Advantech Industrial AI Solutions

Industrial Expertise on Deploying AI Solution with Great Computing Performance and Flexibility

- Introduction
- Product Features
- Application case
- Selection Guide

ADVANTECH

Enabling an Intelligent Planet

NVIDIA Elite Partner

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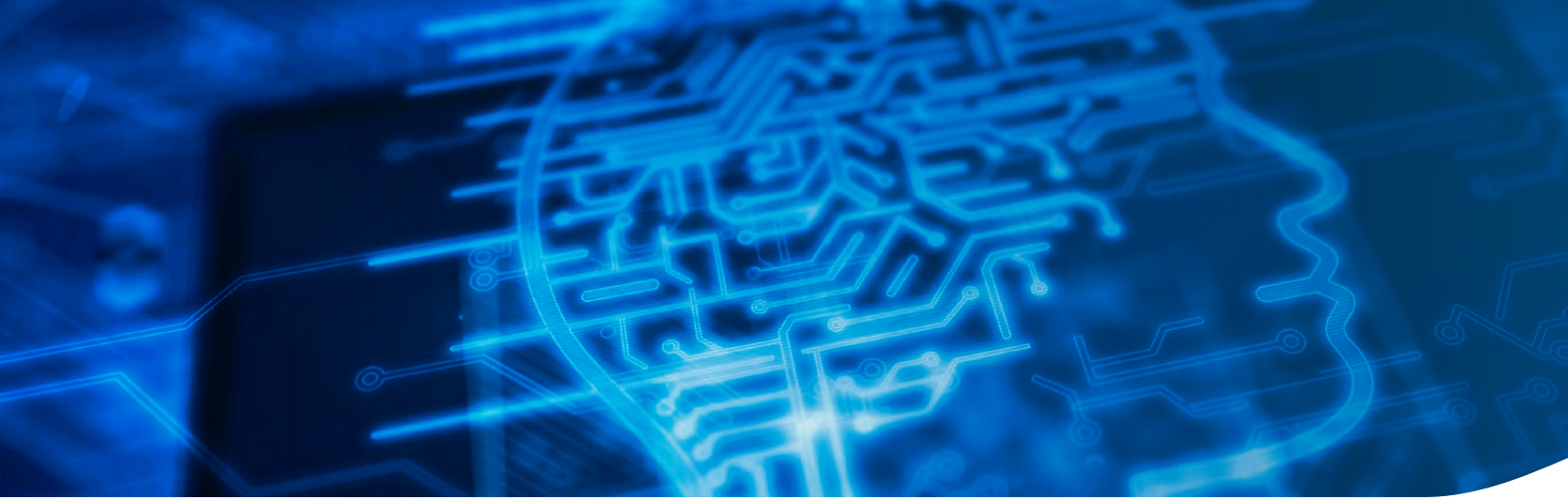


CONTENT

New Product Highlights

ICAM

ICAM-540

- Embedded with NVIDIA® Jetson Orin™
- 8MP 45 fps SONY industrial grade sensor
- HW ISP no GPU/CPU workload
- C-mount lens compatible

AI Developer Kit

MIC-732D-AO

- Open-frame design with fan
- Embedded with NVIDIA® Jetson AGX Orin™
- Supports Total 8-ch GMSL3.0/2.0 with FAKRA connectors
- Supports NVIDIA Isaac Robot Operating System (ROS2)

AMR System

MIC-732-AO

- Fanless and compact design
- Embedded with NVIDIA® Jetson AGX Orin™
- Supports Total 8-ch GMSL 0304 with FAKRA connectors
- Supports NVIDIA Isaac Robot Operating System (ROS2)

AI NVR

MIC-717-OX

- NVR fan based design
- Embedded with NVIDIA® Jetson Orin™ NX
- Supports 8 x PoE
- Supports NVIDIA Jetson Platform Services
- Supports Allxon 24/7 remote monitoring

GPU IPCs

IPC-730

- Supports ATX/uATX motherboards
- Built-in industrial-grade ATX 3.0 850W/1200W power supply
- Supports powerful 450W GPU cards
- Dual rear system fans and dual optional auxiliary front system fans for extreme thermal dissipation efficiency

MIC-770 V3 + MIC-75GF10

- Intel® Core™ processors (14th/13th/12th Gen)
- CPU type: Socket (LGA1700)
- Chipset: Intel® Q670E/H610E
- Fanless system support NVIDIA MXM GPU (up to 80W)
- 3 x DP and 1x HDMI with 2x removable 2.5" SATA storage bay

UNO-148 V2

- Compact and Din-rail design
- Intel® Core™ processors (13th Gen) for real-time processing
- Expansion modular supports NVIDIA® Embedded GPU MXM , up to 35W
- Complete M.2 interface for NVME storage and wireless expansion

Transportation System

ITA560AGX/ NX/ Nano

- Embedded with NVIDIA® Jetson AGX Orin™/ Orin™ NX / Orin™ Nano
- Compact and fanless design
- Compliant with EN 50155 and EN 50121-3-2 standards
- Rugged M12 connectors suitable for harsh, industrial environments
- Support a wide range of connectivity for AI analysis applications

Industrial Edge AI Servers

SKY-602E3

- AMD® EPYC™ Embedded 8004 Series Server processors
- 6 x DDR5-4800 MHz ECC RDIMM up to 576GB
- Remote Management: IPMI function support
- 4 x PCIe 5.0 x16 double-deck FH/10.5" cards or 2 x PCIe 5.0 x16 double deck FH/10.5" cards + 4 x PCIe 5.0 x8 single deck FH/10.5" cards

HPC-6240+ASMB-622V3

- 5th/4th Gen Intel® Xeon® Scalable processors
- DDR5 5600/4800MHz RDIMM up to 4TB
- 4 x PCIe 5.0 x16 slots support FH/10.5"L cards
- 4 x PCIe 5.0 x8 slots
- 4 x 2.5" hot-swappable SASII**/ SATAIII drive bays

GPUs & MXMs

SKY-MXM-2000A-8SDA

- MXM 3.1 Type A form factor
- Up to 3072 CUDA cores
- 24 RT Cores & 96 Tensor Cores
- 12.99 TFLOPS
- 8GB GDDR6 memory with ECC
- 256 GB/s bandwidth
- Long life cycle, supports 5+ years availability

SKY-MXM-5000A-6SDA

- MXM 3.1 Type B+ form factor
- 9728 CUDA cores
- 76 RT Cores & 304 Tensor Cores
- 42.6 TFLOPS
- 16GB GDDR6 with ECC
- 576 GB/s bandwidth
- Long life cycle, supports 5+ years availability

Advantech Industrial GPU Platforms Powered by NVIDIA®

Advantech has developed AI-ready platforms incorporating full NVIDIA AI technologies to meet the increasing demand for AI across various sectors, including factory automation, smart cities, healthcare, energy, and robotics. Advantech's close partnership with NVIDIA enables it to stay abreast of the latest AI technology trends and seamlessly integrate with NVIDIA software and hardware resources. By leveraging Advantech's AI ecosystems, the company can expedite AI deployment at the edge. With 40 years of experience in industrial PC design, Advantech offers top-tier AI systems and design-in services to industrial customers and AI ecosystem partners.

NVIDIA Elite Partner

NVIDIA Elite Partner for Embedded Edge, Visualization, and Compute

Advantech provides industrial edge AI-ready platforms powered by NVIDIA technology, covering cloud-to-edge applications across various industries. Advantech not only offers AI hardware but also integrates NVIDIA software like Metropolis, Holoscan, and ISAAC ROS SDK into edge systems to accelerate AI deployment. With comprehensive AI solutions and services, Advantech aids customers with limited developer resources in seamless AI implementation.

Comprehensive NVIDIA AI GPU platforms

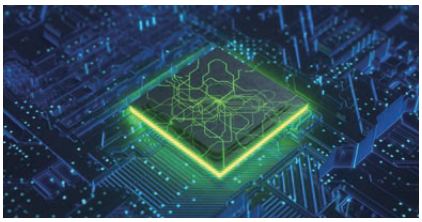
Easy integration of video input, motion control, and AI-ready software

Global service and R&D resources

Support large-scale deployment with remote management

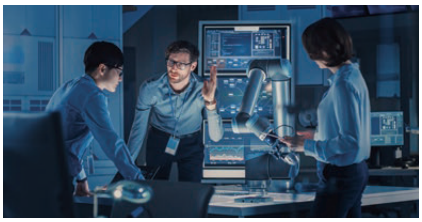
Advantech Industrial Edge AI Systems

Advantech Is The Best Partner for AI Deployment



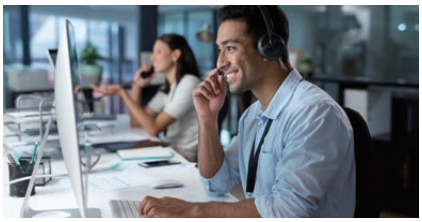
Industrial-grade design validated with AI & GPU technologies

Advantech has the industrial design expertise to support AI applications in any environment. Effective thermal design is crucial, especially when heat is generated by AI computing. Advantech manages heat generated internally by computing processes as well as ambient temperature from the external environment to minimize system shutdowns. Additionally, rigorous vibration tests are conducted to ensure resilience in high-shock and high-vibration environments across various applications.



Global R&D resources enable customization of your AI solutions

With an increasingly diverse market and multiple vertical applications, the demand for customized systems for specific applications is high. Through customization, integration, validation, and certification, we are committed to providing a one-stop solution to customers worldwide who require a trusted partner to maximize their applications.



Worldwide support, local service, and longevity support

Advantech has a system engineering expert group, a 24/7 hotline for application engineers (AE), and a global RMA system. Additionally, Advantech provides certified quality assurance systems and certification services. Our solutions offer long-term support, revision control, design flexibility, and reliable industrial-grade operation.

Advantech AI Ecosystem Accelerates Deployment

AIoT is complex; it consists of edge devices, networking, cloud services, software, hardware, integration, and management. It is not an easy task for enterprises to build up on their own. To accelerate AI deployment, Advantech linked all partners and built up the AI ecosystem to provide the ability and expertise to address the complete AI journey: develop, train, inference, and deployment. Advantech's AI team and partners are always on hand to advise on the optimal inferencing solution architecture for any given project or location.

More Partners

Industrial AI & GPU Platforms Portfolio

The Comprehensive AI Product Line: Arm-based & x86-based

Advantech provides a range of GPU solutions, including embedded Jetson platforms, embedded MXM GPU modules, and GPU computing platforms. These comprehensive solutions allow developers and end-users to choose the most suitable platform for AI deployment, considering computing architectural structure, computing performance, space, and efficiency.

Advantech NVIDIA Jetson Platforms

	Developer kit	AI Camera	Computing System	Ruggedized System	AI NVR	Transportation System
Jetson AGX Orin™	 MIC-732D-AO		 MIC-733-AO  MIC-732-AO			 ITA-560AGX
Jetson Orin™ NX	 MIC-711D-OX MIC-713S-OX	 ICAM-540	 MIC-7I1-OX  MIC-713-OX	 MIC-715-OX	 MIC-717-OX/NVS-960	 ITA-560NX  ITA-510NX
Jetson Orin™ Nano	 MIC-711D-ON MIC-713S-ON		 MIC-7I1-ON  MIC-713-ON		 MIC-717-ON	 ITA-560Nano ITA-510Nano
Jetson AGX Xavier™			 MIC-730AI		 MIC-730IVA	
Jetson Xavier™ NX	 MIC-710AILX -DVA	 ICAM-520	 MIC-710AILX  MIC-710AIX	 MIC-715	 MIC-710IVX	
Jetson™ TX2 NX			 MIC-710AILT  MIC-710AIT			
Jetson Nano™	 MIC-710AIL -DVA1	 ICAM-500	 MIC-710AIL  MIC-710AI		 MIC-710IVA	

Advantech NVIDIA GPU Platforms

PCIe GPU Card

Modular IPC	Desktop/ Rackmount IPC	Transportation System	Server-grade Workstation	Server-grade Workstation	Data Center
MIC-770 V3 +MIC-75G30 ●X1	ACP-4340 ●X1		HPC-6120 +ASMB-610V3 ●X1 ●X2	HPC-7420 +ASMB-977 ●X4 ●X8	SKY-640V2 ●X4 ●X8
MIC-770V3 +MIC-75G20 ●X1	ACP-2020G ●X1			HPC-6240 +ASMB-622V3 ●X2 ●X4	SKY-6420 ●X10
	IPC-730 ●X1				
MIC-770V3 +MIC-75M20 ●X1	IPC-220/240 ●X1			SKY-602E3 ●X4 ●X6	SKY-6100 ●X1 ●X5
	IPC-320 ●X1				SKY-620V3 ●X6 ●X8

● Double Deck Active Fan GPU
- RTX 6000 Ada (1,457 TOPS)
- RTX 5000 Ada (1,044.4 TOPS)
- RTX 4500 Ada (634 TOPS)
- RTX 4000 SFF Ada (306.8 TOPS)
- RTX 2000 Ada (191.9 TOPS)

● Double Deck Passive GPU
- H100 NVL (3,958 TOPS)
- L40S (1,466 TOPS)
- L40 (724 TOPS)

● Single Deck Active Fan GPU
- RTX 4000 Ada (327.6 TOPS)
- A1000 (107.6 TOPS)
- A400(43.4 TOPS)

● Single Deck Passive GPU
- L4 (485 TOPS)
- A40 (72 TOPS)

MXM GPU Card

Modular IPC	Transportation System
MIC-770 V3 +MIC-75GF10 ●●	ITA-460G ●●
UNO-148 V2 + UNO-MXM-CB01 ●	ITA-580G ●
	ITA-520G ●

● Type A
- SKY-MXM-2000A
- SKY-MXM-A2000
- SKY-MXM-A1000
- SKY-MXM-A500
- SKY-MXM-T1000

● Type B
- SKY-MXM-5000A
- SKY-MXM-3500A
- SKY-MXM-A4500
- SKY-MXM-RTX3000

Intel® Core™ Processors/ Intel® Xeon® W Processor

Intel® Xeon® Processors/ AMD EPYC™ Server Processors

Product Introduction

Video Capture Cards

With both efficiency and flexibility, Advantech capture cards and frame grabbers offer comprehensive video and image transformation options. Advantech also validates NVIDIA GPUDirect for Video, providing an optimized pipeline to efficiently transfer video frames in and out of NVIDIA GPU memory.

Features

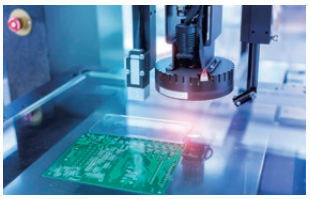
- High bandwidth capacity
- Multiple video input and output
- SDK software compression

Applications

Broadcasting

AVoIP

Medical imaging



Machine vision

AI Cameras

Embedded with the NVIDIA Jetson module, the Advantech AI camera is an all-in-one, compact, and rugged industrial AI camera, ideal for a variety of edge AI vision applications. The AI camera integrates a lighting source, AI computing, and an industrial-grade sensor, and supports an HTML5 web-based utility SDK. This helps our AI machine vision users significantly reduce installation and maintenance efforts.

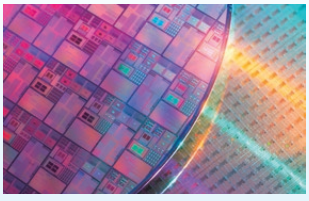
Features

- 1.6MP 60 FPS, SONY industrial grade sensor
- Programmable variable focus lens
- Advanced LEDs illumination

Applications

Equipment manufacturing

Food & beverage



Semiconductor

Factory safety

Edge AI Systems

AI Computing System, Developer kit & Solution Kit

Advantech AI computing systems, developer kits, and solution kits are highly integrated with NVIDIA Jetson. Developer kits enable developers to test AI algorithms beforehand, while AI solution kits offer multiple tested peripherals for deployment environment testing. Featuring robust computing power, compact design, industrial I/O support, and remote management capabilities, Advantech AI computing systems empower developers to swiftly create bespoke AI solutions for smart city, robotics, agriculture, and in-vehicle applications.

Features

- Compact fanless design with wide operating temperature
- Multiple I/O and expansions for different applications
- Board support package (BSP) development
- Support 24/7 remote management and OTA deployment

Applications

Traffic monitoring

Agriculture

Safety & security

AMR & Cobot

AI Network Video Recorder (NVR)

Advantech AI NVR embedded with the NVIDIA Jetson module and is compact and compatible with any connected video stream, supporting 8x PoE, 2 x 1 GbE RJ-45, and 1 x 3.5" SATA HDD for efficient video streaming and storage. This is ideal for the retail, safety and security industries.

Features

- 8-channel video input and storage.
- Integration with Metropolis Jetson Platform Services
- Remote management for large-scale deployments.
- Support 2 x 3.5" HDD

Applications

Safety & security

Traffic monitoring

AI Rugged System

Advantech AI rugged system is designed for applications in harsh environments. Leveraging NVIDIA Jetson SoM, this solution features an IP67 rating for water and dust, lockable connectors for vibration tolerance, a machine ignition protection system, built-in PoE, and GMSL2 video interface support.

