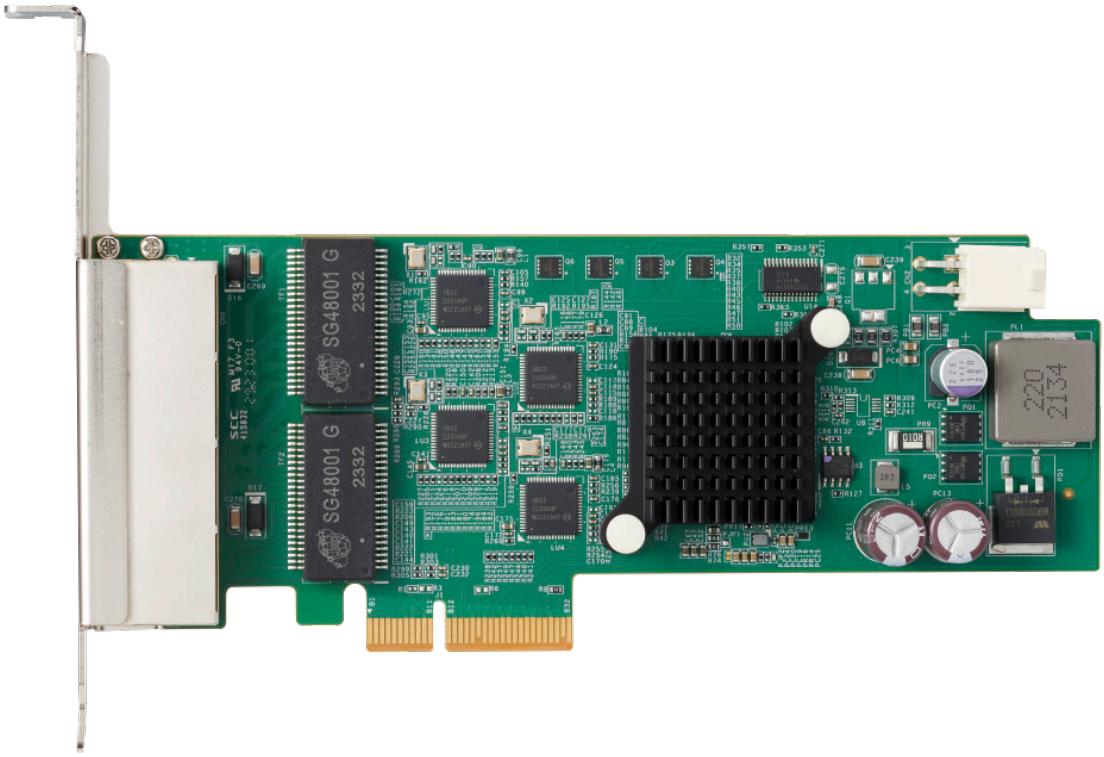
PCIe-GIE74V

User's Manual

4-CH PCI Express® GigE Vision PoE Frame Grabber



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Leading EDGE COMPUTING

Revision History

Revision	Description	Date	By
1.0	Initial release	2024-12-26	AL

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Preface

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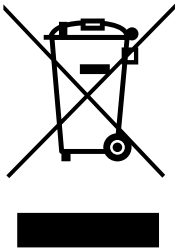
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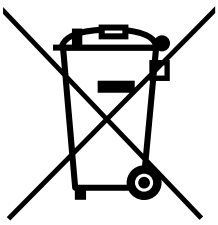
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Battery Labels (for products with battery)









California Proposition 65 Warning



WARNING: This product can expose you to chemicals including acrylamide, arsenic, benzene, cadmium, Tris(1,3-dichloro-2-propyl)phosphate (TDCPP), 1,4-Dioxane, formaldehyde, lead, DEHP, styrene, DINP, BBP, PVC, and vinyl materials, which are known to the State of California to cause cancer, and acrylamide, benzene, cadmium, lead, mercury, phthalates, toluene, DEHP, DIDP, DnHP, DBP, BBP, PVC, and vinyl materials, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



NOTE:

Additional information, aids, and tips that help users perform tasks.



