LEOPARD IMAGING

LI-MULTI-SENSOR-CPHY-FMC-101H

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INTRODUCTION

The LI-MULTI-SENSOR-CPHY-FMC-101H is a MIPI C-PHY camera with OmniVision 1/2.49" CMOS 11.3MP image color sensor OS12D40. It equipped with multiple connectors which could support MIPI D-PHY IPEX camera modules, MIPI DSI Raspberry Pi display panel for video pass-through and MIPI CSI2 cameras for Raspberry Pi. It's compatible with AMD platform. This camera outputs RAW data.

SPECIFICATIONS

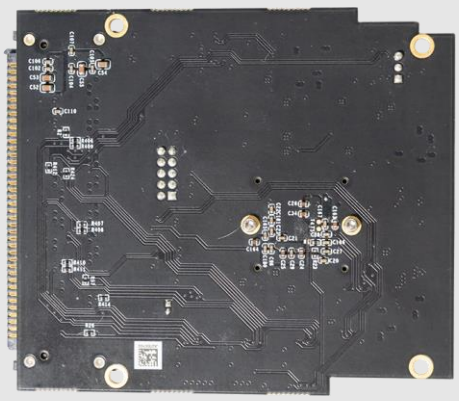
Sensor	OmniVision 1/2.49" CMOS 11.3MP image sensor
Optical Format	1/2.49"
Resolution	4512 (H) x 2512 (V) (active pixels)
Pixel Size	1.404 µm x 1.404 µm
Color / Mono	Color sensor
Output Format	10-bit RGB 4-cell pattern Bayer RAW
Maximum Image transfer Rate	60 fps @ 4512 x 2512
ISP	Not included
Interface (OS12D40)	3 trio C-PHY, up to 1.6 Gsps / trio
Power Consumption	TBD
Operating Temp	TBD
Storage Temp	TBD
Weight	TBD

APPLICATIONS

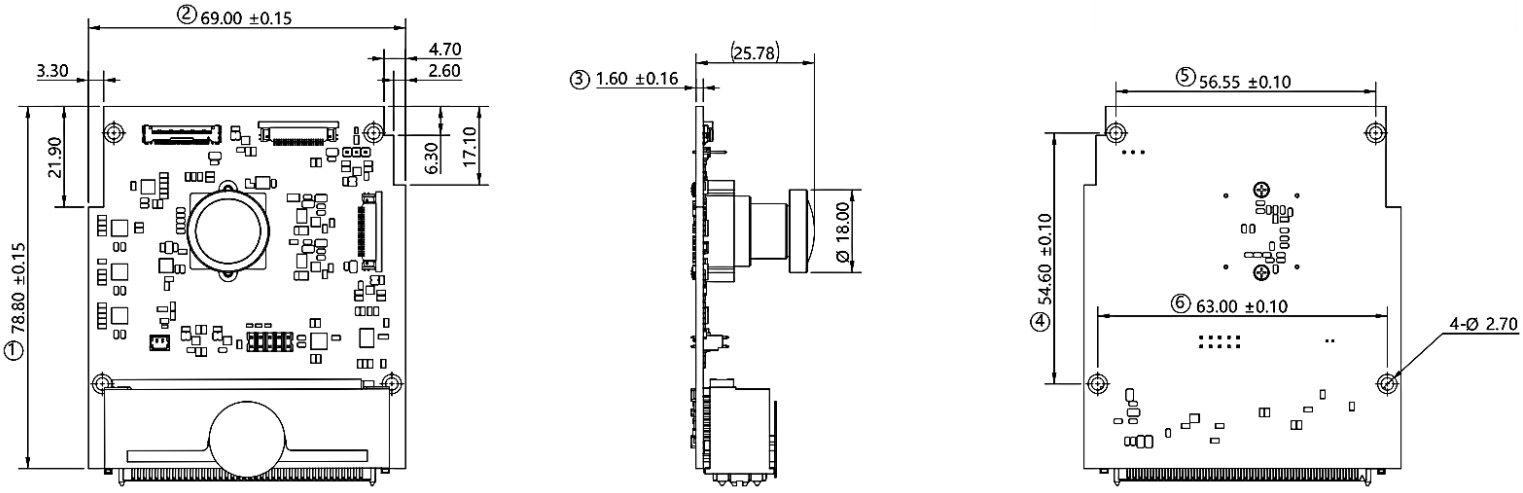
- Automotive
- Industrial Vision and Healthcare (IVH)
- Test & Measurement Equipment (TME)

LENS SPECIFICATIONS

Focal Length	2.8 mm
Aperture, F/#	2.8
Field of View (FOV)	112˚ diagonal at 7.23 mm
	101.5˚ horizontal at 6.32 mm
	65˚ vertical at 3.52 mm
Distortion (F-tan theta)	-13% at DFOV
Chief Ray Angle	12.5˚ at DFOV
IR Filter	660 nm IR cut filter
Lens Mount	M12 x P0.5



