innodisk

EGPL-G1F1

M.2 to Single GbE SFP Network Module

Customer:

Customer Part Number:

Innodisk Part Number:

Innodisk Model Name:

Date:

Innodisk Approver	**Customer Approver**

Total Solution For
Embedded Peripherals

Table of Contents

REVISION HISTORY

Revision	Description	Date
1.0	First Released	Jul , 2025

List of Tables

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1. Product Introduction

1.1. Overview

Innodisk EGPL-G1F1 is designed with M.2 2242 / 2280 form factor with B+M key, EGPL-G1F1 supports PCIe Gen 2.1 with dual lane to single GbE Fiber Optical SFP, optimized for higher performance and lower power, which brings you a flexible expansion solution for embedded systems.

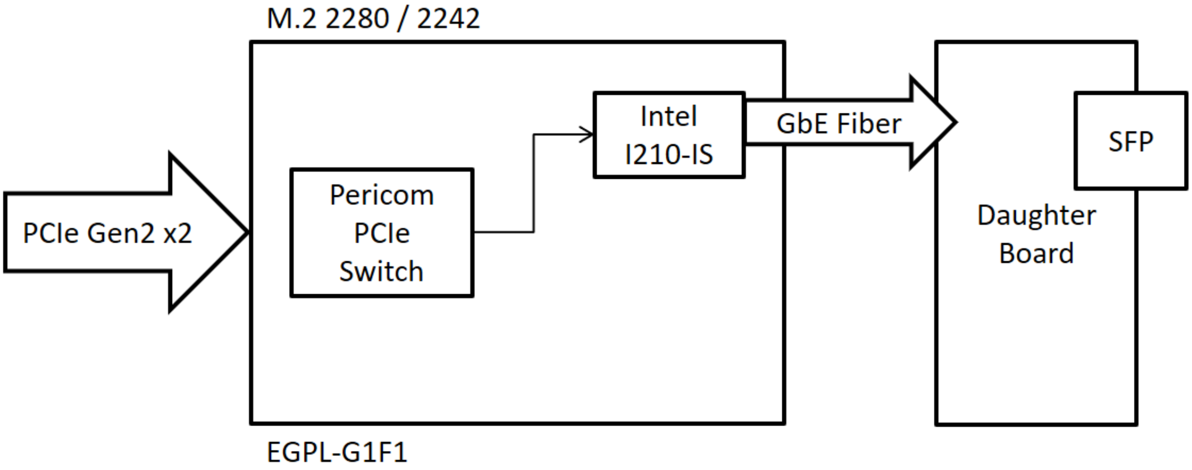


Figure 1: Block Diagram

1.2. Features

- Intel i210-IS Ethernet Controller
- Supports common GbE SFP Optical and direct attached Copper modules
- Support multi-mode fiber (SX) and single-mode fiber (LX) modules
- Flexible daughter board with cable to fit into different system
- With high speed shielding coaxial cable and standard PCIe bracket
- Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
- Support wide temperature -40 ~ 85°C
- Industrial design, manufactured in Innodisk Taiwan

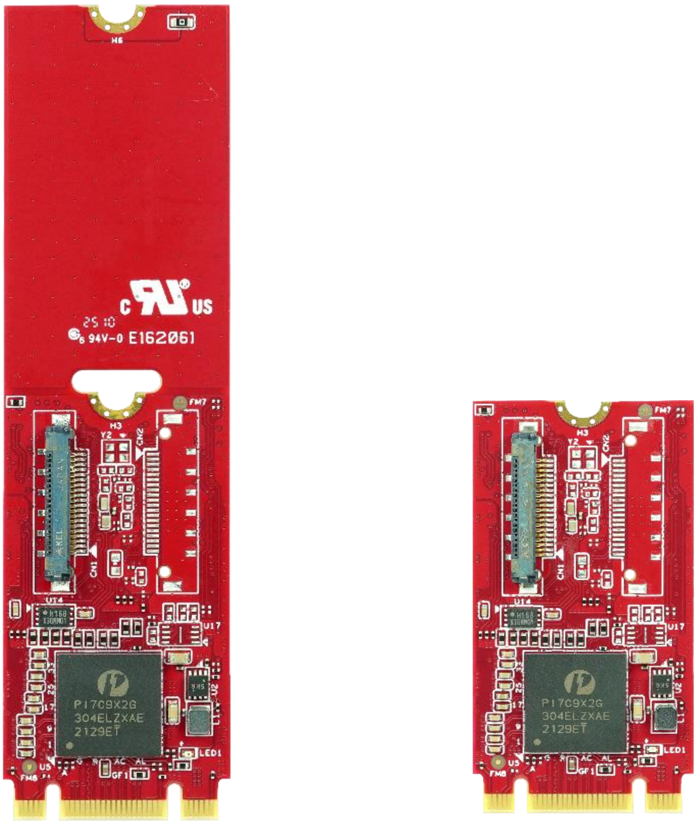


Figure 2: M.2 2280/2242 Board Picture (EGPL-G1F1-W1/W2)

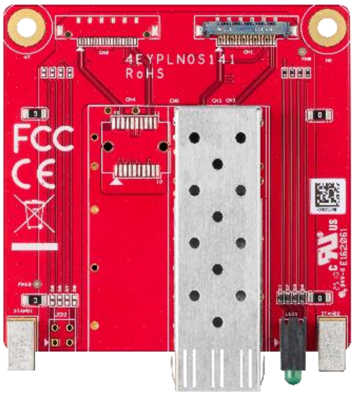


Figure 3: SFP x 1 Daughter Board Picture (EGPL-G1F1-W1/W2)

2. Product Specifications

2.1. Device Parameters

Table 1: Device Parameters

Form Factor	M.2 2242 / 2280 B+M
Input I/F	PCI Express 2.1 x 2
Output I/F	Single GbE Fiber
Output Connector	SFP x 1
Dimension (WxLxH)	M.2 Board (2242): 22 x 42 x 3.75 mm M.2 Board (2280): 22 x 80 x 3.75 mm Daughter Board: 60 x 67 x 14.95 mm

2.2. Electrical Specifications

2.2.1. Power Requirement

Table 2: Power Requirement

Item	Connector	Rating
Input voltage	M.2 Golden Finger	+3.3 DC +-5%

2.2.2. Power Consumption

Table 3: Power Consumption

Voltage(V)	RMS(mA)	Max (mA)
3.3	488	589

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 Failures (MTBF)

Product	Condition	MTBF (Hours)
EGPL-G1F1-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	769,546
EGPL-G1F1-W2	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	769,653

ss

2.4. CE and FCC Compatibility

EGPL-G1F1 conforms to CE and FCC requirements.

2.5. RoHS Compliance

EGPL-G1F1 is fully compliant with RoHS directive.

2.6. Hardware

2.6.1. Layout

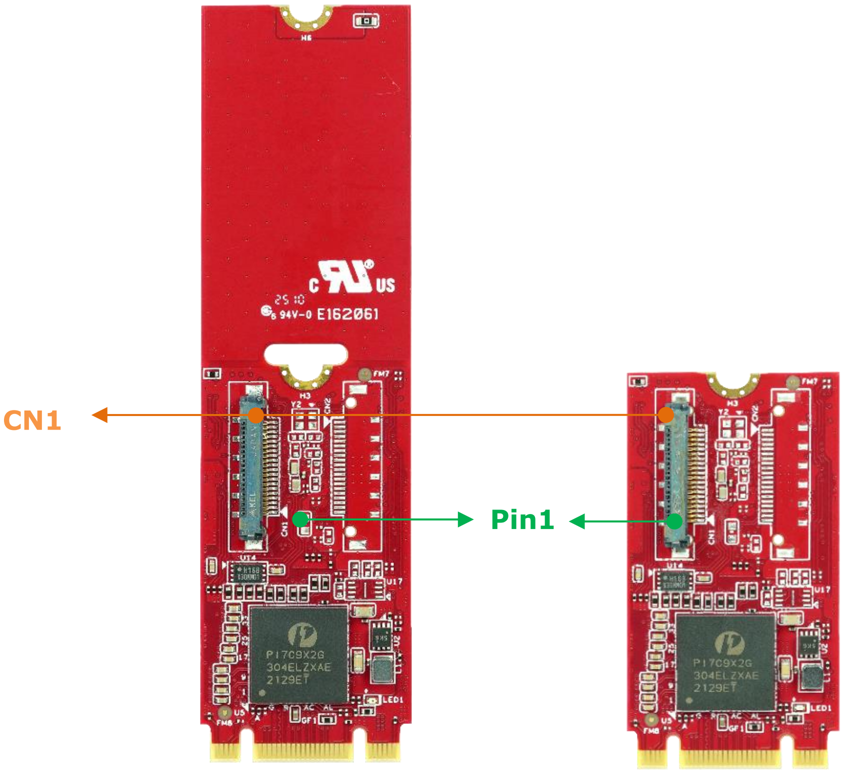


Table 7: M.2 2242 / 2280 PCB Layout Legend

Label	Connector Type	Function
CN1	WAFER SMD/20P/90D P:0.5mm H2.75mm	SFP Control and Data Signal LED Signal

