The Ultimate Solution for Demanding Environments

**KEY BENEFITS**

- Wide dynamic range
- Low-noise and near infrared sensitivity at low-light levels
- 1.3 million 10μm square pixels with microlens
- Optical format 1"
- 1,024 (V) x 1,280 (H) pixels – 5:4 optical format
- 100fps @ full resolution & 12 bits / 60fps @ 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
**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.

**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 (@550 nm)

**MECHANICAL & ELECTRICAL INTERFACE**

- **Power supplies – V**: 3.3 & 1.8
- **Power consumption**
  - **Functional – mW**: 600
  - **Standby – μW**: 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
- **EV71YO1M3U3N-AA0**: Monochrome NIR enhanced CMOS image sensor demokit: USB3, SW, power supply, etc
- **EV71YO1M3U3M-AA0**: Monochrome Color NIR enhanced CMOS image sensor demokit: USB3, SW, power supply