DIMENSIONS



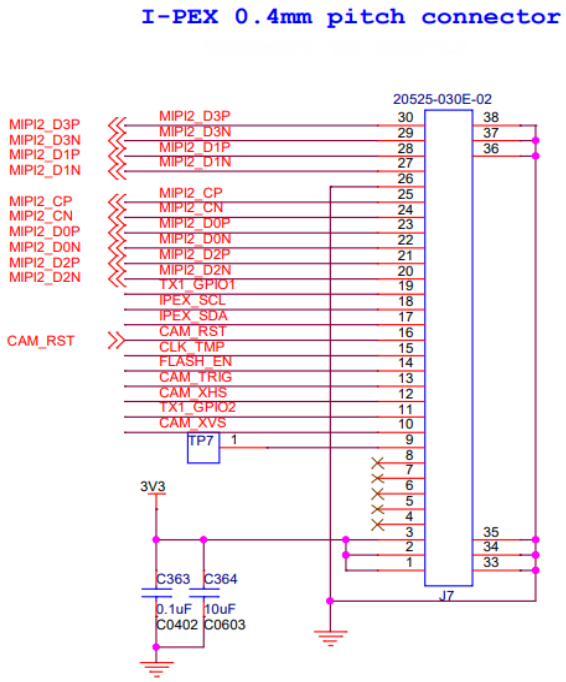
NOTE:

- ⊗ marked are important sizes.
- Tolerances for the unmarked – refer to the Tolerance table.
- All materials are compliant with RoHS requirements.
- Unit: mm

TOLERANCE TABLE					
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
0.5 < X≤3	±0.1	0.5 < X≤3	±0.2	X≤10	±1°
3 < X≤6	±0.1	3 < X≤6	±0.5	10 < X≤50	±30'
6 < X≤30	±0.2	6 < X≤30	±1	50 < X≤120	±20'
30 < X≤120	±0.3	X > 30	±2	120 < X≤400	±10'
120 < X≤400	±0.5			X > 400	±5'
400 < X≤1000	±0.8				
X > 1000	±1.2				

INTERFACE J7 (Connect To MIPI D-PHY IPEX Camera Modules)

- Connector Part#: 20525-030E-02
- Number of Positions: 30
- Pitch: 0.4 mm
- Mating I-PEX Cable: FAW-1233
- External power supply from AMD: 3.3V



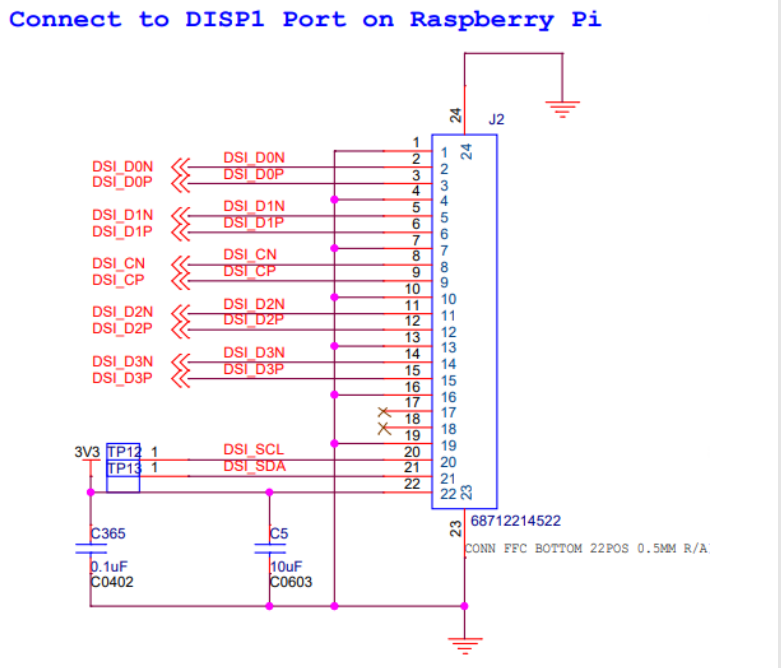
PINOUT DETAILS OF J7

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	3V3	POWER	3.3V power supply (Must be provided from host side)	3.3V
2	3V3	POWER	3.3V power supply (Must be provided from host side)	3.3V
3	3V3	POWER	3.3V power supply (Must be provided from host side)	3.3V
4	NC	-	-	-
5	NC	-	-	-
6	NC	-	-	-
7	NC	-	-	-
8	NC	-	-	-
9	NC	-	-	-
10	CAM_XVS	I/O	GPIO signal	1.8V
11	TX1_GPIO2	I/O	GPIO signal	1.8V
12	CAM_XHS	I/O	GPIO signal	1.8V
13	CAM_TRIG	INPUT	GPIO signal	1.8V

