innodisk

Total Solution For
Embedded Peripherals

InnoAgent
EZ2N-0XL1

Out-of-Band
Remote Management Module

Customer: _____

Customer Part Number: _____

Innodisk Part Number: _____

Innodisk Model Name: _____

Date: _____

Innodisk Approver	Customer Approver

Table of Contents

REVISION HISTORY

Revision	Description	Date
1.0	First Released	Mar, 2022
1.1	Add I2C pinout	Oct, 2022
1.2	Modify Pin Define (config pin)	Feb, 2023
1.3	Add InnoOSR Recovery/Status pin on H2	Apr, 2024

List of Tables

List of Figures

1. Product Introduction

1.1. Overview

Innodisk InooAgent is designed for Out-of-Band (OOB) management, which provides Out-of-band channel bypassing the regular network channel and deliver a dedicated, alternative way to access the device, out-of-band signaling makes device control possible even if the device or its software has broken down.

Device System Risk

- Every system has a potential system crash, and there needs to be a complete mechanism in the operating system to protect system

- **Human Resource & Cost**
  - Human resources may not be able to meet the number of equipment growth, and high human resources also account for a lot of maintenance costs

- **Service Level**
  - Create a 24/7/365 uninterrupted and highly available platform environment (Base on SLA rules)

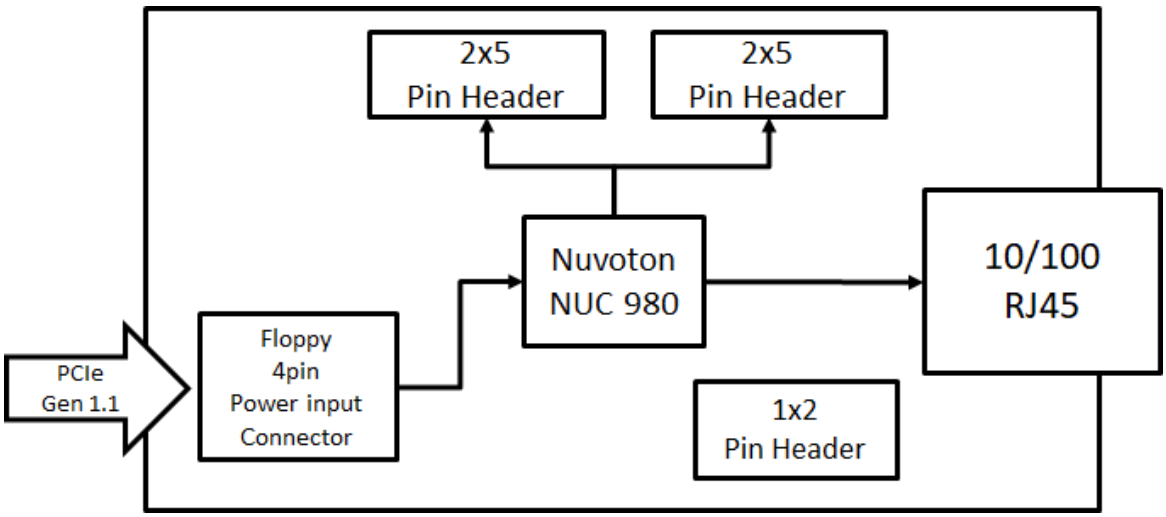


Figure 1: Block Diagram

1.2. Features

- Nuvoton NUC980 32bit Microprocessor
- Support LAN connection
- Remote Power On/Off/Reset
- Programmable Remote control GPIO
- Optional Support I2C function
- Support Remote UART/RS232 Data Transmission
- Support OT Device without Network Connection
- In-Band Heartbeat Agent to Check Device Alive
- Optional Support innodisk iCAP 2.0 Private Cloud
- Standard MQTT Network Connection Protocol
- Support OTA Firmware Upgrade
- Complies with EN61000-4-2 (ESD) Air-15kV, Contact-8kV
- Operation temperature -40°C to +85°C support

