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# Sharpen Your Edge with Comprehensive Solutions

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### 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 DAI Beyond

# Our Growth Path

2012



Founded in Taiwan

2013

Joined Innodisk Group

innodisk

2022

Upgraded to NVIDIA Elite Partner





Implemented NVIDIA Metropolis for Factory technology

2023

- **Detection Solution**
- Launched AOI AI Smart Manufacturing Defect

2024



Joined Intel Arc Design Partner

Alliance with Qualcomm Technologies, Inc.

Qualcom

#### 2012

Launched the full product line of embedded GPU module

#### 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

#### 2022

Enhanced the Edge AI solution

- Introduced NVIDIA AI Enterprise Suite technology
- Launched end-to-end AI solution

#### 2024

Head to Enterprise Edge AI

- Introduced Intel Arc product line
- Unveiled the first short-depth edge server based on NVIDIA MGX™ modular reference architecture
- Announcing Al On-Prem solution

#### 2025

Released AIPU-powered Edge AI solution

Introduced EdgeAI+ product lines

### Aetina Partner Ecosystem



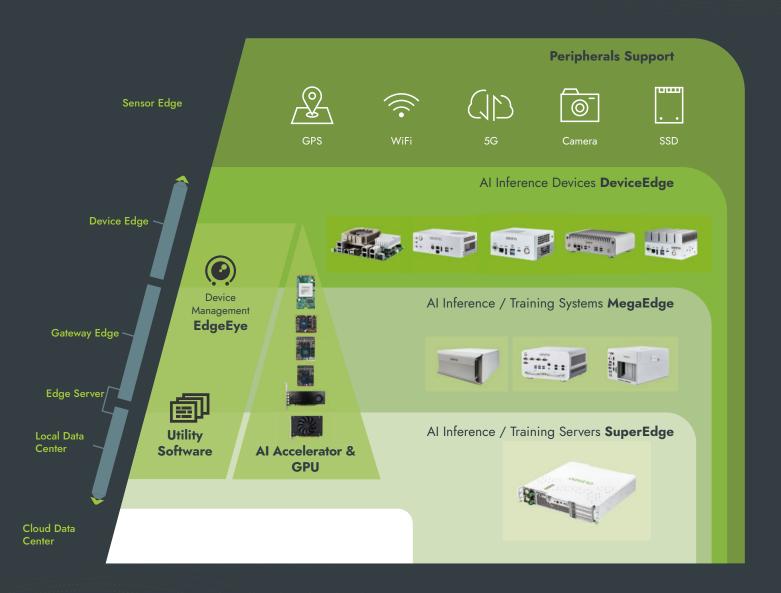
### Solid Experience in Diverse Industries

We create reliable, integrated solutions that transform complex real-world challenges into effective and trustworthy AI applications across industries.



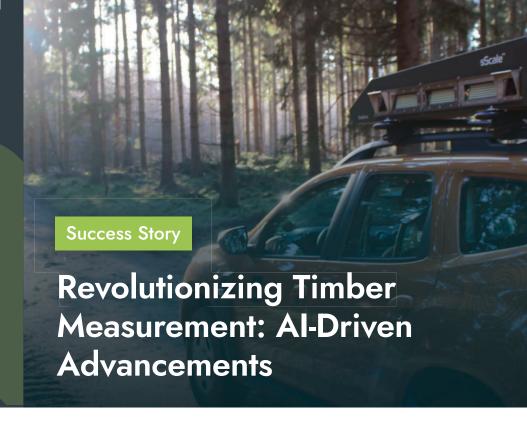
# Comprehensive Solution to Empower Your Business Edge

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.



#### oetino × DRALLE < ✓

An Inspiring
Transformation by
Dralle & Aetina,
Powered by NVIDIA
Jetson™





Our cooperation with Aetina has been flawless and the technical support team is very helpful, competent and responsive.

- Toke Nielsen, Software and Computer Vision Developer - sScale lead



Manual timber stack measurement is labor-intensive, inaccurate, and unsafe. Aetina's Nordic customer, Dralle A/S, faced limitations with their legacy x86 platform, unable to meet modern AI demands for fast machine learning and high processing power. This led them to seek a solution capable of supporting advanced AI and machine learning capabilities.

Dralle partnered with Aetina to unlock AI's potential in a compact, high-performance solution. Aetina's Edge AI expertise guided a seamless transition to an Arm-based platform with the powerful NVIDIA Jetson AGX Orin module, enhancing log end detection with advanced machine learning. The AIB-MX13 Edge Computing Platform, featuring M.2 and GigE ports, integrated cameras and optimized AI processing. Aetina's support ensured a smooth, three-month migration from Dralle's legacy x86 system to the new platform, boosting efficiency and precision in timber measurement.

#### **Key benefits**

- Increased Efficiency: Machine learning algorithms detect up to 1000 unique log ends per frame in 200ms.
- Enhanced Accuracy: All ensures precise detection with minimal false positives.
- Improved Safety: Automation reduces safety risks by eliminating the need for workers to leave the car.



Aetina's AI Inference Platform - DeviceEdge powered by NVIDIA Jetson modules.







A Pioneering Innovation by Daxbot & Aetina, Powered by NVIDIA letson™



We decided to use Aetina's hardware due to the build-quality, extensibility, and robustness. No other product line that we considered had such a complete feature set. All of our questions were handled quickly and easily by Aetina support.

- Wilkins White, Sr. Embedded Engineer at Daxbot



Traditionally, robots are programmed for specific tasks in controlled settings. Daxbot, a pioneering US robotics company, is changing the game with Dax, an adaptable AI service robot designed for urban spaces. Key challenges include autonomous navigation, real-time 3D vision, and integrating diverse AI techniques to tackle complex tasks in dynamic city environments.

Daxbot teamed up with Aetina to transform urban delivery services with Dax robots. Aetina's AIB-MN32 Edge Al platform, powered by NVIDIA Jetson Orin NX, delivers unmatched Al inference power, rich expansion slots and seamless integration, empowering Dax to perform real-time obstacle detection and tackle demanding neural network tasks effortlessly.

#### **Key benefits:** Multifuctional Robots

- Effortless Food Delivery: Dax robots autonomously navigate sidewalks to deliver food, interacting intelligently with its surroundings.
- Smart Security Patrol: Equipped with 3D cameras, Dax monitors and protects areas, swiftly detecting threats and alerting security, ensuring constant vigilance.
- Advanced ADA Sidewalk Assessment: Utilize GPU-accelerated AI for advanced visual recognition, enabling efficient and precise sidewalk assessments.



Aetina's AIB-MN32 edge AI platform powered by NVIDIA Jetson modules

# Al Voice-Controlled Robotic Arms Streamline Multi-variety & Small-batch Production Costs

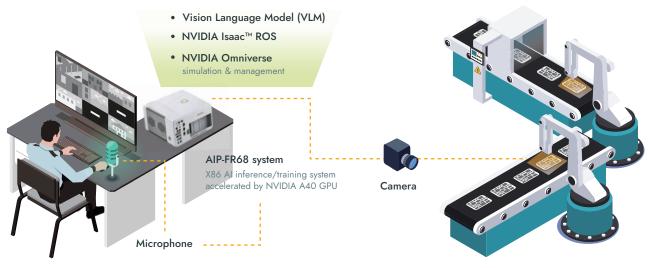
With the era of intelligent manufacturing and consumer-oriented personalized demands, flexible production mode on multi-variety and small batch has gradually taken the place of mass production on specific single product specification, which better meets the personalized demand from market. However, multi-variety and small batch production mode brings challenges for manufacturers on production transfer costs, such as labor resource and manufacturing setting.

Al-enabled robotic arms are increasingly integrated into production workflows for enhanced productivity. Aetina's MegaEdge AIP-FR68 AI computing system with NVIDIA A40 GPU, combined with large language models (LLMs), empowers robotic arms to understand voice commands, enabling production managers to adjust production line parameters without the need of complicated coding. This reduces changeover costs and simplifies transitions between production lines. Creating digital twins in NVIDIA Omniverse allows robotic arms to interact with the factory environment, enabling managers to simulate operations and ensure safety through real-time monitoring. Once activated, the robotic arms collaborate autonomously to optimize production efficiency. The AIP-FR68 efficiently tackles demanding real-time AI Inference tasks, including neural networks computing and intensive 3D images processing. The solution brings more efficient and productive AI robotic arms, empowering manufacturers to streamline production costs of muti-variety and small-batch production mode and speed up the workflow.

#### **Benefits**

- Aetina's NCS AI platforms assure dependable performance, ensuring stability and consistency for critical applications
- AIP-FR68 supports NVIDIA data center GPUs for demanding AI workloads
- Support NVIDIA Omniverse

- No need for complicated code when transitioning the production line, which speeds up the changeover workflow.
- Collaboration between robotic arms enhances production efficiency



Factory control room

Factory production line



Construction Vehicles are the workhorses of the construction industry, performing vital tasks across numerous projects. However, these powerful machines pose significant safety risks on construction sites, which are often high-risk environments. Contractors are constantly looking for solutions to safeguard workers from the potential hazards posed by construction vehicles. Safety incidents can result in devastating consequences, including loss of life, project delays, costly shutdowns, and damage to a company's reputation.

Aetina's AIB-MX23 edge AI inference system offers an AI-powered safety solution to improve safety on construction sites. The powerful AI computing system integrates AI safety detection, alerting construction vehicles' operators in real-time when it detects personnel approaching hazardous zones. With four to eight connecting GMSL cameras, operators can monitor the surrounding environment from all angles, displayed clearly on a central monitoring panel. The system triggers both audible and visual warnings, notifying both the workers in the danger zone and the operator, preventing potential accidents before they happen. The solution empowers construction companies and contractors to create safer work environments, minimize risk and ensure projects are completed without compromising safety.

