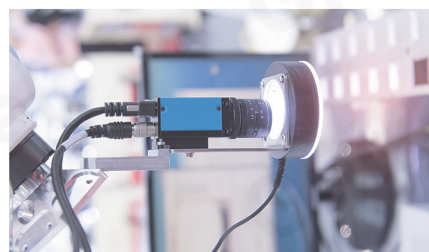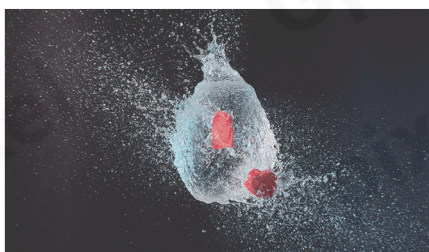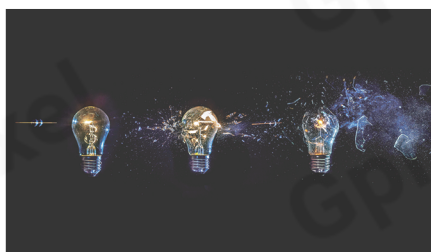# Gpixel

GSPRINT Series

HIGH SPEED IMAGE SENSORS

GSPRINT is Gpixel's high-speed global shutter product family, including 21MP, 10MP, and 2MP sensors. GSPRINT sensors are designed with the latest 4.5 µm global shutter pixels achieving more than 30 ke¯ charge capacity and less than 4 e¯ rms read noise. Using an advanced 65 nm CIS process with light pipe technology, the sensor achieves >65% QE and more than 1/40,000 shutter efficiency. GSPRINT4521 achieves 1000 fps at full resolution in 8-bit mode, 500 fps in 10-bit mode, and 250 fps in 12-bit mode. GSPRINT4510 delivers 1920 fps at full resolution in 8-bit mode, 1000 fps in 10-bit mode, and 480 fps in 12-bit mode. GSPRINT4502 achieves 3460 fps at full resolution in 8-bit mode, 1782 fps in 10-bit mode, and 852 fps in 12-bit mode. ROI and on-chip binning modes can be used to further increase the frame rates. Lower frame rates are enabled by multiplexing to a reduced number of output channels (down to 4 channels). GSPRINT4510 and GSPRINT4521 are pin compatible and packaged in a 454-pin uPGA ceramic package.

Product Family Features

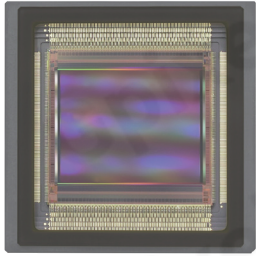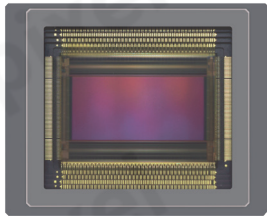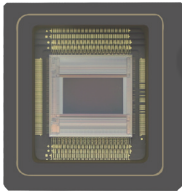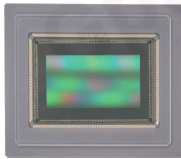- ✅ High Frame Rate
- ✅ Low noise Global Shutter
- ✅ HDR read out
- ✅ On-chip OB correction
- ✅ Flexible channel multiplexing
- ✅ On-chip 2x2 binning and ROI read out
- ✅ One-Time Programmable memory (OTP)
- ✅ On-chip Sequencer and SPI control

Applications

- ✅ 3D laser profiling
- ✅ 3D AOI
- ✅ High Speed Inspections
- ✅ Video broadcasting
- ✅ Scientific Imaging

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Gpixel

Sensor Specifications

CMOS Image Sensors	GSPRINT6502BSI 2MP	GSPRINT4502 2.5MP	GSPRINT4510 10MP	GSPRINT4521 21MP
Pixel	6.5 µm GS	4.5 µm GS	4.5 µm GS	4.5 µm GS
Opt. Format	1"	2/3"	4/3"	1.84" APS-C
Resolution	2048 X 1152	2048 x 1216	4608 X 2176	5120 X 4096
Chroma	Mono	Mono RGB	Mono RGB	Mono RGB qRGB
FWC$_{max}$	20.0 ke$^-$	30 ke$^-$	30 ke$^-$	32 ke$^-$
Noise$_{min}$	27.0 e$^-$	3.8 e$^-$	4 e$^-$	3.5 e$^-$
DR$_{max}$	57.0 dB	68 dB	68 dB	68 dB
QE$_{max}$	80% @ 430 nm	65.7% @ 515 nm	67% @ 550 nm	63% @ 500 nm
Frame Rate @ADC	1875 fps @ 8 bit 1500 fps @ 10 bit	3462 fps @ 8 bit 1782 fps @ 10 bit 852 fps @ 12 bit	1920 fps @ 8 bit 1000 fps @ 10 bit 480 fps @ 12 bit	1000 fps @ 8 bit 500 fps @ 10 bit 250 fps @ 12 bit
Power	<1.9 W	<2.5 W	<5.0 W	<6.0 W
SLVDS lanes	32 @ 1.2G	64 @ 1.2G	HS: 144 @ 1.2G NS: 72 @ 1.2G	HS: 160 @ 1.2G NS: 96 @ 1.2G
Package	25.7 x 22.4 mm² 130p LGA	28.0 x 29.4 mm² 255p µPGA	42.0 x 34.0 mm² 454p µPGA	42.0 x 42.0 mm² 454p µPGA
Availability	ES & EVK	EVK & MP	EVK & MP	EVK & MP

Pin Compatible

Contact

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