



FSM-IMX296 Datasheet

Sony IMX296LLR / IMX296LQR Sensor Module

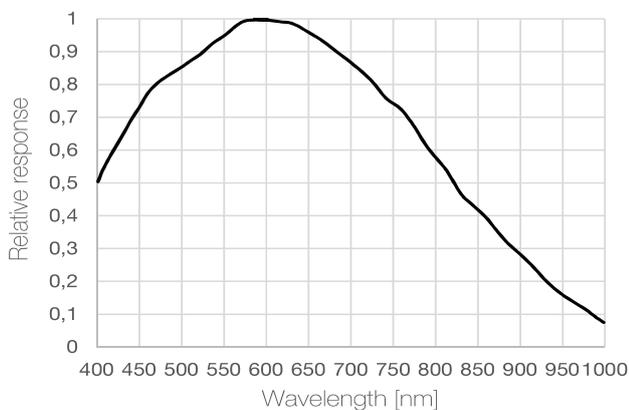
FRAMOS Sensor Module



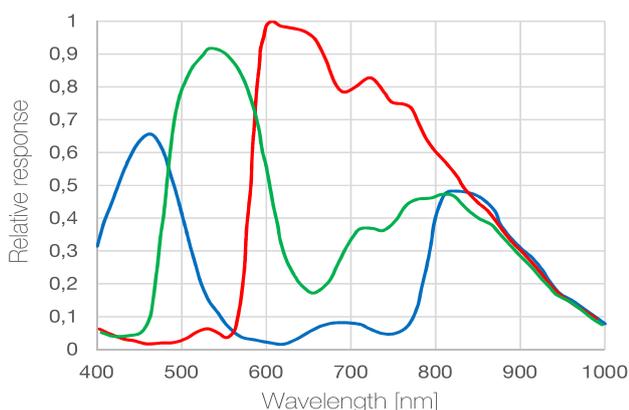
Key Benefits & Features:

- 1.6 Mpx Sony CMOS Global Shutter sensor module, ready to embed!
- All FSMs are part of a rapid prototyping ecosystem, consisting of:
 - ✓ Adapters to various processing boards
 - ✓ Design sources for deep embedding
 - ✓ Various accessories and design in services

FSM-IMX296M (Monochrome):



FSM-IMX296C (Color):



Specification

Model Name	FSM-IMX296M / FSM-IMX296C (V1A-V1B)
------------	-------------------------------------

Image Sensor

Vendor / Name	Sony IMX296LLR / IMX296LQR
Shutter Type	CMOS Global Shutter
Technology / Grade	Pregius (Gen2) / Sensing
Chromaticity	Mono
Optical Format	1/2.9"
Pixel Size	3.45 x 3.45 μm
Max. Resolution	1.6 Mpx / 1456 x 1088 px
Framerate (max.)	60.4 FPS (1-Lane)
Bit Depth(s)	10 bit

Interface

Data Interface	MIPI CSI-2 (1 Lane)
Communication Interface	I ² C (4-wire serial)
Drive Frequency(s)	37.125 / 74.25 / 54 MHz
Input Voltages	1.2V, 1.8V, 3.3V
Interface Connector	Hirose DF40C-60DP-0.4V(51)
EEPROM (Sensor ID)	No

Mechanical

Dimensions (HxWxD)	26.5 x 26.5
--------------------	-------------

Environmental

Operating Temperature	-30°C to +75°C (function) -10°C to +60°C (performance)
Storage Temperature	-40°C to +85°C
Ambient Humidity	20% to 95% RH, non condensing

