

GMSL2 13MP Fixed Focus
Camera Module

EVDF-OOM1-RHCF

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 Block Diagram	4
1.3 Product List	4
1.4 Product Picture	5
2. Product Specification	
2.1 Product Parameter	6
2.2 Resolution Information	7
2.3 Lens Specification	8
2.4 Electrical Specification	9
2.5 Environmental Specification	9
2.6 Mean Time Between Failure (MTBF)	9
3. Hardware Information	
3.1 Connector	10
3.2 Product Drawing	11
4. Packing List	12
5. Installation Guide	13
6. Declaration And Certification	15

Revision History

Revision	Description	Date
1.0	First Released	4, Mar, 2026

1. Product Introduction

1.1 Overview

The 13MP GMSL2™ Camera Module delivers long-distance and high-resolution imaging, ideal for mobile and industrial applications. With support for up to 15 meters of cable length and an IP67-rated robust housing, it ensures reliable performance in harsh outdoor or on-the-move environments. Built-in HDR enhances image clarity in high-contrast lighting, making it perfect for AMRs, AGVs, and heavy machinery. Fully compatible with NVIDIA Jetson Orin, this camera is a powerful vision solution for edge AI and autonomous systems in dynamic, demanding conditions.

The Camera Module features cutting-edge HDR technology, ensuring exceptional image clarity and sharpness even in challenging lighting conditions. By effectively extending the dynamic range, HDR technology captures intricate shadow details and vivid highlights, delivering images with unparalleled realism and natural balance.

1.2 Block Diagram

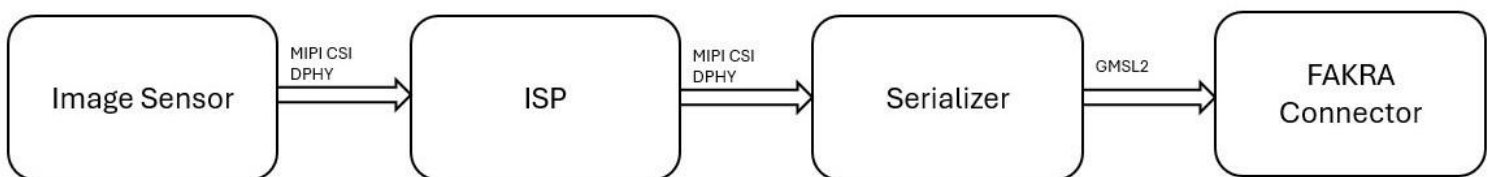


Figure 1: Block Diagram

1.3 Product List

P/N	Description
EVDF-OOM-RHCF-31	GMSL2 13MP Fixed Focus Camera Module
7W5000000390	FAKRA cable 1 meter
7W5000000400	FAKRA cable 3 meter
7W5000000340	FAKRA cable 5 meter
7W5000000350	FAKRA cable 10 meter
7W5000000360	FAKRA cable 15 meter

Table 1: Product List

1.4 Product Picture



Figure 2: Product Picture



Figure 4: Cable Picture

2. Product Specification

2.1. Product Parameter

Model Name	EVDF-OOM1-RHCF
Module Type	GMSL2 13MP Fixed Focus Camera Module
Resolution (Max.)	13MP
Frame Rate (Max. Resolution)	20fps
Output I/F	GMSL2
Sensor	onsemi AR1335
Shutter	Rolling
Video Format	YUV422
Power Consumption	Approximate 1.7W (YUV422 @Max. Resolution)
Operating Temperature	-30°C ~ 70°C
Sensor Size	1/3.2"
Pixel Size	1.1µm
Chroma Type	Color
Lens Type	Fixed Focus (M12)
Dimension (W x L x H/mm)	42 x 41 x 53
Lens FOV (D/H/V)	85°/67°/48°
Platform Support	NVIDIA Jetson Orin
Housing	IP67 Housing
Features	HDR
Dynamic Range	69dB
Warranty	3 Years
Module Weight	97.7g