CAUTION:

Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



WARNING:

Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

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1 Introduction

1.1 Overview

ADLINK's PCIe-GIE74V features a PCI Express® x4 lane GigE Vision PoE (Power over Ethernet, IEEE 802.3af) frame grabbers supporting 4-CH independent Gigabit Ethernet ports for multiple GigE Vision connections with data transfer up to 1 Gb/s per port.

The PCIe-GIE74V's PoE offers up to 15.4W PoE power and automatic detection for stable and reliable connection between PoE and non-PoE cameras and frame grabbers, reducing costs, simplifying installation, and easing maintenance burdens. It also enhances PoE protection to protect against undervoltage, overvoltage, and overcurrent.

1.2 Features

- PCI Express® x4 compliant
- Supports 4 independent Gigabit Ethernet ports
- IEEE 802.3af for PoE (Power over Ethernet) 44 to 57V, 15.4W per port
- Up to 20/60W PoE power supply from PCIe bus or 4-pin auxiliary power supply connector
- Powered Device (PD) auto detection and classification
- Link aggregation/jumbo frame (9 Kb)
- LED connectivity indicators
- IEEE 1588 (PTP technology, hardware only)
- Multiple card and camera support
- PoE protection from protect against undervoltage, overvoltage, and overcurrent
- Windows® 7/10/11 OS compatible

1.3 Applications

The PCIe-GIE74V is ideally suited to frame grab functions in a wide variety of applications, including:

- Machine Vision Inspection Systems
- Scientific Research Instrumentation
- Medical Research Instrumentation

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2 Getting Started

2.1 Unpacking Checklist

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK. Ensure that the following items are included in the package.

- PCIe-GIE74V unit

NOTE

OEM versions with non-standard configuration, functionality, or packaging may vary according to individual requirements.

2.2 Installation

1. Remove the computer cover according to the computer manual.

NOTE

A vacant PCI express slot is required for the installation of the PCIe-GIE74V module; if none is available, remove a PCI express board and note the slot number.

2. Remove the slot cover (if any).
3. Carefully position the PCIe-GIE74V in the selected PCI express slot. If installing in a tower computer, align the board with the board slots.
4. Press the board firmly but carefully into the connector.
5. Anchor the board with the screw.
6. Plug the cable into the PoE power connector.
7. Connect the device via a Gigabit Ethernet connector.
8. Power up the computer.

NOTE

The PCIe-GIE74V can be installed in a PCI Express x4, x8, or x16 slot. Please download the Intel® I210 driver from ADLINK (www.adlinktech.com) or Intel (downloadcenter.intel.com)

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3 Specifications

3.1 Product Specifications

PCI Express	
PCIe x4 Ports	PCIe v2.1 (2.5 GT/s) 1 slot
Differential Output Peak to Peak Voltage	+0.8V to +1.2V
Differential Input Peak to Peak Voltage	+0.175V to +1.2V
Input Voltage for PERST#, WAKE#, and SMBus	-0.75V to +4.05V
Gigabit Ethernet	
LAN Chip	Intel® I210, PCIe v2.1 (2.5GT/s)
Gigabit Ethernet	4
PoE Signal	
Max Output Power	PoE (Power over Ethernet) 15.4W per port IEEE 802.3af compliant
PoE Output Voltage	44 to 57V, PoE port positive voltage feed
Physical	
Dimensions	167.6 mm x 64.9 mm (6.6” x 2.6”) (W x L)
Operating Temperature	32W PoE: 0°C to +55°C (32°F to 131°F) 60W PoE: 0°C to +50°C (32°F to 122°F) Humidity: 5% to 90% RHNC
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Safety Compliance	CE/FCC Class B; RoHS
Advanced	
Jumbo Frame	9 KB
IEEE 1588(Hardware Only)	Yes
Link Aggregation	Yes
Multiple Cards	Yes
PoE (Power over Ethernet)	IEEE 802.3af
PoE Protection	Yes
PoE Power Management	No
Power Requirements	
Input Voltage	3.3VDC and 12VDC, (w/ PC system power)
PoE Power w/ PCIe Slot	Max. 20W (+12V@2.1A)
PoE Power w/ 4-Pin Auxiliary Power Supply Connector	Max. 60W (+12V@6A)

