



EGUC-F1S3

M.2 2242 (USB HS) to single
isolated CAN FD

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	Oct, 2025

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1. Product Introduction

1.1. Overview

Innodisk EGUC-F1S3 is designed with standard Mini PCI Express form factor; EGUC-F1S3 supports USB 2.0 to single independent CAN FD and can connect with either M.2 slot or USB pin header, optimized for higher performance and lower power, which brings you a flexible expansion solution for embedded systems.

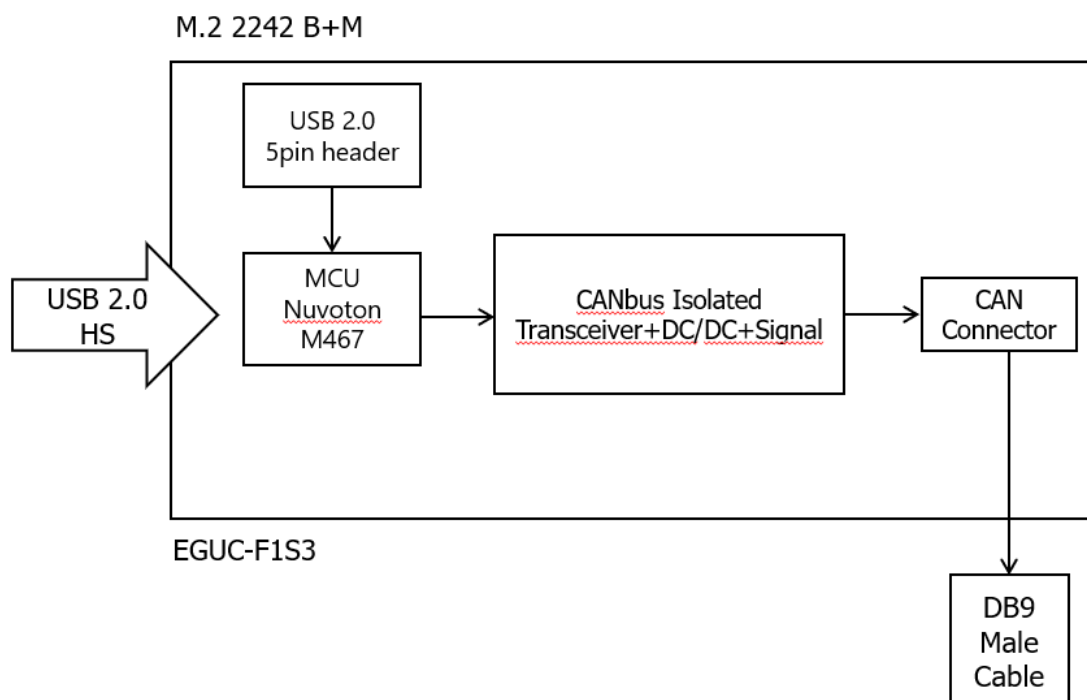


Figure 1: Block Diagram

1.2. Features

- ISO 11898-2:2016 compliant (CAN FD)
- Baud rate support 5/10/20/50/100/125/250/500(default)/800/1000K
- Data rate support 2/4/5Mbps
 - 2M support normal rate 100k and above
 - 4M/5M support normal rate 250K and above
- Support CAN message acceptance filter, listen-only mode
- Keep configuration after hardware reboot
- CAN2.0 Up to 7,800 frame/s (RX baud rate 1M, EID, 8byte data)

- CANFD Up to 6,000 frame/s (RX baud rate 1M, data rate 5M, EID, 64byte data)
- Additional driver to support Linux SocketCAN
- Termination resistor enabled/disabled by jumper
- Complies with IEC 60950-1:2005 + A1: 2009 + A2:2013 2.5kV HiPOT protection
- Complaint with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
- Supports 3rd mounting hole and USB Pin header for out-of-minicard installation
- Industrial Temperature (-40°C to +85°C) support
-

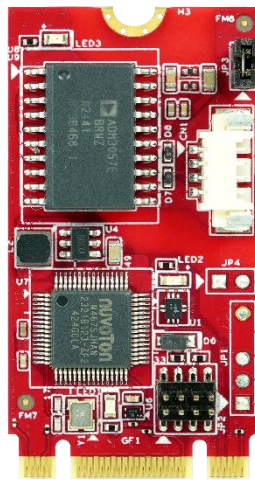


Figure 2: Picture

2. Product Specifications

2.1. Device Parameters

Table 1: Device Parameters

Form Factor	M.2 2242
Input I/F	USB 2.0 High Speed (480Mbps)
Output I/F	CAN FD
Output Connector	DB-9 x 1
Dimension (WxLxH)	22 x 42 x 7.55 mm