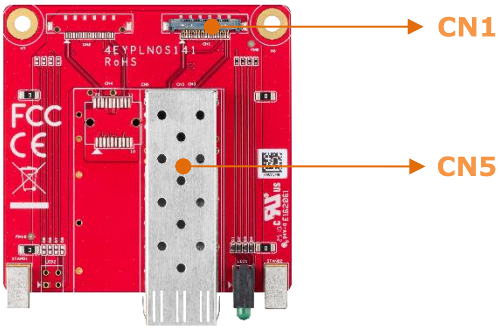
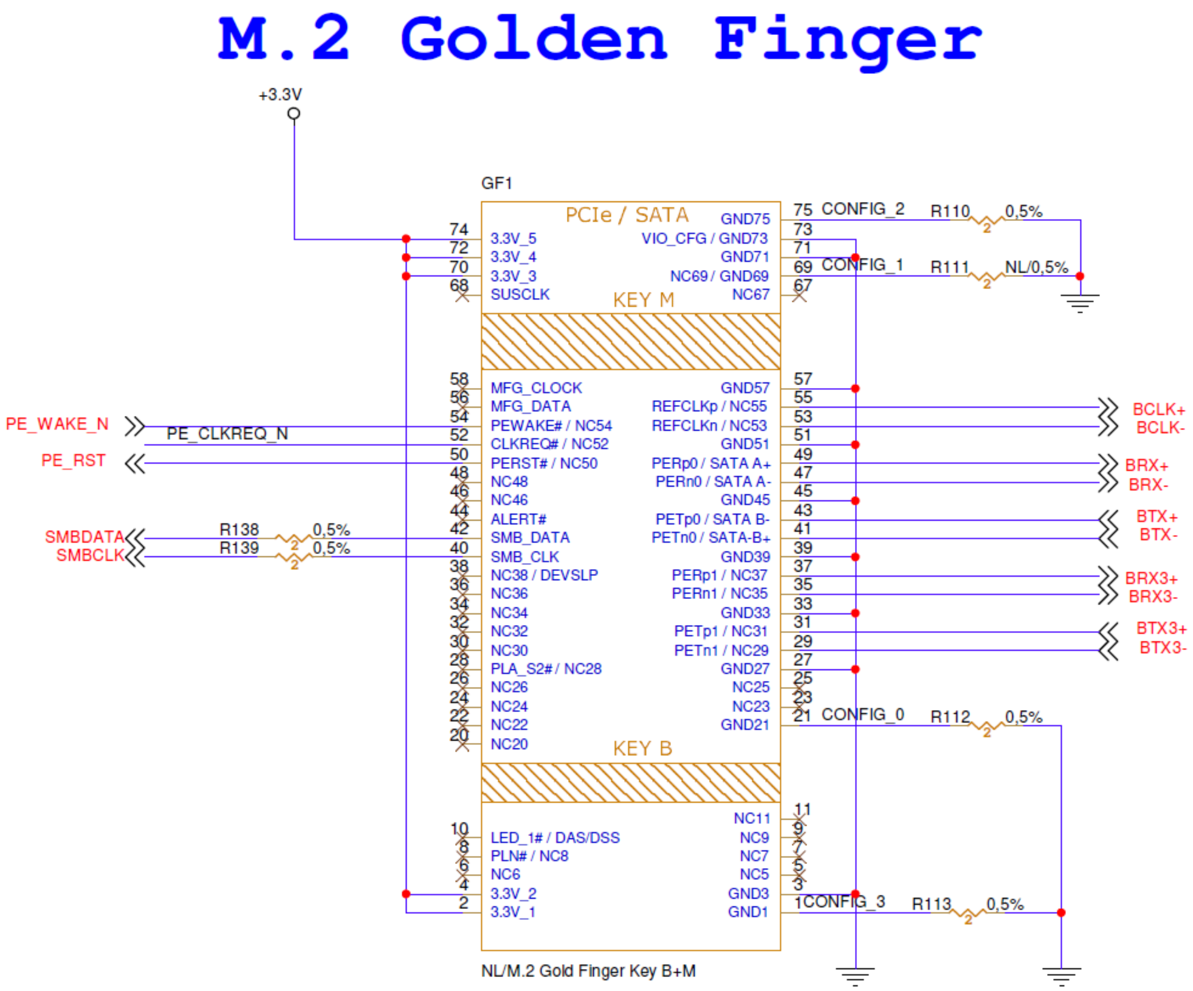


Table 8: Daughter Board PCB Layout Legend

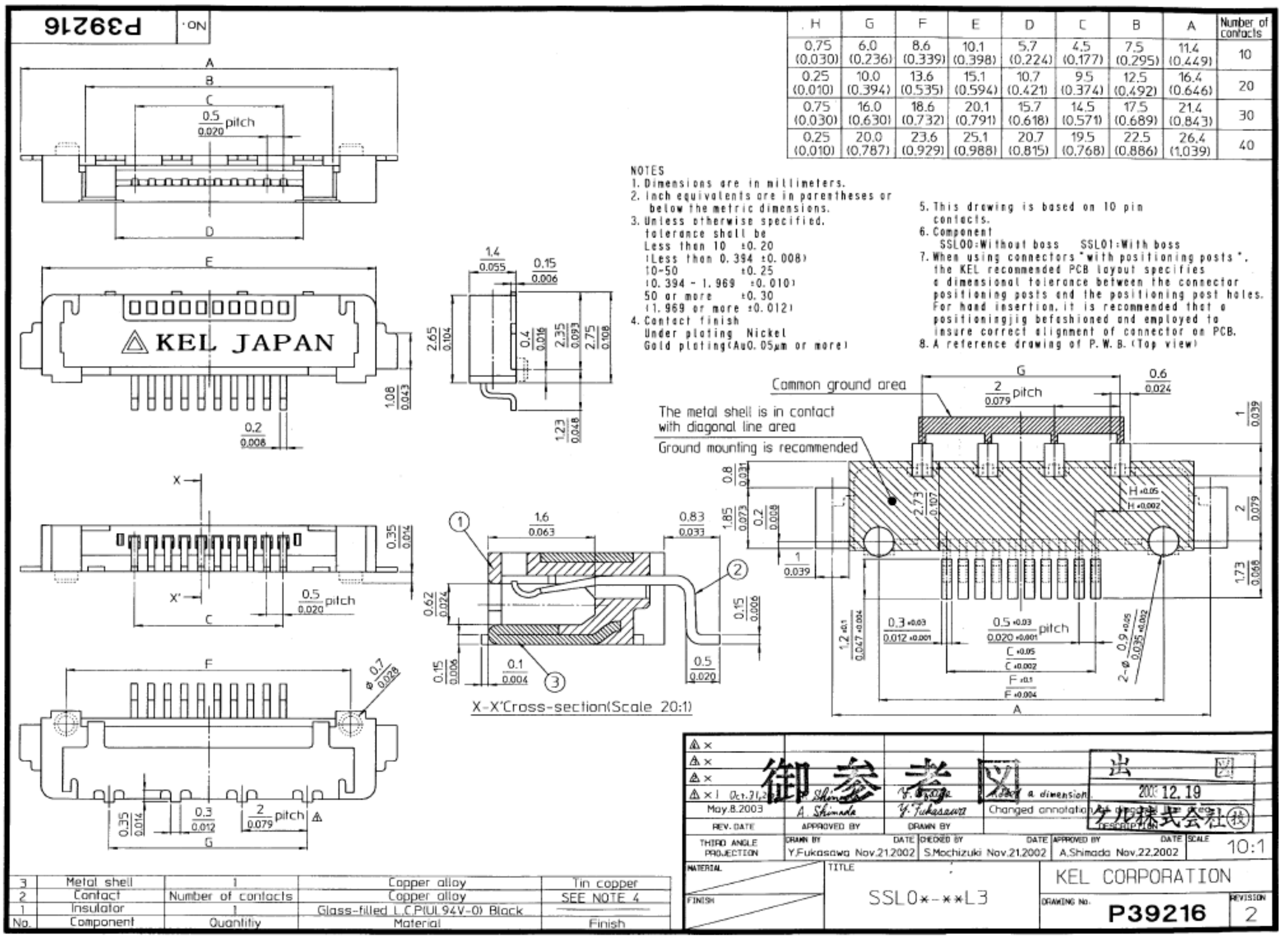
Label	Connector Type	Function
CN1	WAFER SMD/20P/90D P:0.5mm H2.75mm	SFP Control and Data Signal LED Signal
CN5	SFP Cage DIP/20P/90D, Press-fit	SFP Transceiver

