable, or adapter failure.

Adaptive Load Balancing (ALB) provides transmit traffic load balancing and fault tolerance in the event of switch port, cable, or adapter failure.

IEEE 802.3ad Dynamic Link Aggregation is an IEEE standard for increasing throughput between switches or a server and switch. This is accomplished by dynamically bundling or channeling several ports together and showing them as a single link using Link Aggregation Control Protocol (LACP). This increases the total bandwidth for the link and provides fault-tolerance in the event of switch port, cable, or adapters failure.

Switch Fault Tolerance (SFT) provides redundancy across switches. An adapter connected to one switch will automatically failover to a standby adapter connected to a different switch in the event of a switch, switch port, cable, or adapter failure.

Static Link Aggregation (SLA) is a performance technology developed to increase throughput between switches or a server and switch. This is accomplished by bundling or channeling several ports together and showing them as a single link. This increases the total bandwidth for the link and provides fault- tolerance in the event of a switch port, cable, or adapter failure.

Virtual Machine Load Balancing (VMLB) provides transmit and receive traffic load balancing across Virtual Machines bound to the team interface, as well as fault tolerance in the event of switch port, cable, or adapter failure.

IEEE 802.1p QoS: You can adjust the allocation of the Transmit Buffers depending on the packet priority. Using the Advanced driver setting you can allow packet priority and VLAN, and also adjust the size of the Transmit buffer. Other detailed firmware tools can be used for adding priority to Ethernet packets. These tools are OS dependent.

Specifications

Standards compliance	IEEE 802.3-2008, IEEE 802.3ae, IEEE 802.3z, IEEE 802.3x, IEEE 802.3 ad, IEEE 802.1Q, IEEE 802.1p
Bus Slot	PCIe 3.0 x8
Fiber Cable	Fiber (multimode): 50/125,62.5/125µm Fiber (single mode): 9/125µm
Data Rate (full duplex)	10 Gbps: 14,880,000 pps 1 Gbps: 1,190,476 pps
Dimensions	2.525" [64.135 mm] x 6.173" [156.79 mm] x .75" [19.05 mm]
Power Consumption	2.5W without SFP
Power Source	PCIe slot
Nominal Voltage	120/230V / 60/50Hz
Operating Temperature	0°C to +50°C
Storage Temperature	-15°C to 65°C
Altitude	0-10,000 feet
Humidity	5% to 95% (non-condensing)
Weight	0.55 lbs. (0.25 kg.)
Regulatory Compliance	EN 55024:2010 EN 55032:2012 FCC Part 15 Class B ICES-003:2017 (ITE) CE Mark
MTBF	4,636,228 hours. ENV: GB TEMP: 30.00 C. TELCORDIA CALCULATION METHOD: PartsCount (Method I)
Warranty	Limited Lifetime warranty

Note: The supported fiber type and transmission distance depend on the SFP/SFP+ module installed in the NIC's SFP slot. Note that SFP and SFP+ modules are sold separately. See the Lantronix [SFP webpage](#).

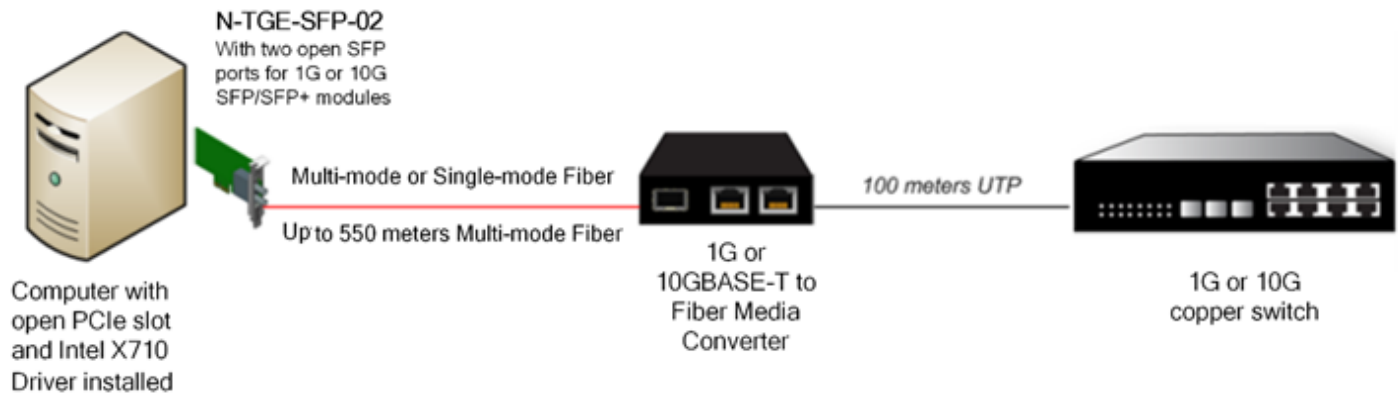
Note: Only 1G SFP modules that support DMI are recognized by the NIC Intel driver.

Note: 1G SFP modules must be installed before powering on the PC to work correctly.

