

N-GXE-xx-01

User Guide

Gigabit Ethernet 1000BASE-SX



Network Interface Cards

- Available with multimode SC or LC connector
- High bandwidth 1000Mbps Network Speed
- Supports IEEE 802.3x Full-Duplex Flow Control
- Supports PCIe x1 bus
- Compliant with PCIe Rev.1.1 Interface
- Supports Jumbo Frames
- Supports High Level VLAN Filtering Function
- Supports IP headers and TCP/UDP checksums offload
- RoHS Compliance
- Supports on-board screening of VLAN tagged Ethernet frames

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Introduction

Transition Networks' Fiber Gigabit Ethernet to PCIe bus NIC fully complies with all IEEE 802.3z and 1000Base-SX standards. With advanced functions like VLAN filtering packet processing, the NIC provides enhanced performance, flexible configuration and secure networking for users in a standard-based environment. Two LED indicators (LINK/ACT and FDX) on the bracket will help to oversee board link activities and full-duplex status.

The GXE NICs support Preboot Execution Environment (PXE), Remote Program Load (RPL), and Bootstrap Protocol (BOOTP). Multi-Boot Agent (MBA) is a software module that allows your networked system to boot with the images provided by remote systems across the network.

Models / Part Numbers

Part Number	Description
N-GXE-SC-01 SC	850 nm multimode 62.5/125µm: 220M (722FT)/50/125µm 550m (1804ft). Standard bracket attached, low-profile bracket included. PXE boot included *
N-GXE-LC-01 LC	850 nm multimode 62.5/125µm: 220M (722FT)/50/125µm 550m (1804ft). Standard bracket attached, low-profile bracket included. PXE boot included *

* Typical maximum cable distance. Actual distance depends on the physical characteristics of the network installation. For more information, see the online user guide at <https://www.transition.com/>.

Application

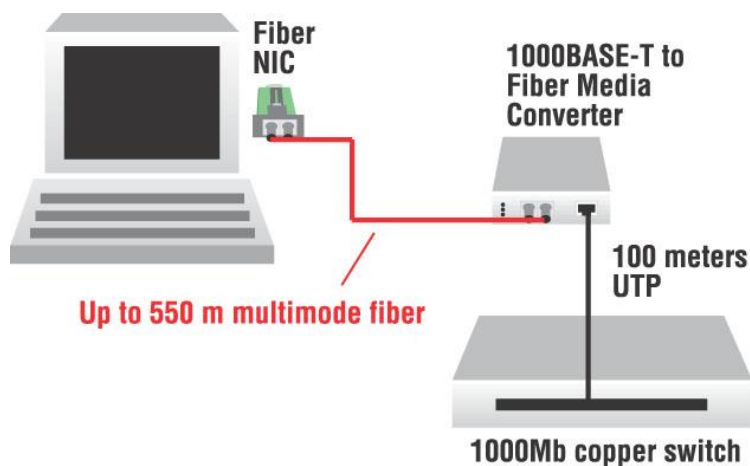


Figure 1: Application

Installation

Package Contents

Before installing the N-GXE NIC, verify that the package contains the following items:

- One N-GXE Series NIC with High Profile bracket installed
- Low-Profile Bracket
- Documentation Postcard

Notify your sales representative immediately if any of the aboved items are missing or damaged. Please save the packing materials for possible future use.

Description

The two LEDs (LINK/ACT and FDX) located on the bracket, show network/NIC link, activity, collision, and full-duplex status.

