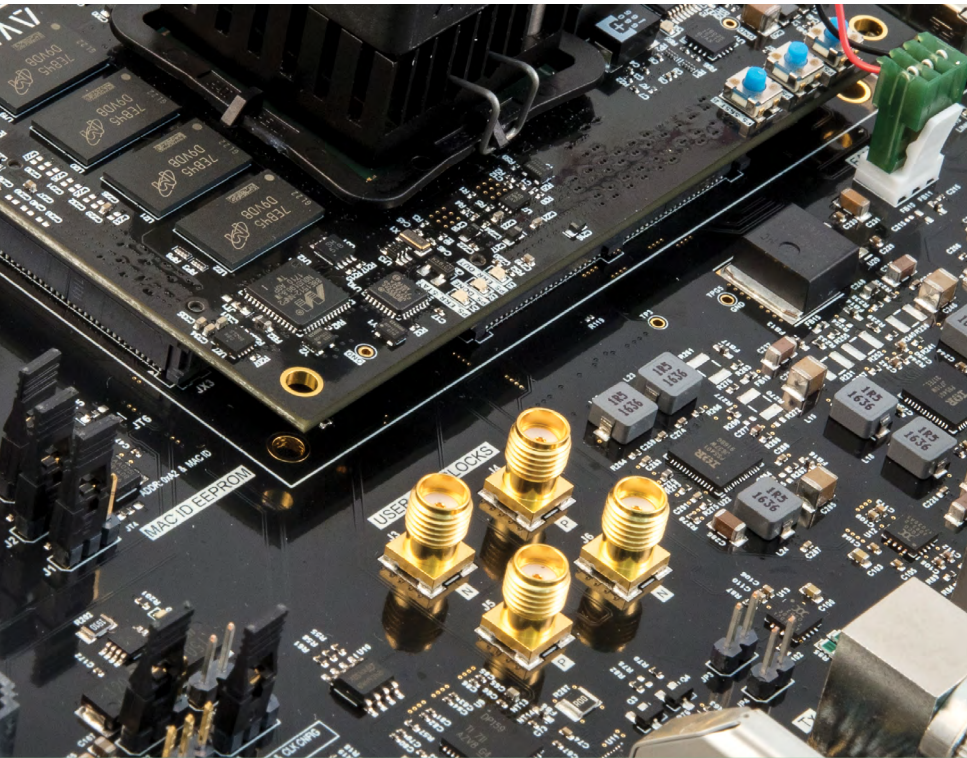


Machine Vision Solutions Selector Guide

onsemi™

XILINX®

Complete Machine Vision Solutions



FPGA + Image sensors + AI & software

Choosing the right technology partners like Avnet, Xilinx and ON Semiconductor for your next machine vision innovation optimizes efficiency, mitigates potential risks and maximizes profit potential. This partnership will deliver unmatched support in establishing the necessary framework of hardware components and software that provides vision algorithms, camera interface standards, advanced analytics, artificial intelligence (AI) and machine learning.

Smarter opportunities with Avnet

Avnet is a global technology company that's successfully supported all facets of innovation for the last century. With a dedicated team of field application engineers, materials specialists, design solution engineers and salespeople, Avnet is uniquely capable in delivering limited or complete end-to-end solutions that turn challenges into opportunities. Once ready for production, we have the supply chain experts who can strengthen your expertise with additional support around testing or regulatory concerns as well.







A successful partnership with Avnet enables you to better focus valuable resources on intellectual property (IP) innovation and other areas that deliver a strong competitive edge. **Together, we'll accomplish more and improve business outcomes.**

Advanced Starter Kits & Evaluation Boards

Get ahead of the competition with your next design. Leading-edge technology from Avnet can fast track your successful development of machine vision solutions.

Starter kits

Development Boards & Platforms

Avnet UltraZed-EV System-on-Module (SOM) Starter Kit	Xilinx Kria KV260 Vision AI Starter Kit	Avnet Ultra96-V2 Zynq UltraScale+ZU3EG Single-Board Computer	Avnet 96Boards ON Semiconductor Dual Camera Mezzanine	Avnet Quad Camera FMC Bundle	ON Semiconductor Sensor Evaluation Platform
 <p>64-bit quad-core Arm Cortex-A53 and Arm Cortex-R5 based processing system (PS) and Xilinx programmable logic (PL) UltraScale architecture in a single device delivering a rich set of peripheral connectivity interfaces.</p>	 <p>The Kria KV260 Vision AI Starter Kit is ideal for vision application development without requiring complex hardware design knowledge. The KV260 is based on the Zynq UltraScale+ MPSoC architecture and comes with a fully equipped carrier card for rapid prototyping and design.</p>	 <p>An Arm-based, Xilinx Zynq UltraScale+™ MPSoC single-board computer based on the Linaro 96Boards Consumer Edition (CE).</p>	 <p>This 96Boards mezzanine card features two Polight IAS-compatible imaging modules based on imaging sensors from ON Semiconductor. These MIPI sensor modules interface to an API302 imaging coprocessor.</p>	 <p>Bundle combines the Avnet Multi-Camera FMC module, four AR0231AT camera modules with GMSL serialization and a cable assembly as a complete add-on solution for vision-guided applications.</p>	 <p>The Demo3 baseboard sends sensor image data to the host computer through a high-bandwidth USB 3.0 interface as well as to an external HDMI monitor. It takes single/dual/quad MIPI interface, dual/quad lanes HiSpi interface, CCP, and parallel interface from the sensor headboard, which eliminates the need for additional receiver boards.</p>
<p>Part # AES-ZU7EV-1-SK-G</p>	<p>Part # SK-KV260-G</p>	<p>Part # AES-ULTRA96-V2-G AES-ULTRA96-V2-I-G (Industrial Grade)</p>	<p>Part # AES-ACC-U96-ONCAM-MEZ</p>	<p>Part # AES-FMC-MC4-AR0231AT-G</p>	<p>Part # AGB1N0CS-GEVK</p>