Features

- I67 rated, waterproof, fanless design.
- Board support package (BSP) development
- Supports 4 x IEEE 802.3af compliant PoE
- Support GMSL2

Applications

Heavy machinery

In-vehicle & AGV

Product Introduction

GPU Industrial PCs

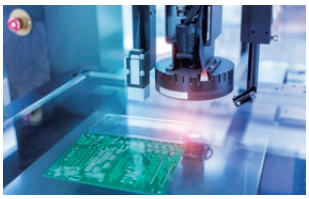
Edge AI Computing System with GPU Cards & MXM GPUs

Advantech industrial PCs provide various form factors designed with high-performance CPU and GPU computing, multiple I/O and communication interfaces, and a compact, fanless design. These features make Advantech industrial PCs suitable for a wide range of applications, offering both versatility and reliability.

Features

- Validated to ensure GPU card compatibility
- Compact size and easy maintenance
- Industrial design supports anti-vibration/dust capabilities, and high-temperature operation
- Flexible GPU slot supports underground training

Applications



Machine vision

Smart machine automation

Robotics

AMR & Cobot

GPU IPC for Medical Applications

Advantech medical-grade GPU platform provides the medical device industry with a commercially available, medical-grade, AI-inference platform, lowering the cost and time to develop and deploy AI-enabled medical devices. USM-500 series adopts the NVIDIA Clara Holoscan MGX platform to deliver real-time AI analytics.

Features

- IEC-60601-1-2 certified medical-grade design
- NVIDIA Certified System
- Extensive expansion options for diverse applications
- Flexible design eases customization

Applications

Medical imaging

Surgical guidance

GPU IPCs for Transportation Applications

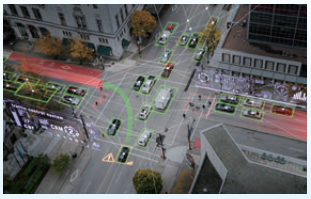
Advantech ITA series GPU IPC are dedicated to AI in transportation applications. ITA series support railway automatic fare collection, railway signaling, rolling stock, station management system and more. With GPU computing, AI enables real-time strategic decision making and feedback for better reliability.

Features

- EN50155 and EN 50121-3-2/EN 50121-4 certified for rolling stock applications
- Support fanless MXM GPU cards and over 5-year product life
- Real-time graphic analysis catering to AI applications

Applications

Smart railways



Smart roadways

Industrial Edge AI Servers

NVIDIA CERTIFIED

High-Density GPU Servers

Advantech GPU Servers-SKY-600 series are high-density GPU AI training platforms designed to meet the growing trend toward AI and large language model training and inference. The SKY-600 series are powered by dual Intel® Xeon® scalable processors and AMD EPYC™ server processors featuring IPMI management functions and smart fan control, leads to better acoustic and the thermal management. It is used in highly parallel applications like AI deep learning, smart cities, medical technology, and high performance computing.

Features

- Better acoustic and the thermal management
- Remote management: IPMI function support
- High-density GPU cards support up to 5 GPUs in a 1U server and 10 GPUs in a 4U server

Applications

Imaging visualization

AI training

Automated optical inspection

Big data analytics

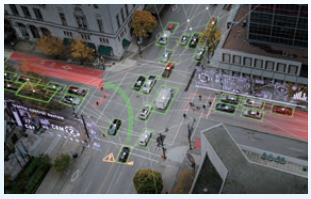
Industrial Servers

From 1U to 4U rackmount server, Advantech industrial server aims to provide the best solutions for the most complex tasks for different industrial applications. Advantech Industrial server gives equipment developers high performance, efficient, and redundant solutions for industrial environments and critical applications.

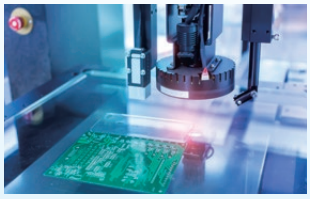
Features

- High-availability and redundancy
- Excellent thermal ability, anti-vibration, and wide temperature operation
- Product life cycle management

Applications



Traffic analysis



Automated optical inspection

Edge Accelerator Servers

Advantech Edge Accelerator Servers provide comprehensive end-to-end performance, efficiency, and responsiveness, essential for driving the next generation of AI inference in embedded devices. Its short-depth chassis and multiple expansion slots make it particularly well-suited for IEM, robotics, industrial vision analysis, and AI at the edge.

Features

- Multiple PCIe expansion slots for flexibility
- Multiple power supply options
- Short-depth chassis design for equipment builders

Applications

Equipment manufacturing

Video streaming

Product Introduction

PCIe GPU & MXM GPU Cards

Advantech offers MXM GPU cards powered by NVIDIA's embedded GPUs, perfect for image processing and edge AI acceleration in the manufacturing, transportation, and medical industries. Built on NVIDIA's latest architectures, Advantech MXM GPUs deliver state-of-the-art technologies, providing high-performing computing and responsive capabilities. These features make them ideal for applications such as auto-optical inspection, driver assistance, and surgical systems.

PCIe GPU Features

- Professional GPU for assured reliability
- Plug-and-play for easy set up
- Rackmount/wallmount flexibility

PCIe GPU Features

- Fits in compact/fanless IPCs for limited space applications
- Highly customizable with easy integration advantages

Applications

Smart manufacturing AI AOI

AMR

Smart transportation

Medical 3D rendering imaging

AI-Ready Software

AI OCR Solution

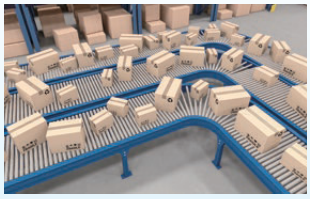
The AI OCR solution provides an AI pre-training model that supports multiple languages, enabling immediate use without additional training. It supports various fonts, including handwriting fonts, and offers model retraining functions to further improve recognition accuracy. Logical thresholds accelerate inference results by setting “include” and “exclude” conditions, increasing both recognition speed and accuracy.

AI AOI Solution

Advantech AI AOI Solution is a one-stop solution with deep-learning image analysis software for applications in automated optical inspection (AOI). The trained software development kit allows fast deployed of AI models with a user-friendly interface, it is flexible and scalable in both in x86 system and ARM-based platforms.

Applications

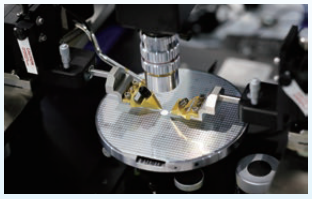
Food & beverage



Logistics

Applications

Electronics manufacturing



Semiconductor

AI, Video & Cloud Design-in Service

Advantech has over 40 years of industrial design expertise, offering industrial-grade hardware design, product reliability, and software integration services.

Through close collaboration with NVIDIA, Advantech AI systems provide products and services with intelligent, secure, energy-efficient features, along with remote manageability, Configure-to-Order Services (CTOS), and Design-to-Order Services (DTOS).

Why Choose Advantech for AI Design-in Services

Worldwide NVIDIA Elite Partner

Advantech is a worldwide elite partner with NVIDIA, enabling the best technology resources and support for our customers.

Video Integration Expertise

Advantech provides an expert team for video integration design, including GMSL, PoE, USB, SDI, SDVoE, and more.

Software Support for AI Acceleration

A dedicated software team supports video interface drivers and NVIDIA AI-ready software, including ISAAC, Metropolis, Holoscan, and NVIDIA AI Enterprise.

Industrial design capability for different environments

From edge fanless systems and tower or rackmount IPCs to servers and all-in-one AI cameras, Advantech enables the design of any system form factor to meet diverse industrial needs.

Global Operations Infrastructure and Logistics Network with Local Delivery

Advantech is located in 25 countries and 93 cities in each major operating region, offering a global reach. We support our customers through an extensive global network of offices and an industry-leading eBusiness infrastructure designed to provide responsive service that benefits clients anytime, anywhere.

Application Case

Factory Automation

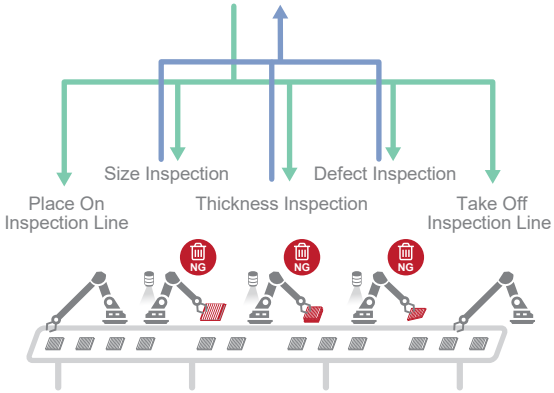
Connector Manufacturer Uses AI to Improve Quality and Efficiency

- Undetected defects are less than 1%, and the machine yield rate is more than 95%.
- Shift manpower to other processes, reducing both production costs and potential labor shortage risks.

A manufacturer of connectors for electronic devices decided to implement Spingence's AINavi, an AI visual defect detection software application, along with an Advantech solution. By replacing the existing manual visual inspection process with an AI-driven process to identify defects, the labor required for production was reduced while simultaneously improving quality. The new system allowed the company to establish a deeper and more trusting relationship with smartphone manufacturers, enabling them to anticipate steady growth.

SKY-640V2

AI GPU Server

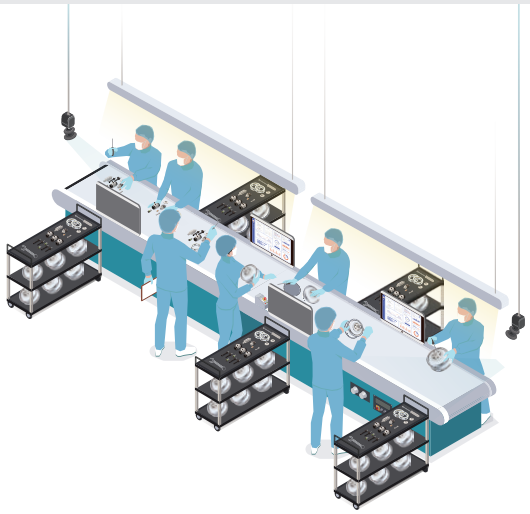


RTX 3080 **RTX 3080**

NVIDIA GPU Cards

SKY-6400

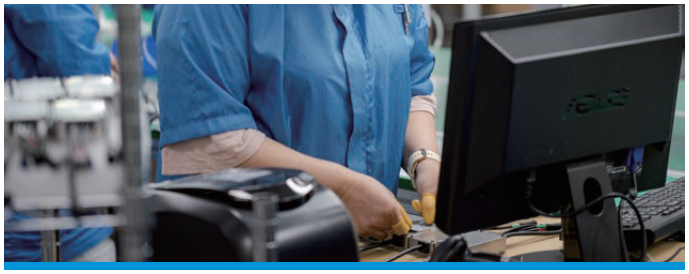
4U 4 GPU AI Hybrid Server



ADVANTECH Mighty Net POWER ARENA

AI Visual Inspection in Electronics-Manufacturing

- Replacing traditional stopwatches to manage production lines is much more efficient and easy to digitize.
- AI helps dynamically adjust production line resources and optimize on-site manpower allocation and processes.



In labor-intensive industries, improving production efficiency requires designating a responsible person to monitor and observe all workers to collect relevant data. However, it is unfeasible to implement these measures fully in the factory. An AI system digitizes human factor information using image recognition and analysis technology. It is deployed in a factory to measure working hours and optimize production.

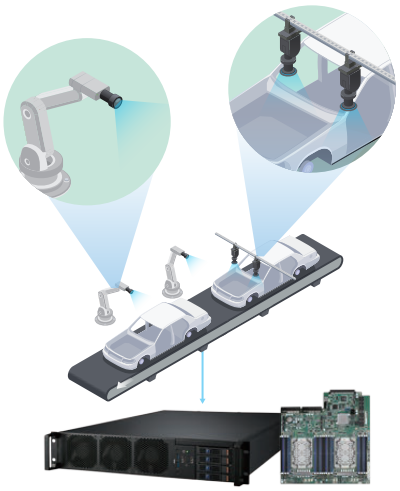
Application Case

Factory Automation

Advanced 3D Metrology for Car Body Construction

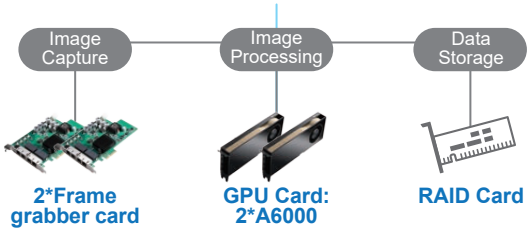
- Efficiency and Precision: Measuring machines that require high speed, efficiency, and accuracy, making AI essential for optimizing these attributes.
- AI is used to automate complex metrology processes, involving 3D sensors and tracking cameras, to achieve reliable and precise measurements.

The automotive industry has embraced metrology technologies that lead to faster and more efficient production processes, allowing the sector to reap significant benefits. The primary objective in metrology is to ensure that high-quality standards are met while operating at the pace demanded by high-volume sellers. Companies utilize 3D coordinates in car body construction, an area with the most stringent requirements for part strength, safety, and design.



HPC-6240+ASMB-622

2U Edge Accelerator Server



2*Frame grabber card

GPU Card: 2*A6000

RAID Card

SKY-640V2

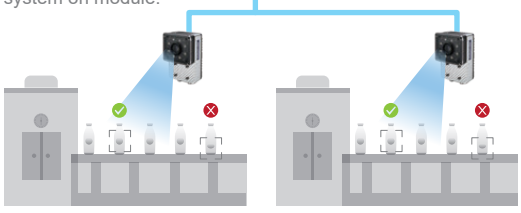
4U Rackmount GPU AI training server

ICAM-500

Integrated Industrial AI camera inference system equipped with NVIDIA Jetson AI system on module.

AINavi

AINavi is an AI model training software designed for use in automated optical inspection (AOI) applications.



AI Inspection for Bottle Label

- AI inspection helps find non-physical defects, such as scratches, color inconsistencies, or material issues, and provides digital results.
- Fast-to-deploy solution with lighting, camera, and AI edge system.

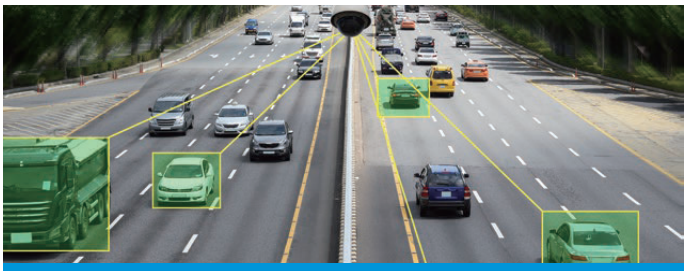
Famous beverage manufacturers need to ensure their new logo labels are printed in the correct color and on the right materials without scratches. One manufacturer decided to adopt the AI AOI solution to accelerate the inspection process on the production line. AI-trained models are deployed to ICAM-500s across different production lines. The ICAM-500 acquires the image, quickly performs inference, and passes the results back to the cloud. Label inspections using AI inference technology can efficiently identify the most subtle defects, ensuring high-quality products.

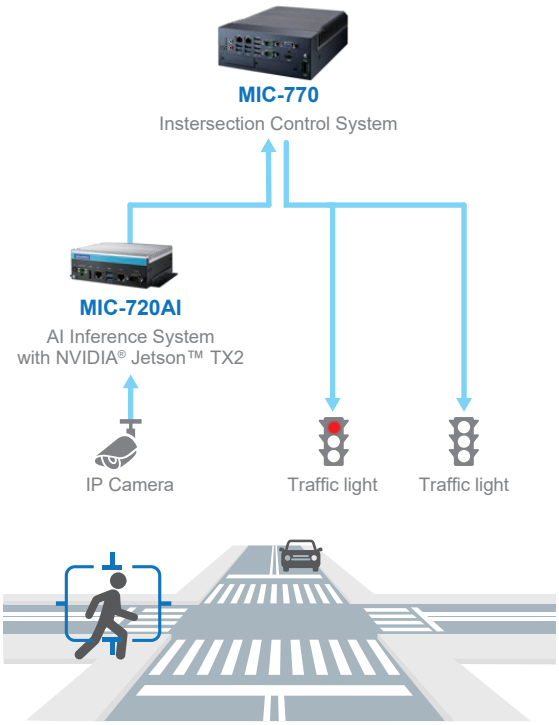
Application Case

Transportation

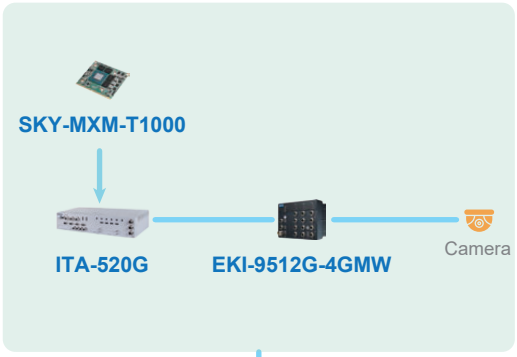
Improving Wait Time at Major Intersections

- Traffic ran more efficiently with average wait time decreased 15 ~ 78%.
- A reduction in vehicle idle time and gas consumption results in annual economic benefits of around TWD 1.83 million.





