

3MP MIPI CAMERA

GENERAL DESCRIPTION

The camera is equipped with SONY CMOS image sensor ISX031. It has an automotive-grade sensor with a well-tuned Image Signal Processor (ISP) that produces exceptional image quality, can be adapted to different SOC platforms .



KEY PARAMETERS

Sensor	SONY 2.95MP ISX031 RGGB
ISP	Built-in
Image Size	1/2.42 inch CMOS
Output Pixels	1920H*1536V
Frame rate	max 60fps
Pixel Size	3.0um*3.0um
HDR Support	Yes
Output data	MIPI/YUV422-8bit
Power Supply	3.3V
Current	<500mA@3.3VDC
Camera interface	FPC
Connector	FH67-30S-0.5SV
Operating temp.	-20 to +75°C
Performance temp.	-20 to +60°C
Dimensions	W: 20mm, L:35mm, H:16.2mm
Weight	<50g

Features

- Output format: YUV422 format
- Car gauge grade high performance
- Support external triggering
- Multi-Camera synchronization Support
- Support different focal length lens

Application

- Machine-vision
- Intelligent transportation
- Aeronautics and Astronautics
- Industrial inspection

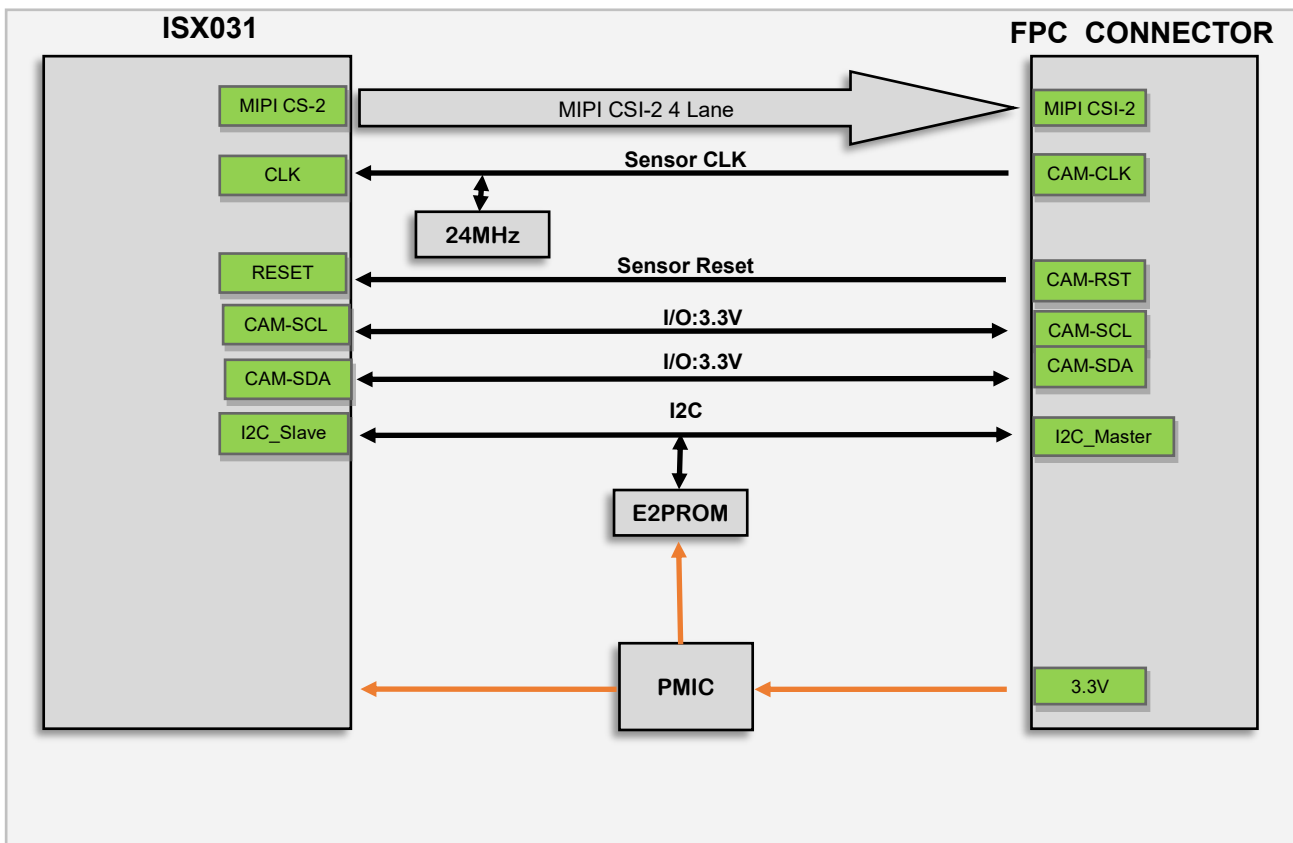




HARDWARE SETTING

EEPROM	
I2C Address	0xA0(8bit address)