2.6.2. Pin Define

Table 9: M.2 B+M Key Pin Define



2.6.3. I/O Connector Mechanical Drawing & Pin Defines



H	G	F	E	D	C	B	A	Number of contacts
0.75 (0.030)	6.0 (0.236)	8.6 (0.339)	10.1 (0.398)	5.7 (0.224)	4.5 (0.177)	7.5 (0.295)	11.4 (0.449)	10
0.25 (0.010)	10.0 (0.394)	13.6 (0.535)	15.1 (0.594)	10.7 (0.421)	9.5 (0.374)	12.5 (0.492)	16.4 (0.646)	20
0.75 (0.030)	16.0 (0.630)	18.6 (0.732)	20.1 (0.791)	15.7 (0.618)	14.5 (0.571)	17.5 (0.689)	21.4 (0.843)	30
0.25 (0.010)	20.0 (0.787)	23.6 (0.929)	25.1 (0.988)	20.7 (0.815)	19.5 (0.768)	22.5 (0.886)	26.4 (1.039)	40

NOTES
1. Dimensions are in millimeters.
2. Inch equivalents are in parentheses or below the metric dimensions.
3. Unless otherwise specified. tolerance shall be
   Less than 10 ±0.20
   (Less than 0.394 ±0.008)
   10-50 ±0.25
   (0.394 - 1.969 ±0.010)
   50 or more ±0.30
   (1.969 or more ±0.012)
4. Contact finish
   Under plating Nickel
   Gold plating(Au0.05μm or more)
5. This drawing is based on 10 pin contacts.
6. Component
   SSL00:Without boss SSL01:With boss
7. When using connectors "with positioning posts", the KEL recommended PCB layout specifies a dimensional tolerance between the connector positioning posts and the positioning post holes. For hand insertion, it is recommended that a positioningjig befashioned and employed to insure correct alignment of connector on PCB.
8. A reference drawing of P.W.B.(Top view)

No.	Component	Quantitiy	Material	Finish
3	Metal shell	1	Copper alloy	Tin copper
2	Contact	Number of contacts	Copper alloy	SEE NOTE 4
1	Insulator	1	Glass-filled L.C.P(UL94V-0) Black	

Figure 4: Wire to Board SMD 20P Connector Drawing

Table 10: Wire to Board SMD 20P Connector Pin Define

Pin #	Signal Name
1	SFP_TD_N
2	SFP_TD_P
3	LAN_SDP1
4	LAN_SDP1
5	SFP_SCL
6	SFP_SDA
7	+3.3V_LAN
8	+3.3V_LAN
9	+3.3V_LAN
10	+3.3V_LAN

11	+3.3V_LAN
12	+3.3V_LAN
13	LINK_100_N
14	LINK_ACT_N
15	LINK_1000_N
16	SFP_SIG_DET
17	LAN_SDP3
18	LAN_SDP0
19	SFP_RD_P
20	SFP_RD_N

1. MECHANICAL DIMENSION

Product Dimension

Unit:mm	General Tolerance :	X.X : ± 0.38 X.XX : ± 0.20

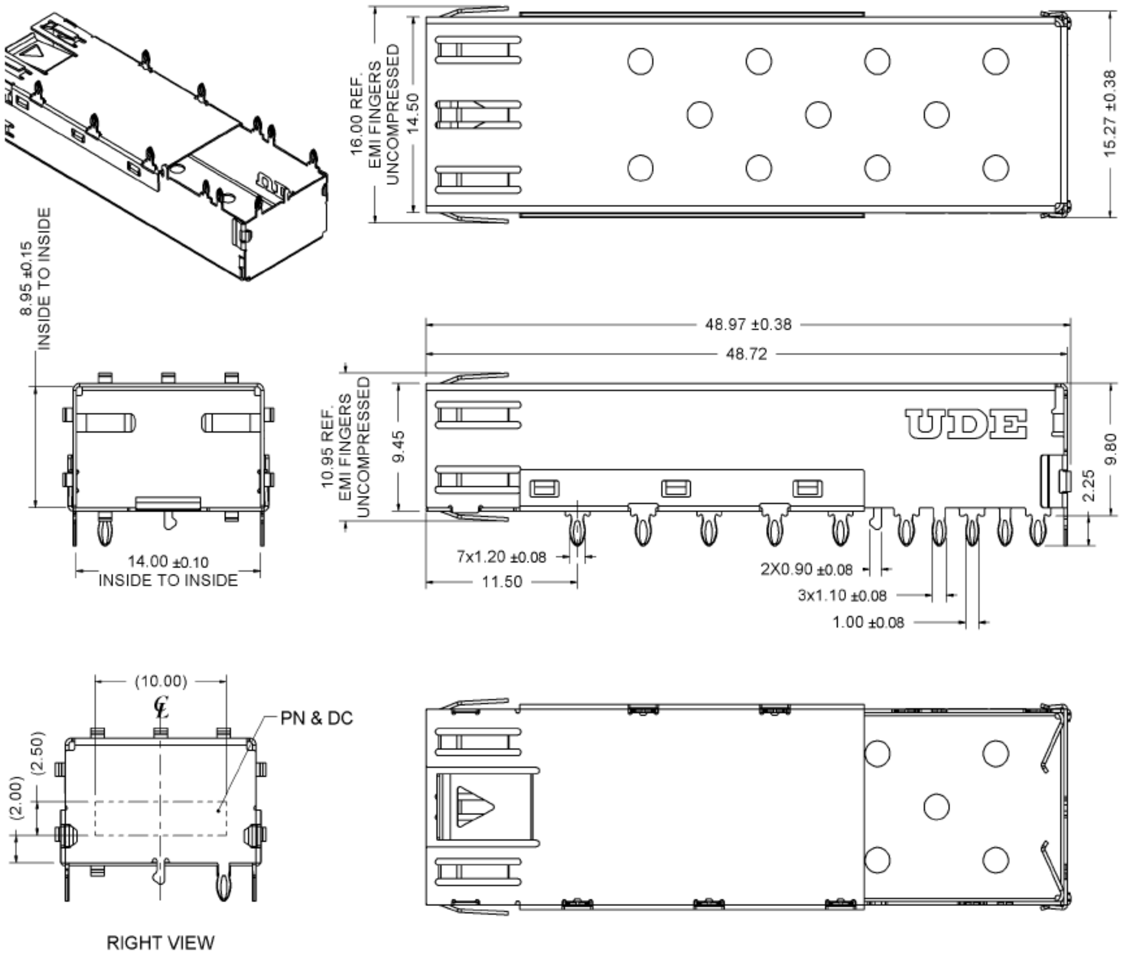
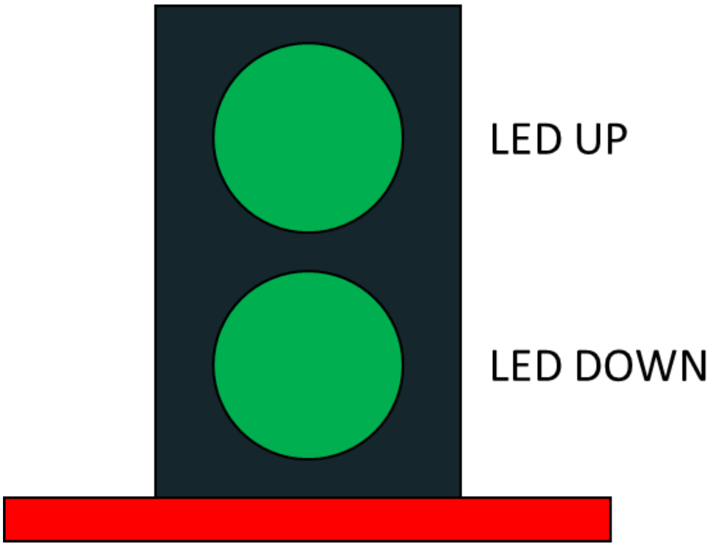