Modules

System-On-Modules

Avnet UltraZed-EV (SOM) System-on-Module



Based on Xilinx Zynq® UltraScale+™ MPSoC. Enables the design of applications such as multimedia, automotive ADAS, AI/ML and surveillance with so much compute power and access to the multitude of multimedia options.

Part

[AES-ZU7EV-1-SOM-G](#)
[AES-ZU7EV-1-SOM-I-G](#)
 (Industrial Grade)

Xilinx Kria K26 (SOM) System-on-Module



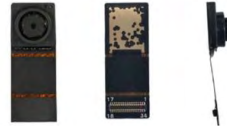
Offered in Commercial and Industrial grades, the Kria K26 SOM features a custom -built Zynq UltraScale+ MPSoC device in a small form factor card ideal for production deployment in Smart Camera, Embedded Vision, and other Security, Retail Analytics, Smart City, and Machine Vision applications.

Part

[SM-K26-XCL2GC](#)
[SM-K26-XCL2GI](#)
 (Industrial Grade)

Chip-On-Board Camera Modules

Compact Global Shutter Imaging Solution



Ideal for industrial applications, this module is based on the AR0144, 1 megapixel, monochrome sensor allowing for fast data processing and better sensitivity. Conforms to the new IAS camera module standard, sharing a common MIPI and connector interface.

Part

[CAV10-000A](#)

4k Imaging Solution with Auto-Focus



This module is based on the AR1335, 13 megapixels, Raw Bayer sensor capable of 4k @ 30 Hz video and 30 frames per second at full resolution. Conforms to the new IAS camera module standard, sharing a common MIPI and connector interface.

Part

[CAVBA-000A](#)



Zynq® UltraScale+™ MPSoC

Zynq® UltraScale+™ MPSoC devices provide 64-bit processor scalability while combining real-time control with soft and hard engines for graphics, video, waveform, and packet processing. Zynq UltraScale+ EV devices feature a video codec enabled for multimedia and embedded vision applications, including surveillance, smart vision, human machine interface, automotive ADAs, and video processing. Additional features of these devices include a quad-core Arm® Cortex®-A53-based APU, dual-cores Arm Cortex-R5F, 16nm FinFET+ programmable logic, Arm Mali™-400MP2, and H.264/H.265 video codec.

Sensors

Image Sensors

ON Semiconductor XGS Global Shutter Image Sensors	ON Semiconductor AR0144 CMOS Digital Image Sensors	ON Semiconductor AR0234CS CMOS Digital Image Sensors
 <p>The XGS Global Shutter family offer excellent image quality and supports all resolutions from 2Mp to 45Mp in 2 footprints.</p>	 <p>The AR0144 is a 1/4-inch 1.0 Mp CMOS digital image sensor with an active-pixel array of 1280H x 800V. It incorporates a new innovative global shutter pixel design optimized for accurate and fast capture of moving scenes.</p>	 <p>The AR0234CS is a 1/2.6-inch 2Mp CMOS digital image sensor with an active-pixel array of 1920 (H) x 1200 (V).</p>
<p>Part # <u>XGS 12000</u></p>	<p>Part # <u>AR0144</u></p>	<p>Part # <u>AR0234CS</u></p>

Out-of-the-Box Vision AI Acceleration

Achieve up to 10x performance increase versus tradition CPU/GPU solutions with Vitis AI, a specialized development environment for accelerating AI inference on Xilinx embedded platforms. Vitis AI supports the industry's leading deep learning frameworks like Tensor flow and Caffe, and offers comprehensive APIs to prune, quantize, optimize, and compile your trained networks to achieve the highest AI inference performance for your deployed application. Additionally, open-source, performance-optimized libraries offer out-of-the-box acceleration with minimal to zero-code changes to your existing applications, written in C, C++ or Python.

Leverage the domain-specific accelerated libraries as-is, modify to suit your requirements or use as algorithmic building blocks in your custom accelerators.

For more info visit:
www.xilinx.com/vitis-ai



CONTACT US

We've helped many companies attain a jump start on their products and get to market faster. Contact us today to get started.

EBV Regional Offices – Status May 2021

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