#### Benefits

- Provides up to 275 TOPS in compact footprint, offering robust AI power for safety inspection
- Customized I/O ports for GMSL cameras and chassis to meet in-vehicle applications
- Wide operating temperature (-25°C ~ +80°C;
   -13°F ~ +176°F) and wide input power (9~36VDC) for rugged environments

- Create safer work environments and enhance worker safety
- Minimize the risk of safety incidents
- Improve operational efficiency, allowing operators to monitor the surroundings more effectively





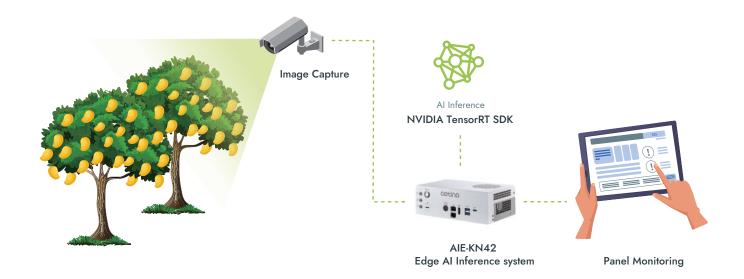
Manually identifying diseases in crops is costly and subjective, highlighting the need for automated systems that ensure accurate detection in the field. To address this, integrating AIoT and AI Vision inspection offers an innovative solution for on-site leaf analysis. This advanced approach enhances the ability to assess crop health and detect leaf diseases, ultimately maximizing both the yield and quality of crops.

Developed in collaboration with an Independent Software Vendor (ISV) partner, this solution leverages Aetina's AIE-KN42 edge AI computing platform and the NVIDIA TensorRT SDK to deliver instant diagnostics of mango leaf health. Using advanced edge AI vision technology, it analyzes leaves directly in the field, eliminating the need for laboratory testing and providing farmers with immediate, actionable insights. Trained on a comprehensive dataset, the system detects diseases and health issues with precision, enabling timely interventions and better crop management. Aetina's AIE-KN42 offers exceptional edge computing performance, eliminating cloud reliance and ensuring real-time, low-latency processing. NVIDIA TensorRT optimizes deep learning models for fast, high-performance inference, empowering farmers to make rapid, informed decisions and enhance crop yield. This approach can be adapted to other crops with additional training, offering a versatile solution for broader agricultural applications.

#### **Benefits**

- Instant, On-Site Diagnostics
- Al-Powered Insights
- Real-Time Updates & Monitoring
- Increased Efficiency & Sustainability

- Eliminating the need for laboratory testing and enabling farmers to take timely action.
- The system supports better decision-making, allowing for timely interventions that improve crop health and yield.
- Ensuring fast and efficient data analysis in the





The integration of AI and IoT (AIoT) into smart traffic systems has significantly improved traffic management efficiency. However, large-scale deployments at intersections and roadside locations face challenges such as limited wired and wireless coverage, restricted data transmission distance, power constraints and high operational and maintenance costs. Wired networks, requiring extensive cabling, are limited by their small coverage area and high costs, while wireless networks like traditional Wi-Fi, are also confined to a 0.1-kilometer range and are prone to interference.

Developed with an independent software vendor (ISV) and Wi-Fi HaLow partner, this solution uses Aetina's AIE-PX-11/12/21/22 fanless edge AI systems for scalable, cost-effective smart traffic deployments. Powered by NVIDIA Jetson AGX Orin™, it delivers real-time, accurate license plate recognition with 99% precision, while ensuring low latency. With Wi-Fi HaLow, it offers ultra-long transmission distances—20x greater than traditional Wi-Fi—while consuming less power. This AloT-enabled system is ideal for smart city applications, supporting traffic control, violation detection, and crime tracking with high efficiency and cost-effectiveness for large-scale deployments.

#### Benefits

- 20x Longer Data Transmission: Wi-Fi HaLow offers a 2-km range, far exceeding standard Wi-Fi's 0.1 km.
- Lower Power Consumption: Aetina's energy-efficient AI system with Wi-Fi HaLow is ideal for outdoor use and easy maintenance.
- Highly Scalable: Wi-Fi HaLow supports up to 256 points, eliminating complex cabling and high 4G/5G costs.
- 99% High-Precision Algorithm: The AI system recognizes skewed license plates at up to 60-degree angles, enabling better decision-making.

- Cost-Effectiveness: No SIM cards, no contracts, and no monthly fees.
- Low Power Consumption, Unlimited Data: Enables real-time image transmission to the control center for Al analysis.
- Comprehensive Solution: Reduces integration costs, speeds up deployment, and lowers maintenance costs.
- Reduced Manual Verification: 99% accuracy in recognition rate lowers the costs for operations and maintenance.





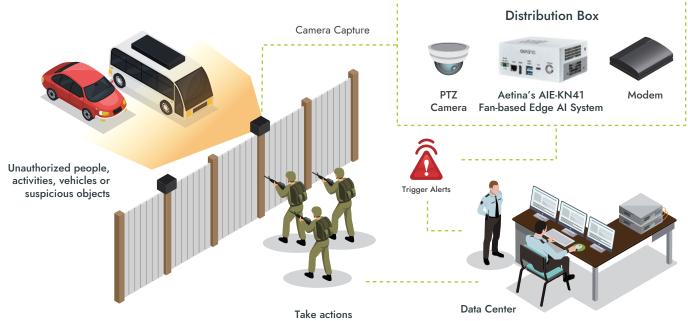
Patrolling and monitoring a vast border requires significant human labor and resources, operating day and night to prevent any unauthorized objects from approaching the country's border. One of Aetina's clients required powerful edge AI systems to be respectively configured with a PTZ camera and a modem in its space-constrained distribution box for deployments along the border. It is essential to have compact but high-performing AI computing systems to support high-resolution imaging from cameras for robust and efficient border security management.

The AIE-KN41 Edge AI system from Aetina offers an ideal solution for these requirements. Fueled by the NVIDIA letson Orin NX module, the AIE-KN41 delivers up to 100 TOPS to support PTZ cameras in precisely detecting intruders such as suspicious individuals, vehicles, animals, or objects attempting to breach borders. To address challenges of constrained space, it is equipped with customized ruggedized enclosures in a small footprint and features wide temperature (-25°C ~ +70°C; -13°F ~ +158°F) and input voltage (12~24VDC), making it suitable for deployment in outdoor environments and harsh temperatures. Additionally, the AIE-KN41 includes customized double LAN ports to connect a PTZ camera and a modem, enabling real-time image capture and low-latency data transmission back to data centers. This solution significantly enhances both effectiveness and efficiency in border intrusion detection, thereby improving overall border security management.

#### **Benefits**

- Offers compact edge AI systems with 100 TOPS AI computing powers to perfectly configure in space-constrained box while providing robust AI power for border intrusion detection
- Provides customized LAN ports and chassis according to deployment requirements and environments
- Wide operating temperature (-25°C  $\sim$  +70°C ; -13°F  $\sim$ +158°F) and wide input voltage (12~24VDC)

- Can conduct accurate intrusion detection
- Enables the deployments of hundreds of nodes for 360-degree monitoring
- Enhance efficiency for border intrusion detection and eliminate the need for human intervention in information gathering





International ports are enhancing logistics efficiency with Al-powered vehicle identification systems. However, challenges like fluctuating lighting, varying angles, and vehicle speed often lead to license plate and container number recognition errors, increasing labor and time costs in port logistics management.

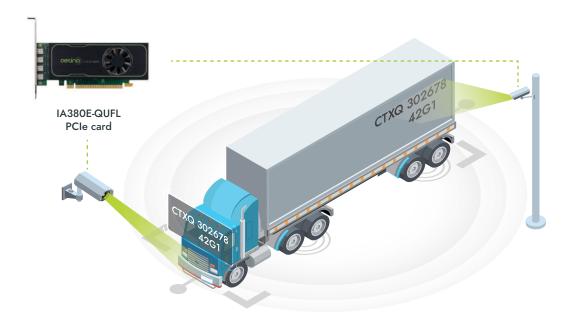
The IA380E-QUFL PCIe acceleration card, combined with AI-powered vehicle recognition, empowers smooth truck flow in container yards. As the trucks pass through the recognition system, license plates and container numbers are swiftly and accurately identified, automatically directing trucks to the correct lane. With seamless lane assignments, trucks no longer need to stop, reducing wait times, boosting efficiency and lowering vehicle emissions! Powered by the Intel Arc A380E GPU, the IA380E-QUFL delivers up to 40.96 TOPS of AI power for real-time visual computing and precise vehicle recognition, driving smarter logistics management and improved efficiency.

#### Benefits

- Efficient Vehicle Identification: The compact IA380E-QUFL PCIe card offers 40.96 TOPS of AI power, enabling real-time visual computing with high energy efficiency and seamless acceleration across various systems.
- Smooth Operations: Automatic lane assignments keep trucks moving smoothly, reducing congestion and delays.
- Eco-friendly Impact: Less idle time and fewer stops help lower vehicle emissions, promoting sustainable logistics.

#### **)**

- Increased Efficiency: Streamlined truck flow reduces wait times and boosts overall throughput in container yards.
- Cost Reduction: Al-driven recognition minimizes labor costs and time spent on manual verification, enhancing port logistics management.
- Smarter Logistics Management: Real-time data computing accelerated by IA380E-QUFL leads to more effective resource allocation, optimizing port operations.





Disasters such as wildfires and urban fires pose significant challenges to safety and resource management. The vast areas affected by disasters such as wildfires require extensive coverage that human teams find difficult to manage quickly and efficiently. Traditional firefighting and rescue methods often fall short due to the unpredictability and scale of such disasters, compounded by inadequate real-time data collection and analysis. Advances in technology, such as AI, have ushered in AI-assisted tools like drones, revolutionizing disaster response.

