



PCM-3662 PC/104-plus Ethernet Module

Introduction

The PCM-3662 is a 10/100 Mbps Ethernet interface module that attaches to the PC/104-plus connector on your CPU card or PC/104-plus CPU module. The PCM-3662 provides 32-bit performance, PCI bus capability, and full compliance with IEEE 802.3u 100Base-T specifications and IEEE 802.3x Full Duplex Flow Control.

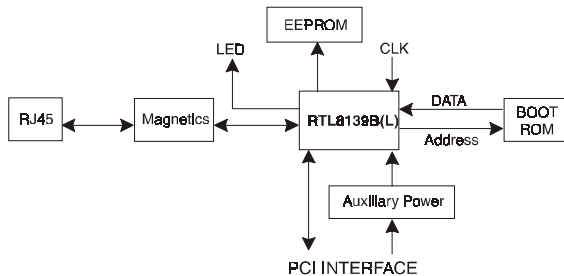
The module includes a built-in 10 pin box header and RJ-45 connector. Three diagnostic LEDs indicate the operating status of the module and the network. You can define LEDs according to the application. The PCM-3662 comes with drivers for a wide variety of networks and operating systems. An optional boot ROM lets you boot a remote station automatically from a server, making hard or floppy disks unnecessary. Besides, PCM-3662 also provides Wake-ON-LAN function. This function can help you to remote wake-up other PC with ATX power supply.

Features

PCM-3662 PC/104-plus Ethernet module

- Compliance with IEEE 802.3u Ethernet standard
- Support IEEE 802.3x Full Duplex Flow Control
- Support 10/100 Base-T Ethernet N-way Auto-negotiation operation
- Wake-On-LAN function and remote wake-up PC
- Support 32-bit general-purpose timer
- Remote boot ROM socket for diskless operation
- Support software drivers for most popular network environment such as Windows 95/98/NT/2000, and Linux

Block Diagram



Specification

PCM-3662 PC/104-plus Ethernet module

Hardware

- PC/104 form-factor: 64 x 8 mm
- Data bus: 32-bit
- Connectors: PC/104-plus stackthrough connector, RJ-45 connector for 10/100 BASE-T, 10-pin box header

Software Driver support

- Windows 95/98/NT/2000 driver
- Novell sever driver

- Windows for workgroups driver
- NDIS2 driver
- MacOS 8.x and 9.x driver
- Unixware 7.0 driver
- OS2 ODI driver
- Packet's driver
- SCO 4.x/5.x Unix driver
- WinCE driver for x86 platform
- Novell ODI client driver
- Novell ODI driver for client32
- Linux driver

General

- **Power:** +5 V @250 mA
- **Temperature:** 0°C to 70°C (operating)
-15°C to 80°C (storage)
- **Humidity:** 10% to 90% (operating)
10% to 90% (storage)

Installation

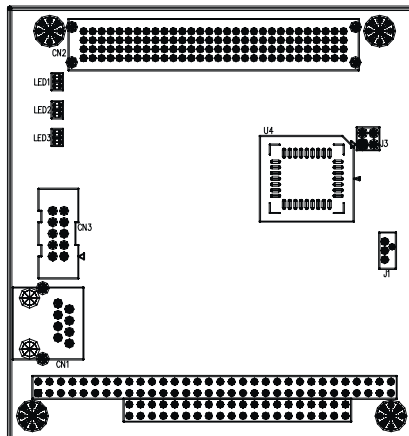
Initial inspection

Your package should contain the following items. If they are missing, damaged or fail to meet specifications, contact your dealer/sales representative immediately.

PCM-3662 PC/104-*plus* Ethernet Module

- This manual
- PCM-3662 board
- 3.5", 1.44 MB driver diskette
- 3.5", 1.44 MB utility diskette
- cable assembly for Wake-ON-LAN function

Locating components



Software Configuration for PCM-3662

The PCM-3662 module is supplied with utility and driver disks. The driver disk contains various popular O.S. drivers such as Windows 95/98/NT/2000, Linux etc. You can install it according to your needs. If you want to update to the latest version of the drivers, you can refer to this web-site:

<http://www.realtek.com.tw/cn/driver/8139-driver.htm>

The utility disk contains the files necessary for setting up the Ethernet controller, directories and files on the disk are as follows:

Rset8139.exe

This program enables you to view the current Ethernet configuration , reconfigure the Ethernet interface, and execute useful diagnostic functions.

PG8139.exe

The PCM-3662 is initially set up at the factory using this program. When you receive your card , use RSET8139.exe to configure it for the working environment. If by chance the EEPROM becomes corrupted, the PG8139.exe program allows you to reconfigure the card.

8139B.cfg

When you run PG8139.exe, it will read the configuration parameters stored in this file.

Ethernet Interface Configuration

The PCM-3662 's on-board Ethernet interface supports all major network operating systems. Each setting is easily configured via the RSET8139.exe program included in the utility disk.