Table 2: Product Parameter

2.2 Resolution Information

Resolution	YUV422	MJPEG
4192*3120	20fps	N/A
4096*3120	20fps	N/A
3840*2160	30 / 25fps	N/A
2592*1944	30 / 25fps	N/A
2560*1440	30 / 25fps	N/A
1920*1080	60 / 50 / 30 / 25fps	N/A
1280*720	100 / 90 / 60 / 50 / 30 / 25fps	N/A
640*480	100 / 90 / 60 / 50 / 30 / 25fps	N/A

Table 3: Resolution Matrix

2.3 Lens Specification

Items	Specification
F No.	2.4
Focal Length	4.0mm
Optical Back Focal Length	4.03 ± 0.2mm (in air)
Mechanical Back Focal Length	2.91 ± 0.2mm (in air)
TTL (Total Track Length)	23.24 ± 0.3mm (in air)
Image Circle	Φ14.00mm (MAX)
Lens Structure	6G1MG + IRF(8E)
Mount	M12*P0.5
Diagonal FOV (D)	85°
Horizontal FOV (H)	67°
Vertical FOV (V)	48°

Table 4: Lens Specification

2.4 Electrical Specifications

Item	Value	Unit
Input Voltage	12	V
Current @Idle	31	mA
Current @Average	140	mA
Current @Maximum	209	mA
Idle Power Rating	0.37	W
Average Power Rating	1.68	W
Maximum Power Rating	2.51	W

Table 5: Power Consumption

2.5 Operating Temperature Range

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

Table 6: Operating Temperature Range.

2.6 Mean Time between Failure (MTBF)

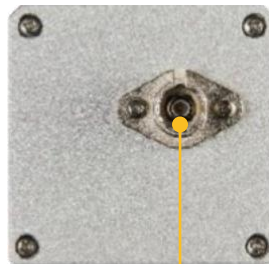
Reliability prediction methodology provides the basis for reliability evaluation and analysis. The purpose of the prediction is to predict the life time of the product in units of failure rate and MTBF.

Product	Condition	MTBF (Hours)
EVDF-OOM1-RHCF-31	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	17,031,788

Table 7: Mean Time between Failure (MTBF)

3. Hardware Information

3.1 Connector



GMSL2 FAKRA Connector

Figure 5: Connector Picture

Location	Connector Type
FAKRA	SSMB/50ohm Coxoc:S410DF01MRTC1333 (無函)SMD/Φ3.4x5.74mm,LCP,-40~+105C

