

An owl is shown in flight on the left side of the image, its wings spread wide. On the right side, a CMOS image sensor chip is displayed, showing its internal structure and a colorful rainbow-like pattern. The background is a gradient of purple and blue, with white lines suggesting a grid or perspective.

Custom CMOS Imaging

adding real vision to your bright ideas

Our world-class 'Eye-On-Silicon' CMOS imaging toolbox technology and dedicated teams make e2v the partner of choice for image sensor or system on chip solutions.

Our Mission at e2v is to forge long-lasting relationships with our valued customers by enabling custom CMOS products of premium quality that extend technical barriers to enhance the competitive position of our partners.

Whether you require semi or full-custom CMOS image sensors or imager-enabled system-on-chip products, e2v can work with you to provide the solutions that will empower your products with clarity and vision.

Typical Applications

- ⇒ Industrial/Commercial security and IP cameras
- ⇒ Automotive
- ⇒ Industrial machine vision, barcode reading, high speed scanning
- ⇒ UV, visible, IR wavelength image capture
- ⇒ Medical
- ⇒ Biometric
- ⇒ Professional and pro-consumer cameras (DSLR, broadcast, cine)
- ⇒ Display/print colour measurement and management devices

The 'Eye-On-Si' CMOS imaging toolbox:

The power and differentiation offered by the extensive e2v custom CMOS toolbox comes from the quality of its many individual 'block-based' IP components.

Many years of research and development has resulted in 'tried and tested', easy to implement imaging building blocks that can extend integration as deep into the total system as required, encompassing the core processing and output interface as optimum partitioning dictates.

As with all real-world systems, the quality and performance of the analogue front-end sensing determines the baseline quality of the product. Innovative embedded post-processing can sometimes offer additional improvements to enhance system performance or perceived quality, but sometimes the raw-data quality and reliability just has to be there. A e2v great care and attention has been paid to pixel development and acute tuning processes.

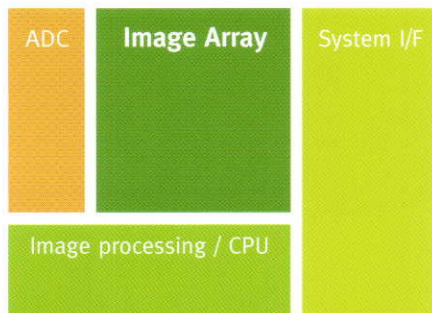


Image Array

- Pixel architectures
 - 3T: rolling shutter
 - 4T: low noise
 - 5T: global shutter (99.7% efficiency)
- Resolution/Format – your choice.
 - We have array stitching technology to offer die from a few mm² to 900mm²
- Pixel size - we have produced everything from 2.2µm (Telecom) to 20µm (Medical)
- Colourised or B&W, with microlenses (High Sensitivity)
- B&W with enhanced NIR sensitivity performance (Night Vision)
- Deep UV sensitive (back-thinned, optimised UV anti-reflect coating IP)
- Zoning and multiple Region Of Interest windowing
- Pixel sub-sampling and/or binning
- Linear or High-Dynamic (>120dB) transfer functions

ADC

- Proprietary low noise, high speed ADC architectures
- Column/SA ADC or CDS/PGA type architectures

Image processing / CPU

- Up to full camera on a single chip
 - AGC & AEC AWB
 - Defect correction
 - Gamma correction
 - Lens shading correction
 - Colour correction
 - Colour interpolation
 - Anti-flicker
 - RGB to YCrCb
 - Edge sharpness
 - Sub-sampling
 - Digital zooming
 - Anti aliasing
- Embedded signal processing and MCU based application software algorithms on chip, programmable and upgradeable by customer
- On chip statistics generation
- Auto focus determination and control algorithms
- Noise management and cancellation algorithms
- Memory control and interface

System I/F

- External system interface
- Sensor data output parallel 8, 10, 12, 14... bit formats
- Serial sensor data output (e.g. LVDS)
- Two wire or high speed (e.g. SPI) sensor/system control bus
- PLLs for flexible clock management
- Timing and synchronisation management
- System voltage regulation
- Many other analogue functions

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