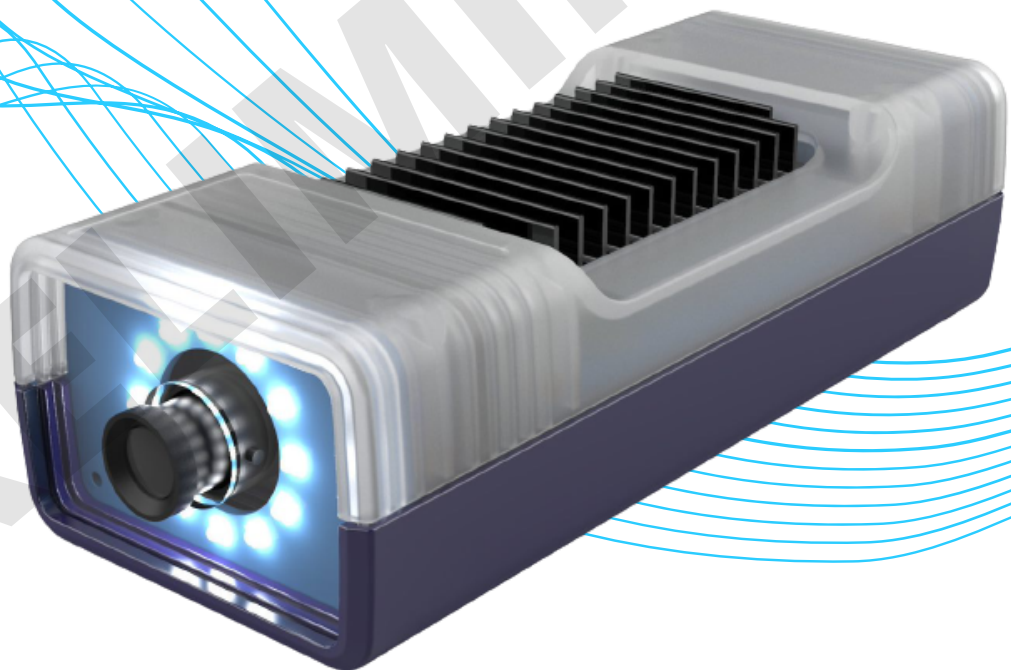


DEEVIEW

MAIVIN AI VISION STARTER KIT



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VERSION: V1.01
DATE: 11/04/2021

PRODUCT BRIEF

MAIVIN AI VISION STARTER KIT

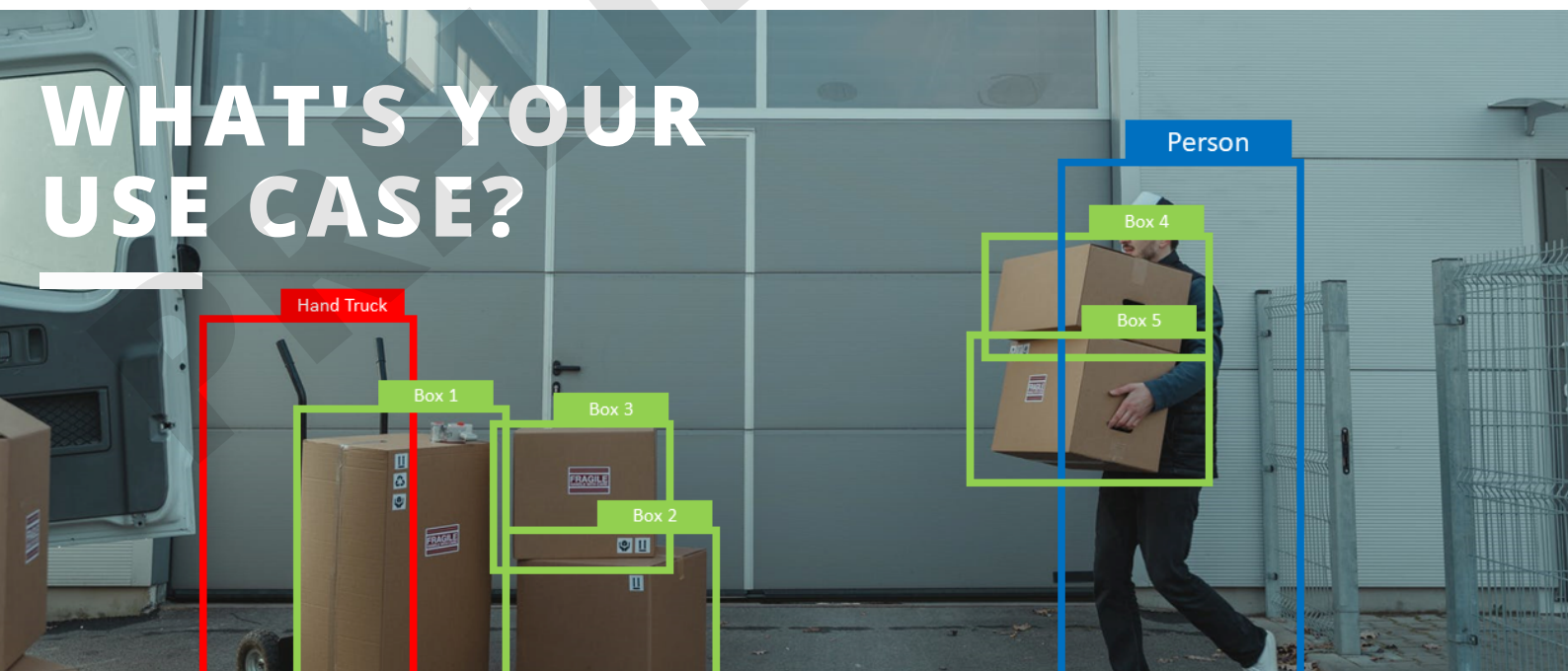
The Maivin AI Vision Starter Kit is a modular AI smart camera platform built with production grade hardware and software components from Au-Zone, Toradex and Vision Components. The starter kit provides you with a path for quickly prototyping and field testing your next custom vision system.

