



Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS

Experienced engineers and technicians on staff at our full-service, in-house repair center

*InstraView*SM REMOTE INSPECTION

Remotely inspect equipment before purchasing with our interactive website at www.instraview.com ↗

WE BUY USED EQUIPMENT

Sell your excess, underutilized, and idle used equipment. We also offer credit for buy-backs and trade-ins. www.artisanng.com/WeBuyEquipment ↗

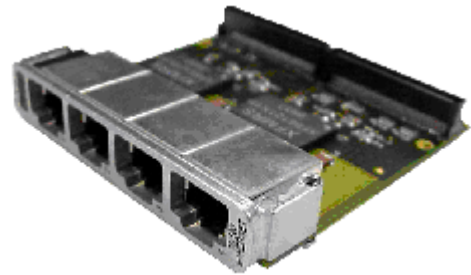
LOOKING FOR MORE INFORMATION?

Visit us on the web at www.artisanng.com ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisanng.com | www.artisanng.com



ZX244F



ZX244R PIM

ZX240 SERIES USER GUIDE

Fast Ethernet Adapter with Rear I/O for PCI Mezzanine Connector (PMC)

ZNYX Networks
48421 Milmont Drive
Fremont, CA 94538 USA

Telephone: (510) 249-0800 or (800) 724-0911
Fax: (510) 656-2460
Email: sales@znyx.com
support@znyx.com
Web site: www.znyx.com

ZX240 Series User Guide
Document # DC0123-01

October 20, 2000 Version

©2000 ZNYX Networks. All rights reserved worldwide. Information in this document is subject to change without prior notice. ZNYX Networks, RAIN, RAINlink, and OpenArchitect are trademarks or registered trademarks of ZNYX Networks in the United States and/or other countries. Motorola and the symbol Motorola are registered trademarks of Motorola, Inc. CompactPCI is a registered trademark of PCI Industrial Computer Manufacturers Group. Adobe, the Adobe logo, Acrobat, and the Reader are trademarks of Adobe Systems Incorporated. All other marks, trademarks or service marks are the property of their respective owners.

ZNYX Networks may have patents, pending patent applications, trademarks, copyrights or other intellectual property rights covered in the subject matter of this document. By furnishing this document, ZNYX Networks does not license nor waive its license to those intellectual property rights except as expressly provided in a written license agreement from ZNYX Networks. Information in this document is subject to change without prior notice

WELCOME!

Thank you for choosing the ZX240 Series embedded PCI Mezzanine Card (PMC) Fast Ethernet Adapter with rear I/O. Your adapter is designed to provide a lifetime of superior service in your system with PMC slots.

The ZX240 PMC Series adapter is a two piece unit equipped with the following features:

- Single-wide PMC card for use with Motorola MCPN750 CompactPCI embedded single board computer or CPV8540 carrier card
- Rear I/O PMC Interface Mezzanine (PIM) card including four 10/100Base TX Ethernet ports for use with Motorola TM-PIMC-0001 Transition Module/PIM Carrier
- 64-bit address and data bus
- link and diagnostic LEDs

ZX240 Series Models

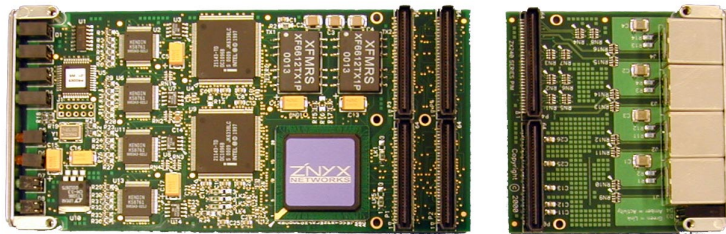
Model	Description	cPCI Slot
ZX244F	PMC card	Motorola MCPN750 single board computer or CPV8540 PMC carrier card
ZX244R	Four channel rear I/O 10/100Base PIM card	Motorola TM-PIMC-0001 PIM carrier card
LAN on Backplane		
ZX244L	PMC card including transformers	Motorola MCPN750 single board computer
ZX244T	Four-channel rear I/O 10/100Base PIM card w/o transformers	Motorola TM-PIMC-0001 PIM carrier card

Comparing the ZX240 Models

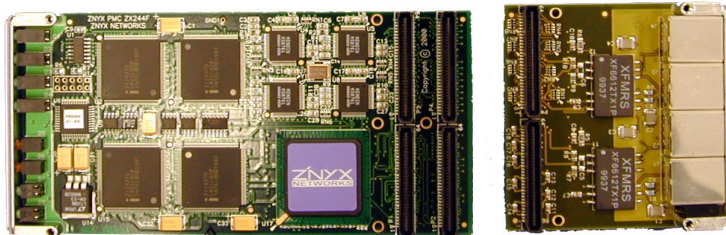
Use the following guidelines for installing the correct ZX240 model into your system:

ZX244F is designed for use in systems where the Ethernet signals travel by cable out of the system. The PIM card ZX244R is also required.

