

MIPI CSI-2 22-pin x2 to GMSL2 IPEX FAKRA Z x4
Capture Card

EB022-2M4F

User Manual

Customer :

Customer Part Number :

Innodisk Part Number :

Innodisk Model Name :

Date :

Innodisk Approver

Customer Approver

Contents

1. Product Introduction	
1.1 Overview	4
1.2 Product List	4
1.3 Product Picture	5
2. Product Specification	
2.1 Product Parameter	6
2.2 Electrical Specification	7
2.3 Operating Temperature Range	7
2.4 Mean Time Between Failure (MTBF)	7
3. Hardware Information	
3.1 Connector	8
3.2 Pin Define	10
3.3 Product Drawing	11
4. Packing List	12
5. Installation Guide	13
6. Declaration And Certification	14

Revision History

Revision	Description	Date
1.0	First Released	30 Apr, 2026

1. Product Introduction

1.1 Overview

The MIPI CSI-2 and GMSL2 interfaces, featuring dual 22-pin inputs and four FAKRA Z outputs. Powered by the onboard MAXIM MAX96724 deserializer chipset, it delivers stable, high-speed data transmission for multi-camera applications.

When paired with Innodisk cameras, the capture card simplifies system integration by reducing design complexity and streamlining camera connectivity. Tailored for AI vision, embedded systems, robotics, and machine vision, it provides reliable performance backed by a 3-year warranty. By accelerating validation and shortening time-to-market, the EB022-2M4F empowers developers and system integrators to build advanced vision solutions with confidence.

1.2 Product List

P/N	Description
EB022-2M4F-11	MIPI CSI-2 22-pin x2 to GMSL2 IPEX FAKRA Z x4 Capture Card Dimension : 73.6 x 53.2mm (FFC cable x2 and IPEX to FAKRA cable x4 included)
9Z9000000350	Adapter, 100 ~ 240V AC, 12V DC, 60W, DC Jack
7W7000000060	FFC cable 15 cm, 22 pins, pitch 0.5mm
7WA000000400	IPEX to FAKRA cable 20cm

