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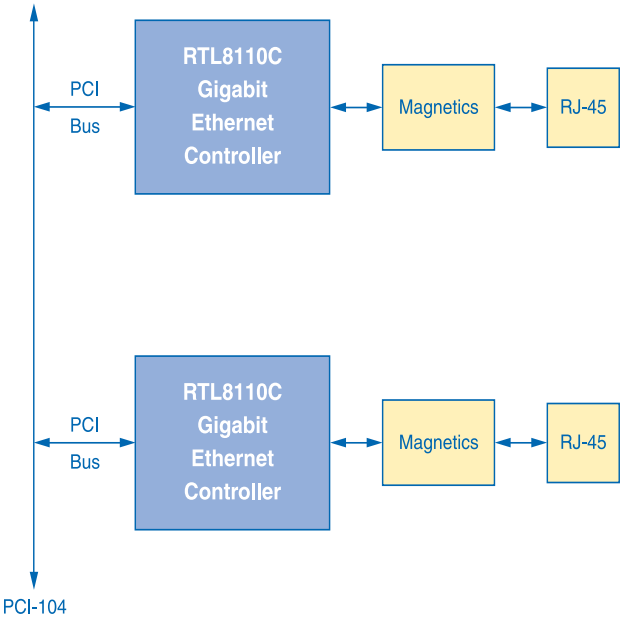
WinSystems®
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PPM-GIGE-2

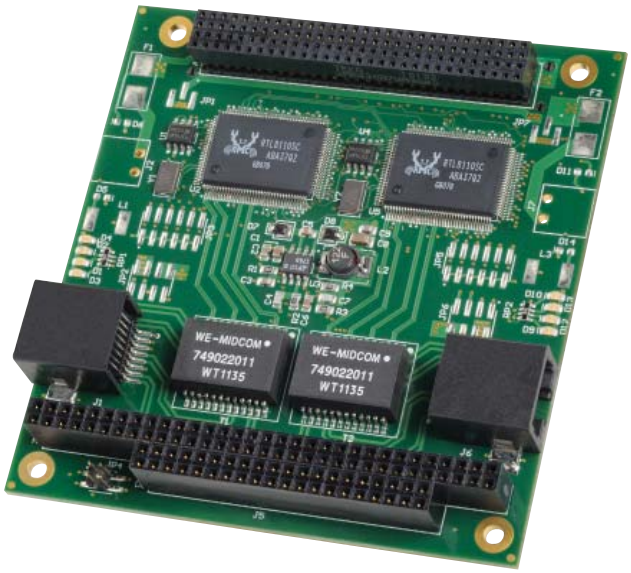
PC/104-*Plus* Dual Gigabit Ethernet Controller Module

Features

- Two Gigabit Ethernet channels on a PC/104-*Plus* card
- IEEE 802.3 support for 1000BASE-T, 100BASE-TX, and 10BASE-T applications
- Automatic switching from 1Gbps to 100 or 10 Mbps and full- and half-duplex operation
- Two Realtek RTL8110 Ethernet PCI controllers
- Auto-Negotiation with Next Page capability
- IEEE 802.3x-compliant full duplex flow control support
- Adaptive equalization supported
- 64Kbyte Rx and 8K Tx packet FIFO on each channel
- PHY supports 2-pair and 3-pair cable downshift
- Two RJ-45 Ethernet interface connectors on board
- Support for Windows®, Linux, and other x86 RTOS
- LEDs provide visual status indication
- Small size, 3.6 x 3.8 inches (90 x 96mm)
- Single +5V supply
- Operates from -40°C to +85°C



PPM-GIGE-2 Block Diagram



Product Description

The PPM-GIGE-2 is a high-performance, PC/104-*Plus* compliant two channel, Gigabit Ethernet module. This add-in module allows connection to two 10, 100, and 1000 Mbps networks using standard CAT 5 twisted pair copper cables. It is based upon the popular Realtek RTL8110 controller that is supported by a wide range of operating systems including Windows, Linux, and other x86-compatible operating systems.

