



ELPL-G401

PCIe to Four

Isolated GbE LAN Module

Customer:	
Customer	
Part Number:	
Innodisk	
Part Number:	
Innodisk	
Model Name:	
Date:	

Innodisk Approver	Customer Approver

Total Solution For
Embedded Peripherals

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REVISION HISTORY

Revision	Description	Date
1.0	First Released	Sep, 2024

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1. Product Introduction

1.1. Overview

Innodisk ELPL-G401 is designed with Standard PCIe form factor, ELPL-G401 supports PCIe Gen 2.1 with a single lane to four GbE LAN ports, optimized for higher performance and lower power, which brings you a flexible expansion solution for embedded systems.

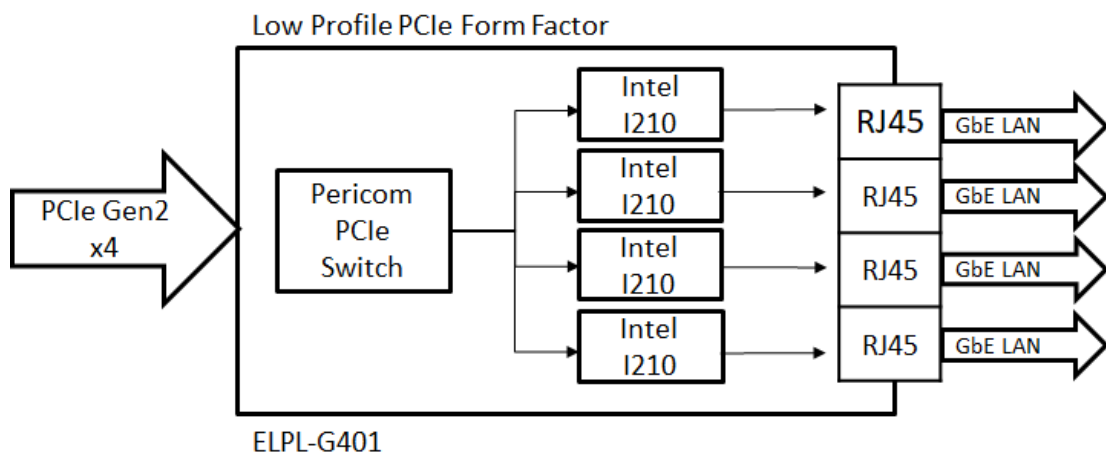


Figure 1: Block Diagram

1.2. Features

- Intel i210 controller, support four GbE LAN ports
- Support PCIe low-profile bracket
- Complies with EN61000-4-5 2kV surge protection
- Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 1kV HiPOT protection
- Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
- Optional Industrial Temperature (-40°C to +85°C) support
- 30μ" golden finger, 3-year warranty
- Industrial design, manufactured in innodisk Taiwan



Figure 2: PCIe Board Picture

2. Product Specifications

2.1. Device Parameters

Table 1: Device Parameters

Form Factor	Low-Profile PCIe
Input I/F	PCI Express 2.1 x 4
Output I/F	GbE LAN x 4
Output Connector	RJ45 x 4
Dimension (WxLxH)	131.9 x 56.02 x 19.88 mm

2.2. Electrical Specifications

2.2.1. Power Requirement

Table 2: Power Requirement

Item	Connector	Rating
Input voltage	PCIex4 Golden Finger	+3.3/12V DC +-5%

2.2.2. Power Consumption

Table 3: Power Consumption

Max (W)	Voltage(V)	Max (mA)
7.77	3.3	656.4
	12	467.3

2.3. Environmental Specifications

2.3.1. Temperature Ranges

Table 4: Temperature Ranges

Temperature	Range
Operating	Standard Grade: 0°C to +70°C Industrial Grade: -40°C to +85°
Storage	-55°C to +95°

2.3.2. Humidity

Relative Humidity: 10-95%, non-condensing

2.3.3. Shock and Vibration

Table 5: Shock and Vibration

Reliability	Test Conditions	Reference Standards
Vibration	7 Hz to 2K Hz, 20G, 3 axes	IEC 68-2-6
Mechanical Shock	Duration: 0.5ms, 1500 G, 3 axes	IEC 68-2-27

2.3.4. Mean Time between Failure (MTBF)

Reliability prediction methodology provides the basis for reliability evaluation and analysis. The purpose of the prediction is to predict the life time of the product in units of failure rate and MTBF.

Table 6: Mean Time between Failure (MTBF)

Product	Condition	MTBF (Hours)
ELPL-G401-C1/W1	The analysis is at 25°C ambient temperature by Telcordia SR-332, Issues 4, Method I, Case 3 under Ground Benign, Controlled environment, 50% operation stress	1,252,582

2.4. CE and FCC Compatibility

ELPL-G401 conforms to CE and FCC requirements.