Software Support

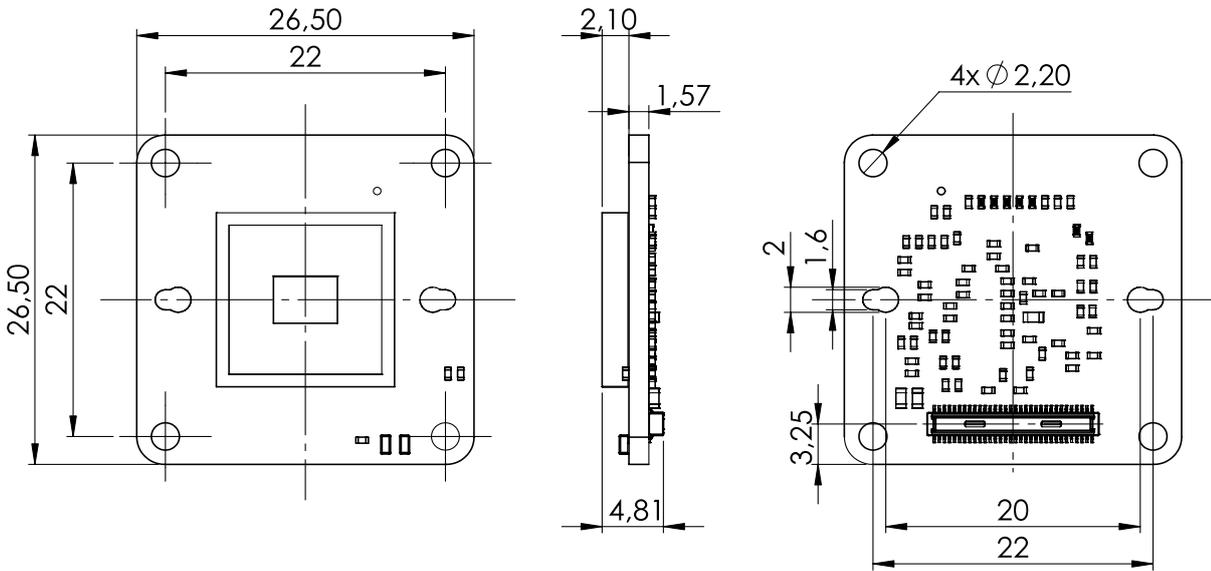
Driver	V4L2 Based Device Driver Libargus / Argus Camera (ISP Tuned) Isaac ROS compliant
Supported Platform(s)	NVIDIA Jetson Family: AGX Xavier, Nano, TX2 (NX), Xavier NX, AGX Orin. Qualcomm DragonBoard 410C
Software Version(s)	NVIDIA JP4.6 / L4T32.6.1 DB410C: Linaro 18.01 / Kernel 4.14

Suggested Accessories & Adapters

Compatible FSA Type	FSA-FT6/A
Recommended Devkit(s)	FSM-IMX296x/TXA_Devkit (TX2, AGX) FSM-IMX296x/NVN_Devkit (Nano, NX)
Lens Mounts	M12 or C/CS-Mount options

A matrix with compatible *Sensor Adapters (FSA)* and *Processor Board Adapters (FPA)* for various setups can be found at the end of this document.

Mechanical Drawing



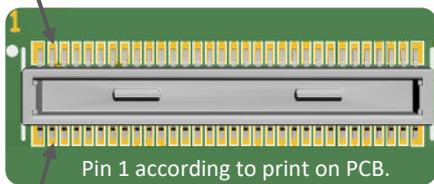
Sensor image optical center is in mechanical board center.

Connector Pinout

Type: Hirose DF40C-60DP-0.4V(51)

Mating Type: Hirose DF40HC(4.0)-60DS-0.4V(51)

Pin	Name
1	NC
3	NC
5	3V3
7	3V3
9	1V8
11	GND
13	GND
15	XCLR
17	NC
19	XMASTER
21	SCK_SCL
23	XCE
25	XVS
27	SDI_SDA
29	XHS
31	XTRIG
33	NC
35	SLAMODE
37	GND
39	INCK
41	NC
43	GND
45	NC
47	NC
49	GND
51	CSI_DO_N
53	CSI_DO_P
55	GND
57	NC
59	NC



Pin	Name
2	NC
4	NC
6	1V2
8	1V2
10	NC
12	GND
14	GND
16	NC
18	SDO
20	TOUT1
22	NC
24	NC
26	TOUT2
28	NC
30	NC
32	TOUT0
34	NC
36	NC
38	GND
40	NC
42	NC
44	GND
46	NC
48	NC
50	GND
52	NC
54	NC
56	GND
58	CSI_CLK_P
60	CSI_CLK_N

Signals are routed directly from image sensor to connector. Details on specific signals are described in the respective image sensor datasheet.