innodisk

Total Solution For Embedded Peripherals

EGP2-X403

M.2 2242 to four RS232 module

Customer: _____

Customer Part Number: _____

Innodisk Part Number: _____

Innodisk Model Name: _____

Date: _____

Innodisk Approver	Customer Approver

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REVISION HISTORY

Revision	Description	Date
1.0	First Released	Aug, 2025

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1. Product Introduction

1.1. Overview

Innodisk EGP2-X403 is designed with M.2 2242 form factor, EGP2-X403 supports PCIe Gen 1.1 with a single lane to four independent UARTs RS-232, optimized for higher performance and lower power, which brings you a flexible expansion solution for embedded systems.

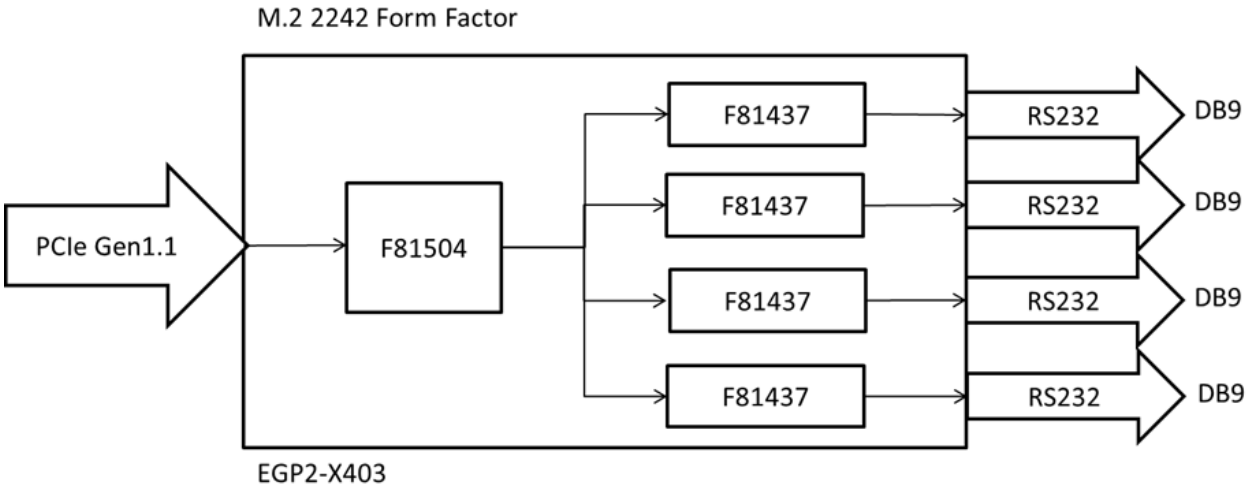


Figure 1: Block Diagram

1.2. Features

- PCI Express base spec 1.1 compliant
- 4800bps to 921600bps serial data rate
- Compatible with 16C550/16C650/16C750/16C850 & 16C950, 128-byte FIFOs
- Alternative vertical or horizontal connector
- Full RS-232 functions with DB9 connector
- Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
- Industrial temperature -40 ºC to 85 ºC
- Industrial design, manufactured in innodisk Taiwan

2. Product Specifications

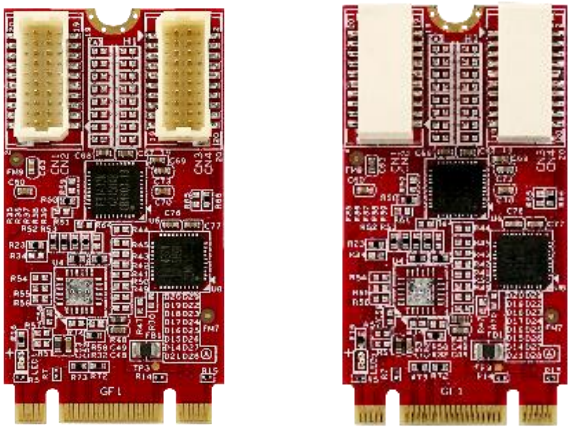


Figure 2: Picture

2.1. Device Parameters

Table 1: Device Parameters

Form Factor	M.2 2242
Input I/F	PCI Express 1.1 x 1
Output I/F	RS-232
Output Connector	DB-9 x 4
Dimension (WxLxH)	Vertical: 22 x 42 x 6.83mm Horizontal: 22 x 42 x 7.93mm