Pin No	Signal Name	Pin Type	Description	Voltage Level
14	FLASH_EN	I/O	GPIO signal	1.8V
15	CLK_TMP	I/O	GPIO signal	1.8V
16	CAM_RST	I	GPIO signal	1.8V
17	IPEX_SDA	I/O	The SDA signal of camera I2C	1.8V
18	IPEX_SCL	I/O	The SCL signal of camera I2C	1.8V
19	TX1_GPIO1	I/O	GPIO signal	1.8V
20	MIPI2_D2N	I/O	MIPI signal (D-PHY)	1.2V
21	MIPI2_D2P	I/O	MIPI signal (D-PHY)	1.2V
22	MIPI2_D0N	I/O	MIPI signal (D-PHY)	1.2V
23	MIPI2_D0P	I/O	MIPI signal (D-PHY)	1.2V
24	MIPI2_CN	I/O	MIPI clock signal (D-PHY)	1.2V
25	MIPI2_CP	I/O	MIPI clock signal (D-PHY)	1.2V
26	GND	-	GND	-
27	MIPI2_D1N	I/O	MIPI signal (D-PHY)	1.2V
28	MIPI2_D1P	I/O	MIPI signal (D-PHY)	1.2V
29	MIPI2_D3N	I/O	MIPI signal (D-PHY)	1.2V
30	MIPI2_D3P	I/O	MIPI signal (D-PHY)	1.2V

INTERFACE J2 (Connect To MIPI DSI Raspberry Pi Display Panel For Video Pass-through)

- Connector Part#: 68712214522
- Number of Positions: 22
- Pitch: 0.5 mm
- External power supply from AMD: 3.3V

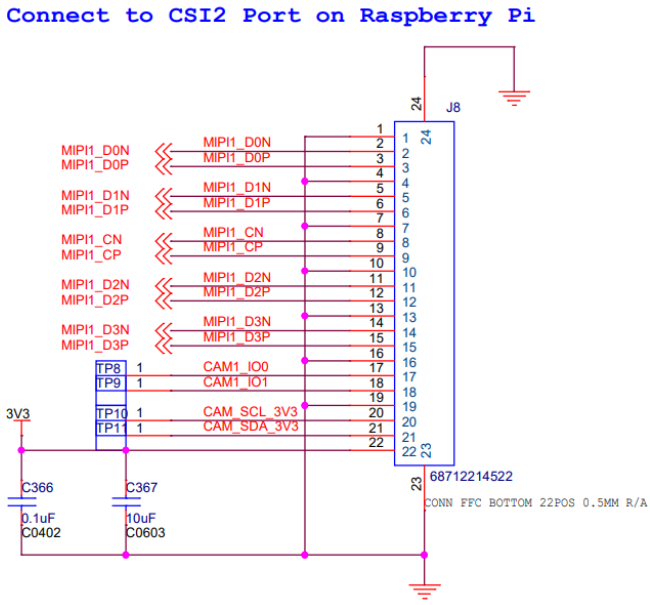


PINOUT DETAILS OF J2

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	GND	-	GND	-
2	DSI_D0N	I/O	MIPI signal(DSI)	1.2V
3	DSI_D0P	I/O	MIPI signal(DSI)	1.2V
4	GND	-	GND	-
5	DSI_D1N	I/O	MIPI signal(DSI)	1.2V
6	DSI_D1P	I/O	MIPI signal(DSI)	1.2V
7	GND	-	GND	-
8	DSI_CN	I/O	MIPI signal(DSI)	1.2V
9	DSI_CP	I/O	MIPI signal(DSI)	1.2V
10	GND	-	GND	-
11	DSI_D2N	I/O	MIPI signal(DSI)	1.2V
12	DSI_D2P	I/O	MIPI signal(DSI)	1.2V
13	GND	-	GND	-
14	DSI_D3N	I/O	MIPI signal(DSI)	1.2V
15	DSI_D3P	I/O	MIPI signal(DSI)	1.2V
16	GND	-	GND	-
17	NC	-	-	-
18	NC	-	-	-
19	GND	-	GND	-
20	DSI_SCL	I/O	The SCL signal of DSI I2C	3.3V
21	DSI_SDA	I/O	The SDA signal of DSI I2C	3.3V
22	3V3	POWER	3.3V power supply (Must be provided from host side)	3.3V

INTERFACE J8 (Connect To MIPI CSI2 cameras for Raspberry Pi)

- Connector Part#: 68712214522
- Number of Positions: 22
- Pitch: 0.5 mm
- External power supply from AMD: 3.3V



