Advantech Industrial Edge AI Platforms by Erreuno

L'intelligenza artificiale (AI) sta diventando sempre più diffusa in una vasta gamma di applicazioni IoT, in particolare all'edge.

Con 30 anni di esperienza nella progettazione IPC, la serie Advantech MIC-Jetson è la migliore piattaforma di intelligenza artificiale all'avanguardia. La serie Advantech MIC-Jetson offre prestazioni superiori per watt per la linea NVIIDA Jetsons completamente integrata. Le sue caratteristiche sono una convalida rigorosa per garantire la compatibilità termica, meccanica ed elettrica, oltre a capacità di funzionamento ad alta temperatura e antivibrazioni di livello industriale, supporto I / O e un design industriale compatto.

I sistemi altamente integrati consentono agli sviluppatori di applicazioni di intelligenza artificiale di creare rapidamente soluzioni di intelligenza artificiale uniche per applicazioni smart city, automazione, imaging medicale, gestione e vendita al dettaglio.

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

Jetson Nano
5-10W0.5 TFLOPS (FP16)
45mm x 70mm

Jetson TX2
7-15W1.3 TFLOPS (FP16)
50mm x 87mm

Jetson Xavier NX
10 - 15W 6 TFLOPS (FP16)
45mm x 70mm

Jetson Xavier
10-30W10 TFLOPS (FP16) | 32 TOPS (INT8) 100mm x 87mm

Edge AI Systems *Designed for Critical Environments*

Compact fanless design endures wide operating temperature range

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

Frame Grabber SDI/HDMI/VGA

Camera Link

Control I/O

Smart I/O

i-Module

Edge AI NVR *8-Channel Camera Support*

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

View More

More application cases online

Remote Management

Numerous Edge AI platforms are deployed in different locations, bringing challenges to collective device management. Advantech provides a remote management platform to deal with provision, OTA updates, and remote monitoring while saving on operations costs and enabling mass deployment.

Applications

Automatic AI IOT

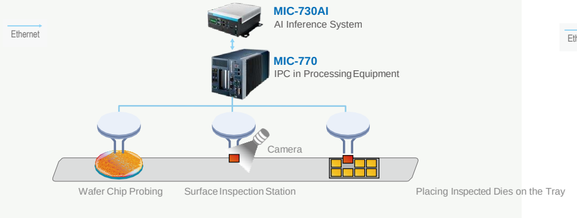
Die Inspection for chip probing

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 Smart Factory

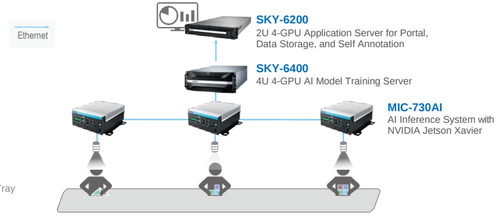
Printer line balance optimization

AI is deployed in a printer assembly lines, transferring labor behavior into quantitative data. This data helps improve line balance and increase UPH (unit per hour) output. Cameras and MIC-730AI are carefully set in each workstation. MIC-730AI detects the scene in ROI (region of interest), and realtime inferences with trained model are inside.

Inference results are passed to the application server for quantitative analysis and training server models are updated accordingly.

Features

MIC-730AI high-performance, fanless design and large memory capacity enables real-time video analysis.



AI in Transportation

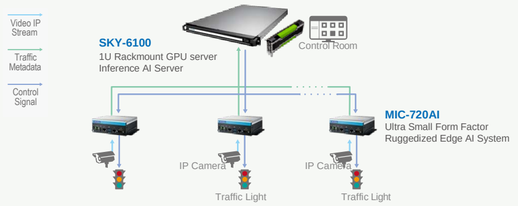
Self-adaptive traffic signal control system

Traditional traffic detection methods like microwave radar are costly and lack the necessary recording detail. By using AI, essential traffic metadata can be collected and integrated into a carefully designed dataflow for further analysis.

MIC-720AI, adopted at roadside, grabs video streams from IP cameras through PoE and sends the analysis and inference results back to the server. The control server manages all the traffic lights automatically based on inference results.

Features

MIC-720AI's low power consumption, fanless design, and wide-operating temperature are well suited for the roadside.