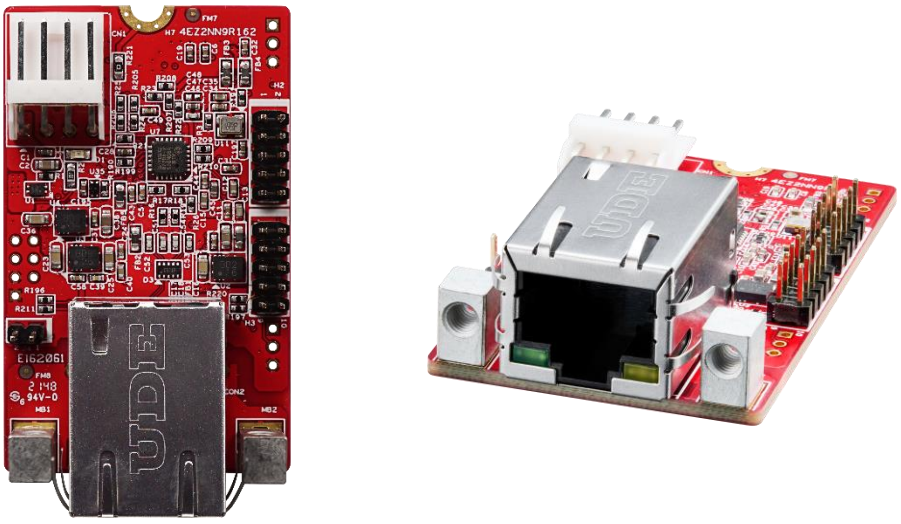


Figure 2: InnoAgent EZ2N-0XL1 Picture

2. Product Specifications

2.1. Device Parameters

Table 1: Device Parameters

Network I/F	10/100 Mbps LAN (RJ45)
Network Protocol	MQTT
Host I/F	3.3V UART, RS232 (Pitch 2.0mm Pin Header)
Remote Control I/O	3.3V GPIO x 6 (2 GPIO can be I2C) Power SW x2 (Pitch 2.0mm Pin Header)
Factory Reset	Pitch 2.0mm Pin Header
Dimension (WxLxH)	51 x 31.3 x 19.05 mm

2.2. Electrical Specifications

2.2.1. Power Requirement

Table 2: Power Requirement

Item	Connector	Rating
Input voltage	4pin floppy male connector	+5 DC +-5%

2.2.2. Power Consumption

Table 3: Power Consumption

Voltage (V)	RMS (mA)	MAX (mA)
5	120.5	225

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)
EZ2N-0XL1	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	11,005,964

2.4. CE and FCC Compatibility

EZ2N-0XL1 conforms to CE and FCC requirements.

2.5. RoHS Compliance

EZ2N-0XL1 is fully compliant with RoHS directive.

