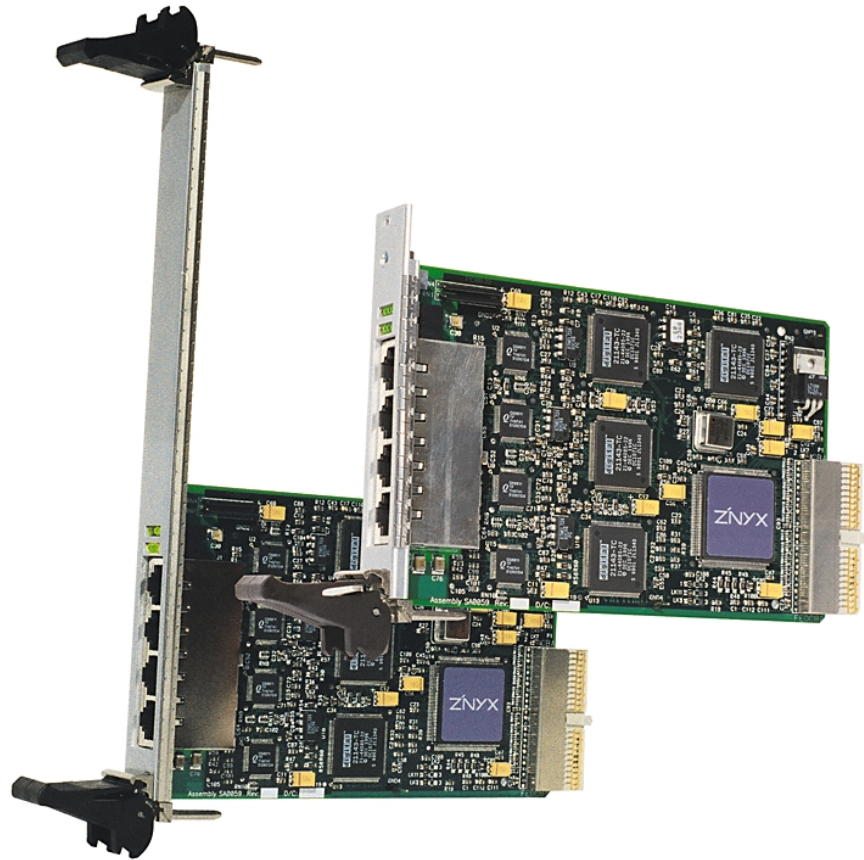


ZNYX



NetBlaster™ ZX410 Series User's Guide

Fast Ethernet Adapters for CompactPCI Systems



Cover: ZNYX NetBlaster ZX414U6 and ZX414U3



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NetBlaster ZX410 Series User's Guide
Document # DU0119-02

August 3, 1999 Version

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Welcome!

Thank you for choosing the ZNYX NetBlaster CompactPCI Fast Ethernet Adapter. Your adapter is designed to provide a lifetime of superior service in your CompactPCI system.

CompactPCI is the newest specification for PCI-based industrial and/or embedded computers. It is electronically compatible with desktop PCI in a different physical form factor.

NetBlaster CompactPCI Fast Ethernet Adapter Models

- NetBlaster CompactPCI ZX412 provides two 10/100 ports, each with separate IEEE Auto Negotiation. It is available for 3U and 6U slots.
- NetBlaster CompactPCI ZX414 provides four 10/100 ports, each with separate IEEE Auto Negotiation. It is available for 3U and 6U slots.

What's In the Package

Your purchase of a NetBlaster CompactPCI adapter includes the following items. Please contact ZNYX Customer Support at (800) 724-0911 if anything is missing from this package.

1. NetBlaster CompactPCI Fast Ethernet adapter (either ZX412 or ZX414).
2. DOS diagnostic and documentation diskette, containing:
 - ZNYX NetBlaster CompactPCI User's Guide (DU011901.PDF)
 - DOS Diagnostic Program (ZX414.EXE and ZX412.EXE)

Installation Procedure

There are two basic steps you need to follow to operate the NetBlaster CompactPCI adapter.

1. Install the hardware.
2. Install the driver.

To get the most recent operating system specific driver, go to the ZNYX web site at www.znyx.com. If the required driver cannot be located on the ZNYX web site, contact ZNYX Technical Support at (800) 724-0911 or support@znyx.com.

Hardware Installation

Below are the steps necessary to install a NetBlaster CompactPCI adapter into a standard, compliant system. In most systems, the configuration is “plug and play”, which requires no operations on the part of the installer. The following are detailed instructions for the hardware installation procedure.

