Multi-Gigabit Host Card
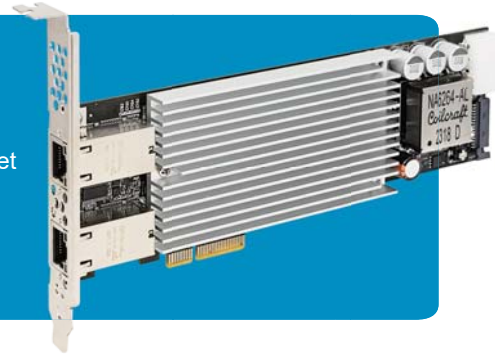
DGEAP-PCIE4XG302

Dual 10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 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
- Supports 10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX Ethernet
- Supports POE+ (IEEE 802.3at Power Sourcing Equipment)
- Each Ethernet port supports Jumbo frame up to 16 KB

Introduction

DGEAP-PCIE4XG302 is Dual 10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX Ethernet (POE+) to PCI Express x4 Gen 3 Host Card.

DGEAP-PCIE4XG302 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 DGEAP-PCIE4XG302 is also backwards-compatible with legacy 1000BASE-T Ethernet.

The DGEAP-PCIE4XG302 is a dual-chip, dual-port, high-performance PCIe 3.0 Multi-Gig 10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX Ethernet adapter. It incorporates Marvell's AQrate PHY technology to deliver 1GbE and 2.5GbE network connectivity speeds over 100m with zero change required for legacy cabling. Speeds ranging from 5GbE to 100M are supported by Cat 5e cabling while 10GbE requires a minimum of Cat 6 with Cat 6a running up to 100m.

DGEAP-PCIE4XG302 is designed with Two key components.
- 8-Lane, 3-Port PCI Express Gen 3 Switch
- Two PCI Express to 10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX Single Chip Host Controllers

Specification

PCI Express
- PCI Express 4-lane Gen 3 (8.0GT/s)
  - Compliant with PCI Express Base Specification Revision 3.1
  - Compliant with PCI Express CEM Specification Revision 3.0
  - Compliant with Advanced Configuration Power Interface (ACPI) Specification
- Support up to 512-Byte Max Payload Size
- Support two DMA engines
  - Provide up to 4 physical or 8 virtual DMA channels enabling communications among Hosts and EPs

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

Power Input for POE+
Step-Up 12V from the following source (A, B)
A. From PCIe Slot (25 W or 75 W depends on mainboard design)
B. From ATA 4 pin Power Connector or/and SATA 15pin Power Connector

POE+ Feature
- Power Supported: IEEE 802.3at (30W)
- Auto Detect, classification
- Auto Turn-On and disconnect
- Efficient 255-mΩ sense resistor
- MPS method: DC Disconnect
- DC Input (12V) could be from either PCIe Edge Connector or Power Connectors

LED Indicators
Link Speed & Activity LEDs (Up side)
- Orange: 5G/2.5G/1G/100M Link
- Green: 10G Link
POE LED (Down side)
- On: POE Power enable (Green)
- Off: POE Power disable
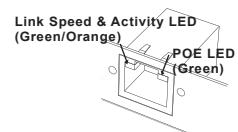
Number of Ports
Two 10GBASE-T RJ45 Ethernet (POE+) ports with Screw Holes for thumbscrew locking Type Ethernet Cable

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
- Storage Temperature: 0℃ to 70℃ (32℉ to 150℉)
- Humidity : 10% to 80% (Non-Condensing)

Physical Dimensions
PCBA: 64.4mm(H) x 197.31mm(L)
Unit Package: 230mm(L) x 150mm(W) x 35mm(H)

Weight
PCBA:230.5g
Unit Package:325g

Certifications
CE/UKCA/FCC/VCCI/RCM