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MIC-710AI

AI Inference System based on NVIDIA Jetson® NANO

Features

- Fanless and compact design
- NVIDIA Jetson® NANO embedded
- 2 x LAN port embedded
- Linux OS with BSP (board support package)
- Supports deep learning trained models
- Wide-operating temperature range

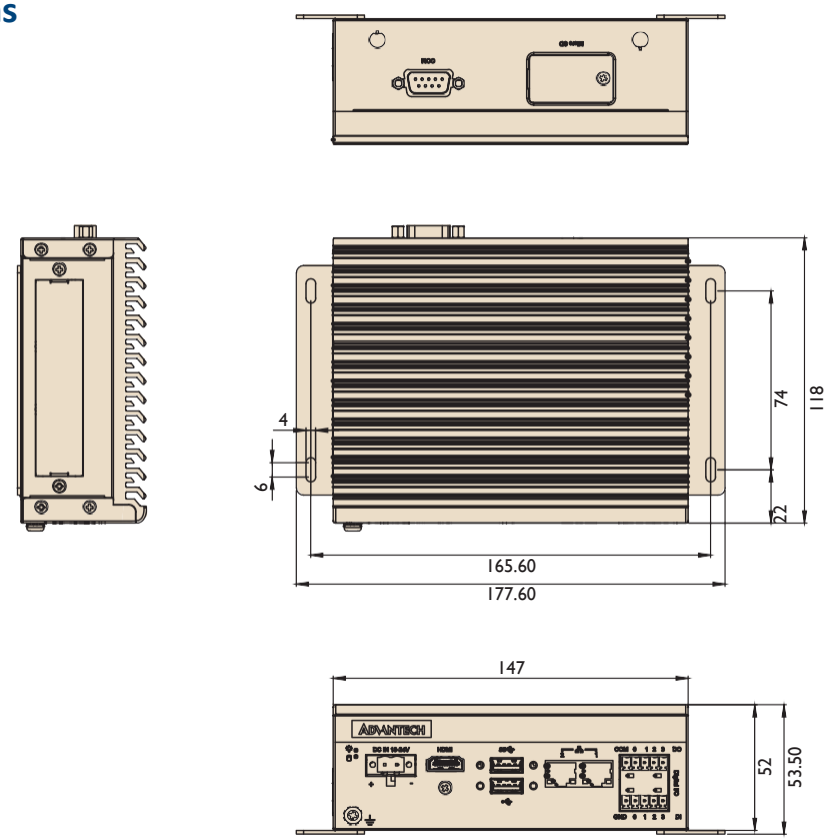
Specifications

Processor System	CPU	Quad Core ARM Cortex A57 (Max. Operating Frequency: 1.43GHz)
	GPU	Maxwell GPU, 128 CUDA core, Performance up to 512 GFLOPS (FP16) (Max. Frequency: 921MHz)
	Memory	4GB LPDDR4
	Flash	16G of eMMC
Ethernet	Interface	RJ-45
	Controller	Intel® i211
	Speed	2 x Gigabit Ethernet (10/100/1000 Mbps)
I/O	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	External USB2.0 x 1 USB3.0 x 1 Internal USB2.0 x 1
	OTG USB (Internal)	1 x Micro USB
	DI/DO	4bit In, 4bit Out
	COM	1 x RS-232/RS-422/RS-485
Expansion	MiniPCIe (iDoor)	1 x MiniPCIe
Storage	M.2 SATA	1 x M.2 2280 (M Key)
	SD card	1 x Micro SD (Support for SD 4.0 Specification without UHS-II)
Power	Power Supply	Power Adaptor: 19-24V (3A-2A)
	Power Type	Thermal Block 2 Pin
Environment	Operational Temperature	-10 ~ 60 °C with 0.7 m/s air flow (Max-P ARM mode)
	Operating Humidity	95% @ 40 °C (non-condensing)
	Vibration	3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis
Mechanical	Dimensions (W x D x H)	147 x 118 x 52 (mm)
	Weight	1.2 kg
	Installation	Desktop/DIN RAIL
Operating System	Linux	Ubuntu 18.04 with JetPack
Certifications		CE/FCC/BSMI

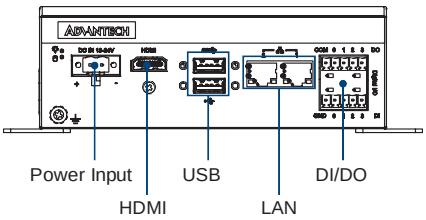
All product specifications are subject to change without notice.