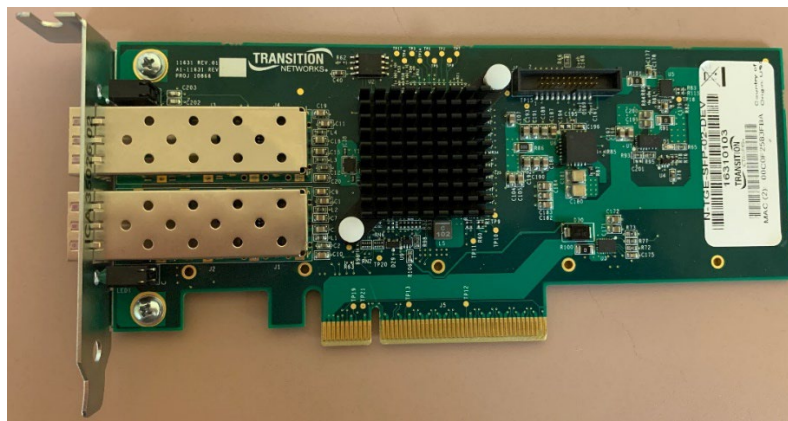
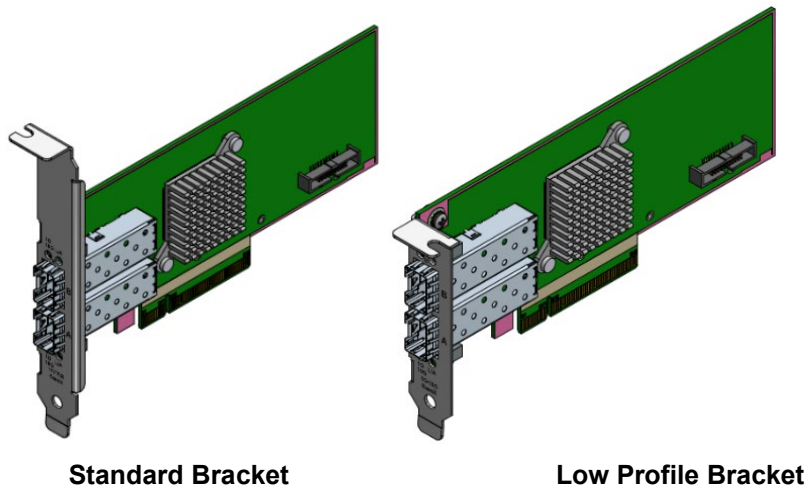
Reset Signals

Any reset signal will come from the host system via the PCIe bus.

