



# FSM-IMX565 Datasheet

Sony IMX565AAMJ-C / IMX565AAQJ-C Sensor Module

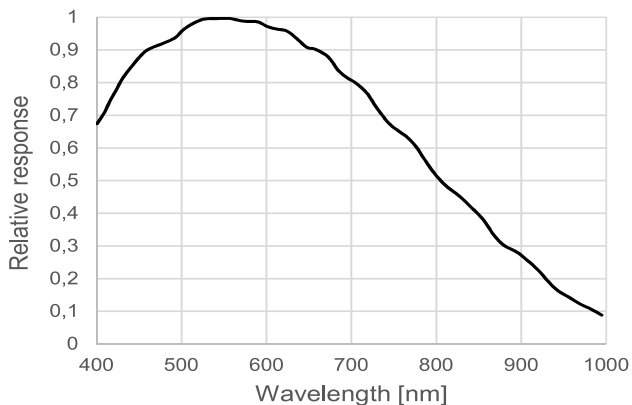
## FRAMOS Sensor Module



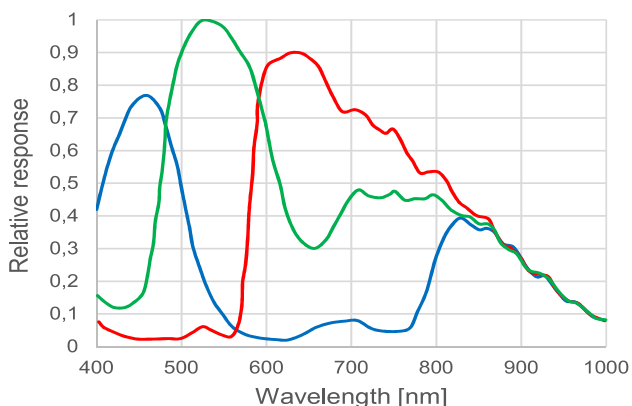
### Key Benefits & Features:

- 12.3 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-IMX565M (Monochrome):



FSM-IMX565C (Color):



### Specification

|                   |  |
|-------------------|--|
| <b>Model Name</b> | <b>FSM-IMX565M / FSM-IMX565C (V1A)</b> |
|-------------------|--|

### Image Sensor

|                    |  |
|--------------------|--|
| Vendor / Name      | Sony<br>IMX565AAMJ-C / IMX565AAQJ-C    |
| Shutter Type       | CMOS Global Shutter                    |
| Technology / Grade | Pregius S (Gen4) / Industrial          |
| Chromaticity       | Color / Mono                           |
| Optical Format     | 1/1.1"                                 |
| Pixel Size         | 2.74 x 2.74 $\mu$ m                    |
| Max. Resolution    | 12.3 Mpx / 4128 x 3008 px              |
| Framerate (max.)   | 42.6 FPS (4-Lane)<br>22.3 FPS (2-Lane) |
| Bit Depth(s)       | 8 / 10 / 12 bit                        |

### Interface

|                         |                            |
|-------------------------|----------------------------|
| Data Interface          | MIPI CSI-2 (2 / 4 Lane)    |
| Communication Interface | I <sup>2</sup> C           |
| Drive Frequency(s)      | 37.125 / 54 / 74.25 MHz    |
| Input Voltages          | 1.1V, 1.8V, 2.9V, 3.3V     |
| Interface Connector     | Hirose DF40C-60DP-0.4V(51) |
| EEPROM (Sensor ID)      | Yes                        |