Table 1: Product List

1.3 Product Picture

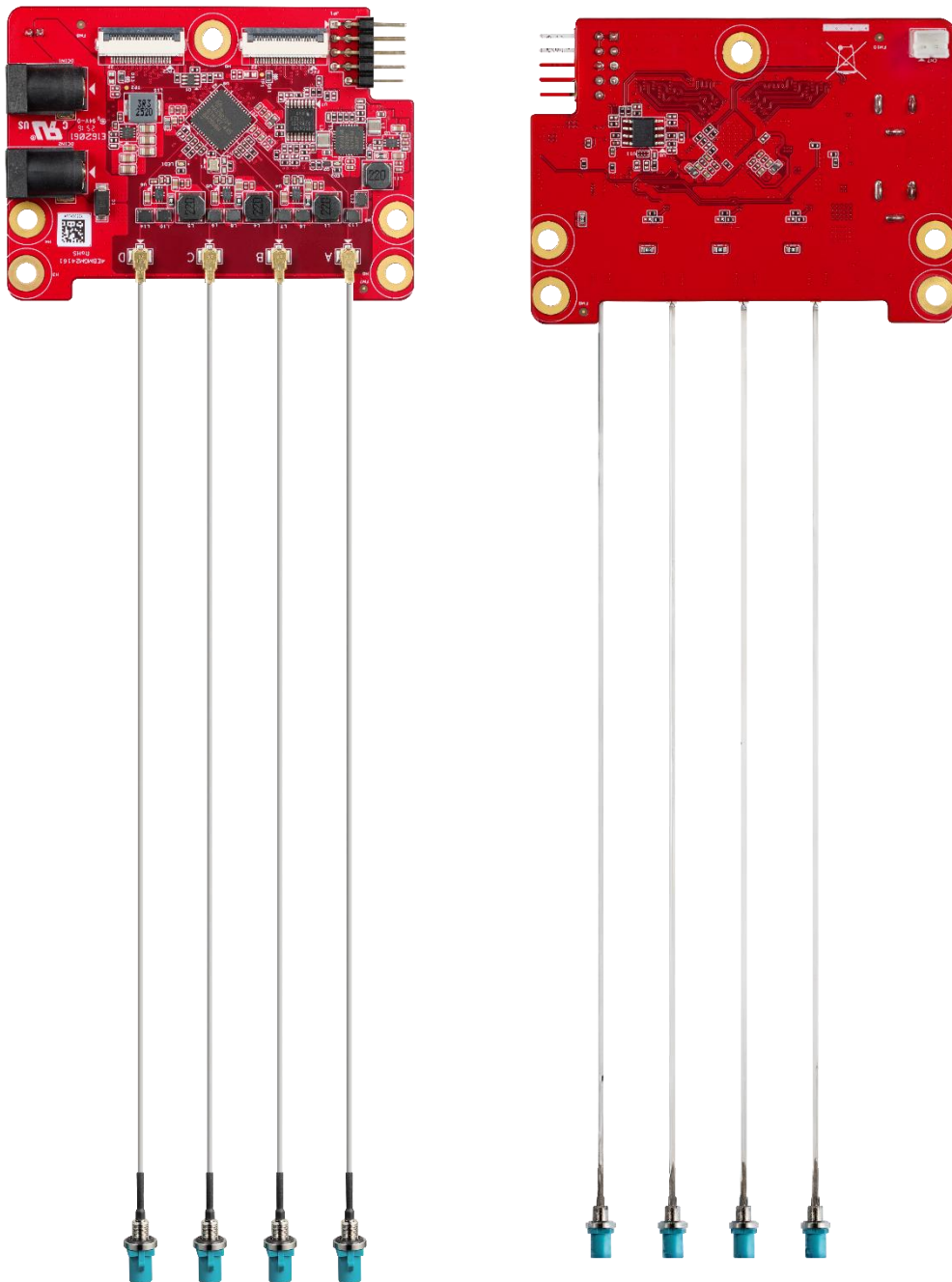


Figure 1: Product Picture

2. Product Specification

2.1. Product Parameter

Model Name	EB022-2M4F
Module Type	MIPI CSI-2 22-pin x2 to GMSL2 IPEX FAKRA Z x4 Capture Card
Camera I/F	GMSL2
Camera I/F Port	4
Host I/F	MIPI CSI-2 22 pin
Host I/F Port	2
Chipset	MAXIM MAX96724
Power Source	12V DC Jack
Power Consumption (Avg.)	Approximate 7W
Operating Temperature	-30°C ~ 70°C
Dimension (W x L x H/mm)	73.6 x 53.2 x 12.3
Warranty	2 Years
Module Weight	56 g

Table 2: Product Parameter

2.2 Electrical Specifications

Item	Value	Unit
Input Voltage	12V	V
Current @Idle	207	mA
Current @Average	595	mA
Current @Maximum	964	mA
Idle Power Rating	2.484	W
Average Power Rating	7.14	W
Maximum Power Rating	11.568	W

Table 3: Power Consumption

2.3 Operating Temperature Range

Temperature	Range
Operation	-30°C ~ 70°C
Storage	-40°C ~ 85°C

Table 4: Operating Temperature Range.

2.4 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.

Product	Condition	MTBF (Hours)
EB022-2M4F-11	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	10,465,106

Table 5: Mean Time between Failure (MTBF)