Taipei's traffic lights have lengthy countdowns to provide enough time for pedestrians to safely cross wide roads. However, drivers on Taipei's major arterial roads might find themselves waiting needlessly for extended periods. Surveillance cameras with AI systems conduct image detection and calculate the positions of people and cars in real-time. When necessary, this system can prolong green lights and activate responsive signals to adjust traffic lights in real-time.



Rolling Stock Total Solution Helps Reduce Terror Attacks and Accidents in Trains

- AI surveillance detects abnormal behavior and potential threats in real time with over 99% accuracy, enhancing passenger safety in trains.
- Instant alerts for incidents like attacks, fires, or falls are sent to drivers and control centers, enabling swift response and assistance.

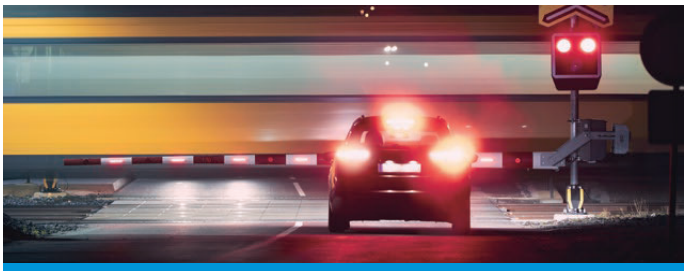
Advantech's total solution AI system for active monitoring and prediction co-developed by the Japan Railway Company delivered exceptional recognition accuracy and performed flawlessly. The fanless rolling stock-grade computers, high-speed computing GPU modules, and network switches, monitored, scanned, and quickly identifies images with potential red flag incidents, allowing onboard train staff to quickly react to incidents and accidents in real time to assure passenger safety.

Application Case

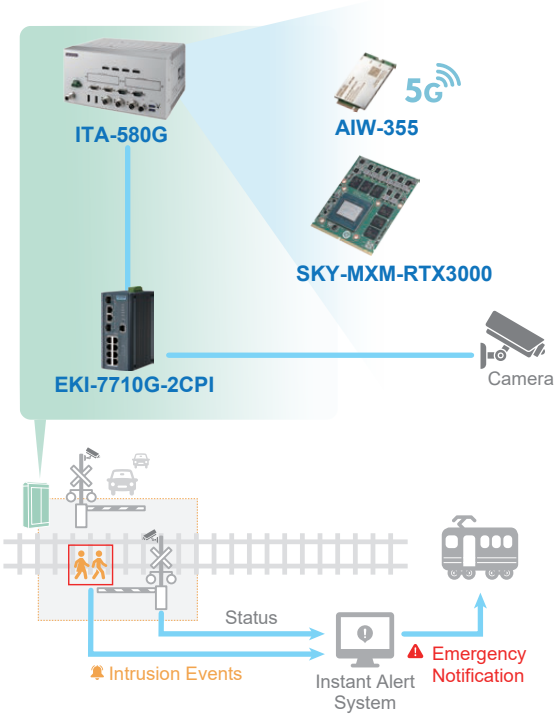
Transportation

Robust AI Edge Platform Safely Guards Railway Crossings

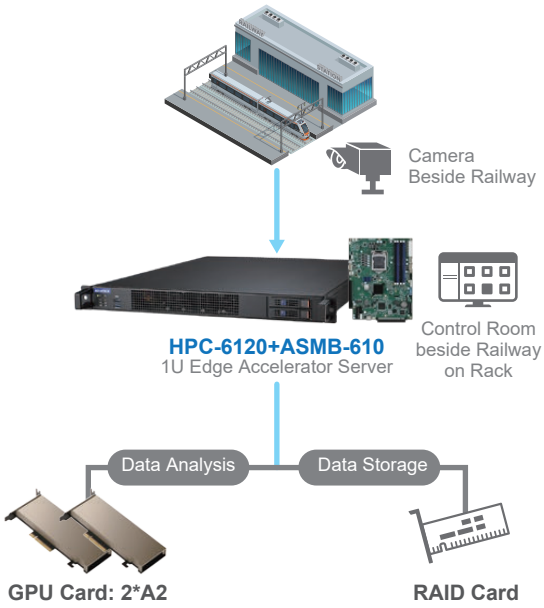
- AI systems ensure 99.9% accurate, real-time monitoring of railway crossings, significantly enhancing safety.
- The fast alert system, delivering warnings in under 2 seconds, prevents fatalities and injuries.



In Taiwan, there are over 400 railway crossings on roads, unfortunately, hundreds of crossing accidents occur annually, resulting in numerous fatalities and injuries. Railway barriers are not automatically closed by default, and if they fail to fully close when required, they can lead to unintentional delays and accidents. Relying solely on manpower cannot ensure safety at level crossings. Therefore, railway companies have adopted AI solutions to address geographic and weather conditions, as well as driver blind spots to enhance safety.



Catenary and Pantograph Video Monitor (CPVM)



AI-Based Pantograph-Catenary Monitoring System Enables Automated Railway Inspections

- The system uses AI-based image processing for inspections, which enhances the accuracy and speed of detecting wear or damage, ensuring the reliability of railway systems.
- NVIDIA GPUs are utilized for high-performance computing and data analysis, crucial for minimizing equipment failures and maintaining reliable train operations.

In China, the continuing growth of the national high-speed railway mileage has necessitated solutions for automated monitoring to ensure the safe and reliable operation of railway systems. Accordingly, various technologies for monitoring and inspecting pantograph-catenary systems have been developed using AI-based image processing. the China Railway Corporation monitors high-speed railways requires AI server that supports high-performance computing with minimal latency and features data inference capabilities.

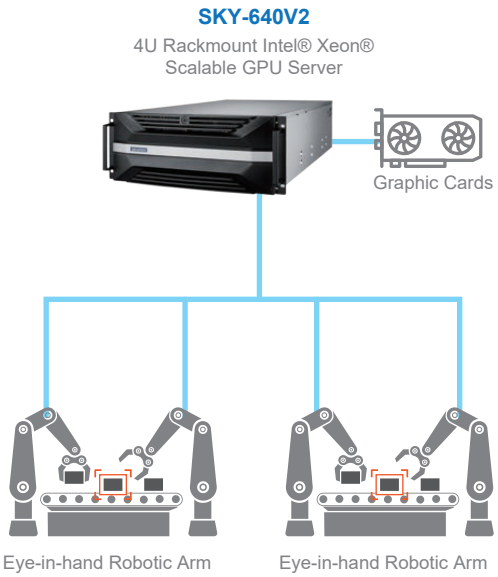
Application Case

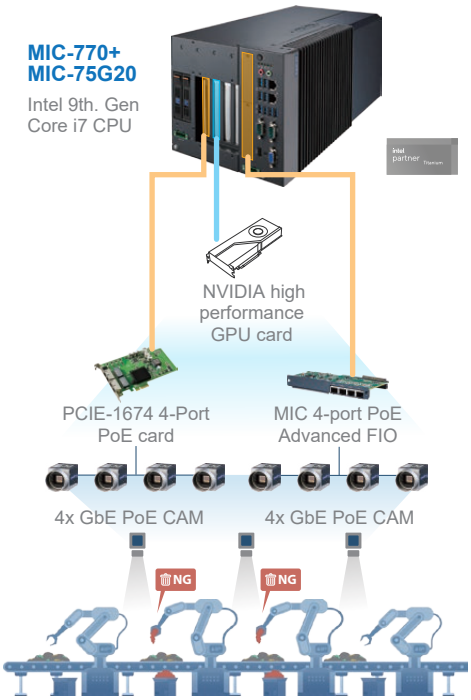
AMR & Cobot

Smart Warehousing: Industrial Servers Ramp up AI for Robotic Arms

- AI-enabled industrial servers are pairing with advanced robotics can make real-time decisions at the edge reduce loads on networks, storage, and analytics throughout smart manufacturing facilities

Integrating AI within robotic arms delivers significant benefits. Three phases improve the success of robotic arm applications: programming, operating, and maintenance. Often, several robotic arms are paired with one industrial server on a production line. Equipping that server with AI processing can significantly impact each of the three phases.





Industrial AI & Robotics Controller System in Waste Recycle Industry

- Using AI technology to categorize waste accurately can mitigate the impact to the environment.
- AI solution identifies certain materials on the recycling line with more efficiency and accuracy.

A recycling center customer was seeking a high-performance, industrial-grade AI solution capable of functioning in harsh environments. The customer needed an automated solution that could help identify specific materials on the recycling line. To this end, they required an industrial AI solution to replace their previous, less effective commercial hardware solutions.

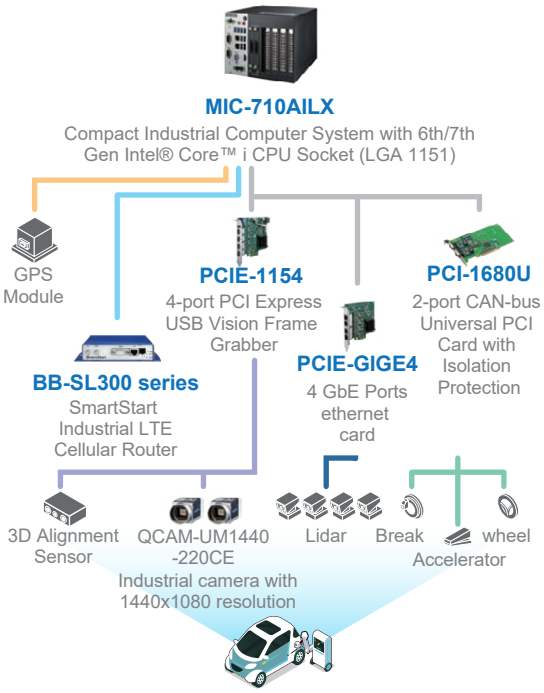
Application Case

AMR & Cobot

Changing the Charging Landscape: 3D Vision-guided Robots

- Charging robot break the space limit, any parking space can now be turned into a charging kiosk.
- The robot accurately locates the charging port and guide the charging plug to fast-charge automatically.

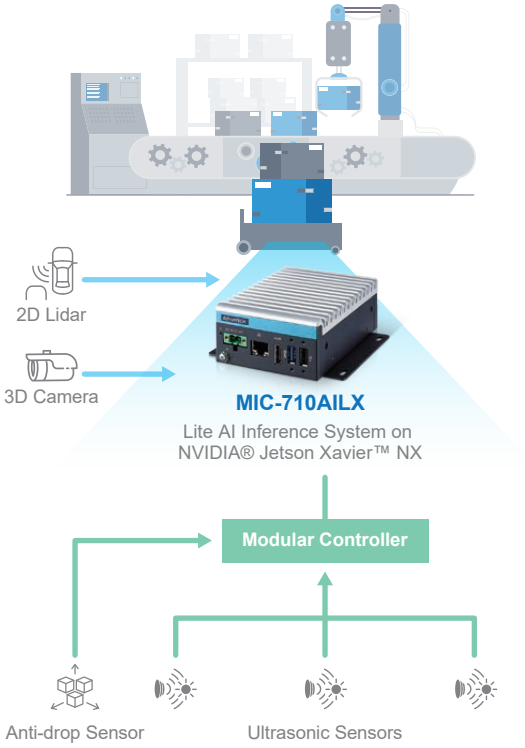
The 3D vision-guided robot provides users with an economical and flexible charging option that turns “cars looking for kiosks" into “kiosks reaching out to cars”. Any parking space can now be turned into a charging kiosk. After a car drives into an unmanned charging station, there is no need for the driver to get out of the vehicle.



Comprehensive Sanitization with the UV Disinfection Robot

- Moving robot replaces humans in disinfection tasks, lowering the risk of infection.
- The UV Disinfection robot saves manpower and achieve complete disinfection for the sites.

During the pandemic, UV disinfection robot is designed to replace humans in disinfection tasks, lowering the risk of infection while keeping the environment safe. This AI-powered autonomous motor robot not only saves manpower but also achieve complete disinfection for the sites. This moving robot combine ultraviolet light for disinfection.



Application Case

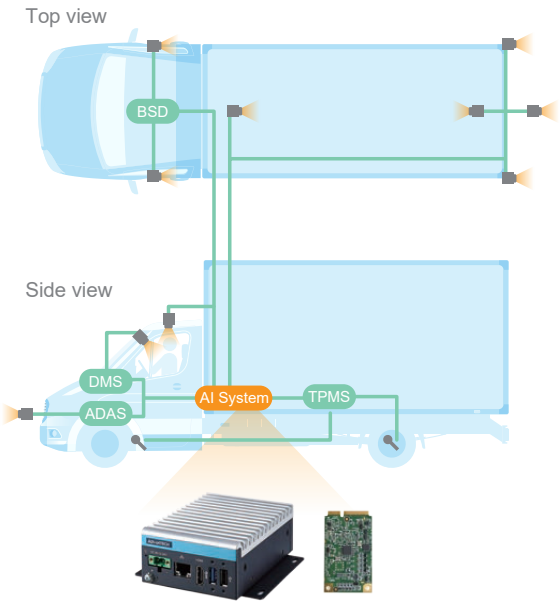
In-Vehicle & AGV

AI Monitoring System Improves Fleet & Driver Safety

- AI improve efficiency and safety on fleet management by monitoring drivers behavior.
- The systems can help orchestrate actions for better engagement, thus enriching the driving experience.

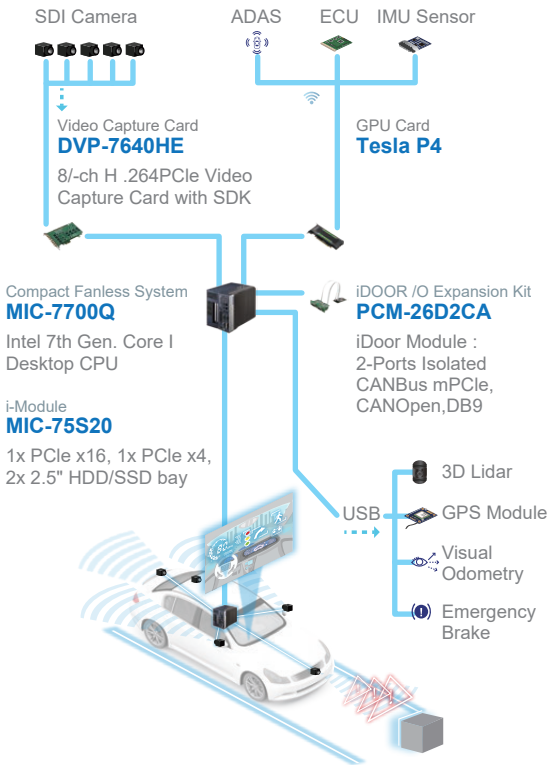
Safety data provides fleet managers with the eyes and ears as a backseat driver. Fleet managers can understand the driving situation without physically being in the vehicles . Managers can understand the strongest and weakest drivers in their fleet by monitoring their employees' behavior of on the road.

AI helps to achieve optimal driving performance, it enhances monitoring accuracy on detecting and predicting driver condition, behavior, and health situation.



MIC-710AIL
Fanless and Ultra-compact AI Inference System Based on NVIDIA® Jetson Nano™

DVP-7036HE
4 Channel 1080P30 TVI / CVI / AHD / CVBS Capture



High-Performance Platform Enables Autonomous Vehicle

- Autonomous cars are capable of sensing the environment and navigating without human input.
- Environment sensors must be supported by high-performance machine vision technology.

Autonomous cars are capable of sensing the environment and navigating without human input. This renowned autonomous vehicle technology company, wanted to achieve next-generation mobility by developing a vehicle equipped with self-driving technology that redefines in-vehicle experiences.

Application Case

Safety & Security

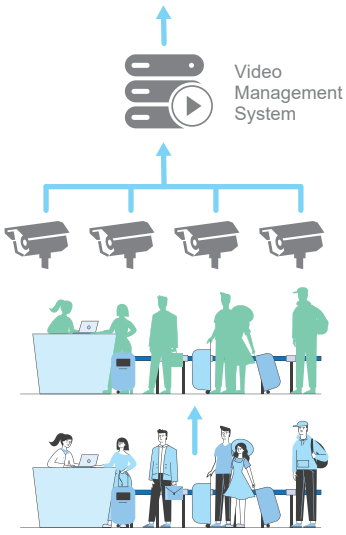
AI Empowered Indoor & Outdoor Facility Safety

- AI can reduce worker injuries in logistic centers, warehouses, and construction sites.
- AI security system can minimize false alerts and send real-time warning alerts as dangerous events arise.

Modern construction sites utilize real-time visual detection systems that analyze 20 to 30 live streams simultaneously. In these systems, visual AI increases the visibility of on-site workers and equipment to improve responsiveness to potentially dangerous situations. Real-time video feeds are available via the cloud to any device with a screen. To avoid tragedies or accidents, real-time alerts are sent to screens. By using EKI-2527PAI switches to expand MIC-730IVA this system can receive 10 ~ 20 video streams.