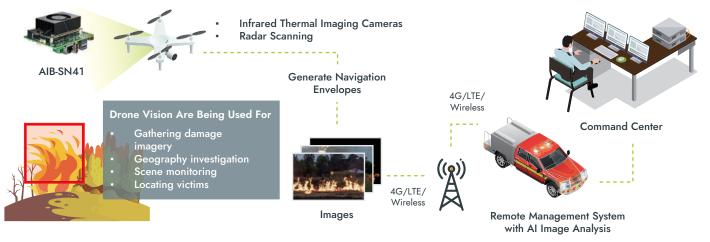
Our partner's drones are powered by Aetina's DeviceEdge AIB-SN41, a robust, compact, and lightweight platform that can be equipped with state-of-the-art sensors, such as 4K cameras, infrared cameras, and radar scanning. These drones feature an autonomous flight plan with obstacle avoidance, real-time monitoring, and tracking, allowing them to navigate safely and efficiently through challenging environments. They excel at acquiring 3D point cloud data, which is crucial for close-up analyses in dangerous areas, such as tunnel collapse, wildland fires, and post-earthquake assessments.

Designed to operate in GPS-denied environments, these drones streamline inspection processes and enhance decision-making at command centers with vital live feedback and comprehensive data analysis. This not only increases operational speed but also significantly reduces risks to human life, making our partner's drones essential tools for complex rescue missions.

#### Benefits

- Provide ready-to-use edge AI computing platform with integrity BSP and device configuration building based upon NVIDIA Jetson Orin SoMs.
- Supports NVIDIA Jetson Platform Services to build generative AI and edge applications faster and with less efforts
- Offer sensors AVL vendors for fast-track development and deployment of end-to-end applications.

- Enhances the speed and efficiency of response operations, allowing for quicker containment of disasters and ultimately leading to more successful disaster management outcomes.
- Strategically integrating AI not only augments the capabilities of search and rescue teams but also effectively reduces casualties.





# 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 Devices and MegaEdge series AI Inference/Training Systems are meticulously engineered to optimize on-premise AI processing by utilizing a range of computing architectures. Moreover, SuperEdge - AI Inference/Training Servers aim 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.

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# Your One-Stop Solution for Al Vision

#### **\**

#### 1.Smart City and Security

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

#### **\**

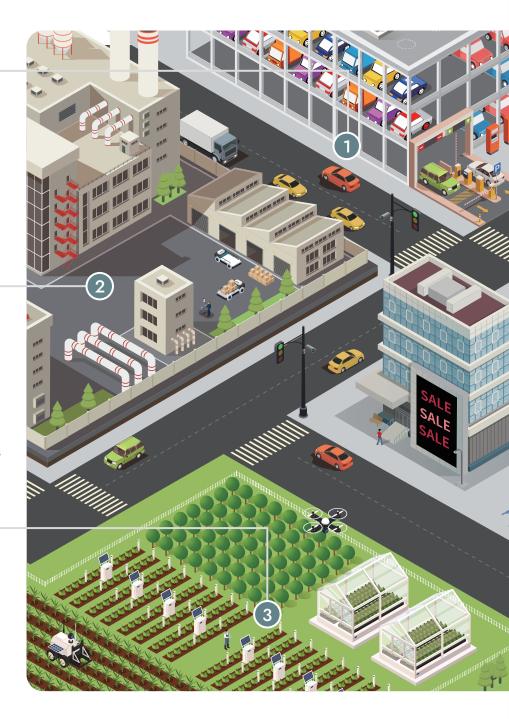
#### 2.Smart Factory

- · 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
- · Al-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





# Intrusion Detection Solution

Transform security with Aetina's Al-driven Intrusion Detection Solution, which aims to eliminate false alarms and ensure non-stop protection. Unlike traditional infrared systems, our solution accelerated by Al 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, Al-powered solution not only minimizes downtime but also fortifies your safety measures with unparalleled precision and reliability.

#### Solution Highlights



- · Support multiple cameras
- · Lifetime software license
- Intel-powered AI platform accelerated by an MXM GPU module

#### Easy Installation

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

#### 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

#### 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 Al Strength















# Al On-Prem Solution

#### Advance Al Inference with On-Prem Al Solution for **Enterprise and Industry**

Aetina MegaEdge AIP-FR68, featuring the Qualcomm® Cloud AI 100 Ultra inference card, delivers exceptional performance for generative AI, computer vision, and LLMs up to 70B parameters. This compact desktop, wall-powered AI workstation supports real-time AI agents, workflow automation, and intelligent search while ensuring secure, low-latency processing at industry-leading power efficiency and superior total cost of ownership.



On-Premise Al Processing



Superior Al Performance On a Single Platform



Ready-for-Use Al Inference Tools



Real-Time AI Analytics

#### Edge AI Inference/Training System

MegaEdge AIP-FR68



- Intel 13/14<sup>th</sup> Gen Core™ i9/i7/i5/i3 CPU (65W)
- Support dual passive Qualcomm Cloud AI 100 Ultra cards
- 4x 2.5" SATAIII SSD, supports RAID configurations
- 2x M.2 2280 M-Key slots, supporting Gen4 x4 **NVMe**
- 1x 10G Ethernet and 3x 2.5G RJ-45 Ethernet
- OOB management tool for remote maintenance



#### Al Inference Card PCIe

Qualcomm Cloud AI 100 Ultra Card



made with Qualcom **Technologies** 

- PCIe FH3/4L, Single slot
- Support 870 TOPS ML capacity (INT8)
- PCle Gen4 x16
- 128GB on board DRAM (with ECC)
- 548GB/s memory bandwidth
- 150W power consumption



### > Al Vision Solutions

#### Ignite Next-level Al Inference with NPU-Driven Precision

Al Vision Solutions amplify Al inference in vision computing with Aetina's high-performance edge Al systems and Axelera's advanced NPU-powered accelerators. From compact edge devices to high-end solutions, we deliver unmatched Al inference in image classification, object detection, and pose estimation—empowering smart security, retail, and manufacturing like never before.



High Performance with Energy Efficiency



Vision Acceleration



Validated systems for Quick Adoption



High Flexibility for Expansion

#### ARM-Based System: AIB-MR1B-B1-AXE / AIE-KR1B-B1-AXE

- Support 1x M.2 Axelera inference accelerator card, up to 214TOPS
   Al Performance
- Compact, power-efficient platform, powered by Rockchip RK3588
- Ideal for high-res, multi-channel video inference
- Pre-installed VOYAGER SDK
- Support OOB management

# Coetino

#### X86-Based M.2 System: AIP-MURE-A1AXE

- Support 3x M.2 Axelera inference accelerator cards, up to 642TOPS AI Performance
- Industrial grade fanless system, powered by Intel 13th Gen Core™ i7/i5/i3
- Dual PSE for real-time IP camera streaming
- Pre-installed VOYAGER SDK
- Support OOB management



#### X86-Based PCIe System: AIP-FR68-A1AXE

- Support 4x PCle Axelera Al accelerator cards, up to 856TOPS Al Performance
- High-performance AI workstation for demanding vision inference, powered by Intel 13th Gen Core™ i9/i7/i5/i3
- Pre-installed VOYAGER SDK
- Support OOB management





# Vision Language Model (VLM) Demo Kit

With the rapid advancements in large language models (LLM), vision language models (VLM) are reshaping human-computer interaction. Aetina's VLM demo kit, powered by the AIE-KX23 AI inference system and pre-installed with VLM software, enables clients to showcase generative AI live demos in exhibitions or display settings. By supporting NVIDIA JetPack 6, it empowers developers to unlock the full potential of Jetson Platform Services. This feature can accelerate edge AI vision analytics and generative AI development.

#### Solution Highlights

### One-stop solution for showcasing cutting-edge Gen AI live demos

- Compact Al inference system with VLM software
- Designed for enterprises to showcase VLM tech in exhibitions or showrooms

#### Plug and Play while user-friendly chatbox

- Feed an input video for real-time analysis.
- Interact with AI via an user-friendly chatbox.

#### Seamless applied to various visual scenarios

- Supports multiple streaming sources, like a pre-recorded video or live camera feed
- Provides alert notification by self-defined rules for real-time insights.

#### Robust AIE-KX23 AI inference system

- Powered by NVIDIA letson AGX Orin™.
- Delivers up to 275 TOPS of Al power.
- Equipped with 512G of storage.

#### Effortless, Ready-to-Display Demo Solution













# **AI Software & Tools**

AloT 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.** 

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# 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 : EdgeRecovery

Aetina's utility software redefines reliability and efficiency. Our EdgeRecovery, equipped with robust backup and recovery tools, provides data replication and disaster-proof solutions, ensuring your systems can quickly recover from failure with minimal downtime. Choose between instant USB boot-ups or one-key SSD recovery for hassle-free restoration. With our remote backup features, you can rest assured that your data is always just a click away from restoration, all while saving on system maintenance costs.



# **Al Inference Devices**

### DeviceEdge - ARM-Based Edge AI Systems

# Supercharge AI Inference with Versatile ARM-Based Edge Solutions

**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 Rockchip. 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.

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### 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,
- 1 x 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-MN32 AIB-MO32 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 Orir NX 8GB/16GB	
Al 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		
ТРМ	TPM v2.0 (optional)	TPM v2.0 (optional)	-			-	
RTC	With super capacitor, battery (optional)	With super capacitor, battery (optional)		r capacitor, (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)		ine-in / Mic 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		pansion Connector )-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 su	pported	Not su	pported	
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	(supports up to	Gen2 Type A 10Gbps shared) 5 Type-C	(supports up to	Gen2 Type A 10Gbps shared) 7 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 Ob  (isolation; support CAN FD),  2 x  2C,  1 x  2S,  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   PC, 1 x   PS, 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 PS-232, 1 x RS-422/485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD)	5 x GPIO, 1 x SPI, 1 x IPS, 3 x IPC, 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 I <sup>2</sup> C, 1 x I <sup>2</sup> S, 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; PCle 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 1 x Rese	x Recovery / et Button	
Power Consumption	Idle: 10.5 W/Full Loading: 130* W Idle: 12 W/Full Loading: 150* 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)		x 57.54 mm 14 x 2.27 in)	87.4 × 67.4 (3.44 × 2.6	x 28.45 mm 5 x 1.12 in)	
Net Weight	0.980 kg (2.161 lb) w/ Fansink	0.701 kg (1.54 lb) w/ Fansink	ŭ.	(0.43 lb)	0.144 kg (0.32		
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 random, 5 ~ 50	60068-2-64, 00 Hz, 1 hr/axis	1 Grms, IEC random, 5 ~ 50	60068-2-64, 00 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 6 half sine, 11	50068-2-27, ms duration	10 G, IEC 6 half sine, 11		
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		p. : -25°C ~ +80°C : -40°C ~ +85°C	**Operating Temp Storage Temp.		
Humidity	95% @ 40°C (104°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)		0°C (104°F) ndensing)	95% @ 40 (non-con	°C (104°F) densing)	
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		

<sup>\*</sup>For more test condition information, please refer to user manual
\*\*In high-temperature environments (70+°C), the system dynamically adjusts performance to ensure stability, and adequate heat dissipation is recommended for optimal operation.