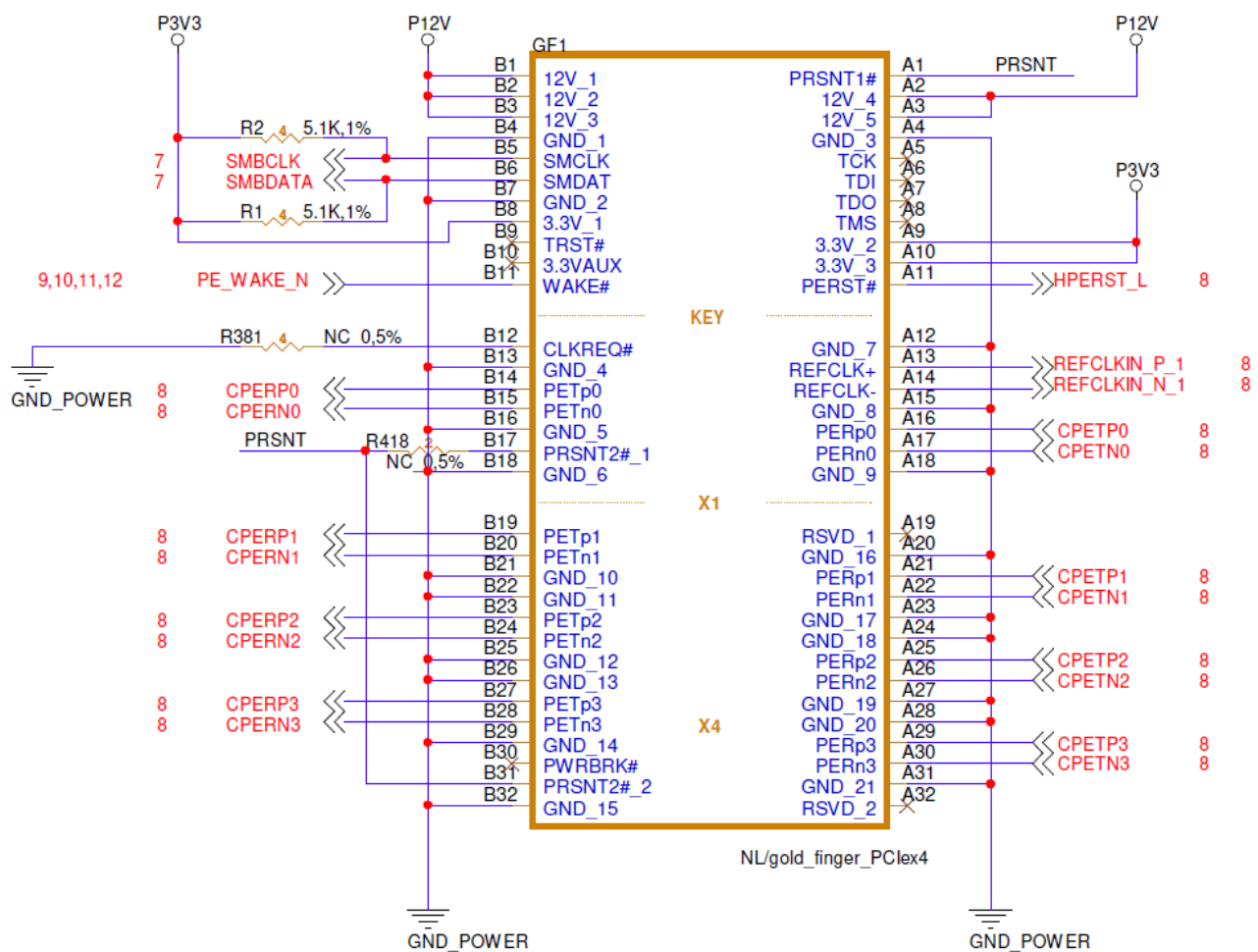
2.5. RoHS Compliance

ELPL-G401 is fully compliant with RoHS directive.