Dimensions

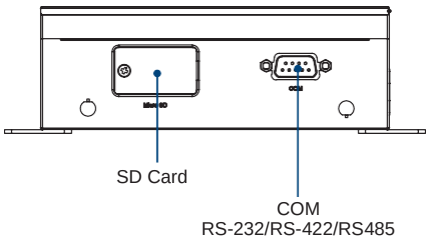
Unit: mm



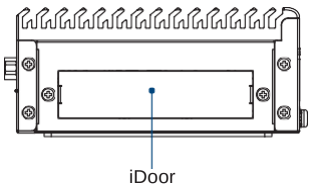
Front View



Back View



Side View



Packing List

Part Number	Description
MIC-710AI/MIC-710AIX	NVIDIA AI Inference System
1652002202	Power connector-2Pin (1pcs)
1652005204	DI/DO connector-5Pin (2pcs)
1700023619-01	Micro USB cable for system recovery (1pcs)
1960095312N001	Mounting bracket (2pcs)

Opitonal

Part Number	Description
96PSA-A65W19P2-1	Power Adapter 100-240V 65W 19V
1700001524	Power Cord UL 3P 10A 125V 183cm (US)
170203183C	Power Cord EU 3P 2.5A 250V 183cm (EU)
170203180A	Power Cord BSI 3P 2.5A 250V 183cm (UK)
1702031836	Power Cord SAA 3P 10A 250V 183cm (AU)
1700008921	Power Cord PSE 3P 7A 125V 183cm (Japan)
1700019146	Power Cord CCC 3P 2.5A 250V 183cm (China)
98R1750020E	DIN RAIL bracket
1960065854N001	PCM series module bracket

MIC-710IVA

8ch AI Video System on NVIDIA Jetson® NANO

Features

- NVIDIA Jetson™ NANO embedded
- Support 8ch PoE Video Input
- Support 2 x 3.5" HDD
- Bundle with Linux Ubuntu 18.04 with BSP
- Low power consumption
- H.264 / H.265 camera supported

Introduction

MIC-710IVA is the ARM based system which integrated NVIDIA® Jetson™ NANO System-on-Module processor, providing 128 CUDA® cores. It is designed for the edge AI video system which supports rich I/O with low power consumption. The system has 4GB LPDDR4 memory, 4K video decode/encode, 8ch POE and 2 x 3.5" HDD expansion.

