

# VVDN EAIA - EDGE AI APPLIANCE



## About Edge AI Appliance

VVDN-EAIA – Edge AI Appliance with AMD Kria™ K26 SOM and Kinara Ara-1 Edge AI Processors - supports high performance vision AI applications on up to 8 parallel video streams at a fraction of cost compared to a GPU based system.

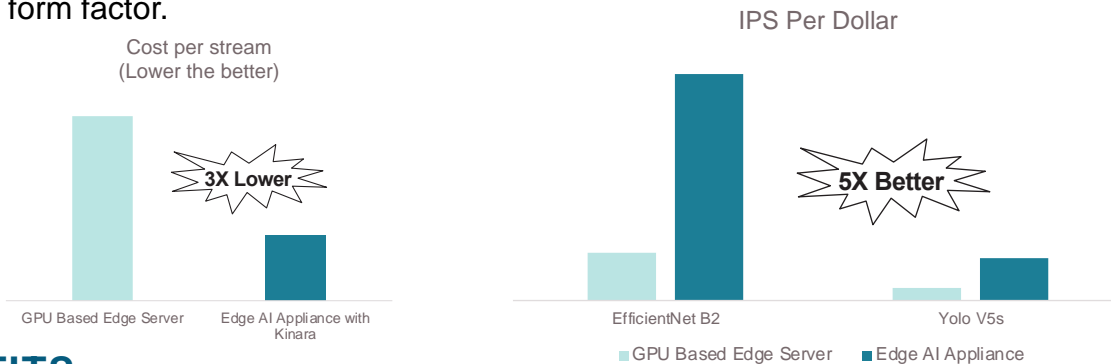
## The Need for AI at the Edge

A single 4K camera running at 30fps can generate more than 3GB of video data per hour. This data needs to be processed in real time for many applications in smart cities and smart retail verticals. Traditionally, these applications run on edge servers with integrated GPUs. However, GPUs, which are designed and optimized for data centers, are not optimal for running AI workloads at the edge. We need a different class of compute appliances that provide extremely low latency AI processing at a low cost and low power. Ease of bring up, a mature software ecosystem and maintainability are also important considerations.

## AI Appliance Optimized for the Edge

Kinara has partnered with AMD and VVDN to bring to market an AI appliance optimized for the edge. With the ability to process up to 8x1080p streams running at 30 frames per second (FPS), this appliance provides 3x better cost per stream<sup>1</sup> compared to an equivalent GPU based system and up to 5x better AI performance per dollar<sup>2</sup>. The appliance is out-of-the-box ready for software developers for high-end video analytics.

This turnkey hardware platform for high-quality, edge inference appliances solves the other challenges in edge deployment – low energy footprint, ability to quickly bring up new models, a robust software ecosystem, low cost, and small form factor.



## KEY BENEFITS

### Unrivaled Edge AI Efficiency

> Everything accelerated! Pre-, post-processing, and inference

### Full Visibility through SDK

> Detailed power, performance, and accuracy metrics

### Automatic Model Optimization

> Model mapping without user intervention



## TARGET MARKETS

- Smart Retail
- Smart Cities
- Smart Manufacturing
- Fleet Management
- Drones, Robotics

1, 2: Kinara computations for cost per stream and IPS (inference per second) per dollar are based on comparisons to an Nvidia T4 graphics card on Dec 2022. Product specifications can be found on nvidia.com.

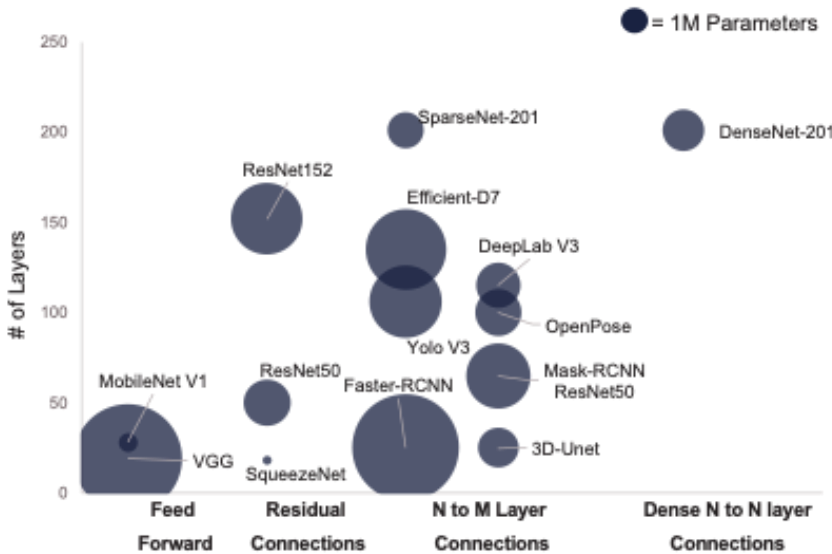
All performance and cost savings claims are provided by Kinara and have not yet been independently verified by AMD. Performance and cost benefits are impacted by a variety of variables. Results herein are specific to Kinara and may not be typical. GD-181.

## EDGE AI APPLIANCE



### Support for leading edge AI models

This Edge AI appliance includes a comprehensive SDK with direct support for 100's of AI models. The SDK's integrated model zoo is combined with functionally-accurate applications built using GStreamer and C++ APIs that enable prototyping and rapid AI application development. The AMD Kria™ K26 SOM performs the pre- and post-processing functions along with the business analytics, while the Kinara Ara-1 edge AI processors run the inference.



### Compact form factor



EAI comes at a compact form factor of 255mmX205mmX42mm, that makes it suitable for space constrained environments.

### FIND OUT MORE

For More Information:

[www.xilinx.com/kria](http://www.xilinx.com/kria)

[kinara.ai](http://kinara.ai)

For Ordering Information:

<https://www.vvdntech.com/visio/n/vvdn-edge-ai-appliance>



### Compute & Storage

1x AMD Kria™ K26 SOM

4x Kinara ARA-1 Accelerator with 4x 1GB LPPDR4

4GB LPDDR4 & 16GB eMMC

### INTERFACES

3x USB 3.0 Type A

1x USB Type B micro for debugging

1x DP1.2a and 1x HDMI

2x RJ45 Jack to connect external server/ POE Switch

1x M.2 connector for SSD and 1x GT Connector

Status LED and Alarm out

### MECHANICAL

Dimensions

205mm(w) X  
255.2mm (d) X  
42mm (h)

Operating Temperature

0°C to 45°C

### KIT COMPONENTS

VVDN edge AI appliance unit

Power adapter 12V at 8.5A