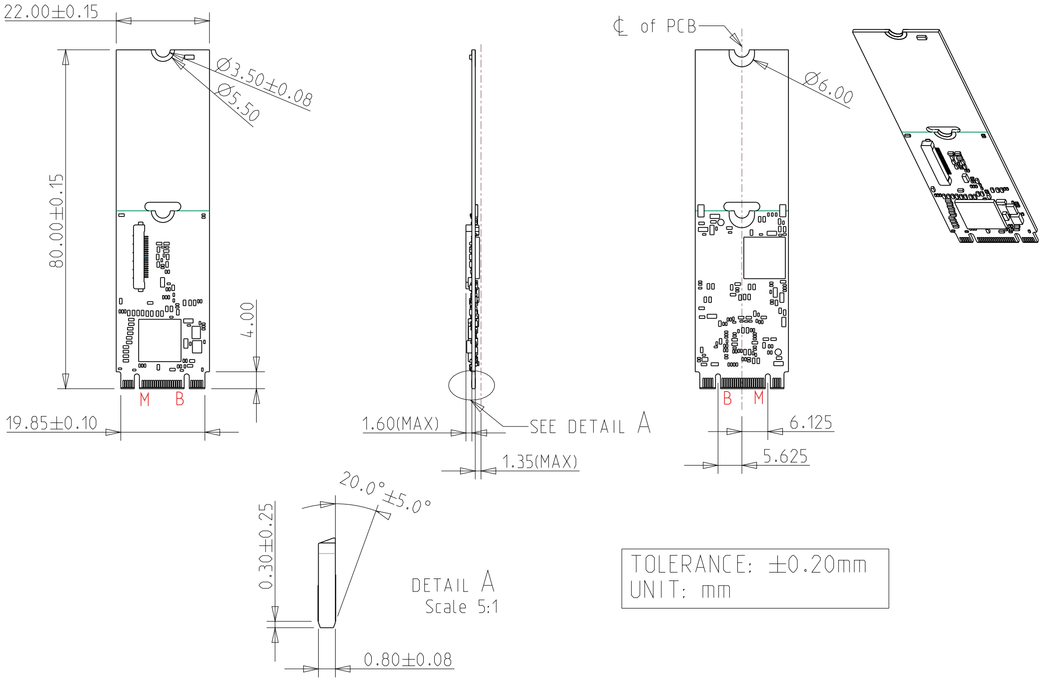
Figure 5: SFP Cage 1x1 Connector Drawing

Table 11: LED Signal Table

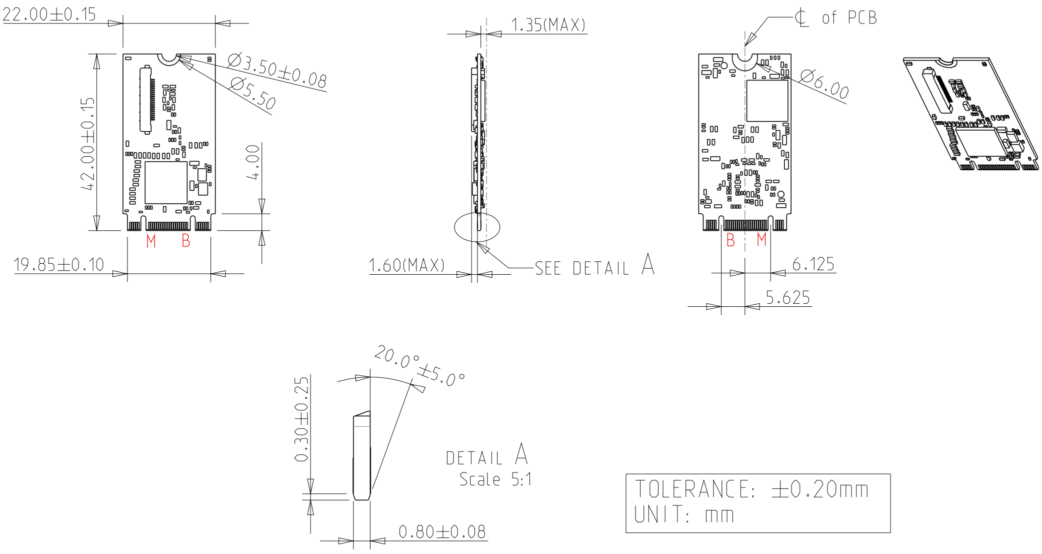


Speed	1G
LED UP (Status)	Green
LED DOWN (Active/Link)	Flash

2.6.4. EGPL-G1F1 Mechanical Drawing

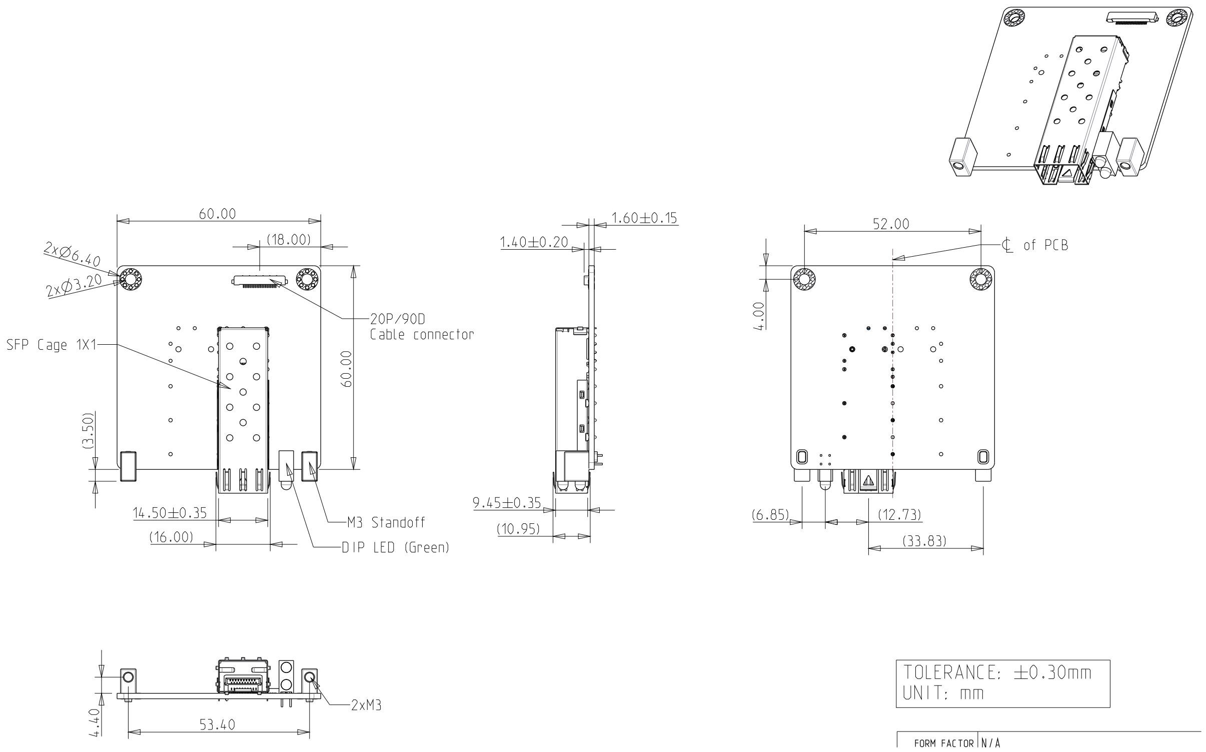


EGPL-G1F1-W1 (2280)