MIC-770V2+MIC-75M20

Compact System with NVIDIA® RTX 2000Ada Qualification iModule



Making Travel Safe and Stress-free with A Smart Anonymization System

- Improve the safety of passengers without the concerns of surveillance video footage.
- Smart anonymization system anonymizes real-time data and provides useful insights from the video data.

Some regions and local authorities, such as the European authority, prohibit the use of surveillance video footage. Such solutions affect legal compliance with the health and safety regulations, even affect the efficiency of the current security system on real-time asset monitoring, especially during the pandemic.
An alternative technological solution entails a smart anonymization surveillance system that use AI to anonymize real-time data and provides useful insights from the video data for airport management.

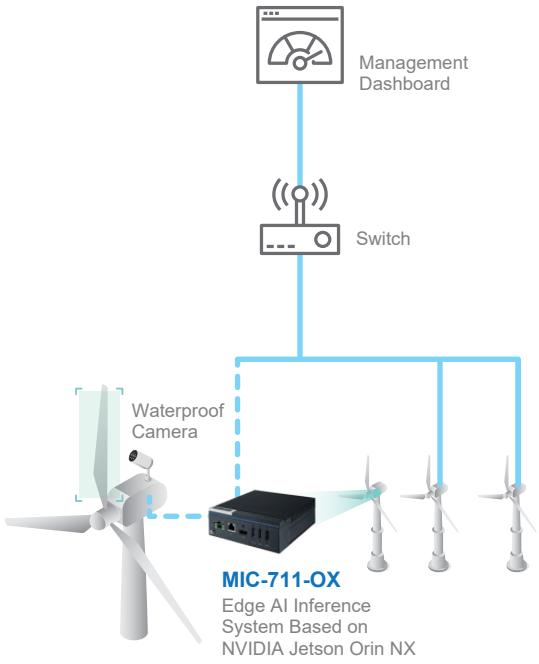
Application Case

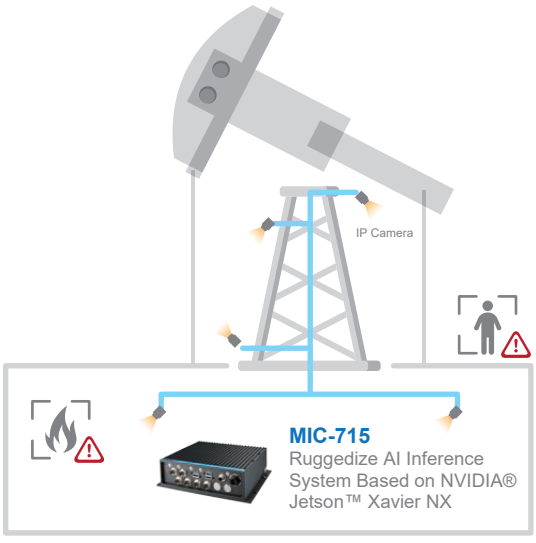
Energy & Environment

AI Predict Maintenance for Wind Turbine Monitoring

- Utilizes AI image monitoring to provide real-time images of various parts of the blades through camera installation.
- Image data is inputted in real-time into the AI system, which issues rapid alarms for issues like ice accretion, cracks, and fractures.

Chinese wind turbine equipment manufacturers have developed highly accurate AI models. The precision of ice accretion detection is over 95%, crack detection accuracy exceeds 95%, and lightning strike recognition accuracy surpasses 80%. Once an issue is detected, the AI inference system immediately issues a warning for prompt maintenance. The AI visual inspection system is compact, allowing customers to directly install it in existing wind power equipment to optimize wind turbine efficiency without the substantial costs deriving from purchase of new large-scale equipment.





Underground

AI Empowered Security and Safety for Oil Drilling

- AI inspection can detect the danger on site in real-time.
- Oil drilling no longer relays on human for on-site security, AI minimizes the labor number working in danger.

According to the law, employees are entitled to work in a safe workplace and under conditions that do not pose a risk of serious harm, regardless of location. Nevertheless, working on an oil rig is working one of the most dangerous jobs out there.
By using AI inspection on oil drilling, AI detects the dangerous behavior and situation in real-time, which helps prevent the accident. Also, some of the security jobs on site and be replaced by AI that greatly reduces the labor exposure to the danger.

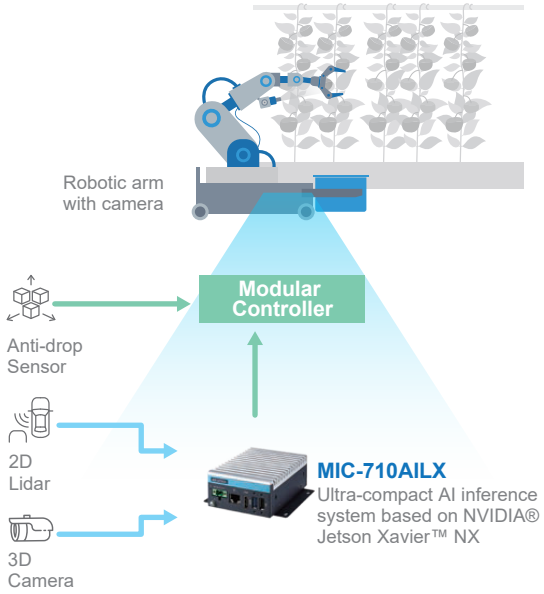
Application Case

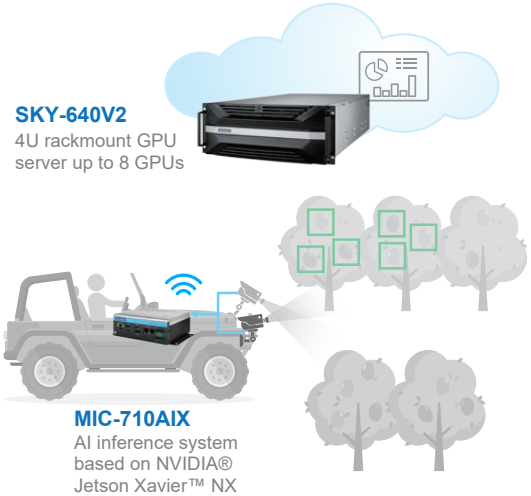
Smart Agriculture

Maximizing the Efficiency of Agricultural Robots

- AI and robotics technology offer a potential solution to the labor shortage problem in agriculture.
- AI-driven interface system can improve productivity by identifying mature fruit precisely for efficient picking.

The agriculture industry is facing a decline in fruit-picking capacity due to an aging rural population, but technology such as robotics and AI are offering a solution. Harvesting robots equipped with AI models and image processing can identify mature fruit and collect them using a robotic arm, resulting in efficient and accurate fruit picking. The use of these robots addresses the declining capacity of the aging rural population while also increasing efficiency and reducing production costs.





An AI Powered Fruit Prediction System for Optimal Harvest Management

- Using AI vision to measures the growth, maturity, and health of each fruit and project a tree's yield.
- AI that helps forecast fruit yields can result in increased profitability and more efficient supply chain management for farmers.

As the demand for fresh produce continues to grow, methods for predicting fruit yields are becoming more efficient and reliable. In addition to increasing productivity and optimizing commercial and operational decisions, farmers are now able to accurately and quickly detect and count fruit using hyperspectral imaging and deep learning algorithms. Using AI to forecast fruit yields can result in increased profitability and more efficient supply chain management for farmers. Smart farming, which is powered by AI, is helping farmers achieve sustainable economic growth.

Application Case

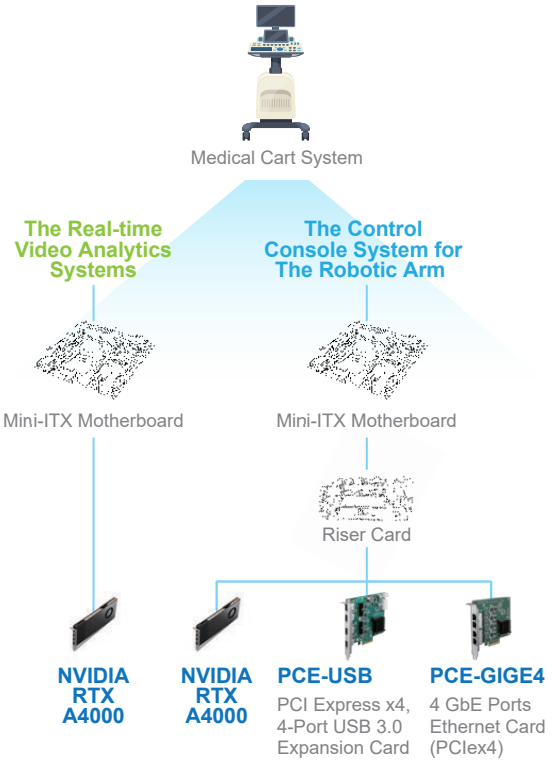
Healthcare

A Giant Step Forward for the Application of AI in Surgery

- AI has the potential to improve surgeon performance, patient outcomes, and doctor–patient relations.
- Build an operating room with AI-driven, real time surgical decision in endoscopy applications.

Advantech USM-500 features an innovative design with multiple expansion options for easy configuration without corresponding drivers, components, or heat dissipation solutions. USM 500 is equipped with two video capture cards that support both 4K and full HD resolution. These cards support the capture of large video files and the execution of AI algorithms and analysis in real time.

Delivers fully annotated and categorized videos of surgical procedures with new insights.



Robotic Assisted Bronchoscopy Platform

- Ensuring stable operation of two high performance computing systems in a single OR kart system.
- The advantage of the RTX A4000, making it suitable for real-time image processing in confined spaces.

Lung cancer is the leading cause of death in the United States and the five-year survival rate for lung cancer is only 23%, largely attributed to challenges in accurate detection, analysis, and surgical intervention. Advantech's premium service solution assists customers in testing their riser cards to ensure compatibility with low-power, high-performance GPU cards, RTX A4000 , ultimately enhancing surgical efficiency and improve surgical precision.

Video Capture Cards & AI Cameras

Video Capture Cards






Model		DVP-7011MUHE	DVP-7012UHEL	DVP-7024UHEL	DVP-7025UHE	DVP-7031UHE	DVP-7111UHE
Video	Compression	SW	SW	SW	SW	SW	SW
	Channels	1	1	2	2	4	1
	Host Interface	M.2 (PCIex4)	PCIe x 4 (Gen2)	PCIe x 4 (Gen2)	PCIe x 4 (Gen2)	PCIe x 8 (Gen2)	PCIe x 4 (Gen2)
	Input Interface	1 x HDMI 2.0	1 x 12G-SDI, 1 x HDMI2.0	2 x HDMI 2.0	2 x 12G-SDI 2 x 6G-SDI 4 x 3G-SDI	4 x HDMI 2.0	1 x HDMI 2.0
	Max. Resolution	4096 x 2160 @60/50/ 30/25/24fps	4096 x 2160 @60/50fps	4096 x 2160 @60/50/ 30/25/24fps	4096 x 2160 @60/50fps	3840 x 2160 @60/50/30/ 25/24fps	4096 x 2160p@ 60/50fps
Watechdog		–	–	–	–	-	Yes
Physical Characteristic	Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)
	Dimensions (W x H x D)	22 x 80 mm M.2 Type M	126.96 x 68.9 mm PCIe Low Profile	139.71 x 68.9 mm PCIe Low Profile	153.95 x 101.01 mm	130.49 x 101.01 mm	120 x 68.9 mm PCIe Low Profile
	Safety	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Operating System		Windows 7/Windows 8/Windows 8.1/Wind0ows 10 Linux 4.8 or Higher (32-bit and 64-bit) Linux ARM NVIDIA Jetson TX2, NANO, AGX Xavier, Xavier NX					

✓: supported, – : not supported, △ : optional

Selection Guide

Video Capture Cards & AI Cameras

AI Cameras

Model		ICAM-520-10W	ICAM-540-3CN	ICAM-540-30W
Processor	NVIDIA Platform	NVIDIA® Jetson Xavier™ NX	NVIDIA® Jetson Orin™ NX	
	AI Performance	21 TOPs	70 TOPS	
Image Sensor	Sensor	SONY MX296, 1.6MP@60fps	SONY IMX334, 8MP@45fps	
	Size, Shutter	1/2.9", Global shutter, Color	1/1.8", Rolling shutter, Color	
Optical	Lens	12mm, 16mm variable focal length	Compatible with c-mount lens	6 mm, 12 mm, 16 mm, 25 mm variable focal length
	LED illumination	8 x PWM white LEDs, Programmable	–	8 x PWM white LEDs, Programmable
Synchronization		Hardware trigger / Software trigger / Free-run		
HW ISP		Color debayering, Sharpness, White balance, CCM correction, Dark noise correction and Brightness		
I/O	Peripheral	1 x USB 3.0 Type C, 1 x RS485	1 x USB 3.0 Type C, 1 x USB 3.0 Type A	
	Digital I/O	1x Trigger in, 2 x Inputs, 2 x Outputs	1x Trigger in, 2 x Inputs, 1 x Outputs	
	Display	1 x HDMI 2.0		
LAN		1 x 10/100/1000 Base-T		
Power Requirements		19~24VDC Max: 18W, Typical 15W		
Dimension (W x H x D)		82 x 121 x 63 mm	78 x 121 x 49 mm	82 x 121 x 63 mm
Software support	OS	Above Ubuntu 18.04, Jetpack 4.6.2	Above Ubuntu 20.04, JetPack 5.1.1	
	SDK/Utiltiy	CAMNavi SDK, Web based camera utility, IP configure tool, NVIDIA DeepStream SDK & example		

✓: supported, – : not supported, △ : optional

Selection Guide

Edge AI Systems

AI Inference Systems




Model		MIC-733-AO	MIC-732-AO	MIC-713-OX/ MIC-713-ON	MIC-711-OX/ MIC-711-ON
Processor	NVIDIA Platform	NVIDIA® Jetson AGX Orin™	NVIDIA® Jetson AGX Orin™	NVIDIA® Jetson Orin™ NX/ Nano	NVIDIA® Jetson Orin™ NX/ Nano
	AI Performance	Up to 275 TOPS	Up to 275 TOPS	Up to 100 TOPS / Up to 40 TOPS	Up to 100 TOPS / Up to 40 TOPS
I/O	Ethernet	4 x 10/100/1000 Mbps (Optional PoE support, IEEE 802.3af/at)	1 x 10/100/1000/ 2500 Mbps 1 x 10GbE	2 x 10/100/1000 Mbps (Optional PoE support, IEEE 802.3af/at)	1 x 10/100/1000 Mbps
	Display	1x HDMI (Max. resolution 3840x2160 @ 60Hz)	1x HDMI (Max. resolution 3840x2160 @ 60Hz)	1x HDMI (Max. resolution 3840x2160 @ 60Hz)	1x HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	Internal: 1 x USB 2.0 External: 2 x USB 2.0, 4 x USB 3.2 Gen 2	Internal: 1 x USB 2.0 (By pin header) External: 3 x USB 3.2 Gen 2, 2 x USB micro B (1 from UART for debug)	External: 6 x USB 3.2 Gen 2	Internal: 1 x USB 2.0 (By pin header) External: 2 x USB 3.2 Gen 2, 1 x USB 2.0
	Digital I/O	4-ch DI, 4-ch DO	–	4-ch DI, 4-ch DO	–
	Power Switch	1 x Power ON/OFF Button	1 x Power ON/OFF Button	–	–
	Serial Port	2 x RS-232/422/485 (On-board pin header)	2 x RS- 232/422/485 (On-board pin header)	2 x RS-232/422/485 (On-board pin header)	–
	CANBus	–	2	1	–
	OTG USB	1 x Micro USB	–	1 x Micro USB	1 x Micro USB
Expansion	iModule (Optional)	1 x PCIe x8 (MIC-75M10-00A2)	–	–	–
	PCIe	–	–	–	–
	Mini PCIe	2 x mPCIe (Signal: PCIe + USB)	1 x mPCIe (Signal: PCIe+USB)	1 x mPCIe (Signal: PCIe + USB)	1 x mPCIe (Signal: PCIe + USB)
	SIM	2 x Nano SIM slots	2 x Nano SIM slots	2 x Nano SIM slot	2 x Nano SIM slots
	M.2	1 x M.2 3052 (B-Key, Signal: USB)	1 x M.2 3052 (B-Key, Signal: USB 3.0+USB 2.0) 1 x M.2 2230 (E-Key, Signal: PCIe+USB2.0)	1 x M.2 3052 (B-Key, Signal: USB)	1 x M.2 3052 (B-key, Signal: USB)
	TPM (Optional)	1 x TPM 2.0	–	1 x TPM 2.0	1 x TPM 2.0
	GMSL (Optional)	2-ch GMSL2.0 with FAKRA connectors	8-ch GMSL3.0/2.0 with FAKRA connectors	2-ch GMSL2.0 with FAKRA connectors	–
	iDoor (Optional)	1 x iDoor bracket reserve	1 x iDoor bracket reserve	1 x iDoor bracket reserve	–
Storage	Storage	1 x Micro SD slot 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)	1 x M.2 2280 (B/M-Key, NVMe, Signal: PCIe x4)	1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4), 1 x Micro SD	1 x Micro SD slot 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)
Power	Mode	AT/ATX (Default AT)	AT/ATX (Default AT)	AT	AT
	Input Voltage	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}
Mechanic	Dimension (W x H x D)	192 x 230 x 87 mm	192 x 203 x 90 mm	194.8 x 174.3 x 65.85 mm	130 x 130 x 46 mm

