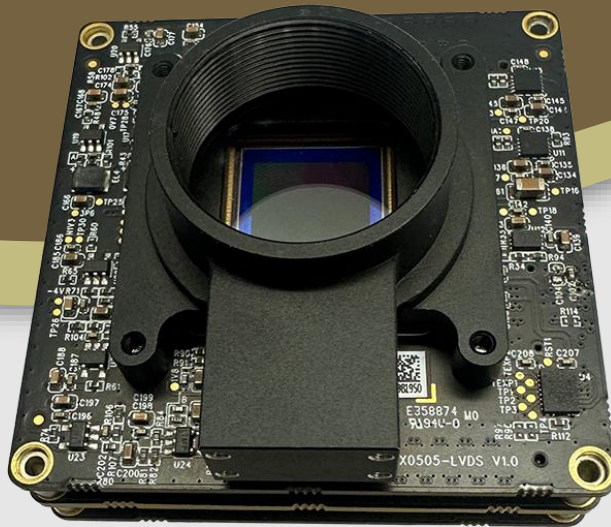




LEOPARD
IMAGING

LI-GMAX0505-MIPI-VDT-NL



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INTRODUCTION

The LI-GMAX0505-MIPI-VDT-NL is equipped with Gpixel 25MP global shutter CMOS image sensor GMAX0505 and low power FPGA CrossLink. Assembly with no lens, this camera outputs 10-bit / 12-bit RAW data.

SPECIFICATIONS

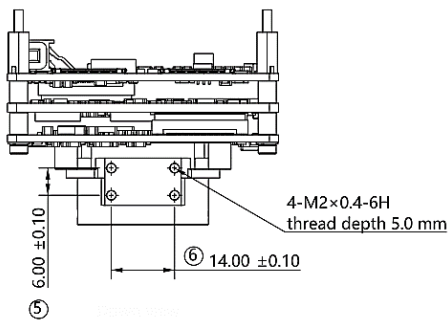
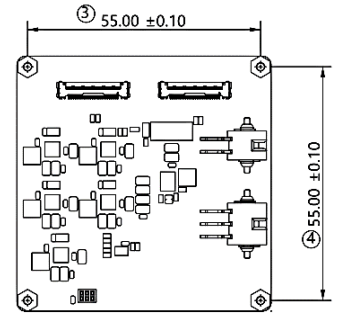
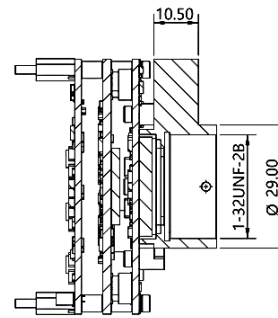
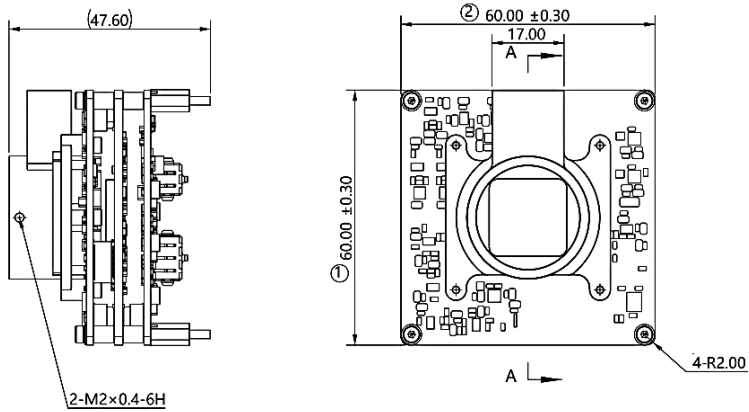
Sensor	Gpixel 25MP Global Shutter CMOS Image Sensor GMAX0505
Optical Format	1.1"
Shutter	Global shutter
Resolution	5120 (H) x 5120 (V) (active pixels)
Pixel Size	2.5 x 2.5 μm
Output Format	10-bit / 12-bit RAW data
Max. Frame Rate	150fps @ 10-bit 42fps @ 12-bit
ISP	Not included
FPGA	Included for signal conversion from LVDS to MIPI
Color / Mono	Color
Interface	2x 4-lane MIPI CSI-2
Power Consumption	TBD
Operating Temp	-20°C ~ +50°C
Storage Temp	-30°C ~ +70°C
Lens Mount	C-mount
Weight	~ 94 g
Part#	LI-GMAX0505-MIPI-VDT-NL

