



# Sensor Module

## iSM-AR0521



### Key features:

- Ready to embed with iENSO vision platform ecosystem
- 5MP resolution and 1440p60 video performance
- Designed for high dynamic range performance, with line interleaved T1/T2 read out to support off chip HDR in an ISP chip
- Superior low-light performance
- Standard MIPI CSI-2 output interface
- Various lens options available

### Compatible embedded vision camera platforms:

- iENSO iVS-CV28P
- iENSO iVS-CV22
- Any camera platform supporting MIPI CSI-2 interface

Image Sensor	
Sensor Model	On Semi AR0521
Shutter Type	Rolling Shutter
Chromaticity/Signal Type	Color/RGB
Optical Format	1/2.5"
Pixel Size	2.2 x 2.2 μm
Max. Resolution	5MP / 2592 x 1944
Frame Rate (max.)	60 fps / 12 Bit
Bit Depth(s)	12 bit
HDR	Supported

Interface	
Data Interface	MIPI CSI-2 (2 / 4 lane)
Communication Interface	I2C
Input Voltage	3.3V
Interface Connector	Hirose FH58 series • FH58-41S-0.2SHW

Mechanical	
Dimensions (w/o Lens)	26 x 26 mm

Optical	
Lens Mount	M12
Optical	Consult iENSO for lens options

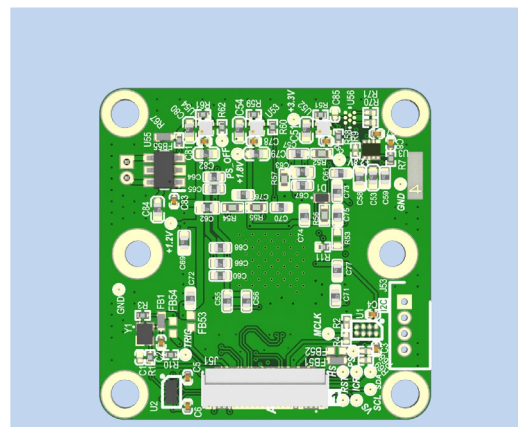
Environmental	
Operating Temperature	-30°C to +85°C (Function) -10°C to +60°C (Performance)
Storage Temperature	-40°C to +85°C
Ambient Humidity	20% to 90% RH, non-condensing



### Give your vision the edge

- Application-based turnkey embedded vision solutions
- Edge AI for powerful on-device decision-making
- Flexible Cloud platform and end-to-end security

## Sensor Module Pinout



PIN	Name	PIN	Name
1	RST N-H	21	GND
2	Hsync-H	22	DCLK P
3	Vsync-H	23	GND
4	+3V3_AUX	24	DCLK N
5	PS	25	GND
6	ICR_CTL	26	DMO1 P
7	GND	27	GND
8	5.0V	28	DMO1 N
9	SCK-H	29	GND
10	SDA-H	30	DMO3 P
11	GND	31	GND
12	MCLK-H	32	DMO3 N
13	GND	33	GND
14	DMO2 P	34	SCK3
15	GND	35	SDA3
16	DMO2 N	36	+1V2D
17	GND	37	CV CLK
18	DMO0 P	38	CV EN0
19	GND	39	CV MOSI
20	DMO0 N	40	CV MISO
		41	+1V8D

Connector Type: Hirose FH58-41S-0.2SHW

## Popular Applications

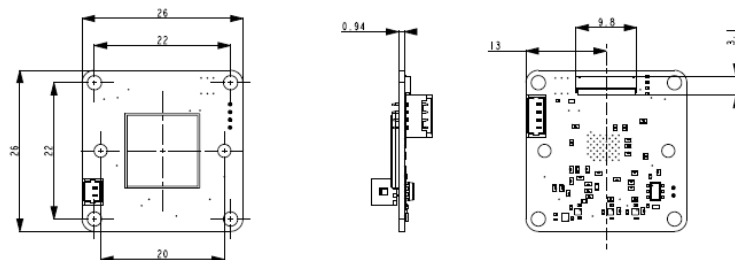


SECURITY



SMART APPLIANCES

## Mechanical Drawing



### iENSO Sensor Module Test Platform

High-speed USB3.0 output

Standard MIPI CSI-2 interface

Optics focus checking

RAW image configuration

Compatible with OS Windows 7 and above

### iENSO Sensor Module EVK

- iSM Test Platform
- Sensor Module: iSM-AR0521
- Included Optics:
  - Lens#1: 4.7mm, F2.4, HFOV 70 degrees
  - Lens#2: 2.9mm, F2.2, HFOV 90 degrees

For more information, visit [iENSO.com](http://iENSO.com)

- Custom module and optics available upon request
- Minimum order quantities may apply
- Contact sales to discuss your specific needs



[www.ienso.com](http://www.ienso.com)



**Americas**  
Global HQ Toronto  
20 Mural St., Unit 7  
Richmond Hill, ON Canada L4B 1K3  
(905) 763-6938 • [vision@ienso.com](mailto:vision@ienso.com)

**Europe**  
Kyiv, Ukraine • [EU@ienso.com](mailto:EU@ienso.com)  
**Middle East**  
Tel Aviv, Israel • [ME@ienso.com](mailto:ME@ienso.com)

**Asia**  
Shenzhen, PRC • [Asia@ienso.com](mailto:Asia@ienso.com)