



## USER'S GUIDE

### NEC-GXE-xx-01 1000Base-X Fiber ExpressCard

- Full duplex design
- Complies with ExpressCard Standard
- SC, LC, multimode, and SC single mode fiber connections
- Support Wake on LAN (*external power adapter*)
- RoHS compliance

NEC-GXE-xx-01 is a small 34mm, 1000Base-SX/LX Fiber NIC ExpressCard, which is specifically designed to plug into a notebook computer equipped with an ExpressCard slot. With its high-performance Gigabit Ethernet controller, it provides fiber optic link capability for notebook PCs (*connection to an existing fiber network at 1000Mbps data rate, using fiber optic cable*). The diagnostic LED is easily visible for maintenance purposes. Extensive Network Operating System (NOS) drivers such as Novell Netware, Windows XP/Vista/2003 server/2008 server/Windows 7, Linux 2.6xx and PXE/RPL remote boot are available.

Part Number	Fiber Port
NEC-GXE-SC-01	SC, 850nm multimode, 550m (1804 ft), 50/125 μm fiber PXE*
NEC-GXE-LC-01	LC, 850nm multimode, 550m (1804 ft), 50/125 μm fiber PXE*
NEC-GXE-SC10-01	SC, 1310nm single mode, 10km (6.2 miles) PXE*
NEC-GXE-LC10-01	SC, 1310nm single mode, 10km (6.2 miles) PXE*
NEC-GXE-LC20-01	SC, 1310nm single mode, 20km (12.4 miles) PXE*

\*Typical maximum cable distance, actual distance is dependent upon the physical characteristics of the network installation.

#### Optional accessories

Kit	Description
NEC-GXE-WOL	Wake-on-LAN (WOL) accessory kit.

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## Installation

### Checklist

Before installing the NEC-GXE-xx-01, verify that the package contains the following items:

- NEC-GXE-xx-01, 1000Base FX ExpressCard
- LAN Drivers and User's Guide CD

Please notify your sales representative immediately if any of the aforementioned items are missing or damaged.

### Description

The ExpressCard has L/A (*Link/Activity*) LED on the top plastic cover, which shows network/link activity. See Figure 1.

### NEC-GXE ExpressCard installation

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

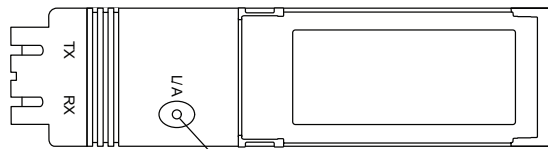


Figure 1: NEC-GXE-xx-01

**Note:** If you do not know how to identify an ExpressCard slot, refer to your laptop's documentation.

To install the NEC-GXE ExpressCard, do the following:

1. Insert the NEC-GXE ExpressCard into the express-card slot on the notebook computer. See Figure 2.
2. Connect the card to the network using a fiber cable.

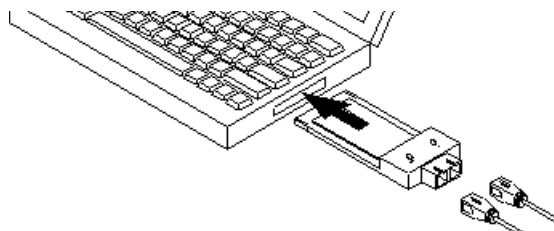


Figure 2: NIC Card and Fiber Cable Installation

## Installation continued

### Driver installation

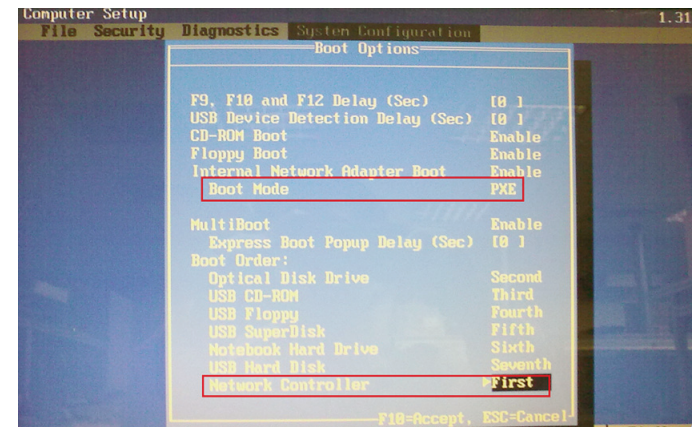
To install a driver, do the following:

1. Insert the CD into the CD-ROM tray.
2. Click on the Driver folder.
3. Click on the folder of the drive that you want to install. For example, winXP: D:\Driver\WinXP\32
4. Click on the "Installation.txt" doc and follow the instruction to install the driver.

### Network remote boot configuration

#### PXE installation

1. DHCP Server: Assign an IP address to the PXE client and instruct the client from which to boot.
2. TFTP Server: Transfer files from the TFTP server to the boot client.
3. BIOS Setting: The ROM image presents itself as the BIOS boot devices: PXE Hot Key Shift + S. See screenshot below.

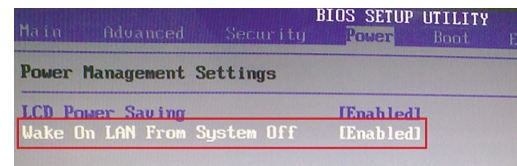


### Wake on LAN (WoL)

The Wake on LAN function on this NIC can recognize a wake-up frame and signal the NoteBook to power up.

#### WoL verification:

- BIOS support, see screen shot below.



- NoteBook's motherboard support WoL and ExpressCard/34

## Installation—continued

### Wake on LAN—continued

Input +3.3VDC to enhance the 3.3V-Aux. See Figure 3.