### NVIDIA Jetson Orin Series—Fanless System



NVIDIA Super Mode

# 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



NVIDIA Super Mode

# 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 RI-45 GbE Ports
- Wide Power Input Range 12 to 24 VDC
- Operating temperature -25°C ~ +55°C



NVIDIA Super Mode

#### 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 160		NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB		
Al Performance	70 TOPS	100 TOPS	20/40 TOPS	70/100 TOPS		
Storage	1 x M.2 NVMe M-Ke	y 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	1 x HDMI 2.0 Type A		
ТРМ	Not su	upported	Not supported			
RTC	With super capacit	tor, battery (optional)	With super capacitor, battery (optional)			
Audio	Not su	upported	Not su	pported		
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		supports up to 10Gbps shared) G 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	1 x 1 x 1 x R 1 x RS-	GPIO, UART, ( 1°C, 28-232, 422/485, n; support CAN FD)	5 x GPIO, 1 x UART, 1 x   <sup>1</sup> C, 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		1 x M.2 B-Key 3042/3052			
MISC. Function	1 x Power / 1 x Reco	overy / 1 x Reset Button	1 x Power / 1 x Recovery / 1 x Reset Button			
Power Consumption	Idle: 6.413 W Idle: 6.413 W Full Loading: 89.13* 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)		5 x 80 mm .67 x 3.15 in)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)			
Mounting	Wall Mount (options	al) / 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, ra	andom, 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 $\sim$ +55°C (-13°F $\sim$ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C $\sim$ +85°C (-40°F $\sim$ +185°F)		Operating Temp. : $\cdot 25^{\circ}\text{C} \sim +55^{\circ}\text{C} \left( \cdot 13^{\circ}\text{F} \sim +131^{\circ}\text{F} \right)$ with $0.5$ m/s air flow Storage Temp. : $\cdot 40^{\circ}\text{C} \sim +85^{\circ}\text{C} \left( \cdot 40^{\circ}\text{F} \sim +185^{\circ}\text{F} \right)$			
Humidity	95% @ 40°C (104	°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)			
Software Support	Linux (Support J	letpack 5.0 above)	Linux (Support Jetpack 5.0 above)			
Certification	CE / FCC C	Class A / UKCA	CE / FCC Class A / UKCA			

 $<sup>\</sup>ensuremath{^{\star}}\xspace For more test condition information, please refer to user manual$ 





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		
Al Performance	20/40 TOPS 70/100 TOPS		200 TOPS	275 TOPS		
Storage	1 x M.2 NVMe M-Ke	y 2242 (128GB built-in)	64GB e	MMC 5.1		
Display	1 x HDMI	2.0 Type A	1 x HDMI	2.0 Type A		
ТРМ	Not su	upported	TPM v2.0 (optional)			
RTC	With super capacit	or, battery (optional)	With super capacito	With super capacitor, battery (optional)		
Audio	Not su	upported	Not su	pported		
LAN	2 x RJ-45	GbE Ports	1 x RJ-45 GbE,	1 x RJ-45 10GbE		
PoE Interface	Not su	upported	2/4 x RJ-45 GbE PSE       2/4 x RJ-45 GbE PSE         (IEEE 802.3af compliant,       (IEEE 802.3af compli         Power Output 15W/Port)*       Power Output 15W/Port			
USB		support up to 10 Gbps shared) G Type-C		SB 2.0 (DB-15), 1 x OTG Type-C, Gen2 Type-C		
I/O Interfaces	1 x 1 x 1 x R 1 x RS-4	GPIO, UART, ( PC, 18-232, 122/485, 1; support CAN FD)	2 x I <sup>2</sup> C, 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; PCle x2 Gen3) 1 x microSD Card Slot			
MISC. Function	1 x Power / 1 x Reco	overy / 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 Idle: 8 W Full Loading: 109* W Full Loading: 130* \			
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)		5 x 80 mm 67 x 3.15 in)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)			
Mounting	Wall Mount (options	al) / 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 $\sim$ +55°C (-13°F $\sim$ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C $\sim$ +85°C (-40°F $\sim$ +185°F)			
Humidity	95% @ 40°C (104	°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)			
Software Support	Linux (Support J	etpack 5.0 above)	Linux (Support Jetpack 5.0 above)			
Certification	CE / FCC C	ilass A / UKCA	CE / FCC Class A / UKCA			

<sup>\*</sup>For more test condition information, please refer to user manual









Model Number	AIE-PX13	AIE-PX23	AIE-PO22	AIE-PN32	AIE-CO21	AIE-CN31	
		1001100	AIE-PO32	AIE-PN42	AIE-CO31	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	
Al Performance	200 TOPS	275 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS	
Storage	64GB el	MMC 5.1	1 x M.2 M-Key 2242 (	NVMe 128GB built-in)	1 x M.2 M-Key 22	42 (128GB built-in)	
Display	1 x HDMI :	2.0 Type A	1 x HDMI 2	2.0 Type A	1 x HDMI	2.0 Type A	
TPM	Not sup	oported	Not sup	oported	Not supported		
RTC	With super capacito	or, battery (optional)	With super capacito	or, battery (optional)	With super capacitor, battery (optional)		
Audio	Line-out/Line-in/Mic (opti	onal with daughter board)	Not sup	oported	Not su	oported	
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 su	oported	Not sup	oported	Not su	pported	
USB	1 x USB 2. 1 x OTG		(supports up to	Gen2 Type A 10Gbps shared) 5 Type-C	(supports up to	Gen2 Type A 10Gbps shared) 6 Type-C	
I/O Interfaces	1 x : 5 x G 2 x l 1 x RS 1 x RS-422/ 2 x CAN 2.0b (isolati	2 x I <sup>2</sup> C, 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 I <sup>2</sup> C, 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 I°C, 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; PCle x4 Gen4) 1 x microSD Card Slot		1 x M.2 B.Key 3042/3052		1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCle x4 Gen3)	1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCle x4 Gen4)	
MISC. Function	1 x Power / 1 x Recov	very / 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	ldle: 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	Power Connector DC-in 12 to 24 VDC /		
Dimension (W x D x H)		5 x 80 mm 57 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	g (3 lb)	0.927 kg	(2.044 lb)	
Vibration	1 Grms, IEC 60068-2-64, rai	ndom, 5 ~ 500 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, rai	ndom, 5 ~ 500 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, ra	ndom, 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		: -25°C ~ +55°C th 0.5 m/s air flow · +85°C (-40°F ~ +185°F)		: -25°C ~ +55°C th 0.5 m/s air flow ~ +85°C (-40°F ~ +185°F)	Operating Temp. : $\cdot25^{\circ}\text{C} \sim +55^{\circ}\text{C}$ (-13°F $\sim$ +131°F) with 0.5 m/s air flow Storage Temp. : $\cdot40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ (-40°F $\sim$ +185°F)		
Humidity	95% @ 40°C (104°l	F) (non-condensing)	95% @ 40°C (104°l	F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)		
Software Support	Linux (Support Je	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Cla	ass A / UKCA	CE / FCC Cla	ass A / UKCA	CE / FCC Cl	ass A / UKCA	

<sup>\*</sup>For more test condition information, please refer to user manual



#### AIE-CO33 | AIE-CN33/43

- Supports NVIDIA Jetson Orin Nano 8G / Orin NX 8GB/Orin NX 16G
- 1 x M.2 B-Key/E-Key/M-Key (128GB built-in)
- 1 x RJ-45 for GbE
- 1 x IEEE 802.3 at GbE PD ports
- Wide Power Input Range 9 to 36 VDC
- Operating temperature -25°C ~ +55°C



#### AIE-CN34/44

- Supports NVIDIA Jetson Orin NX 8G / 16G
- 1 x M.2 B-Key/E-Key/M-Key (128GB built-in)
- 1 x RJ-45 for GbE
- 2 x IEEE 802.3 at GbE PSE ports
- Wide Power Input Range 9 to 36 VDC
- Operating temperature -25°C ~ +55°C







