aetina

Edge ON » AI Beyond

EDGE AI SOLUTIONS

ACCELERATE INTELLIGENCE
AT EVERY EDGE OF BUSINESS

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Overview

Edge AI Applications

About Aetina

Founded in 2012, Aetina is a team of AI explorers dedicated to advancing the Edge of Intelligence. We constantly push the limits of AI, placing our work at the forefront of innovation. Our one-stop service streamlines edge AI applications for businesses. It propels our clients to the edge of their imagination, fueling digital transformation beyond conventional boundaries. Today, Aetina is a full-fledged company offering hardware, software, and customized solutions, poised to elevate the industry to the next level.

At Aetina, we navigate businesses toward AI implementation across verticals with our integrated solutions and adaptable services. Collaborating closely with our partners, we gain actionable insights from the forefront of their fields to tailor our solutions for professional domains. With streamlined solutions and addressed scenarios, AI deployment is simple and efficient. The dream of an intelligent revolution becomes practical.

We have your edge on and fuel AI transformation beyond.

Edge ON AI Beyond

Our Growth Path

2012
Launched the complete embedded GPU module product line

2012
Founded in Taiwan

2013
Joined Innodisk Group

innodisk

2014
Introduced the Rugged GPGPU board series and MXM modules

2016
Debuted the first COM-Express SoM with NVIDIA® Tegra

2017
Built up the Edge AI product line
Launched the first product with the NVIDIA® Jetson™ TX2 module

2020
Established and expanded the AI partner ecosystem
Obtained ISO 9001:2015 certification

2020
Became NVIDIA Preferred Partner

NVIDIA Preferred Partner

2021
Introduced the Pro-AI service
Comprehensive integration of software and hardware solutions

2022
Enhanced the Edge AI solution
Introduced NVIDIA AI Enterprise Suite technology
Launched the end-to-end AI solution

2022
Upgraded to NVIDIA Elite Partner

NVIDIA Elite Partner

2023
Implemented NVIDIA Metropolis for Factories technology
Launched the AOI AI Smart Manufacturing Defect Detection Solution
Announced the AI Intrusion Detection Solution

Aetina Partner Ecosystem

Hardware Partners

antzer · ALFA NETWORK · APPRO.PHO · sysinno · FRAMOS · e-con Systems Think Camera. Think e-con. · LOCOSYS · StereoLabs* · MILLITRONIC

ISV

aira · AVALANCHE COMPUTING · Linker Vision · SOLOMON

Integration Service

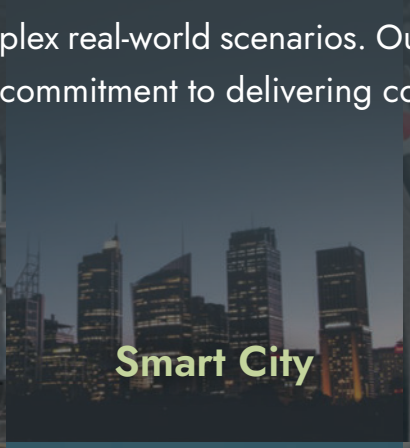
eTarget · SMAX

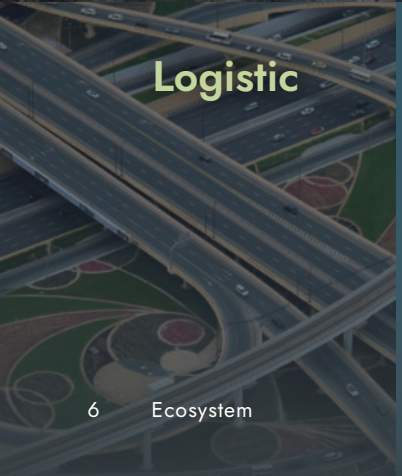
Strategic Partners

innodisk · NVIDIA

Solid Experience in Diverse Industries

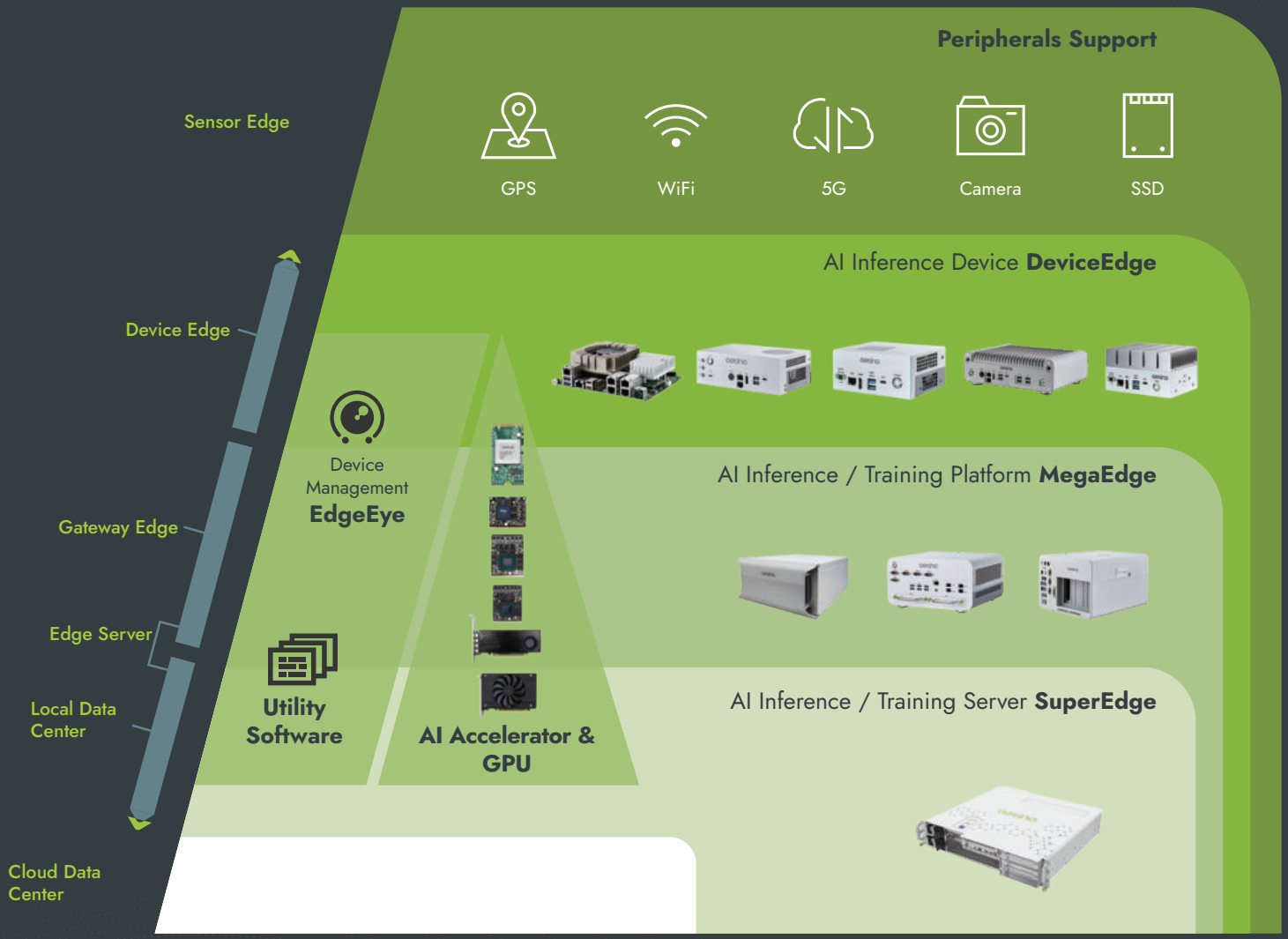
We craft integrated solutions for diverse industries and facilitate the seamless implementation of AI in complex real-world scenarios. Our solutions stand on the bedrock of reliability, showcasing our commitment to delivering compatible and trustworthy AI applications.





Comprehensive Solution to Empower Your Business Edge

We empower developers, integrators, and business owners by streamlining and expediting AI adoption. Our portfolio caters to the demands of every business, providing a versatile approach to AI deployment. Our service ensures systematic and customized AI implementation at every corner of your business.



aetina x STEMMER IMAGING

Success Story

Revolutionizing Embedded Machine Vision: New Modular Embedded Ecosystem

An Innovative Modular Ecosystem by STEMMER IMAGING & Aetina, Powered by NVIDIA Jeston

> *STEMMER IMAGING's strong expertise in computer vision, combined with Aetina's knowledge in technical hardware design, provides a well-rounded offering for a wide range of customers, making sure to meet new customer requirements in a quick and cost-effective manner .*
>
> — **Johannes Hiltner**, Director Product Management at STEMMER IMAGING

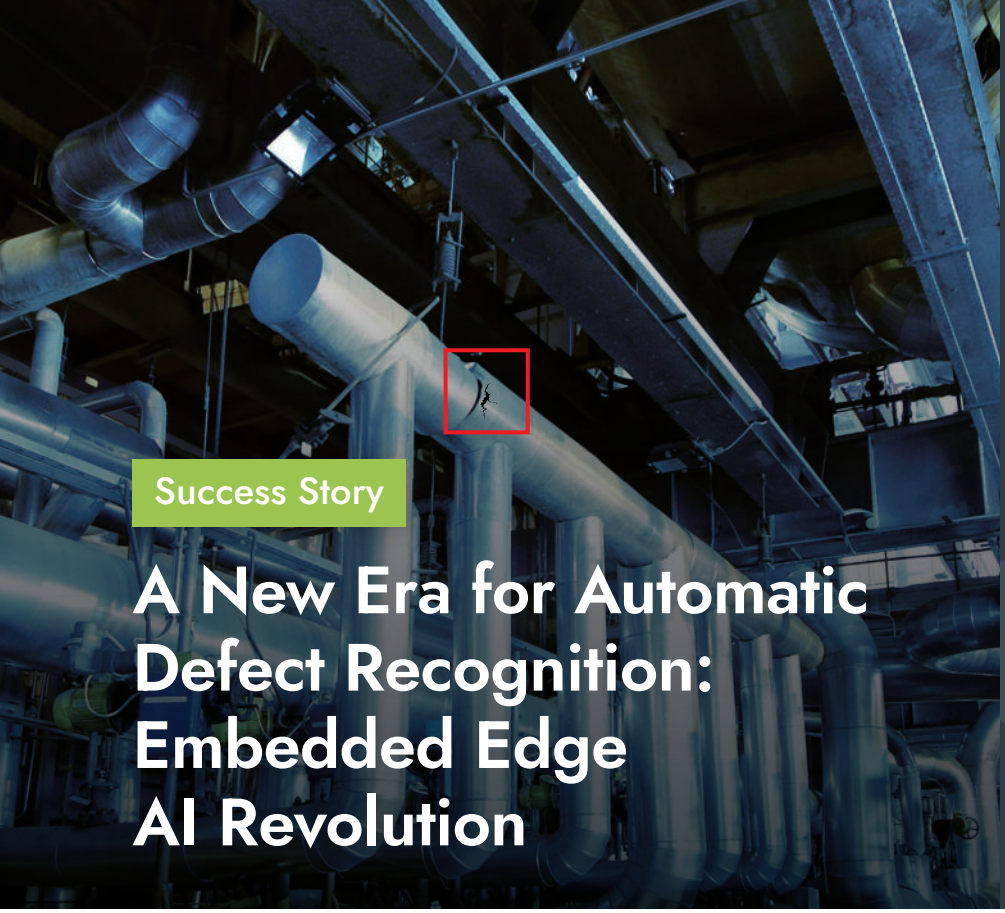
Surging demand for efficient, embedded machine vision across industries is hindered by complex integration, limited hardware/software choices, and slow development cycles, posing hurdles for developers. STEMMER IMAGING collaborated with Aetina to introduce the Embedded Vision Ecosystem, providing a flexible foundation and streamlining workflow to empower developers and accelerate the creation of robust embedded vision applications.

STEMMER IMAGING Modular Embedded Ecosystem provides a diverse toolkit for developing tailored embedded vision solutions. Aetina's developer kit and STEMMER IMAGING's vision solutions come together to forge a new, flexible ecosystem applicable across diverse industries. Its core components include:

- **Aetina's AN810-XNX customized carrier board** powered by NVIDIA Jetson integrates seamlessly with a broad spectrum of cameras and offers versatile I/O interfaces such as GigE, USB3 and MIPI.
- **Common Vision Blox**: software library providing a robust and flexible platform for image acquisition and processing.
- **Comprehensive Service Packages**, ranging from feasibility studies to lifecycle management, which offer support throughout the entire project lifecycle.

Featured Results from this Collaboration

- Vertically integrated end-to-end solution
- High customization and flexibility to meet various industry requirements
- Optimal hardware-specific OS adaptations to fit the hardware needs of vision applications



aetina X TRUEFLAW

Success Story

A New Era for Automatic Defect Recognition: Embedded Edge AI Revolution

A Collaborative Breakthrough by Trueflaw & Aetina, Powered by NVIDIA Jetson Orin

> *Aetina's products and support have made it possible to implement cutting-edge AI solutions for the non-destructive testing industry.*
>
> — **Oskar Siljama**, Senior AI Engineer at Trueflaw

Non-destructive Evaluation (NDE) is commonly adopted to examine the condition of structural components and identify any damage or cracks before they cause problems. A collaborative breakthrough by TrueFlaw & Aetina has made it possible to facilitate cutting-edge AI solutions for the non-destructive testing of steel structure buildings, bridges, tracks, pressure vessels, petrochemical pipelines, and equipment.

The innovative portable ultrasonic testing device combines seamless data streaming, automatic defect recognition, and real-time AI analysis, revolutionizing on-the-go defect inspection. Using the device is as simple as moving the probe to gather data from a test object, then almost instantly getting recognition results delivered to a web-based application for quick access and informed decision-making. The AI performance offered by Aetina's embedded Edge AI developer kit prompted TrueFlaw to choose the next-generation successor, the NVIDIA Jetson AGX Orin. Consequently, Aetina's AIB-MX13/23 developer kit was further enhanced for tailored customization to provide insights into new objectives while reducing data analysis time.

Key benefits

- Industry-first real-time AI analysis for portable ultrasonic testing
- Portable without restriction
- AI defect recognition for various materials

Application Note

Building Intelligent AOI with AI Defect Detection Using NVIDIA Metropolis for Factories

Automated Optical Inspection (AOI) is a key technology in the electronics industry to ensure the quality of products before they are shipped to customers. However, these systems often have high false detection rates, requiring costly labor-intensive manual inspections. Moreover, vision inspection practices on AOI production lines require additional image and data acquisition systems, which can be challenging to integrate effectively and reduce their value.

