Highlights

- Supports PCI Express Specification Revision 2.0
- Single (x1) PCI Express Lane, Low-Profile Form Factor
- Two 10/100/1000M Ethernet ports
    - Support IEEE 802.3af & IEEE 802.3at for PoE (Power over Ethernet)
    - Power Sourcing Equipment (PSE) design, provides data and up to 30W of power on two ethernet ports
    - Isolated Flyback Design
        - DC-DC Converter is Isolated flyback design so that it's power output is electrically isolated from the power input
    - Supports jumbo frame to 9K bytes

Introduction

The **GEPX2-PCIE1XG201** is 2-port 10/100/1000M Ethernet (POE+) to PCI Express x1 Gen 2 Host Card.

The 10/100/1000M Ethernet controller combines an IEEE 802.3u compliant Media Access Controller (MAC), USB 3.0 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 cable or CAT 3 UTP (10Mbps only) cable. Functions such as Crossover Detection and Auto-Correction, polarity correction, adaptive equalization, cross-talk cancellation, echo cancellation, timing recovery, and error correction are implemented to provide robust transmission and reception capabilities.

GEPX2-PCIE1XG201 is fully compliant with Microsoft NDIS5, NDIS6 (IPv4, IPv6, TCP, UDP) Checksum features, and supports IEEE 802 IP Layer 2 priority encoding and IEEE 802.1Q Virtual bridged Local Area Network (VLAN). The above features contribute to lowering CPU utilization, especially benefiting performance when in operation on a network server.

Technical Specifications

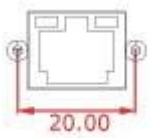
PCIe Host Bus	• Compliant with PCI Express Base Specification Revision 2.0 • Supports PCI Express Card Electromechanical Specification Revision 2.0 • Compliant with Intel’s eXtensible Host Controller Interface (xHCI) Specification Revision 1.0 • Supports PCI Bus Power Management Interface Specification Revision 1.2 • Operational registers are direct-mapped to PCI memory space • Supports Serial Peripheral Interface (SPI) type ROM
Ethernet Feature	• Integrated 10/100/1000M transceiver • Auto-Negotiation with Next Page capability • Supports LPM (Link Power Management) • Supports pair swap/polarity/skew correction • Crossover Detection & Auto-Correction

	• Supports ECMA-393 ECMA ProxZzzy Standard for sleeping hosts
	• Supports power down/link down power saving
	• Supports hardware CRC (Cyclic Redundancy Check) function
	• Software
	  ○ Microsoft NDIS5, NDIS6 Checksum Offload (IPv4, IPv6, TCP, UDP) and Segmentation Task-offload (Large send v1 and Large send v2) support
	  ○ Supports jumbo frame to 9K bytes
	  ○ Driver-less Design
	  ▪ Windows 8.1 inbox driver
	  ▪ Auto-Installation for Windows XP/Vista/7/8/8.1 drivers
	• IEEE
	  ○ Supports Full Duplex flow control (IEEE 802.3x)
	  ○ Fully compliant with IEEE 802.3 and IEEE 802.3u
	  ○ Supports IEEE 802.1P Layer 2 Priority Encoding
	  ○ Supports IEEE 802.1Q VLAN tagging
	  ○ Supports IEEE 802.3az-2010 (EEE)
	• Microsoft AOAC (Always On Always Connected)
	  ○ Supports Microsoft WPD (Wake Packet Detection)
	  ○ Supports Protocol Offload (ARP & NS) at all speeds

POE & POE+ Feature	• Supports IEEE 802.3af & IEEE 802.3at Power Sourcing Equipment (PSE) • Power Delivery **Max. 30W** for two Ethernet Ports • Isolated Flyback Design ○ DC-DC Converter is Isolated flyback design so that it's power output is electrically isolated from the power input • Operates at 54 V isolated supply • Provides PD real-time protection through the following mechanisms: overload, under-load, over-voltage, over-temperature, and short-circuit. • Auto mode – allows turning PDs on and off automatically.

Power Input for POE	Step-Up 12V from either PCIe Slot or auxiliary SATA power connector
	
	• From PCIe Slot
	  • 25 W Slot (Max. 25W)
	  • 75 W Slot (Max. 30W)
	• From SATA Power Connector
	  • SATA Power (Max. 30 W)

LED Indicators	• Power LED
	  ○ On: Port Power On
	  ○ 0.4Hz Blink: Power Management event

	○ 0.8Hz Blink: Port Over Load / Port Short Circuit / Port failed at Startup ○ 3.3Hz Blink: Vmain_Out of Range or Over Temp ○ Off: Port Off • Link Status LED
Number of Ports:	• Two 10/100/1000M Gigabit Ethernet ports with Screw Holes for thumbscrew locking Type Ethernet Cable 

Computer Platform

- Computer with PCI Express slot (x1, x4, x8, x16)

  Note:
  For the best performance (5.0 Gbps), GEPX2-PCIE1XG201 should be installed in a PCIe Gen 2 compliant slot in the host computer. Most computers have PCIe Gen 2 (5.0 Gbps) throughput on x8 or x16 slots.
  A PCIe Gen 1 compliant slot reaches up to 2.5 Gbps throughput.

Operating System Requirements

- Windows XP, Windows Vista, Windows 7, Windows 8
- Linux xHCI support under Linux kernel version 2.6.31 and after
- Host Drivers
  x86 (32-bit) and x64 (64-bit)
  - Windows XP
  - Windows Vista
  - Windows 7
  - Windows 8 and 8.1

Certifications

- CE Test: Pass
- FCC Test : Pass
- VCCI Test: Pass
- RCM Test: Pass

Physical Dimensions

- 64mm(H) x 125mm(L)

- NW: 85g

Kit includes

- GEPX2-PCIE1XG201
- Driver Installation Guide

Optional Accessories

- Low Profile PCI Bracket (BR-00194-09-1020)