LANTRONIX®

N-FXE-xx-02

100Base-FX Fiber Adaptor NIC Cards

User Guide

Part Number 33509
Revision D October 2021

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Warranty

For details on the Lantronix warranty policy, please go to our web site at http://www.lantronix.com/support/warranty.

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

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Federal Communications Commission (FCC) Statement

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

1. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

   (1) This device may not cause harmful interference, and

   (2) This device must accept any interference received, including interference that may cause undesired operation.

2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

3. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Revision History

Date	Rev.	Comments
11/30/11	A	Initial release.
5/1/15	B	Updated Technical Specifications and changed format/layout.
9/1/20	C	Updated features, specifications and contact information.
10/22/21	D	Initial Lantronix re-brand.

Table of Contents

1 Introduction

This document applies to the Lantronix N-FXE-xx-02 100Base-FX Fiber Adaptor NIC Cards.

Product Description

The N-FXE-xx-02 Series is a Fiber Fast Ethernet to PCI-Express (PCIe) bus adapter that fully complies with all IEEE 802.3u and 100Base-FX standards. It provides up to 200Mbps full-duplex bandwidth capacity to support high-end systems. In addition, with advanced functions like VLAN filtering packet processing, the adapter provides added performance, flexible configuration and secure networking to users in a standards-based environment.

The PCI-Express (PCIe) design gives you the maximum possible bandwidth and bus efficiency, along with low power consumption. For users equipped with PCI-Express systems, N-FXE-xx-02 Series provides the ability to easily build or connect to Fast Ethernet fiber networks.

Two LED indicators (LINK/ACT and FDX) on the bracket display NIC link activities and full-duplex status.

The N-FXE-xx-02 support Preboot Execution Environment (PXE). The Multi-Boot Agent (MBA) software module lets your networked system boot with the images provided by remote systems across the network.

Ordering Information

Part Number	Fiber Port
N-FXE-ST-02	100Base-FX 1300nm multimode (ST); [2 km/1.2 mi.*] Link Budget: 12.0 dB. Standard & LP brackets; PXE boot included.
N-FXE-SC-02	100Base-FX 1300nm multimode (SC); [2 km/1.2 mi.*] Link Budget: 12.0 dB. Standard & LP brackets; PXE boot included.
N-FXE-LC-02	100Base-FX 1300nm multimode (LC); [2 km/1.2 mi.*] Link Budget: 13.0 dB. Standard & LP brackets; PXE boot included.
N-FXE-MT-02	100Base-FX 1300nm multimode (MT-RJ); [2 km/1.2 mi.*] Link Budget: 12.0 dB Standard & LP brackets; PXE boot included.

***** Typical max. cable distance. Actual distance depends on installed network physical characteristics.

Features

- PCI-Express x1 Interface
- IEEE 802.3x Full-Duplex Flow Control
- Supports Multicast Frame Filtering
- Supports Asymmetric/Symmetric Flow control
- Supports IEEE 802.1Q VLAN tagging
- IPv6 Capable
- Wake-on-LAN (WoL) power management
- Microsoft certified drivers
- PXE remote boot support
- RoHS Compliance
- UEFI (PC platform BIOS must support)
- Message Signaled Interrupts (MSI)
- Extended Message Signaled Interrupts (MSI-X)
- TCP Segmentation Offload (large send v1 and large send v2 support)
- Available with SC, LC, and MT-RJ multimode fiber connectors
- Standard bracket attached; low-profile bracket included
- Compliant with PCIe Rev 1.1 interface
- Supports Jumbo Frame
- Supports ASF 2.0
- ACPI Supported

2 Installation

Checklist

Before installing the N-FXE Series NIC, verify that the package contains these items:

- Fast Ethernet N-FXE Series 100Base-FX Fiber NIC
- Product Post Card

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

Description

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

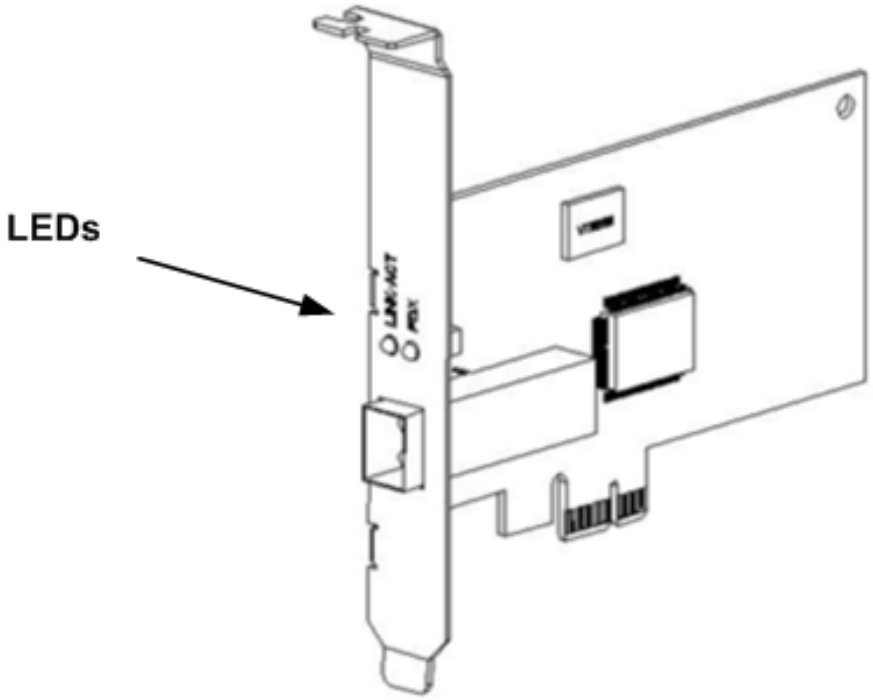


Figure 1. N-FXE-xx-02

Installation Procedure

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

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

To install the N-FXE:

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 and keep the retaining screws.
3. Select an empty PCI-e slot (see system documentation if unsure where PCI-e slots are located) and remove the faceplate. Keep the faceplate.
4. Remove the network N-FXE from the shipping package and store the packaging material in a safe place.
5. Apply even pressure on the corners of the N-FXE, pushing down until it seats firmly into the PCI-e slot.
6. Replace the PC or file server cover and secure it with the screws removed in Step 2.
7. Power up the PC or file server.

Network Remote Boot Configuration

Select remote boot type

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

Set network remote reboot

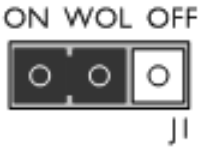
To set the network remote boot, enter PC BIOS first and then select the Boot tab, after that choose MBA as the priority.

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:	<10-9
Single mode fiber (*recommended*):	9 µm
Multimode fiber (*recommended*):	62.5/125 µm
Multimode fiber (*optional*):	100/140, 85/140, 50/125 µm
N-FXE-ST-02	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-02	1310 nm multimode
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-02	1310 nm multimode
Fiber optic transmitter power:	min: -19.0 dBm max: -14.0 dBm
Fiber optic receiver sensitivity:	min: -32.0 dBm max: -14.0 dBm
N-FXE-MT-02	1300nm multimode (MT-RJ)
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

The fiber optic transmitters on the device meet Class I Laser safety requirements per IEC-825/CDRH standard and comply with 21CRF1040.10 and 21CRF1040.11.

Specifications

For model N-FXE-xx-02:

Standards:	IEEE 802.3u, IEEE 802.3x, IEEE 802.1q
Bus Slot	PCIe 1.1
Data rate:	100Mbps fiber media
Status LEDs:	LINK/ACT (Link/Activity): ON = communication link; FLASHING = activity on link FDX (Full-duplex): ON = Full-duplex link
Software support:	Windows 2003, 10, NT 4.0, Windows 2008 Server, Vista, Novell NetWare 5.x, 6.x, Linux
Boot Server Support	PXE Boot ROM
Dimensions:	Depth: 4.25” [108 mm], Height: 2.70” [68.5 mm]
Power Consumption	1.2 Watts (max), +3.3 VDC @ 0.7A
Weight	1 lb. [0.45 kg]
Environment	Operating Temp: 0°C to 50°C Storage Temp: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Certifications	EMI Standard, FCC Class B, CE Mark
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.

3 Related Information

Troubleshooting

Diagnostics LEDs

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

Declaration of Conformity

Name of Mfg: Lantronix, Inc., 7535 Irvine Center Drive, Suite100, Irvine, CA 92618, USA

Model: N-FXE-xxx-02 Network Interface Cards

Part Number: N-FXE-ST-02, N-FXE-SC-02, N-FXE-LC-02, N-FXE-SC5-02, N-FXE-MT-02

Purpose: To declare that the N-FXE-xxx-02, to which this declaration refers, is in conformity with the following standards:

CISPR22-2(2002) Class B, EN55022/EN6100, CE Mark, IEC61000-4-2(2001), IEC61000-4-3 (2002), IEC61000-4-4 (2001)

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

Stephen Anderson

Stephen Anderson, Vice President of Engineering

Date: November 2011

Document Links and Lantronix URLs

- Lantronix website: https://www.lantronix.com
- Product Index: https://www.lantronix.com/resources/product-index/
- Application Notes: https://www.lantronix.com/resources/app-notes/
- Technical Support : +1.952.358.3601, 1.800.260.1312, or techsupport@transition.com
- How to buy: https://www.lantronix.com/buy/
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- Contact Us : https://www.lantronix.com/about-us/contact/

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- About Our Terms and Conditions
- General Terms of Sale
- Reseller Terms of Sale

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- Extended Warranties

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  - End User License Agreement
  - OEM License Agreement
  - Software Development License Agreements

Compliance

- Code of Business Conduct and Ethics
- Conflict Minerals

Intellectual Property

- Patents
- Trademarks

Revision History

Date	Rev	Notes
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