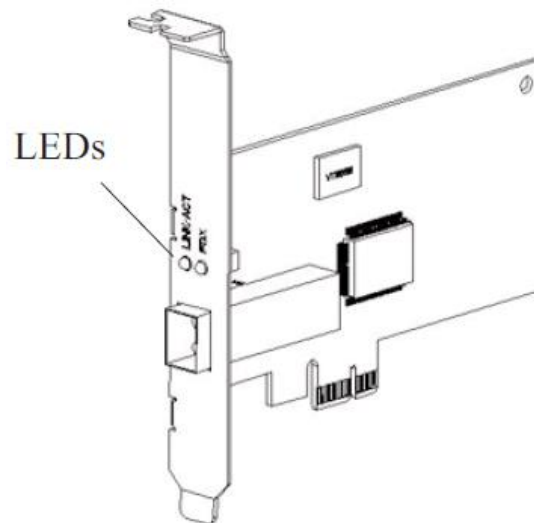


Figure 1: Layout

Install Procedure

CAUTION: Wear a grounding strap and observe electrostatic discharge precautions when installing the N-GXE NIC. Failure to observe this caution could result in failure or damage of the N-GXE NIC.

WARNING: Turn power OFF before installing the N-GXE NIC.

To install the N-GXE NIC, do the following:

1. Turn OFF power to the PC or file server and unplug the power cord.
2. Remove the cover from the PC or file server—keep all screws.
3. Select an empty PCIe slot. See system documentation for PCIe slot location. Remove and retain the faceplate.
4. Remove the network N-GXE NIC from the shipping package and store the packaging material in a safe place.
5. Apply even pressure on the corners of the N-GXE NIC, pushing down until it seats firmly into the PCIe slot.
6. Replace the PC or file server cover and secure it with the screws removed in Step 2 above.
7. Disconnect any antistatic devices.
8. Power up the PC or file server.

Driver Install Example

The Windows 7 64-bit installation procedure is as follows.

1. Download the **Drivers [ZIP]** file from www.transition.com (login required).
2. Unzip the driver to your computer (e.g., for Windows 7 64 bit OS, the driver should be unzipped in the `C:\WINDOWS7\64` directory).
3. Shut down the computer and then remove the N-GXE NIC from the computer.
4. Run "WinUinst64.exe" (under `C:\WINDOWS7\64`) and make sure the old version driver is deleted completely.
5. Run "Winsetup64.exe" (under `C:\WINDOWS7\64`) and pre-install the new driver.
6. Insert the N-GXE NIC into the computer and after you make sure it is installed properly, restart the computer. The computer should detect the network adapter and automatically install the driver.

Notes:

1. If a message displays saying that the driver is not digitally signed by Microsoft, click **Yes**.
2. If the message "*Windows has finished installing the software for this device*" displays, click **Finish** to complete the installation, and then restart Windows if needed.

Network Remote Boot Configuration

Select Remote Boot Type

To enter the MBA config menu to select remote boot type (PXE, RPL), press SHIFT-F10 keys within 3 seconds after powering up the PC, otherwise the computer will load the OS.

Set Network Remote Reboot

To set the network remote boot, first enter PC BIOS, then select the Boot tab, and then choose MBA as the priority.

Cancel Network Remote Boot

To cancel network remote boot, change the PC BIOS setting for MBA to Hard Drive or devices.

Network Parameters

Multimode Fiber Cable and Modal Bandwidth

Per IEEE 802.3z Gigabit Ethernet 1000SX 850nm

Multimode: 62.5/125um

Modal Bandwidth 160Mhz-km: Distance: 220m

Modal Bandwidth 200Mhz-km: Distance: 275m

Multimode: 50/125um

Modal Bandwidth 400Mhz-km: Distance: 500m

Modal Bandwidth 500Mhz-km: Distance: 550m

Cable Specifications

Fiber cable

Bit error rate:	<10 ⁻⁹
Multimode fiber (recommended):	62.5/125 μm
Multimode fiber (optional):	50/125 μm
N-GXE-SC-01	850 nm multimode
Fiber optic transmitter power:	min: -9.5 dBm max: -4.0 dBm
Fiber optic receiver sensitivity:	min: -17.0 dBm max: -17.0 dBm
Link budget:	7.5 dB
N-GXE-LC-01	850 nm multimode
Fiber optic transmitter power:	min: -9.5 dBm max: -4.0 dBm
Fiber optic receiver sensitivity:	min: -17.0 dBm max: 3.0 dBm
Link budget:	7.5 dB

The fiber optic transmitters on the device meet Class I Laser safety requirements per IEC-825/CDRH standard and comply with 21CFR1040.10 and 21CFR1040.11.

