

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 I²C. 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	2048 (H) x 1200 (V)	Optical format	1/1.7"(9.5 mm)
Pixel size	4 × 4 μm ²	Photo-sensitive area	8.2 x 4.8 mm ²
Shutter type	Global shutter	Quantum efficiency	72% @ 550 nm 37% @ 850 nm
Full well capacity	> 12 ke ⁻ @ 12 bit	Parasitic Light Sensitivity	< -92 dB
Dark noise	< 2.3 e ⁻ @ 12 bit	SNR max	40.8 dB
Dynamic range	> 64.4 dB @ 10 bit, > 68.5 dB @ 12 bit	Frame rate	229 fps (Sub-LVDS @10 bit), 195 fps (Sub-LVDS @12 bit), 166 fps (MIPI @10bit)
Output interface	Sub-LVDS: 8 ch + 1 clk MIPI CSI-2 DPHY: 4 ch + 1 clk	Channel multiplexing	8/4/2/1 @ Sub-LVDS 4/2/1 @ MIPI
Interface Speed	Sub-LVDS: 800 Mbps MIPI CSI-2 DPHY: 1.2 Gbps	Max. Data rate	5.6 Gbps Sub-LVDS @ 10-bit 5.75 Gbps Sub-LVDS @ 12-bit 4.1 Gbps MIPI @ 10-bit
ADC	10/12 bit	Register control	I ² C
Chroma	Mono & Color	Power consumption	< 0.5 W
I/O voltage	1.8 V - 3.3 V	Package	12.9 x 16.6 mm ² CLCC 74 pins

Ordering Information

Sensor Part No.

GMAX4002-AVM-NCV-AUD

Mono, CLCC package, 229fps @LVDS, 166fps @MIPI, Demo grade

GMAX4002-AVC-NCV-AUD

Color, CLCC package, 229fps @LVDS, 166fps @MIPI, Demo grade

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