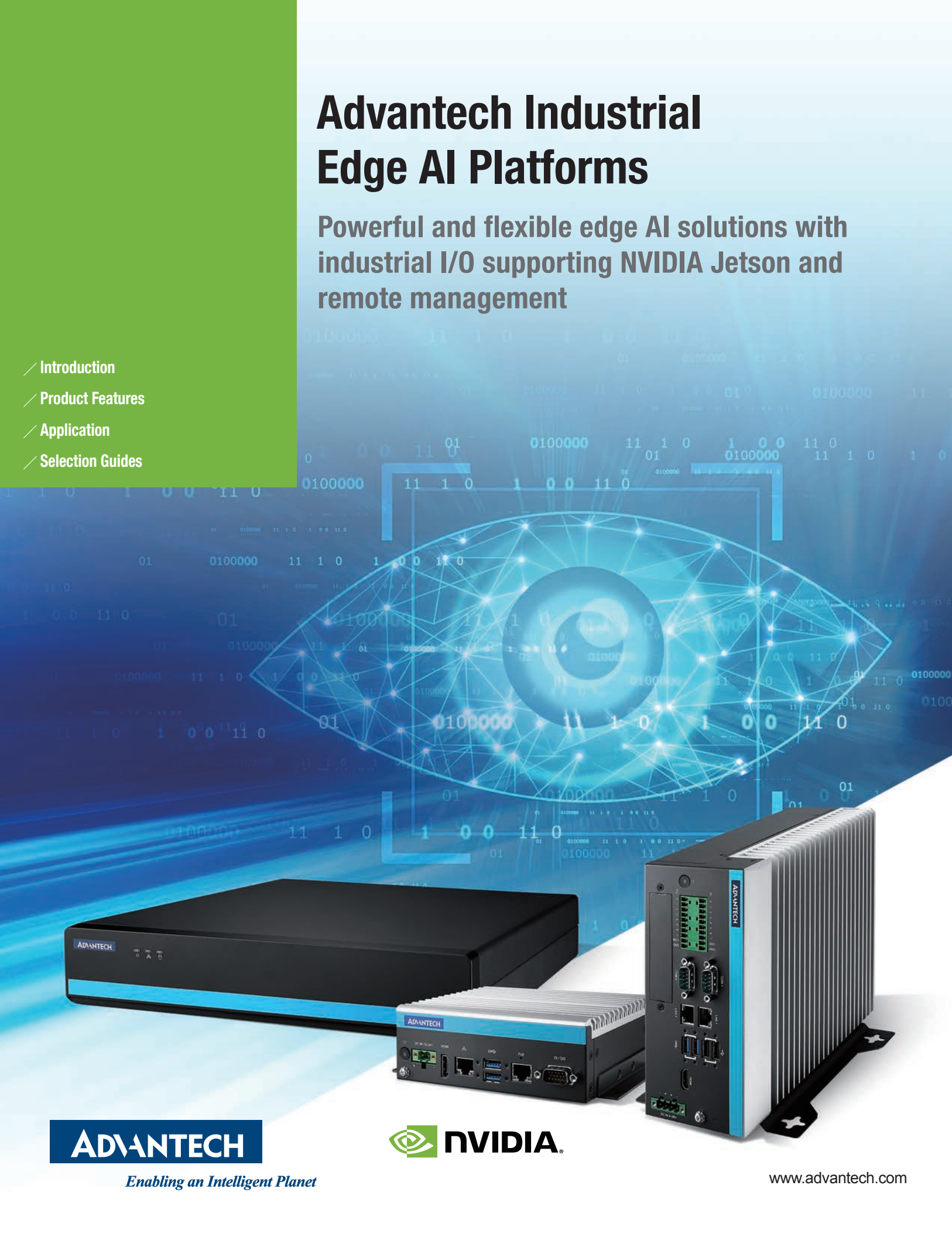
Advantech Industrial Edge AI Platforms

Powerful and flexible edge AI solutions with industrial I/O supporting NVIDIA Jetson and remote management



ADVANTECH

Enabling an Intelligent Planet

NVIDIA

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Advantech Industrial Edge AI Platforms

Artificial intelligence (AI) is becoming increasingly prevalent across a range of IoT applications, especially at the Edge. The Advantech MIC-Jetson series applies 30 years of IPC design experience to creating the best AI platform at the edge. The Advantech MIC-Jetson series offers superior performance per watt for the full embedded Nvidia Jetson lineup. It features strict validation to ensure thermal, mechanical, and electrical compatibility. It also features industrial-grade vibration tolerance, high temperature operation capabilities, I/O support, and a compact, industrial design. Indeed this, highly-integrated system enables AI application developers to rapidly create unique AI solutions for smart city, automation manufacturing, medical imaging, management, and retail applications.