APPLICATIONS

- Machine Vision
- High Resolution Industrial Inspection
- Intelligent Traffic System (ITS)



DIMENSIONS



TOLERANCE TABLE

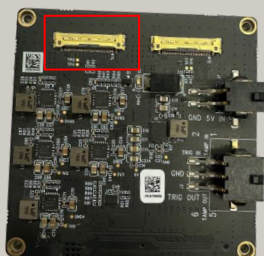
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
0.5 < X ≤ 3	±0.1	0.5 < X ≤ 3	±0.2	X ≤ 10	±1°
3 < X ≤ 6	±0.1	3 < X ≤ 6	±0.5	10 < X ≤ 50	±30'
6 < X ≤ 30	±0.2	6 < X ≤ 30	±1	50 < X ≤ 120	±20'
30 < X ≤ 120	±0.3	X > 30	±2	120 < X ≤ 400	±10'
120 < X ≤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

NOTE:

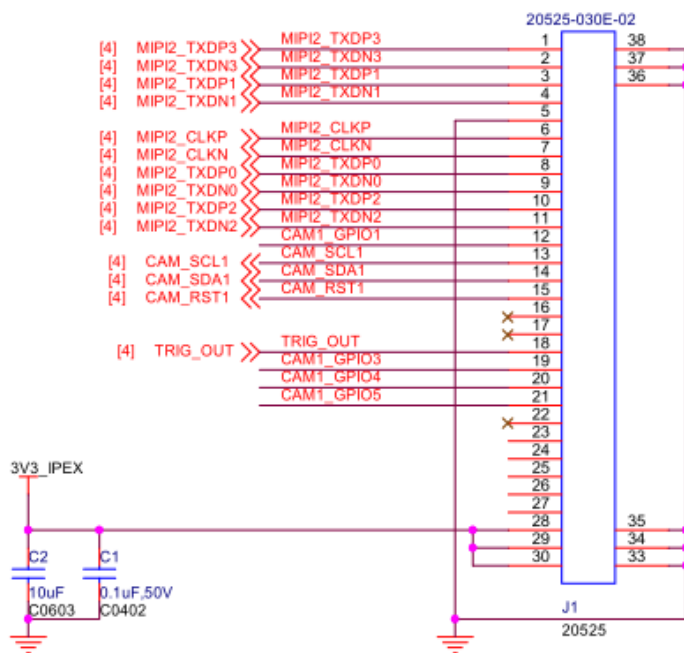
- ⊗ marked are important sizes.
- Other unmarked tolerances are ± 0.3 mm.
- Unit: mm

INTERFACE J1

- Connector Part#: 20525-030E-02
- Number of Positions: 30
- Pitch: 0.4 mm
- Mating I-PEX Cable: FAW-1233-03
- External Power Supply: 3.3V



MIPI MODULE 1



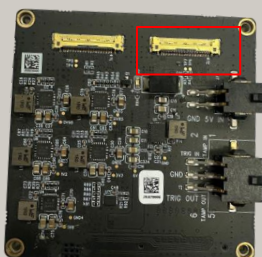
PINOUT DETAILS OF J1

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI2_TXDP3	OUTPUT	MIPI2 Clock Data3 Differential Pair +	MIPI DPHY
2	MIPI2_TXDN3	OUTPUT	MIPI2 Clock Data3 Differential Pair -	MIPI DPHY
3	MIPI2_TXDP1	OUTPUT	MIPI2 Clock Data1 Differential Pair +	MIPI DPHY
4	MIPI2_TXDN1	OUTPUT	MIPI2 Clock Data1 Differential Pair -	MIPI DPHY
5	GND	POWER	Ground signal for digital and analog	-
6	MIPI2_CLKP	OUTPUT	MIPI2 Clock Lane Differential Pair +	MIPI DPHY
7	MIPI2_CLKN	OUTPUT	MIPI2 Clock Lane Differential Pair -	MIPI DPHY
8	MIPI2_TXDP0	OUTPUT	MIPI2 Clock Data0 Differential Pair +	MIPI DPHY
9	MIPI2_TXDN0	OUTPUT	MIPI2 Clock Data0 Differential Pair -	MIPI DPHY
10	MIPI2_TXDP2	OUTPUT	MIPI2 Clock Data2 Differential Pair +	MIPI DPHY
11	MIPI2_TXDN2	OUTPUT	MIPI2 Clock Data2 Differential Pair -	MIPI DPHY
12	CAM1_GPIO1	I/O	General-Purpose Input/Output 1	1.8V
13	CAM_SCL1	INPUT	1.8V IO Camera I2C SCL signal (Externally pull up to 1.8V using 4.7K)	1.8V