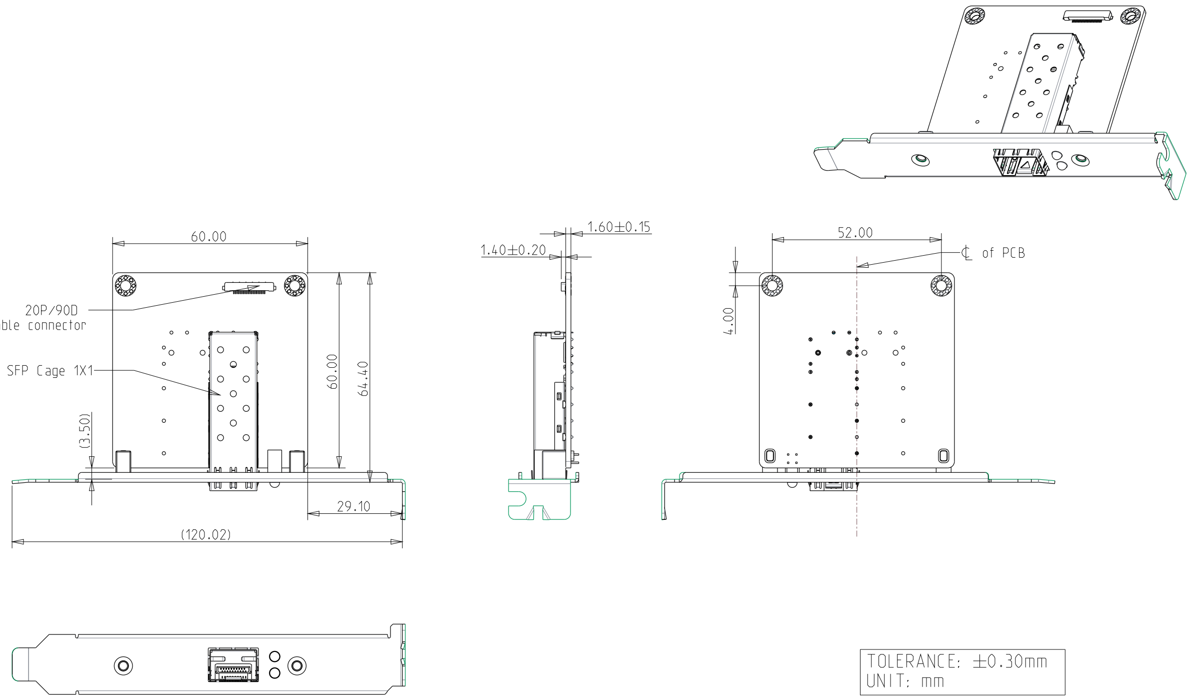


EGPL-G1F1-W2 (2242)

Figure 6: EGPL-G1F1 M.2 Board Drawing



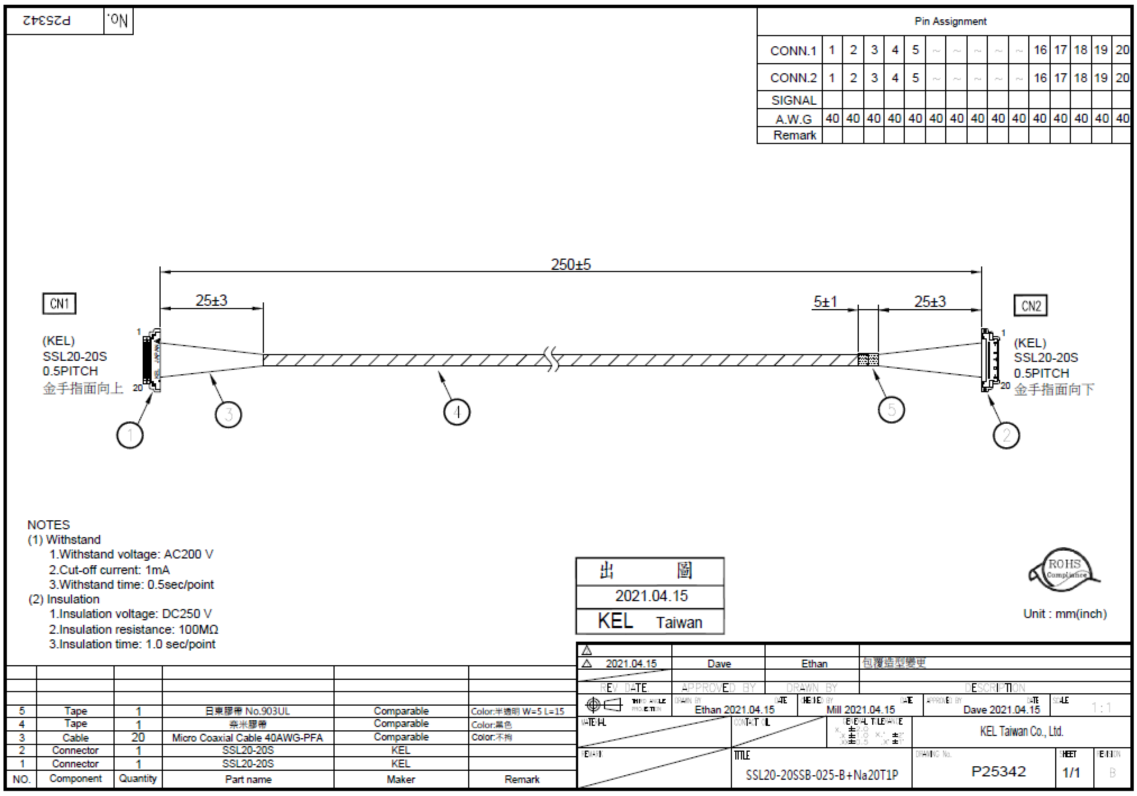
1 Port SFP Board



1 Port SFP Board, with Bracket

Figure 7: SFP Daughter Board Drawing (EGPL-G1F1-W1/W2)

2.6.5. Cable Mechanical Drawing



Pin Assignment															
CONN.1	1	2	3	4	5	~	~	~	~	~	16	17	18	19	20
CONN.2	1	2	3	4	5	~	~	~	~	~	16	17	18	19	20
SIGNAL															
A.W.G	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Remark															

NOTES
(1) Withstand
1.Withstand voltage: AC200 V
2.Cut-off current: 1mA
3.Withstand time: 0.5sec/point
(2) Insulation
1.Insulation voltage: DC250 V
2.Insulation resistance: 100MΩ
3.Insulation time: 1.0 sec/point

NO.	Component	Quantity	Part name	Maker	Remark
5	Tape	1	日東膠帶 No.903UL	Comparable	Color:半透明 W=5 L=15
4	Tape	1	奈米膠帶	Comparable	Color:黑色
3	Cable	20	Micro Coaxial Cable 40AWG-PFA	Comparable	Color:不拘
2	Connector	1	SSL20-20S	KEL	
1	Connector	1	SSL20-20S	KEL	

REV DATE	APPROVED BY	DRAWN BY	DESCRIPTION
△			
△ 2021.04.15	Dave	Ethan	包覆造型變更

THIRD ANGLE PROJECTION
DRAWN BY Ethan DATE 2021.04.15
CHECKED BY Mill DATE 2021.04.15
APPROVED BY Dave DATE 2021.04.15
SCALE 1 : 1
MATERIAL
CONTACT OIL
GENERAL TOLERANCE X. ±2.0 .X ±1.0 .XX ±0.5 X.° ±2° .X° ±1°
KEL Taiwan Co., Ltd.
REMARK
TITLE SSL20-20SSB-025-B+Na20T1P
DRAWING No. P25342
SHEET 1/1
REVISION B

Figure8: Board to Board LAN Cable Drawing

2.6.6. Packing List

- EGPL-G1F1 M.2 Board x 1
- EGPL-G1F1 Daughter Board x 1
- Board to Board LAN Cable x 1
- SFP Connector Cover

2.7. Software Support

- Windows: 10 (64bit) and later versions
- Linux(igc): Kernel 2.4 series, 2.6.x, 3.x, and later versions

3. Installation Guide

Please download driver from Myinnodisk web site.
https://myinnodisk.innodisk.com/myinnodisk/Login.aspx

Windows driver still can be downloaded from intel official website.
https://www.intel.com/content/www/us/en/download/15084/intel-ethernet-adapter-complete-driver-pack.html

4. Appedix

宜鼎國際股份有限公司
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 233 substances (release date: 17-Jan-2023) 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