3. Hardware Information

3.1 Connector

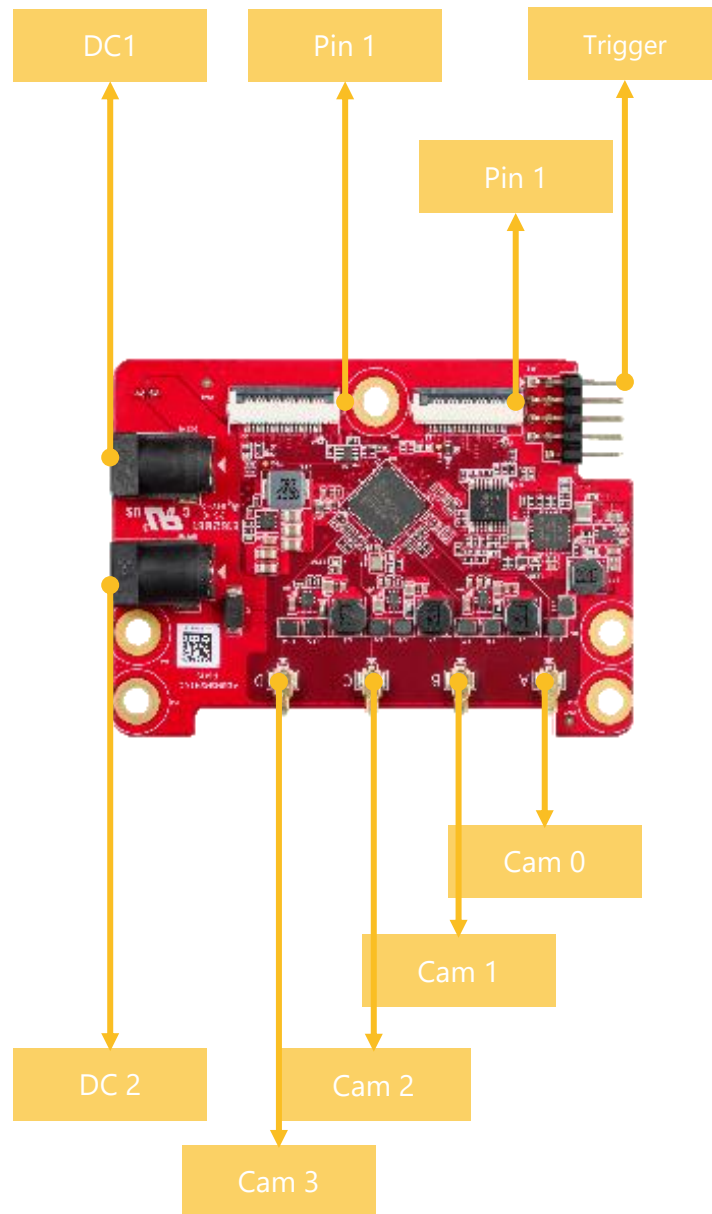


Figure 2: Connector Picture

Function	Connector Type
MIPI	(無鹵)SMD/1x22P/90D P:0.5mm H:2.0mm Natural,LCP -55~+85C
IPEX	(無鹵)SMD/3x3mm Φ2.00 H:1.3mm GF -40/90C
POWER	(無鹵)DIP/3P/90D/Φ2.5mm 14.45x8.95x10.7mm Nylon66 Black -25~+70°C pin=5.5mm
Tigger	(無鹵)DIP/2x5P(Cut PIN9)/90D/P:2.54mm H:5.0mm Nylon 6T Black -40~+105°C

Table 6: Connector Location

3.2 Pin Define

Pin Number	Pin Name	Description
Pin 1	GND	Ground
Pin 2	CAM_D0_N	CSI Data 0
Pin 3	CAM_D0_P	CSI Data 0
Pin 4	GND	Ground
Pin 5	CAM_D1_N	CSI Data 1
Pin 6	CAM_D1_P	CSI Data 1
Pin 7	GND	Ground
Pin 8	CAM_CK_N	CSI Clock
Pin 9	CAM_CK_P	CSI Clock
Pin 10	GND	Ground
Pin 11	CAM_D2_N	CSI Data 2
Pin 12	CAM_D2_P	CSI Data 2
Pin 13	GND	Ground
Pin 14	CAM_D3_N	CSI Data 3
Pin 15	CAM_D3_P	CSI Data 3
Pin 16	GND	Ground
Pin 17	NC	No Connected
Pin 18	NC	No Connected
Pin 19	GND	Ground
Pin 20	CAM_SCL	I2C Clock (3.3V)
Pin 21	CAM_SDA	I2C Data (3.3V)
Pin 22	CAM_3V3	+3.3V