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	253.6	502

2.3. Environmental Specifications

2.3.1. Temperature Ranges

Table 4: Temperature Ranges

Temperature	Range
Operating	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)
EGP2-X403	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	7,360,818

2.4. CE and FCC Compatibility

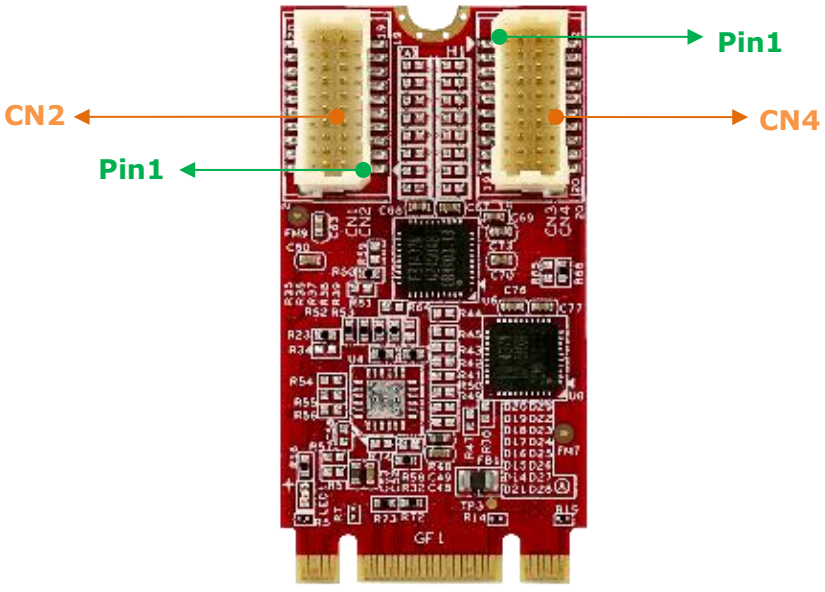
EGP2-X403 conforms to CE and FCC requirements.

2.5. RoHS Compliance

EGP2-X403 is fully compliant with RoHS directive.

2.6. Hardware

2.6.1. Layout



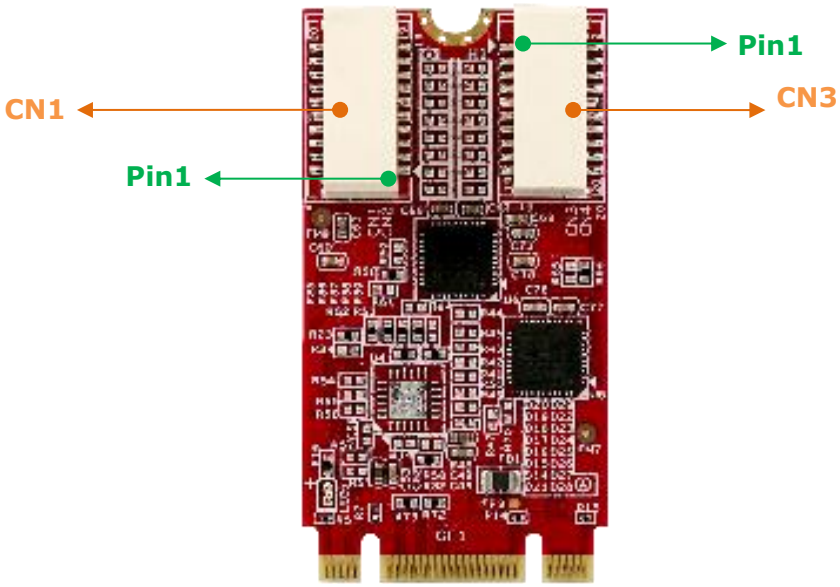


Table 7: PCB Layout Legend

Label	Connector Type	Function
CN1	Wafer DIP 2*10P 90° P:1.0mm	RS-232 Port 1, 2
CN2	Wafer DIP 2*10P 180° P:1.0mm	RS-232 Port 1, 2
CN3	Wafer DIP 2*10P 90° P:1.0mm	RS-232 Port 3, 4
CN4	Wafer DIP 2*10P 180° P:1.0mm	RS-232 Port 3, 4