2.6. Hardware

2.6.1. Layout

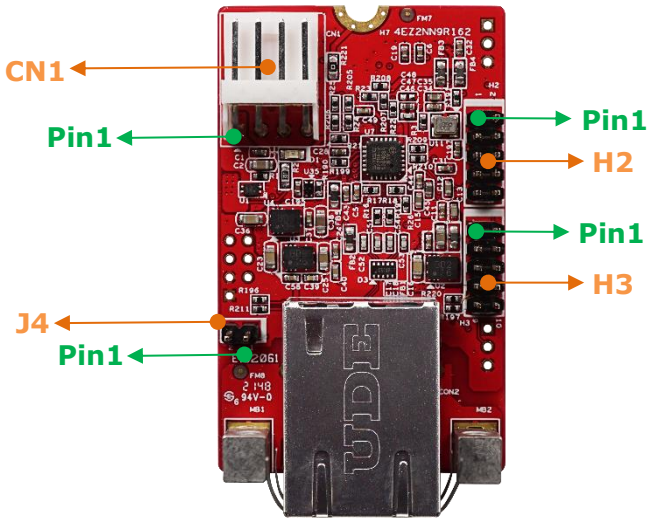
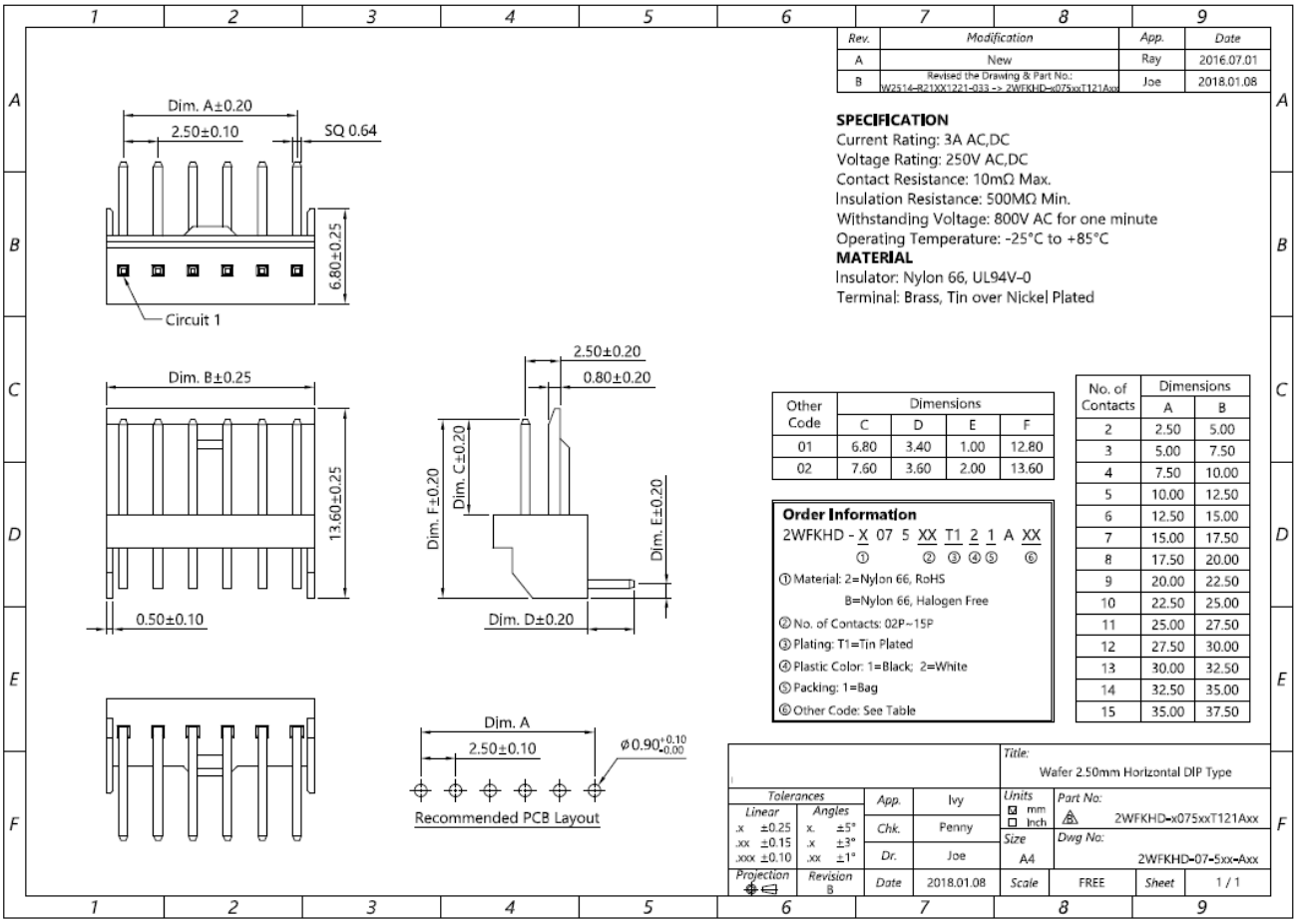


Table 7: PCB Layout Legend

Label	Connector Type	Function
CN1	Floppy 4pin Male Connector P:2.5mm	5V Power Input
H2	DIP 2*5P 180° Male Pin Header P:2.0mm	**GPIO Pin** Programmable GPIO x6 Power Switch x2
H3	DIP 2*5P 180° Male Pin Header P:2.0mm	**Function Pin** MCU Reboot/Config Reset UART Debug/TX/RX +5V
J4	DIP 1*2P 180°Pin Header P:2.0mm	RS232 TX/RX

2.6.2. I/O Connector Mechanical Drawing & Pin Defines



Rev.	Modification	App.	Date
A	New	Ray	2016.07.01
B	Revised the Drawing & Part No.: W2514-R21XX1221-033 -> 2WFKHD-x075xxT121Axx	Joe	2018.01.08

Other Code	Dimensions			
	C	D	E	F
01	6.80	3.40	1.00	12.80
02	7.60	3.60	2.00	13.60

No. of Contacts	Dimensions	
	A	B
2	2.50	5.00
3	5.00	7.50
4	7.50	10.00
5	10.00	12.50
6	12.50	15.00
7	15.00	17.50
8	17.50	20.00
9	20.00	22.50
10	22.50	25.00
11	25.00	27.50
12	27.50	30.00
13	30.00	32.50
14	32.50	35.00
15	35.00	37.50