2.2. Performance

2.2.1. CAN FD RX Performance (frame/per second)

EID, FDF, BRS, DLC64			
Normal rate/Data rate	Performance		
	single prot	dual port	
		CAN1	CAN2
1M/5M	6145	6145	6145

EID, FDF, BRS, DLC8			
Normal rate/Data rate	Performance		
	single prot	dual port	
		CAN1	CAN2
1M/5M	14478	14477	14477

EID, FDF, DLC8			
Normal rate/Data rate	Performance		
	single prot	dual port	
		CAN1	CAN2
1M/5M	6736	6736	6736

2.2.2. CAN FD TX Performance (frame/per second)

EID, FDF, BRS, DLC64			
Normal rate/Data rate	Performance		
	single prot	dual port	
		CAN1	CAN2
1M/5M	5587	N/A	N/A

EID, FDF, BRS, DLC8			
Normal rate/Data rate	Performance		
	single prot	dual port	
		CAN1	CAN2
1M/5M	12542	N/A	N/A

EID, FDF, DLC8			
Normal rate/Data rate	Performance		
	single prot	dual port	
		CAN1	CAN2
1M/5M	6354	N/A	N/A

2.3. Electrical Specifications

2.3.1. Power Requirement

EGUC-F1S3 can connect with either M.2 slot or USB pin header.

Table 2: Power Requirement

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

2.3.2. Power Consumption

Table 3: Power Consumption

Voltage (V)	Idle (RMS)(mA)	Work (RMS)(mA)	Work (MAX)(mA)
3.3	180.3	184.6	794.5

2.4. Environmental Specifications

2.4.1. Temperature Ranges

Table 4: Temperature Ranges

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

2.4.2. Humidity

Relative Humidity: 10-95%, non-condensing

2.4.3. 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

2.4.4. 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)
EGUC-F1S3	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	22,023,222

2.5. CE and FCC Compatibility

EGUC-F1S3 conforms to CE and FCC requirements.

2.6. RoHS Compliance

EGUC-F1S3 is fully compliant with RoHS directive.

2.7. Hardware

2.7.1. Layout

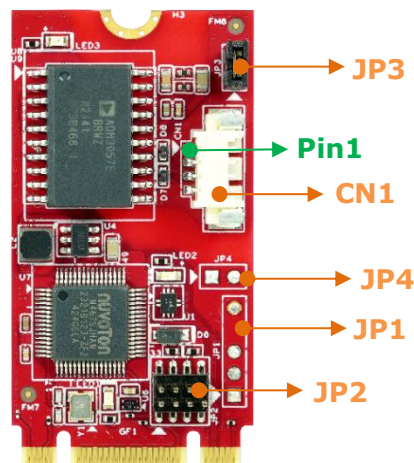
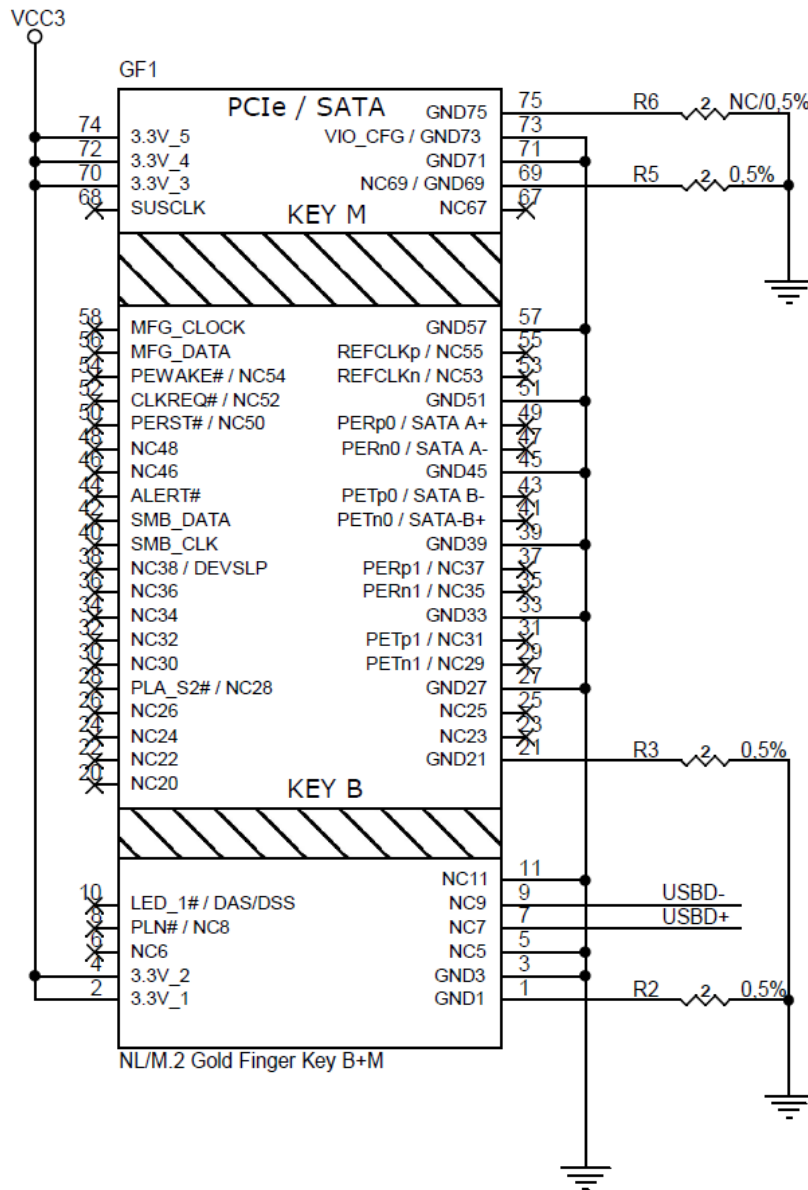


