GE10-PCIE4XG301

Highlights

- PCIe x4 Gen 3 (8.0 GT/s), Low-Profile PCI Form Factor
- IEEE 802.3an 10G, 5G, 2.5G,1G and 100M over up to 100m of Cat6a (or better) cables
- Typical Power Consumption: 6 W at 10 Gbps, 4W at 5 Gbps full length 100 m Cat6a
- Standard compliance:
  IEEE 802.3bz – NBASE-T, IEEE 802.3x – flow control,
  IEEE 802.1P – quality of service, IEEE 802.1QAV – AVB
- Jumbo frame support up to 16 KB

Introduction

GE10-PCIE4XG301 is 10G/ 5G/ 2.5G/ 1000BASE-T/ 100BASE-TX Ethernet to PCI Express x4 Gen 3 Host Card.

GE10-PCIE4XG301 supports 10GBASE-T Ethernet in compliance with the IEEE 802.3an standard, as well as 5 Gbps and 2.5 Gbps Ethernet speeds over standard Cat 5e and Cat 6 copper cables. Compliant to the IEEE 802.3bz standard ratified in September 2016, the GE10-PCIE4XG301 is also backwards-compatible with legacy 1000BASE-T Ethernet.

The GE10P-PCIE4XG301 is a single-chip, single-port, high-performance PCIe 3.0 Multi-Gig 10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX Ethernet adapter. It incorporates Aquantia's AQrate PHY technology to deliver 1 GbE and 2.5 GbE network connectivity speeds over 100 m with zero change required for legacy cabling. Speeds ranging from 5 GbE to 100 M are supported by Cat 5e cabling while 10GbE requires a minimum of Cat6 with Cat 6a running up to 100 m.

Technical Specifications

PCI Express	• PCI Express Gen3 or Gen2, (Supports line rates of 8.0 GT/s and 5.0 GT/s per lane) • Bus width: Supports Gen3 x4 or Gen2 x4 • MSI, MSI-X, and legacy INTx PCIe interrupts, Improved CPU utilization and network performance

MAC	• Large Send Offload (LSO), Receive-Side Scaling (RSS), Direct Cache Access (DCA) header checksum
	   o Increased network performance and lower host CPU utilization
	• WoL power management
	   o Supports low power modes
	• On-chip CPU DASH
	   o Desktop management

	- MACsec
	  - Secured traffic over Ethernet links
	- Quality of Service (QOS) support
	  - Up to eight traffic classes and Data Center Bridging (DCB)
	- Jumbo frames (up to 16Kbytes)
	  - Improves network performance with reduced CPU utilization
	- IPv4, IPv6/TCP and IPv6/UDP checksum offload
	  - Offloading calculations and improved CPU usage

PHY	- Integrated Aquantia AQrate PHY featuring NBASE-T technology
	  - 100 meters over Cat 6a at 10Gbps
	  - 100 meters over Cat 5e (or better) at 5Gbps/ 2.5Gbps/ 1Gbps/ 100Mbps (Does not require any change in the existing infrastructure or cabling)
	- Advanced cable diagnostics
	  - On-chip high resolution cable analyzer
	- Audio Video Bridging (AVB) and 1588v2
	  - Management of time-sensitive traffic packets
	- EEE support
	  - PHY power savings mode
	- Supported Data Rates
	  - 10G/ 5G/ 2.5G/ 1G/ 100 Mbps
	- Standard compliance
	  - IEEE 802.3bz – NBASE-T, IEEE 802.3x – flow control, IEEE 802.1P – quality of service, IEEE 802.1QAV – AVB

LED Indicators	- Left LEDs (Green & Orange)
	  - Orange: 5G/2.5G/1G/100M Link
	  - Green: 10G Link

Number of Port	- One 10GBASE-T RJ45 Ethernet port **with Screw Holes** for thumbscrew locking Type Ethernet Cable

Computer Platform

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

Operating System Requirements

- This driver supports in the following operating systems

- Windows 7, 8, 8.1, 10, Server 2012/2016
- Linux kernels 3.10 and later, includes support for x86_64 and ARM Linux system

Physical Dimensions

- 64.4mm(H) x 148mm(L)
- NW: 101.6g

Certifications

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

Kit includes

- GE10-PCIE4XG301
- Driver CD

Optional Accessories

- Low Profile PCI Bracket --- BR-00194-31-1020