

PER-C102

Marvell 88E8036/52/53,
Dual PCI Express 10/100/1000
Ethernet DaughterBoard

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Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 PCI Express Cable
- 1 Gift Box
- 1 Conductive Bubble Bag
- 1 Accessory for jumpers
- 1 Flat Cable (with COM port version only)
- 1 PER-C102 DaughterBoard
- 1 Quick Installation Guide
- 1 CD-ROM for manual (in PDF format) and drivers

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

Contents

Chapter 1 General Information

1.1 Introduction.....	1-2
1.2 Features	1-3
1.3 Specifications	1-4

Chapter 2 Quick Installation Guide

2.1 Safety Precautions	2-2
2.2 Location of Connectors and Jumpers	2-3
2.3 Mechanical Drawing	2-4
2.4 List of Jumpers	2-5
2.5 List of Connectors	2-5
2.6 Setting Jumpers	2-6
2.7 LAN1, LAN2 Enable/Disable (JP1, JP2)	2-7
2.8 RS-232 Serial Port Connector (CN4)	2-7
2.9 LAN 1, LAN 2 Active LED Connector (CN1, CN6)....	2-7
2.10 LAN 1, LAN 2 Speed LED Connector (CN2, CN5) .	2-7
2.11 PCI Express Connector (CN3)	2-8

Chapter 3 Driver Installation

3.1 Installation	3-3
3.2 Wake-On-LAN Installation.....	3-4

Chapter

1

**General
Information**

1.1 Introduction

The PER-C102 comes with two onboard Marvell 10/100/1000Base-T Gigabit Ethernet Controllers making this add-on module suitable for high-performance network applications such as Firewall PC, Entry PC, Hub PC and so on.

This Ethernet Daughterboard extends the PCI-Express interface and is a new solution in industrial applications. It not only enhances speed and performance of communications in any compatible AAeon SBC (Single Board Computer), but also provides lifetime support. In addition, the PER-C102 can work with other AAeon full-size SBC, half-size SBC and firewall systems. You do not have to adopt another solution to fulfill your expansion requirements, and it allows you to keep a consistent solution.

The PER-C102 features dual LAN ports onboard which support Gigabit LAN speed and reduces the cost of installation and expansion. It is really a good choice for anyone serious about industrial PC communications.

1.2 Features

1. Dual PCI Express Host Interface
2. Dual 10/100 or 10/100/1000Base-T Triple-speed Ethernet Controller
3. Supports Wake-On-LAN

1.3 Specifications

System

- Chipset: PCI Express 10/100 or 10/100/1000Mb LAN optional RJ-45 x 2, Marvell 88E8036/88E8052/88E8053
- Expansion Interface: Dual PCI Express x 1 (DF-13, 30-pin)
- Serial Port: One COM port: internal 5x2 Box Header x 1; External D-sub x 1
- Power Supply Request: From PCI Express connector (DF-13 30-pin)
- EMC: CE/FCC Class A
- Operating Temperature: 32°F~140°F (0°C~60°C)

Chapter

2

Quick Installation Guide

Notice:

The Quick Installation Guide is derived from Chapter 2 of the user manual. For other chapters and further installation instructions, please refer to the user manual CD-ROM that came with the product.



2.1 Safety Precautions

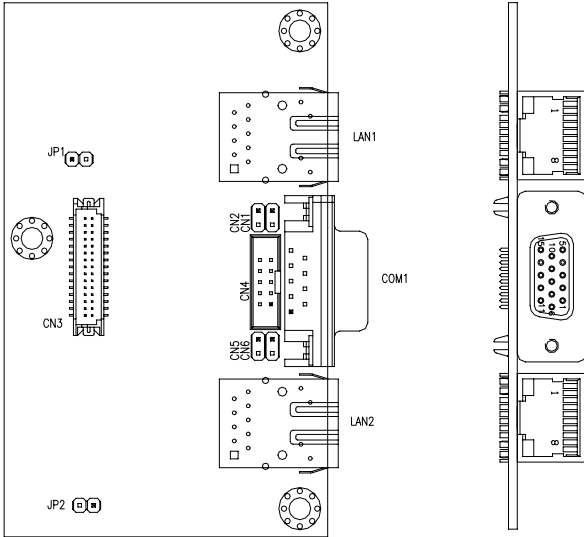
Warning!