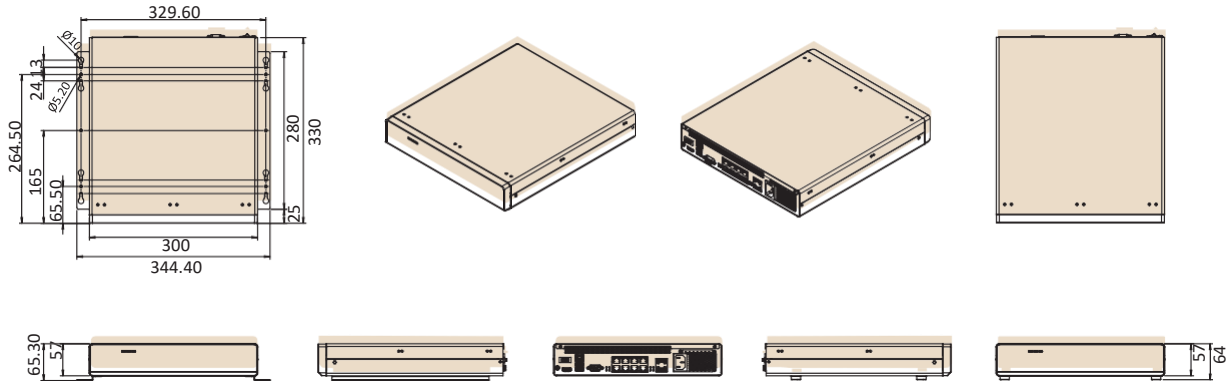
Specifications

		MIC-710IVA
Processor System	CPU	Quad Core ARM Cortex A57 (Max. Operating Frequency: 1.43GHz)
	GPU	Maxwell GPU, 128 CUDA core, Performance up to 512 GFLOPS (FP16) (Max. Frequency: 921MHz)
	Memory	4GB LPDDR4
	Flash	16G of eMMC
Camera Interface PoE	Controller	MICROSEMI PD69104B1ILQ
	LAN Switch	Realtek RTL8316SI
	Bandwidth	10/100 Mbps
	Compliant	IEEE 802.3af
	Power Output	15.4W
Ethernet	Interface	RJ45 x 1
	Controller	Intel® i211AT
	Speed	10/100/1000 Mbps
I/O	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	USB 3.0 x 1 USB 2.0 x 1
	DI/DO	8 bit
	Power Switch	Power ON/OFF Switch x 1
	OTG USB	USB2.0 x 1 (Internal)
	COM	RS-485 x 1
Storage	Storage	3.5" HDD x 2 (Internal)
Power	Power Supply Voltage	AC100-240V 250W ATX
Environment	Operational Temperature	0 ~ 40 °C with 0.7 m/s air flow
	Operating Humidity	95% @ 40 °C (non-condensing)
	Vibration	0.5 Grms @ 5 ~ 500 Hz, random, 1 hr/axis
Mechanical	Dimensions (W x D x H)	300 x 330 x 57mm (11.8" x 13" x 2.24")
	Weight	3 kg
	Installation	Desktop
Operating System	Linux	Ubuntu 18.04
Certifications		CE/FCC/BSMI

All product specifications are subject to change without notice.

Dimensions

Unit: mm



Ordering Information

Part Number	CPU	Memory	eMMC	HDMI	POE	USB 3.0 / USB 2.0	DI/DO	LAN
MIC-710IVA-00A1	NVIDIA Jetson NANO	4GB	16G	1	8	1/1	8	1

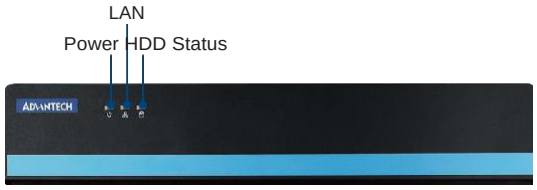
Packing List

Part Number	Description
MIC-710IVA	AI video system based on NVIDIA Jetson® NANO
1960091140N000	3.5"HDD Bay bracket (2pcs)
1700017161-21	HDD SATA Cable (2pcs)
1700023588-01	USB Cable for Software Image update (1pcs)
1960005359T002	Mounting bracket (2pcs)
1990005896S000	Rubber foot pads (4pcs)

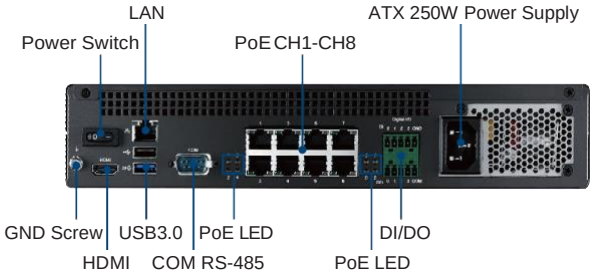
Optional

Part Number	Description
989K008734	Module to securely fix two 2.5" HDDs in one 3.5" HDD Bay

Front View



Rear View



MIC-710IVX

8ch AI Video System on NVIDIA® Jetson™ Xavier NX

Features

- NVIDIA® Jetson™ Xavier NX embedded
- Supports 8CH PoE video input
- Supports 2 x 3.5" HDD
- Board support package (BSP) includes Linux Ubuntu 18.04
- Low power consumption
- Supports H.264/H.265 cameras