NVIDIA Super Mode

Model Number	AIE-CO33	AIE-CN33	AIE-CN43	AIE-CN34	AIE-CN44		
Module Compatibility	NVIDIA Jetson Orin Nano 8G	NVIDIA Jetson Orin NX 8G	NVIDIA Jetson Orin NX 16G	NVIDIA Jetson Orin NX 8G	NVIDIA Jetson Orin NX 16G		
Al Performance	40 TOPS	70 TOPS	100 TOPS	70 TOPS	100 TOPS		
Storage	1 x M.:	2 NVMe M-Key 2242 (128Gf	3 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		TPM v2.0 (optional)		TPM v2.0	(optional)		
RTC	Supp	ort CR2032 holder for RTC f	unction	Support CR2032 ho	Support CR2032 holder for RTC function		
Audio		Not supported		Not su	pported		
LAN		1 x RJ-45 for GbE		1 x RJ-45	GbE Ports		
PoE Interface		1 x RJ-45 GbE PD 802.3 at		2 x RJ-45 GbE	F PSE 802.3 at		
USB	2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x USB 2.0 Type A 1 x OTG Type-C			1 x USB 2	upports up to 10Gbps shared) .0 Type A 5 Type-C		
I/O Interfaces	4 x GPIO, 1 x UART, 2 x I°C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation)			4 x GPIO, 1 x UART, 2 x I <sup>2</sup> C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation)			
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)			
MISC. Function	Support C	One Key Recover/ Recovery,	Reset Button	Support One Key Recover/ Recovery, Reset Button			
Power Consumption		Idle: TBD W Full Loading: TBD W		Idle: TBD W Full Loading: TBD W			
Power Input / Connector	DC-in	9 to 36 VDC / 2-Pin Termin	al Block	DC-in 9 to 36 VDC /	/ 2-Pin Terminal Block		
Dimension (W x D x H)		132 x 90 x 66 mm		132 x 90 x 66 mm			
Mounting	Wall	Mount (optional) / Din Rail (c	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 ~ 50	00 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, ra	ndom, 5 ~ 500 Hz, 1 hr/axis		
Shock	10 G, IE	C 60068-2-27, half sine, 11 r	ns duration	10 G, IEC 60068-2-27,	half sine, 11 ms duration		
Temperature		'5°C ~ +55°C (-13°F ~ +131°F Temp.: -25°C ~ +85°C (-40°F			13°F ~ +131°F) with 0.5 m/s air flow +85°C (-40°F ~ +185°F)		
Humidity	95%	6 @ 40°C (104°F) (non-conde	nsing)	95% @ 40°C (104°	F) (non-condensing)		
Software Support		inux (Support Jetpack 5.0 abo	<u> </u>		etpack 5.0 above)		
Certification		CE / FCC Class A / UKCA		CE / FCC CI	ass A / UKCA		

 $<sup>\</sup>ensuremath{^{\star}}\xspace For more test condition information, please refer to user manual$ 

### 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 ~ +70°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 ~ +70°C



NVIDIA Super Mode

NVIDIA Super Mode

### 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 RI-45 GbE ports
- Wide input voltage range from 12 to 24 VDC
- Operating temperature -25°C ~ +70°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 ~ +70°C









					Super Mode			Super Mode
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
Al 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 el	MMC 5.1	64GB eN	MMC 5.1	1 x M.2 M-Key 2242	(NVMe 128GB built-in)	1 x M.2 M-Key 22	42 (128GB built-in)
Display	1 x HDMI	2.0 Type A	1 x HDMI 2	.0 Туре А	1 x HDMI	2.0 Type A	1 x HDMI	2.0 Type A
ТРМ	TPM v2.0	(optional)	Not sup	ported	Not sup	oported	Not sup	ported
RTC	With super capacito	r, battery (optional)	With super capacitor	, battery (optional)	With super capacito	or, battery (optional)	With super capacito	or, battery (optional)
Audio	Line-out / L (optional with d	ine-in / Mic aughter board)		ine-in/Mic ughter Board)		ine-in / Mic daughter board)		Microphone laughter board)
LAN	1 x RJ-45 GbE port, <sup>7</sup>	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 sup	pported	Not su	pported	Not sup	pported
USB			1 x USB 2 1 x USB 2.0 Typ	Gen1 Type A, 2.0 (DB-15), pe-C (OTG only), Type-C Gen 2	(supports up to	Gen2 Type A 10Gbps shared) G Type-C	(supports up to	Gen2 Type A 10Gbps shared) 5 Type-C
I/O Interfaces	2 x I 1 x S 5 x C 1 x RS 1 x RS-422 / F 2 x CAN 2.0b (isolatic 2 x U. 1 x microSIN	SPÍ, 6PIO -232, 8S-485 (2-in-1) on; support CAN FD) ART,	1 x RS-422 2 x CAN 2.0b (isolati	SPI, GPIO S-232, 2 / RS-485	5 x G 1 x U 1 x 1 x RS 1 x RS-422/ 1 x CAN (isolation; 1 x OOB   1 x microSl	ART, 1 <sup>2</sup> C, 5-232, 485 (2-in-1), support CAN FD),	1 x 1 x R 1 x	GPIO, 1ºC, S-232, UART, n; support CAN FD)
Expansion	1 x M.2 B.Key : (LTE/4G 1 x M.2 E.K. (WiFi) 1 x M.2 M-K (supports NVMe; 1 x microSD	6/5G) ey 2230 (BT) (ey 2280 PCle x2 Gen3)	1 x M.2 E- (support PCle x1 1 x M.2 M	2 Gen1, USB 2.0) Key 2230 Gen4, USB 2.0) -Key 2280 , PCle x2 Gen4)	(LTE/4 1 x M.2 E-	i/BT) Key 2242	(Wi 1 x M.2 M	i-Key 2230 Fi/BT) 1-Key 2242 3 built-in)
MISC. Function	1 x Power / 1 x Recov	very / 1 x Reset Button		very / 1 x Reset Button RT3 (Debug only)	1 x Power / 1 x Reco	very / 1 x Reset Button	1 x Power / 1 x Recov	very / 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 4-Pin DC Jack Po			o 36 VDC / Power Connector		24VDC / lower Connector	DC-in 12 to 2-Pin Term	
Dimension (W x D x H)	220 x 170 (8.66 x 6.6			.7 x 79 mm 1 x 3.11 in)	196.5 x 124 x 68 mm (7.73 x 4.88 x 2.67 in)			9 x 56 mm 3.9 x 22 in)
Mounting	Wall Mount (optional	) / Din Rail (optional)	Wall Mount (optiona	al) / Din Rail (optional)	Wall Mount (optional	l) / Din Rail (optional)	Wall Mount (optional	) / Din Rail (optional)
Net Weight	1.852 k	g (4 lb)	1.969 kg	g (4.34 lb)	1.102 kg (2 lb)		0.54 k	g (1.2 lb)
Vibration	1 Grms, IEC o random, 5 ~ 50	,	1 Grms, IEC random, 5 ~ 50	60068-2-64, 00 Hz, 1 hr/axis	,	60068-2-64, 600 Hz, 1 hr/axis		60068-2-64, 00 Hz, 1 hr/axis
Shock	10 G, IEC 6 half sine, 11		10 G, IEC 6 half sine, 11	60068-2-27, ms duration		60068-2-27, 1 ms duration		C 60068-2-27, 11 ms duration
Temperature	Operating Temp. (-13°F ~ +158°F) wi Storage Temp. : -40°C ~	th 0.5 m/s air flow	Storage	(-13° F ~ +158° F)	(-13°F ~ +158°F) w	: -25°C ~ +70°C ith 0.5 m/s air flow ~ +85°C (-40°F ~ +185°F)	Operating Temp. (-13°F ~ +158°F) wi Storage Temp. : -40°C ~	th 0.5 m/s air flow
Humidity	95% @ 40°C (104°I	(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 Je	tpack 5.0 above)	Linux (Support Je	tpack 5.0 above)	Linux (Support Je	tpack 5.0 above)	Linux (Support J	etpack 5.0 above)
Certification	CE / FCC Cla	ass A / UKCA	CE / FCC Cl	ass A / UKCA	CE / FCC Cl	ass A / UKCA	CE / FCC C	Class A / UKCA

 $<sup>\</sup>ensuremath{^{\star}}\xspace For more test condition information, please refer to user manual$ 

### NVIDIA Jetson Orin Series—In Vehicle System



Purposed built for multiple in-vehicle applications, Aetina's in-vehicle systems powered by NVIDIA Jetson Orin empower organizations with robust mechanism design, circuit protection, ignition power management, reliability for shock and vibration, wide-range operating temperature and power input range, safety validations and easily maintenance. It features high reliable in-vehicle design for working under harsh environments.



### AIE-VX28/AIE-VN44 \*Preliminary

- Supports NVIDIA Jetson AGX Orin series
- IP66 fits in harsh environment
- Wide Power Input Range 9 to 50 VDC with ignition power control
- 4/8 x GMSL (Fakra-Z connectors for GMSL 1/2 automotive cameras)
- 1 x RJ45 GbE / 1 x RJ45 10GbE / 2 x USB2.0 TypeA (lockable)
- 2 x CAN FD port / 3 x Serial ports / I2C / 4 x DI / 4 x DO (Isolated)
- Support M.2 B/E/M key expansion
- Support RTK function (Real Time Kinematic, expansion by M.2 B key)
- E-Mark compliance (E-24 certified)



Model Number	AIE-VN44	AIE-VN44-IP	AIE-VX28-IP			
Module Compatibility	NVIDIA Jetson Orin NX 160	GB (Super Mode-enabled)	NVIDIA Jetson AGX Orin 64GB			
Al Performance	157 TC	275 TOPS				
GMSL	4 x GMSL2 v	ia Fakra Z	8 x GMSL2 via Fakra Z			
СРИ	8-core Arm® Cortex®-A78AE v 8	8.2 64-bit 2MB L2 + 4MB L3	12-core Arm® Cortex®-A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3			
Memory	16GB 128-bit LPDDI	R5 102.4 GB/s	64GB 256-bit LPDDR5 204.8GB/s			
Display		1 x HDMI 2.0 Type A				
RTC	s	Supports RTC battery and Battery Life Monitorin g by MC	CU			
LAN	4 x RJ-45 GbE (POE 60W Total) , 1 x RJ-45 10GbE		nector (POE 60W Total), 1 x M12 connector			
USB		2 x USB2.0 TypeA (lockable) 1 x USB Type-C gen 1 (OTG)				
I/O Interfaces	1 x CAN ( Isolation, Su 1 x RS232/RS44 1 x RS23 2 x DI / 2x DO 1x OOE	95/RS422 32 1 (isolate)	2 x CAN (Isolation, Support CAN FD) 1 x RS232/RS485/RS422 1 x RS232 4 x DI / 4x DO (isolate) 1x OOB			
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; PCle x4 Gen4) 2 x Micro SIM Card					
MISC. Function	1 x Recovery Button, 1 x Reset Button					
Power Input / Connector	DC-in 9-50 \	VDC / 3-Pin (V+/V-/IGN) Terminal Block with ignition p	power control			
LED Indicator	1,	x PWR (w/ IGN) , 1 x PGM (Programmable by user def	ine)			
Dimension (W x D x H)		224(L) x 194(Depth) x 88(H) w/o pad 224(L) x 194(Depth) x 91(H) w pad				
IP	IPX1		IP66			
Net Weight		TBD kg (TBD lb)				
Vibration	Operating, MIL-STD-810H, Method 514.8, Category 4					
Shock	Operating, MIL-STD-810H, Method 516.8, Procedure I					
Temperature	Operating Temp.: -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow; 30W TDP Mode -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow; 60W TDP Mode Storage Temp.: -40°C ~ +85°C (-40°F ~ +185°F)					
Humidity		95% @ 40°C (104°F) (non-condensing)				
Software Support		Linux				
Certification		CE/ FCC Class A, according to EN 55032 & EN 5503 EN 50121-3 (EN 50155:2017, Clause 13.4.8) E-Mark (E-24)	5			