Tolerances		App.	Ivy	Units	Part No:
Linear	Angles	Chk.	Penny	☑ mm ☐ Inch	2WFKHD-x075xxT121Axx
.x ±0.25	x. ±5°	Dr.	Joe	Size	Dwg No:
.xx ±0.15	.x ±3°	Date	2018.01.08	A4	2WFKHD-07-5xx-Axx
.xxx ±0.10	.xx ±1°	Scale	FREE	Sheet	1 / 1
Projection	Revision B				

Figure 3: Floppy 4pin Male Connector Drawing (CN1)

Table 8: Floppy 4pin Male Connector Pin Define (CN1)

Pin #	Signal Name
1	5VIN
2	GND
3	GND
4	NC

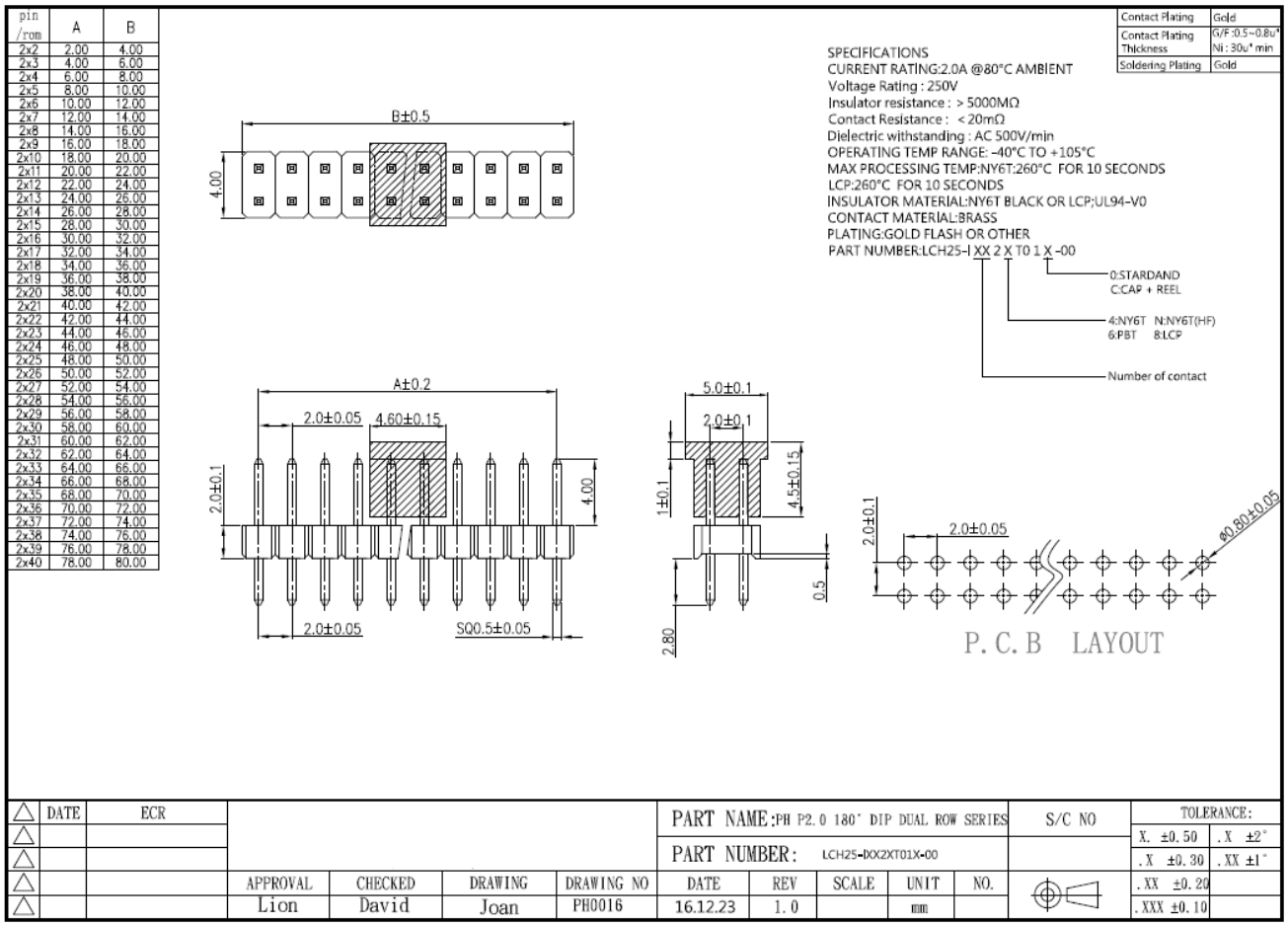


Figure 4: 2*5P 180° Male Pin Header Drawing (H2/H3)

