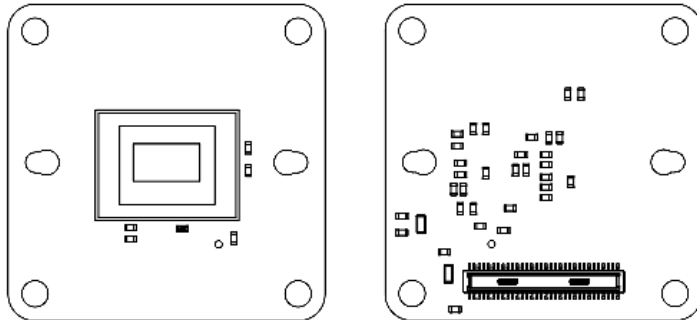




FRAMOS Sensor Module
2023-04-14
Version v1.3a

FRAMOS Datasheet



Contact Information

FRAMOS GmbH

Technical Support:
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FSM-IMX462

a Sony® IMX462LLR-C / IMX462LQR-C Sensor Module

General Description:

This FRAMOS Sensor Module (FSM) provides the Sony IMX462 sensor on a very compact 26.5 mm x 26.5 mm module. The Rolling Shutter sensor has a native resolution of 2.1 [MP] and an optical format of 1/2.8 inch at a pixel size of 2.9 x 2.9 μm . The Module has a MIPI CSI-2 interface with up to 4-data lanes.

FRAMOS Sensor Modules enable users to seamlessly plug the latest image sensor technology into common processing platforms. These modules feature a fully modular design that utilizes standardized connectors and mechanicals. The modules include image sensors on a PCB and have resolutions from 0.4 MP to 24 MP with both rolling and global shutter options. FRAMOS Sensor Modules are ideal in evaluating a sensor as part of a proof-of-concept design. The modules also can compare and contrast multiple sensors using a common backend and integrate them into third-party processor boards.

Targeted Use:

Applications for industry, security and surveillance, and consumer cameras.

Specifications:

| | |
|------------|------------------------------------|
| Model Name | FSM-IMX462M / FSM-IMX462C (V1A) |
|------------|------------------------------------|

Image Sensor

| | |
|---------------------|--|
| Vendor | Sony IMX462LLR-C / Sony IMX462LQR-C |
| Shutter Type | CMOS Rolling Shutter |
| Technology / Grade | Starvis + NIR / Security |
| Chromaticity | Color |
| Optical Format | 1/2.8" |
| Pixel Size | 2.9 x 2.9 μ m |
| Maximum Resolution | 2.1 Mpx / 1920 x 1080 px |
| Framerate (Maximum) | 120 FPS (4-Lane) 60 FPS (2-Lane) |
| Bit Depth | 10 / 12 bit |

Interface

| | |
|-------------------------|----------------------------|
| Data Interface | MIPI CSI-2 (2 / 4 Lane) |
| Communication Interface | I ² C |
| Drive Frequency | 37.125 / 74.25 MHz |
| Input Voltages | 1.2V, 1.8V, 2.9V |
| Interface Connector | Hirose DF40C-60DP-0.4V(51) |
| EEPROM (Sensor ID) | No |

Mechanical

| | |
|--------------------|-------------------|
| Dimensions (H x W) | 26.5 mm x 26.5 mm |
|--------------------|-------------------|

Environmental

| | |
|-----------------------|----------------------------------|
| Operating Temperature | -30°C to +85°C (function) |
| 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 Platforms | NVIDIA Jetson Family: AGX Xavier, Xavier NX, AGX Orin. |
| Software Version(s) | NVIDIA JP5.1 / L4T35.2.1 |

Suggested Accessories and Adapters

| | |
|-----------------------|---|
| Compatible FSA Type | FSA-FT3/A |
| Recommended Devkit(s) | FSM-IMX462C/TXA_Devkit (AGX) FSM-IMX462C/NVN_Devkit (NX) |
| Lens Mounts | M12 or C/CS-Mount options |

Features:

- Image sensors on a PCB with connector, available off-the-shelf.
- Large lineup of products with resolutions from 0.4MP to 24MP, available with either rolling or global shutter imagers
- Available with MIPI CSI-2 (D-PHY) output.
- Converter boards for SubLVDS and SLVS imagers
- Standardized mechanicals with small footprints of 26.5 x 26.5 mm and 28 x 28 mm

Applications:

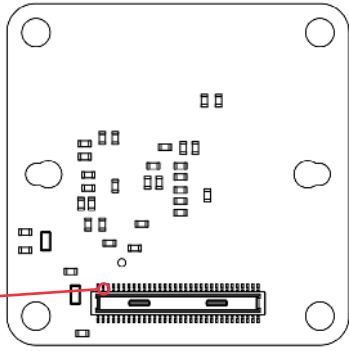
- Engineers looking to reduce their time-to-market with a rapid prototyping module, ready to integrate to various third party processing platforms.
- Embedded vision projects which benefit from an open platform by diving down to the component level. Gauge implementations against Sony's reference.
- Make educated "build vs buy" decisions and benefit from FRAMOS's long-term camera development experience for your tailored productization.