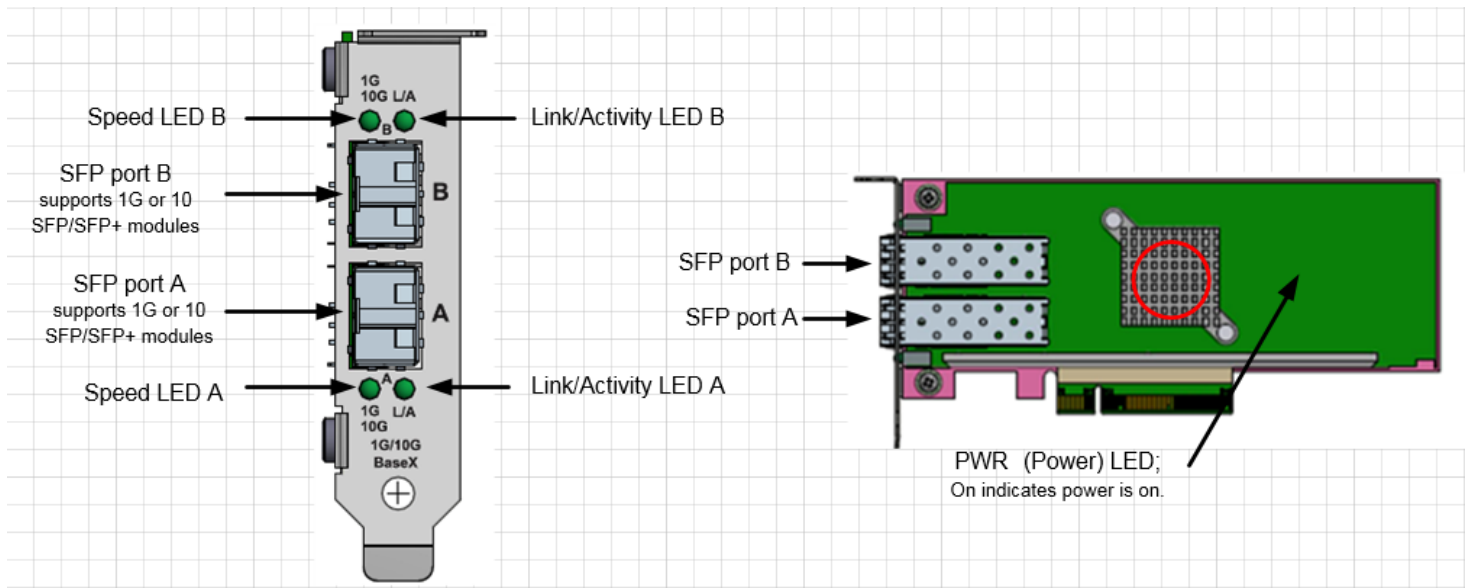
Application Example



Product Views



N-TGE-SFP-02 with Low Profile Bracket and Open SFP Slots



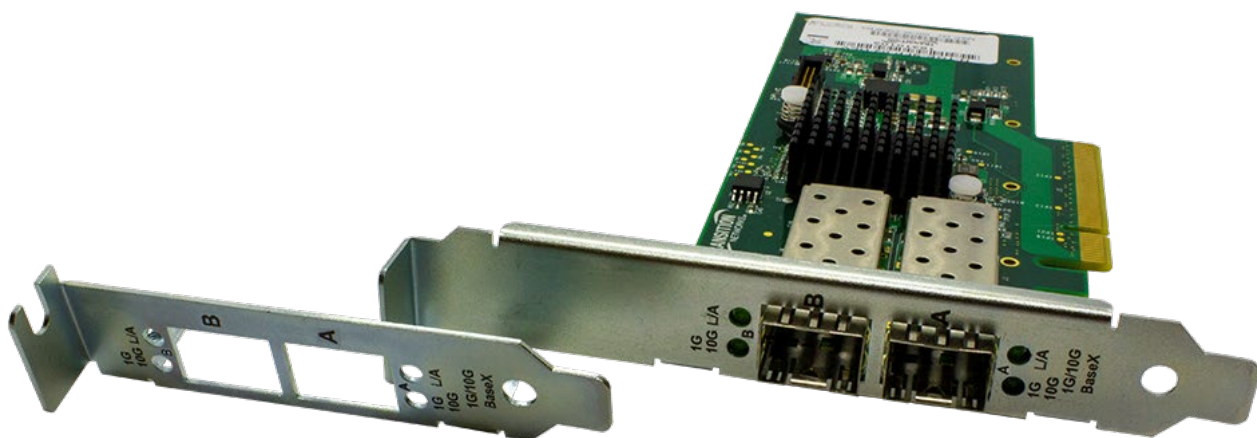
N-TGE-SFP-02 with Low Profile Bracket and Open SFP Slots

Changing the Bracket (Optional)

The NIC ships with the Standard bracket attached; an optional low profile bracket is included. Use the following procedure to change brackets.

1. Ground yourself to dissipate any static charge.
2. Remove the two screws securing the standard bracket to the back side of the NIC.
3. Slide the standard bracket away from the NIC.
4. Slide the low profile bracket onto the adapter.
5. Attach the low profile bracket to the NIC using the two screws you removed in step 2.
6. Carefully tighten the screws until they are seated. Do not over-tighten the screws.

You can re-attach the standard bracket later if necessary.



N-TGE-SFP-02 with Standard Bracket attached and Low Profile Bracket

2 Installation

Package Contents

Before you start installing the N-TGE-SFP-02, verify that the package contains these items:

- One N-TGE-SFP-02 NIC
- One Low Profile Mounting Bracket
- One Product Documentation Postcard (33504)

The drivers and this manual are at <https://www.lantronix.com/support>. Notify your sales representative immediately if any of the above items are missing or damaged. Please save the packaging for possible future use.

Cautions and Warnings

Circuit devices are sensitive to static electricity, which can damage their delicate electronics. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electrical charge.

To protect your device, always:

- Touch the metal chassis of your computer to ground the static electrical charge before you pick up the NIC.
- Pick up the NIC by holding it on the left and right edges only.

Before installing the N-TGE-SFP-02, ensure that the system meets the hardware and software requirements listed.

Any PCIe slot with the proper configuration is acceptable for connection. If the card is installed in a PCIe slot with fewer lanes than the card requires then the adapter card will not provide the optimum data transfer. When more than one PCIe slot is available make sure to use the PCIe slot with the proper configuration.

Safety Warnings

These products are not intended for use in life support products where failure of a product could reasonably be expected to result in death or personal injury. Anyone using this product in such an application without express written consent of an officer of Lantronix does so at their own risk and agrees to fully indemnify Lantronix for any damages that may result from such use or sale.

Installation Instructions: Read all installation instructions before connecting the equipment to the power source.

Over-temperature: This equipment should not be operated in an area with an ambient temperature exceeding the maximum recommended.

During Lightning - Electrical Hazard: During periods of lightning activity, do not work on the equipment or connect or disconnect cables.

Equipment Installation: This equipment should be installed, replaced, or serviced only by trained and qualified personnel.

Equipment Disposal: Disposal of this equipment should be in accordance to all national laws and regulations.

Local and National Electrical Codes: This equipment should be installed in compliance with local and national electrical codes.

Install Process

Install the NIC and then run the driver install as shown and described in the following sections.

