CIS

SLVS-EC I/F
5.1M Pixels CMOS
Color (RAW) camera module

DCC-5SLEC1R

Product Specification
& Operational Manual

CIS Corporation

Table of Contents

1. Handing Precautions

1.1. Camera Handling Precautions

- ☐ Do not use or store the camera module in dusty or humid places.
- ☐ Do not apply excessive force, vibration, or static electricity that could damage the camera module. Please handle camera module with care.
- ☐ Do not shoot direct images that are extremely bright (e.g., strong light source, sun, etc.). When extremely strong light source was shot, smear or blooming may occur. To protect the CMOS image sensor, put a cover cap or seal when the camera is not in use.
- ☐ Refer to Chapter 3.2., “External Connectors” for connecting the camera module. Improper connection may cause damages not only to the camera module but also to the connected devices.
- ☐ Confirm the mutual ground potential carefully before connecting the camera to monitors or computers. Any AC leaks from the connected devices may cause damages or destroy the camera module.
- ☐ Do not apply excessive voltage. (Use only the specified voltage.) Unstable or improper power supply voltage may cause damages or malfunction of the camera module.

Our warranty does not apply to damages or defects caused by neglecting the instructions and precautions explained in this manual.

1.2. Restrictions on Applications

- ☐ The camera module must not be used for any nuclear equipment or aerospace equipment with which mechanical failure or malfunction could result in serious bodily injury or loss of human life.
- ☐ The camera must not be used under conditions or environments other than specified in this manual.

1.3. Disclaimers (Exception Clause)

CIS should not be liable for any damages or losses if;

- damages or losses are caused by earthquake, lightning strike, fire, flood, or other acts of God.
- damages or losses are caused by deliberate or accidental misuse by user, or failure to observe information and instructions explained in this manual.
- damages or losses are caused by repair or modification conducted by user or any unauthorized party.

2. Product Outline

DCC-5SLEC1R is a color (RAW) camera module connectable to AMD KIRA™-SoM KR260 (development kit based with Zynq UltraScale+) via SLVS-EC interface. Using a 1/1.8" global shutter CMOS image sensor, the camera module outputs SLVS-EC 2 lanes and achieves 122 fps.

2.1. Features

- ☐ Global shutter type CMOS image sensor
- ☐ SLVS-EC 2Lane output
- ☐ C lens mount

2.2. Accessories

- ☐ Standard Accessory
  - FPC cable
- ☐ Optional Accessory
  - FMC conversion board (TBD)

3. Specifications

3.1. General Specifications

Electrical Specifications		
Image sensor	Image sensor	1/1.8” global shutter type B/W CMOS sensor
	Effective pixels	2472(H) × 2064(V)
	Unit cell size	2.74µm(H) × 2.74µm(V)
Video output format		SLVS-EC 2Lane
Video output frequency	Pixel clock	74.25MHz
Frame rate	SLVS-EC 2Lane (Max)	8bit:122fps / 10bit:122fps / 12bit:82fps ※Maximum frame rate varies according to the final output I/F.
Resolution (Maximum image size)		2472(H) × 2064(V)
Video format		I2C
Power requirements		DC +3.8V / +1.8V ±5%
Power consumption		1.0 W

Mechanical Specifications	
Dimensions	H:35mm W:29mm D:27mm (without projection) Refer to Section 5.1. Dimensions.
Weight	Approx. 25 g
Lens mount	C mount Refer to Section 5.1. Dimensions.

Environmental Specifications	
Safety/Quality standards	RoHS: 2011/65/EU (EU)2015/863
Operation Guaranteed Temperature	-5 ～ +45°C Humidity: 20 ~ 80%RH with no condensation
Storage Temperature	-25 ～ +60°C Humidity: 20 ~ 80%RH with no condensation

