

## USER'S GUIDE

### N-FXE-xxx-01, 100Base-FX Fiber Adaptor NIC Cards

- **PCI-Express x1 Interface**
- **Available with SC, ST, LC multimode and single mode fiber connections**
- **Wake-on-LAN (WoL)**
- **Supports 802.1q VLAN tagging**

100Base-FX Fiber Adapter NIC is a Fast Ethernet NIC that fully complies with all IEEE 802.3u and 100Base-FX standards. Two LED indicators (*LINK/ACT* and *FDX*) on the bracket will help to oversee board link activities and full-duplex status.

Fast Ethernet PCI-E 100Base-FX Fiber adapters 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.

| Part Number  | Fiber Port  |
|--------------|---|
| N-FXE-ST-01  | ST 1310 nm multimode, 2km ( <i>1.2 miles</i> ) std/low profile bkt<br>PXE boot included*  |
| N-FXE-SC-01  | SC, 1310 nm multimode, 2km ( <i>1.2 miles</i> ) std/low profile bkt<br>PXE boot included* |
| N-FXE-LC-01  | LC, 1310 nm multimode, 2km ( <i>1.2 miles</i> ) std/low profile bkt<br>PXE boot included* |
| N-FXE-SC5-01 | SC, 1310 nm multimode, 5km ( <i>3.1 miles</i> ) std/low profile bkt<br>PXE boot included* |
| N-FXE-LC5-01 | SC, 1310 nm multimode, 5km ( <i>3.1 miles</i> ) std/low profile bkt<br>PXE boot included* |

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

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## Installation

### Checklist

Before installing the Fast Ethernet N-FXE Series 100Base-FX Fiber NIC, verify that the package contains the following items:

- Fast Ethernet N-FXE Series 100Base-FX Fiber NIC
- LAN Driver and User's Guide CD-ROM

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

### Description

The two LED indicators, LINK/ACT and FDX located on the bracket, show network/board link activities, collision, and full-duplex statuses. See Figure 1.

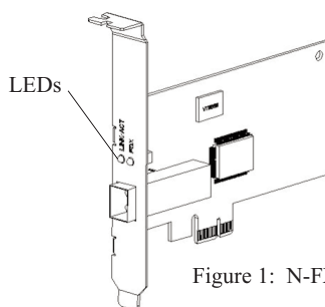


Figure 1: N-FXE-xx-01

### N-FXE NIC card installation

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

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

To install the N-FXE module, 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 PCI-E slot. (*see system documentation if not sure where the PCI-E slots are located*) and remove the faceplate. Keep the faceplate.
4. Remove the network N-FXE- NIC from the shipping package and store the packaging material in a safe place.
5. Apply even pressure on the corners of the N-FXE NIC card, pushing down until it seats firmly into the PCI-E slot.

## Install the N-FXE NIC card -- continued

6. Replace the PC or File Server cover and secure it with the screws removed in Step 2.
7. Disconnect any antistatic devices.
8. Power up the unit.

### Network remote boot configuration

#### Select remote boot type

To enter the MBA configuration 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

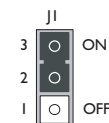
To set the network remote boot, enter PC BIOS first and then select the Boot tab, after that choose MBA as the priority.

#### Cancel network remote boot

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

### Wake on LAN (WoL)

The WoL function on this NIC can recognize a wake-up frame and signal the PC to power up. The default state of the WoL function is enabled (ON), which means pin 2 and pin 3 on J1 (*3-pin header*) are connected via a jumper, as shown below.



Wake on LAN select Jumper (J1)

