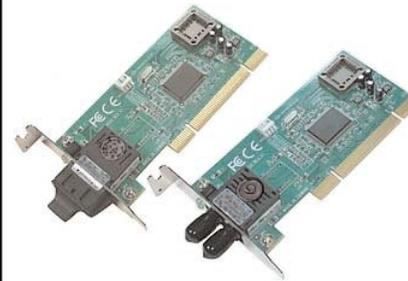


**LH1350C-xx-R3**



**USER'S GUIDE**

**LH1350C-ST-R3  
LH1350C-SC-R3**

100Base-FX, Fast Ethernet Fiber NICs  
The Black Box LH1350C series of fast Ethernet NICs (*Network Interface Cards*) provide a 100Base-FX fiber port to deliver low-cost fiber optic connectivity to the desktop in fiber-rich LAN environments. With driver support for most operating systems and PCI 2.2 plug-and-play capability, these fast Ethernet NICs can be installed in virtually any PC on the network.

Part Number	Port One - Duplex Fiber-Optic 100Base-FX
LH1350C-ST-R3	ST, 1300 nm multimode, 2 km (1.2 miles)*
LH1350C-SC-R3	SC, 1300 nm multimode, 2 km (1.2 miles)*

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

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## Installation

### Description

The LH1350C module has a bootable ROM socket. 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.

### LH1350C module installation

**CAUTION:** Wear a grounding strap and observe electrostatic discharge precautions when installing the LH1350C module. Failure to observe this caution could result in damage or failure of the LH1350C module.

To install the LH1350C module, do the following:

**Important:** Install the LH1350C module in a “master slot” only.

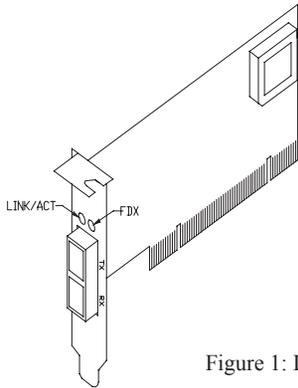


Figure 1: LEDs and Boot ROM Socket

1. Locate a master slot on the PC workstation or file server.
2. Remove the cover from the PC workstation or file server—keep all screws.
3. Remove and keep the screws holding the cover over the installation slot.
4. Carefully slide the LH1350C module into the “master slot,” aligning the module with the slot guides.

### Install the LH1350C module -- continued

5. Ensure that the module is firmly seated in the slot.
6. Use the screws from step “3” to secure the module to the workstation or file server housing.

### LH1350C module configuration

For motherboards with automatic PCI configuration:

- No specific setup is needed.
- You can enter the system BIOS setup menu to view or specify the interrupt (INT) line of the PCI slots.

For motherboards with bus master and interrupt jumpers:

- Enable bus master operation in a selected PCI slot and select an INT request line (IRQ) level, using the appropriate motherboard jumper.
- Enable I/O on the LH350C slot.

### PCI bus system and configuration

- Ensure that the PCI machine supports master slots, and INT multiple sharing and timing compatibility.
- DO NOT install LH1350C in PCI slave slots. Please refer to your PC system manual and select the appropriate configuration settings.
- When installing multiple LH1350C modules in a server station, you should correctly configure the IRQ settings of the PCI slot.
- Up to four LH1350C modules can be installed in a PCI file server running NetWare operating system.
- LH1350C server modules share the same INT line with the driver supporting multiple INT services at a time. The IRQ of each LH1350C module should not conflict with other boards.
- Operation in full or half-duplex (*default*) mode is configured by LAN driver options. The operating mode should match the working status of the remote link device.
- Use EMM386 version 4.49 or higher, and install both DOS and EMM386 from the same DOS package to avoid software problems.

## 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
LH1350C-ST-R3, LH1350C-SC-R3 1300 nm multimode	
Fiber optic transmitter power:	min: -19.0 dBm max: -14.0 dBm
Fiber optic receiver sensitivity:	min: -31.0 dBm max: -17.0 dBm
Link budget:	12.0 dBThe fiber optic transmitters

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 LH1350C-ST-R3, LH1350C-SC-R3

Standards:	IEEE 802.3
Expansion bus standard:	PCI 2.1, 2.2
Data rate	100Mbps fiber media
LED:	LINK/ACT ( <i>on the bracket</i> ) ON = communication link; FLASHING = activity on link FDX ( <i>full duplex link</i> ); ON = full duplex link
Drivers:	<ul style="list-style-type: none"> <li>• NetWare Server 3.12, 4.x, 5.x; 6.x</li> <li>• Netware DOS Client ODI</li> <li>• Windows 95, 98, 2000, 2003, NT4.0, XP</li> <li>• Linux</li> </ul>
Boot server support:	Novell RPL Boot ROM; PXE Boot ROM
Dimensions:	3.2"W x 5.4"D x 0.9"H (80 mm x 138 mm x 23 mm)
Weight:	3 oz. (91g) approximate
Power consumption:	1.0A @ +5VDC
MTBF	184,743 hours ( <i>Bellcore 7 V5.0</i> )
Operating temp:	0°C to 50°C (32°F to 122°F)
Storage temp:	-25°C to 85°C (-13°C to 185°F)
Humidity:	5% to 90%, non-condensing
Altitude:	0 to 10,000 feet
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.

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

## Troubleshooting

### Diagnostics LEDs and Boot ROM

#### LEDS

The LINK/ACT LED lights when a fiber cable or twisted pair cable connection is good. It blinks to indicate activity.

The collision and full-duplex LED report board operating status.

#### Boot ROM

To add the remote boot feature to a workstation, insert the Boot ROM into the ROM socket. See Figure 1 on page 2.

After power UP, the LINK/ACT LED should light; if not, check the following:

- 1 Confirm that the LH1350C module is properly inserted into the master slot.
- 2 Confirm that the PC is properly connected to a power source and with the power source turned ON.
- 3 Check the fiber cable for proper connection.
- 4 Contact Tech Support: 1-724 746-5500 if those steps fail to produce the desired result.

**Note:** To connect this device to a router, bridge, or switch, please refer to the corresponding technical manual for the device.

## Contact Us

#### Technical support

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

- US and Canada: 1-724-746-5500 (24 hours)

#### Email

Ask a question anytime by sending an email: [info@blackbox.com](mailto:info@blackbox.com).

#### Address

Black Box Corporation

1000 Park Drive

Lawrence, PA 15055

Telephone: 724-746-5500

Fax: 724-746-0476



### Declaration of Conformity

Name of Mfg: Black Box Corp, 1000 Park Dr., Lawrence, PA 15505 U.S.A.

Model: LH1350C-xx-R3, Network Interface Cards

Part Number: LH1350C-ST-R3, LH1350C-SC-R3

Regulation: EMC Directive 89/336/EEC

Purpose: To declare that the LH1350C-ST-R3 and LH1350C-SC-R3, to which this declaration refers, is in conformity with the following standards:

CISPR 22:1997+A1:2000; EN 55022:1998+A1:2000 Class A; FCC Part 15 Subpart B; 21CFR subpart J

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

July 5, 2005  
Date

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## Compliance Information

CISPR22/EN55022 Class A, CE Mark, CISPR22/EN55022 Class A + EN55024, CE Mark

### 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.



**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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