ZX244L is designed for use



ZX244 F and L



ZX244 L and T

in systems where the Ethernet signals remain within a system on a backplane and do not go out of the system on a cable. If it becomes necessary to have one or more ports of the ZX244L attached to a cable, then you also need to use the ZX244T. Contact your ZNYX Networks Sales Representative for additional design constraints regarding the ZX244L for both internal and external Ethernet ports.

Getting Started

You will find the PMC ZX240 adapters are simple to install and configure. This document provides instructions for completing the hardware installation process. Troubleshooting and diagnostic sections are also included. There are two basic steps required before you can begin using the adapter:

- Step 1** Install the hardware (follow the instructions in this manual).
- Step 2** Install the software driver (download from the ZNYX web site).

About this Manual

This manual includes the installation, troubleshooting, and reference data for the ZX240 Series Ethernet adapter. See the ZNYX Networks data sheet for product specifications.

All documentation for ZNYX Networks products, including data sheets, release notes and user guides are available for downloading from the ZNYX Networks web site (www.znyx.com). Files are supplied in PDF format so your system requires Adobe Acrobat Reader to open and read the documentation (www.adobe.com).

For help configuring an application-specific driver, download the appropriate driver user guide.

Driver Installation

After you have successfully secured your adapter to the system, you can install and configure the driver (*see separate documentation*). All Ethernet cables should be attached. *See the Hardware Installation section in this manual for further cable requirements.*

Download the specific driver and applicable release notes for your system from the ZNYX Networks web site (www.znyx.com).

Technical Support

If you have difficulty downloading a driver or need further assistance after reading this user manual, the ZNYX Networks professional technical support team is available to answer your questions. Contact us at:

Telephone: (510) 249-0800 or (800) 724-0911
Fax: (510) 656-2460
Email: support@znyx.com
Web site: www.znyx.com

HARDWARE INSTALLATION

You can easily install a ZNYX Networks adapter into an open slot on a Motorola MCPN750 computer or CPV8540 PMC carrier card. Refer to your system documentation if necessary.

Installing the ZX240 Series Adapter

This procedure includes all steps required for installing both the front and rear pieces (PMC and PIM cards) of the ZX240 adapter.

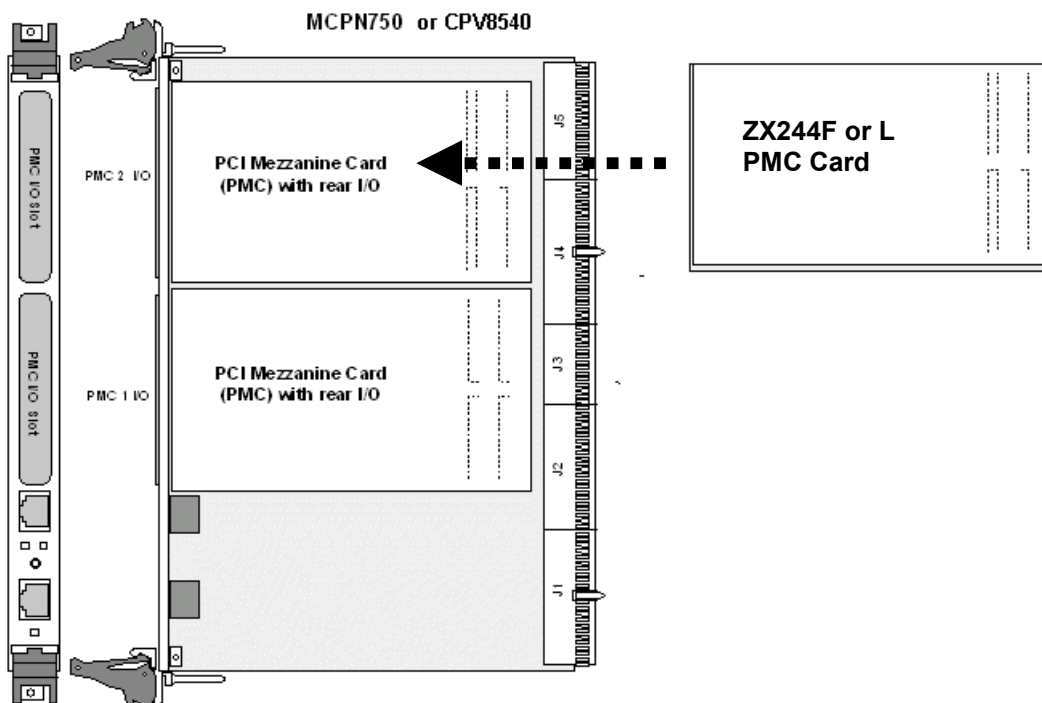
Preparing for the Install

- **Power off** your system.
- **Discharge any static electricity** from your body by touching the metal chassis, 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.
- **Remove the motherboard or carrier card**, containing at least one available single-wide PMC slot from the system chassis.