Table 9: 2*5P 180° Male Pin Header Pin Define (H2)

Signal Name	Pin #	Pin #	Signal Name
Programmable GPIO1 (I2C_SDA)	**1**	**2**	Programmable GPIO2
Programmable GPIO3 (I2C_SCL)	**3**	**4**	Programmable GPIO4
Power Switch 1	**5**	**6**	Programmable GPIO5 (InnoOSR Recovery)
Power Switch 2	**7**	**8**	Programmable GPIO6 (InnoOSR Status)
GND	**9**	**10**	GND

Table 10: 2*5P 180° Pin Header Pin Define (H3)

Signal Name	Pin #	Pin #	Signal Name
MCU Reboot	**1**	**2**	SDK/iCAP Config Reset
GND	**3**	**4**	GND
UART_Debug_TX	**5**	**6**	UART_TX
UART_Debug_RX	**7**	**8**	UART_RX
+5V	**9**	**10**	+5V

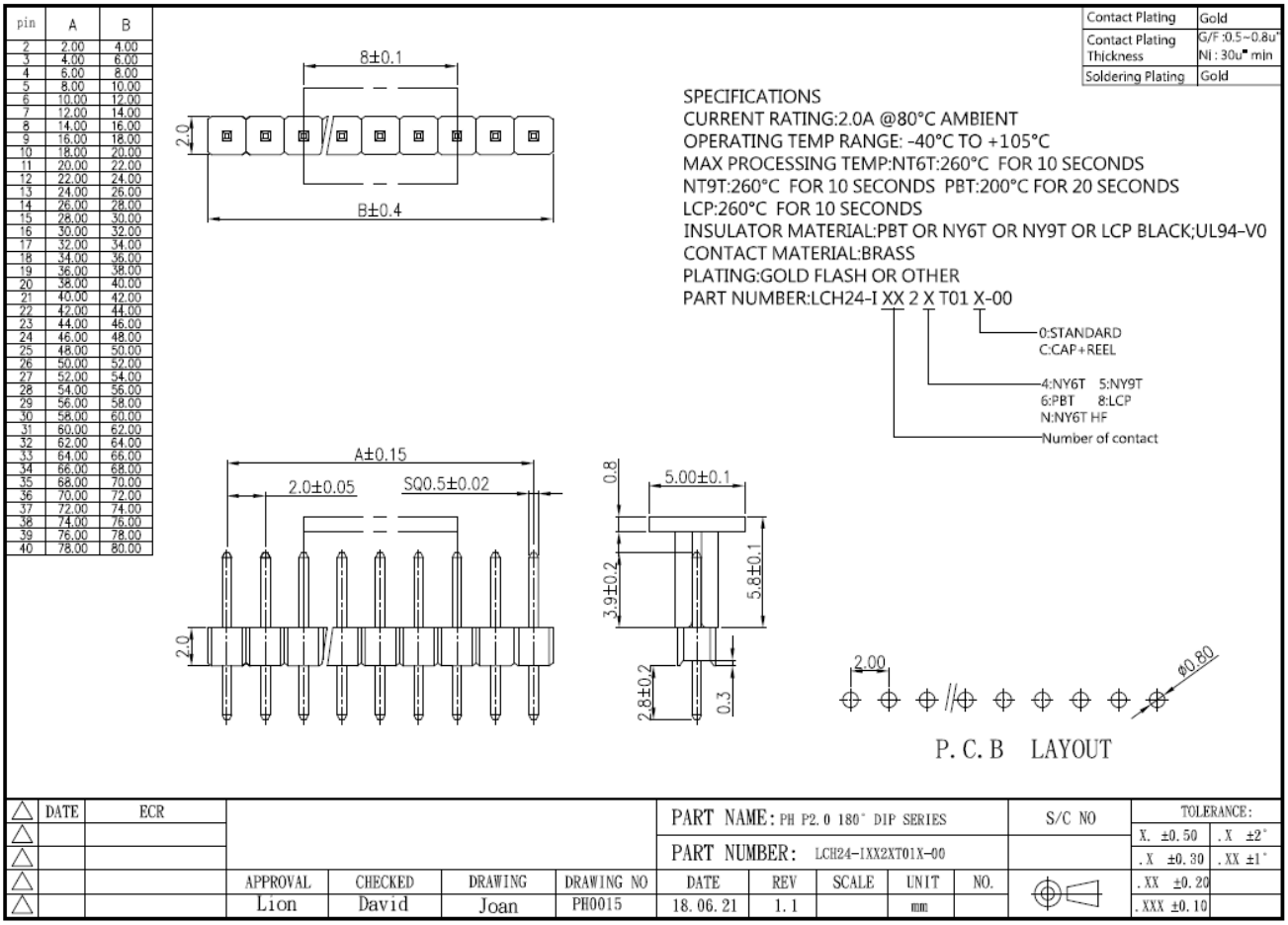


Figure 5: 1*2P 180° Pin Header Drawing (J4)

