2-CH 10GigE, NBASE-T, PoE+ Ethernet Card

Dual 10G/ 5G/ 2.5G/ 1000BASE-T/ 100BASE-TX Ethernet (POE+) & Two PCIe x2 to PCI Express x8 Gen 3 Host Card.

PCIE-POE2-MG supports two (2) independent 10GBASE-T Ethernet channels in compliance with the IEEE 802.3an and 802.3bz standard, as well as 5 Gbps and 2.5 Gbps Ethernet speeds over standard Cat 5e and Cat 6 copper cables. This card 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 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.

Overview

Manufacturer #	• ioi DGEAP2X-PCIE8XG302
LUCID #	• PCIE-POE2-MG
Number of Ports	• Two (2) 10GBASE-T RJ45 Ethernet port with Screw Holes for thumbscrew locking Type Ethernet Cable, • One SFF-8654 4x 38pin connector (PCIe x2, PCIe x2), One JST Compatible 2pin Wafer (Supply 3.3Vaux Power)
PCI Express	• PCI Express Base Specification, r3.0 (compatible w/ PCIe r1.0a/1.1 & 2.0), PCI Power Management Spec r1.2, Microsoft Windows Logo Compliant, Supports Access Control Services, Dynamic link-width control, Dynamic SerDes Speed Control
MAC	• Large Send Offload (LSO), Receive-Side Scaling (RSS), Direct Cache Access (DCA) header checksum • WoL power management, On-chip CPU DASH, MACsec, Quality of Service (QOS) support, Jumbo frames (up to 16Kbytes), IPv4, IPv6/TCP and IPv6/UDP checksum offload

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 with On-chip high resolution cable analyzer
	• Audio Video Bridging (AVB) and 1588v2
	• EEE support
	• 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

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 the following source (A, B, C): A. From PCIe Slot (25 W or 75 W depends on mainboard design), B. From IDE Big 4 pin Power Connector or/and SATA 15pin Power Connector, C. From Mini-Fit Jr. Dual Row 6pin Power Connector

Full Specifications

PCI Express

Standards Compliant
- PCI Express Base Specification, r3.0 (compatible w/ PCIe r1.0a/1.1 & 2.0)
- PCI Power Management Spec r1.2
- Microsoft Windows Logo Compliant
- Supports Access Control Services
- Dynamic link-width control

Dynamic SerDes Speed Control

High Performance
- performancePAK
  - Multicast
  - Dynamic Buffer/FC Credit Pool
- Non-blocking switch fabric
- Full line rate on all ports
- Cut-Thru packet latency of less than 100ns between symmetric (x4 to x4) ingress and egress Ports
- 2KB Max Payload Size

Quality of Service (QoS)
- Traffic Class Queuing
- Eight Traffic Classes per port
- Weighted round-robin source port arbitration

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 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 the following source (A, B, C)

A. From PCIe Slot (25 W or 75 W depends on mainboard design)

B. From IDE Big 4 pin Power Connector or/and SATA 15 pin Power Connector

C. From Mini-Fit Jr. Dual Row 6pin Power Connector

Ethernet port status LEDs

POE LED (Green)

Link LED
- Yellow: 5G/ 2.5G/ 1G/ 100M
- Green: 10G

PCIe Lane Status LEDs

- OFF: Link is Down
- Slow Blink: Gen 1 (2.5GT/s)
- Fast Blink: Gen 2 (5.0GT/s)
- Solid: Gen 3 (8.0GT/s)

Upstream Lane Status LED
- PORT0 LED

Downstream Lane Status LEDs (PORT1 & PORT2 & PORT3 & PORT4 LED)
- PORT3 LED (CON2) & PORT4 LED (CON1) Solid: Gen 3 (8.0GT/s)
- PORT1 LED & PORT2 LED

Number of Ports

One SFF-8654 4x 38pin connector (PCIe x2, PCIe x2)
- One JST Compatible 2pin Wafer (Supply 3.3Vaux Power)

Two 10GBASE-T RJ45 Ethernet (POE+) ports with Screw Holes for thumbscrew locking Type Ethernet Cable

Computer Platform

Computer with PCI Express slot (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