Installing the Hardware

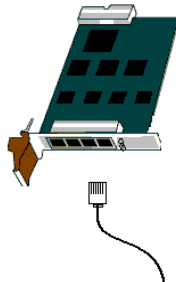
This installation procedure is for installing an adapter into standard, compliant systems. Some steps in this procedure may vary depending on the specific system used. Refer to the system’s documentation if necessary.

The figure on the following page shows the installation of an adapter in a typical system.

1. **Turn off** your system.
2. **Discharge any static electricity** from your body by touching the metal case, or by using an anti-static wrist strap. If you do not have a ground strap, maintain physical contact with the case to maintain the same electrical potential with the system.
3. Select an available **CompactPCI slot**.
4. **Remove the slot cover** from the front panel slot filler bracket.
5. **Insert the ZNYX adapter** into the slot. Make certain that you push the adapter straight into the slot; the bracket and the slot must be properly aligned and the adapter fully “seated”. A good “seat” is when the bracket touches the system case, up to the extraction levers.
6. **Pull up** on the extraction levers to finish seating the adapter.
7. **Secure** the retaining screws.

LAN Cable Connection

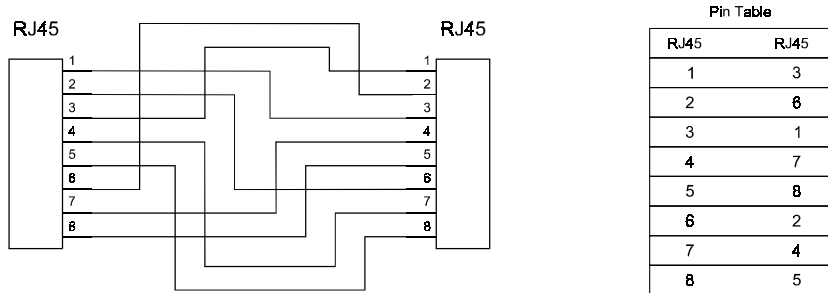
The LAN cable must be properly attached to a functioning network for the adapter to operate. 100 Mbps connections require Category 5 cabling.



Connecting to the Network

There are two ways to connect the system using twisted pair: (1) system to system; (2) direct system to hub or switch.

- You can connect your adapter directly to another system with a null cable. A null cable, or crossover cable, “crosses over” the transmit and receive pairs. If a null cable cannot be purchased, the following wiring diagram may be used.



- You can connect your adapter directly to a hub or switch with an unshielded twisted-pair (UTP) cable. Make certain that the cable length is within the minimum and maximum length restrictions for Ethernet, or you could experience signal or data loss.

Driver Installation

This section covers driver installation for the NetBlaster CompactPCI adapter. At this stage the adapter should be secure in the system and all Ethernet cables should be attached. If this is not the case, return to the “Hardware Installation” procedure in the previous section.

Download operating system specific driver from the ZNYX web site (www.znyx.com). Included with the driver is a release note with installation and configuration instructions. Please follow these directions to configure the driver.

Running DOS Diagnostics

In the following section the notation DIAG41x should be replaced with the appropriate instance (DIAG412, DIAG414, etc.). In each case, the text will assume that the DOS system has been started and the EXE program is in the current directory or search path. See your DOS reference manual for details, if necessary.

Note: Microsoft EMM386 prior to V4.49 is not compatible with PCI systems. The correct version is the copy that was shipped with the US edition of DOS 6.22. Make sure that you have replaced any version of EMM386 dated before 31-May-94, even if you are running from a floppy disk drive.

Testing ZX412 and ZX414 Adapters

1. Run the diagnostic program that came with your adapter to see if your adapter has been properly configured. Run DIAG41x.EXE off your diskette by entering:

```
>DIAG41x LIST
```

2. You will see a list below. (This example is for the ZX414.)

```
DIAG414 Version 1.38 for ZNYX NetBlaster ZX414 4/100 Mbps adapter
(c) Copyright 1994-1998 ZNYX Corporation - All Rights Reserved.
PCI BIOS Information: Version=2.10, Config Mechanism=1, Last Bus=2

Bus Dev Fn  Vendor Device Rev  Type           Lat IL IRQ  Note
=====  =====
0  0  0   8086  1250  03  Host Bridge   20  -  -
0  7  0   8086  7000  01  PCI-ISA       00  -  -
0  7  1   8086  7010  00  IDE           20  -  -
1  4  0   1011  0019  30  Ethernet     40  A  9   ZX414
1  5  0   1011  0019  30  Ethernet     40  A  3   ZX414
1  6  0   1011  0019  30  Ethernet     40  A 10   ZX414
1  7  0   1011  0019  30  Ethernet     40  A  5   ZX414
```