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4 Power over Ethernet

The PCIe-GIE74V PoE (Power over Ethernet) specification enables the PCIe-GIE74V to act as power sourcing equipment (PSE), providing power through a twisted-pair Ethernet connection to powered devices (PDs), such as GigE Vision cameras, IP phones, or wireless access points.

4.1 PoE

Power over Ethernet (PoE), based on the IEEE 802.3af standard, delivers power over Ethernet up to 15.4W.

The PCIe-GIE74V's PoE automatically detects which devices are supported upon connection and ensures compatibility with the requisite protocol.

Table 1: PoE parameters

	PoE (IEEE 802.3af)
Power available at PD	12.95W
Maximum power from PSE	15.4W
Voltage range (at PSE)	44.0 to 57.0 V
Voltage range (at PD)	37.0 to 57.0 V
Maximum current	350 mA/mode

4.2 PoE Protection

The PCIe-GIE74V provides PoE Protection from undervoltage, overvoltage, and overcurrent.

4.2.1 Under- and Overvoltage

PoE output is monitored, and power supply to the PD is interrupted when any output exceeds OVP (Over Voltage Protection) or falls below UVP (Under Voltage Protection) limits.

Table 2: Under- and overvoltage parameters

Normal PoE	44V to 57V
UVP	29V
OVP	62V

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5 Mechanical Layout

NOTE: All dimensions shown are in millimeters.