Table 7: 22-pin Connector Pin Define

3.3 Product Drawing

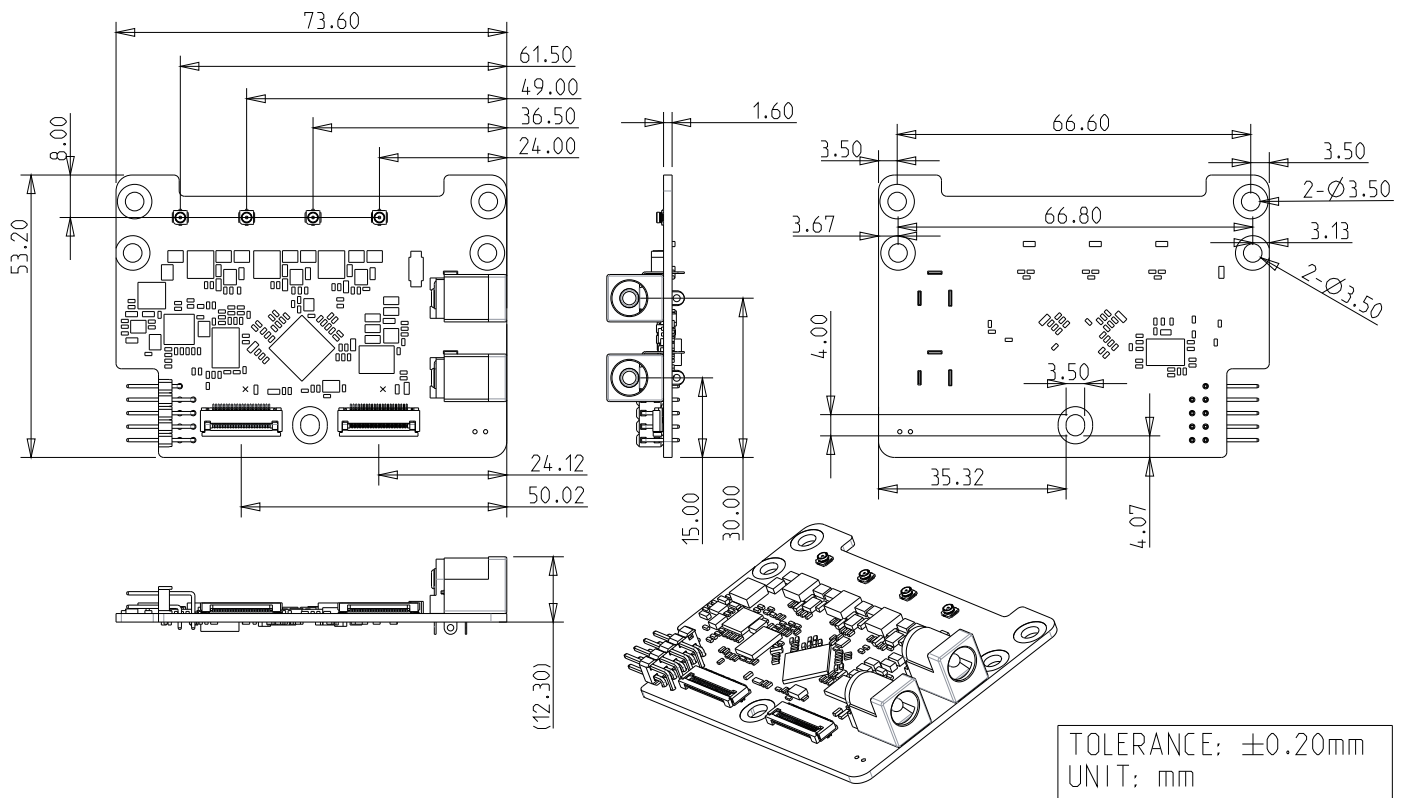


Figure 3: Product Drawing

4. Packing List

P/N	Description	Qty.
EB022-2M4F	SAMTEC 120-pin x1 to MIPI CSI-2 22-pin x4 Capture Card	1
7W7000000060	FFC cable 15 cm, 22 pins, pitch 0.5mm	2
7WA000000400	IPEX to FAKRA cable 20cm	4

Table 8: Packing List

5. Installation Guide

Refer to the diagram below for the capture card connection:

- ①② Unlock the MIPI CSI-2 latches on both the capture board and camera module.
Insert the FFC cable into the board and camera module, then secure both ends by locking the latches.
Ensure the cable is fully inserted, properly secured, and lies flat without twisting.
- ③④ Connect the IPEX-to-FAKRA cable to the IPEX connector on the capture board, then press the IPEX connector down until it clicks into place, and using power cable to connect with power adapter from DC jack side (Suggest using 12V, 60W).
- ⑤⑥ Connect one end of the coaxial cable to the FAKRA connector, and insert the other end into the FAKRA connector on the camera module. Ensure both ends are properly aligned, then push them in until fully locked.

