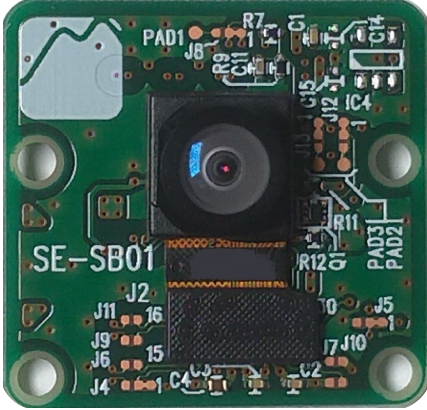




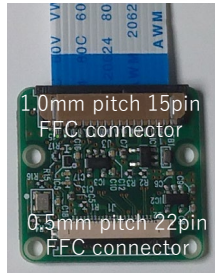
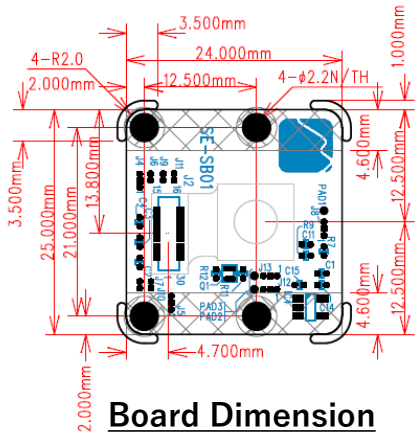
# Soho Enterprise Ltd.

## Fish Eye Camera Board w/ 8Mpix CIS for Single Board Computers

### SE219FE-00/01-CB



- **Ultra Wide View Angle: FoV =187° ±3°**  
 Suitable for wide angle image recognition usage in AIoT area.
- **Adopted the most mature image sensor for SBC.**  
 Sony IMX219PQH5-C
- **Camera Driver with AE/AWB functions for “tinker board” is available.**  
 Processed in Embedded HW ISP, Full Size 20fps/FHD 30fps
- **w/ IRCF(-00), w/o IRCF(-01) module are available**
- **Extensivity:**  
 FFC connector for MIPI CSI-2 4 lane connection for faster fps.
- **Ready for use**  
 No need remodeling the module to get wide FoV



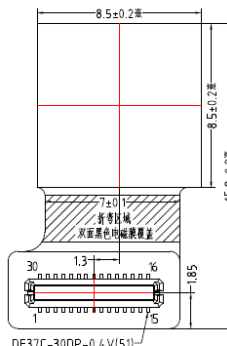
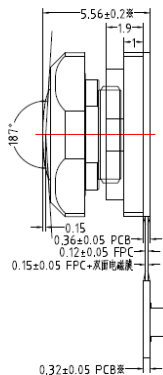
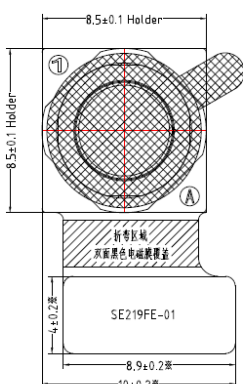
### Assumed application cases

- Look down monitoring with few blind spots
- VR Stereo Vision
- Wide vision for Robots, AI speaker, any others
- Monitoring wildlife ecology, harm to agriculture
- Home-use video monitoring & recording
- 360° monitoring on drones, robot cars, etc.
- Sports camera for tennis, volleyball, badminton, etc.

### Fish Eye Lens Module: SE219FE-00/01



镜头名称	1/4 6P	相对照度 (Relative Illumination)	38.3%(1.0F)	感光芯片 (Chip Type)	IMX219PQH5-C
镜头类型 (Lens Size)	187°±3°	景深 (Focusing Range)	30cm ∞	像素 (Array Size)	3296×2512
视场角 (View Angle)	0.74	调焦距离 (Focussing Distance)	60cm		
焦距 (EFL)	2.10±5%	IR滤光器 (IR Filter)	6.3×6.3×0.21 白玻璃		
光圈 (F-NO)	-37.90%	FPC供体器 材料	FPC硬尾无胶水夹板		
畸变 (TV Distortion)	----	MIPI前置控制	100Ω±10%Ω		
最大成像圈 (Max Image Circle)	----	底座名称 (Holder)	KL085H		



NO	PIN NAME	NO	PIN NAME
1	NC	16	DGND
2	NC	17	MIFI-D2N
3	DVDD1.8V	18	MIFI-D2P
4	DVDD1.2V	19	DGND
5	Sensor-PWDN	20	MIFI-D1N
6	DGND	21	MIFI-D1P
7	MCLK	22	DGND
8	DGND	23	MIFI-D0N
9	AGND	24	MIFI-D0P
10	AVDD2.8V	25	DGND
11	(TBD)	26	MIFI-CLKN
12	DGND	27	MIFI-CLKP
13	MIFI-D3P	28	DGND
14	MIFI-D3N	29	SCLI(1.8V)
15	DGND	30	SDA(1.8V)

Same (x, y) form factor & compatible pin assignment w/ the module on Raspberry Camera V2.1

## Key Specifications SE219FE-00/01-CB

Image Sensor	Product Code: IMX219PQH5-C	Manufacturer	Sony Back-side illuminated CMOS image sensor	
		Pixel size	1.12um x 1.12um	
		Active Image Area	3280 x 2464 8Mpix	
		Optical Size	Type 1/4 Diagonal 4.60mm	
		Operation Temperature	-20~60°C Function guarantee -20~60°C Performance guarantee	
		Storage Temperature	-30~80°C	
Module	Lens	Configuration	Type 1/4, 6P	
		FoV	187° ± 3°	
		F No.	2.10 ± 5%	
		Focus range	30cm ~ Infinity, Adjusted at 60cm when shipped.	
	Connector	30pin	Compatible w/ Raspi Camera v2.1 module	
	Size	8.5mm*8.5mm*5.56mm	Lens Holder size. Same (x, y) size to Raspi module	
	Weight	0.4g		
	Power Supply	Analog	2.8V ± 0.2V	
		Digital	1.2V ± 0.12V	
IO		1.8V ± 0.18V		
Board	Size	25mm* 24mm	Almost same size and compatible position for screw holes with RaspberryPi camera V2.1.	
	Connector	1.0mm pitch 15pin	For Tinker board, RaspberryPi	
		0.5mm pitch 22pin	RaspberryPi0, Raspi compute module, etc.	
	Output	I/O Format	Support MIPI CSI-2 2lane and 4 lane	
		Maximum speed	Full size: 30fps, FHD: 60fps, 720P: 180fps (MIPI 4 lane mode)	
	Power Supply	3.3V ± 0.3V		Generate Analog 2.8V by on-board LDO
				Generate Digital 1.2V by on-board DD-converter.
				Generate Analog 1.8V by on-board LDO
			Generate AF 2.8V by on-board optional LDO	

## Why are the SE camera boards suitable for AIoT vision processing applications?

- 1. Good image quality**  
The SE camera series uses a high-quality Sony image sensor of better SNR.
- 2. Ready to use on tinker board and other SBCs**  
Camera drivers are ready. Easy to customize for PoC prototyping
- 3. Variety of Options**  
Wide variety of options for resolution, global shutter, wide FoV lens, focus driver, etc.
- 4. Low Latency, RAW image**  
Suitable for real-time autonomous control system
- 5. Affordable for everyone**  
Pricing that individuals can purchase from a single item in line with the corporate philosophy of helping to create open innovation.

### Further Information:

<https://soho-enterprise.com/>

<https://www.visionproc.org/index.php>