5.1 PCIe-GIEV4V PCB Layout

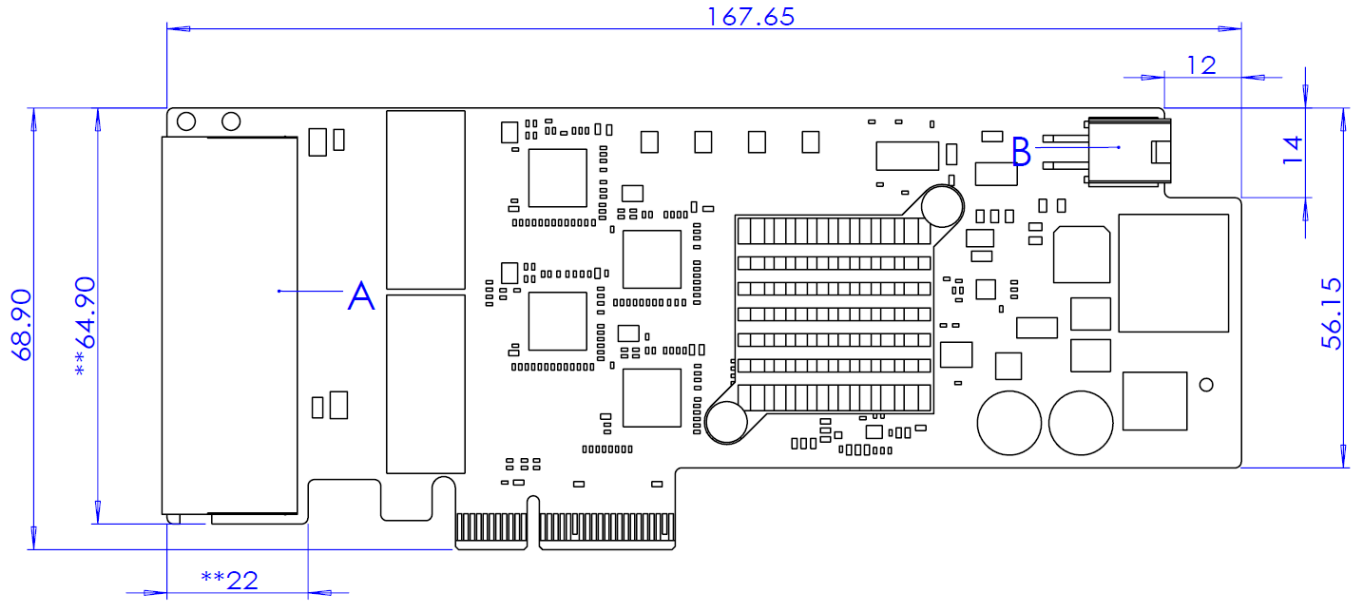


Figure 1: PCIe-GIE74V PCB layout (Top)

Table 3: PCIe-GIEV4V PCB layout legend

A	4x RJ45 connectors
B	4-pin 12V connector

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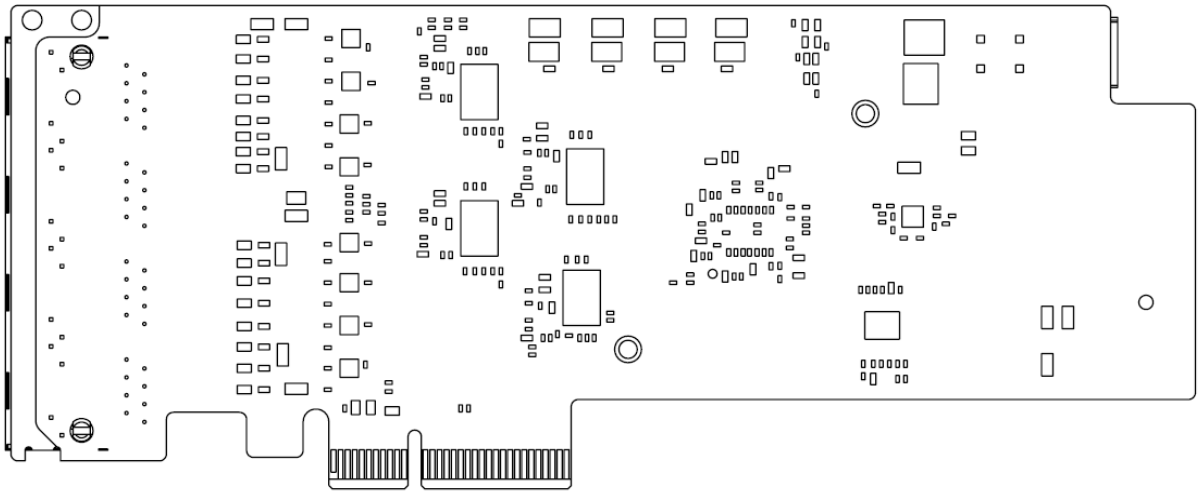


Figure 2: PCIe-GIEV4V PCB layout (Bottom)

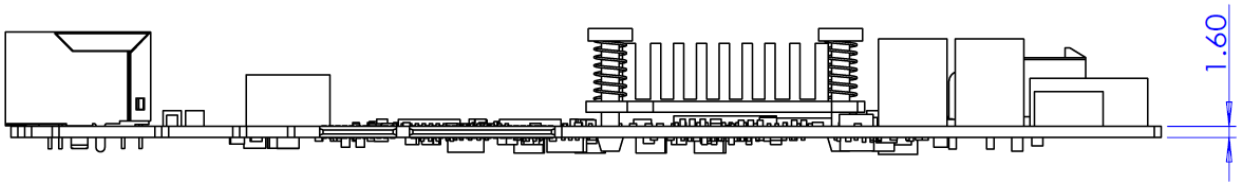


Figure 3: PCIe-GIEV4V PCB layout (Side View)