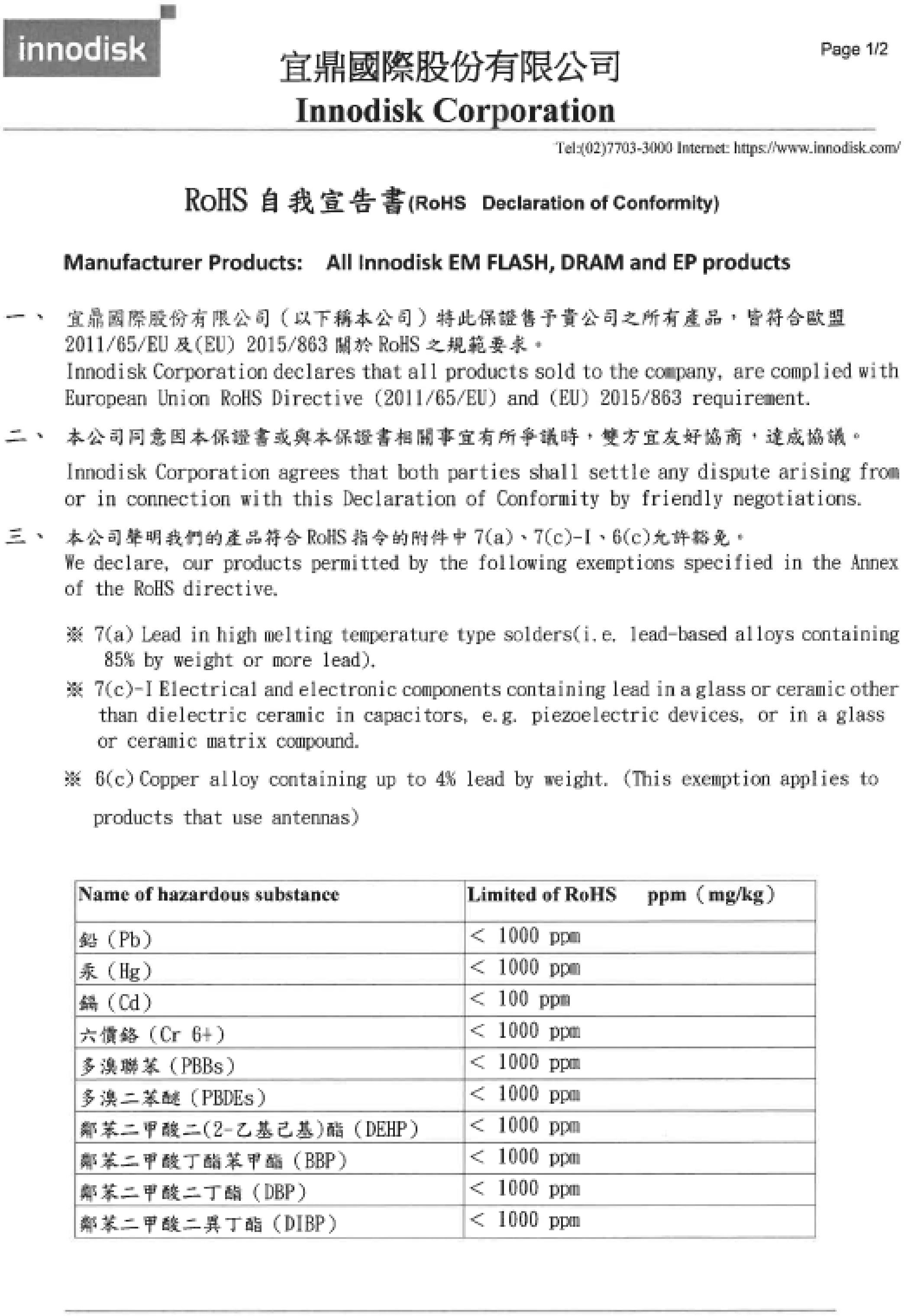
Company name 公司名稱： Innodisk Corporation 宜鼎國際股份有限公司

Company Representative 公司代表人： Yichuan Chen 陳怡全

Company Representative Title 公司代表人職稱： QA Manager 品保經理

Date 日期：2023 / 02 / 09

1



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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.

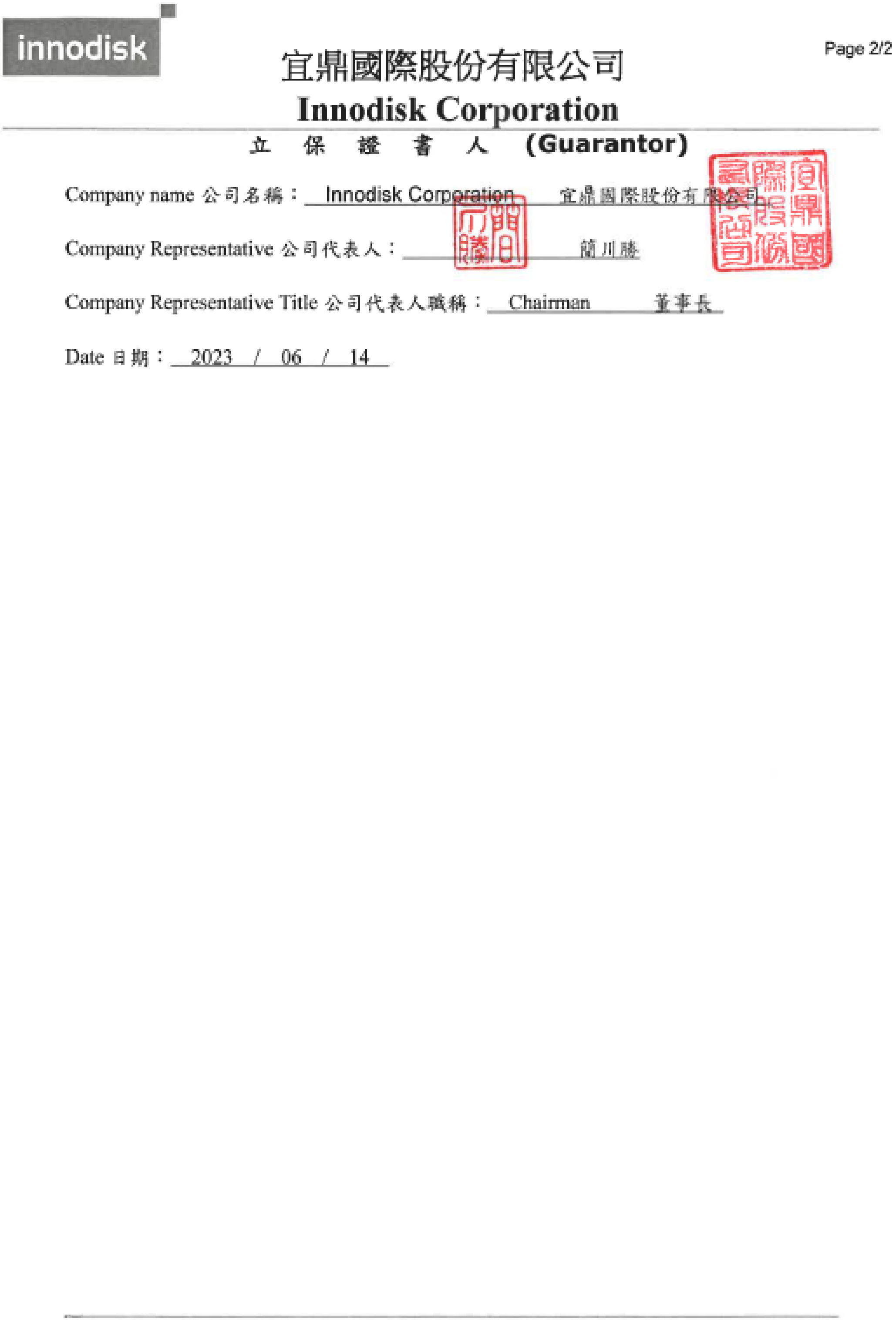
三、本公司聲明我們的產品符合 RoHS 指令的附件中 7(a)、7(c)-I、6(c)允許豁免。
We declare, our products permitted by the following exemptions specified in the Annex of the RoHS directive.