3. If you see a list of two or four 02-Network/00-Ethernet channels, each with an **IRQ** (interrupt line), **bus** value, and a unique **device** number, your card has been automatically configured. Make a note of the *bus* and *device* numbers and go on to the software installation section.
4. Test all channels of your adapter by running DIAG41X for each bus number and device number. For example, if you have a ZX414 the bus number is 1 and the device numbers are from 4-7, run:

```
>DIAG414 1 4
>DIAG414 1 5
>DIAG414 1 6
>DIAG414 1 7
```

5. Substitute the appropriate version of DIAG41X for the adapter used. If the DIAG41X program says:

```
Diagnostics successfully completed.
```

each time, proceed with the software installation.

6. If the DIAG41X program does not indicate a successful completion, refer to the chapter on troubleshooting in this manual.

Troubleshooting

All NetBlaster CompactPCI adapters support plug-and-play. If you have a plug-and-play system, your card will configure itself automatically.

If the operating system does not discover the board, try running the diagnostics program (see previous section).

System-specific Configuration Requirements

As noted earlier, CompactPCI is a plug-and-play bus. This means the host computer program should automatically assign all system resources, such as I/O addresses and interrupt lines (IRQ).

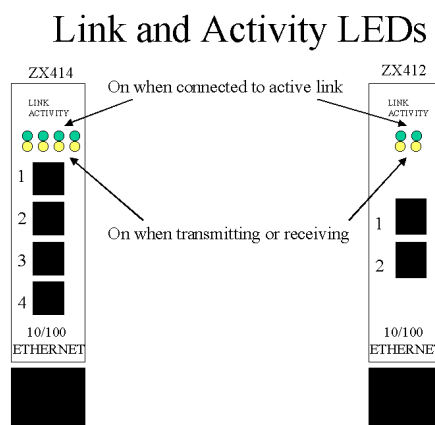
Occasionally, you may need to assign these resources manually. This is often the case with host systems and motherboards that are not fully compliant with plug-and-play standards. This is usually done by modifying your system's **CMOS SETUP** program, typically under the section specifying *PCI bus/slot configuration* options.

Note: All PCI adapters require level triggered interrupts. NetBlaster CompactPCI adapters will not function properly using edge triggered interrupts.

Basic Troubleshooting

For all operating systems, we recommend that you try the following if you are having difficulty. In addition, we have OS-specific troubleshooting suggestions below.

1. Make sure the board is securely seated in the slot.
2. Check the green link LED's. The LED will be on when attached to an active interface (hub, switch, router, or any other system). See figure below:



3. Refer to operating system specific documentation to evaluate any error messages or logs when the driver is loaded.

Technical Support

If you need further assistance after referring to this User's Guide, ZNYX has a professional technical support team available to answer your questions. Contact us at:

Tel: (510) 249-0800 or (800) 724-0911
Fax: (510) 646-2460
Email: support@znyx.com
FTP: <ftp.znyx.com>
URL: www.znyx.com

You can reach us during normal business hours, Pacific Standard Time.

Appendix A: Legal Notices and Certification

This section contains warranty and other product information notices, which may be required by local laws.

Warranty

ZNYX Corporation warrants to the original purchaser of any ZNYX NetBlaster CompactPCI Fast Ethernet adapter product that is to be free from defects in workmanship and materials, under normal use and service, for the lifetime of the personal computer in which it is installed from the date of purchase from ZNYX or its authorized dealer. In order for this warranty to be valid, this hardware product must remain in its original personal computer and be registered with ZNYX within one year of purchase. Otherwise, ZNYX warrants to the original purchaser of this hardware product that it is to be in good working order for a period of thirty-six (36) months from the date of purchase from ZNYX or an authorized dealer.

Should this product, in ZNYX's opinion, malfunction during the applicable warranty period, ZNYX will, at its expense, repair the defective product or part or, at its option, deliver to the Customer an equivalent product or part to replace the defective item. To prevent damage in transport, the Customer must return the product in its original packaging or, if this is not available, other protective packaging approved in advance by ZNYX. All returned products will become the property of ZNYX. At ZNYX's option, replacement parts may be new or reconditioned. Any replaced product or part has a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

This limited lifetime warranty applies to the following ZNYX products only ZX412 and ZX414. ZNYX warrants all other product(s) for a period of thirty-six (36) months from the date of purchase from ZNYX, under the same limited warranty terms and conditions.

