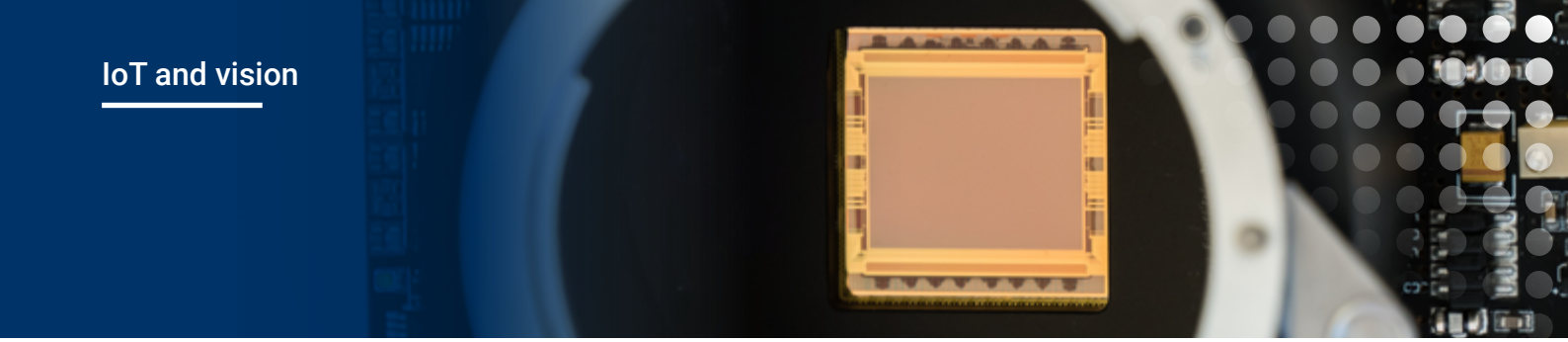


FastEye smart camera

1 MP/2 kfps high-speed camera for smart vision

FastEye is a compact 1 MP high-speed camera featuring CSEM's 1120 x 1024 pixel global shutter CMOS image sensor (VIA1MP), allowing sampling rates of up to 2 kfps at full resolution. The configurable region of interest (ROI) functionality makes it possible to limit the readout to interesting regions of the image, thus enabling increased frame rates of up to 64 kfps at a reduced resolution of 1120 x 32 pixels.

Camera specifications

- Image sensor: 1 MP, 12 µm x 12 µm pixel size
- High-speed: up to 64 kfps (2 kfps @ 1 MP)
- Dynamic range > 60 dB (10 bits/pixel)
- Controllable multiple ROIs (in x and y directions)
- Triggering via software or external input
- Global/rolling shutter capability
- Simple USB 3.0 interface; 6–12 V power supply
- Compact design
- Interface to CSEM Visard (GUI, analysis tools)
- Onboard processing resources on FPGA
- Fast DDR3 memory (1.3 GB or 2.6 GB)

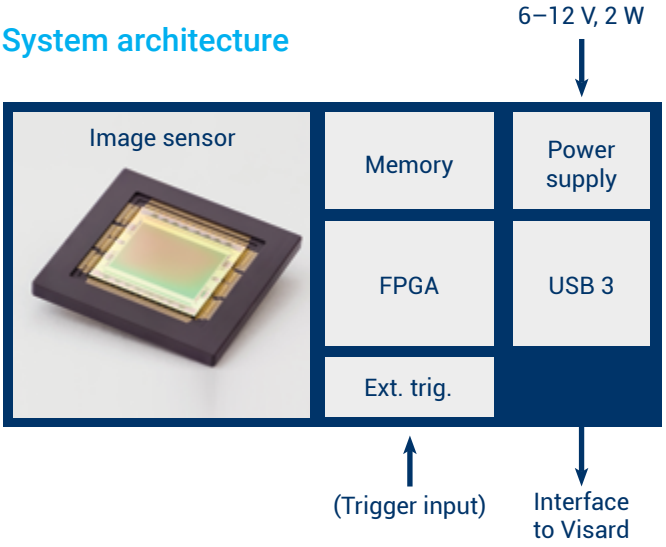
Applications

- Production/quality control: real-time quality assessment in high-speed production lines
- Smart, high-speed inspection: onboard image analysis programmable onto FPGA
  (e.g., image compression, classification, and detection)
- Automotive: smear-free, low-latency visual information acquisition

Recording capacity

Resolution	Memory size (rec. time @ 2 kfps)	
	1.3 GB	2.6 GB
1120 x 1024	936 (0.47 sec)	1872 (0.94 sec)
640 x 320	3281 (1.64 sec)	6562 (3.28 sec)
320 x 200	16775 (8.39 sec)	33550 (16.78 sec)
1120 x 32	29955 (14.98 sec)	59910 (29.96 sec)

System architecture



FastEye mounted with a 50 mm 1.8 f lens