NVIDIA ELITE PARTNER

Full NVIDIA Jetson Product Portfolio

Powered by NVIDIA Jetson technology, our AI edge solutions deliver GPU performance in a compact, embedded footprint with lifecycle extension

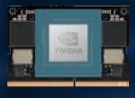
Nano
5 ~ 10W 472 GFLOPs
45 x 70 mm

TX2 NX
7.5 ~ 15W 1.33 TFLOPs
45 x 70 mm

Xavier NX
10 ~ 20W 21 TOPs
45 x 70mm

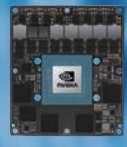
AGX Xavier
10 ~ 40W 30-32 TOPS
100 x 87 mm

Orin Nano
5-15W 20-40 TOPs
45mm x 69.6mm



Orin NX
10-25W 70-100 TOPs
45mm x 70mm

AGX Orin
15 ~ 60W 200-275 TOPS
100 x 87 mm



Remote Management

Numerous Edge AI platforms are deployed in different locations. This creates collective device management challenges. Advantech provides a remote management platform that handles provision, OTA updates, and remote monitoring. It also saves on operation costs and enables mass deployment.

Consolidation for Industrial Deployment

	Advantech	
Complete Sytem Support	Yes	HW support: building systems from carrier board to chassis SW support: From board support package (BSP) to applications deployment
Comprehensive R&D Resources	Yes	HW design R&D team In-house SW R&D team for BSP
Longevity	5-7 years	Low total cost of ownership:including system certification cost and RMA service preparation
Revision Control	Yes	Reduce product validation during product lifecycleAvoid compatibility issues resulting from engineering changes
Worldwide Support, Logistic & RMA Service	Yes	14 repair centers and 4 logistic centers
Customization for Different Needs	Yes	Configuration-to-Order and Design-to-Order services

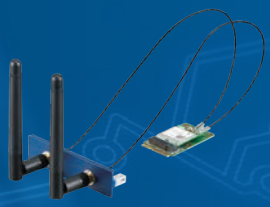
Edge AI Systems *Designed for Critical Environments*

Compact fanless design endures wide operating temperature range

Industrial I/O Support

Advantech provides flexible and modularized support for requirements in different vertical applications. Customers are able to do simple customization without changing system.

Industrial Fieldbus



Wireless Communication

Control I/O

Camera Link

Video Capture

Smart I/O

i-Module

Applications

Automatic AI AOI

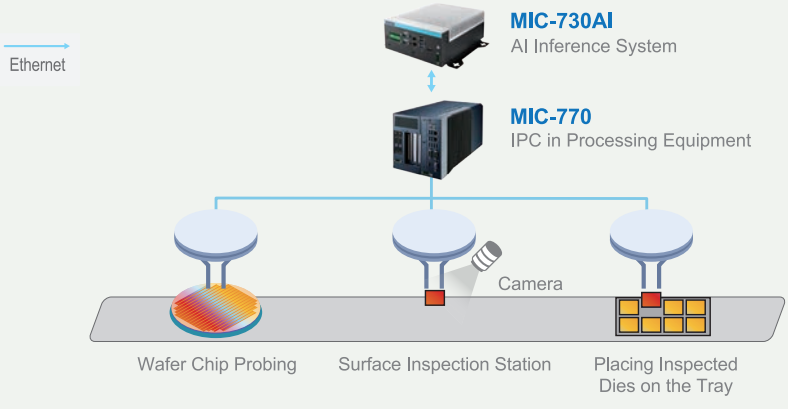
Die Inspection for chip probing

Die surface were traditionally inspected by human eyes under a microscope. To increase inspection efficiency and accuracy, AI is deployed in die processing equipment for surface defect inspection. MIC-770 controls the chip probe and camera. After image processing, MIC-770 passes the image to MIC-730AI, where a trained AI model quickly provides image inference results for each die to MIC-770.