System Requirements

- PCI Express enabled computer system with available PCI Express slot
- Supported OS
- ACPI aware OS
- The latest BIOS on your computer
- One open PCI-Express slot (v3.0 or newer) 8x, or 16x

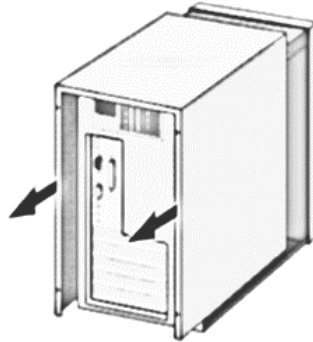
Installing the N-TGE-SFP-02

The following instructions apply to installing the N-TGE-SFP-02 NIC in most systems. Refer to the manual(s) supplied with your system for details about performing these tasks on your particular system.

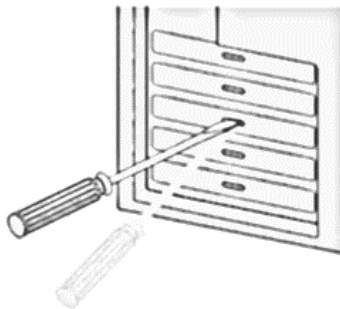
To install the N-TGE-SFP-02 NIC, perform the following steps:

Warning: Before installing the NIC, ensure the system power is OFF and unplugged from the power outlet, and that proper electrical grounding procedures have been followed.

1. Make sure the power is off before removing the cover.
2. Remove the system cover and select any empty PCIe slot as shown below.



3. If you do not know how to identify a PCIe slot, refer to your system documentation.
4. Select an empty, non-shared PCIe slot and remove the faceplate. Keep the faceplate in a safe place. You may need it for future use. See the figure below.



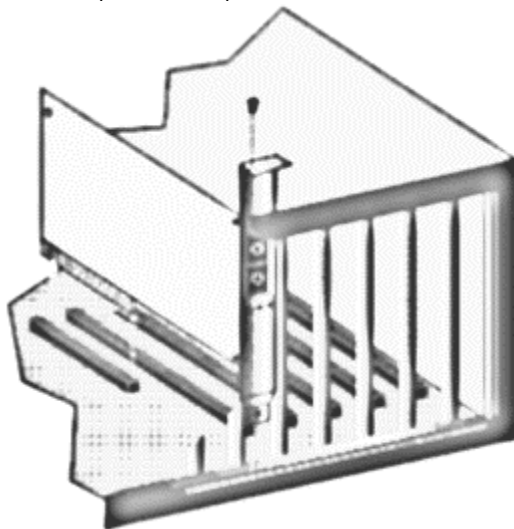
Note: If you cannot locate or don't know how to find a PCIe slot, refer to the documentation that came with your system.

5. Remove the N-TGE-SFP-02 NIC from the shipping package and store the packaging material in a safe location.

A Standard Profile bracket is included with the NIC; install the optional Low Profile bracket if the installation device requires it.

Caution: Wear a grounding device and observe electrostatic discharge precautions when installing the NIC in a system. Failure to observe this caution could result in damage to the NIC.

6. Applying even pressure at both corners of the NIC, push the NIC until it is firmly seated in the PCIe slot. Excessive force could break the connector; use caution when pressing the board in the slot. Make sure the NIC is securely seated (see below).



7. Put the system cover back on and fasten it with the screws removed in Step 2 above.
8. Connect the fiber optic cable.
9. Disconnect any personal antistatic devices.
10. Reconnect power cord to device
11. Power the system on.

Downloading and Installing the Driver

After installing the N-TGE-SFP-02 NIC, if the system does not automatically do so, download the driver from <https://www.lantronix.com/products/n-tge-sfp-02-2-2/> and follow the procedure below.

1. Download the self-extracting archive and run it. When you run it, it will extract the files to a temporary directory, run the installation wizard, and remove the temporary files when the installation is complete. All language files are embedded in this archive.
2. This self-extracting archive supports the following command line parameters:

<u>Parameter</u>	<u>Description</u>
/s	Extract the files silently.

Extracting the Files Without Installing: You can use WinRAR or WinZip to extract the files without installing them.

Plug and Play Update: After you extract the files from the archive using the /e parameter, you can use them to do a plug and play update or install.

1. Start Windows Device Manager
2. Right click on the NIC you want to update and select Update Driver.
3. Follow the directions in the Hardware Update Wizard to select the drivers you extracted.

Using the DxSetup.exe utility:

1. DxSetup.exe installs the Intel PRO Network Connections drivers and software. It automatically detects the system language and launches in that language.

Installing the Drivers from the Intel CD or Installer Package

1. Click the Network icon in the Control Panel.
2. Go to the Adapters tab and click Add.
3. Don't select an Intel adapter from the list.
4. Enter the path to your Intel CD or installer package, in the "Install from Disk" window and click OK.
5. Follow the instructions to install the drivers.

Install Drivers and Software

Windows* Operating Systems

You must have administrative rights to the operating system to install the drivers. In Windows, if the NIC ports show up as "unknown" then you must initiate the driver install.