2.6.2. Pin Define

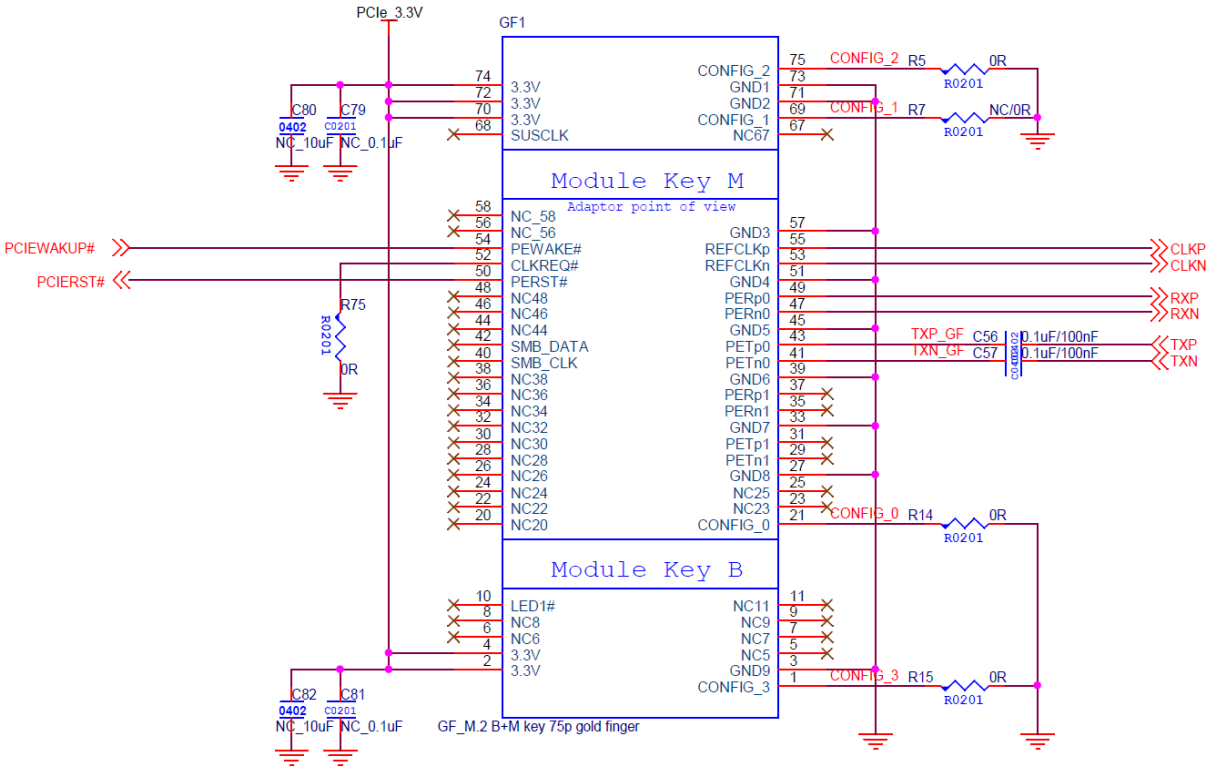


Figure 3: M.2 B-M Key Pin Define

2.6.3. I/O Connector Mechanical Drawing & Pin Defines

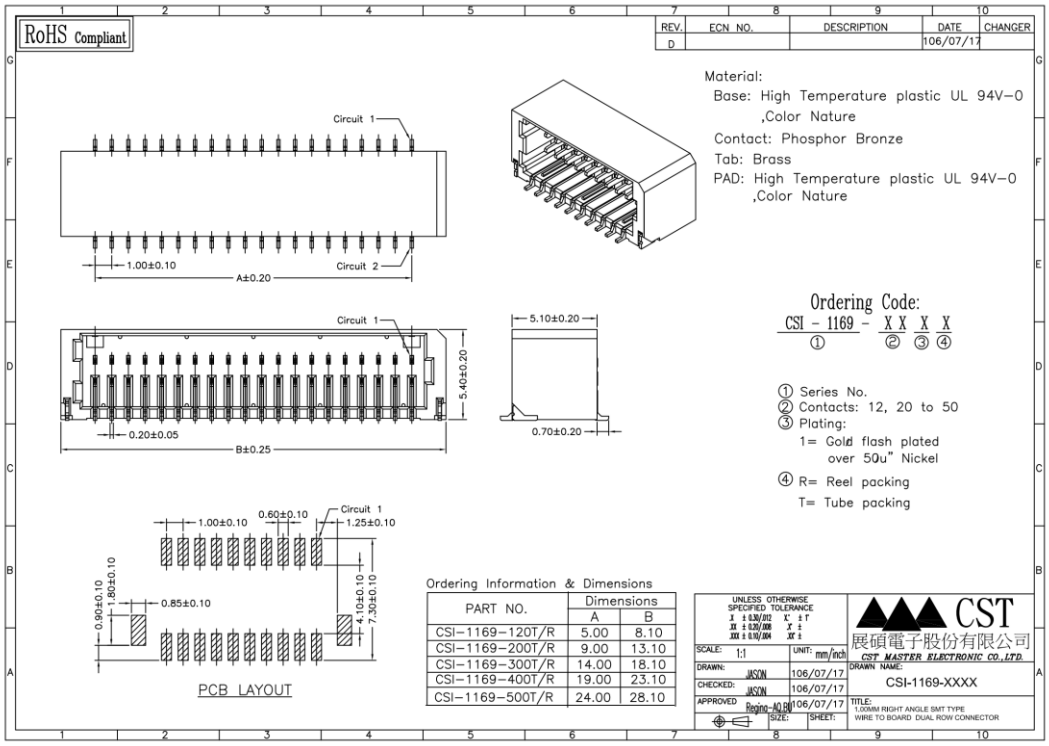


