

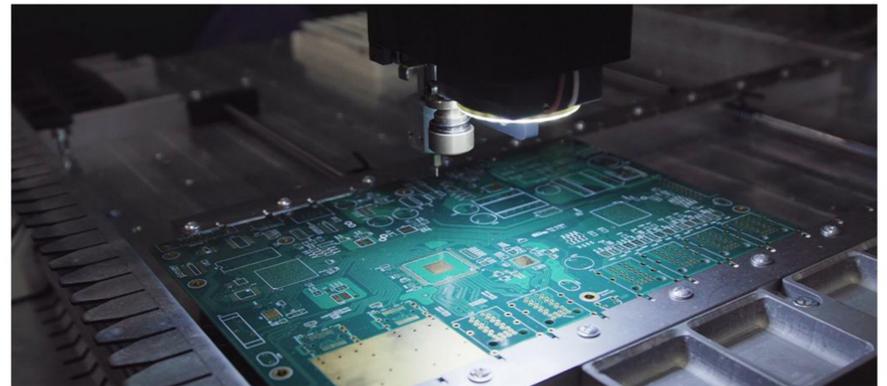
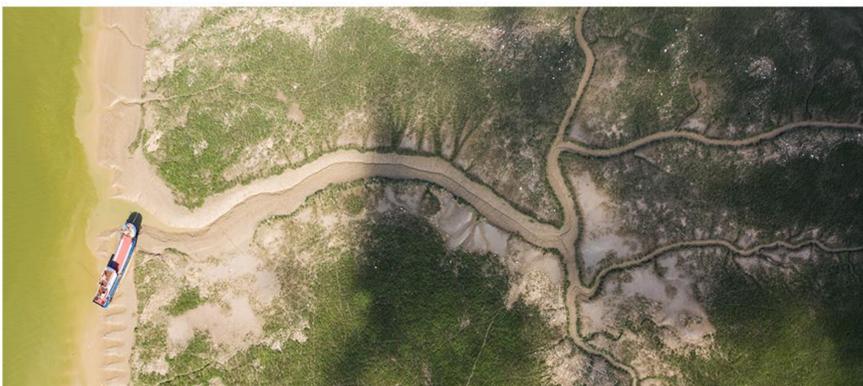
GMAX4416

16 MP 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 14.5 ke^- and min dark noise of 2.6 e^- , delivering max 74.9 dB linear dynamic range and 41.8 dB SNR. On-chip analog binning increases the sensor full well capacity to 60.7 ke^- and 47.8 dB SNR. Peak quantum efficiency is 71.1% (530 nm) and 30% (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 600 Mbps sub-LVDS. It also supports 2 x 2 binning mode and a 2 x 2 binning HDR mode with frame rates of 42 fps and 80 fps respectively.

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



Key Features and Benefits

- ▶ 4.4 μm Charge Domain Global Shutter Pixel
- ▶ 16 MP Resolution
- ▶ 1:1 Aspect Ratio
- ▶ Binning HDR Mode
- ▶ Near Infrared Enhancement
- ▶ Max Frame Rate: 80 fps