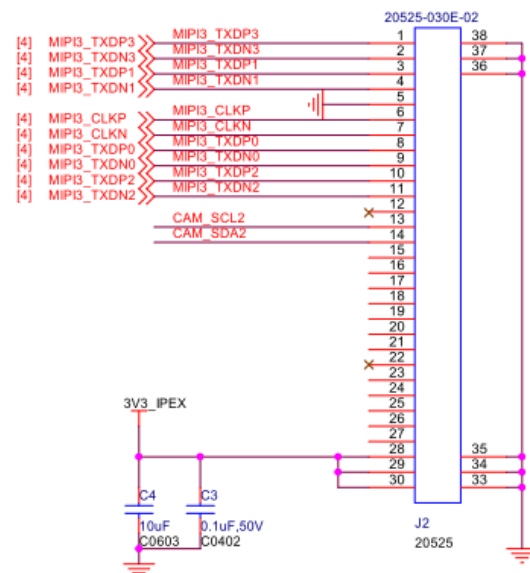
Pin No	Signal Name	Pin Type	Description	Voltage Level
14	CAM_SDA1	I/O	1.8V IO Camera I2C SDA signal (Externally pull up to 1.8V using 4.7K)	1.8V
15	CAM_RST1	INPUT	1.8V IO camera reset signal (Externally pull up to 1.8V using 10k)	1.8V
16	NC	-	-	-
17	NC	-	-	-
18	TRIG_OUT	INPUT	1.8V IO Trigger signla for camera	1.8V
19	CAM1_GPIO3	I/O	General-Purpose Input/Output 3	1.8V
20	CAM1_GPIO4	I/O	General-Purpose Input/Output 4	1.8V
21	CAM1_GPIO5	I/O	General-Purpose Input/Output 5	1.8V
22	NC	-	-	-
23	NC	-	-	-
24	NC	-	-	-
25	NC	-	-	-
26	NC	-	-	-
27	NC	-	-	-
28	3V3_IPEX	POWER	3.3V power supply	3.3V
29	3V3_IPEX	POWER	3.3V power supply	3.3V
30	3V3_IPEX	POWER	3.3V power supply	3.3V

● INTERFACE J2

- Connector Part#: 20525-030E-02
- Number of Positions: 30
- Pitch: 0.4 mm
- Mating I-PEX Cable: FAW-1233-03
- External Power Supply: 3.3V



MIPI MODULE 2

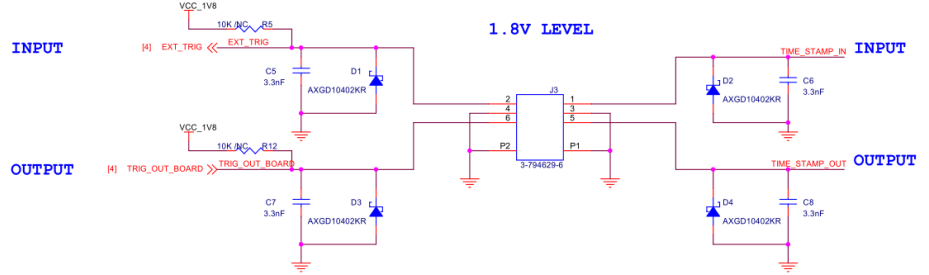
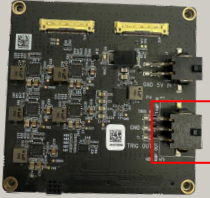