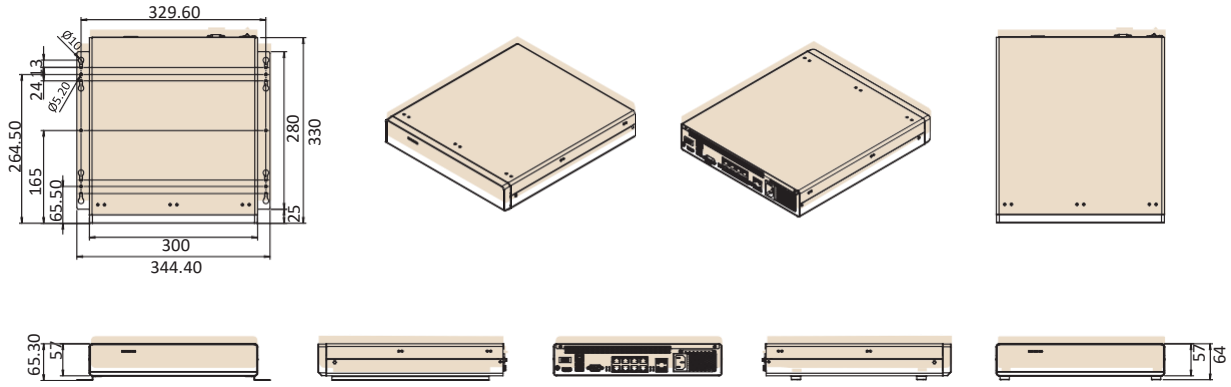
Specifications

Processor System	CPU	ARMv8.2 (64-bit) heterogeneous multi-processing (HMP) CPU architecture | 3x dual-core CPU clusters (six NVIDIA Carmel processor cores) (Max. operating frequency: 1.9GHz)
	GPU	Volta GPU, 384 CUDA core, 48 Tensor cores, Performance up to 21 TOPS (INT8) (Max. frequency: 1100MHz)
	Memory	8GB LPDDR4
	Flash	16G of eMMC
Camera Interface PoE	Controller	MICROSEMI PD69104B1ILQ
	LAN Switch	Realtek RTL8316SI
	Bandwidth	10/100 Mbps
	Compliant	IEEE 802.3af
	Power Output	15.4W
Ethernet	Interface	1 x RJ45
	Controller	Intel® i211AT
	Speed	10/100/1000 Mbps
I/O	Display	HDMI (Max. resolution 3840 x 2160 @ 60Hz)
	USB	1 x USB 3.0 1 x USB 2.0
	DI/DO	4in/4out
	Power Switch	Power ON/OFF Switch x 1
	OTG USB	1 x USB 2.0 (internal)
	COM	RS-485 x 1
Storage	Storage	2 x 3.5" HDD (internal)
Power	Power Supply Voltage	AC100-240V 250W ATX
Environment	Operational Temperature	0 ~ 40 °C with 0.7 m/s air flow
	Operating Humidity	95% @ 40 °C (non-condensing)
	Vibration	0.5 Grms @ 5 ~ 500 Hz, random, 1 hr/axis
Mechanical	Dimensions (W x D x H)	300 x 330 x 57mm (11.8 x 13 x 2.2 ")
	Weight	3 kg
	Installation	Desktop
Operating System	Linux	Ubuntu 18.04
Certifications		CE/FCC/BSMI

All product specifications are subject to change without notice.

Dimensions

Unit: mm



Ordering Information

Part Number	CPU	Memory	eMMC	HDMI	POE	USB 3.0 / USB 2.0	DI/DO	LAN
MIC-710IVX-00A1	NVIDIA Jetson Xavier NX	8GB	16G	1	8	1/1	4in/4out	1

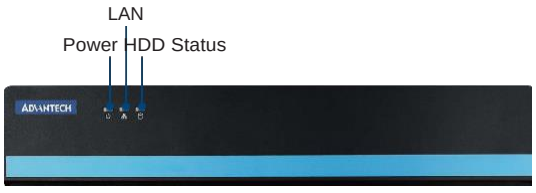
Packing List

Part Number	Description
MIC-710IVX	710IVX AI video system utilizing NVIDIA Jetson® Xavier NX
1960091140N000	3.5" HDD bay bracket (2pcs)
1700017161-21	HDD SATA Cable (2pcs)
1700023588-01	USB cable for image software updates
1960005359T002	Mounting bracket (2pcs)
1990005896S000	Rubber footpads (4pcs)

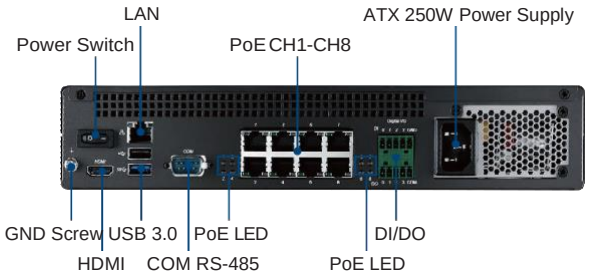
Optional

Part Number	Description
989K008734	Module for securely adapting two 2.5" HDDs to one 3.5" HDD bay

Front View



Rear View



MIC-730AI

AI Inference System based on NVIDIA Jetson® Xavier

Features

- NVIDIA Jetson™ Xavier embedded
- Fanless compact design
- Support 1 x MiniPCIe & 1 x M.2 (PCIex4 NVMe)
- Bundle with Linux Ubuntu 18.04
- Low power consumption
- Support PCIe Add-on Card
- Support 24/7 secure remote monitoring, control, and OTA deployment empowered by AIIxon (support JetPack 4.4GA and above)