Table 11: 1*2P 180° Pin Header Pin Define (J4)

Signal Name	Pin #	Pin #	Signal Name
RS232_RX	**1**	**2**	RS232_TX

2.6.3. EZ2N-0XL1 Mechanical Drawing

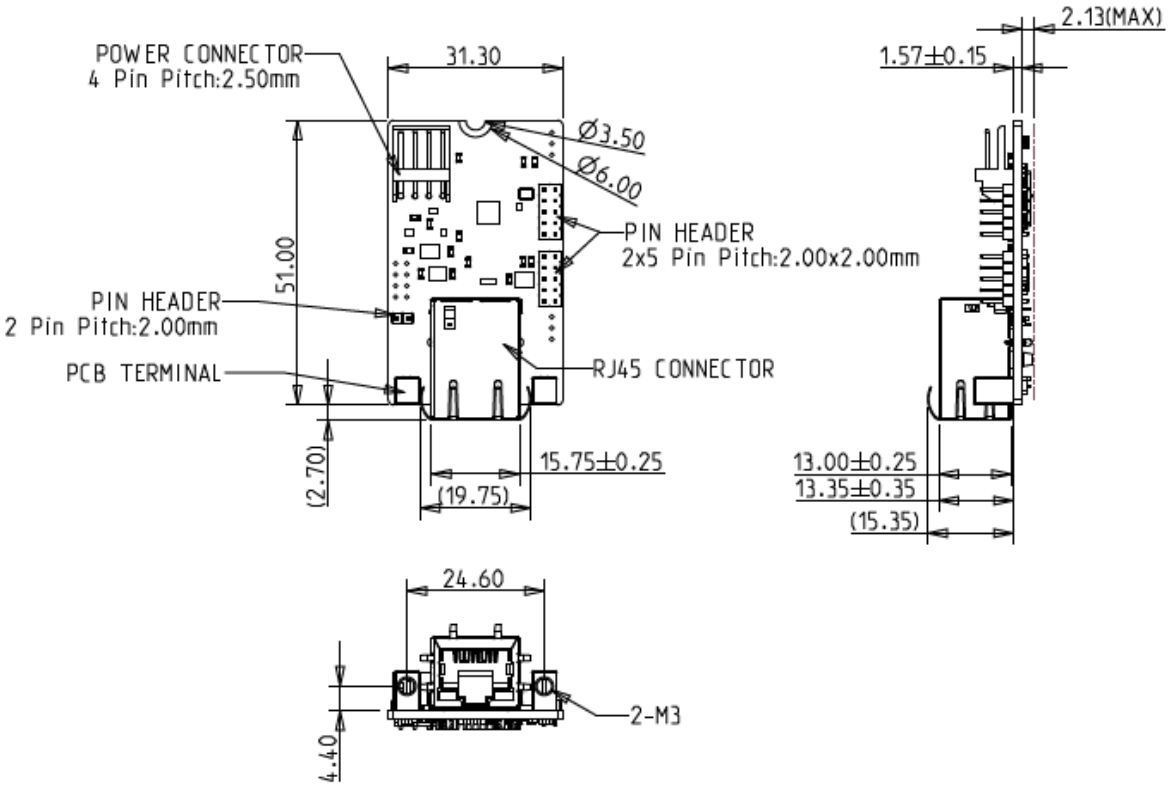


Figure 6: EZ2N-0XL1 Drawing

2.6.4. Packing List

- InnoAgent EZ2N-0XL1 x 1

2.7. Software Support

- Windows & Linux Software Develop Kit
  - Host OS Agent (Source Code)
  - API Library & Sample Code
  - InnoAgent Hardware Setting Tool
- Provide MQTT topic & payload for third party cloud platform integration
- Web Service & Dashboard Demo Page Source Code (For Development)
- Docker Image of Web Service & Dashboard (For Quick Installation and Function Test)

