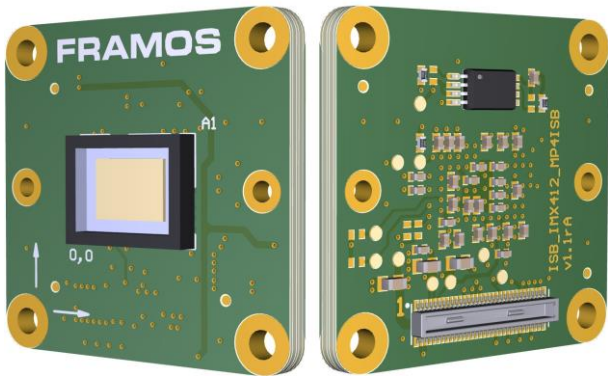




FSM-IMX412 Datasheet

Sony IMX412-AACK Sensor Module

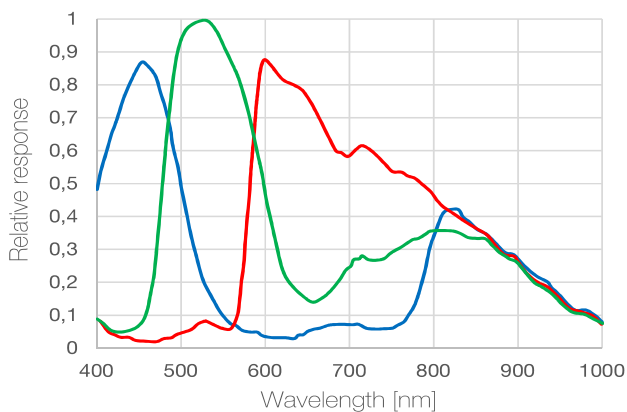
FRAMOS Sensor Module



Key Benefits & Features:

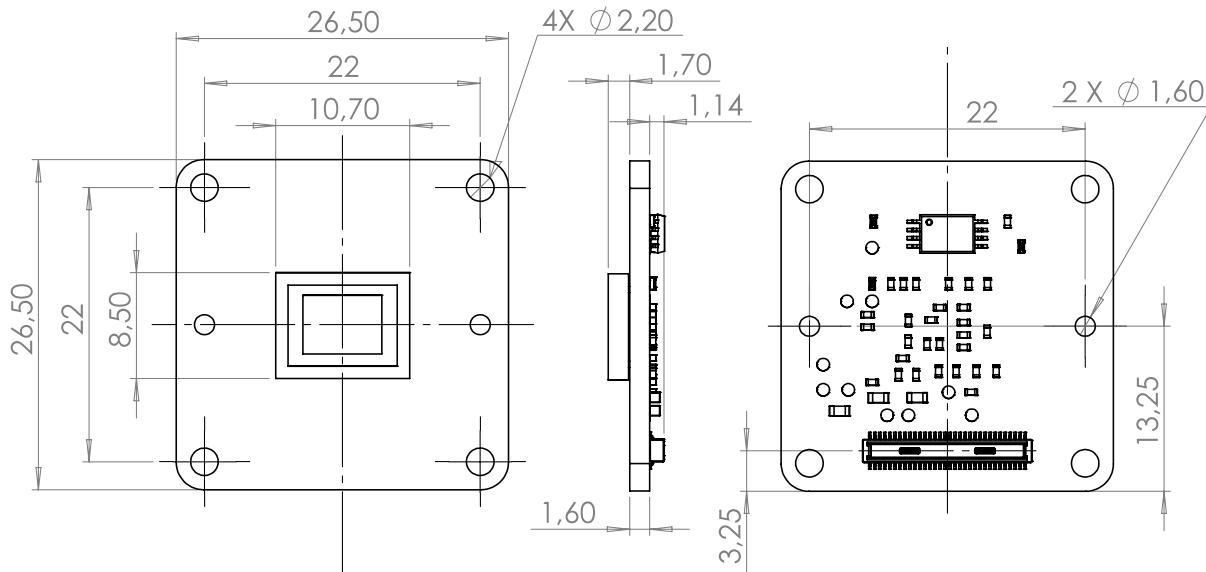
- 12.3 Mpx Sony CMOS Rolling Shutter sensor module, ready to embed!
- All FSMs are part of a rapid prototyping ecosystem, consisting of:
 - ✓ Adapters to various processing boards
 - ✓ Design sources for deep embedding
 - ✓ Various accessories and design in services

FSM-IMX412C (Color):



Specification	
Model Name	FSM-IMX412C (V1B)
Image Sensor	
Vendor / Name	Sony IMX412-AACK
Shutter Type	CMOS Rolling Shutter
Technology / Grade	Starvis / Security
Chromaticity	Color
Optical Format	1/2.3"
Pixel Size	1.55 x 1.55 μm
Max. Resolution	12.3 Mpx / 4056 x 3040 px
Framerate (max.)	59.9 FPS (4-Lane) 30 FPS (2-Lane)
Bit Depth(s)	10 / 12 bit
Interface	
Data Interface	MIPI CSI-2 (2 / 4 Lane)
Communication Interface	I ² C (CCI)
Drive Frequency(s)	6 / 12 / 18 / 27 MHz
Input Voltages	1.05V, 1.8V, 2.75V
Interface Connector	Hirose DF40C-60DP-0.4V(51)
EEPROM (Sensor ID)	Yes
Mechanical	
Dimensions (HxWxD)	26.5 x 26.5
Environmental	
Operating Temperature	-20°C to +75°C (function) -20°C to +60°C (performance)
Storage Temperature	-30°C to +80°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-FT1/A
Recommended Devkit(s)	FSM-IMX412C/TXA_Devkit (TX2, AGX) FSM-IMX412C/NVN_Devkit (Nano, NX)
Lens Mounts	M12 or C/CS-Mount options
A matrix with compatible <i>Sensor Adapters (FSA)</i> and <i>Processor Board Adapters (FPA)</i> for various setups can be found at the end of this document.	

Mechanical Drawing



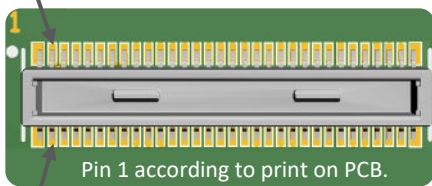
Sensor image optical center is in mechanical board center.

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	2V75_A
7	2V75_A
9	1V8_IO
11	GND
13	GND
15	XCLR
17	NC
19	NC
21	SCL
23	NC
25	XVS
27	SDA
29	GPO
31	NC
33	NC
35	SLASEL
37	GND
39	INCK
41	NC
43	GND
45	NC
47	NC
49	GND
51	CSI_D0_N
53	CSI_D0_P
55	GND
57	CSI_D2_P
59	CSI_D2_N



Pin	Name
2	1V8
4	1V8
6	1V05_A
8	1V05_A
10	NC
12	GND
14	GND
16	NC
18	NC
20	NC
22	NC
24	NC
26	NC
28	NC
30	NC
32	NC
34	NC
36	NC
38	GND
40	NC
42	NC
44	GND
46	CSI_D3_P
48	CSI_D3_N
50	GND
52	CSI_D1_N
54	CSI_D1_P
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.