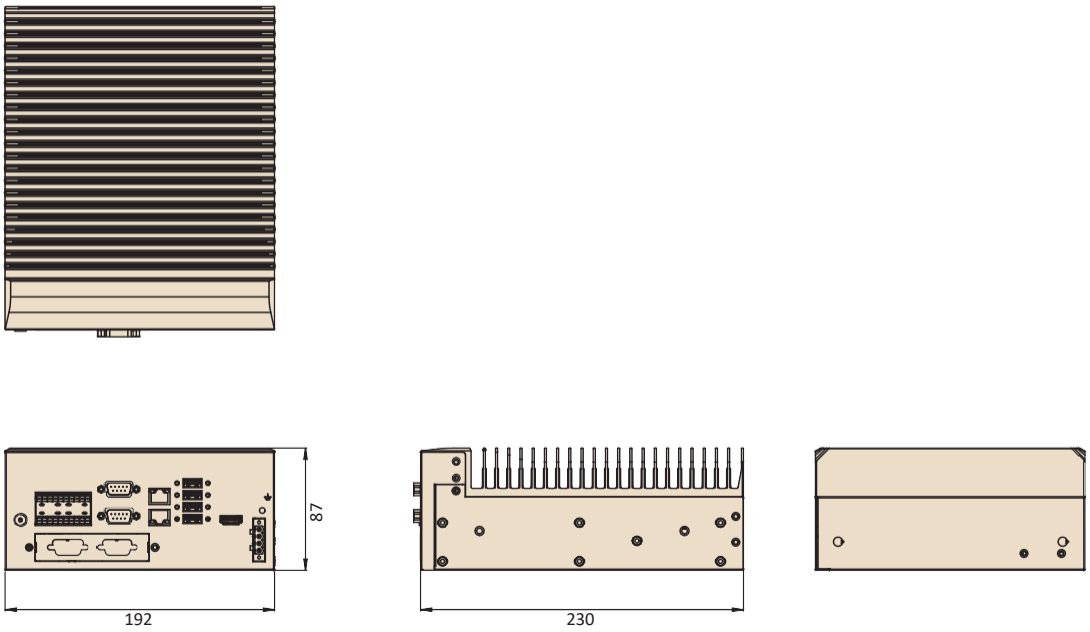
Specifications

		Jetson AGX Xavier
Processor System	GPU	NVIDIA Volta™ architecture with 512 NVIDIA CUDA cores and 64 Tensor cores 11 TFLOPS (FP16) 22 TOPS (INT8)
	CPU	8-core ARM v8.2 64-bit CPU, 8MB L2 + 4MB L3
	DLA	5 TFLOPS (FP16) 10 TOPS (INT8)
	Memory	16/32 GB 256-bit LPDDR4x 2133MHz - 137GB/s
	Storage	32GB eMMC 5.1
Ethernet	Interface	RJ45 x 2
	Controller	LAN1: Intel i210 LAN2: Marvell 88E1512
	Speed	10/100/1000 Mbps
I/O	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	Internal: 1 x USB2.0 External: 2 x USB2.0, 2 x USB3.0
	DI/DO	16 bit (8In/8Out)
	Power Switch	Power ON/OFF Button x 1 (AT/ATX , Default : AT)
	OTG USB	MicroUSB x 1 (Internal)
	COM	2 x RS-232/RS-422/RS-485
Expansion	PCIe	Optional by iModule 1 x PCIex8 > MIC-75M10-00A1 1 x PCIex16 + 1 x PCIex4 > MIC-75M20-00C1 (x16 slot, x8 lanes)
	MiniPCIe	1
Storage	Storage	2.5" HDD/SSD (Max. 9.5mm) x 1 (Internal) 1 x M.2 (NVMe 2280)
Power	Type	AT/ATX
	Power supply Voltage	9-36V
Environment	Operational Temperature	nvpmodel MODE_30W_ALL: -10~+60°C with 0.7 m/s air flow MAXN: -10~+55°C with 0.7 m/s air flow
	Operating Humidity	95% @ 40 °C (non-condensing)
	Vibration	0.5Grms @ 5 ~ 500 Hz, random, 1 hr/axis (With HDD)
Mechanical	Dimensions (W x D x H)	Core Module: 192 x 230 x 87 (mm)
	Weight	4.5 kg
	Installation	Desktop / Wall mount
Operating System	Linux	Ubuntu 18.04
Certifications		CE/FCC/BSMI/CCC

All product specifications are subject to change without notice.