### NVIDIA IGX Orin System



### AIE-MIX640 \*Preliminary

- Support NVIDIA IGX Orin 700 with 248 TOPS
- Support 1x NVIDIA RTX 6000 Ada (up to 1705 TOPS)
- Onboard the Safety MCU (sMCU): Infineon Aurix TC397
- Support NVIDIA ConnectX-7, 2x 100GbE
- Support NVIDIA BMC : AST2600 Microchip ERoT

Mardal Nirmb	ALE MOVE TO
Model Number	AIE-MIX640
NVIDIA Platform	NVIDIA IGX Orin
Al 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)
PCle	1 x PCle Gen5 double width slot (x16) for optional NVIDIA RTX A6000 discrete GPU card 1 x PCle Gen5 single width slot (x8)
LAN	$2\times RJ45$ (up to 1 GbE) $2\times QSFP$ 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 to 125W (without dGPU) 400W (with dGPU)
Power Input / Connector	AC 100-240V, 500W / 850W Single power supply (Select 850W if RTX 6000Ada 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: $0^{\circ}$ C $\sim$ +40 $^{\circ}$ C (-13°F $\sim$ +131°F) Storage Temperature: -40°C $\sim$ +85°C (-40°F $\sim$ +185°F)
Humidity	95% @ 40°C (104°F) (non-condensing)
OS Support	Ubuntu 22.04
Certification	CE / FCC

### ◆ AI on ARM Series—Platform

#### AIB-MR1A-B1/ AIB-MR1B-B1

#### AIE-KR1A-B1/ AIE-KR1B-B1





- Powered by Rockchip RK3588
- LPDDR4X 8/16GB, eMMC 32GB
- 2 x M.2 M-Key, one w/ PCle 3.0 x4 for Al ASIC Accelerator, one w/SATA for Storage
- 1 x M.2 E-Key for WIFI/BT, 1 x mPCle for LTE
- 1 x USB 3.2 Gen1, 2 x GbE, 2 x COM, 1 x HDMI 2.1

Model Number	AIB-MR1A-B1	AIB-MR1B-B1	AIE-KR1A-B1	AIE-KR1B-B1	
Module Compatibility		Rockchip F	K3588		
Memory	LPDDR4X 8GB	LPDDR4X 16GB	LPDDR4X 8GB LPDDR4X 16GB		
Storage	1 x Micro-SD	eMMC 0 slot (SD 2.0) TA for Storage (Bottom Side)	32GB eMMC 1 x Micro-SD slot (SD 2.0) 1 x M.2 M-Key 2280 w/SATA for Storage (Bottom Side)		
Display	1 x HDMI 2.1 TMDS 3840X2160 60	OHz (HDMI Type A Connector)	1 x HDMI 2.1 TMDS 3840X2160 6	OHz (HDMI Type A Connector)	
Audio	1 x MIC-ln, 1 x Line-Out, 1 x Line-In	(Optional with daughter board)	1 x MIC-In, 1 x Line-Out, 1 x Line-In	(Optional with daughter board)	
LAN	2 x GbE (2	x RJ45)	2 x GbE (2	x RJ45)	
USB	1 x USB 3.2 G 1 x USB 2.0 1 x Type C for	(Type A)	1 x USB 3.2 Gen1 (Type A) 1 x USB 2.0 (Type A) 1 x Type C for Programming		
СОМ	1 x RS-232 header (TXD/RXD/C	TS/RTS), 1 x RS-485 header	1 x DB9 for RS-232(TXD/RXD/CTS/RTS) / RS485		
ООВ	1 x OOB (Optional	OOB Module)	1 x OOB (Optional OOB Module)		
Expansion	1 x M.2 M-Key 2280 (PCle 3.0 x4) 1 x M.2 E-Key 2230 (PCle 2.1 1 x mPCle full-size (USB 2.0) for I	x1+USB 2.0) for WIFI/BT	1 x M.2 M-Key 2280 (PCle 3.0 x4) for Al Accelerator (Top Side) 1 x M.2 E-Key 2230 (PCle 2.1 x1+USB 2.0) for WIFI/BT 1 x mPCle full-size (USB 2.0) for LTE w/Micro-SIM card holder		
MISC. Function	1 x Power 1 x Reset I 1 x Recover 1 x Maskron	Button y Button	1 x Power Button 1 x Reset Button 1 x Maskrom Button		
Power Input / Connector	DC-in 12V / Termi	nal Block 2-pin	DC-in 12V / Terminal Block 2-pin		
Dimension (W x D)	131 x 120mm (5.	16" x 4.72")	155 x 123 x 51mm (6.10" x 4.84" x 2.01")		
Net Weight	0.237 kg (0	.522 lb)	0.827 kg (1.822 lb)		
Temperature	Operating Temperature: 0°C ~ 70°C (32°F ~ 158°F) Storage Temperature: -40°C ~ 85°C (-40°F ~ 185°F)		Operating Temperature: 0°C ~ +60°C (32°F~ 140°F) Storage Temperature: -40°C ~ 85°C (-40°F ~ 185°F)		
Humidity	95% @ 40°C Related Hum	idity (non-condensing)	95% @ 40°C Related Hum	nidity (non-condensing)	
Certification	CE / Fo	CC	CE / FCC / LVD		



# Al Inference / Training Systems

# MegaEdge - Expandable X86-Based Edge Al Systems

### 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 Al-enhanced performance, bringing versatile Al acceleration. MegaEdge is optimized for Al inference/training tasks that require high computing performance. Aetina provides PCle, MXM and M.2 series for MegaEdge, empowering clients with optimal Al computing power and systems to satisfy various application scenarios and Al 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.

· PCIe Series	45
· MXM Series	46
· M 2 Series	47

### MegaEdge PCIe Series



### AIP-FR68

- Deliver superior localized AI model training
- NCS certification approved with NVIDIA RTX A6000 and NVIDIA RTX 6000 Ada GPU
- Intel 13/14th Gen Core™ i9/i7/i5/i3 processor, TDP up to 65W
- Pre-installed NVIDIA AI Workbench Software tool
- Drive breakthrough AOI AI defect detection with Metropolis for Factories
- Built in Out-of-Band (OOB) module to execute remote maintenance



### AIP-KQ67

- Intel 13/14th Gen Core™ processors with Intel Q670E chipset
- Supports 4x DDR5 U-DIMM up to 192GB
- NVIDIA NCS certification approved with NVIDIA A2 Tensor Core GPU
- PCle x16 graphics card support up to 300W paired with 850W PSU
- Multiple expansion abilities for WiFi, PoE, and storage modules
- Support Aetina EdgeEye, enhancing device remote management
- Optional support for InnoAgent Out-of-Band module to support remote maintenance

### MegaEdge MXM Series



### AIP-SQ67

- Lift AI performance with extended MXM module via MXM PCIe Gen4 x16 slot
- Intel 13/14th Gen Core™ i9/i7/i5 processor, up to TDP 65W
- Support dual 2.5" SATA III SSD swappable hard drive bay
- Up to five DisplayPort (DP++) for high resolution video display
- Two M.2 M-Key slots enabling 2280 NVMe/SATA
- Built in Out-of-Band (OOB) module to execute remote maintenance

### MegaEdge M.2 Series



### AIP-CR68

- Built in Hailo-8™ Al accelerator for increased Edge Al computing power
- Intel 13/14th Gen Core<sup>™</sup> i9/i7/i5 processor, up to TDP 35W
- Optional PSE support dual IP camera for image capture
- 2x M.2 M-Key slots support for 2280 NVMe, enabling to support dual M.2 Al accelerator
- Built in Out-of-Band (OOB) module to execute remote maintenance



### **AIP-MURE**

- Feature with 3x M.2 M-key for AI Accelerator cards, boosting extreme AI Inference performance.
- Fanless & rugged chassis for harsh environment.
- Dual PSE support IP Camera for real time video streaming.
- Support out-of-band (OOB) management tool for remote maintenance of edge Al system.