The Maivin platform comes integrated with out of box demo applications and support for object detection, classification and tracking which can be customized using the eIQ Toolkit for your own AI model or image data set.

Once you have validated the architecture for your use case the production grade components solve challenging design and supply chain bottlenecks to get you to market with less time and risk.

Benefits

- Removes technical challenges and barriers of developing AI vision features helping you to reduce your embedded vision product time to success:
 - Out of the box object detection and classification models which you can customize with your dataset or machine learning model using the no charge NXP eIQ Toolkit.
 - Quickly prototype and validate the performance of models for your use case without costly custom hardware, firmware development, or high risk learning curve.
 - Production grade hardware and mechanical design suitable for lab and field deployments, so you can quickly validate your ideas in the real world.





Key Features:

- Fully integrated solution, supporting object detection and classification models trained with the eIQ Toolkit without any firmware development.
- Preloaded with trial versions of the DeepView Vision Pack for Application Processing and DeepView Model Pack included with purchase.
- Industry leading machine learning inference performance on the i.MX 8M Plus using DeepViewRT, which has been optimized for NPU architecture.
- JSON API for reporting low bandwidth AI model inference results.
- Full production grade design IP available for license so you can fully customize for your product cutting years off your time to market.
- Modular design supports quick customization for other image sensors or interface options.
- Industrial Grade Toradex Torizoncore open source BSP

What's in the Kit

- Free trial of DeepView Vision Pack for Application Processing & DeepView Model Pack
- Quick start guide with links to full User Guide
- Pre configured detection examples
- Maivin AI Vision Sensor
- All necessary cabling
- Tripod for bench top testing
- 12V Power supply with international plug adapters

100% Compatible with:

- eIQ Toolkit
- DeepViewRT Inference Engine
- DeepView VisionPack for Application Processor
- DeepView Model Pack for Object Detection
- Toradex Torizon Over-The-Air (OTA)



Vision Pack for Application Processors

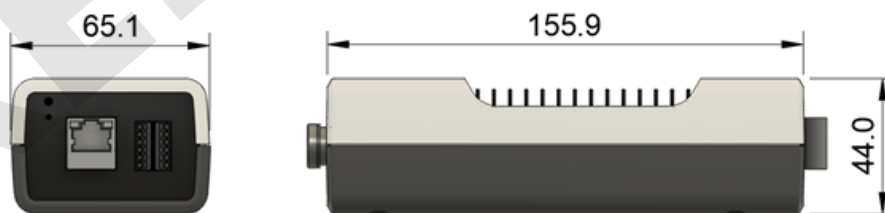
Features	Maivin	EVK
Tested Sources		
OnSemi AR0521	Yes	No
OmniVision OV5620	No	Yes
Sony IMX327-C	Yes*	No
Gigabit Ethernet	Yes	Yes
Web Application <small>Visualize inference results and runtime parameters within a remote browser</small>	Binary	Binary
Functional Demos	Binary	Binary
Hardware Accelerated GStreamer Plugins		
Inference Plugin	Trial	Trial
Decoder Plugin	Trial	Trial
Graphic Overlay Plugin (Box, Skeleton, Parametrics, Labels)	Trial	Trial
Vision Pipeline Accelerator (VPAL)		
SOC Specific Hardware	Trial	Trial
i.MX 8M Plus NPU DMA	Trial	Trial
i.MX 8 GPU DMA	Trial	Trial
Input Image Pre-Processing <small>(2D GPU, CSC, Flip, Scale, Rotation, Cropping, etc.)</small>	Trial	Trial