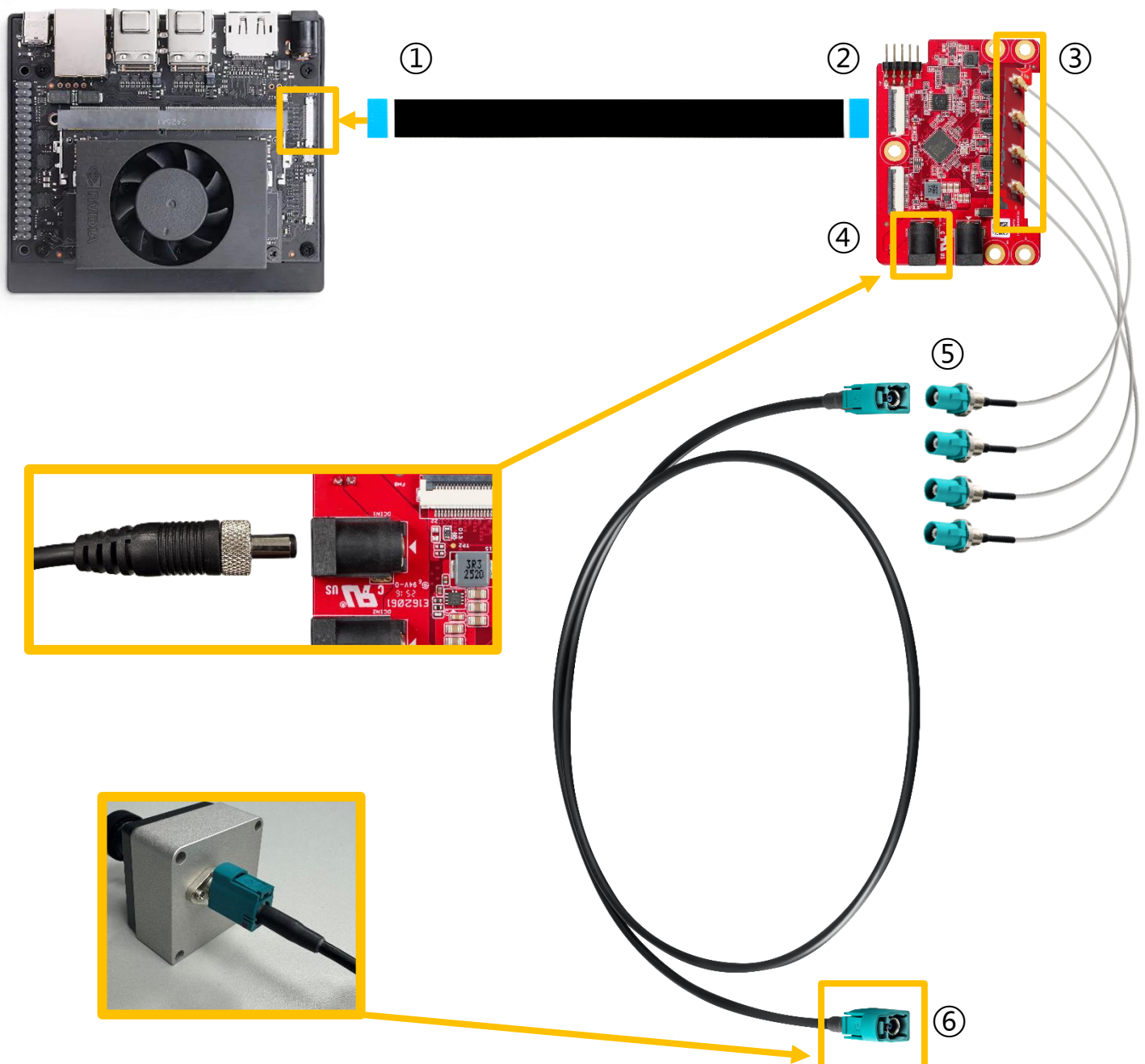


Figure 4: Capture Card connect with ORIN NANO DevKit Picture

6. Declaration And Certification



宜鼎國際股份有限公司
Innodisk Corporation
REACH Declaration

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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.

(Standard finished products, excluding all of customized products & EOL 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 247 substances (release date: 21-JAN-2025) 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: 2025 / 02 / 24



RoHS 自我宣告書 (RoHS Declaration of Conformity)

Manufacturer Products: All Innodisk Flash Memory, DRAM Module and Embedded Peripherals

- 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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Page 2/2

Innodisk Corporation

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

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