The qualified dies can proceed to the die tray for IC packaging and final test(FT) processes.

Features

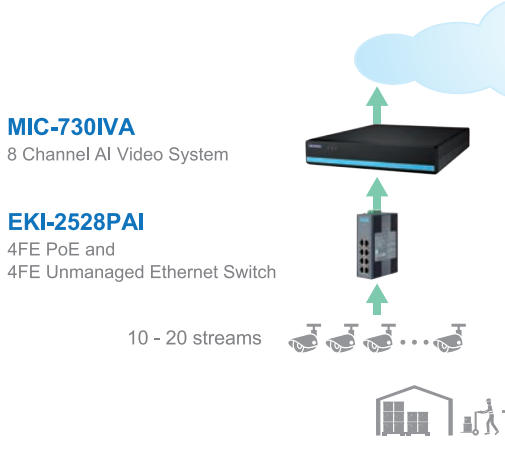
MIC-730AI's high-performance, fanless design and scalability enables flexible equipment configuration.



AI in Safety and Security

AI Empowered Indoor & Outdoor Facility Safety

Visual AI increases the visibility of on-site workers and equipment to improve responsiveness to potentially dangerous situations — such as an employee carelessly approaching moving machinery. This real-time AI-driven NVR system, MIC-730IVA, can improve worksite safety can incorporate both existing security cameras and newly installed



AI Solution Kit *Open Frame System with Multiple Expansion*

Edge AI NVR *8-Channel Camera Support*

Supports 8 PoE (Power-over-Ethernet) for IP cameras

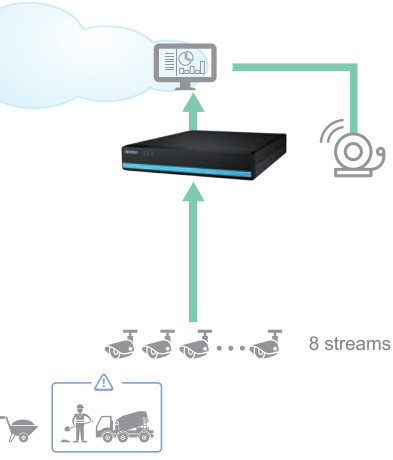
Ruggedized AI System *IP67 Rated, Waterproof Design*

Supports 4 x IEEE 802.3af compliant PoE, lockable I/O and 6 x GMSL video interface (optional)

high-resolution cameras into a single smart security system with AI software.

Features

MIC-730IVA enables the simultaneous reliable processing of at least eight camera streams directly.



AI in Transportation

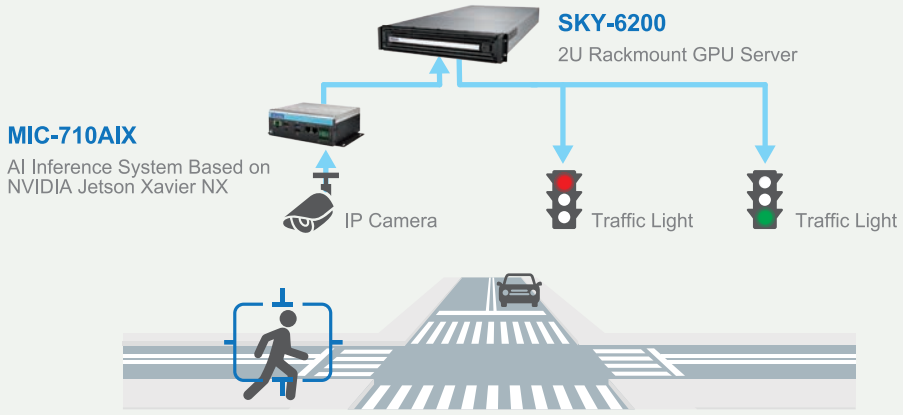
Improving Wait Time at Major Intersections

AI smart traffic signal control system can change specific traffic lights according to traffic flow–it gives traffic on side roads enough time to pass while increasing arterial road green light time when side roads are empty.

It enhances traffic flows for arterial roads during the day, while reducing waiting times at red lights at night. The average wait time has decreased 15~78%. Night wait times at red lights on arterial roads decreased by 35%.

Features

MIC-710AIX's low power consumption, fanless design, and wide-operating temperature are well suited for the roadside.



