Multi-Gigabit Host Card

GE10P-PCIE4XG301
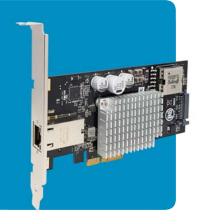
10G/ 5G/ 2.5G/ 1000BASE-T/ 100BASE-TX Ethernet (POE+) to PCI e x4 Gen 3 Host Card

Highlight

- PCIe x4 Gen 3 (8.0 GT/s)
- Low-Profile PCI Form Factor, Dimensions: 64.4mm(H) x 148mm(L)
- IEEE 802.3an 10G, 5G, 2.5G,1G and 100M over up to 100m of Cat6a (or better) cables
- Supports POE+ (IEEE 802.3at Power Sourcing Equipment)
  - Isolated Flyback Design
    DC-DC Converter is Isolated flyback design so that it's power output is electrically isolated from the power input
- 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

Introduction

GE10P-PCIE4XG301 is 10G/ 5G/ 2.5G/ 1000BASE-T/ 100BASE-TX Ethernet (POE+) to PCI Express x4 Gen 3 Host Card.

GE10P-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 GE10P-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.

Specification

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
  - Increased network performance and lower host CPU utilization
- On-chip CPU DASH
  - 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 and Cat 6a at 5Gbps/ 2.5Gbps/ 1Gbps/ 100Mbps
- 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/5 G/2.5 G/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

POE+ Feature

- Supports IEEE 802.3at Power Sourcing Equipment (PSE)
- Operates from a 54 V 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

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

Right LED (Green)
- On: with POE
- Off: without POE

Speed Link & Activity LED (Green/Orange)
POE LED (Green)

Number of Ports

One 10GBASE-T RJ45 Ethernet (POE+) 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

Environmental conditions

- Operating Temperature: 5℃ to 60℃ (41℉ to 140℉)
- Storage Temperature: 0℃ to 70℃ (32℉ to 150℉)
- Humidity : 10% to 80% (Non-Condensing)

Physical Dimensions

PCBA: 64.4mm(H)x148mm(L)
Unit Package: 193mm(L) x 160mm (W) x 50mm (H)

Weight

PCBA:121g
Unit Package:235g

Certifications

CE/UKCA/FCC/VCCI/RCM

Compliances

RoHS/Reach

CE UKCA FC VCI