Figure 4: Wire to Board SMD 2*10P 90D Connector Drawing (CN1/CN3)

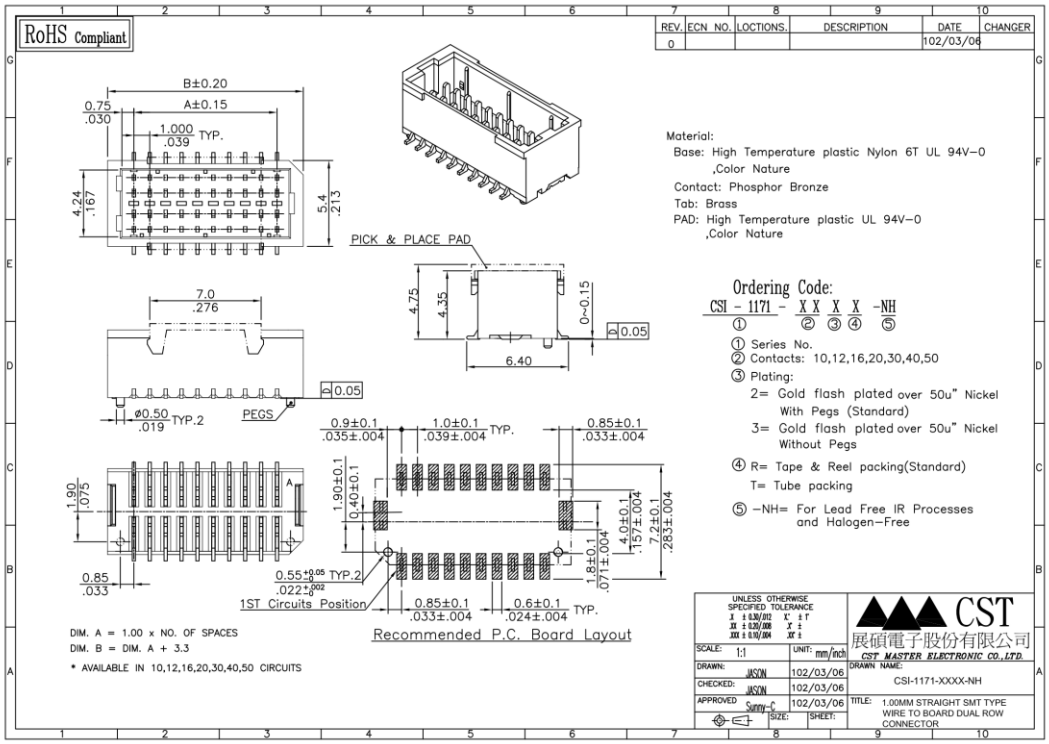


Figure 5: Wire to Board SMD 2*10P 180D Connector Drawing (CN2/CN4)