Table 7: PCB Layout Legend

Label	Connector Type	Function
CN1	Wire to board SMD 1*4P 90° P:1.25mm	CAN bus Port
JP1	Pin Header DIP 1*5P(w/o pin4) 180° P:2.0mm L:4.0mm H:2.0mm	Alternative USB 2.0 input (Reserved)
JP2	Pin Header SMD 2*4P 180° P:1.27mm	Programming PIN Header
JP3	Pin Header DIP 1*2P 180° P:2.0mm	Enable Termination Resistor
JP4	Pin Header DIP 1*2P 180° P:2.0mm	Switch USB 2.0 signal from M.2 to JP1 (Reserved)

2.7.2. Pin Define



M.2 KEY-B define

Figure 3: M.2 Pin Define

2.7.3. I/O Connector Mechanical Drawing & Pin Defines

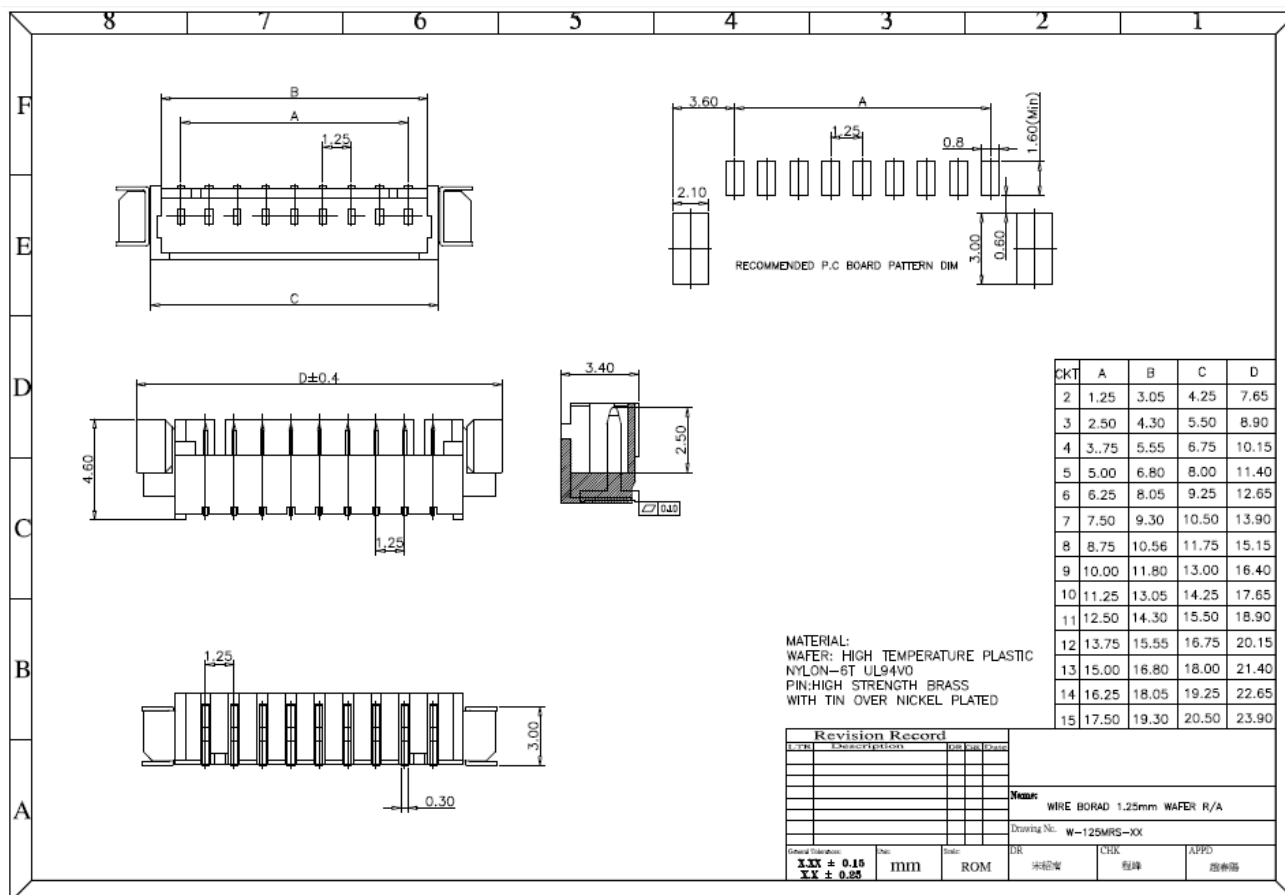


Figure 4: Wire to Board SMD 1*4P Connector Drawing (CN1)

Table 8: Wire to Board SMD 1*4P Connector Pin Define (CN1)