※ 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



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宜鼎國際股份有限公司
Innodisk Corporation

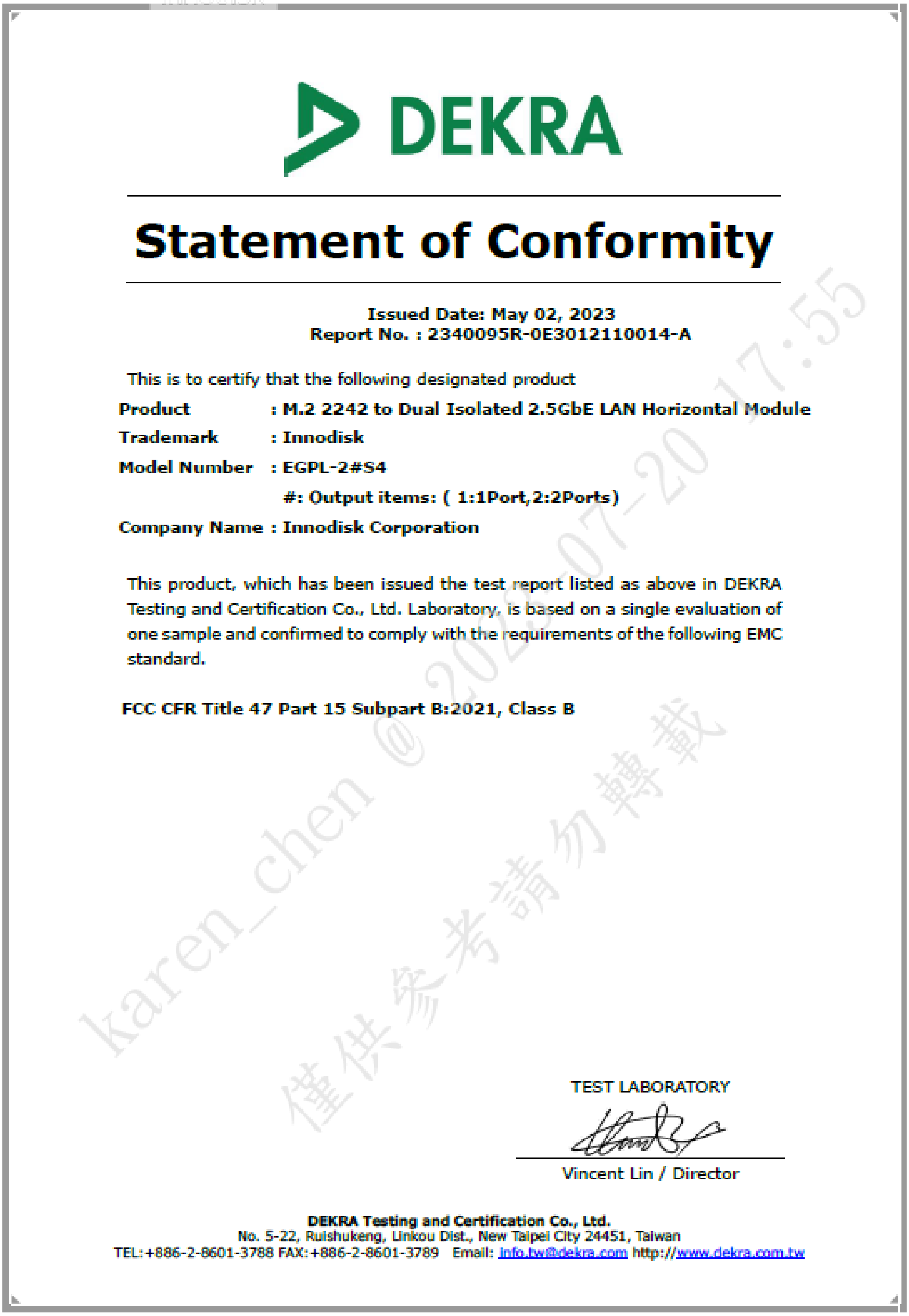
立 保 證 書 人 (Guarantor)

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



Statement of Conformity

Issued Date: May 02, 2023
Report No. : 2340095R-0E3012110014-A

This is to certify that the following designated product

Product : M.2 2242 to Dual Isolated 2.5GbE LAN Horizontal Module
Trademark : Innodisk
Model Number : EGPL-2#S4
#: Output items: (1:1Port,2:2Ports)
Company Name : Innodisk Corporation

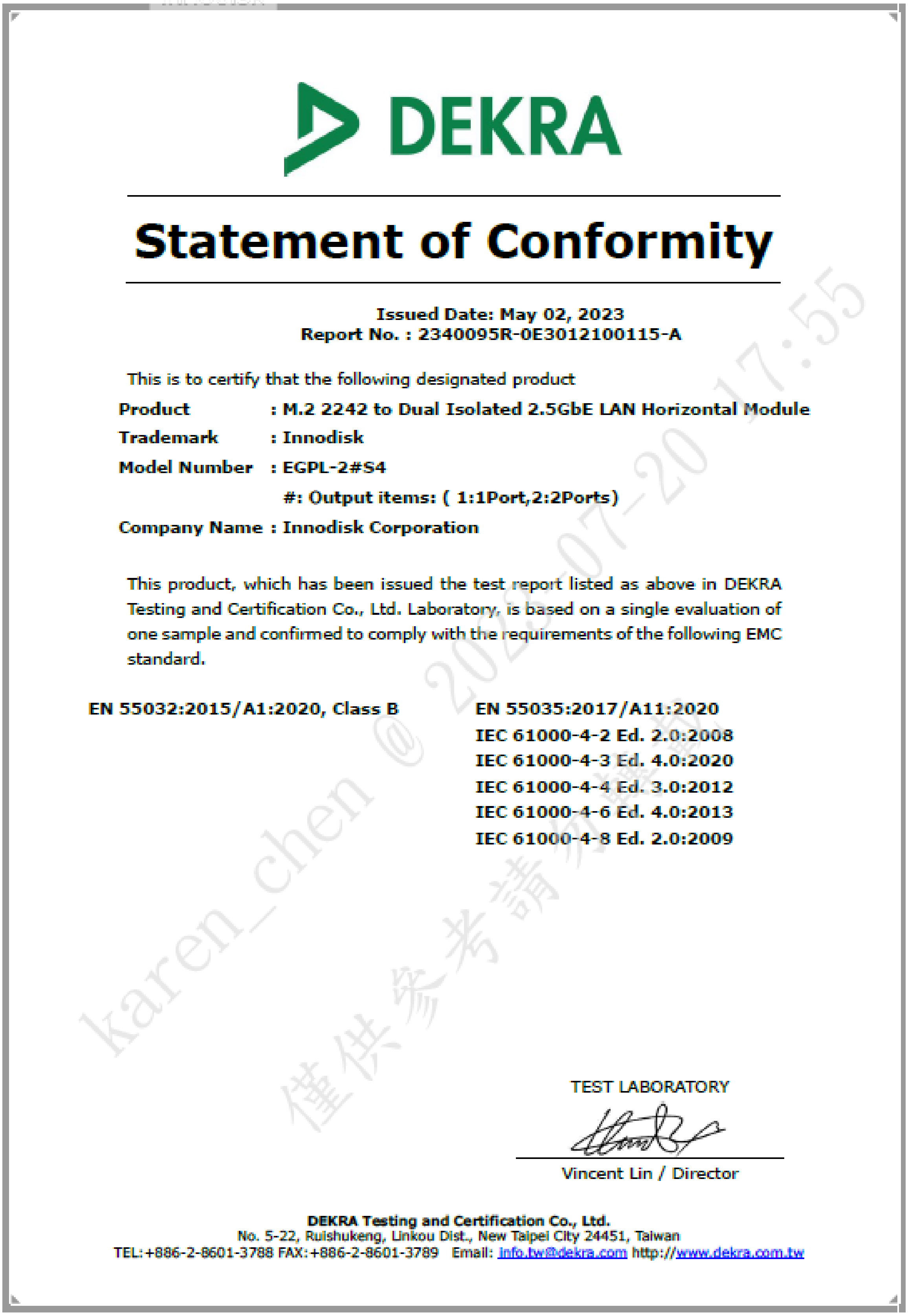
This product, which has been issued the test report listed as above in DEKRA Testing and Certification Co., Ltd. Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

FCC CFR Title 47 Part 15 Subpart B:2021, Class B

TEST LABORATORY

Vincent Lin / Director

DEKRA Testing and Certification Co., Ltd.
No. 5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan
TEL:+886-2-8601-3788 FAX:+886-2-8601-3789 Email: info.tw@dekra.com http://www.dekra.com.tw



DEKRA

Statement of Conformity

Issued Date: May 02, 2023
Report No. : 2340095R-0E3012100115-A

This is to certify that the following designated product

Product **: M.2 2242 to Dual Isolated 2.5GbE LAN Horizontal Module**
Trademark **: Innodisk**
Model Number **: EGPL-2#S4**
#: Output items: (1:1Port,2:2Ports)
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. 4.0:2013
IEC 61000-4-8 Ed. 2.0:2009

