

LFX2-MA Fast Ethernet Extender

Installation Guide



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The Lantronix LFX2-MA Fast Ethernet Extender is a 10/100 bridge that can be used in a number of ways in an Ethernet environment:

1. Conversion between 10 Mbps Ethernet and 100 Mbps Fast Ethernet - allows devices of one speed to be connected to a segment supporting the other speed
2. Network conversion - the LFX2-MA's optional MII and AUI interfaces allow different types of 10 Mbps and 100 Mbps Ethernet media to be bridged
3. Cable extension for 100BASE-T networks - regenerates packets and therefore supports network diameters greater than those possible if using only hubs or repeaters
4. Collision domain separation - reduces unnecessary traffic on each segment which allows for greater throughput

The LFX2-MA has 2 10/100 RJ45 ports, each capable of autosensing both speed and half/full duplex operation. An alternate MII interface is available on one port and an alternate AUI on other. Each LFX is a self-learning bridge, capable of supporting 8,192 addresses and performing wirespeed filtering and forwarding. All bridging functions are automatic - no management software is required. The LFX2-MA conforms to the IEEE 802.3 10BASE-T and IEEE 802.3u 100BASE-T standards.

Installation Tips

Note: These tips are additional to the Installation Instructions that can be found on the back of the unit.

- ▼ The RJ45 ports on the LFX2-MA are autosensing for speed and for half/full duplex operation. When the unit is powered on, verify the correct modes of operation by examining the LEDs for that port. No further configuration is necessary. If the correct mode of operation does not appear in the LED display, check the cable and connecting equipment. If changes are made, power the unit off and then on again to reset.
- ▼ If the optional MII or AUI port is selected for either one of the ports, then the RJ45 interface on that port is rendered inoperative.
- ▼ If the Link/Duplex LED for a port is not lit, please check the cable being used. The port will only be operational if the LED is green (Good Link/Half Duplex) or yellow (Good Link/Full Duplex).

Power Requirements

The Lantronix LFX2-MA is shipped with either a 120VAC (-01 version) or a 220VAC (-02 version) power supply. Input power requirements are 15 volts at 1.0 Amps.

CAUTION:

Not for installation in air ducts or plenums or other environmental air handling spaces. Changes or modifications to this device not explicitly approved by Lantronix will void the user's authority to operate this device.

Cable Requirements

The Lantronix LFX2-MA is compatible with UTP (unshielded twisted pair) and STP (shielded twisted pair) cables. EIA category 3,4 or 5 cables can be supported on the RJ45 connectors.

All ports of the LFX2-MA are configured as MDI-X ports; Port 2 has an MDI option for connecting to hubs, repeaters or other switches.

The following cable configuration is suggested for the cables attached to an LFX2-MA:

	LFX2-MA	End nodes	MDI-X ports	MDI ports
Pin 1	TD+	TD+	RD+	TD+
Pin 2	TD-	TD-	RD-	TD-
Pin 3	RD+	RD+	TD+	RD+
Pin 6	RD-	RD-	TD-	RD-

1. The cable between the LFX2-MA and an end-node or another switch is straight through.
2. The cable between the LFX2-MA and a hub or repeater is not straight through but rather a "crossover" (transmit pairs and receive pairs are reversed). By selecting the MDI option (when available), a straight through cable can be used.

Technical Support

If problems occur during product operation, please check the LFX2-MA switch settings, cables, connectors, network terminators, hardware compatibility and other network components first.

Prior to contacting Lantronix Technical Support, please have the following information available:

- Model number and serial number
- Purchase date
- Network configuration
- Definition of the problem encountered

Lantronix Technical Support can easily be reached at our worldwide website at www.lantronix.com. The website contains technical tips and other helpful product information.

Lantronix Technical Support can also be reached via email at support@lantronix.com, or via telephone between the hours of 6:00 a.m. and 5:30 p.m. (PST) at 800/422-7044 (USA) or 714/453-3990 outside of the United States.

Your Lantronix LFX2 Fast Ethernet Extender is covered by a five-year limited warranty.

WARNING!

This device complies with part 15 of the FCC rules. Operation is subject to the following restrictions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including that which may cause undesired operation. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his or her own expense, will be required to take whatever measures may be required to correct the interference.

NOTE: The RJ45 ports are not for telephone use!

Declaration of Conformity

(according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name: Lantronix
Manufacturer's Address: 15353 Barranca Parkway
Irvine, CA 92618 USA

declares, that the product:

Product Name: Ethernet Extender
Model Number(s): LFX2-MA

conforms to the following standards:

Safety: EN 60950:	1988 + A1, A2
EMC: EN 55022:	1988 Class A
EN 50082-1:	1992
IEC 801-2:	1991/prEN55024-2: 1992-4kV CD, 8kV AD.
IEC 801-3:	1992/prEN55024-3: 1991-3V/m
IEC 801-4:	1988/prEN55024-4: 1992-.05kV Signal Lines 1kV Power Lines

Supplementary Information:

"The product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC."

Manufacturer's Contact: Director of Quality Assurance
Lantronix
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Irvine, CA 92618 USA
Tel: 949-453-3990
Fax: 949-453-3995

The Lantronix logo features the word "LANTRONIX" in a bold, sans-serif font. The letters are white with a dark, textured shadow behind them, giving it a three-dimensional appearance. The shadow is most prominent under the 'A' and 'N' characters.

Part No. 900-114

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Important Instructions For LMS and LFX Installation

- ▼ **Design connections to avoid loops - these unmanaged switches do not support Spanning Tree Algorithm**
- ▼ **If using dedicated switch ports for a connection to a single server, single user or another switch, use full duplex if possible for much better performance**
- ▼ **If using 10BASE2, consider using a repeater connected to a LMS/LFX 10BASE-T port instead of a transceiver, or contact Lantronix for more information**
- ▼ **Avoid bottlenecks in network design by attaching servers to the same switch as their most common clients**
- ▼ **Try to configure each side of the extender/bridge so that nodes that will communicate frequently are on the same port**
- ▼ **To extend 100BASE-FX fiber to maximum length, use 2 LFX2-MAs (with 100BASE-FX fiber transceivers) connected by a Category 5 cable; this allows both fiber links to be extended to the 412 meter limit (each LFX2-MA extender/switch regenerates the signal)**
- ▼ **Because it is a store-and-forward device, the LFX2 filters out bad packets from attached network segments, so it can be used as a screen between a problem segment and the network backbone**

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