2.6. Hardware

2.6.1. Pin Define

Figure 3: PCIe x 4 Golden Finger Pin Define



2.6.2. ELPL-G401 Mechanical Drawing

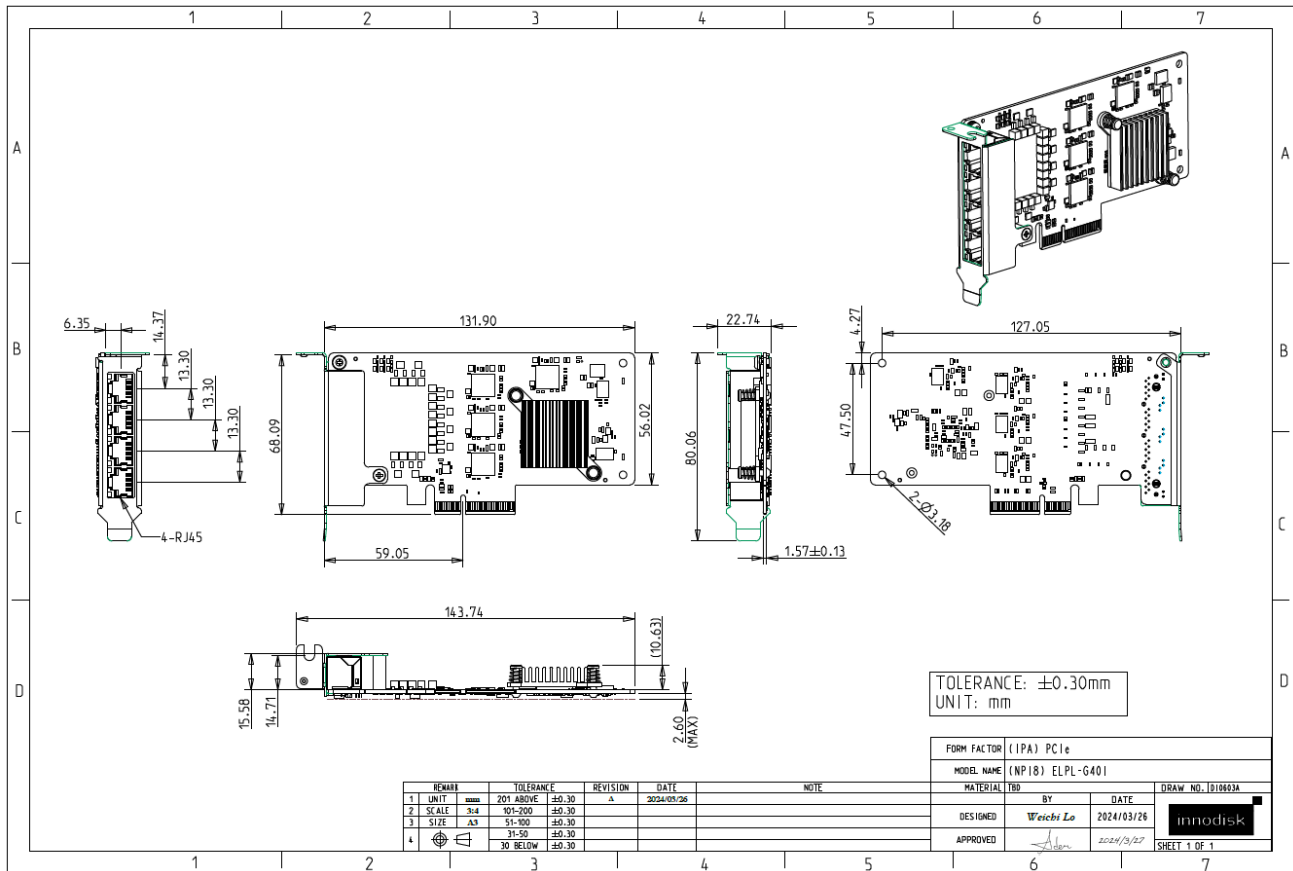


Figure 4: ELPL-G401 PCIe Board Drawing

2.6.3. Packing List

- ELPL-G401 PCIe Board x 1

2.7. Software Support

- Windows: XP(32bit), 7(32/64bit), 8/8.1(32/64 bit), 10(32/64bit), 11
- Linux (igb): kernel 2.4 and above.

3. Installation Guide

Please download driver from Intel official website.

Or you can download Intel i210 chip driver from Intel official web site directly.

<https://www.intel.com/content/www/us/en/products/details/ethernet/gigabit-controllers/i210-controllers/downloads.html>

4. Appedix



Statement of Conformity

Issued Date: May 28, 2024
Report No. : 2440579R-0E3012100115-A

This is to certify that the following designated product

Product : Low-profile PCIe to 4 isolated GbE LAN
Trademark : Innodisk
Model Number : ELPL-G401
Company Name : Innodisk Corporation

This product, which has been issued the test report listed as above in DEKRA Testing and Certification Co., Ltd. Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

EN 55032:2015/A1:2020, Class B	EN 55035:2017/A11:2020
	IEC 61000-4-2 Ed. 2.0:2008
	IEC 61000-4-3 Ed. 4.0:2020
	IEC 61000-4-4 Ed. 3.0:2012
	IEC 61000-4-6 Ed. 5.0:2023
	IEC 61000-4-8 Ed. 2.0:2009