### Mechanical

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

### Environmental

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

### Software Support

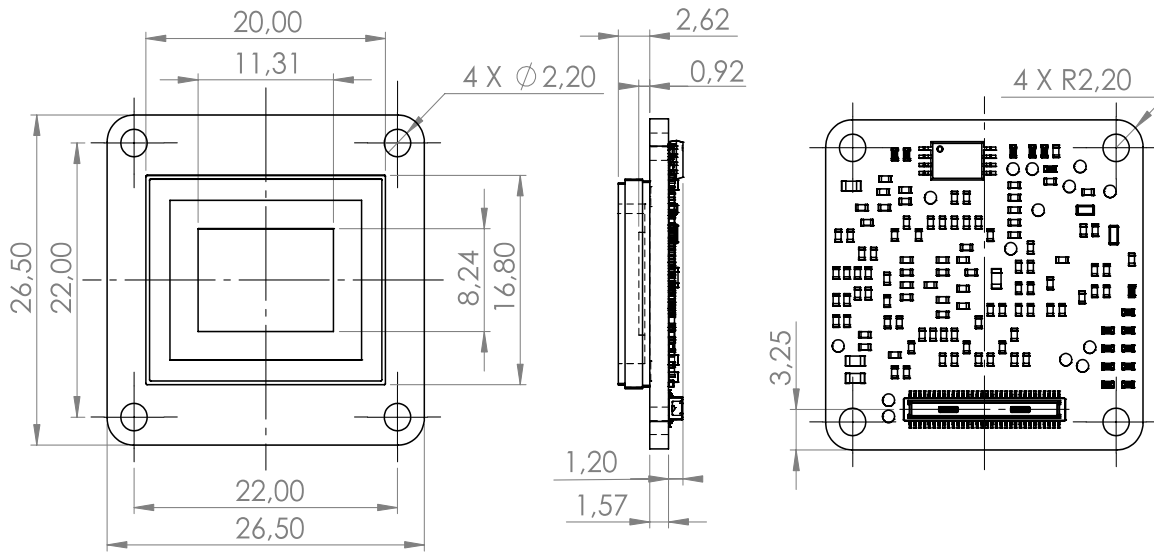
|                       |  |
|-----------------------|--|
| Driver                | V4L2 Based Device Driver<br>Libargus / Argus Camera (ISP Tuned)<br>Isaac ROS compliant |
| Supported Platform(s) | <b>NVIDIA Jetson Family:</b> AGX Xavier, Nano, TX2 (NX), Xavier NX, AGX Orin           |
| Software Version(s)   | NVIDIA JP4.6 / L4T32.6.1   |

### Suggested Accessories & Adapters

|                       |  |
|-----------------------|--|
| Compatible FSA Type   | FSA-FT26/A   |
| Recommended Devkit(s) | FSM-IMX565C/TXA_Devkit (TX2, AGX)<br>FSM-IMX565C/NVN_Devkit (Nano, NX) |
| Lens Mounts           | C/CS-Mount option  |

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**



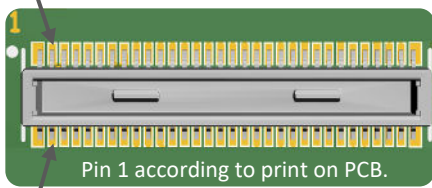
Sensor image optical center is in mechanical board center.

**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  | SCL        |
| 23  | XCE        |
| 25  | XVS        |
| 27  | SDA        |
| 29  | XHS        |
| 31  | XTRIG1     |
| 33  | NC         |
| 35  | SLAMODE0   |
| 37  | GND        |
| 39  | INCK       |
| 41  | NC         |
| 43  | GND        |
| 45  | NC         |
| 47  | NC         |
| 49  | GND        |
| 51  | D_DATA_0_N |
| 53  | D_DATA_0_P |
| 55  | GND        |
| 57  | D_DATA_2_P |
| 59  | D_DATA_2_N |



| Pin | Name       |
|-----|------------|
| 2   | 1V8_EEPROM |
| 4   | 1V8_EEPROM |
| 6   | 1V1        |
| 8   | 1V1        |
| 10  | 2V9        |
| 12  | GND        |
| 14  | GND        |
| 16  | NC         |
| 18  | SDO        |
| 20  | TOUT1      |
| 22  | NC         |
| 24  | SLAMODE2   |
| 26  | TOUT2      |
| 28  | NC         |
| 30  | XTRIG2     |
| 32  | TOUT0      |
| 34  | NC         |
| 36  | SLAMODE1   |
| 38  | GND        |
| 40  | NC         |
| 42  | NC         |
| 44  | GND        |
| 46  | D_DATA_3_P |
| 48  | D_DATA_3_N |
| 50  | GND        |
| 52  | D_DATA_1_N |
| 54  | D_DATA_1_P |
| 56  | GND        |
| 58  | D_CLK_0_P  |
| 60  | D_CLK_0_N  |

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