brainchip x VVDN TECHNOLOGIES

Akida Edge AI Box

Powered by **BrainChip AKD1000** AI Chip

VVDN and BrainChip have collaborated to create an innovative and powerful Akida Edge AI Box. This collaboration leverages **BrainChip's AKD1000 AI Accelerator** and **NXP i.MX 8M Plus SoC** to deliver a compact design with the capability of executing diverse AI applications at the edge. Applications such as video analytics, face recognition, and object detection are among the many possibilities that demonstrate the versatility and potential impact of this solution.

BrainChip's AKD1000 operates on Neuromorphic AI Technology. Neuromorphic computing is inspired by the structure and functionality of the human brain. Akida processors are designed to emulate this neural structure, allowing for unique computing capabilities. This approach often enables more efficient and adaptable processing of information, particularly in tasks related to pattern recognition, learning, and cognitive functions. **The use of neuromorphic AI technology in the AKD1000 is different from traditional computing models** and move towards more bio-inspired and brain-like processing, potentially opening new avenues for AI applications.

Highlights

- NXP i.MX 8M Plus Quad SoC
- 2 x BrainChip AKD1000 processors
- 4GB LPDDR4, 32GB eMMC
- Supports Linux Embedded OS Version 6.1
- Small and compact size enclosure
- Easy to build, deploy, and manage AI at the edge
- Supports 12VDC with external power adapter

Akida Edge AI Box use cases include, but not limited to:

- **Smart Factories**
- **Smart Retail**
- **Smart Cities**
- **Healthcare**
- **Security & Surveillance**
- **Smart Logistics**
- **Automotive**
- **Transportation**

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Technical Specifications

SoC	NXP i.MX 8M Plus Quad SOC
CPU	4x or 2x Cortex-A53 up to 1.8 GHz
GPU	6 GFLOPS (high-precision) OpenGL® ES 3.1/3.0, Vulkan®, Open CL™ 1.2 FP, OpenVG™ 1.1
OS	Supports Linux Embedded OS Version 6.1
USB	- USB 3.0 Port Type A Port - USB 2.0 Port Micro B Port (Flashing and Debug Port)
Display	1x HDMI Output with Max Resolutions of 3840 x 2160p30 Pixel clock up-to 297MHZ
Max Encode	1x1080P60 (H265 & H264) / 2x1080P30 (H265 & H264) / 4x720P30 (H265 & H264)
Max Decode	1x1080P60 (H265 & H264) / 2x1080P30 (H265 & H264) / 4x720P30 (H265 & H264)
User Interface	Power / Reset Button
Operating Temperature	0°C to 50°C
Dimensions	110mm x 110mm x 56mm (L x W x H)
AI/ML Accelerator	2X BrainChip AKD1000 Chip Over PCIe Interface
Memory	4GB LPDDR4
Storage	32GB eMMC & Supports Micro SDXC card up to 1 TB
Network Connectivity	- Wi-Fi Connectivity: 802.11 ac/b/g/n/c (2.4GHz /5GHz - Ethernet Connectivity: Two Ethernet ports with 10/100/1000 mbps - Ethernet Port supports external camera interface
Power Input	12VDC Input using External AC – DC Adapter
Operating Humidity	5% to 95%
Enclosure	- Metal+Plastic Enclosure with heatsink - IP42 ratings
User Indication	- 2x RGB LED for status indication - Power ON / OFF Indication LED (Green)

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