Certification

Up to date certification can be obtained at ZNYX's web site at www.znyx.com.

Appendix B: Legal Notices and Certification

FCC Class B Notice: NETBLASTER ZX412 AND ZX414

Modification to this product not authorized by ZNYX Corporation could void the FCC approval and negate your authority to operate the product.

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 it is 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 the 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.

Canada Compliance: NETBLASTER ZX412 AND ZX414

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CE Conformity: NETBLASTER ZX412 AND ZX414

The NetBlaster ZX412 and ZX414 are in compliance to CE testing according to the following standards with respect to the stated level and given criteria:

EN 55022	
EN 50082-1	
EN 55022(1994)	Class B
EN 61000-4-2 (1995)	4kV (Contact Discharge) and 8kV (Air Discharge)
EN 61000-4-3 (1996)/ENV 50204 (1995)	3V/m
EN 61000-4-4 (1995)	1kV (Power Supply) and 0.5 kV (I/O Cables)
EN 61000-4-5 (1995)	1kV (Line to Line) and 2kV (Line to Ground)
EN 61000-4-6 (1996)	3V _{rms}
EN 61000-4-11 (1994)	0%, 40%, 70% of U _r , voltage dips +/-10% voltage variations

THIS ADAPTER CARD IS FOR USE ONLY WITH COMPACTPCI BUS COMPATIBLE SYSTEMS THAT HAVE ENCLOSED POWER SUPPLIES WITH SELV OUTPUTS AND INSTALLATION INSTRUCTIONS DETAILING USER INSTALLATION OF CARD CAGE ACCESSORIES.

Manufacturer Name: ZNYX Corporation

Manufacturer Address: 48501 Warm Springs Boulevard, Suite 107, Fremont, CA 94539

Warranty

ZNYX Corporation warrants to the original purchaser of any ZNYX NetBlaster CompactPCI Fast Ethernet adapter product that is to be free from defects in workmanship and materials, under normal use and service, for the lifetime of the personal computer in which it is installed from the date of purchase from ZNYX or its authorized dealer. In order for this warranty to be valid, this hardware product must remain in its original personal computer and be registered with ZNYX within one year of purchase. Otherwise, ZNYX warrants to the original purchaser of this hardware product that it is to be in good working order for a period of thirty-six (36) months from the date of purchase from ZNYX or an authorized dealer.

Should this product, in ZNYX's opinion, malfunction during the applicable warranty period, ZNYX will, at its expense, repair the defective product or part or, at its option, deliver to the Customer an equivalent product or part to replace the defective item. To prevent damage in transport, the Customer must return the product in its original packaging or, if this is not available, other protective packaging approved in advance by ZNYX. All returned products will become the property of ZNYX. At ZNYX's option, replacement parts may be new or reconditioned. Any replaced product or part has a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

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Certification

Current product certification can be obtained at ZNYX's web site at www.znyx.com

Warranty Registration Card

NetBlaster™ CompactPCI® Fast Ethernet Adapter

Please complete and return to ZNYX Corporation:

By Mail

ZNYX Corporation
48501 Warm Springs Blvd. Suite 107
Fremont, CA 94539 USA

By Fax

Attn: Warranty Registration
(510) 656-2460

ZNYX Model Number	Date of Purchase	Serial Number(s)
Where did you purchase your ZNYX product?		

How did you learn about ZNYX products? Magazine Ad News Article Trade Show Direct Mail Web Surfing Word of Mouth Other (specify)

You are a : Distributor Reseller End User VAR Consultant Other (specify)

First Name		Last Name	
Title		Division	
Company Name			
Company Address			
Additional Address			
City	State	Country	Postal Code/Zip Code
Telephone Number (include area code)		Fax Number	
Email Address		URL	

Please complete the following system configuration information.

System Manufacturer	Motherboard Manufacturer
BIOS Manufacturer	BIOS Version
Other boards in the system	
Ethernet type: <input type="checkbox"/> 10BaseT <input type="checkbox"/> 100BaseTX	

Please indicate which software is in use with this product (check all that apply)

DOS Solaris VxWorks pSOS
 Windows NT LynxOS QNX Other (specify)
 SCO Unix

Please indicate your processor: Intel PowerPC SPARC Alpha Mips StrongARM Other

Would you like additional information on ZNYX products? <input type="checkbox"/> yes <input type="checkbox"/> no
--

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