✓: supported, – : not supported, △ : optional

Selection Guide

Edge AI Systems

AI Inference Systems

Model		MIC-730AI	MIC-710AIX/ MIC-710AIT/ MIC-710AI	MIC-710AILX/ MIC-710AILT/ MIC-710AIL
Processor	NVIDIA Platform	NVIDIA® Jetson AGX Xavier™	NVIDIA® Jetson Xavier™ NX/ NVIDIA® Jetson™ TX2 NX/ NVIDIA® Jetson Nano™	NVIDIA® Jetson Xavier™ NX/ NVIDIA® Jetson™ TX2 NX/ NVIDIA® Jetson Nano™
	AI Performance	Up to 32 TOPS	21 TOPs/ 1.33 TFLOPs/ 472 GFLOPs	21 TOPs/ 1.33 TFLOPs/ 472 GFLOPs
I/O	Ethernet	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
	Display	1x HDMI (Max. resolution 3840x2160 @ 60Hz)	1x HDMI (Max. resolution 3840x2160 @ 60Hz)	1x HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	Internal: 1 x USB 2.0 External: 2 x USB 2.0, 2 x USB 3.0	Internal: 1 x USB 2.0 External: 1 x USB 2.0, 1 x USB 3.0	Internal: 1 x USB 2.0 External: 1 x USB 2.0, 1 x USB 3.0
	Digital I/O	8-ch DI, 8-ch DO	4-ch DI, 4-ch DO	–
	Power Switch	1 x Power ON/OFF Button	–	–
	Serial Port	2 x RS-232/422/485	Internal: 1 x RS-232 pin header External: 1 x RS-232/RS-422/RS-485	1 x RS-232 pin header
	CANBus	–	–	–
	OTG USB	1 x Micro USB	1 x Micro USB	1 x Micro USB
Expansion	iModule (Optional)	1 x PCIe x8 (MIC-75M10-00A1) 1 x PCIe x8 + 1 x PCIex4 (MIC-75M20-00C1)	–	–
	PCIe	–	–	–
	Mini PCIe	1 x mPCIe (Signal: PCIe+USB)	1 x mPCIe (Signal: PCIe+USB)	1 x mPCIe (Signal: PCIe+USB)
	SIM	1 x Nano SIM slots	1 x Nano SIM slots	1 x Nano SIM slots
	M.2	1 x M.2 2280 (M-Key, Signal: PCIe x2)	–	–
	TPM (Optional)	–	–	–
	GMSL (Optional)	–	–	–
	iDoor (Optional)	1 x iDoor space reserved	1 x iDoor space reserved	–
Storage	Storage	1 x MicroSD 1 x 2.5" HDD/SSD 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x2)	1 x MicroSD 1 x M.2 2280 (M key, signal: SATA3) 1 x SATA3 connector	1 x MicroSD 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)
Power	Mode	AT/ATX	AT	AT
	Input Voltage	9 ~ 36 V_{DC}	19 ~ 24 V_{DC}	12 ~ 24 V_{DC}
Mechanic	Dimension (W x H x D)	192 x 230 x 87 mm	147 x 118 x 52 mm	85 x 118 x 45 mm

✓: supported, – : not supported, △ : optional

Edge AI Systems

AI Developer Kits and AI Solution Kits




Model		MIC-732D-AO	MIC-713S-OX/ MIC-713S-ON	MIC-711D-OX/ MIC-711D-ON	MIC-710AILX-DVA/ MIC-710AIL-DVA
Processor	NVIDIA Platform	NVIDIA® Jetson AGX Orin™	NVIDIA® Jetson Orin™ NX/ Nano	NVIDIA® Jetson Orin™ NX/ Nano	NVIDIA® Jetson Xavier™ NX/ NVIDIA® Jetson Nano™
	AI Performance	Up to 275 TOPS	Up to 100 TOPS / Up to 40 TOPS	Up to 100 TOPS / Up to 40 TOPS	21 TOPs/ 472 GFLOPs
I/O	Ethernet	1 x 10/100/1000/ 2500 Mbps 1 x 10GbE	5 x 10/100/1000 Mbps (Optional PoE support, IEEE 802.3af/at)	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
	Display	1x HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	Internal: 1 x USB 2.0 (By pin header) External: 3 x USB 3.2 Gen 2, 2 x USB micro B (1 from UART for debug)	External: 6 x USB 3.2 Gen 1	External: 2 x USB 3.2 Gen 2, 1 x USB 2.0 Internal: 1 x USB 2.0 (By pin header)	Internal: 1 x USB 2.0 External: 1 x USB 2.0, 1 x USB 3.0
	Digital I/O	–	4-ch DI, 4-ch DO	–	–
	Power Switch	1 x Power ON/OFF Button	–	–	–
	Serial Port	2 x RS- 232/422/485 (On-board pin header)	2 x RS-232/422/485 (On-board pin header)	–	1 x RS-232 pin header
	CANBus	2	1	–	–
	OTG USB	–	1 x Micro USB	1 x Micro USB	1 x Micro USB
Expansion	iModule (Optional)	–	–	–	–
	PCIe	–	1 x PCIex4 slot (PCIex4 link, Gen 4)	–	–
	Mini PCIe	1 x mPCIe (Signal: PCIe+USB)	1 x mPCIe (Signal: PCIe+USB)	1 x mPCIe (Signal: PCIe+USB)	1 x mPCIe (Signal: PCIe+USB)
	SIM	2 x Nano SIM slots	2 x Nano SIM slots	2 x Nano SIM slots	1 x Nano SIM slots
	M.2	1 x M.2 3052 (B-Key, Signal: USB 3.0+USB 2.0) 1 x M.2 2230 (E-Key, Signal: PCIe+USB2.0)	1 x M.2 3052 (B-key, Signal: USB)	1 x M.2 3052 (B-key, Signal: USB)	–
	TPM (Optional)	–	1 x TPM 2.0	1 x TPM 2.0	–
	GMSL (Optional)	8-ch GMSL3.0/2.0 with FAKRA connectors	2-ch GMSL2.0 with FAKRA connectors	2-ch GMSL2.0 with FAKRA connectors	–
	iDoor (Optional)	1 x iDoor bracket reserve	–	–	–
Storage	Storage	1 x M.2 2280 (B/M-Key, NVMe, Signal: PCIe x4)	1 x Micro SD 1 x M.2 2280 (Signal: PCIe x1, Gen 4)	1 x Micro SD slot 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)	1 x MicroSD 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)
Power	Mode	AT/ATX (Default AT)	AT	AT	AT
	Input Voltage	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	12 V_{DC}	12 ~ 24 V_{DC}
Mechanic	Dimension (W x H x D)	191 x 209 x 112 mm	180 x 171 x 68.12 mm	125 x 125 x 51 mm	116 x 85 x 54.7 mm/ 116 x 82 x 30 mm

✓: supported, – : not supported, △ : optional

Selection Guide

Edge AI Systems

Rugged AI Systems & AI NVRs

Model		MIC-715-OX	MIC-715	MIC-717-OX/ MIC-717-ON	MIC-730IVA	MIC-710IVX MIC-710IVA
Processor	NVIDIA Platform	NVIDIA® Jetson Orin™ NX	NVIDIA® Jetson Xavier™ NX	NVIDIA® Jetson Orin™ NX/ Nano	NVIDIA® Jetson AGX Xavier™	NVIDIA® Jetson Xavier™ NX/ NVIDIA® Jetson Nano™
	AI Performance	Up to 100 TOPS	Up to 21 TOPS	Up to 100 TOPS / Up to 40 TOPS	Up to 32 TOPS	21 TOPs/ 472 GFLOPs
I/O	Ethernet	6 x 10/100/1000 Mbps (4 x PoE support, IEEE 802.3af) in M12 X-coded, 8-pin female connector	6 x 10/100/ 1000 Mbps (4 x PoE support, IEEE 802.3af) in M12 X-coded, 8-pin female connector	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	External: 2 x USB 3.0	External: 2 x USB 3.0 (waterproof connector)	1 x USB 3.0 ((Internally used for recovery mode) 2 x USB 2.0	External: 2 x USB 3.0 (Type-A) Internal: 1 x USB 2.0 (pin header) 1 x USB 2.0 (Type-A)	External: 1 x USB 3.0, 1 x USB 2.0 (Type-A)
	Digital I/O	–	–	4-ch DI, 4-ch DO	4-ch DI, 4-ch DO	4-ch DI, 4-ch DO
	Power Switch	–	–	–	1 x Power ON/OFF Switch	1 x Power ON/OFF Switch
	Serial Port	–	–	8 x RJ-45 (10/100 Mbps + PoE / total power: 123.2 W)	8 x PoE (IEEE 802.3af); 2 x RS232/422/485	8 x PoE (IEEE 802.3af); 1 x RS485
	CANBus	2 (Interface: M12 A-coded, 5-pin male)	2 (Interface: M12 A-coded, 5-pin male)	–	–	–
	OTG USB	1 x Micro USB	1 x Micro USB	–	1 x Micro USB	1 x Micro USB
Expansion	iModule (Optional)	–	–	–	–	–
	PCIe	–	–	–	–	–
	Mini PCIe	2 x mPCIe (signal: PCIe + USB)	2 x mPCIe (Signal: PCIe+USB)	–	1 x mPCIe (Signal: PCIe+USB)	–
	SIM	2 x Nano SIM slots	2 x Nano SIM slots	1 x Nano SIM slot	1 x Nano SIM slot	–
	M.2	1 x M.2 3052 (B-Key, signal: PCIe + USB)	1 x M.2 3052 (B-Key, Signal: USB)	1 x M.2 3042 (B-Key, signal: USB)	–	–
	TPM (Optional)	–	–	1 x TPM 2.0	–	–
	GMSL (Optional)	–	–	–	–	–
	iDoor (Optional)	–	–	–	–	–
Storage	Storage	1 x M.2 2280 M-Key (NVMe, PCIe x1)	1 x Micro SD 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)	1 x M.2 2280 (M-Key, NVMe, signal: PCIe x4); 1 x 3.5 HDD or 1 x 2.5 SSD	2 x 3.5 or 2 x 2.5 SATAIII (6Gb/s) drives	2 x 3.5 or 2 x 2.5 SATAIII (6Gb/s) drives
Power	Mode	AT/ATX (M16 ,6 pin male, Default AT)	AT/ATX (M16 ,6 pin male, Default AT)	C13, AT/ATX (Default AT)	C13, AT/ATX (Default AT)	C13, 250W ATX Power supply, AT/ATX (Default AT)
	Input Voltage	12/24V_{DC} (12-6A) with ignition	12/24 V_{DC}, 16-4A	54 V_{DC}, 4.26 A	100 ~ 240 V_{AC}, 3.5A	100 ~ 240 V_{AC}, 3.5A
Mechanic	Dimension (W x H x D)	275 x 220 x 80 mm	275 x 220 x 80 mm	254.5 x 195.0 x 44.45 mm	40 x 40 x 20 mm	40 x 40 x 20 mm

✓: supported, – : not supported, △ : optional

Edge AI Systems

IGX Systems

Model		MIC-735M-IO	MIC-735E-IO	MIC-735I-IO
Processor	NVIDIA Platform	NVIDIA® IGX Orin™		
	AI Performance	Up to 248 TOPS		
Controller	Safety MCU (sMCU)	Infineon Aurix TC397		
	BMC (Baseboard Management Controller) Module	Aspeed AST2600 Microchip ERoT		
I/O	PCIe	2 x PCIe Gen5 (from ConnectX-7 PCIe switch) 1 x PCIe x8 lanes within 16x physical connector 1 x PCIe x16 lanes within 16x physical connector		
	USB	1 x USB 3.2 Gen2 Type-C connectors 8 x USB 3.2 Gen2 Type-A connectors	1 x USB 3.2 Gen2 Type-C connectors 4 x USB 3.2 Gen2 Type-A connectors (Additional 4 x 3.2 Gen2 Type-A pin headers)	1 x USB 3.2 Gen2 Type-C connectors 4 x USB 3.2 Gen2 Type-A connectors (Additional 4 x 3.2 Gen2 Type-A pin headers)
	Ethernet	2 x RJ-45 (up to 1 GbE) 2 x QSFP ports (up to 100GB per port/up to 25 Gb/s per channel) supported by ConnectX-7 chipset		
	Display	One DisplayPort 1.4a output		
	Audio (AU)	Two 3.5mm AU jack (Mic In, Line out)		
Wireless	Wi-Fi	802.11 a/b/g/n/ac BT 5.0		
Expansion	PCIe	1 x PCIe Gen5 double width slot (x16) for optional NVIDIA RTX A6000 discrete GPU card 1 x PCIe Gen5 single width slot (x8)		
Storage	Storage	1 x M.2 (M-Key 2280, NVMe, Signal: PCIe Gen4 x4)		
Power	Mode	700W PS2 Single power supply (medical grade)	Single Flex ATX 850W Power supply	500W / 1200W Single power supply (Select 1200W if RTX A6000 combined)
Mechanic	Dimension (W x H x D)	192 x 376.7 x 338.5 mm	438 x 177 x 450 mm	267.1 x 458 x 500 mm

✓: supported, – : not supported, △ : optional

Selection Guide

GPU Industrial PCs

Compact Din-rail IPC

Model	UNO-148 Series + UNO-MXM-CB01
Supported GPU Model	MXM A500/A1000/A2000
CUDA Cores	Up to 2560
FP32	N/A
GPU Power Budget	Up to 35W
Operating Temperature	0 ~ 55 °C with 0.7 m/s air flow
Function	1 x PCIe x4 slot for I/O
System Power	Up to 90W (under validation)
Recommended Power Supply	96PSA-A120W24T2-4
Compatible GPU Card Dimension	MXM Type A
System Fan	Embedded (6000 RPM/ 43.5 CFM)
Dimension (W x H x D)	108.5 x 140 x 200 mm

Modular IPC

Model	MIC-770 series + MIC-75GF10
Supported GPU Model	MXM RTX3000/A2000/T1000/A500
CUDA Cores	Up to 2560
FP32	Up to 8.25 TFLOPS
GPU Power Budget	Up to 80W
Operating Temperature	-10~50 °C (T1000) -10~40 °C (RTX3000/A2000)
Function	1 x PCIe x4 slot for I/O, frame grabber 2 x SSD/HDD (swappable)
System Power	Up to 230W including GPU
Recommended Power Supply	(230W) 96PSA-A230W24P4-3
Compatible GPU Card Dimension	MXM Type A/B
System Fan	Fanelss
Dimension (W x H x D)	190 x 192 x 230 mm

Modular IPCs

Model	MIC-770 series + MIC-75M20	MIC-770 series + MIC-75G20	MIC-770 series + MIC-75G30
Supported GPU Model	Tesla A2 / T4 / L4 RTX T400 4GB/T1000 8GB RTX A2000 12GB/4000 SFF ADA	NVIDIA A4000/4500/5000/5500/6000/ 4000 Ada/5000 Ada/6000 Ada	RTX A4000/4500/5000/5500/6000/ 4000 Ada/5000 Ada/6000 Ada
CUDA Cores	Up to 7,680	Up to 18,176	Up to 18,176 x2
FP32	Up to 30.3 TFLOPS	Up to 91.1 TFLOPS	Up to 91.1 TFLOPS x2
GPU Power Budget	Up to 80W	Up to 350W	Up to 700W (dual 350W)
Operating Temperature	0~40°C with air flow	0~35°C with air flow	0~35°C with air flow
Function	1 x PCIe x4 slot for I/O, frame grabber	1 x PCIe x4 slot for I/O, frame grabber 2 x SSD/HDD (swappable)	1 x PCIe x4 slot for I/O, frame grabber 2 x SSD/HDD (swappable)
System Power	Up to 230W including GPU	Up to 448W including GPU	Up to 755W including GPU
Recommended Power Supply	(230W) 96PSA-A230W24P4-3	(480W) 96PSD-A480W24-MS (Peak power 720W, 3 Sec.) (PSU Cable) 1700029474-01 PSU 1.5M (Power cord) 1700029720-01 USA AC Conn.	(1000W) XMIC-HRPG-1000-24 (PSU Cable) 1700031413-01 PSU 1M (Power cord) 1700029720-01 USA AC Conn.
Compatible GPU Card Dimension	Max card length: 170 mm Max card height: 125 mm Max card thickness: 41 mm (2-slot)	Max card length: 310 mm Max card height: 130 mm Max card thickness: 59 mm (2.75-slot)	Max card length: 310 mm Max card height: 130 mm Max card thickness: 62 mm (3-slot)
System Fan	Add 98R1752000E Add 98R1752002E for A2 & T4 (23,000RPM, 31.6 CFM, 62 dB)	Embedded (2200 RPM, 82 CFM, 36.5 dB)	Embedded (2200 RPM, 82 CFM, 36.5 dB)
Dimension (W x H x D)	127 x 192 x 230 mm	207 x 192 x 385 mm	280 x 192 x 385 mm