Hardware Specifications

Feature	Description
SoM Module	Toradex Verdin i.MX 8M Plus System on Module
Processor	NXP i.MX 8M Plus
Memory	4GB LPDDR4 RAM, 16GB Flash
Communications (I/O)	10/100 Ethernet, 802.11 ac/a/b/g/n, Dual Band (2.4/5Ghz), Bluetooth 4.2, 4 GPIO, RS-485, CAN bus
Sensor	4 Lane MIPI CMOS sensor interface , OnSemi AR0521 5MP, Sony IMX327 2.1MP or alternates, I2C Temperature
Expansion	M.2 connector for AI accelerators, LTE M1 Modem, SD Card or SSD Drive
Power	4 W at 12 VDC, Input 10 - 27 VDC, 2.1/5.5 mm barrel connector or terminal block
Lens	Three M12 Lens included 3.6mm, 6mm, 12 mm

Mechanical Data

Modularity	¼” thread for tripod mounting Slots for alternative image sensor modules & custom rear connectors
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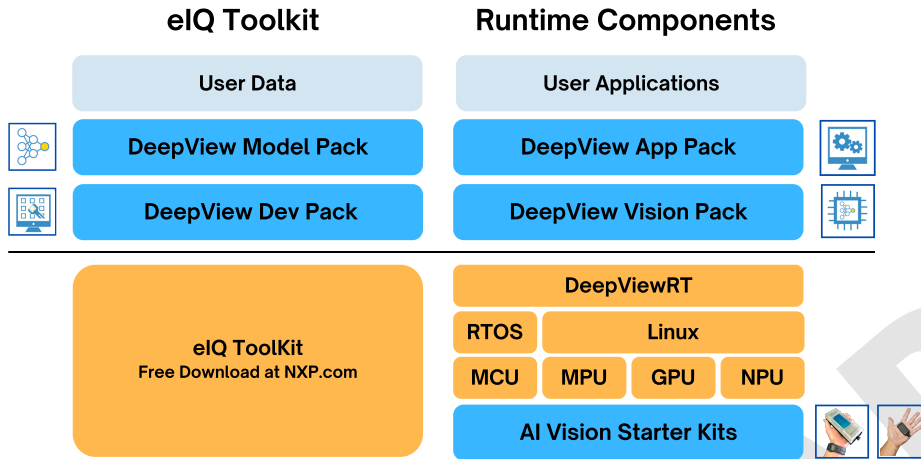


*All measurements are MM

In Partnership with



Build Your Vision Sensor Today



DeepView Development Pack

The Dev-Pack is a bundle of eIQ Toolkit add-on features designed to extend what developers can do with the baseline eIQ Portal providing developers with a practical set of tools to instrument, optimize and deploy highly tuned machine learning solutions on target.



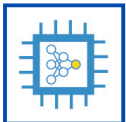
DeepView Model Pack for Detection

DeepView Model Pack is a bundle of state-of-the-art detection models pretrained with COCO and OpenImages and has been fully tested & optimized for NXP RT Crossover MCU's and i.MX8 Application Processors.



DeepView Application Pack | Tracking on MCU

The Tracking Application Pack is the amalgamation of a Au-Zone's proprietary tracking algorithm, DeepViewRT, VisionPack for MCU and ModelPack to provide an integrated solution for Multi Object Tracking on a microcontroller.



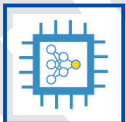
DeepView Vision Pack for Application Processors

The Vision Pack for Apps Processors provides developers with an end to end, hardware accelerated video pipeline for optimized AI based Vision applications. Fully integrated with DeepViewRT inference engine for the high performance / low overhead AI vision solution on Applications Processors.



Maivin AI Vision Starter Kit

The Maivin AI Vision Starter Kit is a modular AI smart camera platform built on NXP's i.MX8MPlus Applications Processor and production grade hardware and software components to enable rapid prototyping and field deployment of custom Vision Solutions. The Maivin targets applications where compute performance is the priority.



DeepView Vision Pack for MCU

Production ready MCU project with hardware optimized vision pipeline for highest performance on MCU class devices. Fully integrated with DeepViewRT inference engine for the high performance / low overhead AI vision solution on MCU.



Micro AI Vision Starter Kit

The Micro AI Vision Starter Kit is a modular AI smart camera platform built on NXP's i.MXRT1064 Crossover MCU and production grade hardware and software components to enable rapid prototyping and field deployment of custom Vision Solutions. The Micro targets applications where lower cost, design complexity and size are prioritized over computer performance