

APX004

Ultra-low power, millisecond APS/EVS switch HVS Sensor



Ultra-LP



High SNR



HDR



Hi-Res



Fast Switch

The ultra-low power APX004 is an innovative Hybrid Vision Sensor, supporting independent outputs of image or event, or a millisecond-switch between them. By taking the unique HVS® structure, as well as the 3D stacking and BSI processes, it operates in the ultra-low-power event mode, and will switch to a 4MP image mode once it detects human or motions, making it perfect for for AIoT and security applications, especially for those requiring a long battery life.

Product Brief

EVS

- Ultra-low power
- On-chip motion detection
- High SNR
- High dynamic range
- High sensitivity
- Configurable contrast sensitivity

APS

- 4MP high-quality image
- Excellent low light performance
- Support HDR

Interface

Data interface: MIPI & DVP & QSPI
Control interface: I²C & SPI

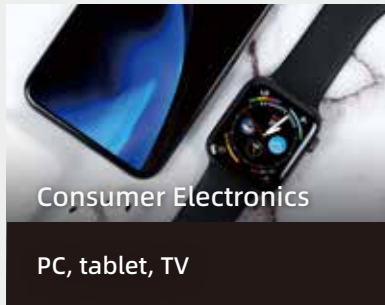
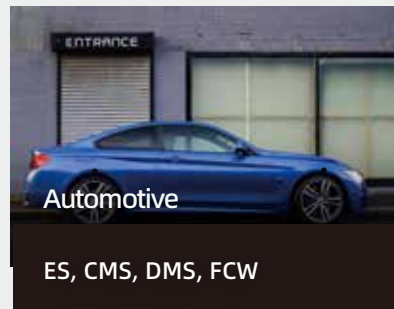
Functions

- Image and event mode operate solely or parallelly
- Support HDR
- Support ROI (APS/EVS mode)
- Support on-chip motion detection

Features

- 3D-stacked and BSI
- Image and event data outputs in parallel
- Support independent operation of EVS
- 4MP image resolution

Application and End Product



Specification

Resolution	APS: 2688 × 1520 (4M) EVS: 896 × 506 (0.5M)	Dynamic range	APS: ~70.4 dB EVS: ~120 dB
Pixel size	2.88 μm × 2.88 μm	ROI	APS/EVS: support
Optical format	1/1.8", CRA 9°	Operating Voltage	Analog: 3.0 V Digital: 1.1 V
Operation mode	Image, event, HVS		I/O: 1.8 V
Contrast sensitivity	0 -100% configurable	Power consumption	< 5mW (EVS mode@VGA 30fps) 150mW(APS mode@ 60 fps Full Resolution)
Shutter mode	Rolling shutter	Data format	APS: Raw8/Raw10/Raw12
HDR mode	Multi-frame HDR	Output interface	4 lane MIPI & DVP & Quad SPI
Min.illumination	< 0.05 lux		Support 1/2/4/8bit DVP
Frame rate	APS: 60 fps @ Full Resolution EVS: 500 fps @ Full Resolution	Package	Fan-out

*Specs vary in different applications. Actual performance must be validated by customer's technical experts. Please contact us for more information.

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