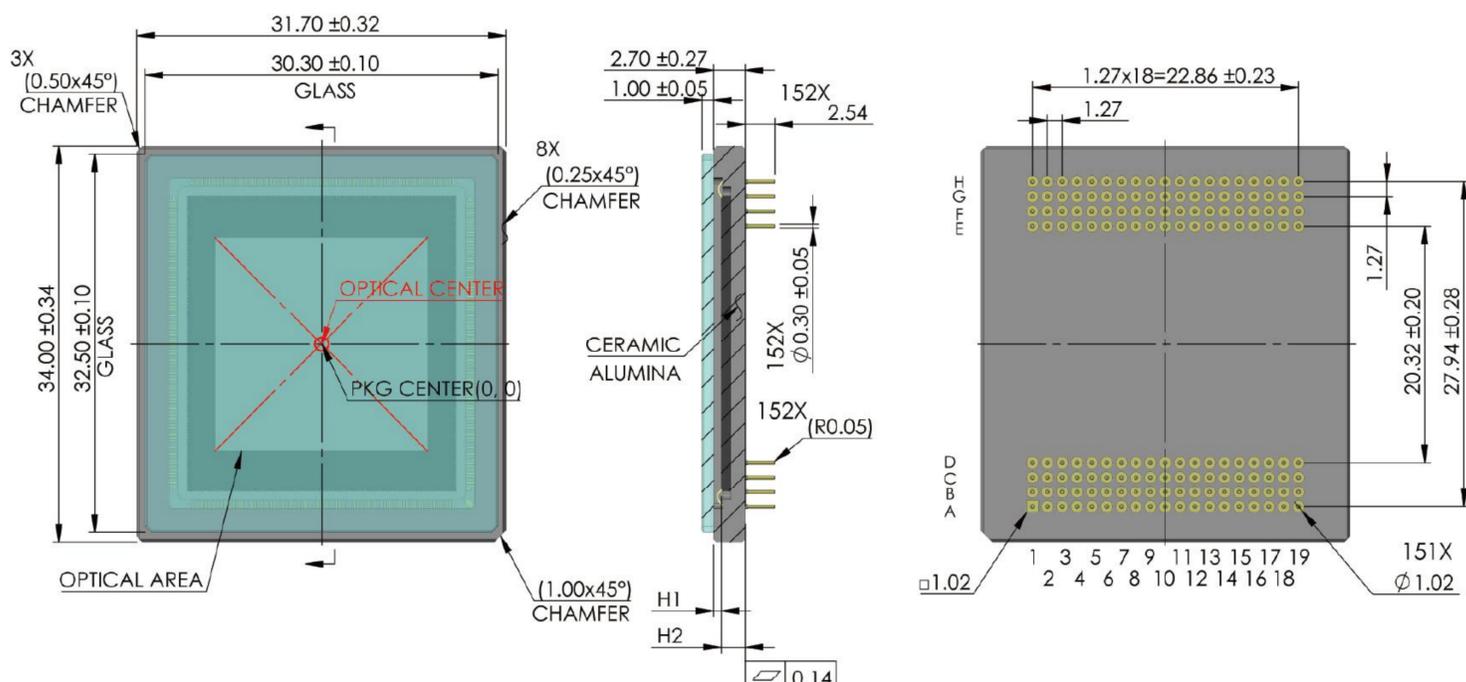
Application

- ▶ Aerial mapping
- ▶ Motion capture
- ▶ AOI inspection

Specifications

Nr of Active Pixels	4096(H) x 4096(V)	Optical Format	1.6"
Pixel Size	4.4 μm x 4.4 μm	Photosensitive Area	18 mm x 18 mm
Shutter Type	Global Shutter	Parasitic Light Sensitivity	< -91 dB
Peak QE	71.1% (530 nm)	Angular Response	> 15° (80% Response)
Full Well Capacity	15 ke ⁻	Temporal Noise	< 3.0 e ⁻
Max. SNR	41.6 dB	Dynamic Range	68.1 dB (STD) 74.9 dB (HDR) 79.9 dB (Binning-HDR)
Dark Current	< 5 e ⁻ /pixel/s (28 °C)	ADC	12 bit
Max Frame Rate	80 fps (STD mode) 42 fps (HDR mode) 80 fps (Binning-HDR mode)	Output Format	32 ch Sub-LVDS
Power Consumption	< 1.5 W	Max. Data Rate	19.2 Gbps
Supply Voltage	3.3 V (analog) 1.8 V-3.3 V (IO) 1.2 V (digital)	Channel Multiplexing	32/16/14/12/10/8/6/4/2/1
Chroma	Mono, RGB Color	Package	152 pins μPGA (31.70 mm x 34.00 mm)

Package Drawing



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