Pin #	1	2	3	4
Signal Name	NC	CAN-H	CAN-L	GND

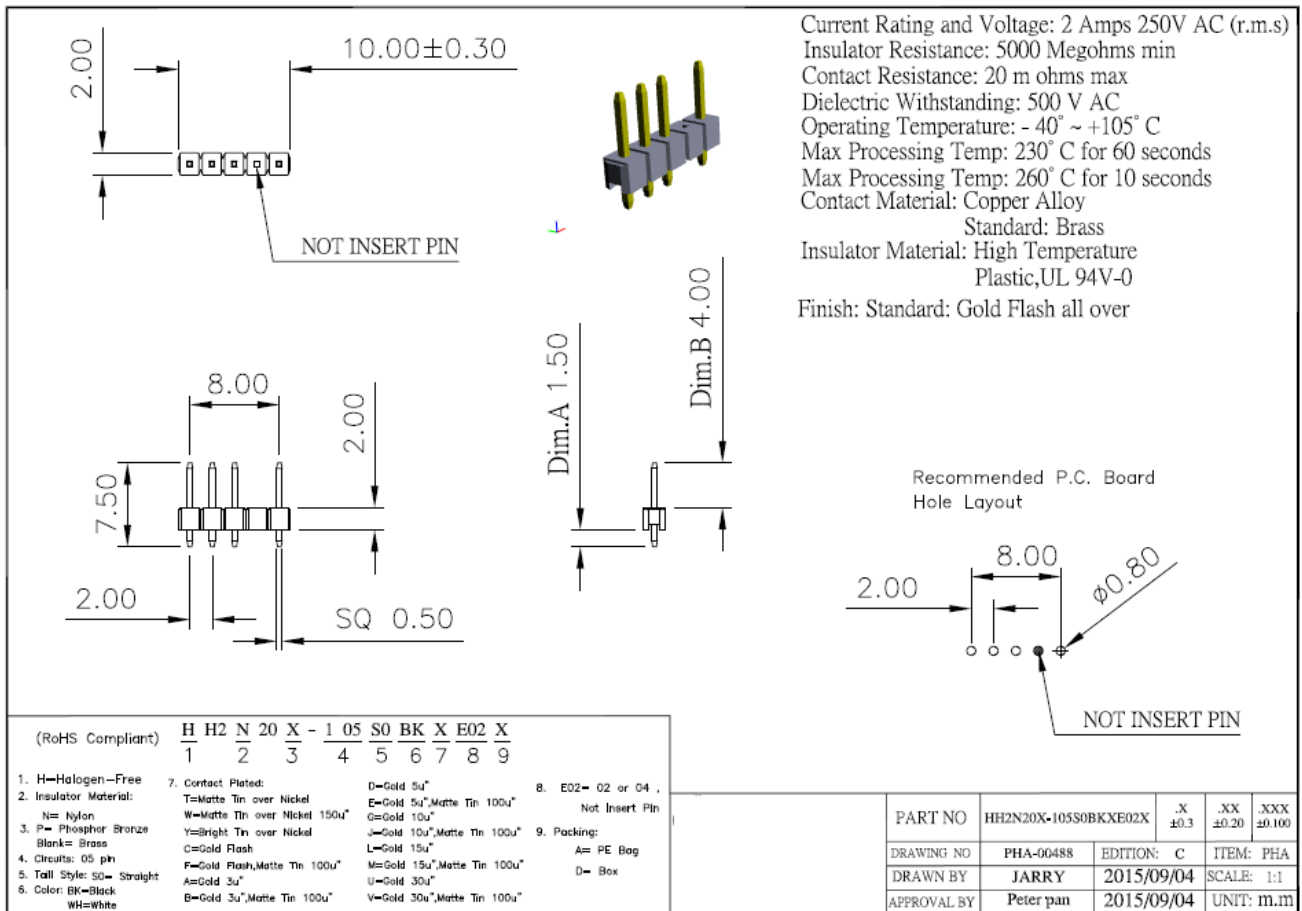


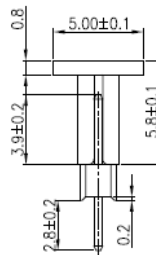
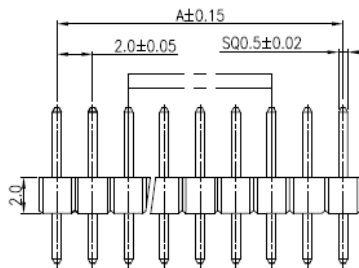
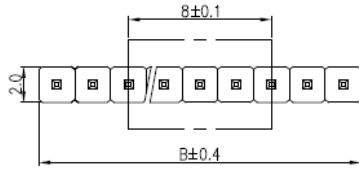
Figure 5: Pin Header DIP 1*5P Drawing (JP1)

Table 9: USB Pin Header DIP 1*5P Pin Define (JP1)

Pin #	1	2	3	-	5
Signal Name	NC	USB_D-	USB_D+	-	GND

pin	A	B
2	2.00	4.00
3	3.00	5.50
4	4.00	6.00
5	5.00	10.00
6	10.00	12.00
7	12.00	14.00
8	14.00	15.00
9	16.00	18.00
10	18.00	20.00
11	20.00	22.00
12	22.00	24.00
13	24.00	26.00
14	26.00	28.00
15	28.00	30.00
16	30.00	32.00
17	32.00	34.00
18	34.00	36.00
19	36.00	38.00
20	38.00	40.00
21	40.00	42.00
22	42.00	44.00
23	44.00	46.00
24	46.00	48.00
25	48.00	50.00
26	50.00	52.00
27	52.00	54.00
28	54.00	56.00
29	56.00	58.00
30	58.00	60.00
31	60.00	62.00
32	62.00	64.00
33	64.00	66.00
34	66.00	68.00