Selection Guide

GPU Industrial PCs

Compact IPCs



Model	IPC-220	IPC-240	IPC-320
Supported GPU model	NVIDIA T400 4GB/T1000 8GB RTX A2000 12GB/4000 SFF ADA		
Recommended Power Supply	19~24 DC		Default with a 250W power supply
Compatible GPU Card Dimension	Max. card length: 179 mm Max. card height: 111 mm		Max. card length: 170 mm Max. card height: 69 mm
Dimension (W x H x D)	155 x 150 x 230 mm	195 x 150 x 230 mm	95 x 270 x 300 mm

Wall-mount IPC

Model	IPC-730
Supported GPU model	All NVIDIA RTX Series
Recommended Power Supply	ATX 3.0 850W ATX 3.0 1200W
Compatible GPU Card Dimension	Max. card length: 357 mm Max. card height: 180 mm
Dimension (W x H x D)	365 x 206 x 450 mm

Wall-mount & Rackmount IPCs




Model	IPC-610 series ACP-4000 series ACP-4340 series	ACP-2020G-85Z	IPC-7130 series	IPC-7132 series
Supported GPU model	All NVIDIA RTX Series	All NVIDIA RTX Series	All NVIDIA RTX Series	All NVIDIA RTX Series
Recommended Power Supply	(850W) 96PS-A850WPS2G (700W) PS8-700ATX-BB For RTX 4080 and 4090, please select 850W↑	Default with an 850W power supply	(850W) 96PS-A850WPS2G (700W) PS8-700ATX-BB For RTX 4080 and 4090, please select 850W↑	(850W) 96PS-A850WPS2G (700W) PS8-700ATX-BB For RTX 4080 and 4090, please select 850W↑
Compatible GPU Card Dimension	Max. card length: FL (340 mm) Max. card height: 135 mm	Max. card length: FL (340 mm) Max. card height: FH (111.15 mm)	Max. card length: FL (340 mm) Max. card height: 135 mm	Max. card length: FL (340 mm) Max. card height: 135 mm
Dimension (W x H x D)	82 x 177 x 479 mm (19" x 7.0" x 18.8")	482 x 88 x 445 mm (18.96" x 3.46" x 17.52")	200 x 320 x 480 mm (7.9" x 12.6" x 18.9")	200 x 330 x 430 mm (7.9" x 13" x 16.9")

Selection Guide

Industrial Edge AI Servers

GPU Servers

Model		SKY-602E3	SKY-6100	SKY-620V3
Form Factor		Tower	1U - Rackmount	2U - Rackmount
Processor System	Processor	AMD® EPYC™ Embedded 8004 series server processors	Dual 2nd Gen Intel® Xeon® Scalable processors, TDP up to 140W	Dual 5th/4th Gen Intel® Xeon® Scalable processors
	Chipset	–	Intel® C622	Intel® C741
Memory	Memory Type	6 x DDR5-4800 MHz ECC RDIMM Up to 576GB	8 x DDR4 2933 MHz ECC/RDIMM/LRDIMM Up to 1TB	16 x DDR5 4800 MHz RDIMM Up to 2TB
Networking	Controller	Intel X710-AT2 (dual 10GbE port)	Intel® X557 10G Base-T + 1 x Intel® I210 Gigabit Ethernet	Intel® X710 10G Base-T + 2 x Intel® I226 2.5Gigabit Ethernet + 1 x Realtek 8211F (dedicated IPMI)
	Port	3 x RJ-45	2 x 10GbE RJ-45 1 x 1GbE RJ-45	2 x 10GbE RJ-45 2 x 2.5GbE RJ-45 1 x RJ-45 for dedicated IPMI
Expansion	Expansion Slots	2 x PCIe 5.0 x16 (FH10.5", dual slots) 2 x PCIe 5.0 x16 (FH, 10.5", dual slots) or 4 x PCIe 5.0 x8 (FH, 10.5", single slot)	5 x PCIe 3.0 x16 (FHHL) 1 x PCIe 3.0 x16 (FH, 10.5", dual slots) + 1 x PCIe 3.0 x16 (FHHL)	4 x PCIe 5.0 x16 (FH, 10.5", dual slots) 2 x PCIe 5.0 x16 (FH, 10.5", dual slots) or 4 x PCIe 5.0 x8 (FH, 10.5") 2 x PCIe 5.0 x8 (FHHL)
Storage	2.5" HDD/SSD	2 x 2.5" internal SATA drive bays	2 x 2.5" hot-swappable drives, 2 x SAS/SATA drive bays	8 x hot-swappable 2.5" SAS/SATA/NVMe drive bays
	3.5" HDD	–	–	–
	M.2 SSD	2 x M.2 2280 slot (PCIe/SATA)	1 x M.2 2242 slot (SATA)	2 x M.2 2280/22110 slots (PCIe/SATA)
I/O Connectivity	Front	–	2 x USB 2.0	2 x USB 2.0
	Rear	2 x USB 3.2 Gen 1 1 x VGA	2 x USB 3.2 Gen 1 1 x VGA	2 x USB 3.2 Gen 1 1 x serial port 1 x VGA
	LED Indicator	Power, LAN, SYS_LED	Power, LAN, SYS_LED	Power, LAN, SYS_LED
	Button	Power, Reset	Power, Reset	Power, Reset
Power Supply		800W 1+0 single power supply or 800W 1+1 redundant power supply	1200W 1+1 platinum level redundant power supply	2700W 1+1 platinum level redundant power supply
Environment	Operating	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 35 °C (32 ~ 95 °F)	0 ~ 35 °C (32 ~ 95 °F)
	Non-Operating	-40 ~ 60 °C (-40 ~ 140 °F)	-40 ~ 60 °C (-40 ~ 140 °F)	-20 ~ 60 °C (-4 ~ 140 °F)
Cooling		1 x 12025 fan or 4 x 8038 fan	6 x 4056 fan + 1 x 4028 fan + 1 x 4028 external fan (optional)	2 x 8038 fan + 4 x 6038 fan
Physical Charasteristics	Dimension (W x H x D)	380 x 340 x 570 mm (14.96" x 13.4" x 22.4")	438 x 44 x 650 mm (17.2" x 1.7" x 25.6")	438 x 88 x 760 mm (17.24" x 3.46" x 29.92")
	Weight (N.W.)	16 kg	16 kg	24 kg
OS Support		Windows Server, Linux (CentOS, RedHat, Canonical® Ubuntu)	Windows Server, Linux (CentOS, RedHat, Canonical® Ubuntu)	Windows Server, Linux (CentOS, RedHat, Canonical® Ubuntu)
Platform Management		ASPEED AST2600 BMC IPMI 2.0, KVM with shared NIC	ASPEED AST2500 BMC IPMI 2.0, KVM with shared NIC	ASPEED AST2600 BMC IPMI 2.0, KVM with dedicated NIC
Security		TPM 2.0	TPM 2.0, chassis intrusion, bezel Lock, HDD tray lock	TPM 2.0, chassis intrusion, bezel lock

– : not supported

Selection Guide

Industrial Edge AI Servers

GPU Servers

Model		SKY-6200	SKY-6400	SKY-640V2
Form Factor		2U - Rackmount	4U - Rackmount	4U - Rackmount
Processor System	Processor	Dual 2nd Gen Intel® Xeon® Scalable processors, TDP up to 140W	Dual 2nd Gen Intel® Xeon® Scalable processors, TDP up to 205W	Dual 3rd Gen Intel® Xeon® Scalable processors, TDP up to 205W
	Chipset	Intel® C622	Intel® C621	Intel® C621A
Memory	Memory Type	24 x DDR4 2933 MHz ECC/RDIMM/LRDIMM Up to 3TB	12 x DDR4 2933 MHz ECC/RDIMM/LRDIMM Up to 1.5TB	16 x DDR4 3200 MHz ECC/RDIMM/LRDIMM up to 2TB
Networking	Controller	Intel® X557 10G Base-T + 2 x Intel® I210 Gigabit Ethernet	2 x Intel® I210 Gigabit Ethernet	Intel® X550 10G Base-T + 2 x Intel® I210 Gigabit Ethernet + 1 x Realtek 8201F (dedicated IPMI)
	Port	2 x 10GbE RJ-45 2 x 1GbE RJ-45	2 x 1GbE RJ-45	2 x 10GbE RJ-45 2 x 1GbE RJ-45 1 x RJ-45 for dedicated IPMI
Expansion	Expansion Slots	4 x PCIe 3.0 x16 (FH, 10.5", dual slots) or 8 x PCIe 3.0 x8 (FH, 10.5") 1 x PCIe 3.0 x8 (FHHL)	4 x PCIe 3.0 x16 (FH, 10.5", dual slots) 1 x PCIe 3.0 x8 (FHHL) 1 x PCIe 3.0 x4 (FH, 10.5")	4 x PCIe 4.0 x16 (FH, 10.5", dual slots) 3 x PCIe 4.0 x8 (FHHL)
Storage	2.5" HDD/SSD	8 x hot-swappable 2.5" SAS/SATA drive bays	2 x 2.5" drives (internal)	2 x 2.5" drives (internal)
	3.5" HDD	–	8 x 2.5/3.5" hot-swappable SAS/ SATA drive bays	8 x 2.5/3.5" hot-swappable SAS/SATA drive bays
	M.2 SSD	1 x M.2 2280 slot (PCIe/SATA)	2 x M.2 2242 slots (SATA)	2 x M.2 2280 (PCIe/SATA) on board
I/O Connectivity	Front	Optional ODD 2 x USB 2.0	2 x USB 3.2 Gen1	Optional ODD 2 x USB 3.2 Gen1
	Rear	4 x USB 3.2 Gen 1 1 x VGA	4 x USB 3.2 Gen 1 1 x serial port 1 x VGA	2 x USB 3.2 Gen1 1 x Serial port 1 x VGA
	LED Indicator	Power, LAN, SYS_LED	Power, LAN, HDD, SYS_LED	Power, LAN, HDD, SYS_LED
	Button	Power, Reset	Power, Reset	Power, Reset, Alarm Reset
Power Supply		2000W 1+1 platinum level redundant power supply	2000W 1+1 platinum level redundant power supply	2000W 1+1 platinum level redundant power supply
Environment	Operating	0 ~ 35 °C (32 ~ 95 °F)	0 ~ 35 °C (32 ~ 85 °F) 0 ~ 30 °C (32 ~ 85.9 °F) with NVIDIA Tesla P100/V100)	0 ~ 35 °C (32 ~ 85 °F) with NVIDIA A100/A30
	Non-Operating	-20 ~ 60 °C (-4 ~ 140 °F)	-20 ~ 60 °C (-4 ~ 140 °F)	-20 ~ 60 °C (-4 ~ 140 °F)
Cooling		6 x 8038 fan	1 x 3000 fan + 1 x 4028 fan +	2 x CPU fans + 3 x 12038 fans + 2 x 8038 external fans (optional)
Physical Charasteristics	Dimension (W x H x D)	438 x 88 x 760 mm (17.24" x 3.46" x 29.92")	435 x 177 x 673 mm (17.12" x 6.96" x 26.49")	435 x 176 x 660 mm (17.12" x 6.9" x 25.9")
	Weight (N.W.)	24 kg	38 kg	34 kg
OS Support		Windows Server, Linux (CentOS, RedHat, Canonical® Ubuntu)	Windows Server, Linux (CentOS, RedHat, Canonical® Ubuntu)	Windows Server, Linux (CentOS, RedHat, Canonical® Ubuntu)
Platform Management		ASPEED AST2500 BMC IPMI 2.0, KVM with shared NIC	ASPEED AST2500 BMC PMI 2.0, KVM with shared NIC LAN SUSI API, WISE-PaaS/RMM	ASPEED AST2500 BMC IPMI 2.0, KVM with dedicated LAN SUSI API, WISE-PaaS/RMM
Security		TPM 2.0, chassis intrusion, bezel lock, HDD tray lock	TPM 2.0, chassis intrusion, bezel lock, HDD tray lock	TPM 2.0, chassis intrusion, bezel Lock, HDD tray lock

– : not supported

Selection Guide

Industrial Edge AI Servers

Edge Accelerator Servers

Model		HPC-6120+ASMB-610V3	HPC-6240+ASMB-622V3	HPC-7420+ASMB-977
Form Factor		1U - Rackmount	2U - Rackmount	4U - Rackmount
Processor System	Processor	Intel® Core™ processors (14th/13th/12th gen)	5th/4th Gen Intel® Xeon® Scalable processors	Dual 5th/4th Gen Intel® Xeon® Scalable processors
	Chipset	Intel® W680	Intel® C741	Intel® C741
Memory	Memory Type	4 x DDR5 up to 4400 MHz ECC/non-ECC UDIMM, up to 128GB	16 x DDR5 up to 4800 MHz RDIMM, up to 1TB, Intel® Optane DCPMM	16 x DDR5 up to 4800 MHz RDIMM, up to 2TB, Intel® Optane DCPMM
Networking	Controller	1 x Intel® I350AM4	1 x Intel® I350AM4	2 x Intel® I210AT 1 x Intel® X710
	Port	4 x GbE RJ-45	4 x GbE RJ-45	4 x 10GbE RJ-45
Expansion	Expansion Slots	1 x PCIe 5.0 x16 or 2 x PCIe 5.0 x8 (FH, 10.5" L) 2 x PCIe 4.0 x4 (LP)	4 x PCIe 5.0 x8 or 2 x PCIe 5.0 x16 (FH, 10.5" L) 4 x PCIe 5.0 x8 (FHHL)	5 x PCIe 5.0 x16 (FHFL) 5 x PCIe 4.0 x8 (FHFL)
Storage	2.5" HDD/SSD	2 x 2.5" hot-swappable SAS/SATA/ SSD drive bays	4 x 2.5" hot-swappable SAS/SATA/ SSD drive bays	2 x 2.5" SAS/SATA/SSD hot-swappable drive bays (optional)
	3.5" HDD	–	–	2 x 3.5" SATA drive
	M.2 SSD	1 x M.2 2280/22110 slot (SATA/NVMe)	2 x M.2 2280/22110 slots (SATA/NVMe)	1 x M.2 2280 slot (SATA/NVMe) 1 x M.2 2280 slot (NVMe)
I/O Connectivity	Front	2 x USB 3.2 Gen1	2 x USB 3.2 Gen1	4 x 10GbE RJ-45 2 x USB 3.2 Gen1 1 x RS-232
	Rear	4 x GbE RJ-45 2 x USB 3.2 Gen2 1 x RS-232 1 x VGA 1 x IPMI RJ-45	4 x GbE RJ-45 2 x USB 3.2 Gen2 1 x RS-232 1 x VGA 1 x IPMI RJ-45	–
	LED Indicator	System Power System Information LAN1~LAN4 HDD power HDD activity LED	System Power System Information LAN1~LAN4 HDD power HDD activity LED	System Power LAN1, LAN2, System temperature System fan. HDD Power HDD Activity LED
	Button	Power	Power	–
Power Supply		500W Single PSU 650W 1+0 non-redundant PSU	1200W 1+1 redundant or 1200W 1+0 non-redundant PSU	850W single PSU or 1200W 1+0 non-redundant PSU
Environment	Operating	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 50 °C (32 ~ 122 °F)
	Non-Operating	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)
Cooling		3 x 4056 and 2 x 4028 Fan with Smart Fan Control	3 x 8038 and 1 x 6038 Fan with Smart Fan Control	3 x 12038 or 3 x 8025 Fan with Smart Fan Control
Physical Charasteristics	Dimension (W x H x D)	438 x 44 x 480 mm (17.24" x 1.73" x 18.9")	438 x 88 x 523 mm (17.24" x 3.46" x 20.59")	438 x 177 x 450 mm (17.24" x 6.97" x 17.7")
	Weight (N.W.)	8.5 kg	12.4 kg	16 kg
OS Support		10 ~ 95%, non-condensing	10 ~ 95%, non-condensing	10 ~ 95%, non-condensing
Platform Management		ASPEED AST2600 BMC IPMI 2.0, KVM with shared NIC LAN	ASPEED AST2500 BMC IPMI 2.0, KVM with shared NIC LAN	ASPEED AST2600 BMC IPMI 2.0, KVM with shared NIC LAN
Security		TPM 2.0	TPM 2.0	TPM 2.0

