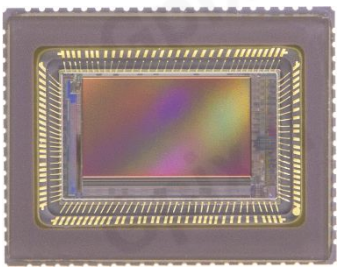
GMAX4002 Product Flyer

2.4MP GLOBAL SHUTTER IMAGE SENSOR

GMAX4002 is a 1/1.7" optical format image sensor with 2048 x 1200 effective pixels. Featuring an advanced charge domain global shutter pixel, **GMAX4002** operates with true CDS for low noise and high dynamic range. Gpixel's Red Fox technology is employed to deliver enhanced QE for NIR applications.



GMAX4002 is configurable through I^2C. It integrates both Sub-LVDS and MIPI interfaces, for frame rates of 229 fps and 166 fps respectively. **GMAX4002** supports 2x2 on-chip binning to achieve higher sensitivity and faster frame rate. It includes an on-chip sequencer and OTP functions. Assembled with 74-pin CLCC package, **GMAX4002** enables a cost-effective camera solution, easy integration and high-reliability mass production.

Key Features

- On-chip sequencer
- I2C control
- MIPI and Sub-LVDS Data Interfaces
- One Time Programmable (OTP) Memory
- High speed and low PLS

Applications

- Machine Vision
- Logistics Bar Code Readers
- Intelligent Traffic Systems

Sensor Specifications

Resolution	2.4 MP - 2048 (H) x 1200 (V)	**Optical format**	1/1.7"
Pixel size	4 μm x 4 μm	**Photosensive area**	8.2 mm x 4.8 mm
Shutter type	Global shutter	**Parasitic Light Sensitivity**	< - 92 dB (angular dependence)
Peak QE	73.7% @ 550 nm	**Angular response**	> 15 ° (80% response)
Full well capacity	11.6k e- @ 12-bit, PGA gain x1.0 11.0k e- @ 10-bit, PGA gain x1.0	**Temporal noise**	2.6 e- @ 12-bit, PGA gain x3.8 2.9 e- @ 10-bit, PGA gain x3.8
Max. SNR	40.6 dB @ PGA gain x1.0	**Dynamic Range**	68.0 dB @ 12-bit, PGA gain x1.0 64.4 dB @ 10-bit, PGA gain x1.0
Dark Current	8.3 e-/pixel/s @ 37 °C	**ADC**	10/12 bit
Maximum frame rate	344 fps @ 1.2G Sub-LVDS, 10 bit 229 fps @ 800M Sub-LVDS, 10 bit 195 fps @ 800M Sub-LVDS, 12 bit 166 fps @ 1.2G MIPI, 12 bit	**Output format**	8 pairs of Sub-LVDS 4 lanes of MIPI
Power consumption	< 0.5 W	**Max. Data rate**	9.6 Gbps @Sub-LVDS 4.8 Gbps @MIPI
Supply voltage	3.3 V for analog 1.8 V - 3.3 V for IO 1.2 V for digital	**Channel multiplexing**	8/4/2/1 @ Sub-LVDS 4/2/1 @ MIPI
Chroma	Bayer RGB, Mono	**Package**	74 pins CLCC 16.6 mm x 12.9 mm

Ordering Information

Sensor Part No.	Description
GMAX4002-AVM-HCV-AU1	Monochrome, Full resolution, High speed, 344 fps @ 10bit 8 x 1.2G Sub-LVDS, Grade 1
GMAX4002-AVC-HCV-AU1	Bayer RGB, Full resolution, High speed, 344 fps @ 10bit 8 x 1.2G Sub-LVDS, Grade 1
GMAX4002-AVM-NCV-AU1	Monochrome, Full resolution, Normal speed, 229 fps @ 10bit 8 x 800M Sub-LVDS, 195 fps @ 12bit 8 x 800M Sub-LVDS, 166 fps @ 10bit 4 x 1.2G MIPI, Grade 1
GMAX4002-AVC-NCV-AU1	Bayer RGB, Full resolution, Normal speed, 229 fps @ 10bit 8 x 800M Sub-LVDS, 195 fps @ 12bit 8 x 800M Sub-LVDS, 166 fps @ 10bit 4 x 1.2G MIPI, Grade 1
GMAX4002W-AVM-NCV-AU1	Monochrome, 1312 (H) x 1200 (V), Normal speed, 229 fps @ 10bit 8 x 800M Sub-LVDS, 195 fps @ 12bit 8 x 800M Sub-LVDS, 166 fps @ 10bit 4 x 1.2G MIPI, Grade 1
GMAX4002W-AVC-NCV-AU1	Bayer RGB, 1312 (H) x 1200 (V), Normal speed, 229 fps @ 10bit 8 x 800M Sub-LVDS, 195 fps @ 12bit 8 x 800M Sub-LVDS, 166 fps @ 10bit 4 x 1.2G MIPI, Grade 1
GMAX4002B-AVM-NCV-AU1	Monochrome, 1024 (H) x 600 (V), Normal speed, 884 fps @ 10bit 8 x 800M Sub-LVDS, Grade 1

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