35	68.00	70.00
36	70.00	72.00
37	72.00	74.00
38	74.00	76.00
39	76.00	78.00
40	78.00	80.00

Contact Plating	Gold
Contact Plating Thickness	Gold Flash
Soldering Plating	Gold



SPECIFICATIONS
CURRENT RATING:2.0A @80°C AMBIENT
OPERATING TEMP RANGE: -40°C TO +125°C
MAX PROCESSING TEMP:NT6T:260°C FOR 10 SECONDS
NT9T:260°C FOR 10 SECONDS PBT:200°C FOR 20 SECONDS
INSULATOR MATERIAL:PBT OR NY6T OR NY9T BLACK
CONTACT MATERIAL:BRASS
PLATING:GOLD FLASH OR OTHER
PART NUMBER:LCH24-I XX 2 X TO 1 X-00

— 0: STANDARD
C: CAP+REEL

— 1: BLACK
2: BLUE 3: YELLOW

— 4: NY6T(HF) 8: NY9T
6: PBT

— Number of contact

Figure 6: Pin Header DIP 1*2P Drawing (JP3/JP4)

Table 10: Pin Header DIP 1*2P Jumper Setting (JP3)

Jumper is set	Enable Termination Resistor
Jumper is NOT set	Disable Termination Resistor

Table 11: Pin Header DIP 1*2P Jumper Setting (JP4)