To execute the configuration, to view the current configuration, or to run diagnostics do the following:

1. Power the PCM-3662 on. Ensure that the RSET8139.EXE file is located in the working directory.
2. At the prompt type RSET8139.exe and press <Enter>. The Ethernet configuration program will then be displayed.
3. A simple screen displays the available options for the Ethernet interface. Highlight the option which you wish to change using the Up and Down keys. To change a selected item press <Enter>, and a window will appear with the available options. Highlight your selection and press <Enter>. Each highlighted option has a helpful message guide displayed at the bottom of the screen for additional information.
4. After you have made your selections and you are sure that this is the configuration you want, press <ESC>. A prompt will appear asking if you want to save the configuration. Press Y if you want to save.

The Ethernet Setup Menu also offers three very useful diagnostic functions. These are:

1. Run EEPROM test.
2. Run Diagnostics on Board.
3. Run Diagnostics on Network

Each option has its own display screen which shows the format and result of any executed diagnostic tests.

Wake-ON-LAN function

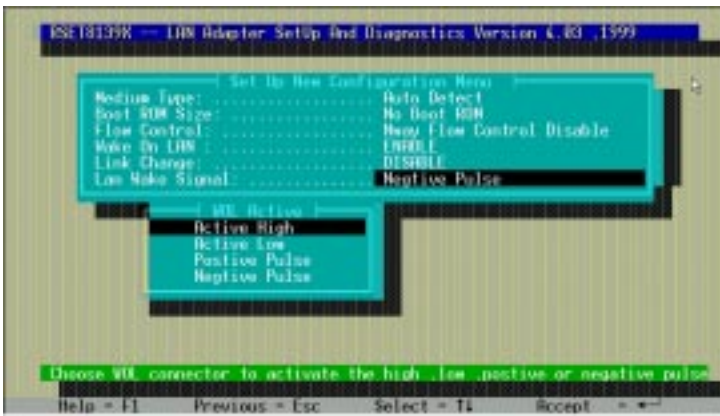
PCM-3662 comes with Wake-ON-LAN(WOL) function and supports four WOL signals (active high, active low, positive pulse, negative pulse). If you want to power on another PC remotely, refer to the following information.

Requirements:

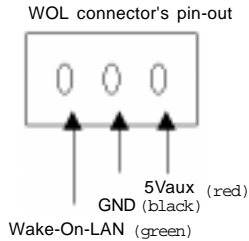
1. Computers with ATX power supply.
2. Motherboard with Wake-ON-LAN function.

Steps:

1. Prepare two PCs with ATX power supplies and plug two PCM-3662s into said PCs. One is Master, the other is Target.
2. Check the details of your motherboard. Find out which WOL signal the motherboard supports.

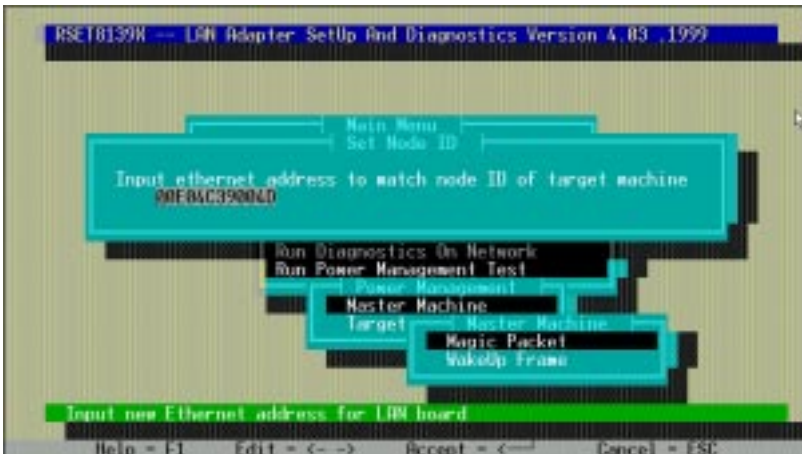


- Use the 3-pin Wake-ON-LAN cable to connect the Target PC and the connector of Wake-on-LAN in Target PC. Notice the 3-pin connector's pin-out and the cap. Connect at the input end of 5V-Vaux.



Note: For lump 5V Vaux power supply, the cap connecting on 5Vaux pin must be large enough to improve the compatibility between differing power supplies.

- Turn on power of the Target PC. Execute **RSET8139.exe** in DOS environment and record the NODE ID of Target PCM-3662. Then turn off power.