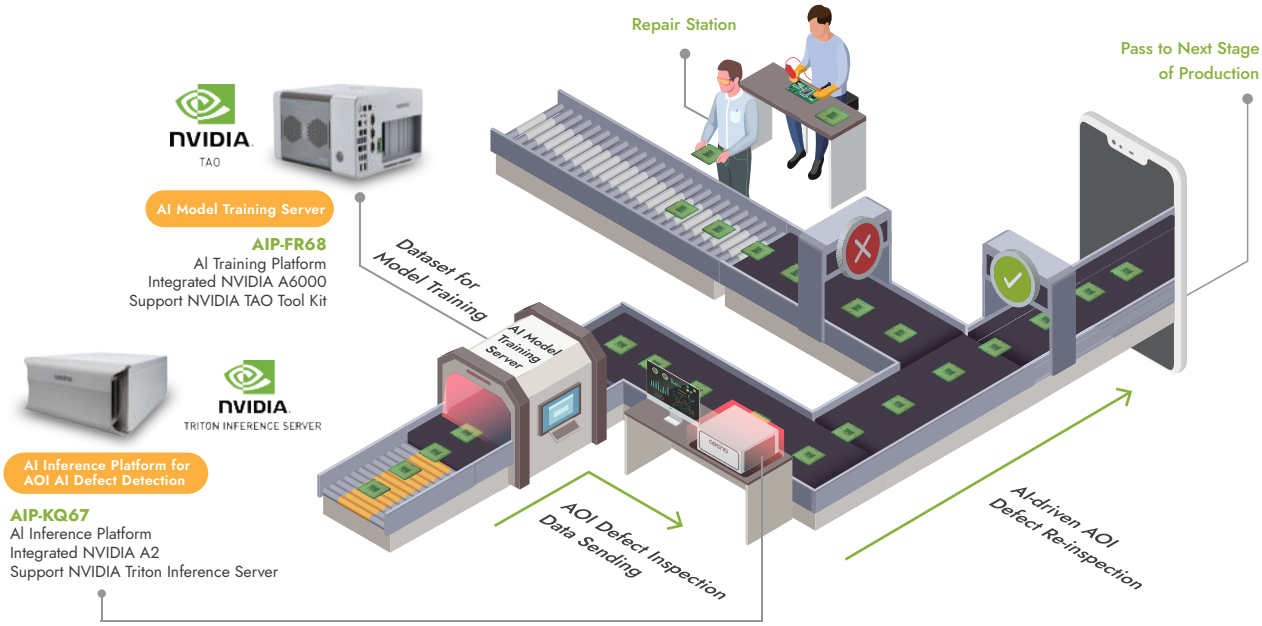
To tackle these issues, Aetina has developed the AOI AI Smart Factory Defect Detection Solution, leveraging NVIDIA Metropolis for Factories technology and developed in partnership with Innodisk and its Yilan Manufacturing Center. This solution offers a three-step approach to simplify data collection and organization with a user-friendly GUI, efficient model training with NVIDIA TAO Toolkit, and optimized AI-assisted models for accurate inference on Aetina AI inference platform, AIP-KQ67. This ultra-streamlined workflow reduces manual inspection by over 50%, enhancing AOI inspection accuracy, accelerating the overall production process, and propelling manufacturing efficiency to new heights.

Benefits

- Supports NVIDIA AI Enterprise Software Suite, TAO, and Triton
- Aetina's NCS AI platforms assure dependable performance, ensuring stability and consistency for critical applications
- One-stop service from project evaluation to after-sales training — simplifying and accelerating intelligent AOI inspection

Results

- Reduce false defect detection rate and manual inspection
- Effectively manage the production line
- Save maintenance costs and time



Application Note

Empowering Security with AI-Driven Intrusion Detection for Crow-Free Zone

Many crows had taken residence on the rooftop of a Japanese factory, presenting both an unsightly spectacle and hygiene concerns due to the birds' droppings. The factory needed a solution that would deter the crows without causing them harm, which led to the development of an accessible AI Vision Solution for intrusion detection. The Aetina AI Intrusion Detection Solution is the ideal choice, consisting of a powerful edge computing system integrated with eco-partner IronYun's Vaidio DIY, which facilitates swift and effortless training for recognizing new objects, specifically crows.

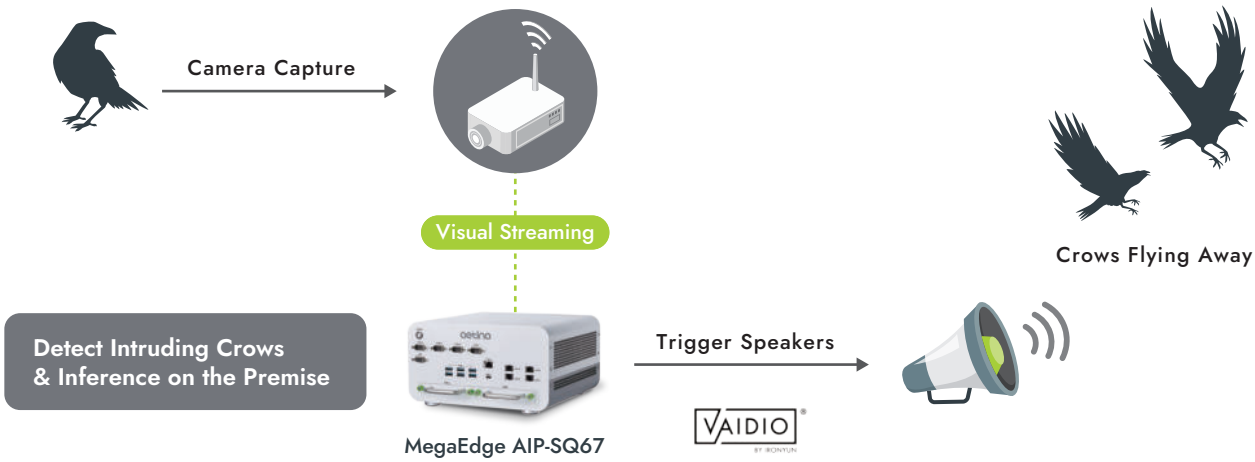
This solution not only streamlined the detection process and made it easier to integrate with the factory's existing ONVIF IP cameras, NVR systems, and 3rd-party speakers. By emitting loud noises through the speakers when crows were detected, the factory was able to deter the birds without causing them harm.

Benefits

- Supports multiple cameras and channels
- Adjustable parameters to meet various field requirements
- Long-distance object detection of 50 to 70 meters

Results

- Humane, harm-free, and efficient crow dispersal
- Revolutionize factory safety and environment
- Eliminate the labor costs of manual intervention



Application Note

Maximizing Food Production with Edge AI-Enhanced Smart Farm Systems

The escalating global population is amplifying the demand for increased food production, compelling the agricultural industry to urgently seek additional labor resources. However, the inherently labor-intensive nature of this industry has confronted persistent challenges related to workforce shortages. Exacerbating this situation are factors such as the aging rural demographic, diminishing interest in agriculture among the younger generation, and declining birth rates in various regions around the world.

To address the pressing issue of labor scarcity, it is becoming more popular to adopt agricultural harvesting robots. Aetina's Smart Farm System, powered by Aetina's AIB-MX22, stands out by providing robust AI performance. Fueled by the NVIDIA Jetson AGX Orin module, the AIB-MX22 achieves up to 275 TOPS, facilitating server-class AI inference at the edge with minimal latency. Featuring built-in M.2 B-Key, M.2 E-Key, and M.2 M-Key, the system accommodates LTE/5G, Wifi/BT, and storage functionalities, respectively.

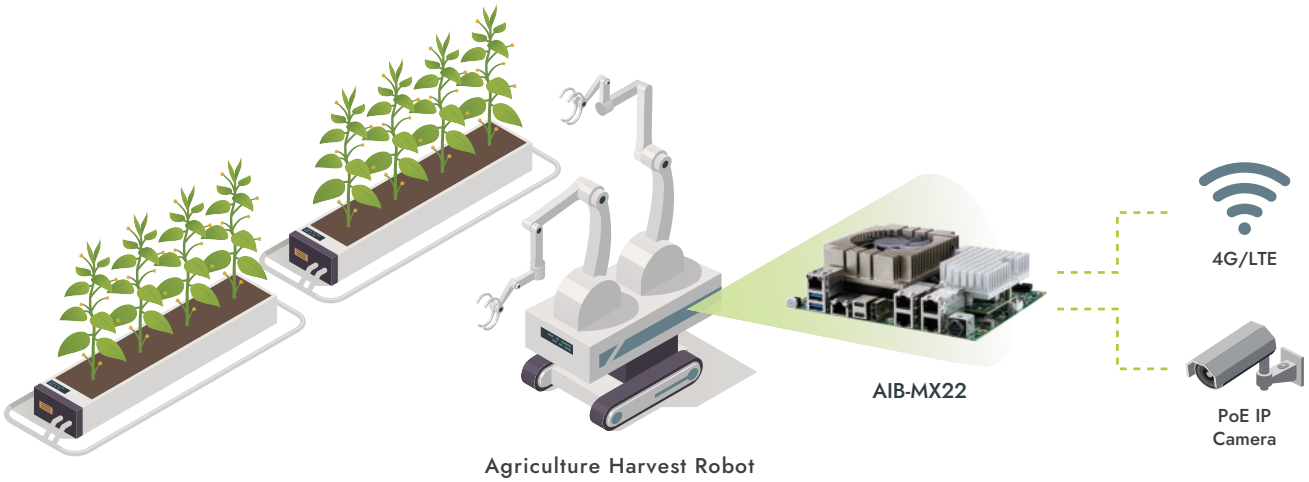
The inclusion of four PSE ports supports connectivity with four PoE cameras, while the 10GbE port ensures data transfer speeds of up to 10 GB per second, surpassing the traditional GbE port by tenfold. With a wide input power range of 9 to 36 VDC, the AIB-MX22 is well-suited for diverse embedded applications in challenging environmental conditions and climates.

Benefits

- The NVIDIA Jetson AGX Orin module offers up to 275 TOPS and enables server-class AI inference at the edge with low latency.
- Equipped with comprehensive M.2 expansion and LAN ports, AIB-MX22 offers high flexibility and expansion ability, which makes it ideal for various applications.
- Aetina offers one-stop service from project evaluation to after-sales training, which accelerates the harvesting process and optimizes the crop yields.

Results

- Lower workforce overheads
- Higher crop yield
- Robots take up a much smaller space than conventional farming equipment
- Fewer errors in planting seeds, irrigation, and sprinkling pesticides
- Lower usage of pesticides



Agriculture Harvest Robot

Application Note

Improving Safety and Shortening Ride Times with Smart Elevator Solutions

In the age of digital transformation, Aetina and her partner stand at the forefront of revolutionizing the elevator industry. Addressing the challenges of traditional maintenance, our partner has pioneered an intelligent elevator solution, integrating IoT, big data, and AI. This technology transforms elevators into 'smart devices', equipped with embedded sensors that transmit real-time data to the cloud. This allows for immediate fault detection, consumable tracking, and proactive maintenance, greatly enhancing user experience and reducing downtime.

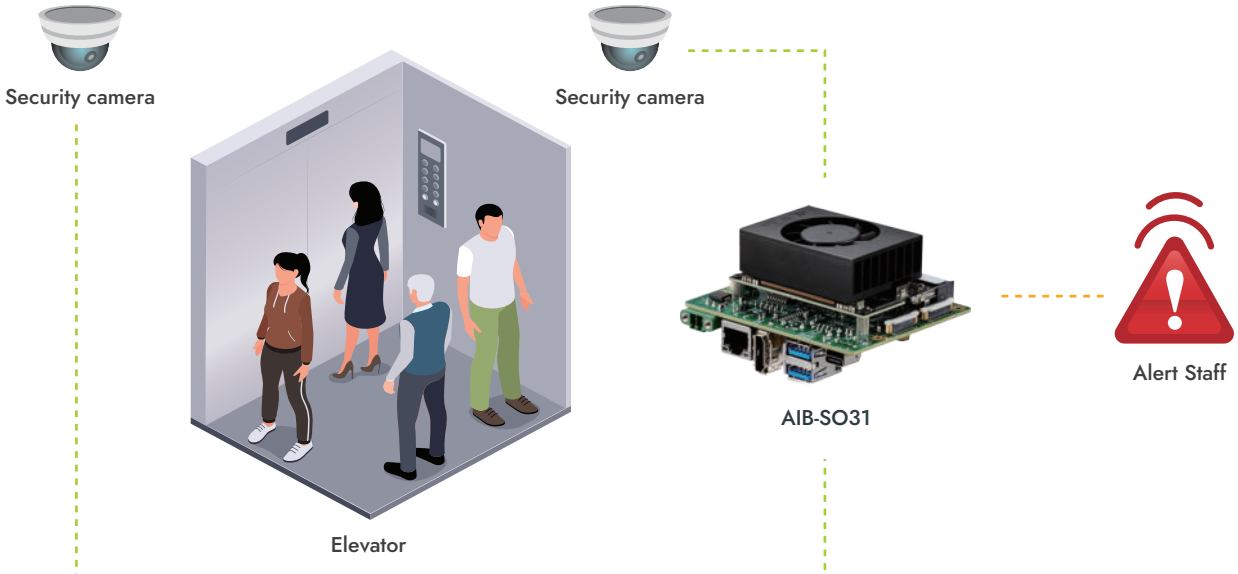
Beyond fault detection, Aetina's solution incorporates AI to optimize elevator dispatch and space utilization, ensuring efficiency even during peak hours. Our Jetson Orin Nano platform, AIB-SO31, is specially designed for the elevator environment, combining a small footprint with high computational power and supporting a range of functions from sensor data collection to complex image analysis. The innovative approach not only caters to the immediate needs of users but also addresses long-term operational challenges by minimizing maintenance costs, enhancing safety, and ensuring efficient operation.