Model Number	AIP-FR68	AIP-KQ67
СРИ	Intel 13/14 <sup>th</sup> Core i9/i7/i5/i3 Processor up to 65W	Intel 13/14 <sup>th</sup> Core i5/i7/i9 Processor up to 125W
Chipset	Intel R680E Chipset	Intel Q670E Chipset
GPU(Optional)	NVIDIA RTX 6000Ada/5000Ada/4500Ada/4000Ada NVIDIA A2/T4/L4 Qualcomm Cloud Al100 ultra	NVIDIA RTX 6000Ada/5000Ada/4500Ada/4000Ada NVIDIA A2/T4/L4
Memory	4 x DDR5 U-DIMM up to 192G Support 4400MT/s	4 x DDR5 U-DIMM up to 192G (4000MT/s with 4 DIMM)
Storage	4 x 2.5" SATAIII SSD (Support RAID 0/1/5/10) 1 x M.2 M-Key Slot, Support PCle Gen 4 x4 for NVME/SATA, Size 2280 1 x M.2 M-Key Slot, Support PCle Gen 4 x4 for NVME, Size 2280	2 x 2.5" SATAIII SSD (500W PSU SKU) 1 x M.2 M-Key Slot, Support PCle Gen4 x4 for NVME/SATA, Size 2280 (500W & 850W PSU SKU)
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 (R]-45 1 x 10GbE LAN (R]-45) 1 x RS-485(R]-45) 2 x RS-232/422/485 (D89) 1 x Line out 1 x Mic in 1 x 8bits GPIO (D815) 2 x DP++1.4 1 x HDMI 2.0 1 x Power Button	1 x Power button 2 x USB 2.0
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
Internal I/O	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 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 PCle Gen5 x16 (PCle x16 slot) 2 x PCle Gen4 x4 (PCle x4 slot) 1 x PCle Gen3 x2 (PCle x4 slot) 1 x M.2 2230 E-Key
MISC. Function	OOB (out of band), Built-in Innodisk – InnoAgent	N/A
Power Consumption	Full loading: up to 600 Watts	Full loading: up to 500 Watts/850 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)
Dimension (W x D x H)	340 x 213 x 279 mm	315 x 413 x 159mm
Mounting	Wallmount / Deskmount	Desktop
Net Weight	11 Kg	10 kg
Vibration	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation, w/o PCle Card)	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation, w/o PCle Card)
Shock	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation, w/o PCle Card)	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation, w/o PCIe Card)
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)
Humidity	95% @ 40°C Related Humidity (non-condensing)	95% @ 40°C Related Humidity (non-condensing)
OS Support	Windows 10 IOT / Windows 11 IOT/ Ubuntu 22.04	Windows 11 IOT/ Ubuntu 22.04
Certification	CE / FCC Class A / UKCA / LVD / RoHS	CE / FCC Class A / UKCA / LVD / RoHS







Model Number	AIP-SQ67	AIP-CR68	AIP-MURE	
CPU	Intel 13/14th Core i5/i7/i9 Processor up to 65W	Intel 13/14th Core i5/i7/i9 Processor up to 35W	Intel 13 <sup>th</sup> Core i3/i5/i7 Processor up to 15W	
Chipset	Intel Q670E Chipset	Intel R680E Chipset	SoC	
GPU(Optional)	MXM A1000/A2000/A4500/T1000/2000Ada/5000Ada	Hailo-8™ M.2 Al Acceleration Module	AXELERA AI ACCELERATOR M.2 2280 MODULE	
Memory	2 x DDR5 SO-DIMM up to 64G Support 4800MT/s	4 x DDR5 U-DIMM up to 192G Support 4400MT/s	2 x DDR5 SO-DIMM up to 96G Support 5200MT/s	
Storage	2 x 2.5" SATAIII SSD 2 x M.2 M Key Slot, Support PCle 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 Al accelerator)	1 x 2.5" SATAIII SSD 2 x M.2 M-Key Slot, Support PCle Gen4 x4 for NVME, Size 2280	
Front I/O	6 x USB3.2 Gen2 Type-A(10G) 1 x USB3.2 Gen2 Type-C(20G) 5 x 2.5GbE LAN (R)-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) 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	2 x USB 3.2 Gen2 Type-A(10G) 2 x USB 2.0 Type-A 2 x 1GbE LAN (RJ-45, 2 x support Dual POE 802.3 at) 1 x DP++1.4 1 x HDMI 2.0 1 x Line out 1 x Mic in 2 x SMA Antenna hole	
Rear I/O	5 x DP++ (HBR2) 1 x Line Out 1 x Mic in 2 x CAN Bus-Isolation 2.08 (optional) 2 x USB2.0 Type-A	6 x SMA Anntenna hole	1 x Power Button 1 x Rest Button 1 x 8bits GPIO (D815) 2 x RS-232/422/485 (DB9) 1 x VGA 4 x SMA Antenna hole	
Internal I/O	N/A	N/A	1 x USB 2.0 Type-A	
Expansion	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	1 x M.2 2230 E-Key 1 x M.2 2242/3042/3052 B-Key 1 x Nano SIM slot	
MISC. Function	OOB (out of band), Built-in Innodisk — InnoAgent	OOB (out of band), Built-in Innodisk — InnoAgent	OOB (out of band)(optional), Built-in Innodisk — InnoAgent	
Power Consumption	Full loading: up to 600 Watts	Full loading: up to 260 Watts	Full loading: up to 130 Watts	
Power Input / Connector	DC-in 24VDC / 4-pin Terminal Block	DC-in 12~48VDC / 4-pin Terminal Block	DC-in 12~24VDC / 4-pin Terminal Block	
Dimension (W x D x H)	270 x 280 x 150mm	340 x 86 x 253 mm	270 x 195 x 80 mm	
Mounting	Deskmount	Wallmount / Deskmount	Din-rail / Wallmount / Deskmount	
Net Weight	5.5 kg	5 Kg	3.82Kg	
Vibration	2Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation)	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (operation)	1Grms ,IEC60068-2-64,Random, 5 ~ 500 Hz ,1Hr / Axis (op mode) 1.15Grms , ISTA 2A Random with package, 1 ~ 200 Hz , 30 min / Axis (non-op mode)	
Shock	5G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation)	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (operation)	10G, IEC 60068-2-27, Half Sine, 11 ms Duration (op mode) 30G, IEC 60068-2-27, Half Sine, 1 1 ms Duration (non-op mode)	
Temperature	Operating Temp. : 0°C $\sim$ +50°C (With MXM) Storage Temp. : -40°C $\sim$ +85°C (-40°F $\sim$ 185°F)	Operating Temp. : $0^{\circ}\text{C} \sim +50^{\circ}\text{C} (32^{\circ}\text{F} \sim 122^{\circ}\text{F})$ Storage Temp. : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C} (-40^{\circ}\text{F} \sim 185^{\circ}\text{F})$	Operating Temp.: -30°C ~ +60°C (-22°F ~ 140°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)	
OS Support	Windows 11 IOT/ Ubuntu 22.04	Windows 10 IOT / Windows 11 IOT/ Linux Ubuntu 22.04	Windows 11 IOT/ Linux Ubuntu 22.04/24.04	
Certification	CE / FCC Class A / UKCA / LVD / RoHS	CE / FCC Class A / UKCA / LVD / RoHS	CE / FCC Class A / UKCA / LVD / RoHS	



# Al Inference/Training Servers

### SuperEdge

### Accelerated Edge Server designed with modular architecture

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 are designed to optimize AI workloads in constrained edge environments, making them an ideal solution for enterprise server rooms or edge locations. This enables advanced computing solutions and faster edge or near-edge deployments. The SuperEdge is based on modularized architecture, offering exceptional flexibility and expansion, while delivering outstanding computing power and energy efficiency for AI. Featuring versatile computing form factors powered by x86 processors and cutting-edge NVIDIA GPUs, SuperEdge servers deliver unmatched performance for AI workloads, edge computing, enterprise AI, design simulation, and rendering. SuperEdge servers bridge edge devices and datacenters, optimizing operations and data flow across the network while delivering a robust and strategic advantage in an AI-driven marketplace.

· Short-Depth Servers

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### Short-Depth Servers



### AEX-2UA1

- Unmatched edge AI performance: Built on NVIDIA MGX™ server architecture and Intel® Xeon® 6 with P-cores.
  - Enhanced AI Training and Inferencing: Dual Double-width GPUs with NVIDIA® NVLink™ for seamless AI training and inferencing.
- Optimized Network transfer for demanding workloads: Minimal latency with NVIDIA® BlueField®-3 DPU and ConnectX®-7 NIC.
- Deployments in space-constrained locations: Compact 2U short-depth (420mm) rackmount server.



### AEX-2UA2

- Unmatched edge Al performance: Powered by Intel® Xeon® 6 with P-cores.
- Enhanced AI Training and Inferencing: Dual Double-width GPUs with NVIDIA® NVLink™ for seamless AI training and inferencing.
- Optimized Network transfer for demanding workloads: Minimal latency with NVIDIA® BlueField®-3 DPU and ConnectX®-7 NIC.
- Deployments in space-constrained locations: Compact 2U short-depth (420mm) rackmount server.





Model Number		AEX-2UA1	AEX-2UA2			
	Form Factor	Front Access 2U Rackmount	Rear Access 2U Rackmount			
Chassis	Dimensions (W x D x H)	438mm x 420mm x 88mm				
Processor		Single Intel® Xeon® 67	700-series with P-cores			
Chipset		N/A				
Max GPU Count (Optional)		Up to 2 Double-width PCle Passive GPUs	Up to 2 Double-width PCIe Passive GPUs or 1 Double-width PCIe Active GPUs (blower type)			
System Memory		8 x Chann	el Memory			
	Drive Bays	Rear: 4x Hot-swappable E1.S, up to PCle Gen5, up to 15mm E1.S	Front: 4x Hot-swappable E1.S, up to PCle Gen5, up to 15mm E1.S			
Storage	M.2	2 x M.2, up to PCle Gen	5 x4, M-Key 2280/22110			
	RAID Support	NVMe RAID 0/1/5/10 support (	Intel® VROC RAID key required)			
Input/Output		1 x RJ45 1Gbe Dedic 1 x Mini 2 x USB :	DP port			
	Buttons	System Power UID/BMC reset				
Front Panel	LED	Power status UID Storage Activity Network Activity Information				
PCIe Expansion s	lots	2 x PCIe Gen5 x16 link (PCIe x16 slot, FHFL) for 2 Double-width GPUs with NVLink bridge 1 x PCIe Gen5 x8 link (PCIe x16 slot, FHFL)* 1 x PCIe Gen5 x16 link (PCIe x16 slot, FHHL)  * Slot not avaliable when 2 Double-width AOC is installed.				
	Power Supply	Default: 2 x 1600W Redundant (1+1) Titanium Level (96%) power supplies				
Power	Power Input	Default 1600W power supply: 1000W: 100-127V~, 12A, 47-63Hz 1600W: 200-240W~, 9.5A, 47-63Hz				
	Power Connectors	IEC 603	320 C13			
Package		TBD	TBD			
Weight		TBD	TBD			
MISC. Function		Trusted Platform N Intel® Platform Firmware	Module (TPM) 2.0 e Resilience (Intel® PFR)			
Temperature			0°C ~ 35°C (50°F ~ 95°F) 30°C to 60°C (-22°F to 140°F)			
Humidity		Operating Relative Humidity: Non-operating Relative Humidit	8% to 80% (non-condensing) y: 8% to 90% (non-condensing)			
OS Support		TBD	TBD			
Certification		TBD	TBD			



### Al Accelerator & GPU

## MXM, PCIe, M.2 Solutions for Al Acceleration

### **Compact GPU Solutions for Superlative AI Acceleration**

Aetina's **compact GPU solutions** boost AI computing performance effortlessly with modules designed for seamless integration. Offering cutting-edge modules in multiple form factors—PCIe, Mobile PCI Express Module (MXM), and M.2—these compact solutions ensure seamless integration with your existing edge systems, enabling a smooth and effortless upgrade without overhauling your infrastructure. Our accelerators go beyond just boosting performance—they provide unparalleled flexibility and expandability, allowing you to scale and adapt your AI applications with ease. Whether you're accelerating deep learning, image processing, or other AI-driven tasks, these compact modules deliver a perfect balance of power, efficiency, and adaptability, making them the ultimate solution for your AI needs.