– : not supported

Industrial Edge AI Servers

Edge Accelerator Servers



Model		HPC-6120+ASMB-610	HPC-6240+ASMB-622	HPC-7420+ASMB-976
Form Factor		1U - Rackmount	2U - Rackmount	4U - Rackmount
Processor System	Processor	Intel® Xeon® W processors	Dual 3rd Gen Intel® Xeon® Scalable processors	Dual 3rd Gen Intel® Xeon® Scalable processors
	Chipset	Intel® W480E	Intel® C621	Intel® C621
Memory	Memory Type	4 x DDR4 up to 2933 MHz ECC/non-ECC UDIMM, up to 128GB	16 x DDR4 up to 3200 MHz RDIMM, up to 1TB, Intel® Optane DCPMM	16 x DDR4 up to 3200 MHz RDIMM, up to 2TB, Intel® Optane DCPMM
Networking	Controller	1 x Intel® I350AM4	1 x Intel® I350AM4	2 x Intel® I210AT 1 x Intel® X550-AT2
	Port	4 x GbE RJ-45	4 x GbE RJ-45	4 x 10GbE RJ-45
Expansion	Expansion Slots	1 x PCIe 3.0 x16 or 2 x PCIe 3.0 x8 (FH, 10.5" L) 2 x PCIe 3.0 x4 (LP)	4 x PCIe 4.0 x16 (FH, 10.5" L) 4 x PCIe 4.0 x8 (FHHL)	4 x PCIe 4.0 x16 (FHFL) 7 x PCIe 4.0 x8 (FHFL)
Storage	2.5" HDD/SSD	2 x 2.5" hot-swappable SAS/SATA/ SSD drive bays	4 x 2.5" hot-swappable SAS/SATA/ SSD drive bays	2 x 2.5" SAS/SATA/SSD hot-swappable drive bays (optional)
	3.5" HDD	–	–	2 x 3.5" SATA drive
	M.2 SSD	1 x M.2 2280 slot (SATA/NVMe)	1 x M.2 2280 slot (SATA/NVMe)	1 x M.2 2280 slot (SATA/NVMe) 1 x M.2 2280 slot (NVMe)
I/O Connectivity	Front	2 x USB 3.2 Gen1	2 x USB 3.2 Gen1	4 x 10GbE RJ-45 2 x USB 3.2 Gen1 1 x RS-232
	Rear	4 x GbE RJ-45 2 x USB 3.2 Gen2 1 x RS-232 1 x VGA 1 x IPMI RJ-45	4 x GbE RJ-45 2 x USB 3.2 Gen2 1 x RS-232 1 x VGA 1 x IPMI RJ-45	–
	LED Indicator	System Power System Information LAN1~LAN4 HDD power HDD activity LED	System Power System Information LAN1~LAN4 HDD power HDD activity LED	System Power LAN1, LAN2, System temperature System fan. HDD Power HDD Activity LED
	Button	Power	Power	–
Power Supply		500W Single PSU 650W 1+0 non-redundant PSU	1200W 1+1 redundant or 1200W 1+0 non-redundant PSU	850W single PSU or 1200W 1+0 non-redundant PSU
Environment	Operating	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 50 °C (32 ~ 122 °F)
	Non-Operating	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)
Cooling		3 x 4056 and 2 x 4028 Fan with Smart Fan Control	3 x 8038 and 1 x 6038 Fan with Smart Fan Control	3 x 12038 or 3 x 8025 Fan with Smart Fan Control
Physical Charasteristics	Dimension (W x H x D)	438 x 44 x 480 mm (17.24" x 1.73" x 18.9")	438 x 88 x 523 mm (17.24" x 3.46" x 20.59")	438 x 177 x 450 mm (17.24" x 6.97" x 17.7")
	Weight (N.W.)	8.5 kg	12.4 kg	16 kg
OS Support		10 ~ 95%, non-condensing	10 ~ 95%, non-condensing	10 ~ 95%, non-condensing
Platform Management		ASPEED AST2600 BMC IPMI 2.0, KVM with shared NIC LAN	ASPEED AST2500 BMC IPMI 2.0, KVM with shared NIC LAN	ASPEED AST2500 BMC IPMI 2.0, KVM with shared NIC LAN
Security		TPM 2.0	TPM 2.0	TPM 2.0

– : not supported

Transportation AI Systems

x86-Based Controller for Roadway, In-Vehicle and Rolling Stock Applications




Model		ITA-3650G	ITA-460G	ITA-520G	ITA-580G
Processor System	CPU	6th/7th Gen Intel® Core™ i7/i5/i3 processors; Intel® Celeron® processors	9th/8th Gen Intel® Core™ i7/i5/i3; Celeron® processors	11th Gen Intel® Core™ i7 processors	11th Gen Intel® Core™ i7 processors
	Frequency	Up to 3.70 GHz	AMI 256Mb SPI Flash (limited to TDP 35W in default)	2.6 GHz, up to 4.7 GHz	2.6 GHz, up to 4.7 GHz
	TDP	35W/51W/65W	35W/65W	35W	35W
	Chipset	C236	Dual channel DDR4 2666MHz	Intel® RM590E	Intel® RM590E
	Graphics	Intel® HD Graphics 630/610/530/510	Intel® H310	Intel® UHD Graphics for 11th Gen Intel®	Intel® UHD Graphics for 11th Gen Intel®
Graphics Card Expansion	MXM Slot	1	1	1	1
	Type	MXM 3.0, Type-A/B (< 150W)	MXM 3.1 Type A/ B (< 60W)	MXM 3.1, Type-A, 60W	MXM 3.1, Type-A, 60W
	Supported GPU Model	MXM T1000/ A2000; MXM RTX 3000 (with fan)	MXM 2000A/ A2000/ A1000/ A500		
Memory	Technology	Dual-channel	Dual channel	Dual channel	Dual channel
	Capacity	Up to 32 GB	Up to 32 GB	Up to 32 GB	Up to 32 GB
	Onboard Memory	8 GB (16 GB Optional) DDR4 2400 MHz (without ECC)	8 GB DDR4 2666 (16GB optional)	16 GB DDR4 3200	16 GB DDR4 3200
	SO-DIMM Slot	1	1	1	1
Ethernet	Controller	5 x Intel® I210; 1 x IWGI219LM	2 x Intel® i210-IT	7 x Intel® i226-IT	3 x Intel® i226-IT
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000/2500 Mbps	10/100/1000/2500 Mbps
	Connector	6 x RJ-45	2 x M12 X-Coded	7 x M12 X-Coded	3 x M12 X-Coded
I/O Interface	USB Ports	6 x USB 3.0	2 x USB 3.0 /3.1 (Type-A)	4 x USB 3.2 (Type-A) + 1 USB 2.0 (M12 A-Coded)	4 x USB 3.2 (Type-A) + 1 USB 2.0 (M12 A-Coded)
	Audio	1 x Speaker out with 8W amplifier, 1 x Mic-in	1 x M12 A-Coded (1 x line out, 1 x Mic-in)	1 x Speaker-out, 1 x Mic-in	1 x Speaker-out, 1 x Mic-in
	Serial Ports	2 x DB9 (RS232/422/485 with automatic flow control)	1 x DB9 (2 x RS-232/422/485 software programmable)	2 (RS-232/422/485)	2 (RS-232/422/485)
	Digital I/O	–	–	4 x DI & 4 x DO	4 x DI & 4 x DO
	Displays	1 x VGA, 1 x HDMI, 4 x DP	1 x HDMI	2 x DP	2 x DP
Expansion Slots	Mini PCIe	1	3	2	2
	SIM Slots	1	1	4	4
	M.2	–	–	2 x M.2 (B+M, 3042/3052) 1 x M.2 (A+E, 2230)	2 x M.2 (B+M, 3042/3052) 1 x M.2 (A+E, 2230)
Storage	mSATA/M.2	1 x mSATA	1 x mSATA	1 x mSATA	1 x mSATA
	2.5” SSD	2 x 2.5" SSD slot	2 x 2.5" SSD slot (9 mm)	2 x 2.5" 7 mm SSD, support RAID 0/1/5/10 (up to 4 x 2.5" 7mm SSD as optional)	Max. 4 x 2.5" SSD by FRU-ITASSD kit expansion, supports RAID 0/1/5/10
Software	Operating System	Windows 7 & 10, Ubuntu	Windows 10, Linux Ubuntu 20.04	Windows 10/11, Linux Ubuntu 20.04+	Windows 10/11, Linux Ubuntu 20.04+
Power	Input Voltage	9~36 V_{DC}	12V/24V (8~32V_{DC} *wide power input); 9.6V ~28.8V full loading (*: Power input constraint at low power 8~9.6V) (6-Pin M16)	24~110 V_{DC} (M12 S-Coded)	24~110 V_{DC} (M12 K-Coded)
	Ignition On/Off	✓	✓	✓	✓
Environment	Operating Temperature	-25 ~ 40°C (with MXM GPU support)	-25 ~ 60°C with 0.7 m/s air flow	EN 50155 OT4 -40 ~ 70°C; OT1 -25 ~ 55°C with MXM module	
	Vibration, Shock	IEC60068-2-6: 2007; IEC60068-2-27: 2008	MIL-STD-810; 75G 11 ms	EN 61373	EN 61373
	Ingress Protection	–	IP-65	IP-40 (with IO caps)	IP-40 (with IO caps)
Mechanical	Dimension (W x H x D)	210 x 120 x 240 mm	195.8 x 124.2 x 226.9 mm	482.6 x 88 x 224.3 mm	260 x 140 x 197.2 mm
	Weight	5.5kg	6.5 kg	7.5kg	7.5 kg
Certification	EMC	CE/FCC, CCC, BSMI	CE/FCC Class A	CE, FCC	CE, FCC
	Safety	UL, CCC, BSMI	CB/UL, CCC, BSMI	UL, CB, CCC	UL, CB, CCC, BSMI
	Type Approval	–	Emark, ISO 7637-2	EN 50155:2021 EN 50121-3-2 EN 50121-4 EN 45545-2	EN 50155:2021 EN 50121-3-2 EN 50121-4 EN 45545-2

Transportation AI Systems

Arm-Based Controllers for Railway Applications





Model		ITA-560AGX	ITA-560NX	ITA-560Nano	ITA-510NX	ITA-510Nano
Processor System	CPU	NVIDIA® Jetson AGX Orin™	NVIDIA® Jetson Orin™ NX	NVIDIA® Jetson Orin™ Nano	NVIDIA® Jetson Orin™ NX	NVIDIA® Jetson Orin™ Nano
	Frequency	2.2GHz	2.0GHz	2.0GHz	2.0GHz	2.0GHz
	TDP	32GB: 40W/64GB:60W	25W	15W	25W	15W
	Chipset	Arm® Cortex®-A78AE	Arm® Cortex®-A78AE	Arm® Cortex®-A78AE	Arm® Cortex®-A78AE	Arm® Cortex®-A78AE
	Graphics	NVIDIA® Ampere® GPU 2048 NVIDIA CUDA cores and 64 Tensor cores	NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores	NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores	NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores	NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores
Memory	Capacity	32GB/64GB	16GB	8GB	16GB	8GB
	Onboard Memory	32GB/64GB	16GB	8GB	16GB	8GB
	SO-DIMM Slot	–	–	–	–	–
Ethernet	Controller	2 x Intel® i226-IT + 1 x MARVELL_88E1512	3 x Intel® i210-IT + 1 x Realtek PHY	3 x Intel® i210-IT + 1 x Realtek PHY	3 x Intel® i210-IT + 1 x Realtek PHY	3 x Intel® i210-IT + 1 x Realtek PHY
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	3 x M12 X-Coded	4 x M12 X-Coded	4 x M12 X-Coded	4 x M12 X-Coded	4 x M12 X-Coded
I/O Interface	USB Ports	2 (Type-A)	2 (Type-A)	2 (Type-A)	2 (Type-A)	2 (Type-A)
	Audio	–	–	–	–	–
	Serial Ports	1 x DB9 (RS-232/422/485)	1 x DB9 (RS-232/422/485)	1 x DB9 (RS-232/422/485)	1 x DB9 (RS-232/422/485)	1 x DB9 (RS-232/422/485)
	Digital I/O	4 x DI & 4 x DO	4 x DI & 4 x DO	4 x DI & 4 x DO	4 x DI & 4 x DO	4 x DI & 4 x DO
	Displays	1 x HDMI	1 x HDMI	1 x HDMI	1 x HDMI	1 x HDMI
Expansion Slots	Mini PCIe	1	1	1	1	1
	SIM Slots	–	1	1	1	1
	M.2	1 x M.2 (M-key) 2242 for storage	1 x M.2 (B-Key) 3052 for 5G/LTE 1 x M.2 (E-Key) 2230 for Wi-Fi/Bluetooth 1 x M.2 (M-Key) 2280 for storage			
Storage	mSATA/M.2	1 x M.2 (M-key) 2242 for storage	1 x M.2 2280 (M-Key) 128GB (defaul)	1 x M.2 2280 (M-Key) 128GB (defaul)	1 x M.2 2280 128GB (default)	1 x M.2 2280 128GB (default)
	2.5” SSD	–	–	–	–	–
Software	Operating System	Linux Ubuntu 20.04	Linux Ubuntu 20.04	Linux Ubuntu 20.04	Linux Ubuntu 20.04	Linux Ubuntu 20.04
Power	Input Voltage	24/110 V_{DC} (M12 S-Coded)	24/110 V_{DC} (M12 S-Coded)	24/110 V_{DC} (M12 S-Coded)	24/110 V_{DC} (M12 S-Coded)	24/110 V_{DC} (M12 S-Coded)
	Ignition On/ Off	–	–	–	–	–
Environment	Operating Temperature	EN 50155 OT1 -25 ~ 55°C	EN 50155 OT1 -25 ~ 55°C	EN 50155 OT1 -25 ~ 55°C	EN 50155 OT1 -25 ~ 55°C	EN 50155 OT1 -25 ~ 55°C
	Vibration, Shock	EN 61373	EN 61373	EN 61373	EN 61373	EN 61373
	Ingress Protection	IP-40 (with IO caps)	IP-40 (with IO caps)	IP-40 (with IO caps)	IP-40 (with IO caps)	IP-40 (with IO caps)
Mechanical	Dimension (W x H x D)	260 x 75 x 197.2 mm	160 x 60 x 190 mm	160 x 60 x 190 mm	482.6 x 44 x 218.3 mm	482.6 x 44 x 218.3 mm
	Weight	3.8 kg	2.4 kg	2.4 kg	4.5 kg	4.5 kg
Certification	EMC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC
	Safety	UL, CB, CCC	UL, CB, CCC	UL, CB, CCC	UL, CB, CCC	UL, CB, CCC
	Type Approval	EN 50155:2017 EN 50121-3-2	EN 50155:2017 EN 50121-3-2	EN 50155:2017 EN 50121-3-2	EN 50155:2017 EN 50121-3-2	EN 50155:2017 EN 50121-3-2

✓: supported, – : not supported, △: optional

GPUs & MXMs

NVIDIA MXM GPUs

Model	SKY-MXM-5000A	SKY-MXM-3500A	SKY-MXM-2000A	SKY-MXM-A4500	SKY-MXM-A2000	SKY-MXM-A1000	SKY-MXM-A500	SKY-MXM-RTX3000	SKY-MXM-T1000
Part Number	SKY-MXM-5000A-6SDA	SKY-MXM-3500A-2SDA	SKY-MXM-2000A-8SDA	SKY-MXM-A4500-6SDA	SKY-MXM-A2000-8SDA	SKY-MXM-A1000-4SDA	SKY-MXM-A500-4SHA	SKY-MXM-R3000-6SDA	SKY-MXM-T1000-4HDB
GPU Architecture	Ada Lovelace	Ada Lovelace	Ada Lovelace	Ampere	Ampere	Ampere	Ampere	Turing	Turing
GPU Memory	16GB GDDR6 with ECC	12GB GDDR6 with ECC	8GB GDDR6 with ECC	16GB GDDR6 with ECC	8GB GDDR6 with ECC	4GB GDDR6	4GB GDDR6	6GB GDDR6	4GB GDDR6
Memory Interface	256-bit	192-bit	128-bit	256-bit	128-bit	128-bit	64-bit	192-bit	128-bit
Max Clock	9000 MHz	9000 MHz	8000 MHz	8000 MHz	7000 MHz	7000 MHz	7000 MHz	7000 MHz	6000 MHz
Memory BW	576 GB/s	432 GB/s	256 GB/s	512 GB/s	224 GB/s	224 GB/s	112 GB/s	336 GB/s	192 GB/s
CUDA Cores	9728	5120	3072	5888	2560	2048	2048	1920	896
RT Cores	76	40	24	46	20	16	16	30	-
Tensor Cores	304	160	96	184	80	64	64	240	-
Tensor Tflops (FP16 Dense/ Sparse)	165/329	92/184	52/104	70/140	34/66	26/52	25/50	44/NA	N / A
Max FP 32 Per f	41.15	23.04	12.8	17.66	8.64	6.66	6.54	5.3 TF	2.7 TF
GPU Clock	1425 MHz	1725 MHz	1635 MHz	930 MHz	1117 MHz	1192 MHz	652 MHz	945 MHz	1395 MHz
Boost Clock	2115 MHz	2250 MHz	2115 MHz	1500 MHz	1612 MHz	1624 MHz	1597 MHz	1380 MHz	1455 MHz
Form Factor	MXM Type B+	MXM Type B+	MXM Type A	MXM Type B+	MXM Type A	MXM Type A	MXM Type A	MXM Type B	MXM Type A
Dimension (L x H)	82 x 105 mm (3.23" x 4.13")	82 x 105 mm (3.23" x 4.13")	82 x 70 mm (3.23" x 2.76")	82 x 105 mm (3.23" x 4.13")	82 x 70 mm (3.23" x 2.76")	82 x 70 mm (3.23" x 2.76")	82 x 70 mm (3.23" x 2.76")	82 x 105 mm (3.23" x 4.13")	82 x 70 mm (3.23" x 2.76")
Interface	MXM 3.1, PCIe 4.0 x16	MXM 3.1, PCIe 4.0 x16	MXM 3.1, PCIe 4.0 x8	MXM 3.1, PCIe 3.0 x16	MXM 3.1, PCIe 3.0 x8	MXM 3.1, PCIe 3.0 x8	MXM 3.1, PCIe 3.0 x4	MXM 3.1, PCIe 3.0 x16	MXM 3.1, PCIe 3.0 x16x
TGP Power	115 W	115 W	60 W	115 W	60 W	60 W	35 W	80 W	50 W
Display Output	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz		3 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz			Headless Design No Display Output	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz	
NVENC	2(8th Gen)	2(8th Gen)	1(8th Gen)	1(7th Gen)	1(7th Gen)	1(7th Gen)	1(7th Gen)	1(7th Gen)	1(6th Gen)
NVDEC	5(5th Gen)	1(5th Gen)	1(5th Gen)	2(5th Gen)	2(5th Gen)	2(5th Gen)	1(5th Gen)	3(4th Gen)	3(4th Gen)
Operating temperature	0 ~ 55°C (32 ~ 131°F) (dependent on CPU and cooler solution)								
Storage temperature	-40 ~ 85°C (-40 ~ 185°F)								
Vibration (Non-operating)	2G								
OS support	Windows 10/11, 64-bit Linux Drivers, 64-bit								