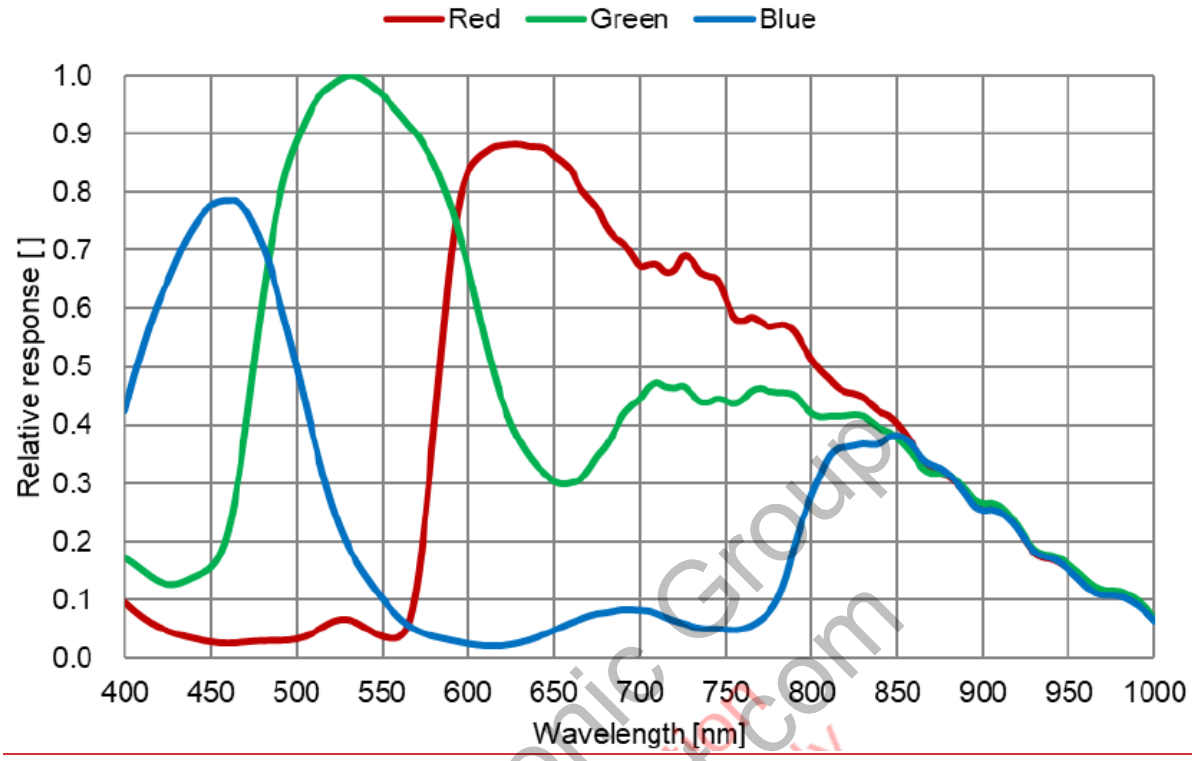
3.2. External Connectors

3.2.1 60pins connector DF40C-60DP-0.4V (HIROSE)

Pin No.	Signals	Pin No.	Signals
1	VCC+3.8V	2	VCC+1.8V
3	VCC+3.8V	4	VCC+1.8V
5	NC	6	NC
7	NC	8	NC
9	NC	10	NC
11	GND	12	GND
13	GND	14	GND
15	IMS_SDA	16	IMS_SCL
17	IMS_SDO	18	IMS_XCE
19	IMS_TOUT0	20	IMS_SLAMODE0
21	IMS_TOUT1	22	IMS_XMASTER
23	IMS_TOUT2	24	IMS_XTRIG2
25	IMS_SLAMODE1	26	IMS_XTRIG1
27	IMS_SLAMODE2	28	IMS_XHS
29	IMS_OMODE	30	IMS_XVS
31	GND	32	GND
33	IMS_XCLR	34	(Reserved)
35	IMS_INCK	36	(Reserved)
37	GND	38	GND
39	IMS_DOP0	40	(Reserved)
41	IMS_DOM0	42	(Reserved)
43	GND	44	GND
45	IMS_DOP1	46	(Reserved)
47	IMS_DOM1	48	(Reserved)
49	GND	50	GND
51	(Reserved)	52	(Reserved)
53	(Reserved)	54	(Reserved)
55	GND	56	GND
57	(Reserved)	58	(Reserved)
59	(Reserved)	60	(Reserved)

3.3. Spectral Response

※ Excludes characteristics of lens, IR cut filter, and light source.



4. Functions

4.1. CMOS Sensor

CMOS Sensor Specifications

No	Item	Descriptions
1	Sensor model name	IMX547-AAQJ-C
2	Shutter	Global shutter type Variable shutter speed (sensor resolution per 1H)
3	Input frequency	74.25MHz
4	Read out mode	Entire pixels read out mode Vertical/Horizontal 1/2 skipping mode ROI read out mode Vertical/Horizontal, Normal/Reverse flip readout mode
5	Readout rate (Max)	8bit:122.9fps 、 10bit:122.2fps 、 12bit:82.4fps
6	CDS/PGA	0dB to 24dB : Analog Gain (0.1dB step) 24.1dB to 48dB : Analog Gain + Digital Gain (0.1dB step)
7	I/O interface	SLVS-EC (1Lane / 2Lane selectable) output