Table 8: Connector Location

3.2 Product Drawing

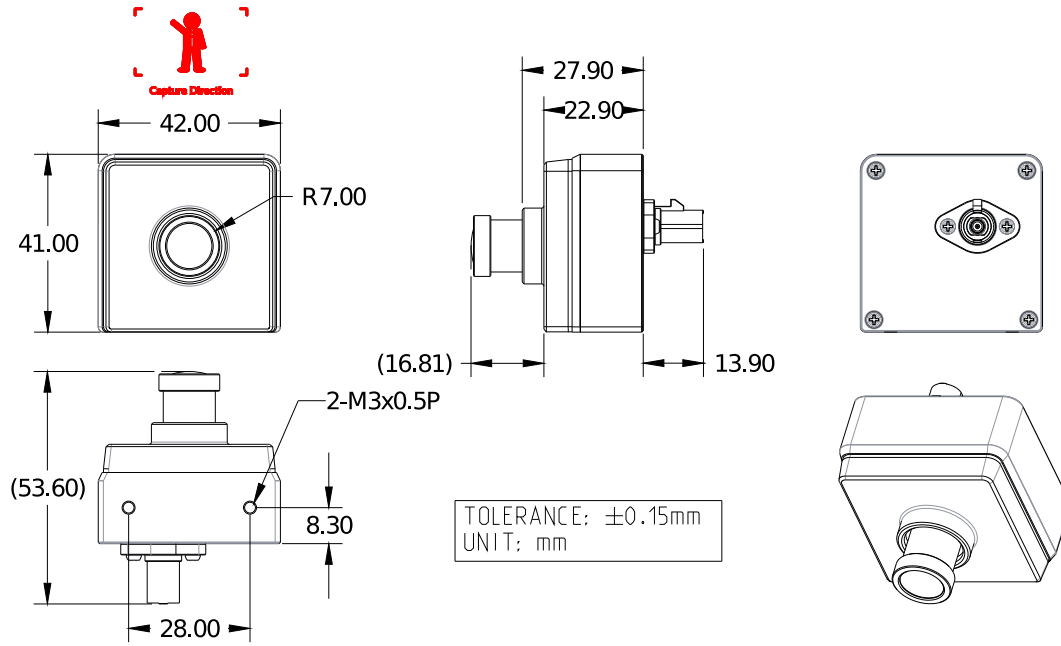


Figure 6: Product Drawing

4. Packing List

P/N	Description	Qty.
EVDF-OOM1-RHCF	GMSL2 13MP Fixed Focus Camera Module	1
*The cable and Capture board must be purchased separately.		

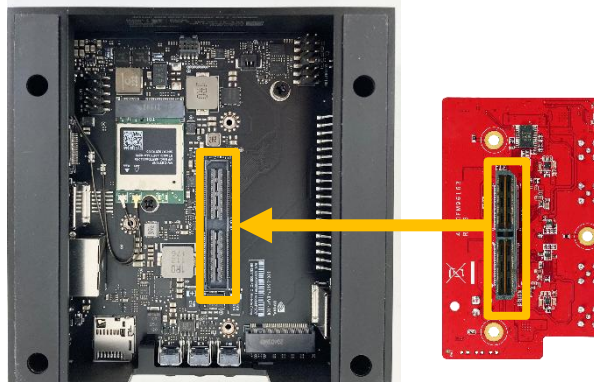
Table 10: Packing List

5. Installation Guide

Connect the camera using the GMSL coaxial cable as shown below:

Install the SAMTEC 120-pin x1 to GMSL2 FAKRA Z x4 Capture board (EB120-1S4F-13) onto the main board by aligning the 120-pin connector and pressing it down evenly until it is fully seated.

Ensure the Capture board is properly secured and correctly aligned with the main board connector.



*Ensure the correct orientation when connecting the SAMTEC 120-pin connector. The connector is equipped with a keying mechanism to prevent incorrect insertion.

Figure 11: Capture Card connect with AGX DevKit Picture

Align the FAKRA connector with one of the GMSL2 FAKRA ports on the Capture board, then push it straight in until it clicks into place, and using power cable to connect with power adapter from DC jack side (Suggest using 12V, 60W).

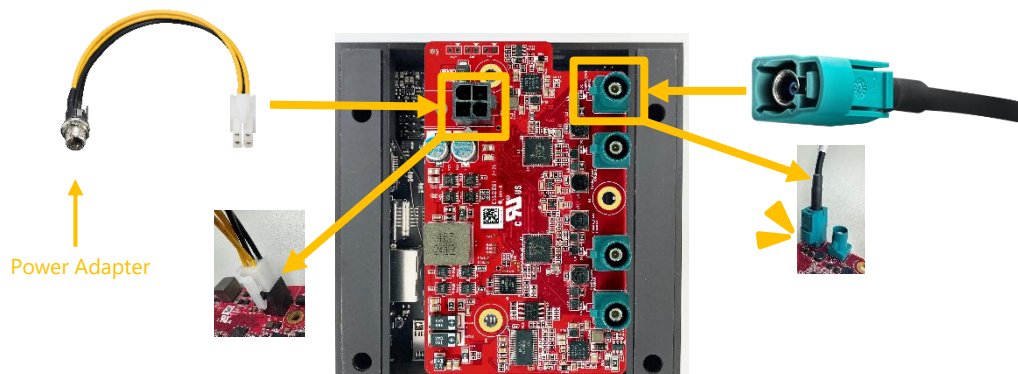


Figure 12: Capture Card insert power cable and coaxial cable Picture

Insert the other end of the coaxial cable into the camera module's FAKRA connector, ensuring proper alignment before pushing it in until it is fully locked.