Table 8: Wire to Board SMD 2*10P Connector Pin Define (CN1/CN2)

Signal Name	Pin #	Pin #	Signal Name
DCD_P1	**2**	**1**	DCD_P2
RX_P1	**4**	**3**	RX_P2
TX_P1	**6**	**5**	TX_P2
DTR_P1	**8**	**7**	DTR_P2
GND	**10**	**9**	GND
DSR_P1	**12**	**11**	DSR_P2
RTS_P1	**14**	**13**	RTS_P2
CTS_P1	**16**	**15**	CTS_P2
RI_P1	**18**	**17**	RI_P2
NC	**20**	**19**	NC

Table 9: Wire to Board SMD 2*10P Connector Pin Define (CN3/CN4)

Signal Name	Pin #	Pin #	Signal Name
DCD_P3	**2**	**1**	DCD_P4
RX_P3	**4**	**3**	RX_P4
TX_P3	**6**	**5**	TX_P4
DTR_P3	**8**	**7**	DTR_P4
GND	**10**	**9**	GND
DSR_P3	**12**	**11**	DSR_P4
RTS_P3	**14**	**13**	RTS_P4
CTS_P3	**16**	**15**	CTS_P4
RI_P3	**18**	**17**	RI_P4
NC	**20**	**19**	NC