4.2. EEPROM

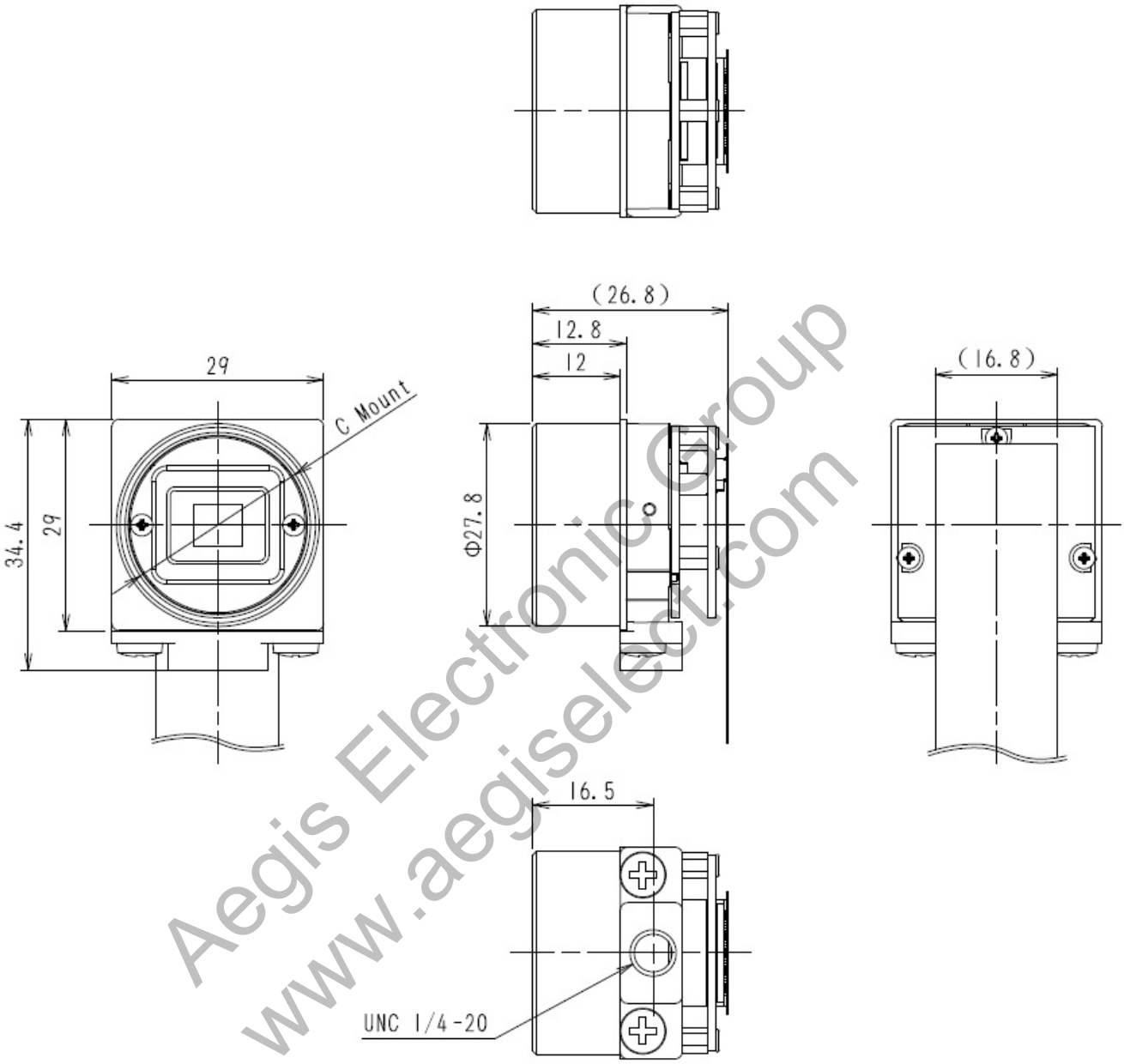
EEPROM is equipped with DCC-5SLEC1R to store data.

EEPROM Specifications

No	Item	Descriptions
1	EEPROM model name	BR24G256NUX-5
2	BUS method	I2C I/F
3	Slave address	1␣0␣1␣0␣A2␣A1␣A0␣R/W A2:0、 A1:1、 A0:0 (fix) R/W:0 write /1 read
4	Capacity	256k bit
5	Power requirements	DC+1.8V
6	Maximum operational frequency	1MHz
7	Write protect function	Invalid

5. Dimensions

5.1. Camera Dimensions



2) C mount screws comply with ANSI/ASME B1.1,1-32UN(2B).
Note 1) Screw length from the lens mount surface shall be less than 6mm.
And protruding portion of the C mount lens shall be less than 10mm.

(Unit:mm)

6. Case for Indemnity (Limited Warranty)

6.1. Product Warranty

The term of warranty of this product is within a year from the date of shipping out from our factory.
If you use the product properly and discover a defect during the warranty period, and if that was caused by designing or manufacturing, CIS Corporation, at its option, repairs or replaces it at no charge to you. Products out of warranty period will be subject to charge.

CIS should not hold responsible for damages or losses if;

- damages or losses are caused by earthquake, lightning strike, fire, flood or other acts of God.
- damages or losses are caused by deliberate or accidental misuse by user, or failure to observe the information contained in the instructions in this Product Specification and Operational Manual.
- damages or losses are caused by repair or modification conducted by customer or any unauthorized party.

6.2. CMOS Defective Pixels

CIS applies defective pixel correction prior to shipment of the product. However, the number of defective pixels are subject to increase due primarily to the effect of cosmic rays. Due to this nature, CIS should not hold responsible for the natural increase of defective pixels.

6.3. Product Support

Should you have any problems in function of the product you purchased, and if you need our further analysis and/or repair, please contact your local distributor.