Installing the PMC Card

1. Remove the cover from an empty single-wide PMC slot on the motherboard or carrier card.
2. Insert the ZNYX Networks PMC adapter card into the PMC slot.

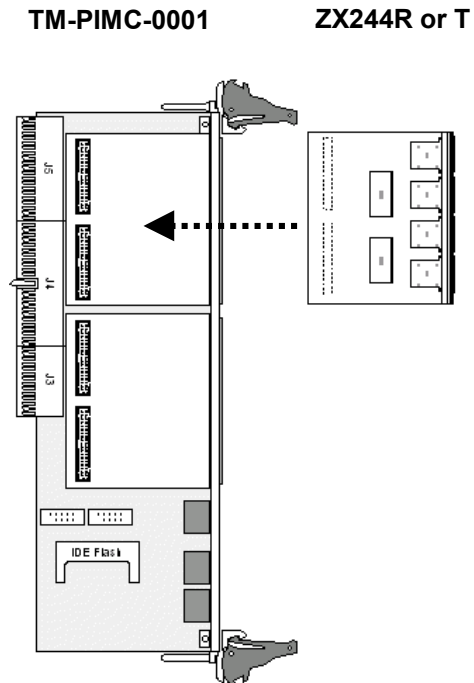
NOTE Insert the bezel of the ZNYX Networks adapter into the PMC cutout on the front panel of the motherboard or carrier card. Do not allow the gasket in the groove of the bracket to become damaged. Do not operate without the gasket properly seated.



3. Guide the adapter down over the alignment pin. Fully seat the adapter into the mating connectors on the MCPN750.
4. Secure four (4) retention screws and two (2) standoffs, included with card, through the ZNYX Networks adapter standoffs and tighten.
5. Reinstall the motherboard or carrier card in the system.

Installing the PIM Rear I/O Card

1. Insert the ZX244 Rear I/O PIM card into the corresponding seat on the TM-PIMC-0001 PIM carrier card.
2. Secure two (2) retention screws and two (2) standoffs, included with the card, through the card standoffs and tighten.
3. Reinstall the TM-PIMC-0001 in the system.



System-specific Requirements

The host computer system should automatically assign all system resources, such as I/O addresses and interrupt lines (IRQ).

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. Each 10/100BaseTX Ethernet port of the ZX240 requires a standard category 5 UTP Ethernet cable.

Connecting to the Network

There are two ways to connect: (1) system to system or (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” to transmit and receive pairs.

You can connect your adapter directly to a hub or switch with a straight through cable. Be sure that the cable length is within the minimum and maximum length restrictions for Ethernet or you could experience signal or data loss.

TROUBLESHOOTING

All ZNYX adapters support Plug-and-Play functionality. If you have a Plug-and-Play system, your card will configure itself automatically. If your operating system does not discover the board, you can verify that your adapter is properly configured by running the ZNYX DOS-based diagnostics program.

Running DOS Diagnostics

DOS-based diagnostic programs are available from the ZNYX Networks web site (www.znyx.com) to troubleshoot hardware problems. If you believe you have a hardware problem and have the capability to run DOS-based diagnostics, follow the testing procedure below. PMC-to-PCI adapters are available from Catalyst Enterprises (<http://www.catalyst-ent.com>).

Testing ZX240 Adapters in DOS

1. Download the diagnostic program, `DIAG244.exe`, from the ZNYX web site (www.znyx.com).
2. Run the diagnostic program in DOS as follows:
 - Enter the following command:


```
>DIAG244 LIST
```
 - Verify that a list similar to the example below is displayed.

```
DIAG244 Version 2.05 for ZNYX NetBlaster ZX244 4/100 Mbps adapter
(c) Copyright 2000 ZNYX Corporation - All Rights Reserved.
PCI BIOS Information: Version=2.10, Config Mechanism=1, Last Bus=1
```

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	01	Ethernet	73	A	10	ZX244
1	5	0	1011	0019	41	Ethernet	73	A	10	ZX244
1	6	0	1011	0019	41	Ethernet	73	A	10	ZX244
1	7	0	1011	0019	41	Ethernet	73	A	10	ZX244
1	0	0	8086	7800	21	VGA	0	A	5	

ZX244 includes four Ethernet devices in list

Your card is automatically configured if the number of devices listed equal the number of ports on the adapter.

The **Note** column must indicate four devices are for the ZX244. Each device should have an **IRQ** (interrupt line), **bus** value, and a unique **device** number.