✓: supported, – : not supported, △: optional

GPUs & MXMs

NVIDIA RTX™ GPUs

Model	NVIDIA RTX A800 40GB	NVIDIA RTX 6000 Ada	NVIDIA RTX 5000 Ada	NVIDIA RTX 4500 Ada	NVIDIA RTX 4000 Ada	NVIDIA RTX 4000 SFF Ada	NVIDIA RTX A6000	NVIDIA RTX A5500	NVIDIA RTX A5000	NVIDIA RTX A4500	NVIDIA RTX A4000
Part Number	SKY-QUAD-A800-40	SKY-QUAD-6000A-48	SKY-QUAD-5000A-32	SKY-QUAD-4500A-24	SKY-QUAD-4000A-20	SKY-QUAD-4000SA-20	SKY-QUAD-RTXA 6000B	SKY-QUAD-A5500-24B	SKY-QUAD-RTXA 5000B	SKY-QUAD-RTXA 4500B	SKY-QUAD-RTXA 4000B
GPU Architecture	Ampere	Ada Lovelace	Ada Lovelace	Ada Lovelace	Ada Lovelace	Ada Lovelace	Ampere	Ampere	Ampere	Ampere	Ampere
Memory Size	40 GB HBM2 with ECC	48 GB GDDR6 with ECC	32 GB GDDR6 with ECC	24 GB GDDR6 with ECC	20 GB GDDR6 with ECC	20 GB GDDR6 with ECC	48 GB GDDR6 with ECC	24 GB GDDR6 with ECC	24 GB GDDR6 with ECC	20 GB GDDR6 with ECC	16 GB GDDR6 with ECC
Memory Interface	5,120-bit	384-bit	384-bit	320-bit	160-bit	160-bit	384-bit	384-bit	384-bit	320-bit	256-bit
Memory Bandwidth	1555 GB/s	960 GB/s	576 GB/s	432 GB/s	360 GB/s	280 GB/s	768 GB/s	768 GB/s	768 GB/s	640 GB/s	512 GB/s
Form Factor	Dual slot, full height	Dual slot, full height	Dual slot, full height	Dual slot, full height	Single slot, full height	Dual slot, low profile	Dual slot, full height	Dual slot, full height	Dual slot, full height	Dual slot, full height	Single slot, full height
Dimension (L x H)	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	241.3 x 111.8 mm (9.5" x 4.4")	167.6 x 68.6 mm (6.6" x 2.7")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	241.3 x 111.8 mm (9.5" x 4.4")
CUDA Cores	6912	18176	12800	7,680	6144	6144	10752	10249	8192	7168	6144
Tensor Cores	432	568	400	240	192	192	336	320	256	224	192
RT Cores	–	142	100	60	48	48	84	80	64	56	48
FP32	19.5	91.1	65.3	39.6	26.7	19.2	38.7	34.1	27.8	23.7	19.2
Media Acceleration	1 JPEG Decoder, 5 Video Decoder	3 NVENC 3 NVDEC (+AV1 enc&dec)	2 NVENC 2 NVDEC (+AV1 enc&dec)	2 NVENC 2 NVDEC (+AV1 enc&dec)	2 NVENC 2 NVDEC (+AV1 enc&dec)	2 NVENC 2 NVDEC (+AV1 enc&dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)
NVLink	✓	–	–	–	–	–	✓	✓	✓	✓	–
Virtualization Ready	✓	✓	✓	–	–	–	✓	✓	✓	–	–
Display Connectors	Headless Design	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x mDP 1.4	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4
Operating Temperature	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 45°C (32 ~ 113°F)	0 ~ 50°C (32 ~ 122°F)
Max Power	240 W	300 W	250 W	210 W	130 W	70 W	300 W	230 W	230 W	200 W	140 W
Power Connector	16-Pin PCIe	16-Pin PCIe	16-Pin PCIe	16-Pin PCIe	16-Pin PCIe	–	8-Pin CPU	8-Pin PCIe	8-Pin PCIe	8-Pin PCIe	6-Pin PCIe
Graphics Bus	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16

✓: supported, – : not supported, △: optional

GPUs & MXMs

NVIDIA RTX GPUs: Entry to Mid-range

Model	NVIDIA RTX 2000 Ada	NVIDIA RTX A2000 12GB	NVIDIA RTX A1000	NVIDIA RTX A400	NVIDIA T1000 8GB	NVIDIA T1000	NVIDIA T400 4GB	NVIDIA RTX A4000E
Part Number	SKY-QUAD-2000A-16	SKY-QUAD-A2000-12B	SKY-QUAD-A1000-8	SKY-QUAD-A400-4	SKY-QUAD-T1000-8-B	SKY-QUAD-T1000-AB	SKY-QUAD-T400-4-B	SKY-QUAD-A4000E16B
GPU Architecture	Ada Lovelace	Ampere	Ampere	Ampere	Turing	Turing	Turing	Ampere
Memory Size	16 GB GDDR6 with ECC	12 GB GDDR6 with ECC	8 GB GDDR6	4 GB GDDR6	8 GB GDDR6	4 GB GDDR6	4 GB GDDR 6	16 GB GDDR6 with ECC
Memory Interface	128-bit	192-bit	128-bit	64-bit	128-bit	128-bit	64-bit	256-bit
Memory Bandwidth	224 GB/s	288 GB/s	192 GB/s	96 GB/s	160 GB/s	160 GB/s	80 GB/s	512 GB/s
Form Factor	Dual slot, low profile	Dual slot, low profile	Single slot, low profile	Single slot, low profile	Single slot, low profile	Single slot, low profile	Single slot, low profile	Single slot, full height
Dimension (L x H)	167.6 x 68.6 mm (6.6" x 2.7")	167.6 x 68.6 mm (6.6" x 2.7")	162.5 x 68.6 mm (6.4" x 2.7")	162.5 x 68.6 mm (6.4" x 2.7")	154.9 x 68.6 mm (6.1" x 2.7")	154.9 x 68.6 mm (6.1" x 2.7")	154.9 x 68.6 mm (6.1" x 2.7")	241.3 x 111.8 mm (9.5" x 4.4")
CUDA Cores	2816	3328	2304	768	896	896	384	6144
Tensor Cores	88	104	72	24	–	–	–	192
RT Cores	22	26	18	6	–	–	–	48
FP32	12	8	6.74 TFLOPS	2.7 TFLOPS	2.5	2.5	1	19.2
Media Acceleration	1 NVENC (+AV1 enc) 1 NVDEC (+AV1 dec)	1 NVENC, 2 NVDEC (+AV1 dec)	1 NVENC, 1 NVDEC (+AV1 dec)	1 NVENC, 1 NVDEC (+AV1 dec)	1 NVENC, 2 NVDEC	1 NVENC, 2 NVDEC	1 NVENC, 2 NVDEC	1 NVENC, 2 NVDEC (+AV1 dec)
NVLink	–	–	–	–	–	–	–	–
Virtualization Ready	–	–	–	–	–	–	–	–
Display Connectors	4 x mDP 1.4	4 x mDP 1.4	4 x mDP 1.4	4 x mDP 1.4	4 x mDP 1.4	4 x mDP 1.4	3 x mDP 1.4	4 x DP 1.4
Operating Temperature	0 ~ 45°C (32 ~ 113°F)	0 ~ 50°C (32 ~ 122°F)	0°C to 50 °C	0°C to 50 °C	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 50 °C (32 ~ 122°F)
Max Power	70 W	70 W	50 W	50 W	50 W	50 W	30 W	140 W
Power Connector	–	–	–	–	–	–	–	6-Pin PCIe
Graphics Bus	PCIe 4.0 x8	PCIe 4.0 x16	PCIe 4.0 x8	PCIe 4.0 x8	PCIe 3.0 x16	PCIe 3.0 x16	PCIe 3.0 x16	PCIe 4.0 x16

NVIDIA RTX Long-Life SKU Model

Model	NVIDIA RTX 4000H	NVIDIA RTX 6000E Ada	NVIDIA RTX 5000E Ada	NVIDIA RTX 4000E Ada	NVIDIA RTX 2000E Ada	NVIDIA T1000E	NVIDIA T600E	NVIDIA T400E
Part Number	SKY-QUAD-A4000H16B	SKY-QUAD-6000EA-48	SKY-QUAD-5000EA-32	SKY-QUAD-4000EA-20	SKY-QUAD-2000EA-16	SKY-QUAD-T1000E8B	SKY-QUAD-T600E-4	SKY-QUAD-T400E-4
GPU Architecture	Ampere	Ada Lovelace	Ada Lovelace	Ada Lovelace	Ada Lovelace	Turing	Turing	Turing
Memory Size	16 GB GDDR6 with ECC	48 GB GDDR6 with ECC	32 GB GDDR6 with ECC	20 GB GDDR6 with ECC	16 GB GDDR6 with ECC	8 GB GDDR6	4 GB GDDR6	4 GB GDDR6
Memory Interface	256-bit	384-bit	384-bit	160-bit	128-bit	128-bit	128-bit	64-bit
Memory Bandwidth	512 GB/s	960 GB/s	576 GB/s	320 GB/s	224 GB/s	160 GB/s	160 GB/s	80 GB/s
Form Factor	Single slot, full height	Dual slot, full height	Dual slot, full height	Dual slot, full height	Single slot, low profile	Single slot, low profile	Single slot, low profile	Single slot, low profile
Dimension (L x H)	"241.3 x 111.8 mm (9.5"" x 4.4"")"	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	241.3 x 111.8 mm (9.5" x 4.4")	169.6 x 68.9 mm (6.6" x 2.7")	154.9 x 68.6 mm (6.1" x 2.7")	154.9 x 68.6 mm (6.1" x 2.7")	154.9 x 68.6 mm (6.1" x 2.7")
CUDA Cores	6144	18176	12800	6144	2816	896	640	384
Tensor Cores	192	568	400	192	88	–	-	-
RT Cores	48	142	100	48	22	–	-	-
Max FP 32 Per f	19.2	91.1	65.3	26.7	12	2.5	1.7	1.09
Media Acceleration	–	3 NVENC 3 NVDEC (+AV1 enc&dec)	2 NVENC 2 NVDEC (+AV1 enc&dec)	2 NVENC 2 NVDEC (+AV1 enc&dec)	1 NVENC 1 NVDEC (+AV1 enc&dec)	1 NVENC, 2 NVDEC,	1 NVENC 2 NVDEC	1 NVENC 2 NVDEC
NVLink	–	–	–	–	–	–	–	–
Virtualization Ready	–	✓	✓	–	–	–	–	–
Display Connectors	4 x DP 1.4a	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x mDP 1.4	4 x mDP 1.4	4 x mDP 1.4	4 x mDP 1.4
Operating Temperature	0 ~ 50 °C (32 ~ 122°F)	0 ~ 45 °C (32 ~ 113°F)	0 ~ 45 °C (32 ~ 113°F)	0 ~ 50 °C (32 ~ 122°F)	0 ~ 45 °C (32 ~ 113°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)
Max Power	140 W	300 W	250 W	130 W	50 W	50 W	40W	30 W
Power Connector	16-Pin PCIe	16-Pin PCIe	16-Pin PCIe	16-Pin PCIe	–	–	–	–
Graphics Bus	PCIe4.0x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x8	PCIe 4.0 x16	PCIe 3.0 x16	PCIe 3.0 x16

✓: supported, – : not supported, △: optional

GPUs & MXMs

NVIDIA Data Center GPUs

Model	Tesla H100 NVL	NVIDIA H100	NVIDIA A100 80G	NVIDIA A30	NVIDIA L40S	NVIDIA L40
Part Number	SKY-TESL-H100N-94P	SKY-TESL-H100-80P	SKY-TESL-A100-80P	SKY-TESL-A30-24P	SKY-TESL-L40S-48P	SKY-TESL-L40-48P
GPU Architecture	Hopper	Hopper	Ampere	Ampere	Ada Lovelace	Ada Lovelace
Form Factor	Dual slot, full height 3 NVLINK bridges	Dual slot, full height 3 NVLINK bridges	Dual slot, full height 3 NVLINK bridges	Dual slot, full height 1 NVLINK bridge	Dual slot, full height	Dual slot, full height
Dimension (L x H)	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")
GPU Memory	94GB HBM3	80GB HBM2e	80GB HBM2e	24GB HBM2	48GB DDR6 with ECC	48GB DDR6 with ECC
Memory Bandwidth	3.9TB/s	2TB/s	1,935 GB/s	933GB/s	864GB/s	864GB/s
CUDA Cores	14592	14592	6912	3584	18176	18176
Tensor Cores	456	456	432	224	568	568
RT Cores	–	–	–	–	142	142
FP32/FP64 TFLOPS	67 / 34	48 / 24	19.5 / 9.7	10.3 / 5.2	91.6 / –	88 / –
Multi-Instance GPU	Up to 7	Up to 7	Up to 7	Up to 4	–	–
Media Acceleration	7 JPEG Decoder, 7 Video Decoder	7 JPEG Decoder, 7 Video Decoder	1 JPEG Decoder, 5 Video Decoder	1 JPEG Decoder, 4 Video Decoder	3 NVENC, 3 NVDEC (+AV1 enc/dec)	3 NVENC, 3 NVDEC (+AV1 enc/dec)
Ray Tracing	–	–	–	–	✓	✓
Fast FP64	✓	✓	✓	✓	–	–
Design	Compute Optimise	Compute Optimise	Compute Optimise	Compute Optimise	Compute + Graphics	Compute + Graphics
DL & Compute	Ultimate	Ultimate	Ultimate	Fastest	Fastest	Fastest
Graphics	For in-situ visualization (no vPC/vQuadro)		For in-situ visualization (no vPC/vQuadro)	For in-situ visualization (no vPC/vQuadro)	Best	Best
Operating Temperature	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Max Power	400 W	350 W	300 W	165 W	350 W	300 W

Model	NVIDIA L4	NVIDIA A40	NVIDIA A10	NVIDIA A2
Part Number	SKY-TESL-L4-24P	SKY-TESL-A40-48P	SKY-TESL-A10-24P	SKY-TESL-A2-16P
GPU Architecture	Ada Lovelace	Ampere	Ampere	Ampere
Form Factor	Single slot, low profile	Dual slot, full height 1 NVLINK bridge	Single slot, full height	Single slot, low profile
Dimension (L x H)	167.6 x 68.6 mm (6.6" x 2.7")	266.7 x 111.8 mm (10.5" x 4.4")	266.7 x 111.8 mm (10.5" x 4.4")	167.6 x 68.6 mm (6.6" x 2.7")
GPU Memory	24GB DDR6 with ECC	48GB DDR6 with ECC	24GB GDDR6	16GB GDDR6
Memory Bandwidth	300GB/s	696GB/s	600GB/s	200GB/s
CUDA Cores	7680	10752	9216	1280
Tensor Cores	240	336	288	40
RT Cores	60	84	72	10
FP32/FP64 TFLOPS	31.3 / –	37.4 / –	31.2 / –	4.5 / –
Multi-Instance GPU	–	–	–	–
Media Acceleration	2 NVENC, 4 NVDEC, (+AV1 enc/dec)	1 Video Encoder, 2 Video Decoder (+AV1 decode)	1 Video Encoder, 2 Video Decoder (+AV1 decode)	1 Video Encoder, 2 Video Decoder (+AV1 decode)
Ray Tracing	✓	✓	✓	✓
Fast FP64	–	–	–	–
Design	Compute + Graphics	Compute + Graphics	Compute + Graphics	Compute + Graphics
DL & Compute	Fastest	Fastest	Fast	Fast
Graphics	Good	Best	Good	Good
Operating Temperature	0 ~ 50°C (32 ~ 122°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 50°C (32 ~ 122°F)
Max Power	72 W	300 W	150 W	40-60 W

✓: supported, – : not supported, △: optional

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