Note Some modules are compatible with earlier versions of Jetpack. Contact us for further available options.

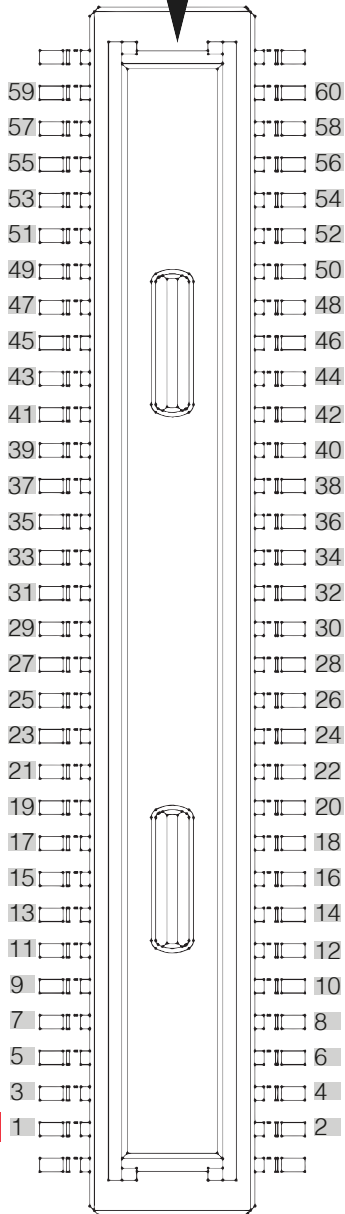
Note A matrix with compatible Sensor Adapters (FSA) and Processor Board Adapters (FPA) for various setups can be found in the FSM Ecosystem User Manual.

PixelMate™ Connector Pinout and Signal Description

WARNING Pin 1 is identified on the board. Orient accordingly, paying close attention to the pin number in reference to the locator view illustrated below. Failure to align correctly will cause permanent damage.

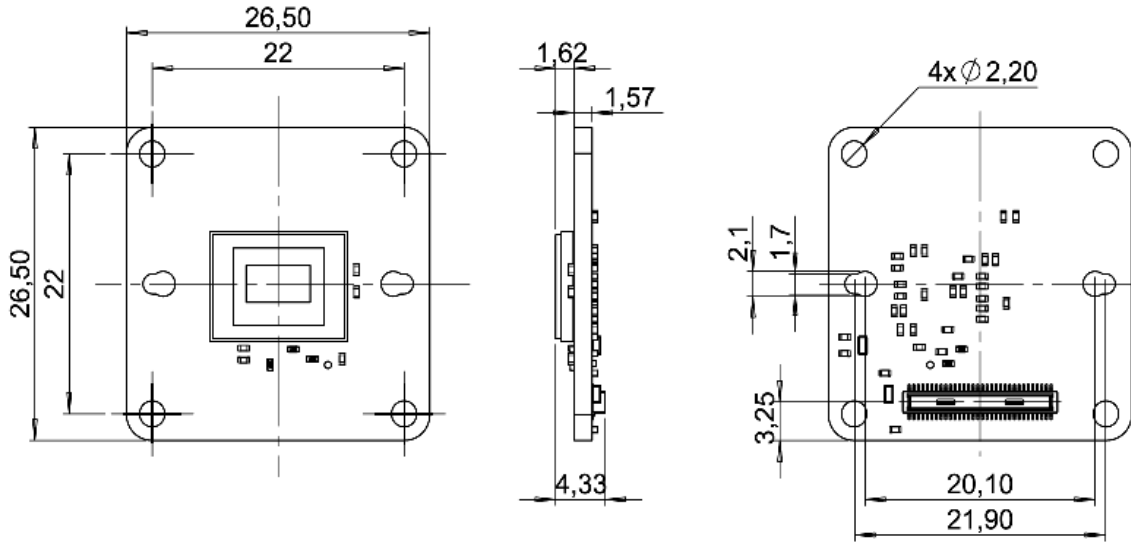


Note Signals are routed directly from image sensor to connector. Details on specific signals are described in the respective Sony® image sensor datasheet.