3. Installation Guide

Please download Software Develop Kit (SDK) & user manual from Myinnodisk web site.
https://myinnodisk.innodisk.com/myinnodisk/Login.aspx

4. Appedix

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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 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

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

CERTIFICATE OF CONFORMITY

Product	:	InnoAgent Out-of-Band Management Module
Brand	:	Innodisk
Model No.	:	EZ2N-0XL1
Applicant	:	Innodisk Corporation
Report No.	:	CEBDBO-WTW-P22030411

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 (Not Applicable)
EN 61000-3-3:2013+A2:2021 (Not Applicable)
EN 55035:2017 +A11:2020
EN 61000-4-2:2009 / IEC 61000-4-2:2008 ED. 2.0
EN 61000-4-3:2006 +A1:2008 +A2:2010 / IEC 61000-4-3:2010 ED. 3.2
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
EN 61000-4-5:2014 +A1:2017 / IEC 61000-4-5:2017 ED. 3.1 (Not Applicable)
EN 61000-4-6:2014+AC:2015 / IEC 61000-4-6:2013 ED. 4.0
EN 61000-4-8:2010 / IEC 61000-4-8:2009 ED. 2.0
EN 61000-4-11:2004 +A1: 2017 / IEC 61000-4-11:2017 ED. 2.1 (Not Applicable)
EN IEC 61000-4-11:2020 / 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
2022/4/13

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CERTIFICATE OF CONFORMITY

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Brand	:	Innodisk
Model No.	:	EZ2N-0XL1
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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 Electromagnetic Compatibility Regulations 2016 (S.I. 2016/1091). The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

BS EN 55032:2015 +A11:2020, Class B
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BS EN 61000-3-3:2013+A2:2021 (Not Applicable)
BS EN 55035:2017 +A11:2020
BS EN 61000-4-2:2009 / IEC 61000-4-2:2008 ED. 2.0
BS EN 61000-4-3:2006 +A1:2008 +A2:2010 / IEC 61000-4-3:2010 ED. 3.2
BS EN IEC 61000-4-3:2020 / IEC 61000-4-3:2020 ED. 4.0
BS EN 61000-4-4:2012 / IEC 61000-4-4:2012 ED. 3.0
BS EN 61000-4-5:2014 +A1:2017 / IEC 61000-4-5:2017 ED. 3.1 (Not Applicable)
BS EN 61000-4-6:2014+AC:2015 / IEC 61000-4-6:2013 ED. 4.0
BS EN 61000-4-8:2010 / IEC 61000-4-8:2009 ED. 2.0
BS EN 61000-4-11:2004 +A1: 2017 / IEC 61000-4-11:2017 ED. 2.1 (Not Applicable)
BS EN IEC 61000-4-11:2020 / IEC 61000-4-11:2020 ED. 3.0 (Not Applicable)

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Jim Hsiang

Jim Hsiang / Associate Technical Manager

2022/4/13

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TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart B, Class B
ANSI C63.4:2014
Report No.: FDBDBO-WTW-P22030411
Model No.: EZ2N-0XL1
Received Date: 2022/3/11
Test Date: 2022/3/15 ~ 2022/3/16
Issued Date: 2022/4/13

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 , **Date:** 2022/4/13
Jim Hsiang / Associate Technical Manager

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Prepared by : Albee Chu / Senior Specialist

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**ICES-003:2020 Issue 7, Class B** **ICES-Gen:2018 Issue 1+A1:2021** **ANSI C63.4-2014 amended as per ANSI C63.4a-2017**
Report No.:	CIBDBO-WTW-P22030411
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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

Approved by: Jim Hsiang , **Date:** 2022/4/13

Jim Hsiang / Associate Technical Manager

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Prepared by : Albee Chu / Senior Specialist

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April 25, 2024