The Realtek RTL8110 Gigabit Ethernet controllers combine triple-speed IEEE 802.3 compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver, 32-bit PCI bus controller, and embedded memory. With state-of-the-art DSP technology and mixed-mode signal technology, it offers high-speed transmission over CAT 5 UTP or CAT 3 UTP (10 Mbps only) cable. Functions such as Crossover Detection & Auto-Correction, polarity correction, adaptive equalization, cross-talk cancellation, echo cancellation, timing recovery, and error correction are implemented to provide robust transmission and reception capability at high speeds.

The device supports the 32-bit PCI v2.2 interface for host communications and is compliant with the IEEE 802.3 specification for 10/100 Mbps Ethernet and the IEEE 802.3ab specification for 1000 Mbps Ethernet.

PPM-GIGE-2 - PC/104-*Plus* Dual Gigabit Ethernet Module

Integrated PHY - The PHY supports 10/100/1000 Mbps full- and half-duplex operation. IEEE 802.3ab Auto-negotiation support provides automatic link configuration of speed, duplex, and flow control.

Ethernet Connection - Both channels of the PPM-GIGE-2 are hooked to the network through two onboard RJ-45 connectors.

Monitor LEDs - Light emitting diodes (LEDs) are on the PPM-GIGE-2 to provide a visual indication of the link status, network activity and network speed. The red LED is On if the link is at 10 Mbps and blinks if data is being transferred. The yellow LED is ON when the link is established at 100MB and then blinks when packets are being sent or received. Similarly, the green LED is ON when the link is established at 1 Gbps and then blinks when packets are being sent or received. If no link is established, all LEDs will be OFF. If a link is established but there is no activity one and only one LED will solid ON and the color of the LED will indicate the channel link speed.

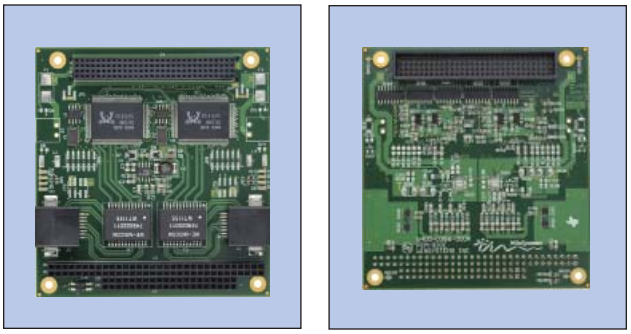
Software - Most PCI-compatible drivers, utilities and 10/100/1000 Ethernet supported operating systems based on the RTL8110 will work directly with this module.

Power Supplies - There are three independent power supplies on this module for use by the RTL8110 controller. They are 3.3V, 1.8V, and 1.2V. The PPM-GIGE-2 requires only a single +5 volt input. The +5V input power and ground for the board is supplied from both the PC/104 and PC/104-*Plus* connectors.

PC/104-*Plus* Interface - The PPM-GIGE-2 module is designed to offer flexible, high-performance Ethernet networking capability. It provides 32-bits of addressing and data, as well as the complete control interface to operate on the PC/104-*Plus* Bus. The chip has a PCI Bus master interface and is compliant with the PCI Bus Specification Revision 2.2.

The PPM-GIGE-2 is designed to support 3.3V PC/104-*Plus* signaling. Multiple PPM-GIGE-2 boards can be installed and supported on a single PC/104-*Plus* stack. There is a jumper block on board to select the module slot position and system resources.

Other Configurations - WinSystems offers a single channel version of this board called the PPM-GIGE-1. Also available is a dual channel with Power over Ethernet (POE) support called the PPM-GIGE-2-POE. Visit our website for the detailed specifications.



Front and Back Picture of PPM-GIGE-2

Technical Specifications

Electrical

Data rate	10/100/1000 megabits per second

Power Requirements

Vcc = +5V ±5% @ 500 mA typical

Connectors

Ethernet	Two, RJ-45
PC/104-*Plus*	120-pin (4 x 30; 2mm) stackthrough with shrouded header
PC/104	16-bit stackthrough (feed through only)

Environmental

Operational from -40°C to +85°C
Non-condensing relative humidity 5% to 95%
RoHS compliant Yes

Mechanical

Dimensions	3.6 x 3.8 inches (90 x 96mm)
Weight	3.1 oz. (88 gm)

Ordering Information

PPM-GIGE-2	PC/104-*Plus* dual channel Gigabit Ethernet module

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