

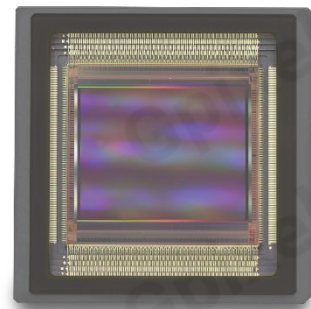
GSPRINT4521 Product Flyer



21MP HIGH SPEED CMOS IMAGE SENSOR

GSPRINT4521 is a 21 Megapixel (5120 x 4096) APS sized (29.5mm) high speed, global shutter image sensor designed with the latest 4.5 μm charge domain global shutter pixel. It achieves more than 28 ke^- FWC, 6.3 e^- temporal noise and >68.8 dB dynamic range. Using advanced 65nm CIS process and light pipe technology, the sensor achieves 63% QE and more than 1/40,000 shutter efficiency. With on-chip charge binning, FWC can be further increased to >120 ke^- and frame rate is quadrupled.

GSPRINT4521 will be offered in different speed variants. The full speed variant consists of 160 pairs sub-LVDS channels running at 1.2Gbps which delivers a stunning 1000 fps in single gain operation at 8 bit per pixel and full resolution and more than 3000 fps with a ROI of 1024 rows in a dedicated 3D laser profiling mode. These unique features make it an ideal solution for demanding imaging in high-end applications such as high speed 4K video, industrial inspection, motion analysis and life science imaging.



Key Features

- 4.5 μm Square Pixels
- Sub-LVDS with channel multiplexing
- Vertical ROIs with speed boosting
- Max. frame rate up to 1000fps @8bit

Applications

- Machine vision
- High resolution industrial inspection
- Flat panel display inspection

Sensor Specifications

Resolution	5120 x 4096	Optical format	APS sized (29.5mm)
Pixel size	4.5um × 4.5um	Photo-sensitive area	23.04mm × 18.43mm
Shutter type	Global shutter	Quantum efficiency	63 %
Full well capacity	32 ke ⁻ @12-bit Gain 0	Frame rate	1000 fps @ 8-bit
	16.5 ke ⁻ @12-bit Gain 2		500 fps @ 10-bit
Dark noise	>120 ke ⁻ @ binning	Dark current	250 fps @ 12-bit
	6.1 e ⁻ @12-bit Gain 2		11.4e ⁻ /p/s @ 50 °C
Dynamic range	3.5 e ⁻ @12-bit Gain 3	Output interface	160 ch sub-LVDS @1.2 Gbps
	68dB		Power consumption
Chroma	Color & Mono	Package	454 pins uPGA
I/O voltage	1.8V		42mmx42mm

Ordering Information

Sensor Part No.

GSPRINT4521-AVM-NUT-BU1 Mono, Normal speed, 250fps@12bit & 500fps@10bit, Grade 1	GSPRINT4521-AVM-NUT-BU2 Mono, Normal speed, 250fps@12bit & 500fps @10bit, Grade 2
GSPRINT4521-AVM-HUT-BU1 Mono, High speed, 1000fps@8bit, 500 fps@10bit, 250fps@12bit, Grade 1	GSPRINT4521-AVM-HUT-BU2 Mono, High speed, 1000fps@8bit, 500 fps@10bit, 250fps@12bit, Grade 2
GSPRINT4521-AVC-NUT-BU1 Color, Normal speed, 250fps @12bit & 500fps@10bit, Grade 1	GSPRINT4521-AVC-NUT-BU2 Color, Normal speed, 250fps @12bit & 500fps @10bit, Grade 2
GSPRINT4521-AVC-HUT-BU1 Color, High speed, 1000fps@8bit, 500fps@10bit, 250fps@12bit, Grade 1	GSPRINT4521-AVC-HUT-BU2 Color, High speed, 1000fps@8bit, 500fps@10bit, 250fps@12bit, Grade 2
GSPRINT4521-AVM-NUT-BR2 Mono, removable glass, Normal speed, 250fps@12bit & 500fps@10bit, Grade2	

EVK Part No.

GSPrint4521_EVM, USB interface, 3 stacked PCB boards

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