N-GXE-xx-01 Technical Specifications

Standards:	IEEE 802.3z, IEEE 802.3x, IEEE 802.1Q
Data rate:	100Mbps fiber media
LEDs:	LINK/ACT (on the bracket) ON = communication link; FLASHING = activity on link FDX (full duplex link); ON = full duplex link
Data transfer node/speed:	Full duplex with NWay flow control 1000Mbps speed
Software support:	Windows 98/ME, Vista, XP, 7, 8, 8.1, 10, NT 4.0; Novell NetWare 4.x, 5.x, 6.x, Linux, PXE & RPL Boot ROM
Bus Slot:	PCIe 1.1 compliant
PCB dimensions:	108 mm (L) x 68.5 mm (H) (4.2" L x 2.7" H)
Weight:	0.06kg (0.1 lbs) approximate
Power requirements:	3.3VDC @ 1.5A max.
Power consumption:	5 watts
Ambient temperature:	0°C to 50°C (32°F to 122°F)
Humidity:	5% to 90%, non-condensing
MTBF:	N-GXE-xx-01 @ 25C = 1246,176 Bellcore7 V5.0 Hours N-GXE-xx-01 @ 40C = 658,260 Bellcore7 V5.0 Hours
Warranty:	Lifetime

WARNING: Visible and invisible laser radiation when open: DO NOT stare into the beam or view directly with optical instruments. Failure to observe this warning could result in damage to your vision or blindness.

CAUTION: Use of controls, adjustments, or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

FCC Regulations: This equipment has been tested and found to comply with the limits for a class B computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN55022/EN61000-3 and the Generic European Immunity Standard EN55024.

Troubleshooting

Diagnostics LEDs

LED	Color	Function
LINK/ACT	Green	Lit when cable connection is good and speed is at 100Mbps. Blinks when any traffic is present.
FDX	Green	Lit when full-duplex mode is active.

Contact Us

Technical Support

Technical support is available 24-hours a day

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

Main Office

tel: +1.952.941.7600 | toll free: 1.800.526.9267 | fax: 952.941.2322


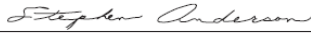
sales@transition.com | techsupport@transition.com | customerservice@transition.com

Address

Transition Networks
10900 Red Circle Drive
Minnetonka, MN 55343, U.S.A.

Web: <https://www.transition.com> Compliance Information

Declaration of Conformity

 Declaration of Conformity	
Name of Mfg:	Transition Networks, 10900 Red Circle Drive, Minnetonka, MN 55343 U.S.A.
Model:	N-GXE-xx-01 Network Interface Cards
Part Number:	N-GXE-SC-01, N-GXE-LC-01
Regulation:	EMC Directive 89/336/EEC
Purpose:	To declare that the N-GXE-xx-01, to which this declaration refers is in conformity with the following standards:
	CISPR22-2(2002) Class B, EN55022/EN61000, CE Mark, IEC61000-4-2(2001), IEC61000-4-3 (2002), IEC61000-4-4 (2001), EN55024
	I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).
 Stephen Anderson, Vice-President of Engineering	October, 2015 Date

Canadian Regulations

This digital apparatus does not exceed the Class B limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Regulations

Achtung !

Dieses ist ein Gerät der Funkstörgrenzwertklasse B. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fall ist der Benutzer für Gegenmaßnahmen verantwortlich.

Attention !

Ceci est un produit de Classe B. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.



In accordance with European Union Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003, Transition Networks will accept post usage returns of this product for proper disposal. The contact information for this activity can be found in the 'Contact Us' portion of this document.



CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentliches Telekommunikationsnetz in den EGMitgliedstaaten verstösst gegen die jeweiligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Record of Revisions

Rev	Date	Notes
A	3/31/09	Initial release.
B	5/5/16	Removed discontinued part numbers and changed format. Updated OS / driver support information.
C	4/19/17	Added MTBF info and updated contact info.

The information in this manual is subject to change without further notice.

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