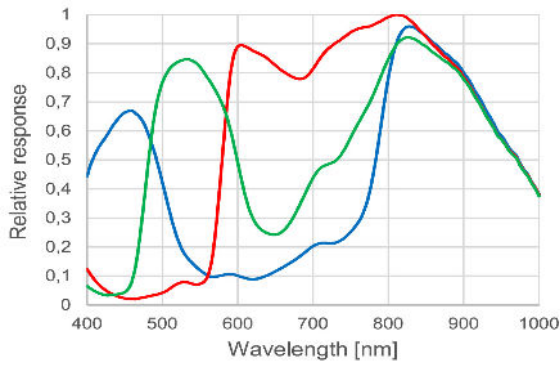


| J1 Pin | Pin Description | J1 Pin | Pin Description |
|--------|-----------------|--------|-----------------|
| Pin1 | NC | Pin2 | NC |
| Pin3 | NC | Pin4 | NC |
| Pin5 | 2V9 | Pin6 | 1V2 |
| Pin7 | 2V9 | Pin8 | 1V2 |
| Pin9 | 1V8 | Pin10 | NC |
| Pin11 | GND | Pin12 | GND |
| Pin13 | GND | Pin14 | GND |
| Pin15 | XCLR | Pin16 | NC |
| Pin17 | NC | Pin18 | SDO |
| Pin19 | XMASTER | Pin20 | NC |
| Pin21 | SCL | Pin22 | NC |
| Pin23 | XCE | Pin24 | NC |
| Pin25 | XVS | Pin26 | NC |
| Pin27 | SDA | Pin28 | NC |
| Pin29 | XHS | Pin30 | TENABLE |
| Pin31 | XTRIG | Pin32 | TOUT |
| Pin33 | NC | Pin34 | NC |
| Pin35 | NC | Pin36 | NC |
| Pin37 | GND | Pin38 | GND |
| Pin39 | INCK | Pin40 | NC |
| Pin41 | NC | Pin42 | NC |
| Pin43 | GND | Pin44 | GND |
| Pin45 | NC | Pin46 | D_DATA_3_P |
| Pin47 | NC | Pin48 | D_DATA_3_N |
| Pin49 | GND | Pin50 | GND |
| Pin51 | D_DATA_0_N | Pin52 | D_DATA_1_N |
| Pin53 | D_DATA_0_P | Pin54 | D_DATA_1_P |
| Pin55 | GND | Pin56 | GND |
| Pin57 | CSI_D2_P | Pin58 | CSI_CLK_P |
| Pin59 | CSI_D2_N | Pin60 | CSI_CLK_N |

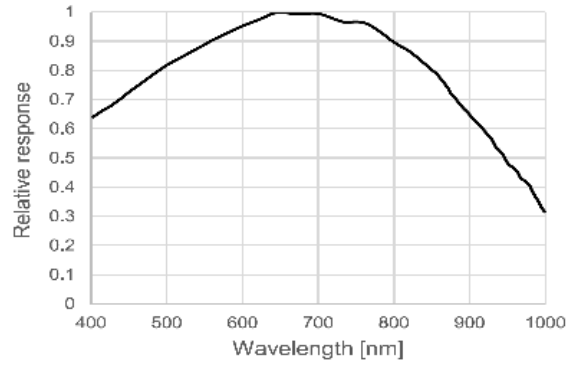
Physical Dimensions



FSM-IMX462C (Color) Spectral Sensitivity

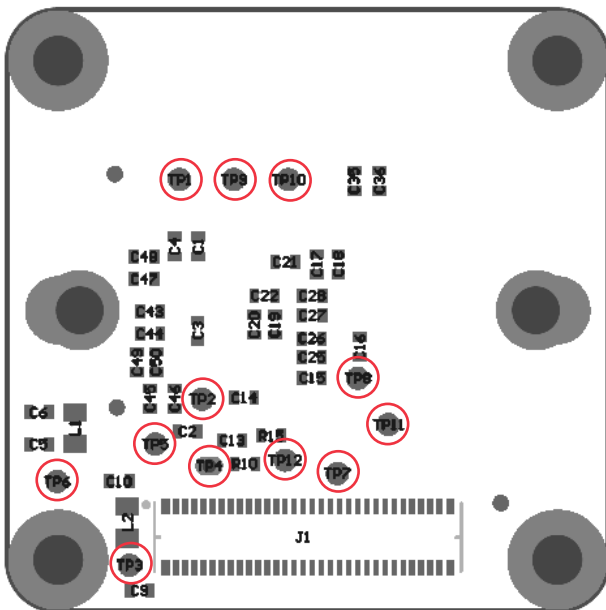


FSM-IMX462M (Mono) Spectral Sensitivity



Note Additional information surrounding the image sensor can be found in the Sony® datasheets.

Testpoints



| Test Point | Description |
|------------|-------------|
| TP1 | GND |
| TP2 | TAMON |
| TP3 | 1V2 |
| TP4 | 1V8 |
| TP5 | 2V9 |
| TP6 | GND |
| TP7 | INCK |
| TP8 | XCLR |
| TP9 | SCL |
| TP10 | SDA |
| TP11 | XHS |
| TP12 | XVS |

Order Codes

| | |
|----------------------------|----------------------------------|
| FSM-IMX462C-000-V1A | No lens mount |
| FSM-IMX462C-01S-V1A | M12 Mount (DW LH-15.0) |
| FSM-IMX462C-01C-V1A | M12 Mount (CMT821B) |
| FSM-IMX462C-00G-V1A | M12 Mount (CMT168) |
| FSM-IMX462C-04G-V1A | C/CS-Mount (FMA-MNT-CCS/265-V1A) |

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