PINOUT DETAILS OF J2

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI3_TXDP3	OUTPUT	MIPI3 Clock Data3 Differential Pair +	MIPI DPHY
2	MIPI3_TXDN3	OUTPUT	MIPI3 Clock Data3 Differential Pair -	MIPI DPHY
3	MIPI3_TXDP1	OUTPUT	MIPI3 Clock Data1 Differential Pair +	MIPI DPHY
4	MIPI3_TXDN1	OUTPUT	MIPI3 Clock Data1 Differential Pair -	MIPI DPHY
5	GND	POWER	Ground signal for digital and analog	-
6	MIPI3_CLKP	OUTPUT	MIPI3 Clock Lane Differential Pair +	MIPI DPHY
7	MIPI3_CLKN	OUTPUT	MIPI3 Clock Lane Differential Pair -	MIPI DPHY
8	MIPI3_TXDP0	OUTPUT	MIPI3 Clock Data0 Differential Pair +	MIPI DPHY
9	MIPI3_TXDN0	OUTPUT	MIPI3 Clock Data0 Differential Pair -	MIPI DPHY
10	MIPI3_TXDP2	OUTPUT	MIPI3 Clock Data2 Differential Pair +	MIPI DPHY
11	MIPI3_TXDN2	OUTPUT	MIPI3 Clock Data2 Differential Pair -	MIPI DPHY
12	NC	-	-	-
13	CAM_SCL2	INPUT	1.8V IO Camera I2C SCL signal (Externally pull up to 1.8V using 4.7K)	1.8V
14	CAM_SDA2	I/O	1.8V IO Camera I2C SDA signal (Externally pull up to 1.8V using 4.7K)	1.8V
15	NC	-	-	-
16	NC	-	-	-
17	NC	-	-	-
18	NC	-	-	-
19	NC	-	-	-
20	NC	-	-	-
21	NC	-	-	-
22	NC	-	-	-
23	NC	-	-	-
24	NC	-	-	-
25	NC	-	-	-
26	NC	-	-	-
27	NC	-	-	-
28	3V3_IPEX	POWER	3.3V power supply	3.3V
29	3V3_IPEX	POWER	3.3V power supply	3.3V
30	3V3_IPEX	POWER	3.3V power supply	3.3V

INTERFACE J3 (Trig)

- Connector Part#: 3-794269-6
- Number of Positions: 6
- Pitch: 3.0 mm

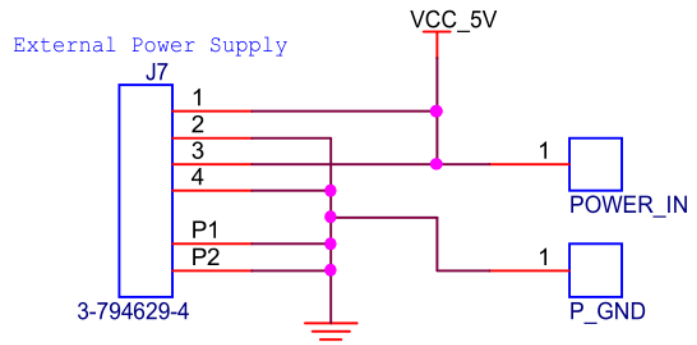
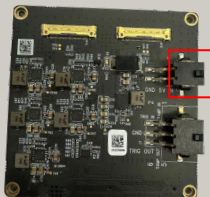


PINOUT DETAILS OF J3

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	TIME_STAMP_IN	INPUT	1.8V IO time stamp signal	1.8V
2	EXT_TRIG	INPUT	1.8V IO external trigger signal	1.8V
3	GND	POWER	Ground signal for digital and analog	-
4	GND	POWER	Ground signal for digital and analog	-
5	TIME_STAMP_OUT	OUTPUT	1.8V IO time stamp signal	1.8V
6	TRIG_OUT_BOARD	OUTPUT	1.8V IO external trigger signal	1.8V

INTERFACE J7 (External 5V Power Supply)