Dimensions

Unit: mm



Ordering Information

Part Number	NVIDIA Jetson	CUDA/Tensor Cores	CPU	Memory	eMMC
MIC-730AI-00A1	Xavier	512/64	8-core ARM v8.2 64-bit CPU	LPDDR4 16G 1333MHz	32GB
MIC-730AI-10A1	Xavier	512/64	8-core ARM v8.2 64-bit CPU	LPDDR4 32G 1333MHz	32GB

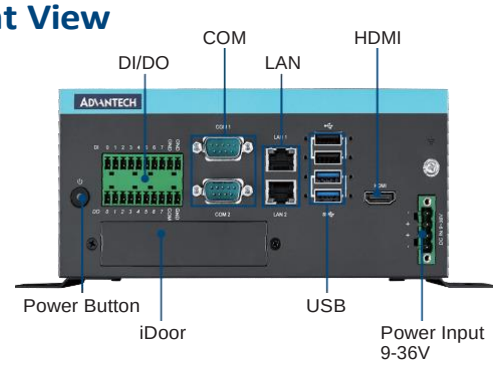
Packing List

Part Number	Description
MIC-730AI	AI Inference System based on NVIDIA Jetson® Xavier
1652003234	Power terminal block 4P (1pcs)
1652010202	DI/DO terminal block 10P (2pcs)
1700013095-01	SATA cable (1pcs)
1700023619-01	Micro USB cable for system recovery (1pcs)
1700024372-01	SATA power cable (1pcs)
1960070543T007	Mounting bracket (2pcs)
1990008871S000	2.5 HDD Rubber (4pcs)

Opitonal

Part Number	Description
96PSA-A230W24P4-3	Adaptor A/D, 100-240V, 220W, 24V
96PSA-A150W19P4-3	Adaptor A/D, 100-240V, 150W, 19V
1702002600	Power Cord (USA) UL/CSA, 3-pin, 10A, 125V, 1.83 M, 180 D
1700022940-01	Power Cord PSE, 3-pin, 7A, 125V, 3 m, DAC-ST01
1702002605	Power Cord (EU) 2-pin, 10/16A, 220V, 1.83 M, 90 D
1960065854N001	PCM series module bracket
MIC-75M10-00A1	iModule (1 x PCIex8)
MIC-75M20-00C1	iModule(1xPCIex16+1xPCIex4,x16slot,x8lanes)

Front View



Remote Management Enrollment

Enroll in 24/7 secure service to get full feature of remote device management on one centralized cloud portal - Allxon Portal.

*Support JetPack 4.4GA and above

Enrollment Page: https://allxon.com/jetson/device_enroll/

MIC-730IVA

8ch AI Network Video Recorder on NVIDIA Jetson® Xavier

Features

- NVIDIA Jetson™ Xavier embedded
- Support 8ch PoE video input
- Support 2 x 3.5" HDD
- Bundle with Linux Ubuntu 18.04 with BSP
- Low power consumption
- H.264 / H.265 camera supported
- Jetpack 4.2.2 compatible