Sensor	
Model	ISX031
I2C Address	0x34(8bit address)



Block Diagram

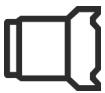




Pin Definitions

NO	Pin Name	Type	Description
1	E2PPROM-WP	INPUT:3.3V/1.8V	E2PROM L:Write disable; H:writable
2	BOOT-CTL	INPUT:3.3V/1.8V	H: Not Load NOR FLASH L: Load NOR FLASH Default:L
3	ERROR	OUTPUT:	Fault check signal output pin H:OK L:ERROR
4	GND	POWER	
5	FRSYNC	I/O:1.8V	Frame synchronization signal
6	GPIO3	I/O:1.8V	reserve
7	GND	POWER	
8	D0_N	OUTPUT	MIPI
9	D0_P	OUTPUT	MIPI
10	GND	POWER	
11	D1_N	OUTPUT	MIPI
12	D1_P	OUTPUT	MIPI
13	GND	POWER	
14	CLK_N	OUTPUT	MIPI
15	CLK_P	OUTPUT	MIPI
16	GND	POWER	
17	D2_N	OUTPUT	MIPI
18	D2_P	OUTPUT	MIPI
19	GND	POWER	
20	D3_N	OUTPUT	MIPI
21	D3_P	OUTPUT	MIPI
22	GND	POWER	
23	POW_RES	INPUT:3.3V/1.8V	On-camera electrical signal
24	SENSOR-CLK	INPUT: 24MHZ(1.8V)	Clock signal input(Modules use an internal 24MHz clock)
25	GND	POWER	
26	CAM-SCL	I/O:3.3V	UP 10K(FRSYNC:L I2C Address 7'H1A or 0X1A) (FRSYNC:H I2C Address in Flash)
27	CAM-SDA	I/O:3.3V	UP 10K(FRSYNC:L I2C Address 7'H1A or 0X1A) (FRSYNC:H I2C Address in Flash)
28	GND	POWER	
29	VCC-3.3V	POWER	
30	VCC-3.3V	POWER	