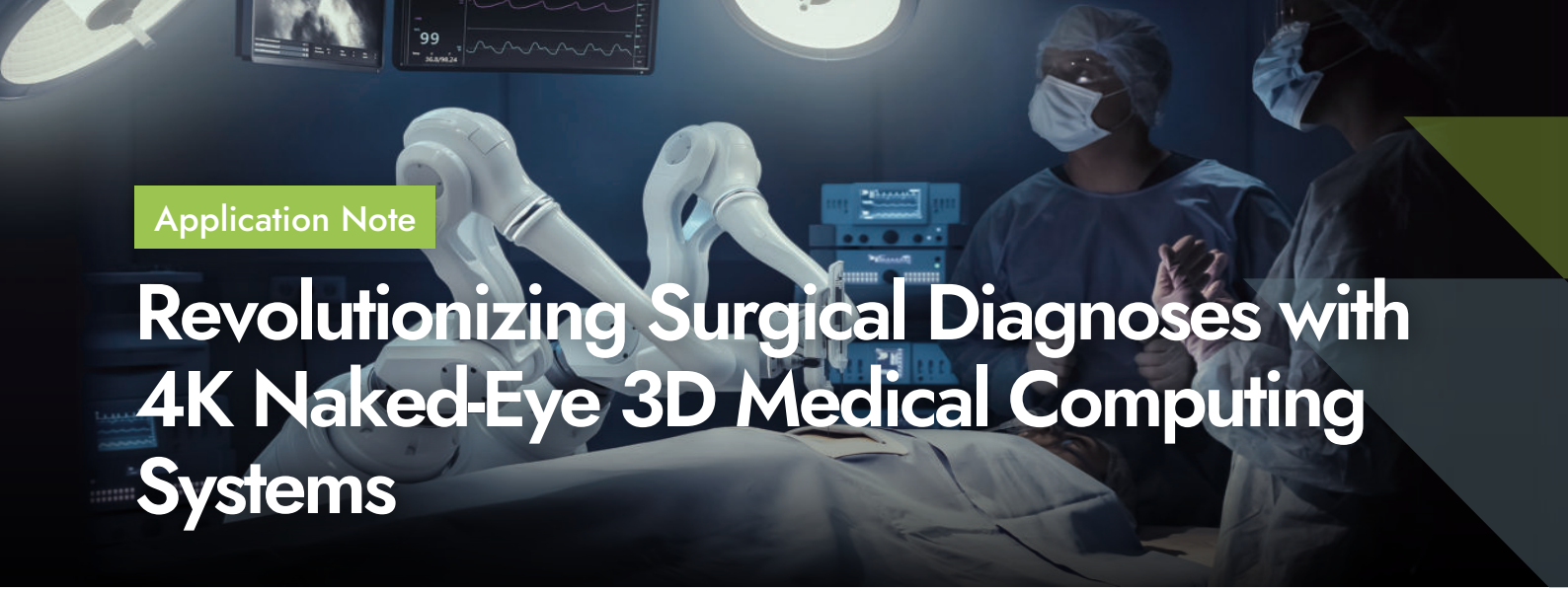
Benefits

- Palm-sized platform design with high computing abilities
- Supports E-Key for Wi-Fi card

Results

- Safety enhanced with earthquake warnings and emergency stops
- Improve emergency reaction times
- Reduce elevator ride times





Application Note

Revolutionizing Surgical Diagnoses with 4K Naked-Eye 3D Medical Computing Systems

Minimally invasive surgery (MIS) has emerged as a breakthrough in surgical procedures, accompanied by a growing demand for advanced technologies. For doctors and medical staff using MIS, surgical skills are a prerequisite, but now they must also learn the ins and outs of the cutting-edge machinery used for MIS. Shortening the learning curve for those new technologies, by making them easier to use, is the biggest challenge.

A technological marvel, the Naked-eye 3D Medical Computer System built by one of Aetina's clients, features Aetina MegaEdge AIP-SQ67 harnessing MXM M3A2000-VY for unparalleled 3D imaging computing. Seamlessly integrated with 3D medical imaging equipment such as endoscopes and robotic surgical systems like Da Vinci robotic arm, the system captures, consolidates, and presents dynamic surgical images in real-time 3D stereoscopic images on the screen, eliminating the need for uncomfortable 3D glasses and reducing the load on physicians.

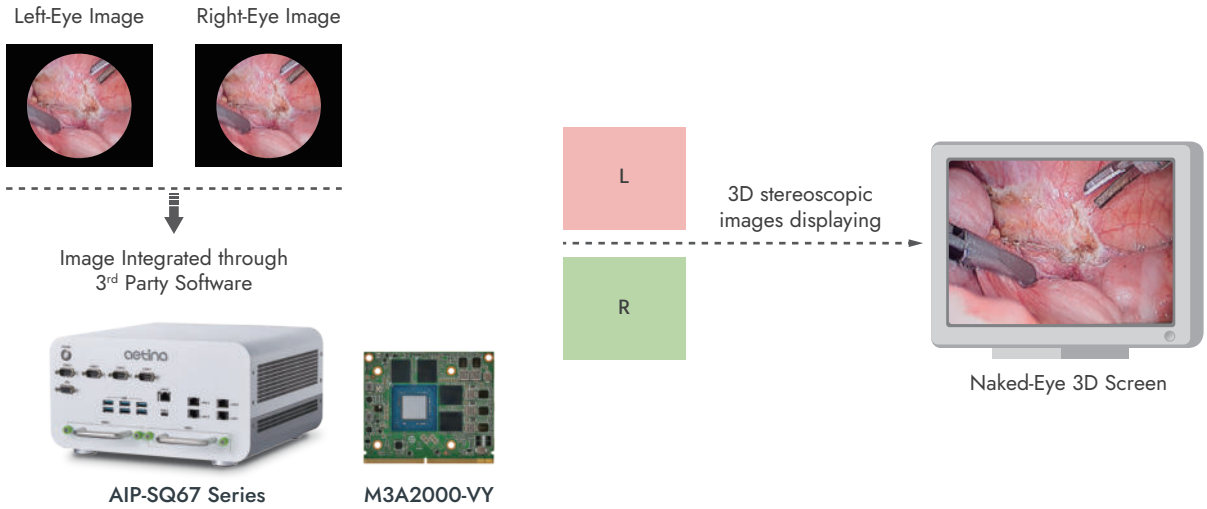
Beyond aiding in surgery, the system allows editing and recording footage for meticulous analysis. It facilitates preoperative assessments and serves post-surgery as an invaluable tool for medical seminars and educational training. Supporting resolutions up to 4K@60, the system delivers high-definition images with detailed insights for nuanced diagnoses.

Benefits

- Integrated MXM slot to support MXM PCIe Gen.4 x16, enhancing computing power
- Equipped with two removable 2.5" SSD drive trays, allowing users to swap SSD quickly
- 5x DP++ supports high-resolution graphics display

Results

- Eliminates the discomfort of 3D glasses and significantly reduces the burden on physicians
- Enhances the experience in MIS, reducing medical errors
- Elevates surgical efficiency and precision



Application Note

Powering Safer Maritime Navigation with Autonomous Shipping

The coastal shipping industry grapples with the dual challenges of an aging workforce and shortages in human resources, exacerbated by the demanding work environment. Additionally, human errors reportedly contribute to 70-80% of maritime accidents, emphasizing the need for a solution to reduce such incidents. The proposed answer lies in implementing fully autonomous navigation, leveraging the combined capabilities of AIoT and image analysis.

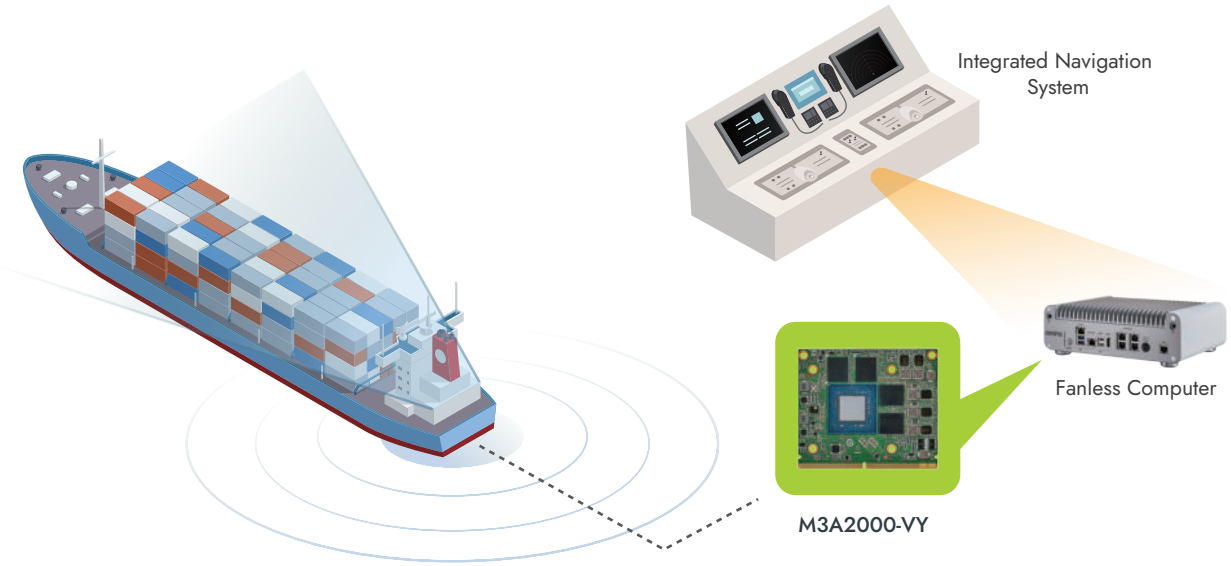
Aetina's GPU-based MXM, designated as M3A2000-VYX-A1, addresses this requirement. It supports a broad temperature range from -40℃ to 85℃ and boasts a robust coating, ensuring reliable operation even under harsh maritime conditions. The object detection algorithm integral to the autonomous shipping system operates stably owing to the MXM's support for Error Correction Code (ECC). ECC bolsters system accuracy and reliability by detecting and correcting data errors, mitigating the risk of system crashes or data corruption. As a result, autonomous ships can navigate safely in real time based on precise object detection results. This improvement significantly reduces maritime accidents and streamlines the flow of goods and traffic, thereby enhancing overall convenience.

Benefits

- Supports Error Correction Code (ECC) to ensure accurate, reliable operation
- Designed for harsh maritime environments with a robust coating and a broad operational temperature range from -40℃ to 85℃
- Guarantees five years of availability coupled with exclusive technical support, resulting in maintenance cost and time savings

Results

- Fewer accidents at sea
- Streamlined goods and traffic flow
- Enhance overall convenience



Application Note

Augmenting Veterinary Healthcare with AI-enabled Portable Ultrasound

The landscape of animal healthcare investment is rapidly transforming, spurred by the inherent complexities of non-verbal communication between animals and humans. AI-enabled portable ultrasound solutions are being integrated to improve veterinary healthcare by increasing diagnostic precision.

One of Aetina's partners, a global industry leader in the manufacturing of diagnostic ultrasound apparatuses, used Aetina's GPU-based MXM called M3A500 for their portable veterinary ultrasound PC. The M3A500 propels the efficiency of automated segmentation models, significantly reducing the time for image adjustment and manual intervention. It delivers highly precise imaging at superior frame rates with minimal latency, enabling expeditious and accurate evaluation for healthcare practitioners.

Benefits

- Conservative energy footprint, with performance up to 7.28 TFLOPS
- Five-year availability guarantee and exclusive technical support, resulting in maintenance cost and time savings

Results

- Improves patient diagnosis outcomes through optimized accuracy
- Bolsters the GPU power of mobile ultrasound apparatuses

Portable Veterinary Ultrasound PC

Sharpen Your Edge with Comprehensive Solutions

Intelligent edge systems present complex challenges and diverse pain points in the fast-evolving world of AI. Aetina empowers your business edge with comprehensive **AI Solutions** - from needs assessment to deployment. Our ready-to-go **AI Accelerator & GPU** integrate effortlessly, providing a significant boost in computing performance, and the **DeviceEdge series AI Inference Device** and **MegaEdge series AI Inference/Training Platform** are meticulously engineered to optimize on-premise AI processing by utilizing a range of computing architectures. Moreover, **SuperEdge - AI Inference/Training Server** aims to handle the demanding tasks of enterprise AI and LLM training. Coupled with the spectrum of user-friendly offerings, including **AI Software & Tools**, Aetina caters to the unique needs of intelligent solutions, refining and enhancing your business's competitive edge in the market.

Your One-Stop Solution for AI Vision

1.Smart City and Security

- Traffic Analytics
- Security and Public Safety
- License Plate Detection
- Vehicle Counting
- Smart Parking System

2.Smart Factory

- AOI AI Defect Detection
- Intrusion Detection
- Industrial Inspection
- Perceptive Robotics
- Material Handling
- Factory Floor Video Analytics

3.Smart Agriculture

- Intelligent Robot Assistant for Harvesting
- Autonomous Tractor
- Selective Spraying System
- Smart Farm Machines
- Potato Health Management

Aetina's **AI Solutions** revolutionize your operations with all-in-one solutions. We cater to all experience levels, offering a comprehensive suite of hardware (platforms, peripherals, cameras) and software, equipping your projects with the transformative power of AI. Aetina partners with industry-leading expertise to extend its competencies from robust backend training servers for developing intricate models to efficient front-end AI inference platforms and software for real-world deployment. This seamless integration empowers machines to perform automated tasks – from object identification to image inspection – with incredible accuracy and efficiency, resulting in advanced data-driven edge AI computing applications fitting in smart cities, manufacturing, logistics, healthcare, agriculture, retail, and autonomous robots.

4.Smart Transportation and Logistics

- Autonomous Shipping
- Warehouse Autonomous Mobile Robot
- Digital Signage
- Traffic Flow Management

5.Smart Medical

- 3D Medical Imaging
- AI-enabled Portable Ultrasound
- Surgical Robot
- Medical Image Assistant
- Telepathology
- Patient Health Monitoring

6.Smart Retail

- Automated Checkout
- Shopper Analytics
- Store Traffic Analytics
- Inventory Management
- Digital Signage
- Social Distancing Detection

Smart Factory AOI AI Defect Detection Solution

Aetina's AOI AI Defect Detection Solution integrates AI-powered NVIDIA NCS-certified AI Inference/Training platforms and NVIDIA Metropolis for Factories technology to tackle the high false alarm rates plaguing traditional AOI systems. It streamlines data collection, model training, and defect recognition, enhancing inspection accuracy while reducing manual re-inspections and labor costs, thereby increasing productivity and ROI in smart factory implementations.