To connect power to the NEC-GXE-xx-01 for the wake-on LAN, do the following:

1. Locate the optional NEC-GXE-WOL kit.
2. Plug the power cable into the NIC card. See Figure 3.
3. Plug the power supply into an AC outlet.
4. Plug the barrel connect of the power supply into the power cable for the NIC. See Figure 3.

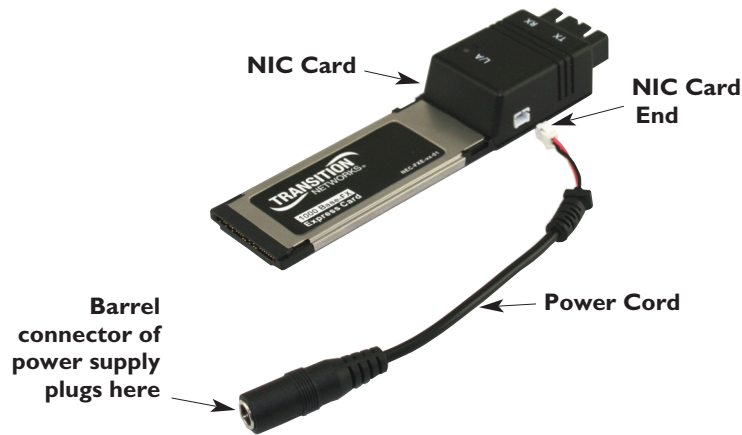


Figure 3: NEC-GXE-WOL kit Installation

## Cable Specifications

### Fiber cable

Bit error rate:	<10 <sup>-9</sup>
Single mode fiber ( <i>recommended</i> ):	9/125 μm
Multimode fiber ( <i>recommended</i> ):	62.5/125 μm

NEC-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	

NEC-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	

NEC-GXE-SC20-01		1310 nm single mode
Fiber optic transmitter power:	min: -9.5 dBm	max: -3.0 dBm
Fiber optic receiver sensitivity:	min: -20.0 dBm	max: -3.0 dBm
Link budget:	10.5 dB	

NEC-GXE-LC20-01		1310 nm single mode
Fiber optic transmitter power:	min: -9.5 dBm	max: -3.0 dBm
Fiber optic receiver sensitivity:	min: -21.0 dBm	max: -3.0 dBm
Link budget:	11.5 dB	

NEC-GXE-LC20-01		1310 nm single mode
Fiber optic transmitter power:	min: -8 dBm	max: -2.0 dBm
Fiber optic receiver sensitivity:	min: -23.0 dBm	max: -1.0 dBm
Link budget:	15 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.

## Technical Specifications

For models NEC-GXE-xx-01.

Standards:	IEEE 802.1q VLAN Tagging, IEEE 802.1p Priority Coding, IEEE 802.3u, IEEE 802.3x, ExpressCard Compliant
Data transfer rate	1000 Mbps, 1,488,000 pps
LED:	LINK/ACT -ON = communication link -Flashing = activity on link
Jumbo frames:	up to 9Kbytes
LAN Drivers:	Windows 7, XP, Vista, 2008 server
Card Slot:	ExpressCard/34, 26 pin connector
Dimensions:	128(L) x 34(W) 5(H) mm (5.04"(L) x 1.34"W) 0.19"H)
Weight:	1 lb (0.454kg) approximately
Power consumption:	3.3 watts
Ambient temperature:	0°C to 50°C (32°F to 122°F)
Humidity:	5% to 90%, non-condensing
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.

### Electronic emission notices

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.

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

## Troubleshooting

### Diagnostics LEDs and Boot ROM

LED	Color	Function
LINK/ ACTIVITY	Green	<ul style="list-style-type: none"> <li>Lit when the cable connection is good and speed is at 1000Mbps.</li> <li>Blinks when traffic is present.</li> </ul>

## Contact Us

### Technical support

Technical support is available at [techsupport@transition.com](mailto:techsupport@transition.com)

- US and Canada: 1-800-260-1312 (24 hours)
- International: 00-1-952-941-7600 (24 hours)

### Transition now

Chat live via the Web with Transition Networks Technical Support. Log onto [www.transition.com](http://www.transition.com) and click Tech Support/Transition Now link.

### Web-based seminar



Transition networks provides seminars via live, web-based training. Log onto [www.transition.com](http://www.transition.com) and click the Learning Center link.

### Email

Ask a question anytime by sending an email to our technical support staff: [techsupport@transition.com](mailto:techsupport@transition.com)

### Address

Transition Networks  
10900 Red Circle Drive  
Minnetonka, MN 55343, U.S.A.  
Telephone: 952-941-7600  
Toll free: 800-526-9267  
Fax: 952-941-2322

 <b>Declaration of Conformity</b>	
<b>Name of Mfg:</b>	Transition Networks, 10900 Red Circle Drive Minnetonka, MN 55343 U.S.A.
<b>Model:</b>	NEC-GXE-xx-01 Network Interface Cards
<b>Part Number:</b>	NEC-GXE-SC-01, NEC-GXE-LC-01, NEC-GXE-SC10-01, NEC-GXE-LC10-01, NEC-GXE-SC20-01
<b>Purpose:</b>	To declare that the NEC-GXE-xx-01, to which this declaration refers, is in conformity with the following directive(s) and standard(s):
EN55022/EN61000-3-2:2000; EN55022:1998+A1:2000+A2:2003, Class B; EN61000-3-3:1995+A1:2001; CISPR 22:A1:2000+A2:2002; ICES-003:2004, Class B EN55024/1998+A1:2001+A2:2003; CE Mark.	
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	May, 2011 Date

## Compliance Information

### 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.

### 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 Community (CE) Electromagnetic Compatibility Directive

This equipment has been tested and found to comply with the protection requirements of European Emission Standard and the Generic European Immunity Standard.



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.

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