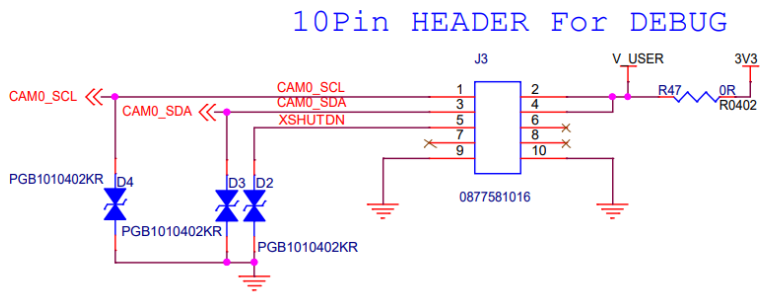
PINOUT DETAILS OF J8

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	GND	-	GND	-
2	MIPI1_D0N	I/O	MIPI signal(CSI)	1.2V
3	MIPI1_D0P	I/O	MIPI signal(CSI)	1.2V
4	GND	-	GND	-
5	MIPI1_D1N	I/O	MIPI signal(CSI)	1.2V
6	MIPI1_D1P	I/O	MIPI signal(CSI)	1.2V
7	GND	-	GND	-
8	MIPI1_CN	I/O	MIPI signal(CSI)	1.2V
9	MIPI1_CP	I/O	MIPI signal(CSI)	1.2V
10	GND	-	GND	-
11	MIPI1_D2N	I/O	MIPI signal(CSI)	1.2V
12	MIPI1_D2P	I/O	MIPI signal(CSI)	1.2V
13	GND	-	GND	-
14	MIPI1_D3N	I/O	MIPI signal(CSI)	1.2V
15	MIPI1_D3P	I/O	MIPI signal(CSI)	1.2V
16	GND	-	GND	-
17	CAM1_IO0	I/O	GPIO signal	3.3V

Pin No	Signal Name	Pin Type	Description	Voltage Level
18	CAM1_IO1	I/O	GPIO signal	3.3V
19	GND	I/O	GND	-
20	CAM_SCL_3V3	I/O	The SCL signal of CSI I2C	3.3V
21	CAM_SDA_3V3	I/O	The SDA signal of CSI I2C	3.3V
22	3V3	POWER	3.3V power supply (Must be provided from host side)	3.3V

INTERFACE J3 (For Debug)

- Connector Part#: 0877581016
- Number of Positions: 10
- Pitch: 2 mm

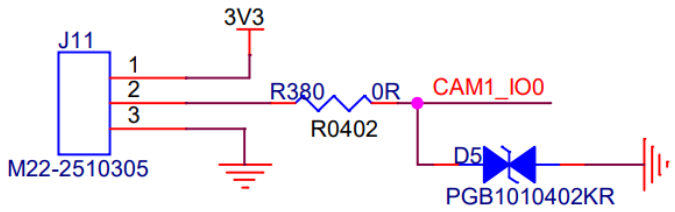


PINOUT DETAILS OF J3

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	CAM0_SCL	I/O	The SCL signal of camera (OS12D40) I2C	1.8V
2	3V3	-	POWER	3.3V
3	CAM0_SDA	I/O	The SDA signal of camera (OS12D40) I2C	1.8V
4	3V3	-	POWER	3.3V
5	XSHUTDN	I/O	GPIO signal	1.8V
6	NC	-	-	-
7	NC	-	-	-
8	NC	-	-	-
9	GND	-	-	-
10	GND	-	-	-

INTERFACE J11

- Connector Part#: M22-2510305
- Number of Positions: 3
- Pitch: 2 mm

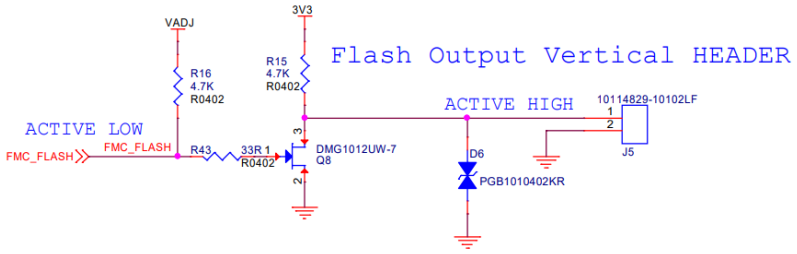


PINOUT DETAILS OF J11

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	3V3	-	POWER	3.3V
2	CAM1_IO0	I/O	GPIO signal	3.3V
3	GND	-	-	-

INTERFACE J5

- Connector Part#: 10114829-10102LF
- Number of Positions: 2
- Pitch: 1.25 mm



PINOUT DETAILS OF J5

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	ACTIVE	OUTPUT	GPIO signal	3.3V
2	GND	-	-	-

REVISION HISTORY

Revision	Description	Release Date
0.1	Initial draft.	04 Jun 2025
0.2	Updated pictures on the page 1 & 2.	20 May 2026

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