INTERNET OF THINGS

° All Kits

INTEL® VISION ACCELERATOR
DESIGN WITH INTEL® ARRIA®
10 FPGA

A flexible, customizable processor that adapts to advanced display, video, and image processing workloads.

- Low-latency for real-time inference
- Ideal for compute-intensive networks in network video recorder (NVR), gateway, and edge servers
- Long-life continual operation in industrial temperatures

Get Started  Buy
Overview

Flexible Hardware
FPGA compute performance and features evolve over time and can be optimized (or tailored) to meet unique system requirements.

Distributed, Fine-Grain Digital Signal Processor (DSP) Blocks, Memory, and Logic
Deliver higher on-chip bandwidth compared to a general purpose GPU with deterministic low latency and power efficiency.

Core and I/O Programmability Enables Flexibility
Versatile I/O configurations and multifunction OpenCL™ kernels accelerate deep learning applications.

Who Needs This Product
Information and operational technologists who:
- Are new to IoT commercial platforms and need a simple path without a steep learning curve
- Create solutions that offload deep learning and AI workloads from the CPU or GPU to dedicated accelerator products
- Need a quicker path to deployment

Use Cases
- Smart cities
- Automotive and transportation
- Healthcare
- Retail
- Digital Security

Reference Implementations
Store Traffic Monitor
Safety Gear Detector
Intruder Detector
Specifications

**Interfaces to Host**
PCIe*

**Configuration**
For edge servers including NVRs, gateways, and edge video analytics servers

**Supported Streams**
Aggregation of 3 to 32 video streams per device

**Batch Size**
1-144

**Power Consumption**
Board capable of 60 W maximum, 40 W typical operation

**Efficiency**
Good efficiency versus general purpose GPU

**Memory**
Larger memory footprint networks (more than 250 MBs) and compute-intensive networks (more than 3 GMACs)
30-40 generic size networks can be preloaded

**Precision**
Supports lower precision networks (such as FP16 and FP11)

**Customization**
Customizable hardware architecture for optimization and to support unique topologies

**Lifespan**
Eight years with active fan and more than 10 years with passive thermal solution

**Operating System Support**
Ubuntu* 16.04.3, kernel 4.14.0
Ubuntu 16.04.3, kernel 4.15.0

**Host System List**
IEI Tank* 870 (Intel® Core™ i7 or i5 processors)

**Host CPU Configurations**
Intel® Core™ i7 processor 6700TE & Intel® Q170 chipset
Intel Core i5 processor 6500TE & Intel Q170 chipset
Intel® Xeon® E3-1275 processor version 5
Intel Xeon E5-1650 processor version 4

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**Documentation**

- Use Powerful Intel® Vision Products for Facial Recognition
- IEI* Mustang-F100-A10 Brochure
- Get Started Guide
Tools

Intel® Distribution of OpenVINO™ Toolkit

- Enable deep learning inference on the edge based on convolutional neural networks
- Support for heterogeneous execution across various accelerators—CPU, GPU, Intel® Movidius™ Myriad™ X, and FPGA—using a common API
- Speed up time to market via a library of functions and preoptimized kernels
- Preinstalled models included with release 5

Documentation | Forum

Free Download  Get Started  Training

Review the supported pretrained models for the Intel Distribution of OpenVINO toolkit. Learn More

Suppliers

IEI Integration Corp.

Support
IEI Technical Support

Additional Resources
Expand Data Possibilities with Intel® Vision Products
Tools

Intel® Distribution of OpenVINO™ Toolkit
Intel® Media SDK
Intel® System Studio
Intel® Software Development Kits

Training

IoT Training
Tech.Decoded
GitHub*: Intel® IoT Developer Kit
01.org
YouTube*: Intel® IoT

Related Programs

Intel® AI: In Production
Intel® Internet of Things Solutions Alliance