Solution Highlights

- Aetina's one-stop AI services
- Accelerated implementation through HW/SW integration

- Reducing workloads of re-inspection task
- Saves production line labor cost

- Utilize NVIDIA cutting-edge toolkits
- GPU-powered AI inference

- Integration with existing workflow
- Enhance detection accuracy

Minimize AOI False Alarms for Significant Labor Savings

Traditional AOI

AOI False Alarm Rate Exceeds **20%**

*4 Four production lines requires four operators for recheck

Aetina AOI AI Defect Detection Solution

False Alarm Rate Below **5%**

*1 One operator handles four production lines

Intrusion Detection Solution

Transform security with Aetina's AI-driven Intrusion Detection Solution, which aims to eliminate false alarms and ensure non-stop protection. Unlike traditional infrared systems, our solution accelerated by AI distinguishes between routine activities and actual threats, enhancing detection accuracy. It offers 24/7 vigilant safeguarding of business assets and worker safety, adapting to existing VMS systems and customizable environmental changes. This smart, AI-powered solution not only minimizes downtime but also fortifies your safety measures with unparalleled precision and reliability.

Solution Highlights

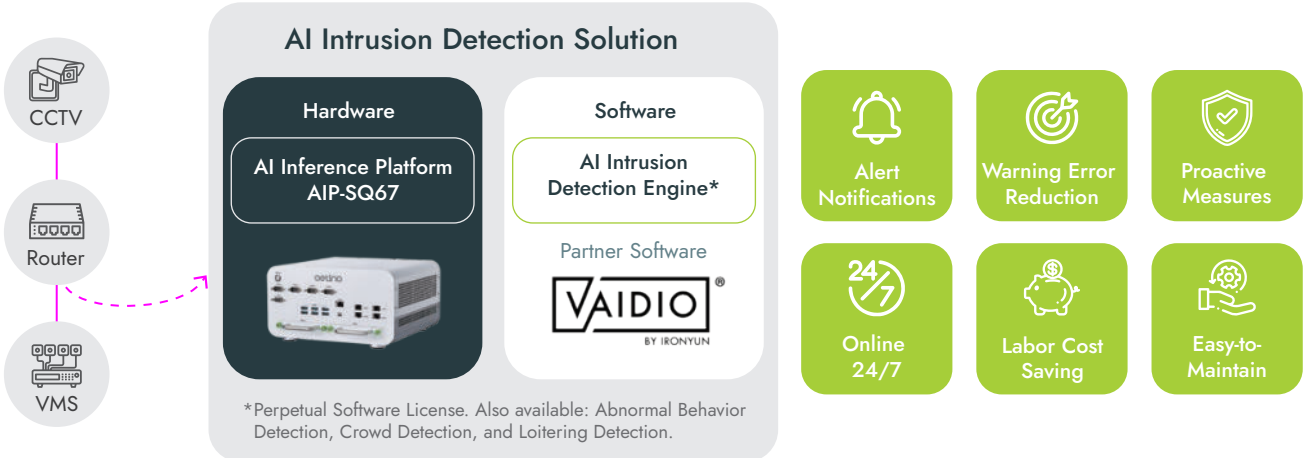
Ready-for-Use Turnkey Solution
- Support multiple cameras
- Perpetual software license
- Intel-powered AI platform accelerated by an MXM GPU module

High Accuracy
- Recognition of various objects and images
- Low false alarm rate with fast recognition processing
- Instant alert notification for abnormal events
- Accurate detection at up to 50-70 meters

Easy Installation
- Allows for parameter adjustment
- Easy to start through a web browser

High Compatibility
- Supports most brands of VMS solutions
- Supports 99% of IP cameras on the market
- Provide customized services

All-in-One Security Solution with AI Strength



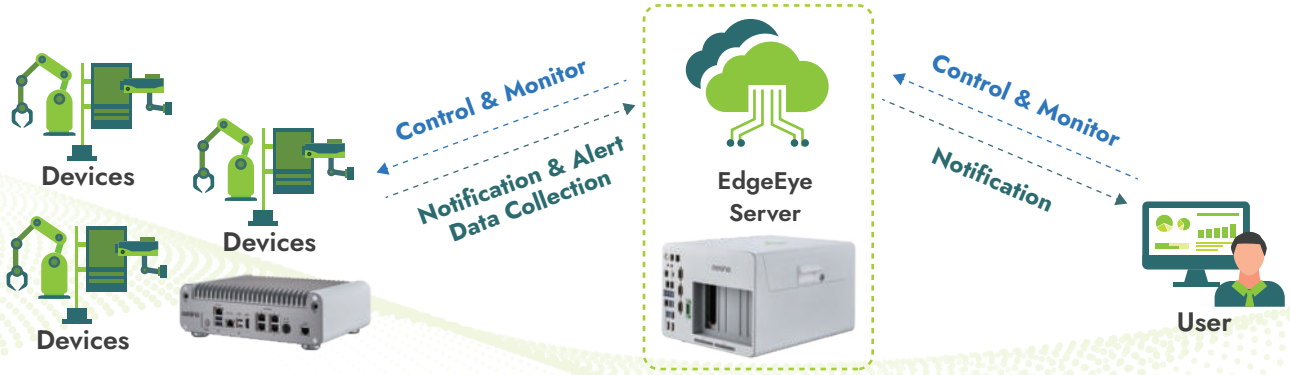
AI Software & Tools

AIoT is shaping the trajectory of smart industries. Enterprises are, however, facing difficulties ensuring seamless communication between hardware and software, making compatibility and interoperability more critical than ever. Aetina's Software & Tools tackle this challenge head-on, by simplifying and enriching the management of Aetina's hardware through our **Cloud Management Platform** and **Utility Software.**

EdgeEye : Cloud Management Platform

Cloud management platforms are important when managing an increasing multitude of edge devices scattered across various locations. These centralized management platforms enable real-time monitoring by providing a diverse range of metrics to inform decision-making and ensure optimal performance and security of devices. Aetina's EdgeEye is our answer for comprehensive cloud management.

EdgeEye, a remote device management platform, simplifies the management of scattered edge devices, providing a user-friendly interface with real-time monitoring of critical hardware metrics such as CPU and GPU utilization, and memory capacity. Furthermore, EdgeEye goes beyond passive monitoring by offering real-time alert notifications to notify users immediately when metrics exceed user-defined thresholds. Most importantly, EdgeEye's out-of-band management (OOB) allows for essential remote-control functions such as reboot, shutdown, bootup, backup, and recovery, ensuring disruptions are resolved instantly and unnecessary maintenance visits can be avoided. It maximizes maintenance efficiency.



Utility Software : OTA / EdgeRecovery

Aetina's utility software revolutionizes device maintenance with features like **OTA (Over-the-Air)** updates, allowing remote bug fixes and BSP upgrades. This eliminates the need for manual, hard-to-access updates, streamlining quality assurance and cutting labor costs. Moreover, our **EdgeRecovery** includes robust backup and recovery tools. These tools offer data replication and disaster-proof solutions, accessible via USB for quick boot-ups or through an SSD bundle for one-key recovery on Aetina systems. The remote backup and recovery functions not only enhance data restore but also significantly reduce downtime during system failures.

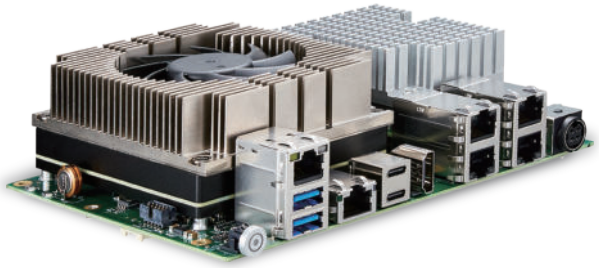
AI Inference Devices

DeviceEdge_ARM for AI Inference

Unlocking the Full Potential of ARM-Driven Edge AI Systems

DeviceEdge offers AI inference solutions through a broad spectrum of compact but powerful edge systems with SoM/SoC by utilizing ARM architecture, including dedicated platforms, fanless systems, fan-based systems and in-vehicle systems leveraging NVIDIA Jetson, NVIDIA IGX Orin ,and other series. Aetina designs an extensive lineup of systems, incorporating industrial-grade I/Os, NVIDIA JetPack™ SDK for accelerating software, and high expansion capabilities for multiple peripherals. Furthermore, Aetina also provides comprehensive customization services, such as customized I/O interfaces and form factors, thermal design, BSP customization, third-party software pre-installation and device integration to meet various industry demands and different application scenarios. DeviceEdge sustains comprehensive solutions for expert guidance, seamless integration, and compliance assurance, facilitating efficient edge AI deployments.

NVIDIA Jetson Orin Series – Platform



AIB-MX11/12 | AIB-MX21/22

- Supports NVIDIA Jetson AGX Orin™ 32GB/64GB
- Wide input power from 9 to 36VDC
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key, 1 x GbE, 1 x 10GbE, and 2/4 x IEEE 802.3af GbE PSE ports
- Operating Temperature -25°C ~ +80°C

AIB-MX13/23

- Supports NVIDIA Jetson AGX Orin™ 32GB/64GB
- Wide Power Input Range 9 to 36 VDC
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key, 1 GbE,
- 1x 10GbE port
- Operating Temperature -25°C ~ +80°C

AIB-MO22/32 | AIB-MN32/42

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- Wide input voltage range from 12 to 24VDC
- 1 x M.2 B-Key, E-Key/M-Key (NVMe 128GB built-in)
- 2 x RJ-45 GbE Ports
- Operating temperature -25°C ~ +80°C

AIB-SO21/31 | AIB-SN31/41

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- Wide input voltage range from 12 to 24VDC
- 1 x M.2 NVMe M-Key 2242 (128GB built-in)
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x GbE port
- Operating temperature: -25°C ~ + 80°C




Model Number	AIB-MX11/12 AIB-MX21/22	AIB-MX13 AIB-MX23	AIB-MO22 AIB-MO32	AIB-MN32 AIB-MN42	AIB-SO21 AIB-SO31	AIB-SN31 AIB-SN41
Module Compatibility	NVIDIA Jetson AGX Orin 32GB NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson AGX Orin 32GB NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	200 TOPS 275 TOPS	200 TOPS 275 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS
Storage	64GB eMMC 5.1	64GB eMMC 5.1	1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 M-Key 2242 (NVMe 128GB built-in)	
Display	1 x HDMI 2.0 Type A	1 x HDMI 2.0 Type A	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	TPM v2.0 (optional)	TPM v2.0 (optional)	–		–	
RTC	With super capacitor, battery (optional)	With super capacitor, battery (optional)	With super capacitor, battery (optional)		With super capacitor, battery (optional)	
Audio	Line-out / Line-in / Mic (optional with daughter board)	Line-out / Line-in / Mic (optional with daughter board)	Line-out / Line-in / Mic (optional with daughter board)		Line-out / Line-in / Mic (optional with daughter board)	
Camera Input	1 x 16-Lane MIPI Expansion Connector (120-Pin)	1 x 16-Lane MIPI Expansion Connector	1 x 8-Lane MIPI Expansion Connector (120-Pin)		2 x 4-Lane MIPI CSI-2 22-Pin Connector	
LAN	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port	2 x RJ-45 GbE Ports		1 x RJ-45 GbE Port	
PoE Interface	2 or 4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*	Not supported	Not supported		Not supported	
USB	2 x USB 3.2 Gen1 Type A, 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C	2 x USB 3.2 Gen1 Type A, 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C	2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C	
I/O Interfaces	2 x UART, 1 x UART (Debug only) 1 x RS-232, 1 x RS-422/485 (2-in1), 2 x CAN 2.0b (isolation; support CAN FD), 2 x I²C, 1 x I²S, 1 x SPI, 5 x GPIO, 2 x 3.3VDC/0.5A, 3 x 5VDC/0.5A, 1 x 12VDC/0.5A, 1 x USB 2.0, 1 x microSIM Card Slot	2 x I²C, 1 x I²S, 1 x SPI, 5 x GPIO, 1 x 3.3VDC/0.5A, 2 x 5VDC/0.5A, 1 x 12VDC/0.5A, 1 x USB 2.0, 2 x UART, 1 x UART (Debug only), 1 x RS-232, 1x RS-422/485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD)	5 x GPIO, 1 x SPI, 1 x I²S, 3 x I²C, 1 x UART, 1 x UART (Debug Only), 1 x RS-232, 1 x CAN (Isolation; support CAN FD), 1 x RS-422/485 (2-in1), 1 x microSIM Card Slot		5 x GPIO, 1 x I²C, 1 x I²S, 1 x RS-232, 1 x UART, 1 x UART (Debug Only), 1 x SPI, 1 x CAN (Isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x2 Gen3) 1 x microSD Card Slot	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x4 Gen4) 1 x microSD Card Slot	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button	1 x Power / 1 x Recovery / 1 x Reset Button	1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: 10.5 W/Full Loading: 111* W Idle: 12 W/Full Loading: 132* W	Idle: 6.655 W/Full Loading: 52.25* W Idle: 6.9 W/Full Loading: 72.25* W	Idle: 7 W Full Loading: 28.68* W	Idle: 7.3 W Full Loading: 39* W	Idle: 5.4 W Full Loading: 27.08* W	Idle: 5.7 W Full Loading: 37.5* W
Power Input / Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector	DC-in 12 to 24 VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 2-Pin Terminal Block	
Dimension (W x D x H)	176 x 132 x 57.32 mm (6.93 x 5.19 x 2.26")	131 x 120 x 62.9 mm (5.16 x 4.72 x 2.47 in)	120 x 100 x 57.54 mm (4.73 x 3.94 x 2.27 in)		87.4 x 67.4 x 28.45 mm (3.44 x 2.65 x 1.12 in)	
Net Weight	0.980 kg (2.161 lb) w/ Fansink	0.701 kg (1.54 lb) w/ Fansink	0.195 kg (0.43 lb)		0.144 kg (0.32 lb) w/ Fansink	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration	10 G, IEC 60068-2-27, half sine, 11 ms duration	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C	Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C	Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C		Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C	
Humidity	95% @ 40°C (104°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)	Linux (Support Jetpack 5.0 above)	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA	CE / FCC Class A / UKCA	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

*For more test condition information, please refer to user manual

NVIDIA Jetson Orin Series – Fanless System

AIE-PN33/43-2PSE | AIE-PN33/43-4PSE

- Supports NVIDIA Jetson Orin™ NX Series
- 1 x M.2 B-Key/E-Key/M-Key (128GB built-in)
- 2/4 x IEEE 802.3af GbE PSE ports
- 2 x RJ-45 GbE Ports
- Wide Power Input Range 12 to 24 VDC
- Operating temperature -25°C ~ +55°C

AIE-PO23/33-6USB | AIE-PN33/43-6USB

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- 1 x M.2 B-Key/E-Key/M-Key (128GB built-in)
- 6 x USB 3.2 Ports
- 2 x RJ-45 GbE Ports
- Wide Power Input Range 12 to 24 VDC
- Operating temperature -25°C ~ +55°C