- Connector Part#: 3-794269-4
- Number of Positions: 4
- Pitch: 3.0 mm

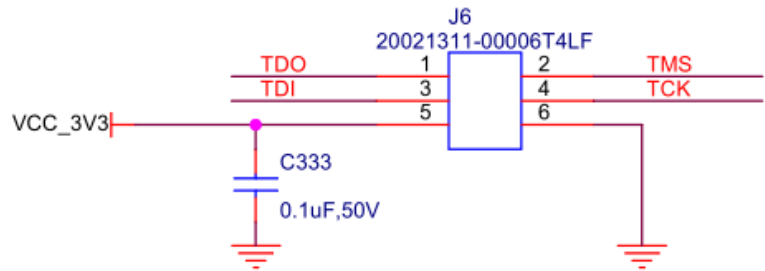
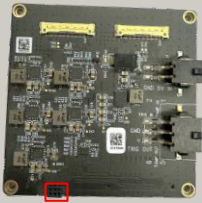


PINOUT DETAILS OF J7

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	VCC_5V	POWER	5V power supply	5V
2	GND	POWER	Ground signal for digital and analog	-
3	VCC_5V	POWER	5V power supply	5V
4	GND	POWER	Ground signal for digital and analog	-

INTERFACE J6 (FPGA Programming)

- Connector Part#: 20021311-00006T4LF
- Number of Positions: 6
- Pitch: 1.27 mm

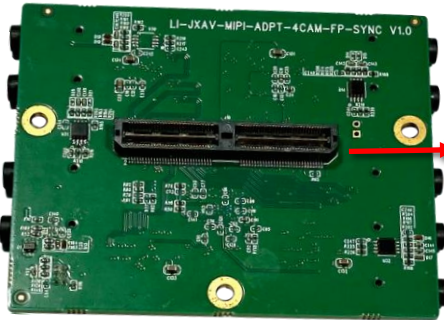


PINOUT DETAILS OF J6

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	TDO	OUTPUT	3.3V IO JTAG test data output signal	3.3V
2	TMS	INPUT	3.3V IO JTAG test mode select signal	3.3V
3	TDI	INPUT	3.3V IO JTAG test data input signal	3.3V
4	TCK	INPUT	3.3V IO JTAG test clock input signal	3.3V
5	VCC_3V3	POWER	3.3V power supply	3.3V
6	GND	POWER	Ground signal for digital and analog	-

LI-AGO-ADP-GMAX0505-MIPI-NL

LI-JXAV-MIPI-ADPT-4CAM-FP-SYNC V1.0



To NVIDIA® Jetson
AGX Orin™
Developer Kit

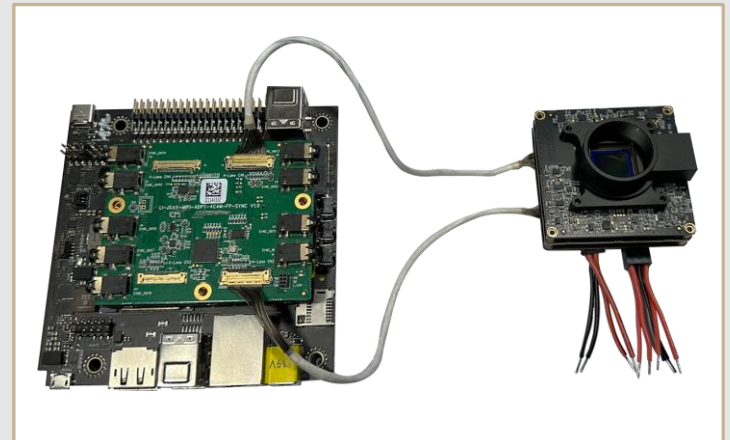


To Camera J1

To Camera J2

SPECIFICATIONS

- Compatible with NVIDIA® Jetson AGX Orin™ Developer Kit
- Support up to 2 cameras
- 5 VDC power supply for camera
- Weight: ~ 113 g
- Resolution: TBD
- Power consumption: TBD
- Allows customization



NOTE:

NVIDIA® Jetson AGX Orin™ Developer Kit is **NOT** included

BOM

#	Items	QTY
1	LI-GMAX0505-MIPI-VDT-NL	1
2	LI-JXAV-MIPI-ADPT-4CAM-FP-SYNC V1.0	1
3	FAW-1233-02	2
4	LI-794617-4-cable-80mm	1
5	LI-794617-6-cable-50mm	1

- REVISION HISTORY

Revision	Description	Release Date
0.1	Initial draft.	22 Nov 2024
0.2	Corrected optical format.	22 May 2025

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