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6 Connector Pinouts

6.1 RJ-45 Ethernet Port

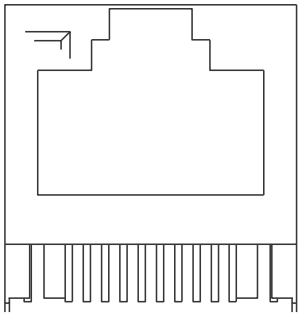


Figure 4: RJ-45 Ethernet connector

Table 4: RJ-45 Ethernet port connector signals

Pin	Signal
1	MDI0+ (PoE_DCV+)
2	MDI0- (PoE_DCV+)
3	MDI1+ (PoE_DCV-)
4	MDI2+ (PoE_DCV+)
5	MDI2- (PoE_DCV+)
6	MDI1- (PoE_DCV-)
7	MDI3+ (PoE_DCV-)
8	MDI3- (PoE_DCV-)

Table 5: RJ-45 Ethernet port LED indicators

	Activity	Status
LED1 10/100/1000	Off	10 Mbps
	Green	100Mpbs
	Yellow	1000Mbps
LED2 ACT/LINK	Off	No link
	Green	Linked
	Flashing green	Data activity

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6.2 4-Pin 12V Power Connector (CN2)

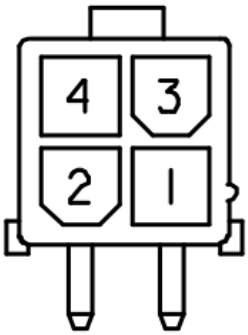


Figure 5: 4-pin 12V power connector

Table 6: 4-pin 12V power connector pin assignment

Pin	Signal
1	GND
2	GND
3	+12V
4	+12V

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Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

S'il vous plaît prêter attention stricte à tous les avertissements et mises en garde figurant sur l'appareil , pour éviter des blessures ou des dommages.

- Read these safety instructions carefully.
- Keep the User's Manual for future reference.
- Read the Specifications section of this manual for detailed information on the recommended operating environment.
- The device can be operated at an ambient temperature of 50ºC.
- When installing/mounting or uninstalling/removing device; or when removal of a chassis cover is required for user servicing (See "Getting Started" on page 9.):
  - Turn off power and unplug any power cords/cables.
  - Reinstall all chassis covers before restoring power.
- To avoid electrical shock and/or damage to device:
  - Keep device away from water or liquid sources.
  - Keep device away from high heat or humidity.
  - Keep device properly ventilated (do not block or cover ventilation openings).
  - Always use recommended voltage and power source settings.
  - Always install and operate device near an easily accessible electrical outlet.
  - Secure the power cord (do not place any object on/over the power cord).
  - Only install/attach and operate device on stable surfaces and/or recommended mountings.
- If the device will not be used for long periods of time, turn off and unplug from its power source.
- Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools.
- A Lithium-type battery may be provided for uninterrupted backup or emergency power.



Risk of explosion if battery is replaced with one of an incorrect type; please dispose of used batteries appropriately.

Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- The device must be serviced by authorized technicians when:
  - The power cord or plug is damaged.
  - Liquid has entered the device interior.
  - The device has been exposed to high humidity and/or moisture.
  - The device is not functioning or does not function according to the User's Manual.
  - The device has been dropped and/or damaged and/or shows obvious signs of breakage.
- Disconnect the power supply cord before loosening the thumbscrews and always fasten the thumbscrews with a screwdriver before starting the system up.
- It is recommended that the device be installed only in a server room or computer room where access is:
  - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefore, and any precautions required.

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- Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location.

- If PoE (Power over Ethernet) is enabled for the device, the system can ONLY be deployed indoors. Unless otherwise noted, the PoE system is NOT designed to withstand the rigors of outdoor use.

	**BURN HAZARD** Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching. ***RISQUE DE BRÛLURES*** *Ne touchez pas cette surface, cela pourrait entraîner des blessures.*

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Getting Services

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