

### Features

- IEEE 802.3 support for 1000BASE-T, 100BASE-TX, and 10BASE-T applications
- Automatic switching from 1 Gbps to 100 or 10 Mbps and full- and half-duplex operation
- Realtek RTL8110 Gigabit Ethernet PCI controller
- 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
- PHY supports 2-pair and 3-pair cable downshift
- IEEE 802.3at/af POE compliant
- Up to 40W for single port PSE applications
- RJ-45 Ethernet interface connector on board
- Support for Windows®, Linux, and other x86 RTOS
- LEDs provide status indication
- Small size, 3.6 x 3.8 inches (90 x 96mm)
- Single +5V supply
- Operates from -40°C to +85°C

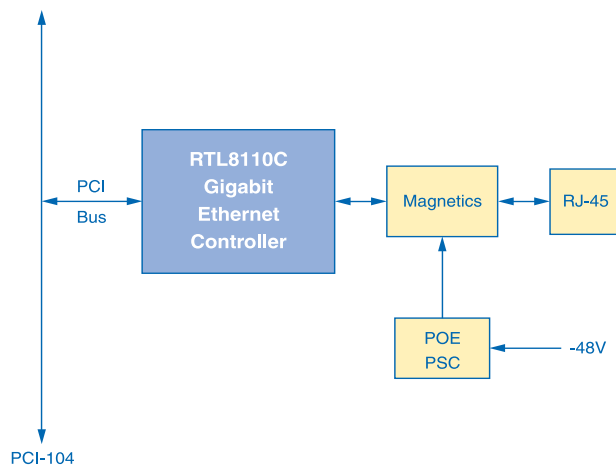


### Product Description

The PPM-GIGE-1-POE is a high-performance, PC/104-Plus compliant Gigabit Power over Ethernet (POE) module. This add-in module allows connection to 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 controller combines a 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-1-POE Block Diagram

## PPM-GIGE-1-POE - PC/104-Plus Gigabit with Power over Ethernet

**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** - The PPM-GIGE-1-POE is hooked to the network through an onboard RJ-45 connector.

**Power over Ethernet (POE)** - This board supports power-sourcing equipment (PSE) for POE applications. An external power supply unit supplies -48 volts which is injected at the magnetics and can supply up to 40W of power. An onboard controller provides input under voltage lockout, input overvoltage lockout, over temperature detection, output voltage slew-rate limit during startup and LED status indication on each port. This protection operates automatically with out the need of any software programming.

**Monitor LEDs** - Light emitting diodes (LEDs) provide a visual indication of the link status, network activity, network speed, and PSE status.

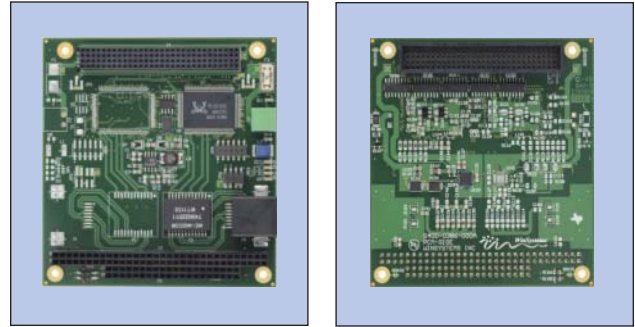
**Software** - Most PCI-compatible drivers, utilities and 10/100/1000 Ethernet supported operating systems based on the RTL8110 will work directly with this module.

**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-1-POE 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-1-POE 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-1-POE is designed to support 3.3V PC/104-Plus signaling. There is a jumper block on board to select the module slot position and system resources. Also, there is a PC/104 connector on the board. It feeds the signals through the connector to the next module in a stack.

**Other Configurations** - WinSystems also offers a dual channel Power over Ethernet version of this board called the PPM-GIGE-2-POE. Visit our website for the detailed specifications.



Front and Back Picture of PPM-GIGE-1-POE

### Technical Specifications

#### Electrical

Data rate 10/100/1000 megabits per second

#### Power Requirements

Vcc = +5V ±5% @ 250 mA typical

#### Connectors

Ethernet	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	2.9 oz. (83 gm)

### Ordering Information

PPM-GIGE-1-POE PC/104-Plus Gigabit Ethernet module

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