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

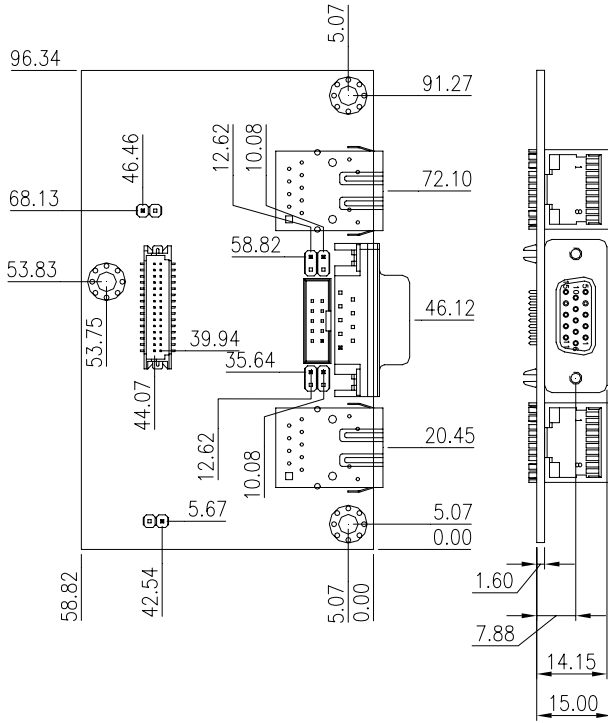
Caution!

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Location of Connectors and Jumpers



2.3 Mechanical Drawing



2.4 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

Label	Function
JP1	LAN1 Enable / Disable
JP2	LAN2 Enable / Disable

2.5 List of Connectors

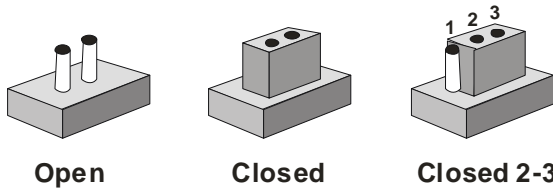
The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

Label	Function
COM1	DB9 RS-232 Serial Port Connector
LAN1	10/100 or 100/1000 Base-T Ethernet Connector
LAN2	10/100 or 100/1000 Base-T Ethernet Connector
CN1	LAN 1 Active LED Connector
CN2	LAN 1 Speed LED Connector
CN3	PCI Express x1 Connector
CN4	RS-232 Serial Port Connector
CN5	LAN 2 Speed LED Connector
CN6	LAN 2 Active LED Connector

2.6 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.7 LAN1, LAN2 Enable/Disable (JP1, JP2)

JP1, JP2	Function
LAN Disable	Close
LAN Enable	Open

2.8 RS-232 Serial Port Connector (CN4)

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C.

2.9 LAN1, LAN2 Active LED Connector (CN1, CN6)

Pin	Signal	Pin	Signal
1	Link_LED(-)	2	Active_LED(+)

2.10 LAN1, LAN2 Speed LED Connector (CN2, CN5)

Pin	Signal	Pin	Signal
1	#LINK1000_LED(G+/O-)	2	#LINK100_LED(G-/O+)

- * 10 Speed LED OFF
- 100 Speed Green LED ON (G+, G-)
- 1000 Speed Orange LED ON (O+, O-)

2.11 PCI Express Connector (CN3)

Pin	Signal	Pin	Signal
1	GND	2	+3.3V
3	PCIe-RX1	4	+3.3V
5	PCIe-RX1#	6	PCIe-WAKE#
7	GND	8	PCIe-RST#
9	PCIe-CLK1	10	+3.3VSB
11	PCIe-CLK1#	12	+3.3VSB
13	GND	14	PCIe_TX2
15	PCIe_TX1	16	PCIe_TX2#
17	PCIe_TX1#	18	GND
19	+12V	20	PCIe-CLK2
21	+12V	22	PCIe-CLK2#
23	SMBDATA	24	GND
25	SMBCLK	26	PCIe-RX2
27	+3.3V	28	PCIe-RX2#
29	+3.3V	30	GND

Chapter

3

**Driver
Installation**

The PER-C102 comes with a CD-ROM that contains all drivers your need.

In addition, you can activate the installation items through Autorun program which will install each driver directly. If your system do not support Autorun program or you cannot install drivers successfully, please read instructions below for further detailed installations.

Follow the sequence below to install the drivers:

Step 1 – Install Dual PCI Express 10_100_1000 Ethernet Daughterboard Drivers

Please read following instructions for detailed installations.

3.1 Driver Installation:

Insert the PER-C102 CD-ROM into the CD-ROM Drive. And install the driver.

Install Dual PCI Express 10_100_1000 Ethernet Daughterboard Driver.

1. Go to **My Computer** and click on the right of mouse, select **Properties**
2. Select **Hardware**
3. Enter **Device Management**
4. Select your LAN card and click on the right of mouse
5. Select **Update your driver** and follow the instructions that the window show
6. Select to **install from CD-ROM**
7. Click on the **Dual PCI Express 10_100_1000 Ethernet Daughterboard Drivers** folder
8. Choose the OS your system is
9. The system will help you install the driver automatically
10. Please re-start your computer

3.2 Wake-On-LAN Installation:

Please follow the steps below to activate the Wake-On-LAN function.

1. Go to ***My network places*** and click on the right of mouse
2. Select ***Properties***
3. Go to ***Local Area Connection*** and click on the right of mouse
4. Select ***Properties*** and click on ***Configure***
5. Select ***Advanced*** and you will see ***Wake-On-LAN*** in the box of Property
6. Select ***Wake-On-LAN*** and follow the instructions that the window shows
7. The system will help you to install the driver automatically