1. Download the latest drivers from the support website and transfer them to the system.
2. If the Found New Hardware Wizard screen is displayed, click Cancel.
1. Start the autorun located in the downloaded the software package. The autorun may automatically start after you have extracted the files.
3. Click Install Drivers and Software.
4. Follow the instructions in the install wizard.

In Linux Ubuntu 18.04 and 20.04 based operating systems the driver is built into the OS, so typically you do not have to do any driver installation; the NIC just works with the driver included in the OS.

Installing Linux* Drivers from Source Code

1. Download and expand the driver tar file.
2. Compile the driver module.
3. Install the module using the modprobe command.
4. Assign an IP address using the ifconfig command.

Installing Linux Drivers from RPMs

1. Download and expand the driver tar file.
2. Install the driver using the rpm command.

Manually Install Intel® Network Adapter Drivers in Windows

See <https://www.intel.com/content/www/us/en/support/articles/000022174/network-and-i-o.html>.

In the example below, the adapter used is the Intel® Ethernet Connection X722 and Windows Server* 2016 as the base operating system.

1. Download the driver package for your Operating System. See the [Driver and Software List](#) for Webpacks Available for Intel® Ethernet Adapters.
2. The EXE is a self-extracting compressed file and you can double-click the EXE you downloaded to automatically install the drivers and Proset software. For manual installation, continue to step 3.
3. Use your preferred Zip software to extract the files from the installation package you downloaded (either PROWinx64.exe or PROWinx32.exe) to a temporary location (e.g., C:\Temp\PROWinx64).
4. Open **Device Manager** and right-click **Start** and click **Device Manager** OR run **devmgmt.msc**.
5. Right-click the connection you want to update and choose **Update Driver Software**. If there is no driver installed for that device it will show up with a yellow exclamation and have a generic name such as **Ethernet Controller**.
6. Choose **Browse my computer for driver software**
7. Click **Browse** and go to the folder where you extracted the driver files. Make sure that **Include subfolders** is checked so that it will scan the entire driver set.
8. Click **Next** and it will start to install the driver software. Once installation is complete, it will show in the network adapters section.
9. Continue with the same process for any other adapters you wish to update by selecting the adapter from the list.

Messages: *This product is not supported on this operating system. Aborting setup*

Additional Driver Information

Windows 10

Intel® Network Connections Software and Drivers: <https://downloadmirror.intel.com/25016/eng/readme.htm>

Readme for Intel(R) Ethernet Network Adapter X710-T2L for OCP 3.0:

<https://downloadmirror.intel.com/22283/eng/readme.txt>

Release Notes for Intel(R) Network Connections Software Version 25.0:

<https://downloadmirror.intel.com/25016/eng/readme.txt>

Complete Driver Pack (Windows, Linux, and FreeBSD)

Intel® Ethernet Adapter Complete Driver Pack Version: 25.0 (Latest):

<https://downloadcenter.intel.com/download/22283/Intel-Ethernet-Adapter-Complete-Driver-Pack>. This .zip file contains all of the Intel® Ethernet network drivers and software for currently supported versions of Windows*, Linux*, and FreeBSD* for most Intel® Ethernet Adapters.

Readme for Intel® Ethernet Adapter Complete Driver Pack Version:

<https://downloadmirror.intel.com/22283/eng/readme.txt>

Update Both NVM and Driver Simultaneously

Using the Intel NVM Update Package is the recommended way to update the NVM image. The NVM Update tool also asks about creating a backup copy before the update occurs, which is recommended. **Note** that selecting the wrong image through the driver boot option tab to update may cause issues.

Keeping up with software changes, performance enhancements, or security updates requires the most current hardware drivers for supported systems. Previous updates to Intel network drivers were driver specific. Currently, both the firmware (device NVM image) and network drivers are field-serviceable, allowing the NVM image and network driver to be updated as a matched set. Updating the device image and the driver together can increase numerous key features.

Note: Updating to the most current NVM (with the NVM Update Package) and driver does not update the Option ROM. Intel recommends an Option ROM update after the NVM and driver are updated.

Note: When running SR-IOV, it is recommended that all Virtual Functions be disabled before the NVM Update process.

Obtaining New NVM/Driver Images

See the [Intel Download Center](http://downloadcenter.intel.com/download/24769) for the latest NVM Packages for Windows, Linux, and FreeBSD at <http://downloadcenter.intel.com/download/24769>. Use the Software/NVM Matrix tables in the Intel Ethernet Controller [X710](#) Feature Support Matrix to ensure compatibility. These documents are continuously maintained and always current. In the webpage section “This download is valid for the product(s) listed below” select “[X710-BM2](#)”. This package contains all files required to update the non-volatile memory (NVM) on the Intel® Ethernet Adapters in your system. It contains the NVM Update Utility, configuration file, updated NVM binaries, and required driver files. See the readme file for more information, such as limitations and prerequisites, etc.

For More NVM/Driver Information

Note that the information in these manuals is for experienced system administrators who are familiar with server, network, and data center concepts and technologies.