AIE-PO23/33-3M | AIE-PN33/43-3M

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- 1 x M.2 B-Key/E-Key
- 3 x M.2 M-Key (1 x 128GB built-in)
- 2 x RJ-45 GbE Ports
- Wide Power Input Range 12 to 24 VDC
- Operating temperature -25°C ~ +55°C

AIE-PX11/12 | AIE-PX21/22

- Supports NVIDIA Jetson AGX Orin™ 32GB/64GB
- 2/4 x IEEE 802.3af GbE PSE ports
- 1 x GbE port, 1 x 10GbE port
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key slot
- Wide input voltage range from 9 to 36 VDC
- Operating Temperature -25°C ~ +55°C

AIE-PX13/23

- Supports NVIDIA Jetson AGX Orin™ 32GB/64GB
- 1 x GbE port, 1 x 10GbE port
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key slot
- Wide input voltage range from 9 to 36 VDC
- Operating Temperature -25°C ~ +55°C

AIE-PO22/32 | AIE-PN32/42

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key (128GB built-in)
- 2 x RJ-45 GbE ports
- Wide input voltage range from 12 to 24 VDC
- Operating temperature -25°C ~ +55°C

AIE-CO21/31 | AIE-CN31/41

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- 1 x M.2 E-Key, 1 x M.2 M-Key (128GB built-in)
- 1 x RJ-45 GbE port
- Wide input voltage range from 12 to 24 VDC
- Operating temperature -25°C ~ +55°C

Model Number	AIE-PN33-2PSE / AIE-PN33-4PSE	AIE-PN43-2PSE / AIE-PN43-4PSE	AIE-PO23-6USB / AIE-PO33-6USB	AIE-PN33-6USB / AIE-PN43-6USB
Module Compatibility	NVIDIA Jetson Orin NX 8GB	NVIDIA Jetson Orin NX 16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	70 TOPS	100 TOPS	20/40 TOPS	70/100 TOPS
Storage	1 x M.2 NVMe M-Key 2242 (128GB built-in)		1 x M.2 NVMe M-Key 2242 (128GB built-in)	
Display	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	Not supported		Not supported	
RTC	Not supported		Not supported	
Audio	Not supported		Not supported	
LAN	2 x RJ-45 GbE Ports		2 x RJ-45 GbE Ports	
PoE Interface	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W per Port)	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W per Port)	Not supported	
USB	2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (support up to 10 Gbps shared) 4 x USB 3.2 Gen1 Type A 1 x OTG Type-C	
I/O Interfaces	5 x GPIO, 1 x UART, 1 x I^2C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation; support CAN FD)		5 x GPIO, 1 x UART, 1 x I^2C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: 6.413 W Full Loading: 89.13* W	Idle: 6.413 W Full Loading: 89.13* W	Idle: 6.413 W Full Loading: 47.13* W	Idle: 6.413 W Full Loading: 47.13* W
Power Input / Connector	DC-in 12-24VDC / 4-Pin DC Jack Power Connector		DC-in 12-24VDC / 4-Pin DC Jack Power Connector	
Dimension (W x D x H)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)		270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)	
Net Weight	TBC kg (TBC lb)		TBC kg (TBC lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

*For more test condition information, please refer to user manual

Model Number	AIE-PO23-3M / AIE-PO33-3M	AIE-PN33-3M / AIE-PN43-3M	AIE-PX11/AIE-PX12	AIE-PX21/AIE-PX22
Module Compatibility	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB
AI Performance	20/40 TOPS	70/100 TOPS	200 TOPS	275 TOPS
Storage	1 x M.2 NVMe M-Key 2242 (128GB built-in)		64GB eMMC 5.1	
Display	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	Not supported		TPM v2.0 (optional)	
RTC	Not supported		Not supported	
Audio	Not supported		Not supported	
LAN	2 x RJ-45 GbE Ports		1 x RJ-45 GbE, 1 x RJ-45 10GbE	
PoE Interface	Not supported		2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*
USB	2 x USB 3.2 Gen2 Type A (support up to 10 Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C	
I/O Interfaces	5 x GPIO, 1 x UART, 1 x I²C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation; support CAN FD)		2 x I²C, 1 x SPI, 5 x GPIO, 2 x UART 1 x RS-232, 1 x RS-422/485 (2-in-1), 2 x CAN 2.0b (isolation; support CAN FD) 1 x microSIM Card Slot, 1 x OOB (optional)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in) 2 x M.2 M-Key 2280 (PCIe)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in) 2 x M.2 M-Key 2280 (PCIe)	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x2 Gen3) 1 x microSD Card Slot	
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: 6.413 W Full Loading: 43.13* W	Idle: 6.413 W Full Loading: 43.13* W	Idle: 7.5 W Full Loading: 109* W	Idle: 8 W Full Loading: 130* W
Power Input / Connector	DC-in 12-24VDC / 4-Pin DC Jack Power Connector		DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector	
Dimension (W x D x H)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)		270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)	
Net Weight	TBC kg (TBC lb)		4.3 kg (9.48 lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

*For more test condition information, please refer to user manual

Model Number	AIE-PX13	AIE-PX23	AIE-PO22 AIE-PO32	AIE-PN32 AIE-PN42	AIE-CO21 AIE-CO31	AIE-CN31 AIE-CN41
Module Compatibility	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	200 TOPS	275 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS
Storage	64GB eMMC 5.1		1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 M-Key 2242 (128GB built-in)	
Display	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	Not supported		Not supported		Not supported	
RTC	Not supported		Not supported		With super capacitor, battery (optional)	
Audio	Line-out/Line-in/Mic (optional with daughter board)		Not supported		Not supported	
LAN	1 x RJ-45 GbE, 1 x RJ-45 10GbE		2 x RJ-45 GbE Ports		1 x RJ-45 GbE Port	
PoE Interface	Not supported		Not supported		Not supported	
USB	2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C	
I/O Interfaces	2 x I²C, 1 x SPI, 5 x GPIO, 2 x UART 1 x RS-232, 1 x RS-422/485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD) 1 x microSIM Card Slot		5 x GPIO, 1 x UART, 1 x I²C, 1 x RS-232, 1 x RS-422/485 (2-in-1), 1 x CAN (isolation; support CAN FD), 1 x microSIM Card Slot		5 x GPIO, 1 x UART, 1 x I²C, 1 x CAN (Isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x4 Gen4) 1 x microSD Card Slot		1 x M.2 B-Key 3042/3052 (LTE/4G/5G) , 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen3)	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen4)	1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen3)	1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen4)
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button 1 x CAN 2.0b with isolation	
Power Consumption	Idle: 5.5 W Full Loading: 51.08* W	Idle: 5.9 W Full Loading: 71* W	Idle: 5.5 W Full Loading: 25.95* W	Idle: 6.4 W Full Loading: 35.45* W	Idle: 3.4 W Full Loading: 25.08* W	Idle: 3.7 W Full Loading: 35.5* W
Power Input / Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24 VDC / 2-Pin Terminal Block	
Dimension (W x D x H)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)		137.6 x 125 x 71.5 mm (5.41 x 4.92 x 2.81 in)		130 x 90.2 x 72 mm (5.11 x 3.55 x 2.83 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)	
Net Weight	4.2 kg (9.7 lb)		1.36 kg (3 lb)		0.927 kg (2.044 lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

*For more test condition information, please refer to user manual

NVIDIA Jetson Orin Series – Fan Based System

AIE-KX11/12/21/22

- Supports NVIDIA Jetson AGX Orin™ 32GB/64GB
- 2/4 x IEEE 802.3af GbE PSE ports
- 1 x GbE port, 1 x 10GbE port
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key slot
- Wide input voltage range from 9 to 36 VDC
- Operating Temperature -25°C ~ +55°C

AIE-KX13/23

- Supports NVIDIA Jetson AGX Orin™ 32GB/64GB
- 1 x GbE port, 1 x 10GbE port
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key slot
- Wide input voltage range from 9 to 36 VDC
- Operating Temperature -25°C ~ +55°C

AIE-KO22/32 | AIE-KN32/42

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- 1 x M.2 B-Key, 1 x M.2 E-Key, 1 x M.2 M-Key (128GB built-in)
- 2 x RJ-45 GbE ports
- Wide input voltage range from 12 to 24 VDC
- Operating temperature -25°C ~ +55°C

AIE-KO21/31 | AIE-KN31/41

- Supports NVIDIA Jetson Orin Nano™ / Orin™ NX Series
- 1 x M.2 E-Key, 1 x M.2 M-Key (128GB built-in)
- 1 x RJ-45 GbE port
- Wide input voltage range from 12 to 24 VDC
- Operating temperature -25°C ~ +55°C




Model Number	AIE-KX11/12	AIE-KX21/22	AIE-KX13	AIE-KX23	AIE-KO22/32	AIE-KN32/42	AIE-KO21 AIE-KO31	AIE-KN31 AIE-KN41
Module Compatibility	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	200 TOPS	275 TOPS	200 TOPS	275 TOPS	20 TOPS/ 40 TOPS	70 TOPS/ 100 TOPS	20 TOPS/ 40 TOPS	70 TOPS/ 100 TOPS
Storage	64GB eMMC 5.1		64GB eMMC 5.1		1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 M-Key 2242 (128GB built-in)	
Display	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	TPM v2.0 (optional)		Not supported		Not supported		Not supported	
RTC	Not supported		Not supported		With super capacitor, battery (optional)		With super capacitor, battery (optional)	
Audio	Line-out / Line-in / Mic (optional with daughter board)		Line-out/Line-in/Mic (opt. with Daughter Board)		Line-out / Line-in / Mic (optional with daughter board)		Line-in/out, Microphone (optional with daughter board)	
LAN	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port		1 x RJ-45 GbE port, 1 x RJ-45 10GbE port		2 x RJ-45 GbE Ports		1 x RJ-45 GbE Port	
PoE Interface	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)	Not supported		Not supported		Not supported	
USB	2 x USB 3.2 Gen1 Type A, 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C, 1 x DB-15 USB 2.0		2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x USB 2.0 Type-C (OTG only), 1 x USB 3.2 Type-C Gen 2		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C	
I/O Interfaces	2 x I²C, 1 x SPI, 5 x GPIO 1 x RS-232, 1 x RS-422 / RS-485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD) 2 x UART, 1 x microSIM Card Slot		2 x I²C, 1 x SPI, 5 x GPIO 1 x RS-232, 1 x RS-422 / RS-485 2 x CAN 2.0b (isolation; support CAN FD) 1 x microSIM Card Slot		5 x GPIO, 1 x UART, 1 x I²C, 1 x RS-232, 1 x RS-422/485 (2-in-1), 1 x CAN (isolation; support CAN FD), 1 x OOB (optional), 1 x microSIM Card Slot		5 x GPIO, 1 x I²C, 1 x RS-232, 1 x UART, 1 x CAN (Isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x2 Gen3) 1 x microSD Card Slot		1 x M.2 B-Key 3042/3052 (support USB 3.2 Gen1, USB 2.0) 1 x M.2 E-Key 2230 (support PCIe x1 Gen4, USB 2.0) 1 x M.2 M-Key 2280 (support NVMe, PCIe x2 Gen4) 1 x MicroSD Slot		1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (128GB built-in)	
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button 2 x UART, 1 x UART3 (Debug only)		1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: 14.3 W Full Loading: 115.8* W	Idle: 14.8 W Full Loading: 136.8* W	Idle: 9.655 W Full Loading: 55.25 W	Idle: 9.9 W Full Loading: 75.25 W	Idle: 9.5 W Full Loading: 30.05* W	Idle: 10.5 W Full Loading: 39.55	Idle: 8.5 W Full Loading: 30.25* W	Idle: 7.6 W Full Loading: 40.25* W
Power Input / Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector		DC-IN 9 to 36 VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 2-Pin Terminal Block	
Dimension (W x D x H)	220 x 170 x 79 mm (8.66 x 6.69 x 3.11 in)		210 x 124.7 x 79 mm (8.3 x 4.91 x 3.11 in)		196.5 x 124 x 68 mm (7.73 x 4.88 x 2.67 in)		123 x 99 x 56 mm (48.4 x 38.9 x 22 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)	
Net Weight	1.852 kg (4 lb)		1.969 kg (4.34 lb)		1.102 kg (2 lb)		0.54 kg (1.2 lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +70°C (-13° F ~ +158° F) Storage Temp. : -40°C ~ +85°C (-40° F ~ +185° F)		Operating Temp. : -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA		CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

*For more test condition information, please refer to user manual

NVIDIA Jetson Orin Series–In Vehicle System

AIE-VO040/VO80
AIE-VN080/VN160 *Preliminary

- Supports NVIDIA Jetson Orin NX/Nano series
- Wide Power Input Range 9 to 36 VDC
- 1 x RJ-45 GbE Port
- Support M.2 M/E Key expansion
- -25°C ~ +70°C operating temperature
- E-Mark compliance

Model Number	AIE-VO040	AIE-VO080	AIE-VN080	AIE-VN160
Module Compatibility	NVIDIA Jetson Orin Nano 4GB	NVIDIA Jetson Orin Nano 8GB	NVIDIA Jetson Orin NX 8GB	NVIDIA Jetson Orin NX 16GB
AI Performance	20 TOPS	40 TOPS	70 TOPS	100 TOPS
Storage	1 x M.2 M-Key 2242 (128GB built-in)			
Display	1 x HDMI 2.0 Type A			
LAN	1 x RJ-45 GbE Port			
	2 x USB 3.2 Gen2 Type A 1 x OTG Type-C			
I/O Interfaces	1 x CAN (Isolation, DB9-Port 1) (Support CAN FD) 2 x Antenna Hole for Wifi			
Expansion	1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in) 1 x microSD card slot (optional; occupy M.2 E-Key slot)			
MISC. Function	1 x Recovery Button, 1 x Reset Button			
Power Consumption	Idle: TBD W Full Loading: TBD* W		Idle: TBD W Full Loading: TBD* W	
Power Input / Connector	DC-in 9-36 VDC / 3-Pin (V+/V-/IGN) Terminal Block			
LED Indicator	1 x PWR (w/ IGN), 1 x PGM (Programmable by user define)			
Dimension (W x D x H)	132 x 84.4 x 54 mm			
Mounting	Wall Mount / Din Rail (optional)			
Net Weight	TBD kg (TBD lb)			
Vibration	Operating, MIL-STD-810G			
Shock	Operating, MIL-STD-810G			
Temperature	Operating Temp.: -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow; 20W TDP Mode -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow; 30W TDP Mode Storage Temp.: -40°C ~ +85°C (-40°F ~ +185°F)			
Humidity	95% @ 40°C (104°F) (non-condensing)			
OS Support	Linux			
Certification	CE / FCC / E-Mark (E24)			