Selection Guide





Model Name		MIC-715	MIC-730AI	MIC-710AIX/ MIC-710AIT/ MIC-710AI	MIC-710AILX/ MIC-710AILT/ MIC-710AIL	MIC-710AILX-DVA/ MIC-710AIL-DVA
Processor	NVIDIA Platform	NVIDIA® Jetson Xavier™ NX	NVIDIA® Jetson AGX Xavier™	NVIDIA® Jetson Xavier™ NX/ NVIDIA® Jetson™ TX2 NX/ NVIDIA® Jetson Nano™		NVIDIA® Jetson Xavier™ NX/ NVIDIA® Jetson Nano™
	AI Performance	Up to 21 TOPS	Up to 32 TOPS	21 TOPs/ 1.33 TFLOPs/ 472 GFLOPs		21 TOPs/ 472 GFLOPs
I/O	Ethernet	6 x M12 10/100/1000 Mbps (support 4 port PoE IEEE 802.3af)	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	1 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 (waterproof connector)	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	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	1 x RS-232 pin header
	CANBus	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	1 x Micro USB
Expansion	iModule (Optional)	-	1 x PCIe x8 (MIC-75M10-00A1) 1 x PCIe x8 + 1 x PCIex4 (MIC-75M20-00C1)	-	-	
	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)	1 x mPCIe (Signal: PCIe+USB)
	SIM	2 x Nano SIM slots	1 x Nano SIM slots	1 x Nano SIM slots	1 x Nano SIM slots	1 x Nano SIM slots
	M.2	1 x M.2 3052 (B-Key, Signal: USB)	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 Micro SD 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)	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)	1 x MicroSD 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)
Power	Mode	AT/ATX (M16 ,6 pin male, Default AT)	AT/ATX	AT	AT	AT
	Input Voltage	12/24 V_{DC}, 16-4A	9 ~ 36 V_{DC}, 11-3A	19-24 V_{DC}, 1.5-1.18A	12 ~ 24 V_{DC}	12 ~ 24 V_{DC}
Dimensions	W x D x H	275 x 220 x 80 mm	192 x 230 x 87 mm	147 x 118 x 52 mm	85 x 118 x 45 mm	116 x 85 x 54.7 mm/ 116 x 82 x 30 mm

Work with Advantech

For Domain-Focused SI We offer : ☑ Customized System Design ☑ Linux/BSP Customization ☑ EMC/Safety Certificate

For Distributors We offer : ☑ Full Portfolio of Jetson System ☑ Promotion Marketing Program ☑ Jetson BSP

For ISV We offer : ☑ Co-Marketing for Vertical Applications ☑ System + AI Application Certification ☑ Global Service Support

Selection Guide




Model		MIC-733-AO	MIC-711-OX/ MIC-711-ON	MIC-711D-OX/ MIC-711D-ON	MIC-713S-OX/ MIC-713S-ON
Processor	NVIDIA Platform	NVIDIA® Jetson AGX Orin™	NVIDIA® Jetson Orin™ NX/ Nano		NVIDIA® Jetson Orin™ NX/ Nano
	AI Performance	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 Mbps		5 x 10/100/1000 Mbps
	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)	HDMI (Max. resolution 3840x2160 @ 60Hz)		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	External: 2 x USB 3.2 Gen 2, 1 x USB 2.0 Internal: 1 x USB 2.0 (By pin header)		External: 6 x USB 3.2 Gen 1
	Digital I/O	4-ch DI, 4-ch DO	-		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)
	CANBus	-	-		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	-	-		1 x PCIex4 slot (PCIex4 link, Gen 4)
	Mini PCIe	2 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
	M.2	1 x M.2 3052 (B-Key, Signal: USB)	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	-	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 Micro SD slot 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)	1 x Micro SD slot 1 x M.2 2280 (M-Key, NVMe, Signal: PCIe x4)		1 x Micro SD 1 x M.2 2280 (Signal: PCIe x1, Gen 4)
Power	Mode	AT/ATX (Default AT)	AT		AT
	Input Voltage	9 ~ 36 V_{DC}, 16-4A	9 ~ 36 V_{DC}	12 V_{DC}	9 ~ 36 V_{DC}
Dimensions	W x D x H	192 x 230 x 87 mm	130 x 130 x 46 mm	125 x 125 x 51 mm	180 x 171 x 68.12 mm

View More

More application cases online

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