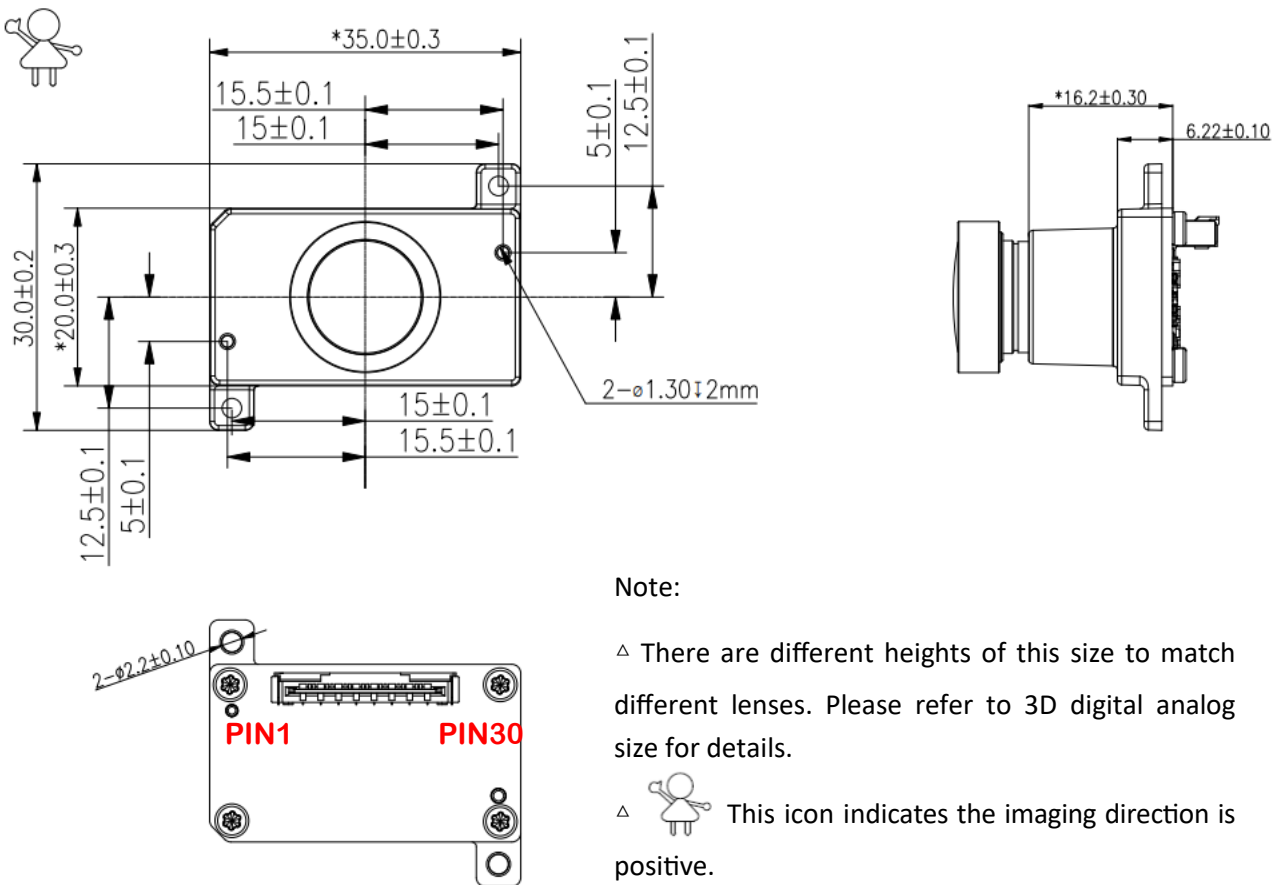


MODEL AND LENS

Model	HFOV	VFOV	F.No	EFL	Max Optical Distortion	Lens Mount
SG3-ISX031C-MIPI-H30X	30°	24°	F1.6	10.96mm	-2.5%	M12
SG3-ISX031C-MIPI-H60F	60.35°	47°	F1.6	5.8mm	-11.5%	M12
SG3-ISX031C-MIPI-H100F1	100.4°	78°	F1.6	3.55mm	-49%	M12
SG3-ISX031C-MIPI-H190X	196°	154.5°	F2.0	1.51mm	-154.2%	M12



DIMENSIONS



Diagram

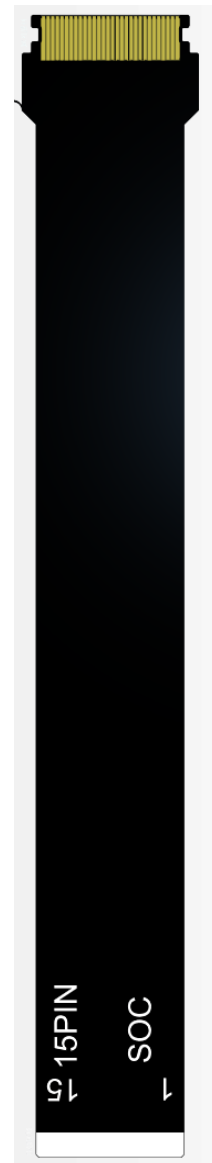


 **Attachment**

Through 2 types of FPC cables, 15pin and 22pin signals can be output. Different specifications can be selected according to the needs.

Part number	Name	description	remark
339901-0010	22Pin FPC	Spacing 0.5mm Length 120mm	Jetson Orin Nano/NX DK 4lane
339901-0011	15Pin FPC	Spacing 1mm Length 120mm	Jetson Nano/Raspberry Pi 2lane

15Pin		
Number	Pin	remark
1	GND	
2	D1N	
3	D1 P	
4	GND	
5	D2 N	
6	D2 P	
7	GND	
8	CLK N	
9	CLK P	
10	GND	
11	SENSOR-RESETn	3.3V or 1.8V/IO
12	CAM-CLK	Default: Modules use an internal 24MHz clock
13	CAM-SCL	3.3V/IO
14	CAM-SDA	3.3V/IO
15	VCC-3.3V	



 Attachment

22Pin		
Number	Pin	remark
1	GND	
2	D1 N	
3	D1 P	
4	GND	
5	D2 N	
6	D2 P	
7	GND	
8	CLK N	
9	CLK P	
10	GND	
11	D3 N	
12	D3 P	
13	GND	
14	D4 N	
15	D4 P	
16	GND	
17	SENSOR-RESETn	1.8V or 3.3V/IO
18	CAM-CLK	Default: Modules use an internal 24MHz clock
19	GND	
20	CAM-SCL	3.3V/IO
21	CAM-SDA	3.3V/IO
22	VCC-3.3V	





PLATFORMS SUPPORT

Platforms	Product Link
<p>NVIDIA Jetson Platforms (Jetson Orin Nano/NX)</p> 	<p>Provide development driver package</p> <p>https://www.sensing-world.com/jetson_camera_ecosystem/</p> 





Revision History

Version	Description	Release date
Rev1.0	First Release	2024.01
Rev2.0	block diagram, pin definition, lens specification, etc	2024.06