· MXM Series	53
· PCle Series	59
· Expansion Kit	61

### MXM Series

### Based on NVIDIA Ada



#### MX5000A-WA

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



#### MX3500A-SA

- NVIDIA RTX 3500 embedded graphics based on NVIDIA Ada Lovelace architecture
- 5120 CUDA cores, 40 RT cores and 160 Tensor cores, 12GB GDDR6 memory
- PCle Gen 4 x16 interface
- 23.04 TFLOPS peak FP32 performance
- Support Error Correction Code(ECC)



#### MX2000A-VA

- NVIDIA RTX 2000 embedded graphics based on NVIDIA Ada Lovelace architecture
- 3072 CUDA cores, 24 RT cores and 96 Tensor cores, 8GB GDDR6 memory
- PCle Gen 4 x8 interface
- 12.99 TFLOPS peak FP32 performance
- Support Error Correction Code(ECC)







Model Number	MX5000A-WA	MX3500A-SA	MX2000A-VA
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	40°C@ 95%, Non-condensing	40°C@ 95%, Non-condensing	40°C@ 95%, 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
Certification	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC / UKCA



### **Based on NVIDIA Amphere**



#### M3A4500-WP

- NVIDIA RTX A4500 embedded graphics based on NVIDIA Ampere architecture
- 5888 CUDA cores, 46 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)



#### 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
- PCle Gen 4 x8 interface

### **Based on NVIDIA Turing**



#### 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
- PCle Gen 3 x16 interface



#### 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
- PCle Gen 4 x8 interface
- Supports Error Correction Code (ECC)



#### 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
- PCle Gen 4 x4 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
- PCle 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: 46 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	Size: 8GB GDDR6	Size: 4GB GDDR6	Size: 4GB GDDR6	Size: 6GB GDDR6	Size: 4GB GDDR6
	Clock: 16 Gbps	Clock: 14 Gbps	Clock: 12 Gbps	Clock: 12 Gbps	Clock: 14 Gbps	Clock: 12 Gbps
	Interface Width: 256-bit	Interface Width: 128-bit	Interface Width: 128-bit	Interface Width: 64-bit	Interface Width: 192-bit	Interface Width: 128-bit
	Bandwidth (GB/sec): 512	Bandwidth (GB/sec): 224	Bandwidth (GB/sec): 192	Bandwidth (GB/sec): 96	Bandwidth (GB/sec): 336	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	Total Graphics Power (TGP):	Total Graphics Power (TGP):	Total Graphics Power (TGP):	Total Graphics Power (TGP): 45 W	Total Graphics Power (TGP):	Total Graphics Power (TGP):
Consumption	125 W	60 W	60 W		80 W	50 W
Form Factor	MXM Graphics Module	MXM Graphics Module	MXM Graphics Module	MXM Graphics Module	MXM Graphics Module	MXM Graphics Module
	Version 3.1, Type B	Version 3.1, Type A	Version 3.1, Type A	Version 3.1, Type A	Version 3.1, Type B	Version 3.1, Type A
Dimension	82.0 x 105.0 mm	82.0 × 70.0 mm	82.0 × 70.0 mm	82.0 × 70.0 mm	82.0 × 105.0 mm	82.0 x 70.0 mm
(W x D x H)	(3.22" x 4.13")	(3.22" × 2.75")	(3.22" × 2.75")	(3.22" × 2.75")	(3.22" × 4.13")	(3.22" x 2.75")
Net Weight	0.0616 kg	0.037 kg	0.037 kg	0.037 kg	0.065 kg	0.033 kg
	(0.1358 lb)	(0.082 lb)	(0.082 lb)	(0.082 lb)	(0.1433lb)	(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	40°C@ 95%,	40°C@ 95%,	40°C@ 95%,	40°C@ 95%,	40°C@ 95%,	40°C@ 95%,
	Non-condensing	Non-condensing	Non-condensing	Non-condensing	Non-condensing	Non-condensing
OS Support	Windows 10/11 64-bit	Windows 10/11 64-bit	Windows 10/11 64-bit	Windows 10/11 64-bit	Windows 10 64-bit	Windows 10 64-bit
	Linux 64-bit	Linux 64-bit	Linux 64-bit	Linux 64-bit	Linux 64-bit	Linux 64-bit
Certification	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC / UKCA	CE / FCC	CE / FCC

### MXM Series

### **Based on AI ASIC**



#### AI-MXM-H84A

- Powered by 4 x Hailo-8 Al 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
Al 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)	82.0 x 105.0 mm (3.22" x 4.13")
Net Weight	0.05kg (0.1102 lb)
Temperature	Standard: Operating Temp : 0°C ~ +70°C Storage Temp.:-40°C ~ +85°C
Humidity	40°C@ 95%, Non-condensing
OS Support	Windows 10/11 64-bit Linux 64-bit
Certification	CE / FCC

## MXM Series Based on Intel Arc



### MXA380E-QA \*Available in Q3 2025

- Intel Arc A380E GPU for the edge
- 128 Intel® XMX Engines Cores, 8 Xe-cores, 8 Ray Tracing and 128 Xe Vector Engines, 6GB GDDR6 memory
- PCle 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 Xe Vector Engines: 128 RT Cores: 8 Core Clock (MHz): 1250(Base) Floating Point Performance: 2.56 TFLOPS GPU peak TOPS (Int8): 40.96	
Memory Specs	Size: 6GB GDDR6 Clock: 15.5 Gbps Interface Width: 96-bit Bandwidth (GB/sec): 186	
Feature Support	PCI Express Gen4.0 x8 DirectX: 12 Ultimate OpenVINO OpenCL 3.0 OpenGL 4.6 Vulkan 1.3 AV1 hardware encoding / decoding	
Display	Resolution: 7680x4320 <sup>1</sup> Max: 4x DisplayPort 1.4a / or 4x HDMI 1.4	
Power Consumption	Total Graphics Power (TGP): 50 W	
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)	
Temperature	Standard: Operating Temp. :0 to + 55°C (32°F ~131°F)/ Storage Temperature: -40 to + 85°C (-40°F ~ 185°F)	
Humidity	40°C@ 95%, Non-condensing	
OS Support	Windows 10/11 64-bit	
Certification	CE / FCC / UKCA	



### Based on Intel Arc



### IA380E-QUFL \*Available in Q3 2025

- Intel Arc A380E GPU for the edge
- 128 Intel® XMX Engines Cores, 8 Xe-cores, 8 Ray Tracing and 128 Xe Vector Engines, 6GB GDDR6 memory
- PCle Gen 4 x16 interface via golden finger
- Five-year long-term product availability support

### Based on NVIDIA RTX Ada



### N4060-VSFX

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





Model Number	IA380E-QUFL	N4060-VSFX
Engine	Intel Arc A380E Architecture: Intel Arc Xe-cores: 8 Intel® XMX Engines Cores: 128 XeVector Engines: 128 RT Cores: 8 Core Clock (MHz): 1250(Base) Floating Point Performance: 2.56 TFLOPS GPU peak TOPS (Int8): 40.96	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
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
Support	PCI Express 4.0 x8 DirectX: 12 Ultimate OpenVINO OpenCL 3.0 OpenGL 4.6 Vulkan 1.3 AV1 hardware encoding/decoding	PCI Express 4.0 x8 DirectX: 12 Ultimate Open GL 4.6 Vulkan 1.2
Display	Resolution: 7680x4320 Max: 4x Display Display connector: Mini DisplayPort	Resolution: 7680x4320 Max: 4x Display Display connector: DisplayPort1.4a / HDMI 2.1
Power Consumption	Total Graphics Power (TGP): 50W Min. System Power Requirement: 350W or better power supply	Total Graphics Power (TGP): 115 W Min. System Power Requirement2: 550 W Supplementary Power Connectors): 8-PIN
Form Factor	Low-profile / Single slot	ATX
Dimension (W x D)	169.69 x 68.9 mm (6.68" x 2.71")	152.05 x 114.15 mm (5.98" x 4.49")
Net Weight	0.202 kg (0.4453 lb)	0.401 kg (0.8841 lb)
Temperature	Standard Operating Temp. : 0 to + 55°C (32°F ~131°F )/ Storage Temperature: -40 to + 85°C (-40°F ~ 185°F)	Standard Operating Temp. : 0 to + 55°C (32°F ~131°F)/ Storage Temperature: -40 to + 85°C (- 40°F ~ 185°F)
Humidity	40°C@ 95%, Non-condensing	40°C@ 95%, Non-condensing
OS Support	Windows 10 / 11 64-bit	Windows 10 / 11 64-bit / Linux
Certification	CE / FCC / UKCA	CE / FCC / UKCA

### 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)	1111.2 x 168mm
Net Weight	71.5g
Temperature	Standard Operating Temp.: 0°C ~ +55°C
Humidity	40°C@ 95%, Non-condensing
Certification	CE / FCC