Intel® Ethernet NVM Update Tool Quick Usage Guide for Microsoft® Windows:

<https://www.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-quick-windows-usage-guide.html>

Intel® Ethernet NVM Update Tool Quick Usage Guide for Linux:

<https://www.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-quick-linux-usage-guide.html>

Intel® Ethernet NVM Update Tool: Quick Usage Guide for EFI: [https://www-](https://www-ssl.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-quick-efi-usage-guide.html)

[ssl.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-quick-efi-usage-guide.html](https://www-ssl.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-quick-efi-usage-guide.html)

Intel® Ethernet NVM Update Tool: Quick Usage Guide for VMware ESX*:

<https://www.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-vmware-esx-quick-usage-guide.html>

Intel® Ethernet NVM Update Tool: Quick Usage Guide for FreeBSD*:

<https://www.intel.com/content/www/us/en/embedded/products/networking/nvm-update-tool-freebsd-quick-usage-guide.html>

Copper SFPs and Copper Cable

Caution: Copper SFPs generate more heat than MSA allows and are therefore not recommended for use in the NIC. Copper SFP applications include Gigabit Ethernet switches and routers, Fiber Channel switch infrastructure, xDSL applications, and Metro Edge Switching.

TN-SFP-GE-T Copper SFP: Hardened Cisco Compatible Gigabit SFP Module 1000Base-T (RJ-45)

<https://www.lantronix.com/products/tn-sfp-ge-t/>

or

TN-SFP-T-MG Copper SFP: MSA Compliant 10/100/1000Base Copper SFP Module 10/100/1000Base-T (RJ-45)

<https://www.lantronix.com/products/tn-sfp-t-mg/>

Caution: Be careful when removing the SFP or SFP+ from a device. Some SFP transceiver module temperatures may exceed 160°F (70°C) and be too hot to touch with bare hands.

Warning: Invisible laser radiation may be emitted from the aperture of the port when no cable is connected; avoid exposure to laser radiation and do not stare into open apertures.

SFP/SFP+ Optical Modules

Note that SFP and SFP+ Modules are sold separately. For Lantronix SFP/SFP+ Optical Transceivers see the SFP webpage.

SFP+ transceiver modules can be used to connect fiber optic cables to the NIC card, greatly increasing the cable reach. Note that NIC cards are shipped without SFP modules.

Warning: Never attempt to view optical connectors that might be emitting laser energy.

Do not power up the laser product without connecting the laser to the optical fiber and putting the cover in position, as laser outputs will emit infrared laser light at this point.

Caution: We strongly recommend that you do not install or remove the SFP module with fiber-optic cables attached to it because of the potential damage to the cables, the cable connector, or the optical interfaces in the SFP module. Disconnect all cables before removing or installing an SFP module.

For more information see the manual specific to your SFP on the Lantronix [SFP webpage](#).

Note: If you insert a 1G SFP module in the NIC, you must also use a 1G SFP at the connected equipment. If you insert a 10G SFP module in the NIC, you must also use a 10G SFP at the connected equipment. If using 1G SFP modules you must install them before powering on the PC. The NIC defaults to 10G operation unless the 1G SFP modules are installed before powering up. If using 1G SFPs, they must support DMI.

Note: 1G SFP modules must be installed before powering on the PC to work correctly.

Note: The supported fiber type and transmission distance depend on the SFP/SFP+ module installed in the NIC's SFP slot. Note that SFP and SFP+ modules are sold separately. See the Lantronix [SFP webpage](#).

Note: Only 1G SFP modules that support DMI (Diagnostic Monitoring Interface) are recognized by the NIC Intel driver.

Inserting the SFP/SFP+ Module

To insert the SFP module into the cage:

1. Open the SFP module's locking mechanism.
2. Make sure that the male connectors on the module will align with the female connectors inside of the cage. Also check that there is no dirt or foreign matter in the module or in the cage.
3. Insert the module into the adapter card module cage.
4. Close the locking mechanism.

Removing the SFP/SFP+ Module

To remove the SFP module from the cage:

Caution: Be careful when removing the SFP or SFP+ from a device. Some SFP transceiver module temperatures may exceed 160°F (70°C) and be too hot to touch with bare hands.

Warning: Invisible laser radiation may be emitted from the aperture of the port when no cable is connected; avoid exposure to laser radiation and do not stare into open apertures.

1. Unlock the locking mechanism by opening the handle.
2. Pull the module out of the cage.

For More Fiber/SFP Information

The Fiber Optic Association ([FOA](https://www.thefoa.org)) is an international non-profit educational organization chartered to promote professionalism in fiber optics through education, certification and standards.