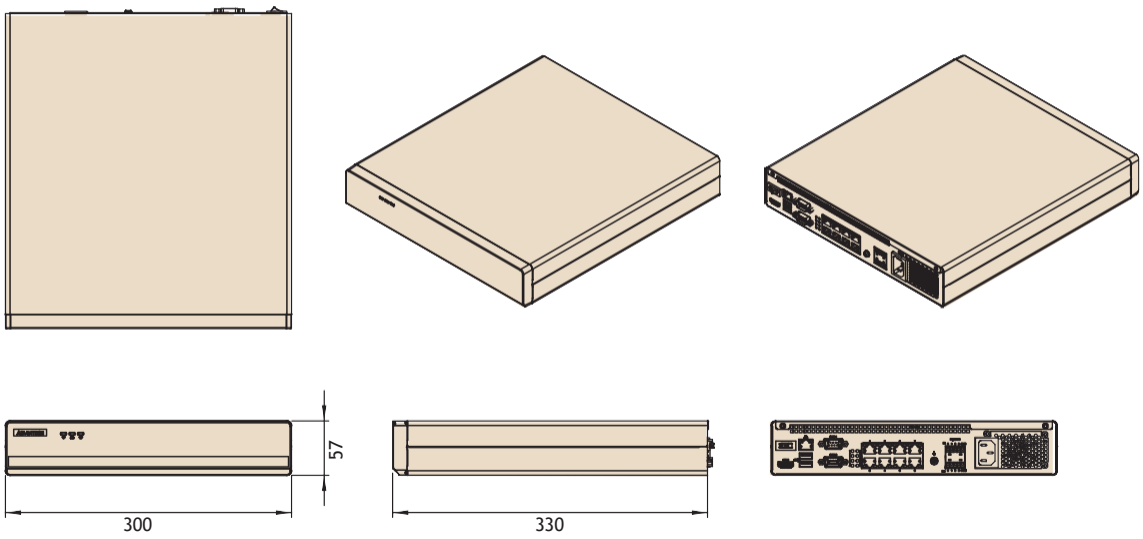
Specifications

		Jetson AGX Xavier 16GB
Processor System	GPU	NVIDIA Volta™ architecture with 512 NVIDIA CUDA cores and 64 Tensor cores 11 TFLOPS (FP16) 22 TOPS (INT8)
	CPU	8-core ARM v8.2 64-bit CPU, 8MB L2 + 4MB L3
	DLA	5 TFLOPS (FP16) 10 TOPS (INT8)
	Memory	16 GB 256-bit LPDDR4x 2133MHz - 137GB/s
	Storage	32GB eMMC 5.1
Camera Interface PoE	Controller	Marvell 88E1512
	LAN Switch	Realtek RTL8316SI
	Bandwidth	10/100 Mbps
	Compliant	IEEE 802.3af
	Power Output	Single 15.4 W , Total 60W
Ethernet	Interface	RJ45 x 1
	Controller	Intel® 210IT
	Speed	10/100/1000 Mbps
I/O	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	USB 3.0 x 2
	DI/DO	8 bit (4In/4Out)
	Power Switch	Power ON/OFF Switch x 1
	OTG USB	USB2.0 x 1 (Internal)
	COM	RS-232/RS-422/RS-485 x 2
Storage	Storage	3.5" HDD x 2 (Internal)
Power	Power Supply Voltage	AC100-240V 250W ATX
Environment	Operational Temperature	0 ~ 50 °C with 0.7 m/s air flow
	Operating Humidity	95% @ 40 °C (non-condensing)
	Vibration	0.5 Grms @ 5 ~ 500 Hz, random, 1 hr/axis
Mechanical	Dimensions (W x D x H)	300 x 330 x 57mm (11.8" x 13" x 2.24")
	Weight	3 kg
	Installation	Desktop
Operating System	Linux	Ubuntu 18.04
Certifications		CE/FCC/BSMI

All product specifications are subject to change without notice.

Dimensions

Unit: mm



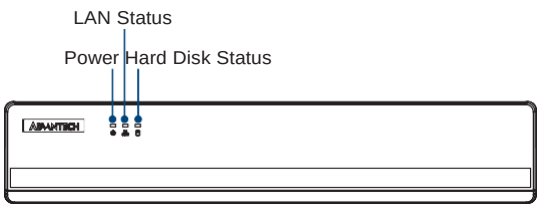
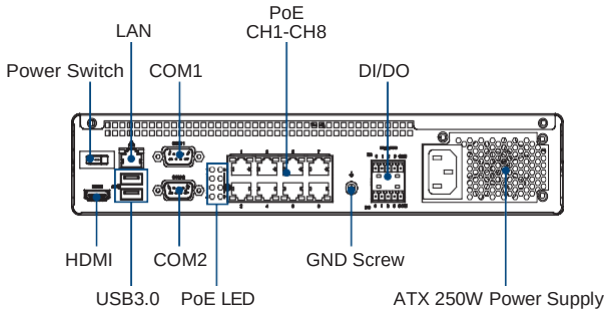
Ordering Information

Part Number	NVIDIA Jetson	CUDA/Tensor Cores	CPU	Memory	eMMC	PoE	HDMI	USB3.0	DI/DO	LAN
MIC-730IVA-00A1	Xavier	512/64	8-core ARM v8.2 64-bit CPU	LPDDR4 16G 1333MHz	32GB	8	1	2	4In/4Out	1

Packing List

Part Number	Description
MIC-730IVA	AI NVR based on NVIDIA Jetson® Xavier

Front View



Rear View