NVIDIA IGX Orin System

AIE-MIX640 *Preliminary

- Support NVIDIA IGX Orin 700 with 248 TOPS
- Support 1x NVIDIA RTX A6000 (Up to 867 TOPS) or 1x RTX 6000 Ada (up to 1705 TOPS)
- Onboard the Safety MCU (sMCU) : Infineon Aurix TC397
- Support NVIDIA ConnectX-7, 2x 100GbE
- Support NVIDIA MBC : AST2600 Microchip ERoT
- GPU Max Frequency : 1.185 GHz
- CPU Max Frequency : 1.971 GHz

Model Number	AIE-MIX640
NVIDIA Platform	NVIDIA IGX Orin
AI Performance	248 TOPS
Safety MCU (SMCU)	Infineon Aurix TC397
BMC (Baseboard Management)	Aspeed AST2600
Display	1 x DisplayPort 1.4a output 1 x HDMI 2.0b input (up to 4kp60, optional)
PCIe	1 x PCIe Gen5 double width slot (x16) for optional NVIDIA RTX A6000 discrete GPU card 1 x PCIe Gen5 single width slot (x8)
LAN	2 x RJ45 (up to 1 GbE) 2 x QSFP ports (up to 100GB per port/up to 25 Gb/s per channel)
USB	4 x USB 3.2 Gen2 Type-A, 4 x USB 3.2 Gen2 Type-A (Onboard interface) 1 x USB 3.2 Gen2 Type-C
I/O Interfaces	4 x UART, 1 x CAN, 8 x GPIO (Onboard interface)
Expansion	1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe) 2 x SATA 2.5" HDD/SSD (Max. 2 x 4TB)
Power Consumption	Up to125W (without dGPU) 400W (with dGPU)
Power Input / Connector	AC 100-240V, 500W / 800W Single power supply (Select 800W if RTX A6000 combined)
Dimension (W x D x H)	413 x 315 x 159 mm
Net Weight	11 KG
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration
Temperature	Operating Temperature: 0°C ~ +40°C (-13°F ~ +131°F) Storage Temperature: -40°C ~ +85°C (-40°F ~ +185°F)
Humidity	95% @ 40°C (104°F) (non-condensing)
OS Support	TBD
Certification	CE / FCC

ARM+ AI Series–Platform

AIB-MR1A-A1

- Powered by Rockchip RK3588
- LPDDR4 8GB, eMMC 32GB
- 2 x M.2 M-Key (1x w/ PCIe 3.0 x4 for ASIC accelerator, and 1 x w/SATA for storage)
- 1 x M.2 E-Key for WIFI/BT, 1 x mPCIe for LTE
- 2 x USB 3.2 Gen1, 2 x GbE, 2 x COM, 1 x HDMI 2.1

Model Number	AIB-MR1A-A1
Module Compatibility	Rockchip RK3588
Storage	32GB eMMC 1 x Micro-SD slot 1 x M.2 Key M w/SATA for Storage
Display	1 x HDMI 2.1 (HDMI Type A Connector)
Audio	1 x MIC-In, 1 x Line-Out, 1 x Line-In (Optional with daughter board)
LAN	2 x GbE (2 x RJ45)
USB	1 x USB 3.2 Gen1 (Type A), 1 x USB 2.0 (Type A), 1 x Type C for OTG
COM	1 x header for RS-232 (TXD/RXD/CTS/RTS) and RS-485
MISC. Function	1 x M.2 M-Key 2280 (PCIe 3.0 x4) 1 x M.2 E-Key 2230 (PCIe 2.1 x1+USB 2.0) 1 x mPCIe full-size (USB 2.0)
Power Consumption	1 x Power Button / 1 x Reset Button 1 x Recovery/Debug header 1 x InnoAGE/OSR header (Optional OOB/Recovery SSD) 1 x InnoAGENT header (Optional OOB Module) 1 x CPU FAN header
Power Input / Connector	DC-in 12V / DC Jack 4pin
Dimension (W x D x H)	131 x 120 x 50mm
Mounting	N/A
Net Weight	0.241 kg (0.53 lb) w/ Fansink
Vibration	N/A
Shock	N/A
Temperature	Operating Temp.: 0°C ~ +70°C Storage Temp.: -40°C ~ +85°C
Humidity	95% @ 40°C Related Humidity (non-condensing)
Certification	CE / FCC

AI Inference / Training Platforms

MegaEdge_X86 for AI Inference/Training

Optimized x86 Architectures for Next-Level AI Inference and Training

Leveraging x86 architecture, Aetina's **MegaEdge** provides scalable edge computing systems that allow for additional GPU power or AI-enhanced performance, bringing versatile AI acceleration. MegaEdge is optimized for AI inference/training tasks that require high computing performance. Aetina provides PCIe, MXM and M.2 series for MegaEdge, empowering clients with optimal AI computing power and systems to satisfy various application scenarios and AI project demands. Moreover, MegaEdge is ideal for seamless integration into vision-related applications, supporting a variety of peripheral connections for sensors, cameras, and monitors. When integrated with Aetina's EdgeEye, a cloud management platform, MegaEdge also offers basic real-time hardware monitoring and remote-control functions, enabling optimal resource utilization and minimal operational disruptions.

MegaEdge PCIe Series

AIP-FR68

- Pre-installed NVIDIA AI Workbench Software tool
- Drive breakthrough AOI AI defect inspection with Metropolis for Factories
- NCS (NVIDIA-Certified System) certification, featuring NVIDIA RTX A6000 or NVIDIA RTX 6000Ada GPU
- Specialized Thermal design to support Dual passive GPU(A30) for localized AI Training
- Support out-of-band (OOB) management for remote maintenance of edge devices

AIP-KQ67

- Powered by Intel 12/13th Gen Core™ i9/i7/i5 65w processors
- Drive breakthrough AOI AI defect inspection with Metropolis for Factories.
- NCS (NVIDIA-Certified System) certification, featuring NVIDIA A2 GPU for AI inference.

MegaEdge MXM Series

AIP-SQ67

- Achieve faster and more accurate AI inference with the 12/13th Intel CPU
- Built-in with two swappable SSD trays for easy installation.
- Accelerate AI-enabled applications with extended MXM modules
- Support out-of-band (OOB) management for remote maintenance of edge devices

MegaEdge M.2 Series

AIP-CR68

- Powered by Intel 12/13th Gen Core™ i9/i7/i5 processors, TDP up to 35W
- Build in Hailo AI accelerator for Edge AI inference
- Optional PSE support Dual IP Camera for image capture
- Support out-of-band (OOB) management for remote maintenance of edge devices




Model Number	AIP-FR68	AIP-KQ67	AIP-SQ67	AIP-CR68
CPU	Intel 12/13th Core i5/i7/i9 Processor up to 65W	Intel 12/13th Core i5/i7/i9 Processor up to 65W	Intel 12/13th Core i5/i7 Processor up to 65W	Intel 12/13th Core i5/i7/i9 Processor up to 35W
Chipset	Intel R680E Chipset	Intel Q670E Chipset	Intel Q670E Chipset	Intel R680E Chipset
GPU(Optional)	PCIe 6000Ada/A6000/A5500/ A5000/A4500/A4000/A3000/ A2000/A30/A2/T4/L4	PCIe 6000ADA/A6000/A5500/ A5000/A4500/A4000/A3000/ A2000/A30/A2/T4/L4	MXM A1000/A2000/ A4500/T1000/RTX5000	Hailo-8™ M.2 AI Acceleration Module
Memory	4 x DDR5 U-DIMM up to 128G Support 4400MHZ	4 x DDR5 U-DIMM up to 128GB (4000MHz with 4 DIMM)	2 x DDR5 SO-DIMM up to 64G Support 4800MHz	4 x DDR5 U-DIMM up to 128G Support 4400MHZ
Storage	4 x 2.5" SATAIII SSD (Support RAID 0/1/5/10) 1 x M.2 M-Key Slot, Support PCIe Gen 4 x4 for NVME/SATA, Size 2280 1 x M.2 M-Key Slot, Support PCIe Gen 4 x4 for NVME, Size 2280	2 x 2.5" SATAIII SSD paired with 500W PSU 1 x M.2 M-Key Slot, Support PCIe Gen4 x4 for NVME/SATA, Size 2280	2 x 2.5" SATAIII SSD 2 x M.2 M Key Slot, Support PCIe Gen 4 x4 for NVME/SATA, Size 2280	1 x 2.5" SATAIII SSD 1 x M.2 M-Key Slot, Support PCIe Gen 4 x4 for NVME/SATA, Size 2280 1 x M.2 M-Key Slot, Support PCIe Gen 4 x4 for NVME, Size 2280 (support M.2 AI accelerator)
Front I/O	8 x USB 3.2 Gen2 Type-A(10G) 1 x USB 3.2 Gen2 Type-C(20G) 3 x 2.5GbE LAN (RJ-45, 2 x support Dual POE 802.3 at) 1 x 10GbE LAN (RJ-45) 1 x RS-485(RJ-45) 2 x RS-232/422/485 (DB9) 1 x Line out 1 x Mic in 1 x 8bits GPIO (DB15) 2 x DP++1.4 1 x HDMI 2.0 1 x Power Button	1 x Power button 2 x USB 2.0	6 x USB3.2 Gen2 Type-A(10G) 1 x USB3.2 Gen2 Type-C(20G) 5 x 2.5GbE LAN (RJ-45) 4 x RS-232/422/485 (DB9) 1 x 7bits GPIO(DB9) 1 x Power Button	8 x USB 3.2 Gen2 Type-A (10G) 1 x USB 3.2 Gen2 Type-C (20G) 3 x 2.5GbE LAN (RJ-45, 2 x support POE 802.3 at) 1 x 10GbE LAN (RJ-45) 1 x RS-485 (RJ-45) 2 x RS-232/422/485 (DB9) 1 x Line out 1 x Mic in 1 x 8bits GPIO (DB15) 2 x DP++1.4 1 x HDMI 2.0 1 x Power Button
Rear I/O	6 x SMA Anntenna hole	6 x USB 3.2 Gen2 Type-A(10G) 1 x USB 3.2 Gen2 Type-C(20G) 3 x 2.5GbE LAN (RJ45) 1 x 10GbE LAN (RJ45) 2 x DP++1.4 1 x HDMI 2.1 3 x Jack support Line out/Line in/Mic in 2 x SMA Anntenna hole	5 x DP++ (HBR2) 1 x Line Out 1 x Mic in 2 x CAN Bus-Isolation 2.0B (optional) 2 x USB2.0 Type-A	6 x SMA Anntenna hole
Internal I/O	N/A	N/A	N/A	N/A
Expansion	1x PCIe Gen4 x16 or Gen4 x8 (PCIe x16 slot) 1x PCIe Gen4 x8 (PCIe x16 slot) 1x PCIe Gen3 x4 (PCIe x4 slot) 1x PCIe Gen3 x4 (PCIe x16 slot) 1x PCIe Gen3 x1 (PCIe x1 slot) 1 x M.2 2230 E-Key 1 x M.2 3052 B-Key 1 x Nano SIM slot	1 x PCIe Gen5 x16 (PCIe x16 slot) 2 x PCIe Gen4 x4 (PCIe x4 slot) 1 x PCIe Gen3 x2 (PCIe x4 slot) 1 x M.2 2230 E-Key	1 x MXM Slot Gen4 x16 (Type B+)	1 x M.2 2230 E-Key 1 x M.2 3052 B-Key 1 x Nano SIM slot
MISC. Function	OOB (out of band), Built-in Innodisk – InnoAgent	N/A	OOB (out of band), Built-in Innodisk – InnoAgent	OOB (out of band), Built-in Innodisk – InnoAgent
Power Consumption	Full loading: up to 600 Watts	Full loading: up to 500 Watts/850 Watts	Full loading: up to 600 Watts	Full loading: up to 260 Watts
Power Input / Connector	DC-in 24 to 48VDC, 4-pin Terminal Block	500W: AC-in 110-240VAC,60~50 Hz, 8-4A(FLEX ATX PSU) 850W: AC-in 110-240VAC,60~50 Hz, 10-6A(FLEX ATX PSU)	DC-in 24VDC / 4-pin Terminal Block	DC-in 12~48VDC / 4-pin Terminal Block
Dimension (W x D x H)	340 x 213 x 279 mm	315 x 413 x 159mm	270 x 280 x 150mm	340 x 86 x 253 mm
Mounting	Wallmount / Deskmount	Desktop	Deskmount	Wallmount / Deskmount
Net Weight	11 Kg	10 kg	5.5 kg	5 Kg
Vibration	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation, w/o PCIe Card)	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation, w/o PCIe Card)	2Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation)	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation)
Shock	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation, w/o PCIe Card)	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation, w/o PCIe Card)	5G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation)	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation)
Temperature	Operating Temp. : 0°C ~ +50°C (32°F ~ 122°F) (w/o GPU) Operating Temp. : 0°C ~ +50°C (32°F ~ 122°F) (w/ 165W Passive GPU) Operating Temp. : 0°C ~ +40°C (32°F ~ 104°F) (w/ 300W Active GPU) Storage Temp. : -40°C ~ +85°C (-40°F ~ 185°F)	Operating Temp.: -10°C ~ +50°C, with 0.5m/s air flow (w/ 120W Passive GPU) Operating Temp.: -10°C ~ +40°C, with 0.5m/s air flow (w/ 300W Passive GPU) Storage Temp.: -40°C ~ +85°C (-40°F ~ 185°F)	Operating Temp. : 0°C ~ +50°C (With MXM) Storage Temp. : -40°C ~ +85°C (-40°F ~ 185°F)	Operating Temp. : 0°C ~ +50°C (32°F ~ 122°F) Storage Temp. : -40°C ~ +85°C (-40°F ~ 185°F)
Humidity	95% @ 40°C Related Humidity (non-condensing)	95% @ 40°C Related Humidity (non-condensing)	95% @ 40°C Related Humidity (non-condensing)	95% @ 40°C Related Humidity (non-condensing)
OS Support	Windows 10 IOT LTSC / Windows 11 / Ubuntu 20.04/22.04	Windows 11 / Ubuntu 22.04	Windows 11 / Ubuntu 22.04	Windows 10 IOT LTSC / Windows 11 / Linux Ubuntu 20.04/22.04
Certification	CE / FCC Class A / UKCA / LVD / RoHS	CE / FCC Class A / UKCA / RoHS	CE / FCC Class A / UKCA / RoHS	CE / FCC Class A / UKCA / LVD / RoHS

AI Inference/Training Servers

SuperEdge

NVIDIA MGX Modular Architecture Accelerated Edge Server

As generative AI and large language models (LLMs) permeate business and consumer lifestyles, organizations seek reliable, compact, and cost-effective edge servers to accommodate their diverse accelerated computing and unique AI workloads. Aetina's **SuperEdge AI Inference/Training Servers** incorporate NVIDIA MGX™ architecture, which maximizes computing power at the Edge and facilitates seamless integration of multi-generation compute capabilities. This enables advanced computing solutions and faster edge or near-edge deployments. The SuperEdge showcases exceptional computing capabilities and energy efficiency for AI throughputs. Backed by versatile computing form factors powered by X86 CPUs, as well as cutting-edge NVIDIA GPU products, these edge servers unleash the potential of large language model training, edge computing, design and simulation, enterprise AI, and rendering. Endorsed as NVIDIA-Certified Systems (NCS), SuperEdge servers streamline data center operations and offer a robust and competitive edge in an AI-driven marketplace.