TEST LABORATORY

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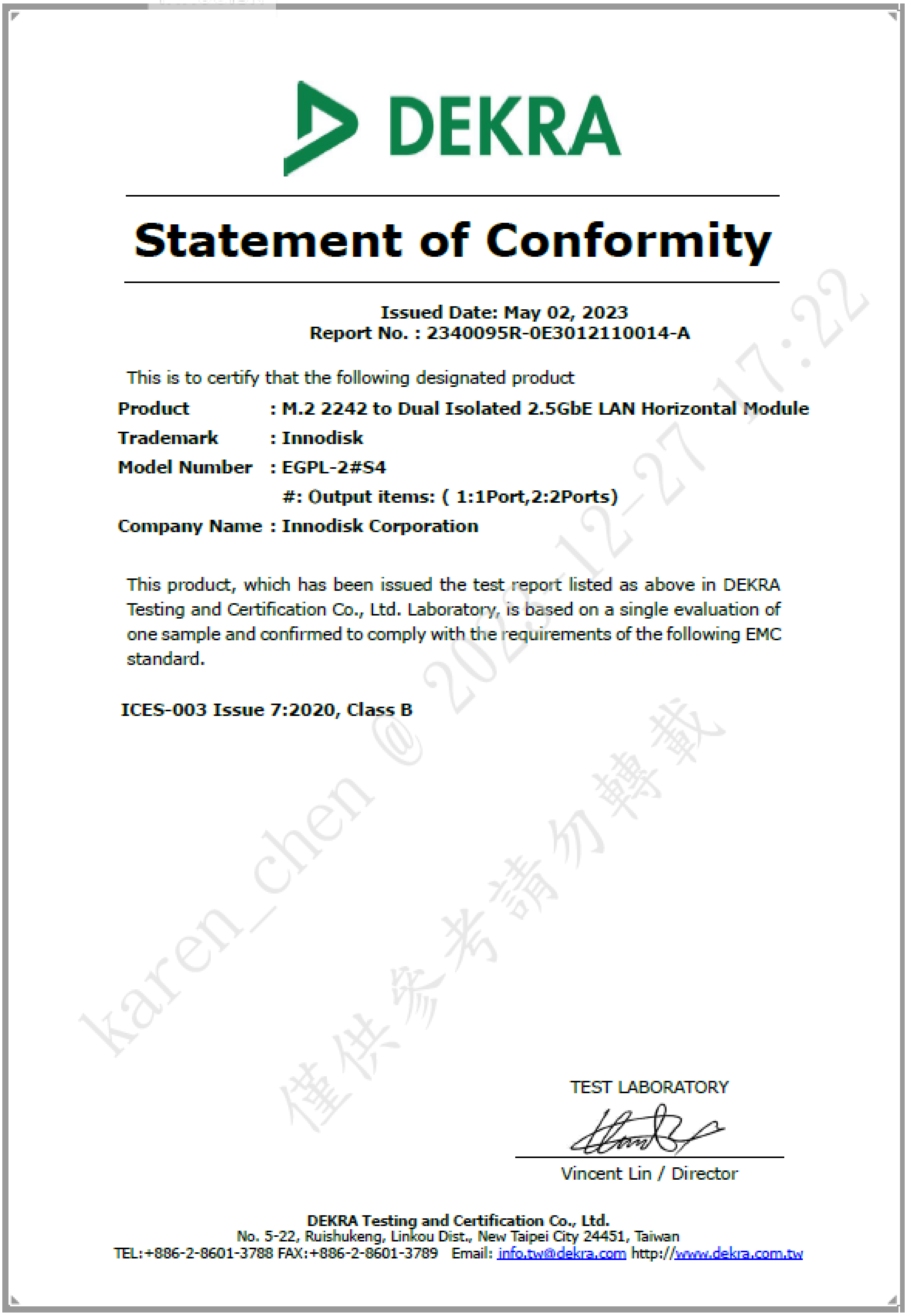
TEL:+886-2-8601-3788 FAX:+886-2-8601-3789 Email: info.tw@dekra.com http://www.dekra.com.tw



Statement of Conformity

Issued Date: May 02, 2023
Report No. : 2340095R-0E3012110014-A

This is to certify that the following designated product

Product : M.2 2242 to Dual Isolated 2.5GbE LAN Horizontal Module
Trademark : Innodisk
Model Number : EGPL-2#S4
#: Output items: (1:1Port,2:2Ports)
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.

ICES-003 Issue 7:2020, Class B

TEST LABORATORY

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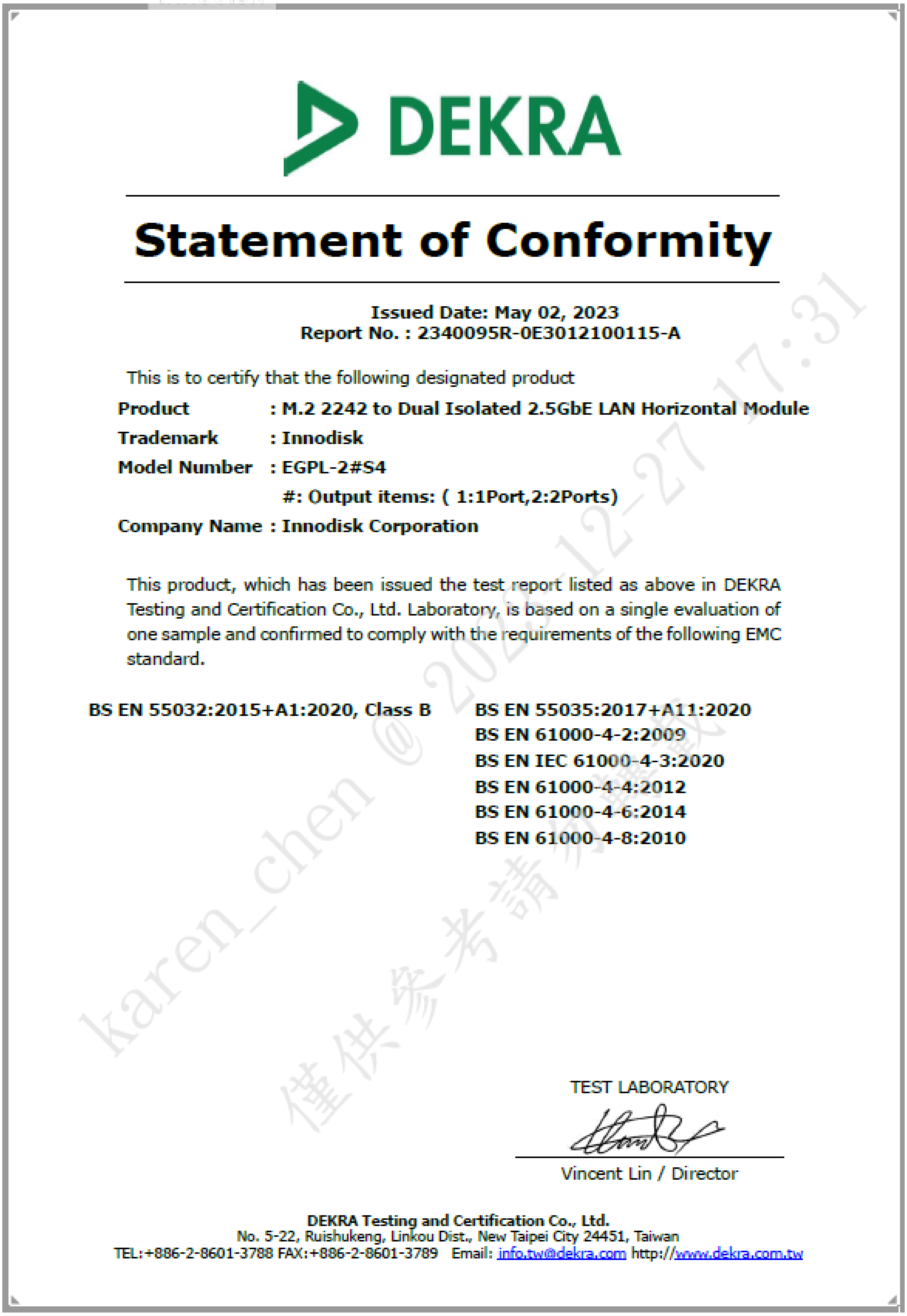

Statement of Conformity

Issued Date: May 02, 2023
Report No. : 2340095R-0E3012100115-A

This is to certify that the following designated product

Product : M.2 2242 to Dual Isolated 2.5GbE LAN Horizontal Module
Trademark : Innodisk
Model Number : EGPL-2#S4
#: Output items: (1:1Port,2:2Ports)
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.

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 61000-4-6:2014
BS EN 61000-4-8:2010

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July 16, 2025