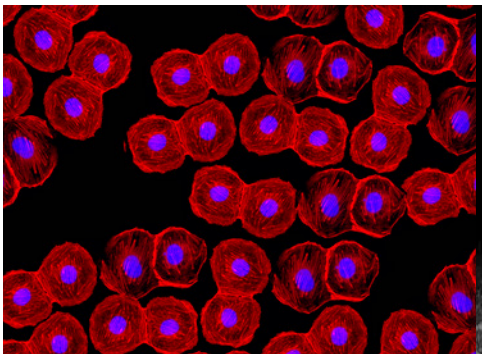
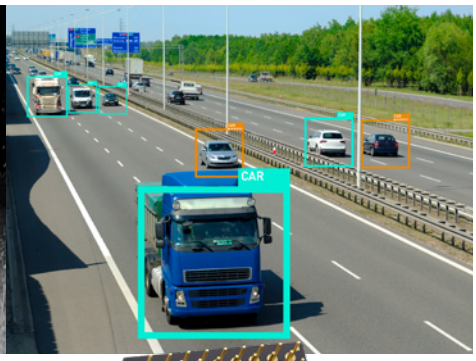
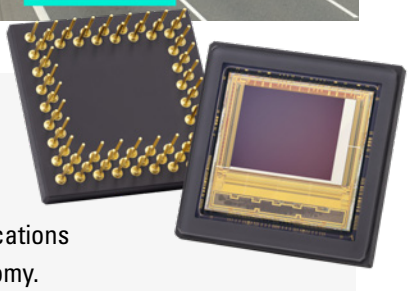
OnyxMax
HIGH-PERFORMANCE CMOS IMAGE SENSORS FOR EXTREMELY LOW LIGHT CONDITIONS







OnyxMax™ is the next generation of Teledyne e2v's popular Onyx 1.3M low light CMOS image sensor. This new sensor has been designed for extremely low light conditions, down to 1 mLux. The combination of sensitivity and image resolution increases its range, allowing even small objects to be detected in harsh conditions. This makes OnyxMax ideal for a wide range of applications including science, defense, traffic cameras, broadcast, surveillance, border control and astronomy.

SENSOR FEATURES	CUSTOMER BENEFITS
High image processing throughput with 120 fps frame rate @ 1.3M resolution	Low power SWAP-C class
Global shutter and rolling shutter HDR	Compatible with 1-inch C-mount optics for easy integration and reduced costs
A state-of-the-art low noise global shutter	Excellent SNR and frequency contrast in low light conditions
LVDS and SPI interfaces	Square format with flexible multi integration and multi resolution

Sensor Characteristics

	OnyxMax
RESOLUTION – PIXELS	1,280 x 1,024
PIXEL SIZE SQUARE – µm	10
ASPECT RATIO	5/4
DEPTH - BITS	8 / 10 / 12 / 14
FRAME RATE – fps	120 / 120 / 60 / 30
READOUT NOISE – e-rms	1.8
FWC – ke-	14
DYNAMIC RANGE – dB HDR – dB	75 100
SNRMAX – dB	41.5
Q.E. – %, @ 850 nm MTF – %, @ 850 nm	58 63
OPERATING POWER CONSUMPTION / STANDBY mW	275 / 1.2

KEY SPECIFICATIONS

- Global and rolling shutter in serial and overlap modes
- Rolling shutter with HDR mode in serial and overlap modes
- Global shutter with external CDS mode
- Range gating mode for active imaging
- 1" optical format
- Output format true 8 / 10 / 12 / 14bit LVDS and synchronization
- Frame clamp and on-chip fixed pattern noise correction
- SPI controls
- Control input pins: Trigger in, reset
- Light control output – Trigger out
- 3.3 V and 1.8 V power supplies
- 80 MHz input clock
- 67 pins PGA ceramic package

EMBEDDED FUNCTIONS

- Image statistics and context output
- Sub-sampling
- Two PLL for LVDS and ADC frequencies generation
- Wide dynamic range capabilities
- Accumulation mode for active imaging applications
- Time to read improvement (good first image, abort image)
- Low power

TYPICAL APPLICATIONS

- Surveillance & security cameras
- Military and law enforcement
- Scientific imaging / astronomy
- Industrial inspection
- Biometric and medical imaging
- Traffic cameras