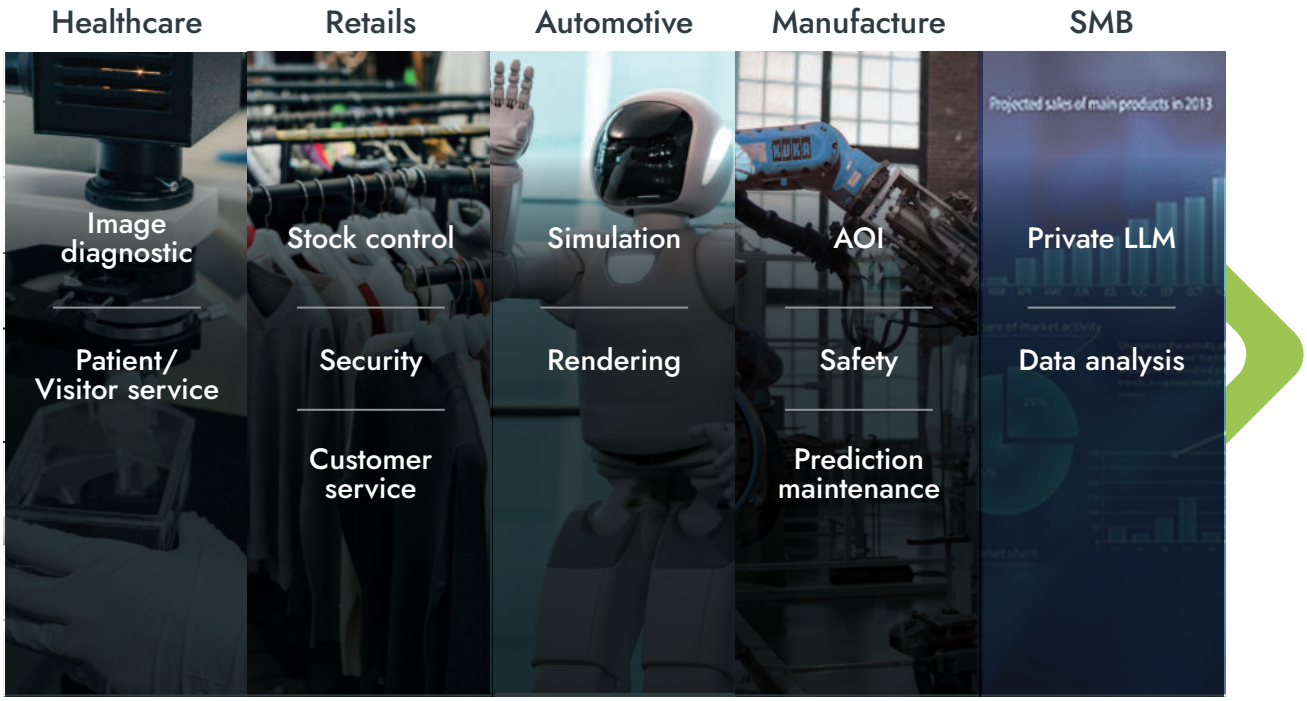
NVIDIA MGX Short-Depth Server

AEX-2UA1 *Preliminary

- NVIDIA-certified MGX modular server, tailored for Edge AI applications.
- Powered by Intel® Xeon® 6 with P-cores.
- Short and Compact Accelerated server - 420mm (16.5") short-depth.
- Optimal Accelerated performance at Edge - supporting 2 double deck GPUs and NVLink bridge for boosting GPU-to-GPU interconnections.
- Supporting NVIDIA® Bluefield-3 and NVIDIA® ConnectX®-7 for high performing networking.

Model Number	AEX-2UA1
CPU	Single Socket Intel® Xeon® 6 with P-cores
Chipset	N/A
GPU(Optional)	Support up to 2 dual width PCIe Passive GPUs
Memory	8 channel memory 6400 MT/s DDR5 8000 MT/s MCR DIMM
Storage	(External/Rear) (4) Hot-swappable E1.S, up to PCIe Gen5, up to 15mm E1.S (Internal) (2) M.2, up to PCIe Gen5 x4, M-Key 2280/22110
Front I/O	I/O: (1) RJ45 1Gbe Dedicated BMC LAN port, (1) MiniDP port, (2) USB 2.0 ports Button: System Power, UID/BMC reset Status LED: Power, UID, Storage IO, LAN1, LAN2, Information
Expansion	(2) FHFL Gen 5 x 16 PCIe slot (up to 2 Double Width GPU with NVLink bridge) (1) FHFL Gen 5 x 16 PCIe slot (x8 link) (1) FHHL Gen5 x 16 PCIe slot
MISC. Function	Trusted Platform Module (TPM) 2.0 Intel® Platform Firmware Resilience (Intel® PFR)
Power Input / Connector	IEC 60320 C13
Dimension (W x D x H)	2U Rackmount 438mm x 420mm x 88mm
Mounting	Rackmount
Temperature	Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F) Non-operating Temperature: -30°C to 60°C (-22°F to 140°F)
Humidity	Operating Relative Humidity: 8% to 80% (non-condensing) Non-operating Relative Humidity: 8% to 90% (non-condensing)

Key Applications



AI Accelerator & GPU

MXM. PCIe. M.2_Modules for AI Acceleration

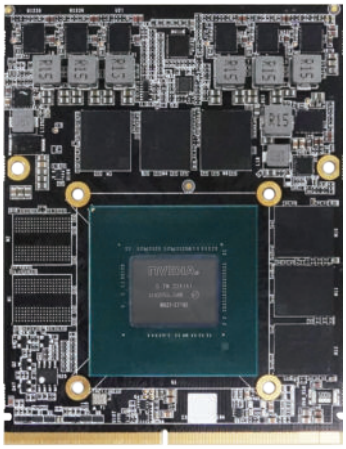
Flexible Utilization for Superlative AI Acceleration

Aetina's AI accelerators and GPU boost AI computing performance effortlessly with modules designed for seamless integration. These modules are available in multiple form factors, including PCIe, Mobile PCIe Module (MXM), and M.2, ensuring compatibility with your existing edge systems and providing an easy upgrade path without significant changes to your current infrastructure. Our accelerators not only enhance performance—but also bring unprecedented flexibility and expandability to your setups, allowing you to adapt and scale your AI applications easily. Whether you need to accelerate deep learning algorithms, image processing, or other AI-driven tasks, these modules offer a potent combination of efficiency and adaptability.

MXM Series

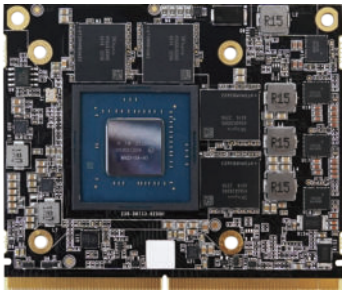
MX5000A-WP

- NVIDIA RTX 5000 embedded graphics based on NVIDIA Ada Lovelace architecture
- 9728 CUDA cores, 76 RT cores and 304 Tensor cores, 16GB GDDR6 memory
- PCIe Gen 4 x16 interface
- 41.15 TFLOPS peak FP32 performance
- Support Error Correction Code(ECC)



MX3500A-SP

- NVIDIA RTX 3500 embedded graphics based on NVIDIA Ada Lovelace architecture
- 5120 CUDA cores, 40 RT cores and 160 Tensor cores, 12GB GDDR6 memory
- PCIe Gen 4 x16 interface
- 23.04 TFLOPS peak FP32 performance

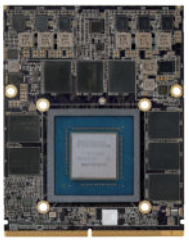


MX2000A-VP

- NVIDIA RTX 2000 embedded graphics based on NVIDIA Ada Lovelace architecture
- 3072 CUDA cores, 24 RT cores and 96 Tensor cores, 8GB GDDR6 memory
- PCIe Gen 4 x8 interface
- 12.99 TFLOPS peak FP32 performance

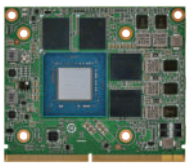
Model Number	MX5000A-WP	MX3500A-SP	MX2000A-VP
Engine	NVIDIA RTX 5000 Ada Architecture: NVIDIA Ada Lovelace CUDA Cores: 9728 Tensor Cores: 304 RT Cores: 76 Floating Point Performance: 41.15 TFLOPS	NVIDIA RTX 3500 Ada Architecture: NVIDIA Ada Lovelace CUDA Cores: 5120 Tensor Cores: 160 RT Cores: 40 Floating Point Performance: 23.04 TFLOPS	NVIDIA RTX 2000 Ada Architecture: NVIDIA Ada Lovelace CUDA Cores: 3072 Tensor Cores: 96 RT Cores: 24 Floating Point Performance: 12.99 TFLOPS
Memory	Size: 16GB GDDR6 Speed: 18 Gbps Interface Width: 256-bit Bandwidth (GB/sec): 576	Size: 12GB GDDR6 Speed: 18 Gbps Interface Width: 192-bit Bandwidth (GB/sec): 432	Size: 8GB GDDR6 Speed: 16 Gbps Interface Width: 128-bit Bandwidth (GB/sec): 256
Support	PCI Express 4.0 x16 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 4.0 x16 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 4.0 x8 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2
Display	Resolution: 7680x4320 Max: 4x DisplayPort	Resolution: 7680x4320 Max: 4x DisplayPort	Resolution: 7680x4320 Max: 3x DisplayPort
Power Consumption	Total Graphics Power (TGP): 115 W	Total Graphics Power (TGP): 115 W	Total Graphics Power (TGP): 60 W
Form Factor	MXM Graphics Module Version 3.1, Type B	MXM Graphics Module Version 3.1, Type B	MXM Graphics Module Version 3.1, Type A
Dimension (W x D x H)	82.0 x 105.0 mm (3.22" x 4.13")	82.0 x 105.0 mm (3.22" x 4.13")	82.0 x 70.0 mm (3.22" x 2.75")
Net Weight	0.06 kg (0.1323 lb)	0.0592 kg (0.1305 lb)	0.037 kg (0.082 lb)
Temperature	Standard Operating Temp. : 0°C ~ +55°C Storage Temp. : -40°C ~ +85°C	Standard Operating Temp. : 0°C ~ +55°C Storage Temp. : -40°C ~ +85°C	Standard Operating Temp. : 0°C ~ +55°C Storage Temp. : -40°C ~ +85°C
Humidity	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing
OS Support	Windows 10 / 11 64-bit	Windows 10 / 11 64-bit	Windows 10 / 11 64-bit
Certification	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC / UKCA

MXM Series



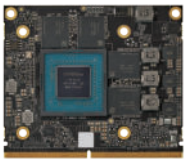
M3A4500-WP

- NVIDIA RTX A4500 embedded graphics based on NVIDIA Ampere architecture
- 5888 CUDA cores, 80 RT cores and 184 Tensor cores, 16GB GDDR6 memory
- 18.55 TFLOPS peak FP32 performance
- Supports CUDA Compute version 8.6, OpenGL 4.6, Vulkan 1.2, DirectX 12 Ultimate and Shader Model 7.0
- Supports Error Correction Code (ECC)



M3A2000-VY

- NVIDIA RTX A2000 embedded graphics based on NVIDIA Ampere architecture
- 2560 CUDA cores, 20 RT cores and 80 Tensor cores, 8GB GDDR6 memory
- 8.25 TFLOPS peak FP32 performance
- PCIe Gen 4 x8 interface
- Supports Error Correction Code (ECC)



M3A1000-PP

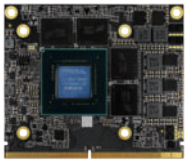
- NVIDIA RTX A1000 embedded graphics based on Ampere architecture
- 2048 CUDA cores, 16 RT cores and 64 Tensor cores, 4GB GDDR6 memory
- 6.66 TFLOPS peak FP32 performance
- PCIe Gen 4 x8 interface

M3A500-PP

- NVIDIA RTX A500 embedded graphics based on Ampere architecture
- 2048 CUDA cores, 16 RT cores and 64 Tensor cores, 4GB GDDR6 memory
- 6.54 TFLOPS peak FP32 performance
- PCIe Gen 4 x4 interface

M3T3000-QN

- NVIDIA Quadro RTX 3000 embedded graphics based on NVIDIA Turing architecture
- 1920 CUDA cores, 30 RT cores and 240 Tensor cores, 6GB GDDR6 memory
- 5.3 TFLOPS peak FP32 performance
- PCIe Gen 3 x16 interface

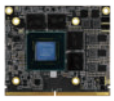


M3T1000-PN

- NVIDIA Quadro T1000 embedded graphics based on NVIDIA Turing architecture
- 896 CUDA cores, 4GB GDDR6 memory
- 2.6 TFLOPS peak FP32 performance
- PCIe Gen 3 x16 interface