## Cable Specifications

### Fiber cable

|   |                            |                |
|---|----------------------------|----------------|
| Bit error rate:                           | <10 <sup>-9</sup>          |                |
| Single mode fiber ( <i>recommended</i> ): | 9 μm                       |                |
| Multimode fiber ( <i>recommended</i> ):   | 62.5/125 μm                |                |
| Multimode fiber ( <i>optional</i> ):      | 100/140, 85/140, 50/125 μm |                |
| N-FXE-ST-01                               | 1310 nm multimode          |                |
| Fiber optic transmitter power:            | min: -19.0 dBm             | max: -14.0 dBm |
| Fiber optic receiver sensitivity:         | min: -31.0 dBm             | max: -xx.0 dBm |
| Link budget:                              | 12.0 dB                    |                |
| N-FXE-SC-01                               | 1310 nm single mode        |                |
| Fiber optic transmitter power:            | min: -19.0 dBm             | max: -14.0 dBm |
| Fiber optic receiver sensitivity:         | min: -31.0 dBm             | max: -14.0 dBm |
| Link budget:                              | 12.0 dB                    |                |
| N-FXE-LC-01                               | 1310 nm single mode        |                |
| Fiber optic transmitter power:            | min: -19.0 dBm             | max: -14.0 dBm |
| Fiber optic receiver sensitivity:         | min: -32.0 dBm             | max: -14.0 dBm |
| Link budget:                              | 13.0 dB                    |                |
| N-FXE-SC5-01                              | 1310 nm single mode        |                |
| Fiber optic transmitter power:            | min: -20.0 dBm             | max: -0.0 dBm  |
| Fiber optic receiver sensitivity:         | min: -32.0 dBm             | max: 14.0 dBm  |
| Link budget:                              | 12.0 dB                    |                |
| N-FXE-LC5-01                              | 1310 nm single mode        |                |
| Fiber optic transmitter power:            | min: -20.0 dBm             | max: -0.0 dBm  |
| Fiber optic receiver sensitivity:         | min: -32.0 dBm             | max: 0.0 dBm   |
| Link budget:                              | 12.0 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 N-FXE-xxx-01

|                           |  |
|---------------------------|--|
| Standards:                | IEEE 802.3u, IEEE 802.3x, IEEE 802.1q VLAN   |
| Data rate                 | 100Mbps fiber media  |
| LED:                      | LINK/ACT ( <i>on the bracket</i> )<br>ON = communication link; FLASHING = activity on link<br>FDX ( <i>full duplex link</i> ); ON = full duplex link                                       |
| Data transfer node/speed: | Full duplex with NWay flow control<br>100Mbps speed  |
| Software support:         | <ul style="list-style-type: none"> <li>• Windows 2000, 2003, XP, NT4.0, Vista</li> <li>• Novell Netware 4.x</li> <li>• Linux</li> <li>• NDIS2</li> <li>• PXE &amp; RPL Boot ROM</li> </ul> |
| Bus Slot:                 | PCI-E 1.0 compliant  |
| PCB dimensions:           | 120(L) x 68.5(H) mm<br>(4.72" L x 2.7" H)  |
| Weight:                   | 0.06kg (0.1 lb) approximate  |
| Power requirements:       | 3.3VDC @ 85A   |
| Power consumption:        | 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.

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.



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

## Troubleshooting

### Diagnostics LEDs and Boot ROM

#### LEDs

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

|  |   |
|--|---|
|  <b>Declaration of Conformity</b>                   |   |
| <b>Name of Mfg:</b>  | Transition Networks, 10900 Red Circle Drive,<br>Minnetonka, MN 55343 U.S.A.   |
| <b>Model:</b>  | N-FXE-xxx-01 Network Interface Cards  |
| <b>Part Number:</b>  | N-FXE-ST-01, N-FXE-SC-01, N-FXE-LC-01<br>N-FXE-SC5-01, N-FXE-LC5-01   |
| <b>Regulation:</b>   | EMC Directive 89/336/EEC  |
| <b>Purpose:</b>  | To declare that the N-FXE-xxx-01, to which this declaration<br>refers, is in conformity with the following standards: |
| CISPR22-2(2002) Class B, EN55022/EN61000, CE Mark, IEC61000-4-2(2001),<br>IEC61000-4-3 (2002), IEC61000-4-4 (2001)                   |   |
| I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s)<br>and Standard(s).         |   |
| <br>Stephen Anderson, Vice-President of Engineering | February, 2009<br>Date  |

## 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 the 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

## Compliance Information

CISPR22-2(2002) Class B, EN55022/EN61000, CE Mark, IEC61000-4-2(2001), IEC61000-4-3 (2002), IEC61000-4-4 (2001)

### FCC regulations

This equipment has been tested and found to comply with the limits for a Class A 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 the user's own expense.

### Canadian regulations

This digital apparatus does not exceed the Class A 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 A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### European regulations

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

**Achtung!** Dieses ist ein Gerät der Funkstörgrenzwertklasse A. 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 A. 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 EG-Mitgliedstaaten 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.**

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