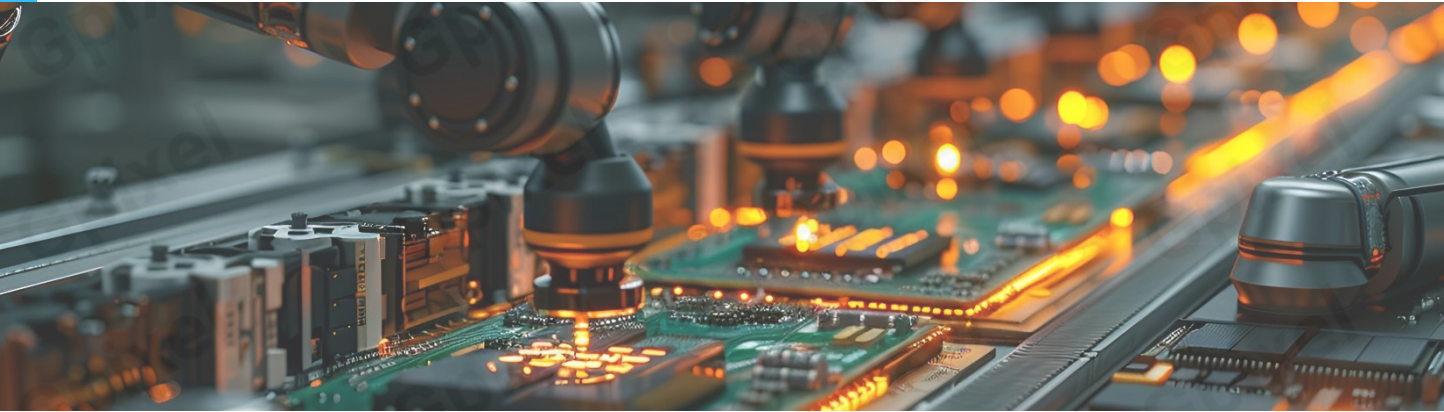


GMAX4416 Product Flyer

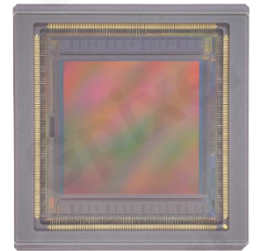


16MP 4.4 μm 1.6" GLOBAL SHUTTER IMAGE SENSOR

GMAX4416 is a 1.6" (25.5 mm) optical format CMOS image sensor with 4096 x 4096 (16.7 MP) effective pixels. Using advanced processing technology, the 4.4 μm global shutter pixel achieves a max full well capacity of 15 ke- and min dark noise of 3.0 e-, delivering max 73.9 dB linear dynamic range and 41.8 dB SNR. On-chip analog binning increases the sensor full well capacity to 60 ke- and 47.8 dB SNR. Peak quantum efficiency is 71% @ 530 nm and 33% @ 850 nm due to its optimized NIR process.

GMAX4416 can reach 80 fps frame rate in 12-bit standard high-speed mode with 32 pairs 600Mbps sub-LVDS. It also supports 2x2 binning mode and a 2x2 binning HDR mode with frame rates of 42 fps and 80 fps respectively.

GMAX4416 is housed in 152 pin ceramic μPGA package, 31.70 mm x 30.40 mm outer dimensions.



Key Feature

- 4.4 μm charge domain global shutter pixel
- 16MP resolution
- 1:1 aspect ratio
- binning HDR mode
- Near infrared enhancement
- Maximum frame rate: 80 fps

Applications

- Aerial mapping
- Motion capture
- AOI inspection

Sensor Specifications

Resolution	4096 (H) x 4096 (V)	Optical format	1.6" (25.5 mm)
Pixel size	4.4 μm x 4.4 μm	Photo-sensitive area	18 mm x 18 mm
Shutter type	Global Shutter	Quantum efficiency	70.50%
Full well capacity	15 ke^- @ STD & HDR 60 ke^- @ Binning HDR	Temporal noise	3.0 e^- @ STD & HDR 6.6 e^- @ Binning HDR 68.7 dB @ STD
Dark Current	< 5 $\text{e}^-/\text{pixel}/\text{s}$	Dynamic range	73.9 dB @ HDR 79.1 dB @ Binning HDR
Max. Line rate	80 fps @ STD & Binning HDR 42 fps @ HDR	Output format	32 pairs Sub-LVDS
Data rate	19.2 Gbps	Channel multiplexing	16/14/12/10/8/6/4/2/1
Chroma	Mono & RGB	Power consumption	<1.5 W
I/O voltage	3.3 V (analog), 1.8 V – 3.3 V (IO) 1.2 V (digital)	Package	152 pins μPGA (31.70 mmx 34.00 mm)

Ordering Information

Sensor Part	Description	Grade
GMAX4416-AVM-NUT-BUD	Monochrome, with microlens, ceramic 152 pins μPGA , Sealed D 263® T eco glass with AR coating. 80 fps @ HS / Binning-HDR mode, 40 fps @ HDR mode.	Demo grade
GMAX4416-AVM-NUT-BUE	Monochrome, with microlens, ceramic 152 pins μPGA , Sealed D 263® T eco glass with AR coating. 80 fps @ HS / Binning-HDR mode, 40 fps @ HDR mode.	ES grade
GMAX4416-AVC-NUT-BUD	Bayer color, with microlens, ceramic 152 pins μPGA , Sealed D 263® T eco glass with AR coating. 80 fps @ HS / Binning-HDR mode, 40 fps @ HDR mode.	Demo grade
GMAX4416-AVC-NUT-BUE	Bayer color, with microlens, ceramic 152 pins μPGA , Sealed D 263® T eco glass with AR coating. 80 fps @ HS / Binning-HDR mode, 40 fps @ HDR mode.	ES grade

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