THE ULTIMATE SOLUTION FOR DEMANDING ENVIRONMENTS

Teledyne e2v's Onyx family of image sensors are designed for the most demanding outdoor camera and industrial machine vision applications, where illumination budgets are restricted or where high-speed inspection is required. Teledyne e2v's new Onyx EV76C664 is a 1.3 million pixel CMOS image sensor providing excellent sensitivity and performance in the near infrared spectrum. It has been designed using Teledyne e2v's advanced CMOS imaging technology and is ideal for many different types of application where premium performance imaging is required.

The **Onyx EV76C664** has an innovative pixel design which offers excellent performance in low-light conditions, but also caters for 'all-light' environments (typical of outdoor camera applications) where wide dynamic range is also needed. The device features an electronic global shutter (true snapshot) or rolling shutter, multi-integration modes performing range gating, and offers a high-readout speed at full resolution.

KEY BENEFITS

- Wide dynamic range
- Low-noise and near infrared sensitivity at low-light levels
- 1.3 million 10 µm square pixels with microlens
- Optical format 1"
- 1,024 (V) x 1,280 (H) pixels – 5:4 optical format
- 100 fps @ full resolution & 12 bits / 60 fps @ full resolution & 12 bits DDS
- Output format true 8/10/12/14 bits LVDS with synchronization
- SPI controls
- Control input pins: trigger in, reset
- Light control output – trigger out
- 3.3V and 1.8V power supplies
- 80 MHz input clock

FEATURES

- Image histograms and context output
- Sub-sampling (horizontal/vertical)
- Dual PLL for LVDS and ADC frequencies generation
- Wide dynamic range capabilities
- Time to read improvement (good first image, abort image)
- Global and rolling shutters readout mode
- Monochrome
- Sparse monochrome and color filter
- Multi-integration capabilities

Sensor Characteristics

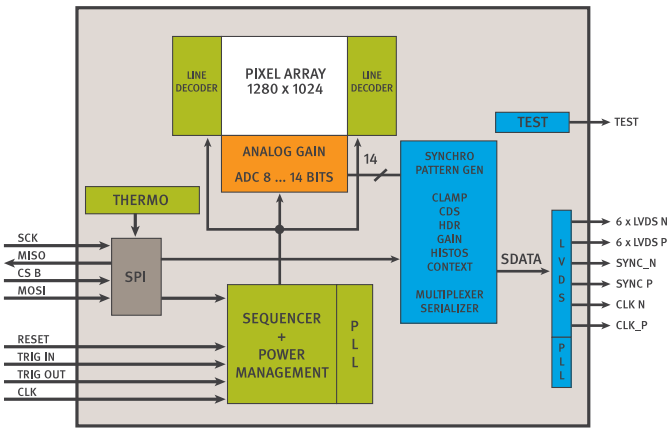
Resolution – pixels	1,024 (V) x 1,280 (H)
Image size – inches	1
Pixel size – µm	10 x 10
Aspect ratio	5:4
Max frame rate – fps	100 @12 bits, full format 60 @12 bits, full format +DDS
Pixel rate – Mpixels/s	124 @14 bits/ 705 @10 bits

PIXEL PERFORMANCE

Bit depth – bits	True 8/10/12/14
Dynamic range – dB	68 (DDS linear) / >100 (HDR modes)
Readout noise – electron	17 in Global Shutter – 5 in Global Shutter + DDS
SNRmax – dB	42
Quantum efficiency – %	60 (@55 onm)

MECHANICAL & ELECTRICAL INTERFACE

Power supplies – V	3.3 & 1.8
Power consumption **Functional – mW** **Standby – µW**	 600 2



APPLICATIONS

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

ORDER CODES

EV76C664ABT-RTR	Monochrome NIR enhanced CMOS image sensor with film
EV76C664AMT-RTR	Monochrome and color NIR enhanced CMOS image sensor with film
EV71YPO1M3U3N-AA0	Monochrome NIR enhanced CMOS image sensor demokit: USB3, SW, power supply, etc.
EV71YPO1M3U3N-AA0	Monochrome Color NIR enhanced CMOS image sensor demokit: USB3, SW, power supply, etc.