Jumper is set	USB signal from JP1
Jumper is NOT set	USB signal from M.2

2.7.4. EGUC-F1S3 Mechanical Drawing

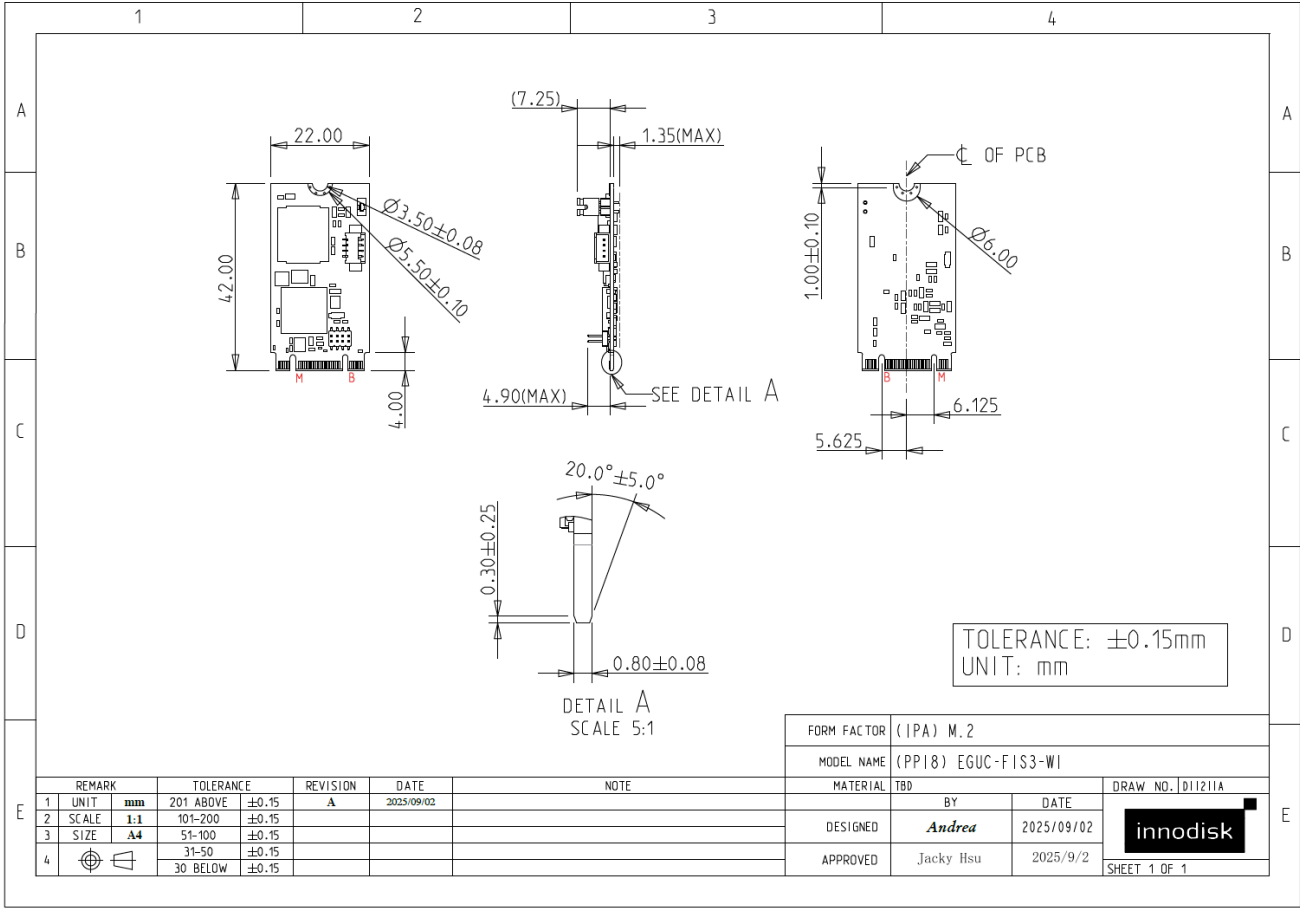


Figure 7: EGUC-F1S3 Drawing

2.7.5. Cable Mechanical Drawing & Pin Defines

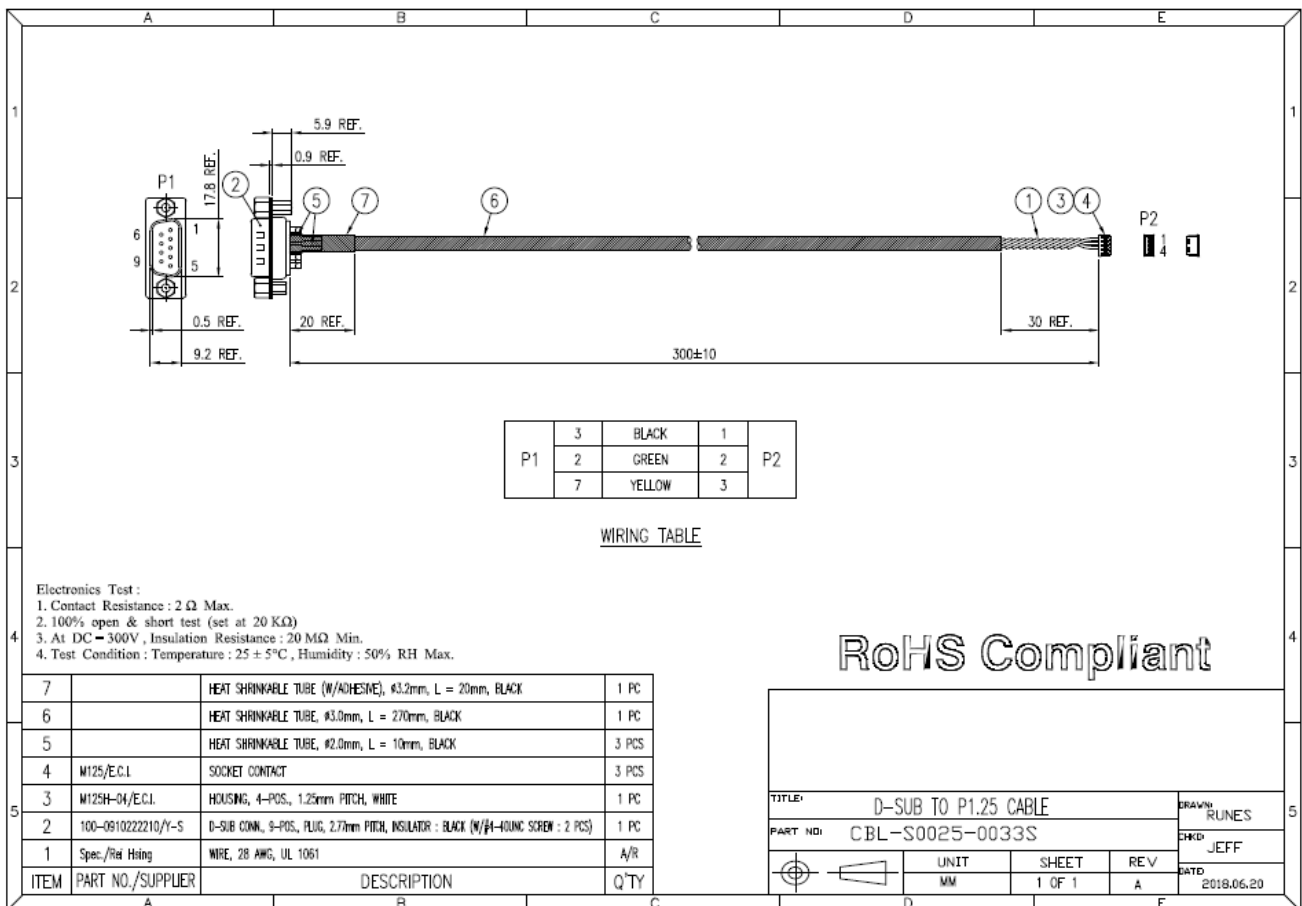


Figure 8: DB9 Cable Drawing

Table 12: DB9 Cable Pin Define

Pin #	1	2	3	4	5	6	7	8	9
Signal Name	NC	CAN-L	GND	NC	NC	NC	CAN-H	NC	NC

2.7.6. Packing List

- EGUC-F1S3 x1
- DB9 Cable x1

2.8. Software Support

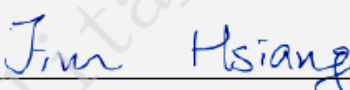
Windows	10(32/64bit), 11
Linux (cdc-acm driver)	Kernel 2.6 and above, 32/64bit
Linux (SocketCAN driver)	Kernel 2.6.38 and above, 32/64bit

3. Installation Guide

Please download driver, software API and user manual from Myinnodisk web site.