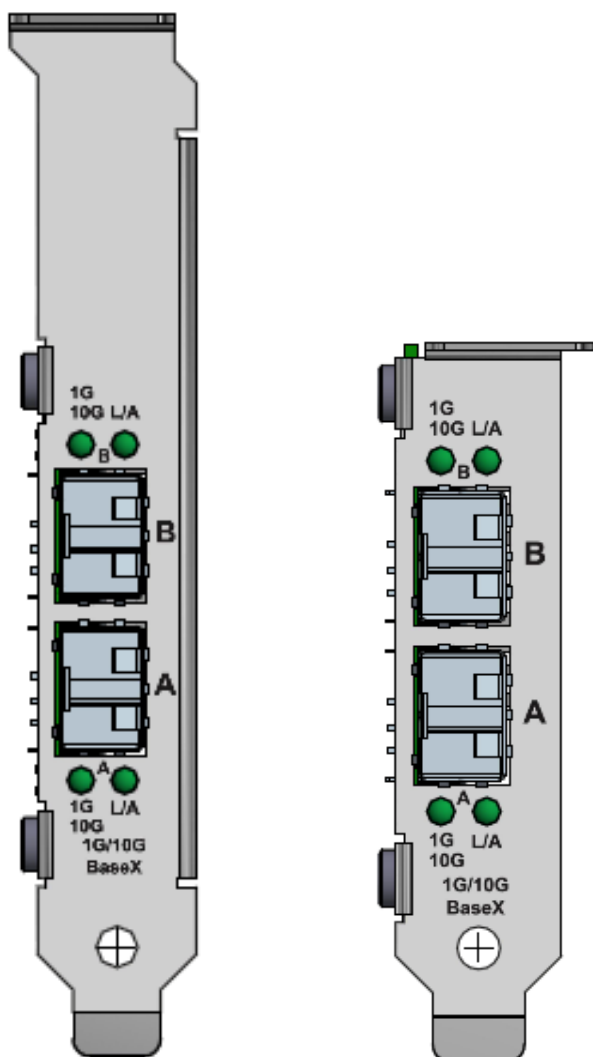
Visual Inspection and Cleaning of Connectors: <https://www.thefoa.org/tech/ref/testing/test/scope.html>

Testing & Troubleshooting Fiber Optic Systems: <https://www.thefoa.org/tech/ref/contents.html#Test>

3 LEDs

There are four LEDs on the faceplate and one LED on the PCB:

LED	Description
D1 (on PCB)	Power; on indicates power is on. LED D1 lights to indicate the 3.3V is being generated from the 12V PCIe voltage on the card. D1 is located on the top of the card near the back of the PCB.
L/A Link /Activity (on bracket)	Fiber port link status; On = link OK; Off = link fail; Flash = link OK and activity;
1G 10G Speed (on bracket)	ON=10G OFF = 1G



4. Troubleshooting

If the N-TGE-SFP-02 NIC fails, isolate and correct the fault by determining the answers to the following questions and then taking the indicated action:

1. Verify that section [5. Technical Specifications](#) on page [13](#) are met.
2. Verify that section [2. Installation](#) instructions on page [4](#) were followed.
3. Is the green L/A LED lit indicating link up?

NO

- Ensure the switch port is not down.
- Remove the failed adapter and reboot the system.
- Reseat the NIC in its PCIe slot or insert the NIC in a different PCIe slot.
- If the PCIe slot is known to be functional, replace the adapter.
- Contact Tech Support. See [Contact Us](#) on page [18](#).

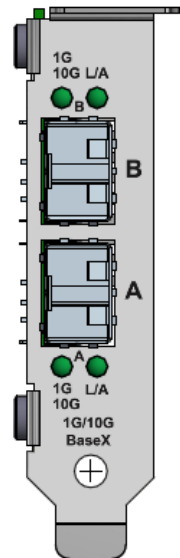
YES

- Proceed to step 4.

4. Is the green L/A LED blinking indicating traffic is present?

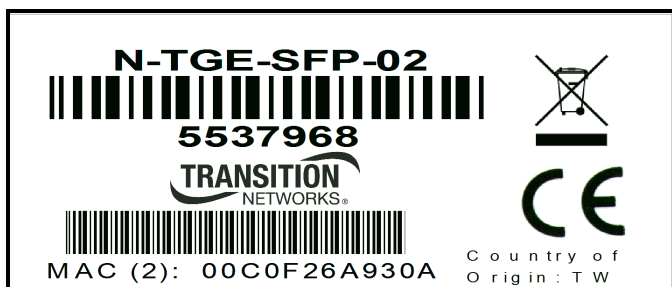
NO

- Check the cables for proper connection.
 - Ensure that the cable is connected on both ends or use a known working cable.
 - Make sure the cable length does not exceed specifications.
 - Check for conflicting or incompatible hardware devices and settings.
 - Make sure the link partner is enabled, active and can send and receive traffic.
 - Make sure the adapter and link partner settings match each other or are set to auto-negotiate.
 - If there is port activity, disconnect / reconnect the cable to restart the initialization process.
 - Restart the workstation to restart the initialization process.
 - Contact Tech Support.
5. Check the log file at C:\Windows\System32\LogFiles\PerformanceTuning.log.
 6. Check your process monitor and other system monitors. Ensure there is sufficient processor and memory capacity to perform networking activity.
 7. In Windows 7 with a port set to 10G, inserting a 1G SFP stops the interface. You must remove the SFP and disable/enable the port to get it started. The issue exists with Windows 10 older demo versions.
 8. Check the Release Notes for new features, changes, and known issues.
 9. Check for updated drivers; see [Downloading and Installing the Driver](#) on page [12](#).
 10. Check the Intel [support website](#) for possible documented issues. Select your adapter from the adapter family list. Check the FAQs section and check the Knowledge Base.
 11. Verify that the function you are trying to perform is supported. See Features on page [4](#).
 12. Contact Technical Support.