3. Write down the **bus** and **device** numbers for testing each adapter channel (*see the Testing Each Adapter Channel section*).

Testing Each Adapter Channel

Test the connection for each adapter channel by running the ZNYX program, DIAG244 . exe (download from the ZNYX web site) for each bus and device number.

1. Enter the following command, in DOS, for each device number:

```
>DIAG244 (bus number) (device number)
```

Example: If you have a ZX244 adapter a bus number of 1 and the device numbers are 4, 5, 6, and 7, enter as follows:

```
>DIAG244 1 4
```

```
>DIAG244 1 5
```

```
>DIAG244 1 6
```

```
>DIAG244 1 7
```

2. If the DIAG244 program displays the following successful message for each device, you are ready to download and install the driver (see separate documentation).

```
Diagnos tics successfully completed.
```

Troubleshooting Tips

For all operating systems, if you are having difficulty, we recommend you try the following:

- Be sure the board is securely seated in the slot.
- Refer to the operating system-specific documentation to evaluate any error messages or logs after the driver is loaded.
- Note the LED light activity (see section below).

LED Reference Key

The table below references the LED activity of the ZX240 Series PMC and PIM cards.

Each port on the ZX244 PMC card is linked to an LED so you know immediately if the port has an established link (green) and is transmitting or receiving activity (amber).

The rear PIM card includes an LED for each port that can be one of three colors: green, white or amber (*see table below*).

NOTE In most cases, the driver must be properly loaded and configured to bring up the link.

ZX244 F or L	ZX244 R or T	ZX244 PMC LED	Color	Function
		Power	Green	ON indicates the power source is active.
		Operate (Operational)	Green	ON indicates the driver is loaded and the board has passed internal tests.
		Fault Int (Internal Fault)	Red	ON indicates a failure of the internal tests.
		Fault Ext (External Fault)	Red	ON indicates a failure external to the adapter—inability to establish a link on a configured port, or another connectivity problem external to the adapter.
		Lnk Act (1-4) (Link/Activity)	Green	ON indicates the receiver side is properly connected and active.
			Amber	ON indicates the link is active and either receiving or transmitting.
		ZX244 PIM Tri-color LEDs 1, 2, 3, or 4	Green	Below a numbered LED indicates the corresponding port has an established link.
			Amber	Indicates the corresponding port is active and either receiving or transmitting.
			White	Indicates the corresponding port is not linked or active.

APPENDIX A: LEGAL NOTICES AND CERTIFICATION

FCC Class A Notice (Pending): ZX240 SERIES

Modification to this product not authorized by ZNYX Networks 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 A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if it is 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 his own expense.

Canada Compliance (Pending):

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

CE Conformity (Pending):

The ZX240 Series is in compliance to CE testing according to the following standards with respect to the stated level and given criteria:

EN55022	
EN50082-1	
EN55022(1998)	Class A
EN61000-4-2 (1995)	4kV (Contact Discharge) and 8kV (Air Discharge)
EN61000-4-3 (1995)	3V/m
ENV 0204 (1995)	
EN61000-4-4 (1995)	1kV (power Supply) and 0.5 kV (I/O Cables)
EN61000-4-5 (1995)	1kV (Line to Line) and 2kV (Line to Ground)
EN61000-4-6 (1996)	3Vrms
EN61000-4-11 (1994)	0%, 40%, 70% of U_T , voltage dips +/-10% voltage variations

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

Manufacturer Name: ZNYX Networks
Manufacturer Address: 48421 Milmont Drive,
Fremont, CA 94538

Warranty

ZNYX Networks warrants to the original purchaser of any ZNYX Networks product that is to be free from defects in workmanship and materials, under normal use and service, for a period of one year from the date of purchase from ZNYX Networks or its authorized dealer. In order for this warranty to be valid, this hardware product must remain in its original system and be registered with ZNYX Networks within one year of purchase. ZNYX Networks warrants to the original purchaser of this hardware product that it is to be in good working order for a period of twelve (12) months from the date of purchase from ZNYX Networks or an authorized dealer.

Should this product, in ZNYX Network's opinion, malfunction during the applicable warranty period, ZNYX Networks 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 Networks. All returned products will become the property of ZNYX Networks. At ZNYX Network'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.



Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS

Experienced engineers and technicians on staff at our full-service, in-house repair center

*InstraView*SM REMOTE INSPECTION

Remotely inspect equipment before purchasing with our interactive website at www.instraview.com ↗

WE BUY USED EQUIPMENT

Sell your excess, underutilized, and idle used equipment. We also offer credit for buy-backs and trade-ins. www.artisanng.com/WeBuyEquipment ↗

LOOKING FOR MORE INFORMATION?

Visit us on the web at www.artisanng.com ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisanng.com | www.artisanng.com