<https://myinnodisk.innodisk.com/myinnodisk/Login.aspx>

4. Appedix

		
CERTIFICATE OF CONFORMITY		
Product : M.2 2242 (USB HS) to Single isolated CAN FD Brand : Innodisk Model No. : EGUC-F1S3 Applicant : Innodisk Corporation Report No. : CEBDBO-WTW-P25070169		
We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards, in accordance with the Directive 2014/30/EU. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.		
EN 55032: 2015+A11:2020, Class B EN 61000-3-2: 2014 (Not Applicable) EN IEC 61000-3-2: 2019+A1:2021+A2:2024 (Not Applicable) EN 61000-3-3: 2013+A1:2019+A2:2021+AC:2022 (Not Applicable) EN 55035: 2017+A11:2020 EN 61000-4-2: 2009 / IEC 61000-4-2: 2008 ED. 2.0 EN IEC 61000-4-3: 2020 / IEC 61000-4-3: 2020 ED. 4.0 EN 61000-4-4: 2012 / IEC 61000-4-4: 2012 ED. 3.0 (Not Applicable) EN 61000-4-5: 2014+A1:2017 / IEC 61000-4-5: 2017 ED. 3.1 (Not Applicable) EN IEC 61000-4-6: 2023 / IEC 61000-4-6: 2023 ED. 5.0 (Not Applicable) EN 61000-4-8: 2010 / IEC 61000-4-8: 2009 ED. 2.0 EN IEC 61000-4-11: 2020+AC:2020 / IEC 61000-4-11: 2020 ED. 3.0 (Not Applicable)		
NOTE: The above EN/IEC basic standards are applied with latest version if customer has no special requirement.		
		
Jim Hsiang / Associate Technical Manager 2025/8/20		
No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan Tel: 886-2-26052180 Fax: 886-2-26051924 http://ee.bureauveritas.com.tw E-Mail: service.adt@tw.bureauveritas.com		
		

**CERTIFICATE OF CONFORMITY**

Standard: 47 CFR FCC Part 15, Subpart B, Class B
ANSI C63.4-2014
ANSI C63.4a-2017

Report No.: FDBDBO-WTW-P25070169

Product: M.2 2242 (USB HS) to Single isolated CAN FD

Brand: Innodisk

Model No.: EGUC-F1S3

Received Date: 2025/7/8

Test Date: 2025/7/16 ~ 2025/7/17

Issued Date: 2025/8/20

Applicant: Innodisk Corporation

Address: 5F., No. 237, Sec. 1, Datong Rd., Xizhi Dist., New Taipei City 221005, Taiwan (R.O.C.)

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

FCC Registration /
Designation Number: 418586 / TW1078

Approved by:

Jim Hsiang

Jim Hsiang / Associate Technical Manager

, Date:

2025/8/20

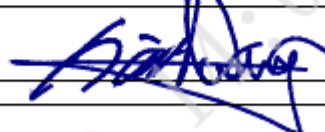
This test report consists of 19 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The test results in the report only apply to the tested sample. The test results in this report are traceable to the national or international standards.

Prepared by : Vivian Chen / Senior Specialist



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TEST REPORT IEC/EN 62368-1 Audio/video, information and communication technology equipment – Part 1 : General requirements	
Report Number	2508010
Date of issue	2025-08-15
Total number of pages	8
Tested by (name, function, signature)	Richard Ma / Engineer
Approved by (name, function, signature)	David Wang / Reviewer
 	
Testing Laboratory	
Name	Universal Certification Technology Co. Ltd.
Address	13F-5, No. 93, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan.
Test Location	Same above
Applicant	
Name	Innodisk Corporation
Address	5F., No. 237, Sec. 1, Datong Rd., Xizhi Dist., New Taipei City 221005, Taiwan (R.O.C.)
Test item description	
Product name	M.2 2242 (USB HS) to Single isolated CAN FD
Trade mark(s)	Innodisk
Model /Type reference	EGUC-F1S3
Test specification	
Standard	☐ IEC 62368-1:2018 ☒ EN IEC 62368-1:2020+A11:2020 ☐ IEC 62368-1:2014 ☐ EN IEC 62368-1:2014+A11:2017
Test procedure	Clause 5.4.9 Electric Strength Test
Test Result	Compliance
General disclaimer	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory.	

innodisk

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),

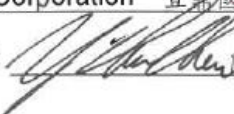
Scope: Flash Memory, DRAM Module and Embedded Peripherals Products.

- 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 223 substances and shown on the ECHA website. (<http://echa.europa.eu/de/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:  陳怡全

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

Date 日期: 2022 / 02 / 08

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
------------------	------------

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