Product and Box Label Information

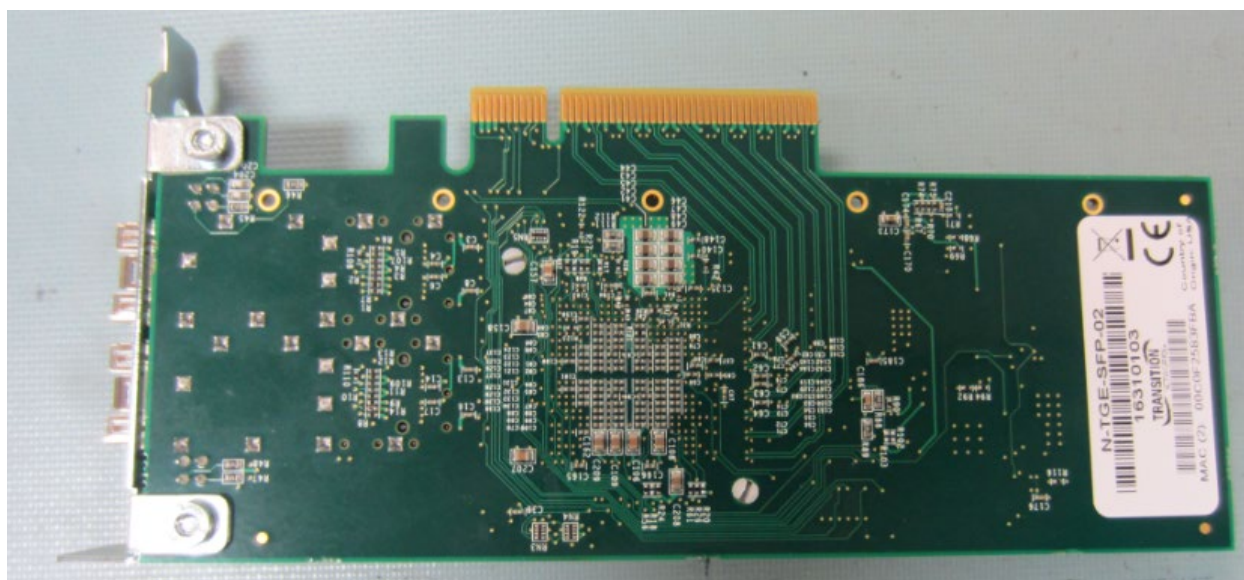
The Product ID, MAC Address, Serial #, Board PN and Rev. are printed on the Box Label and Device Label.



Product Label



Box Label



Product Label Placement

Record Device and System Information

After performing the troubleshooting steps, and before calling or emailing Technical Support, please record as much information as possible in order to help the Tech Support Specialist. Record the following information:

1. Product ID: _____ MAC Address: _____
Serial #: _____ Board PN and Rev: _____
LED status: _____

2. Record the System information: Check your computer documentation for support information.

PC make and model: _____

Operating System: _____

BIOS version: _____

Intel X710 Driver: _____

PC's Icon Tray indication: _____

Connected Device(s): _____

SFP Model: _____

Cable type: _____

3. Your Lantronix service contract number: _____

4. Describe the failure: _____

5. Describe any action(s) already taken to resolve the problem: _____

5. Compliance Information

Declaration of Conformity

Manufacture's Name: Lantronics, Inc.

Manufacture's Address: 48 Discovery, Suite 250, Irvine, California 92618 USA

Declares that the product: N-TGE-SFP-02

Conforms to the following Product Regulations:

FCC 47 CFR Part 15 Subpart B

Directive 2014/30/EU, Directive 2015/863/EU

2011/65/EU EN 50581:2012

EN 55024:2010/A1:2015, EN 55032-2012/AC:2013

ISED ICES-003 Issue 6:2016, Updated April 2019 Class B

EN61000-3-2:2014 (<16A)

EN61000-3-3:2013 (<16A)

With the technical construction on file at the above address, this product carries the CE Mark

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Place: Irvine, California

Date: April 27, 2022

Signature: *Fathi Hakam*

Full Name: Fathi Hakam

Position: Vice President of Engineering

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the FCC Part 15, Subpart B, Class B.
CISPR 22:A1:2000+A2:2002;ICES-003:2004, Class B

European Community (CE) Electromagnetic Compatibility Directive

This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN 55032, and EN 55024.

**Lantronix Corporate Headquarters**

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Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Tel: +1 (800) 526-8766, Tel: +1 (949) 453-3990, or <https://www.lantronix.com/technical-support/>

Sales Offices

For a current list of our domestic and international sales offices, go to the Lantronix web site at www.lantronix.com/about/contact.