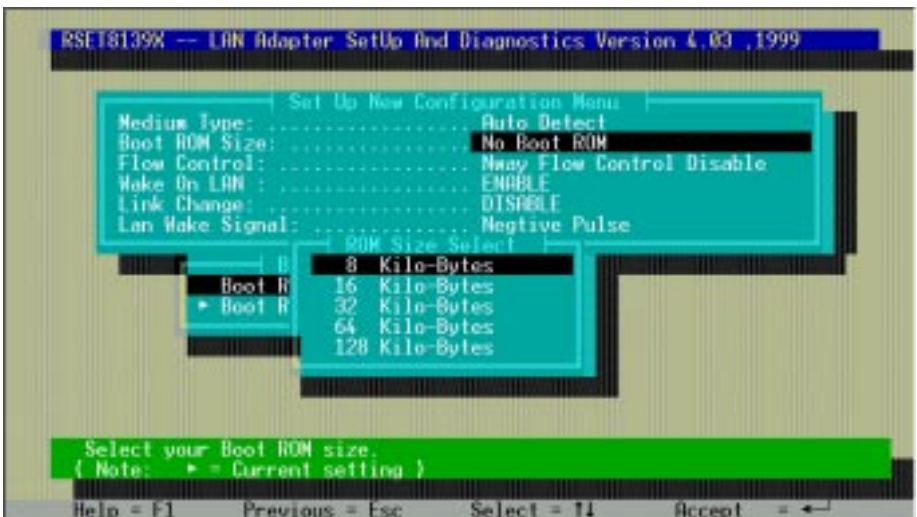
- Execute RSET8139W.exe in Master PC
Run Diagnostics → Run Power Management Test → Master Machine → Magic Packet → Input Ethernet address to match node ID of target machine (Target PCM-3662 Node ID)



- Wake-up Target PC

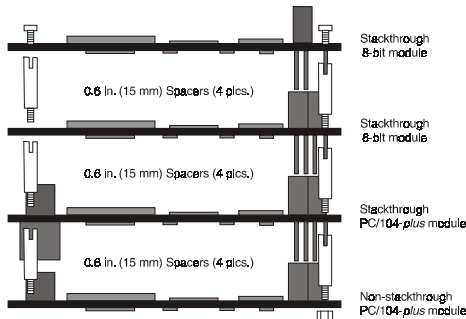
Remote boot ROM

A boot ROM allows you to boot the workstation directly from the server, avoiding the need for local hard or floppy disks. Install the boot ROM as shown below. If you want to change the size of the boot ROM, execute RSET8139W.exe and select boot ROM size.

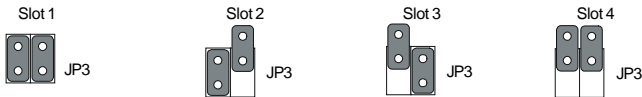


Hardware installation

The following shows a typical module stack with 2 PC/104-*plus* modules, 1 PC/104 16-bit module, and 1 PC/104 8-bit module. The maximum configuration for the PCI bus of a PC/104-*plus* module is four plus the host board. If standard PC/104 modules are used in the stack, they must be located at the top because they do not normally include the PCI bus.



There are four PC/104-*plus* cards which are allowed in the PC/104-*plus* CPU system. If you want to install more than one PC/104-*plus* module, you have to note that each module has different settings to avoid module conflicts. For the PCM-3662, you can use JP3 to set up different signal settings to avoid conflicts with other PC/104-*plus* modules. Please refer to the following table.



Slot	REQ*	GNT*	CLK	ID Address	INT0*	INT1*	INT2*	INT3*
1	REQ0*	GNT0*	CLK0	AD20	INTA*	INTB*	INTC*	INTD*
2	REQ1*	GNT1*	CLK1	AD21	INTB*	INTC*	INTD*	INTA*
3	REQ2*	GNT2*	CLK2	AD22	INTC*	INTD*	INTA*	INTB*
4	REQ2*	GNT2*	CLK3	AD23	INTD*	INTA*	INTB*	INTC*

Because the PCM-3662 has to follow PCI 2.1 specifications, you can refer to those specifications for detailed signal settings.

PCM-3662 Installation

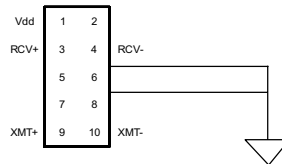
The following instructions tell how to install the PCM-3662 module on a CPU card. The process is similar with PC/104-*plus* CPU modules. Make sure that you have properly attached a boot ROM if necessary.

Warning! TURN OFF your PC power supply whenever you install or remove the PCM-3662 or connect and disconnect cables.

1. Turn the PC's power off. Turn off any peripheral devices such as printers and monitors.
2. Disconnect the power cord and any other cables from the back of the computer.
3. Remove the system unit cover (see the user's guide for your chassis if necessary).
4. Remove the CPU card from the chassis (if necessary) to gain access to the card's PC/104-*plus* connector.
5. Screw the brass spacer (included with the module) into the threaded hole on the CPU card. Do not tighten too much, or the threads may be damaged.
6. Carefully align the connector pins of the PCM-3662 with the PC/104-*plus* connector. Slide the module into the connector. The module pins may not slide all the way into the connector; do not push too hard or the module may be damaged.
7. Select the Jumper 3.
8. Secure the module to the CPU card through the threaded hole in the CPU card using the screw included.
9. Reinstall the CPU card and replace the system unit cover. Reconnect the cables you removed in step 2. Turn the power on. This completes the hardware installation. Install the software drivers as required.

Pin Assignment

10-pin Box Header (CN3)



RJ-45 Pin Assignment



RJ-45 Connector