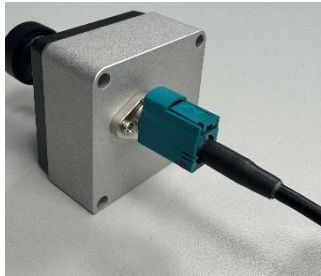


Figure 13: Coaxial cable connector with GMSL2 Camera module Picture

Double-check that the Capture board is firmly installed, both FAKRA connectors are securely fastened, and that the coaxial cable is routed without sharp bends, excessive tension, or twists.

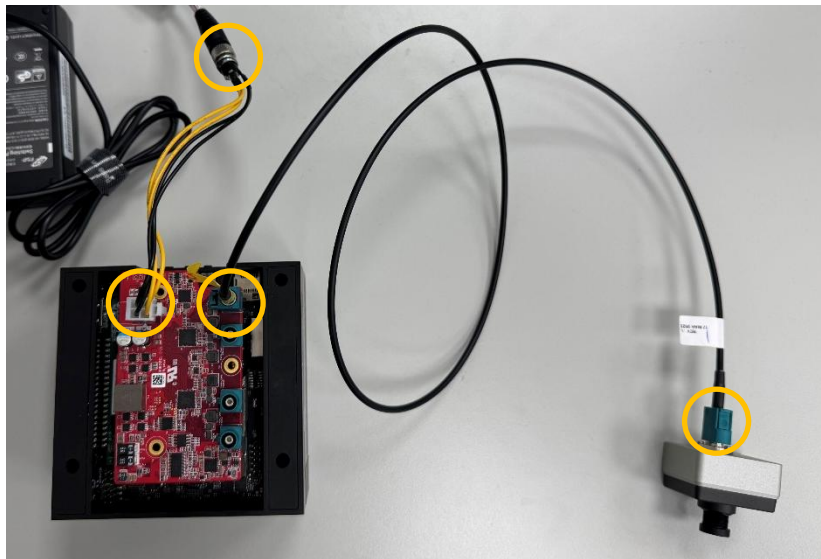



Figure 14: Installation Guide Picture

6. Declaration And Certification



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.

(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

宜鼎國際股份有限公司
Innodisk Corporation

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

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart B, Class A

ANSI C63.4-2014

ANSI C63.4a-2017

Report No.: FDBDBO-WTW-P25090225

Product: GMSL2 13MP Fixed Focus Camera Module

Brand: Innodisk

Model No.: EVDF-OOM1

Received Date: 2025/9/9

Test Date: 2025/9/9 ~ 2025/9/10

Issued Date: 2025/10/2

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:

2025/10/2

Jim Hsiang / Associate Technical Manager

This test report consists of 25 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 : Annie Chang / Senior Specialist



This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: EN 55032: 2015+A11:2020, Class A
 BS EN 55032: 2015+A11:2020, Class A
 EN 61000-3-2: 2014 (Not Applicable)
 EN IEC 61000-3-2: 2019+A1:2021+A2:2024 (Not Applicable)
 BS 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)
 BS EN 61000-3-3: 2013+A1:2019+A2:2021 (Not Applicable)
 EN 55035: 2017+A11:2020
 BS EN 55035: 2017+A11:2020

Report No.: CEBDBO-WTW-P25090225

Product: GMSL2 13MP Fixed Focus Camera Module

Brand: Innodisk

Model No.: EVDF-OOM1

Received Date: 2025/9/9

Test Date: 2025/9/9 ~ 2025/9/16

Issued Date: 2025/10/2

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:** 2025/10/2

Jim Hsiang / Associate Technical Manager

This test report consists of 55 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 : Annie Chang / Senior Specialist

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.