KV260 GitHub Docs

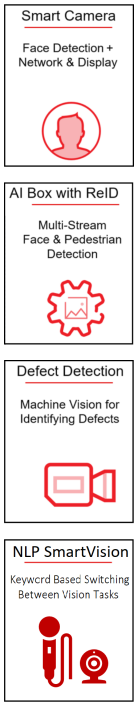
version 1.0

Xilinx, Inc.

May 18, 2021

Contents

Kria™ KV260 Vision AI Starter Kit Applications



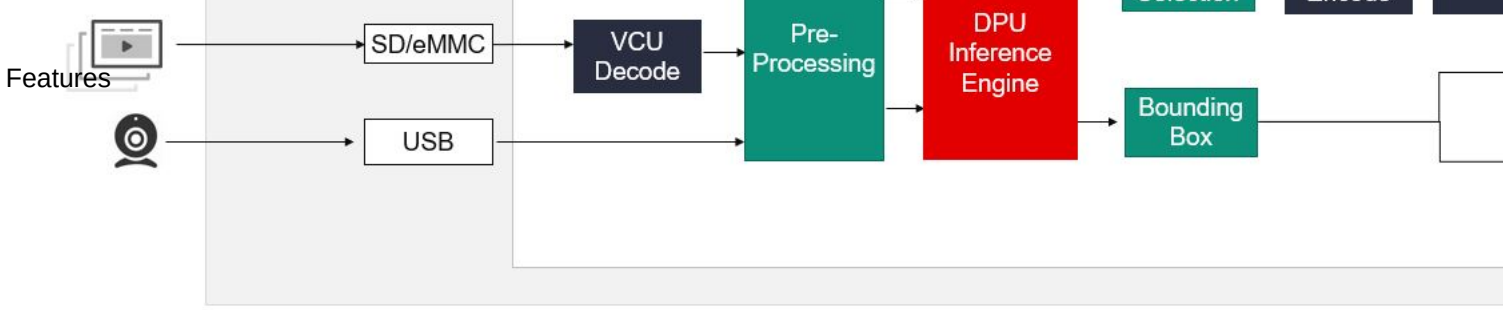
The Kria KV260 Vision AI Starter Kit is the first out-of-the box ready evaluation/development platform in the Xilinx Kria portfolio of products. The Starter Kit is the platform of choice for development of vision specific target applications. It consists of a non-production K26 SOM plugged into a vision carrier card and equipped with a thermal solution of fan & heatsink. The SOM on the Starter Kit is based on Zynq UltraScale+ MPSoC architecture that is paired with 4GB of DDR4 memory. The Starter Kit is vision ready as it features multi-camera support through 2x OnSemi Image Access System (IAS) connectors and 1x Raspberry Pi connector. One of the IAS connectors link to a dedicated OnSemi 13 MP AP1302 Image Sensor Processor (ISP), which has the ability to handle all image processing functions including interlaced High Dynamic Range (iHDR) operations. Beyond the vision-specific interfaces, there are a host of other interfaces for general purpose development as well. These include flexible IO connectivity through Ethernet and USB, expandability via Pmod connectors.

Enabled by a growing ecosystem of accelerated applications from the Xilinx App Store, developers of all types can get applications up and running in under 1 hour, with no FPGA experience needed. From there, customization and differentiation can be added via preferred design environments, at any level of abstraction—from application software to AI model to FPGA design.

With both hardware and software development requirements simplified, the KV260 Vision AI Starter Kit is the fastest and easiest platform for application development with the goal of heading towards production volume deployment with the Kria K26 SOMs. The KV260 Vision AI Starter Kit is very accessible and priced at $199, it’s a perfect vehicle to leverage during the development phase of your vision applications and further accelerates your time to market.

Getting Started

For more information, see Getting Started with Kria KV260 Vision AI Starter Kit.



Features

- 4k resolution images from a sensor
- H.264/H.265 encode/decode
- HDMI or DisplayPort or RTSP out
- User programmable Deep Learning models

Quick Start

- Overview
- Setting up the Board and Application deployment

Tutorials

- Customizing AI Models used in the Application
- Building the Design components

Architecture Documents

- Software Architecture - Platform
- Software Architecture - Accelerator
- Hardware Architecture - Platform
- Hardware Architecture - Accelerator

Other

- Debugging
- Known Issues

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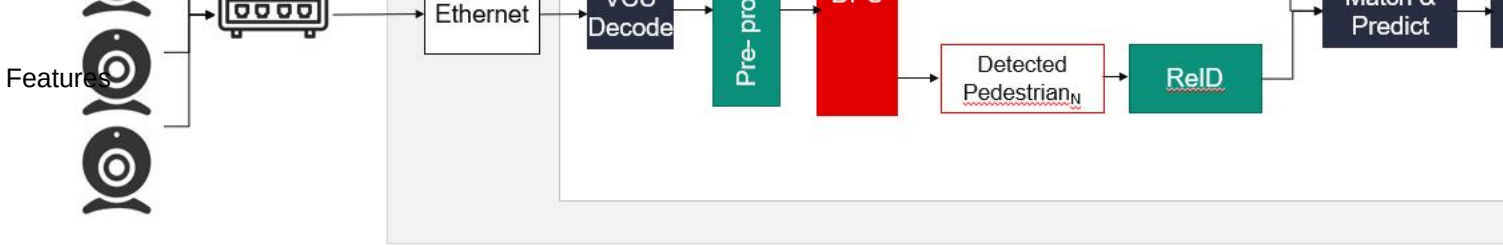

Features

- Upto 4 input streams from IP cameras
- H.264/H.265 decoding capability at 1080p resolution
- Pedestrian detection and tracking on individual streams
- HDMI or DisplayPort out
- User programmable Deep Learning Models

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Features

Note: The test mango image is taken from COFILAB.

Features

- Monochrome images from a file source
- Defect detection and sorting of mangoes
- HDMI or DisplayPort out from the various stages
- User programmable CV Models

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The natural language processing (NLP) SmartVision implements keyword spotting (KWS) on proceesing system (PS) and face detection, objectdetect, platedetect running on programmable logic (PL). It showcases keyword based dynamic switching between multiple tasks and modifying display properties.

Features

- Live audio capture from USB Microphone
- 1024x768 resolution images from a sensor
- DisplayPort out
- User programmable Deep Learning models

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