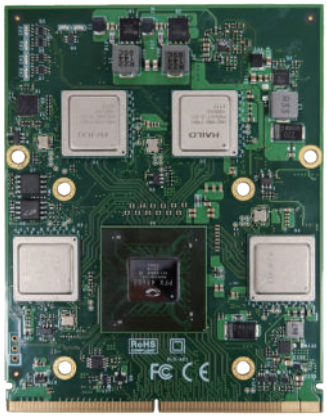




Model Number	M3A4500-WP	M3A2000-VY	M3A1000-PP	M3A500-PP	M3T3000-QN	M3T1000-PN
Engine	NVIDIA RTX A4500 Architecture: NVIDIA Ampere CUDA Cores: 5888 Tensor Cores: 184 RT Cores: 80 Floating Point Performance: 18.55 TFLOPS	NVIDIA RTX A2000 Architecture: NVIDIA Ampere CUDA Cores: 2560 Tensor Cores: 80 RT Cores: 20 Floating Point Performance: 8.25 TFLOPS	NVIDIA RTX A1000 Architecture: NVIDIA Ampere CUDA Cores: 2048 Tensor Cores: 64 RT Cores: 16 Floating Point Performance: 6.66 TFLOPS	NVIDIA RTX A500 Architecture: NVIDIA Ampere CUDA Cores: 2048 Tensor Cores: 64 RT Cores: 16 Floating Point Performance: 6.54 TFLOPS	NVIDIA Quadro RTX 3000 Architecture: NVIDIA Turing CUDA Cores: 1920 Tensor Cores: 240 RT Cores: 30 Floating Point Performance: 5.3 TFLOPS	NVIDIA Quadro T1000 Architecture: NVIDIA Turing CUDA Cores: 896 Floating Point Performance: 2.6 TFLOPS
Memory	Size: 16GB GDDR6 Clock: 16 Gbps Interface Width: 256-bit Bandwidth (GB/sec): 512	Size: 8GB GDDR6 Clock: 14 Gbps Interface Width: 128-bit Bandwidth (GB/sec): 224	Size: 4GB GDDR6 Clock: 12 Gbps Interface Width: 128-bit Bandwidth (GB/sec): 192	Size: 4GB GDDR6 Clock: 12 Gbps Interface Width: 64-bit Bandwidth (GB/sec): 96	Size: 6GB GDDR6 Clock: 14 Gbps Interface Width: 192-bit Bandwidth (GB/sec): 336	Size: 4GB GDDR6 Clock: 12 Gbps Interface Width: 128-bit Bandwidth (GB/sec): 192
Support	PCI Express 4.0 x16 Support ECC DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 4.0 x8 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 4.0 x8 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 4.0 x4 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 3.0 x16 DirectX: 12 Open GL 4.6 Vulkan 1.1 API	PCI Express 3.0 x16 DirectX: 12 Open GL 4.6 Vulkan 1.1 API
Display	Resolution: 7680x4320 Max: 4x DisplayPort	Resolution: 7680x4320 Max: 4x DisplayPort	Resolution: 7680x4320 Max: 4x DisplayPort	N/A	Resolution: 7680x4320 Max: 4x DisplayPort	Resolution: 7680x4320 Max: 4x DisplayPort
Power Consumption	Total Graphics Power (TGP): 125 W	Total Graphics Power (TGP): 60 W	Total Graphics Power (TGP): 60 W	Total Graphics Power (TGP): 45 W	Total Graphics Power (TGP): 80 W	Total Graphics Power (TGP): 50 W
Form Factor	MXM Graphics Module Version 3.1, Type B	MXM Graphics Module Version 3.1, Type A	MXM Graphics Module Version 3.1, Type A	MXM Graphics Module Version 3.1, Type A	MXM Graphics Module Version 3.1, Type B	MXM Graphics Module Version 3.1, Type A
Dimension (W x D x H)	82.0 x 105.0 mm (3.22" x 4.13")	82.0 x 70.0 mm (3.22" x 2.75")	82.0 x 70.0 mm (3.22" x 2.75")	82.0 x 70.0 mm (3.22" x 2.75")	82.0 x 105.0 mm (3.22" x 4.13")	82.0 x 70.0 mm (3.22" x 2.75")
Net Weight	0.0616 kg (0.1358 lb)	0.037 kg (0.082 lb)	0.037 kg (0.082 lb)	0.037 kg (0.082 lb)	0.065 kg (0.1433lb)	0.033 kg (0.0728lb)
Temperature	Standard Operating Temp.: 0°C ~ +55°C Storage Temp.: -40°C ~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Extended Operating Temp.: -40°C ~ +85°C Storage Temp.: -40°C ~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Extended Operating Temp.: -40°C ~ +85°C Storage Temp.: -40°C ~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Extended Operating Temp.: -40°C ~ +85°C Storage Temp.: -40°C ~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Extended Operating Temp.: -40°C ~ +70°C Storage Temp.: -40°C ~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Extended Operating Temp.: -40°C ~ +85°C Storage Temp.: -40°C ~ +85°C
Humidity	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing
OS Support	Windows 10/11 64-bit Linux 64-bit	Windows 10/11 64-bit Linux 64-bit	Windows 10/11 64-bit Linux 64-bit	Windows 10/11 64-bit Linux 64-bit	Windows 10 64-bit Linux 64-bit	Windows 10 64-bit Linux 64-bit
Certification	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC	CE / FCC

MXM Series

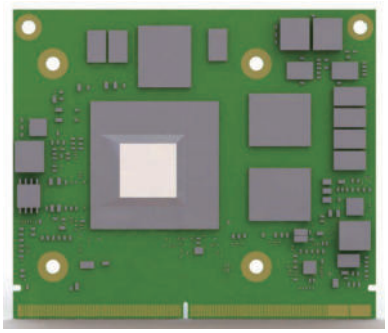


AI-MXM-H84A

- Powered by 4 x Hailo-8 AI Processors
- MXM Type B small form factor
- Delivers up to 104 TOPS of AI performance at a typical power consumption of 25W
- Dedicated enablement S/W package and AI developer tools, with out-of-the-box support for state-of-the-art NN models

Model Number	AI-MXM-H84A
Engine	4 x Hailo-8 AI processor with up to 26 TOPS and best-in-class power efficiency
AI Performance	104 TOPS
Memory	N/A
Support	PCI Express 3.0 x16 Supported TensorFlow and ONNX
Display	N/A
Power Consumption	25W (Typical power consumption)
Form Factor	MXM graphics module version 3.1, Type B
Dimension (W x D x H)	82 x 105mm
Net Weight	0.05 kg
Temperature	Standard: Operating Temp : 0°C ~ +70°C Storage Temp.:-40°C ~ +85°C
Humidity	10~90%, Non-condensing
OS Support	Windows 10/11 64-bit Linux 64-bit
Certification	CE / FCC

MXM Series



MXA380E-QA *Preliminary

- Intel Arc A380E GPU for the edge
- 128 Intel® XMX Engines Cores, 8 Xe-cores, 8 Ray Tracing and 128 XeVector Engines, 6GB GDDR6 memory
- PCIe Gen4.0 x8 signal
- Five-year long-term product availability support

Model Number	MXA380E-QA
GPU Engine Specs	Intel Arc A380E Architecture: Intel Arc Xe-cores: 8 Intel® XMX Engines Cores: 128 XeVector Engines: 128 RT Cores: 8 Core Clock (MHz):2000(Base)/2250(Boost) _TBD Floating Point Performance: 4.096 TFLOPS _ TBD
Memory Specs	Size: 6GB GDDR6 Clock: 15.5 Gbps Interface Width: 96-bit Bandwidth (GB/sec): 186
Feature Support	PCI Express 4.0 x8 DirectX: 12 UltimateOpenVINO OpenCL 3.0 OpenGL 4.6 Vulkan 1.3AV1 hardware encoding/decoding
Display	Resolution: 7680x4320[1] Max: 4x DisplayPort 1.4a
Form Factor	MXM Graphics Module Version 3.1, Type A
Dimensions (WxD)	82.0 x 70.0 mm (3.22" x2.75")
Net Weight	0.033 kg (0.073 lb) _TBD
Temperature	Standard: Operating Temp. :0 to + 55°C (32°F ~131°F) Extended Operating Temp. :-40 to + 85°C (-40°F ~185°F) Storage Temperature: -40 to + 85°C (- 40°F ~ 185°F)
Humidity	10~90%, Non-condensing
OS Support	Windows 10/11 64-bit
Certification	CE/FCC/UKCA

PCIe Series

IA380E-QUFL *Preliminary

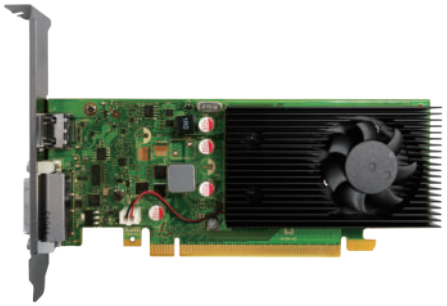
- Intel Arc A380E GPU for the Edge
- Intel XMX 128 cores and 8 Xe-core, 6GB GDDR6 memory
- PCIe Gen 4 x8 signal
- 5 years long-term product availability support

N4060-VSFX

- Powered by NVIDIA RTX 4060 Ada Lovelace architecture
- 3072 CUDA cores, 24 RT cores and 96 Tensor cores, 8GB GDDR6 memory
- PCIe Gen 4 x8 signal
- 15.11 TFLOPS peak FP32 performance

N1650-L9FX

- Powered by NVIDIA Turing architecture GeForce GTX 1650
- Integrated with 4GB GDDR5 128 bit memory interface
- PCIe Gen 3 x16 signal



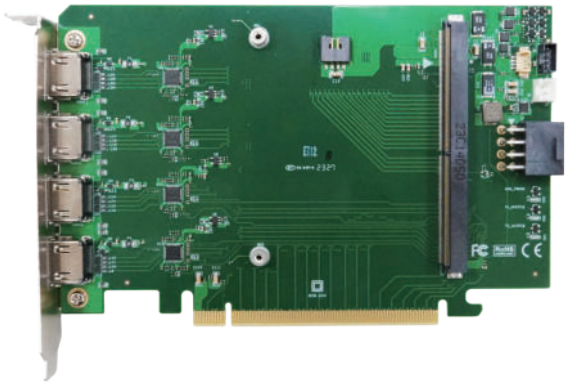
N1030-J6FL

- NVIDIA power-efficient GPU GeForce GT 1030
- Analog display supported
- Small form factor suitable for slim systems
- OpenCL 1.2, OpenGL 4.5, DirectX 12 and Vulkan compatible

*Preliminary

Model Number	IA380E-QUFL	N4060-VSFX	N1650-L9FX	N1030-J6FL
Engine	Intel Arc A380E Architecture: Intel Arc Intel XMX Cores: 128 Xe engine: 128 Xe-core: 8 Core Clock (MHz): 2000(Base) / 2250(Boost)(TBD) Floating Point Performance: 4.096 TFLOPS	NVIDIA GeForce RTX 4060 Architecture: NVIDIA Ada Lovelace CUDA Cores: 3072 Tensor Cores: 96 RT Cores: 24 Core Clock (MHz): 1830(Base) / 2460(Boost) Floating Point Performance: 15.11 TFLOPS	NVIDIA GeForce RTX 1650 Architecture: NVIDIA Turing CUDA Cores: 896 Floating Point Performance: 2.98 TFLOPS	NVIDIA GeForce GT 1030 Architecture: NVIDIA Pascal CUDA Cores: 384 Floating Point Performance: GFLOPS
Memory	Size: 6GB GDDR6 Clock: 15.5 Gbps Interface Width: 96-bit Bandwidth (GB / sec): 186	Size: 8GB GDDR6 Clock: 17 Gbps Interface Width: 128-bit Bandwidth (GB / sec): 272	Size: 4GB GDDR5 Clock: 8 Gbps Interface Width: 128-bit Bandwidth (GB/sec): 128	Size: 2GB GDDR5 Clock: 6 Gbps Interface Width: 64-bit Bandwidth: 48
Support	PCI Express 4.0 x8 DirectX: 12 Ultimate OpenVINO OpenCL 3.0 OpenGL 4.6 Vulkan 1.3 Intel Deep Link	PCI Express 4.0 x8 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2	PCI Express 3.0 x16 DirectX: 12 API Open GL 4.6 Vulkan API	PCI Express 3.0 x16 DirectX: 12 Open GL 4.5 Vulkan 1.2
Display	Resolution: 7680x4320 Max: 4x Display Display connector: Mini DisplayPort 2.0	Resolution: 7680x4320 Max: 4x Display Display connector: DisplayPort1.4a / HDMI 2.1	Resolution: 7680x4320 Max: 3x DisplayPort Display connector: DisplayPort1.4a / HDMI 2.0b / DL-DVI-D	Resolution: 1920x1200 Max: 2x DisplayPort Display connector: SL-DVI-D
Power Consumption	Total Graphics Power (TGP): 50-75 W (TBD) Min. System Power Requirement2: 350W or better power supply (TBD)	Total Graphics Power (TGP): 115 W Min. System Power Requirement2: 550 W Supplementary Power Connectors): 8-PIN	Total Graphics Power (TGP): 75 W Min. System Power Requirement: 300 W	Total Graphics Power (TGP): 30 W Min. System Power Requirement: 300 W
Form Factor	Low-profile / Single slot	ATX	ATX	ATX
Dimension (W x D)	169.69 x 68.85 mm (6.68" x 2.71")	152.05 x 114.15 mm (5.98" x 4.49")	168 x 111mm (6.62" x 4.37")	167.64x 68.9 mm (6.6" x 2.71")
Net Weight	0.248 kg (0.5467 lb) (TBD)	0.401 kg (0.8841 lb)	0.32kg	TBD
Temperature	Standard Operating Temp. : 0°C ~ +55°C Storage Temp. : -40°C ~ +85°C	Standard Operating Temp. : 0°C ~ +55°C Storage Temp. : -40 °C~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Storage Temp.: -40°C ~ +85°C	Standard Operating Temp.: 0°C ~ +55°C Storage Temp.: -40°C ~ +85°C
Humidity	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing	10~90%, Non-condensing
OS Support	Windows 10 / 11 64-bit	Windows 10 / 11 64-bit / Linux	Windows 7 / 10 64-bit / Linux	Windows 7 / 11 64-bit / Linux
Certification	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC	CE / FCC

Expansion Kit



DEV-MXM-4H-A1

- Built based on PCI Express x16 Gen3, converting the MXM slot to a PCI Express slot
- Compatible with Aetina Embedded MXM Module
- Display interface : 4 x HDMI

Model Number	DEV-MXM-4H-A1
Display	4x HDMI
Power Connector	Supplementary Power Connectors: 8-pin
Dimension (W x D x H)	111.2 x 168mm
Net Weight	71.5g
Temperature	Standard Operating Temp.: 0°C ~ +55°C
Humidity	10~90%, Non-condensing
Certification	CE / FCC