TEST LABORATORY

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Vincent Lin / Director

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Statement of Conformity

Issued Date: May 28, 2024
Report No. : 2440579R-0E3012110014-A

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Trademark : Innodisk
Model Number : ELPL-G401
Company Name : Innodisk Corporation

This product, which has been issued the test report listed as above in DEKRA Testing and Certification Co., Ltd. Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

FCC CFR Title 47 Part 15 Subpart B:2022, Class B

TEST LABORATORY

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BS EN 55032:2015+A1:2020, Class B **BS EN 55035:2017+A11:2020**
BS EN 61000-4-2:2009
BS EN IEC 61000-4-3:2020
BS EN 61000-4-4:2012
BS EN IEC 61000-4-6:2023
BS EN 61000-4-8:2010

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Company Name : Innodisk Corporation

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ICES-003 Issue 7:2020, Class B

TEST LABORATORY

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innodisk

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Innodisk Corporation
REACH Declaration

Tel: (02) 7703-3000 Fax: (02) 7703-3555 Internet: <https://www.innodisk.com/>

Innodisk Corporation pursues its social responsibility for global environmental preservation by committing to be compliant with REACH regulation (REGULATION (EC) No 1907/2006). We hereby confirm that the product(s),

Scope: Flash Memory, DRAM Module and Embedded Peripherals Products.

- The standard products of **not listed in the Appendix2** meet the requirements of REACH SVHC regulations (SVHCs < 0.1% in Article), as described in the candidate list table currently including 240 substances (release date: 23-JAN-2024) and shown on the ECHA website, <https://echa.europa.eu/candidate-list-table>
- The standard products listed in the **Appendix2** contain(s) one or more hazardous substances or constituents exceeding 0.1 % by weight in article if not otherwise specified in candidate list table.
Where the threshold value is exceeded, the substances in question are to be declared in accompanying, (SVHCs > 0.1% in Article).
- Comply with REACH Annex XVII.



Guarantor

Company name 公司名稱: Innodisk Corporation 宜鼎國際股份有限公司

Company Representative 公司代表人:  Yichuan Chen 陳怡全

Company Representative Title 公司代表人職稱: Quality Assurance Div. SR. Manager 品保處經理

Date 日期: 2024 / 02 / 19

宜鼎國際股份有限公司
Innodisk Corporation

Tel: (02) 7703-3000 Internet: <https://www.innodisk.com/>

RoHS 自我宣告書 (RoHS Declaration of Conformity)

Manufacturer Products: All Innodisk EM FLASH, DRAM and EP products

- 一、宜鼎國際股份有限公司（以下稱本公司）特此保證售予貴公司之所有產品，皆符合歐盟 2011/65/EU 及 (EU) 2015/863 關於 RoHS 之規範要求。
Innodisk Corporation declares that all products sold to the company, are complied with European Union RoHS Directive (2011/65/EU) and (EU) 2015/863 requirement.
- 二、本公司同意因本保證書或與本保證書相關事宜有所爭議時，雙方宜友好協商，達成協議。
Innodisk Corporation agrees that both parties shall settle any dispute arising from or in connection with this Declaration of Conformity by friendly negotiations.
- 三、本公司聲明我們的產品符合 RoHS 指令的附件中 7(a)、7(c)-I、6(c) 允許豁免。
We declare, our products permitted by the following exemptions specified in the Annex of the RoHS directive.
- ※ 7(a) Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead).
- ※ 7(c)-I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound.
- ※ 6(c) Copper alloy containing up to 4% lead by weight. (This exemption applies to products that use antennas)

Name of hazardous substance	Limited of RoHS ppm (mg/kg)
鉛 (Pb)	< 1000 ppm
汞 (Hg)	< 1000 ppm
鎘 (Cd)	< 100 ppm
六價鉻 (Cr 6+)	< 1000 ppm
多溴聯苯 (PBBs)	< 1000 ppm
多溴二苯醚 (PBDEs)	< 1000 ppm
鄰苯二甲酸二(2-乙基己基)酯 (DEHP)	< 1000 ppm
鄰苯二甲酸丁酯苯甲酯 (BBP)	< 1000 ppm
鄰苯二甲酸二丁酯 (DBP)	< 1000 ppm
鄰苯二甲酸二異丁酯 (DIBP)	< 1000 ppm

宜鼎國際股份有限公司
Innodisk Corporation

立保證書人 (Guarantor)

Company name 公司名稱: Innodisk Corporation 宜鼎國際股份有限公司

Company Representative 公司代表人: 簡川勝

Company Representative Title 公司代表人職稱: Chairman 董事長

Date 日期: 2023 / 06 / 14

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September 5, 2024