2.6.4. EGP2-X403 Mechanical Drawing

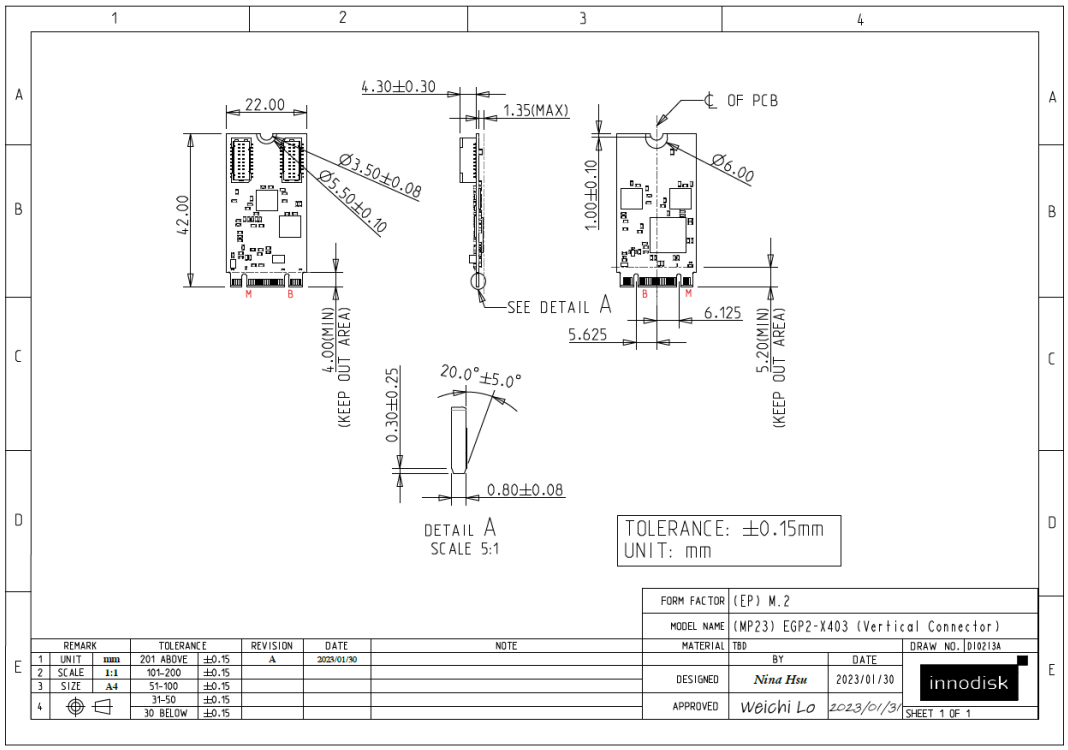


Figure 6: EGP2-X403-W1 Drawing

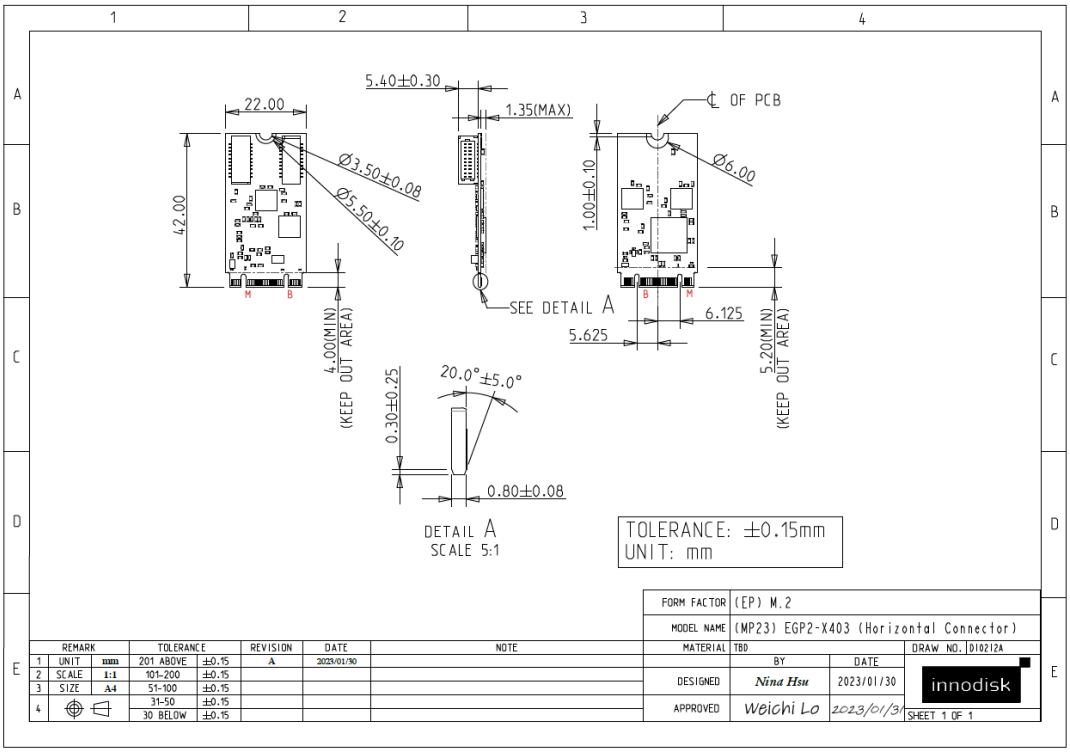


Figure 7: EGP2-X403-W2 Drawing

2.6.5. Cable Mechanical Drawing & Pin defines

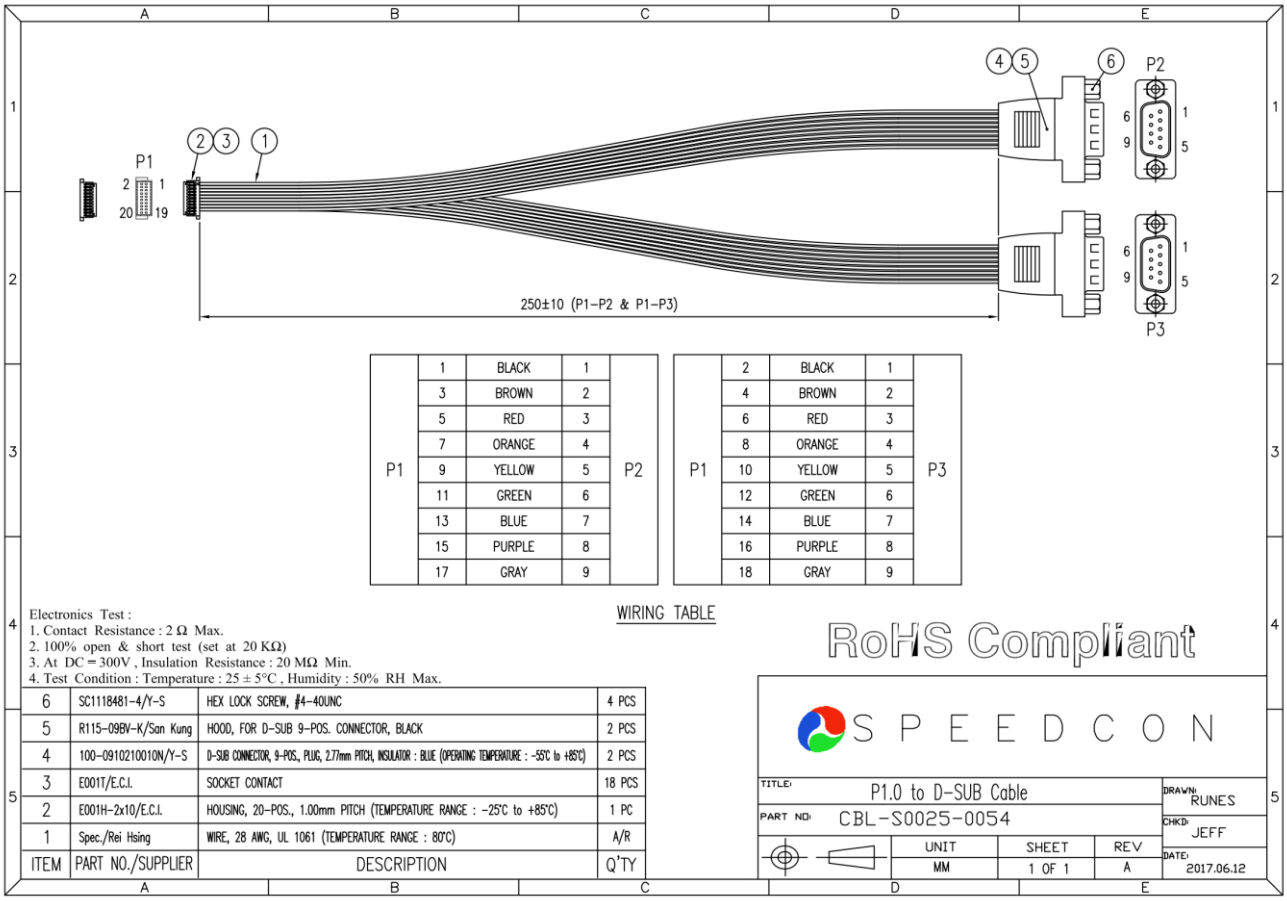


Figure 8: DB9 Cable Drawing

Table 10: DB9 Cable Pin Define

Pin #	1	2	3	4	5	6	7	8	9
RS-232	DCD	RXD	TXD	DTR	GND	DSR	RTS	CTS	RI

2.6.6. Packing List

- EGP2-X403 x1
- DB9 Cable x2

2.7. Software Support

- Windows: 10, 11
- Linux: Kernel 2.6.x and above.(Linux source code for modification)

3. Installation Guide

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

4. Appedix

DEKRA

Date : Mar. 30, 2023

CE Statement of Conformity

This statement is to certify that the designated product below.

Product	:	M.2 2242 to 4 x RS-232-422-485
Trademark	:	Innodisk
Model Number	:	EGP2-X#0%-W* (#: Output items: (2:2Port,4:4Ports), %: Mode: (3: RS-232, 4: RS-232/422/485), *: Connector direction (1: vertical, 2: horizontal))
Company Name	:	Innodisk Corporation
Applicable Standards	:	EN 55032:2015/A1:2020, Class B EN 55035:2017/A11:2020

One sample of the designated product has been tested and evaluated in our laboratory to find in compliance with the applicable standards above. The issued test report(s) show(s) it in detail.

Report Number : 2330124R-0E3012100115-A

TEST LABORATORY

Vincent Lin / Director

The verification is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. Logo.

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, E-mail: info.tw@dekra.com

Statement of Conformity

Issued Date: Mar. 30, 2023
Report No. : 2330124R-0E3012110014-A

This is to certify that the following designated product

Product : **M.2 2242 to 4 x RS-232-422-485**
Trademark : **Innodisk**
Model Number : **EGP2-X#0%-W***
(#: Output items: (2:2Port,4:4Ports),
%: Mode: (3: RS-232, 4: RS-232/422/485),
***: Connector direction (1: vertical, 2: horizontal))**
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
ICES-003 Issue 7:2020, Class B

TEST LABORATORY

Vincent Lin / Director

DEKRA Testing and Certification Co., Ltd.
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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

innodisk

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

宜鼎國際股份有限公司
Innodisk Corporation

鄰苯二甲酸二異丁酯（DIBP）	< 1000 ppm

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： Randy Chien 簡川勝

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

Date 日期： 2021 / 06 / 09

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