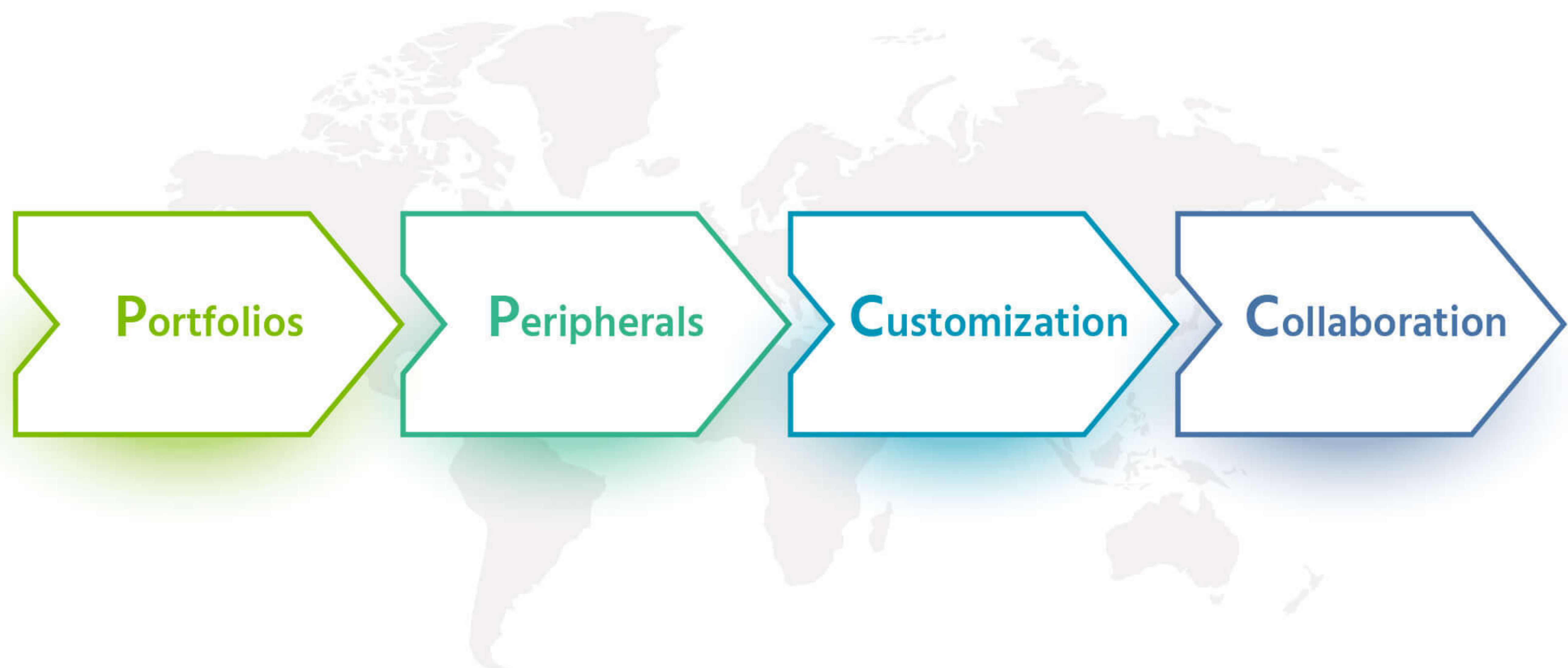# aetina

DeviceEdge
Jetson Series

Leveraging NVIDIA Jetson Series to Fulfill Comprehensive Edge AI Solutions

Leveraging NVIDIA Jetson™, the world's leading modules for autonomous machines and other embedded applications, Aetina delicately designs a vast array of compact computers, including industrial-oriented I/Os, NVIDIA JetPack™ SDK for accelerating software, and high expansion capabilities for multiple peripherals.

As an Elite Partner of NVIDIA Partner Network, Aetina has priority access to NVIDIA Jetson products, ensuring you to quickly build AI solutions with latest technologies. With NVIDIA ecosystem collaboration, Aetina helps you easily solve technical issues and even scale the business.

NVIDIA. | ELITE PARTNER

To help partners and clients successfully build ideal AI projects successfully, Aetina offers Pro-AI service, which features comprehensive solutions that help developers, system integrators, and business owners through 2P and 2C elements—Portfolios, Peripherals, Customization, Collaboration—to adopt AI or create different AI verticals in a quicker and more effortless way.

> **Portfolios** > **Peripherals** > **Customization** > **Collaboration**

Portfolios－Broad Product Line

To meet different edge computing performance requirements, Aetina provides wide range of platforms and systems, powered by NVIDIA Jetson modules from high-performance level to entry level—Jetson AGX Orin™, Jetson Orin™ NX, Jetson Orin™ Nano, Jetson AGX Xavier™ , Jetson Xavier™ NX, Jetson™ TX2 NX and Jetson Nano™ modules.

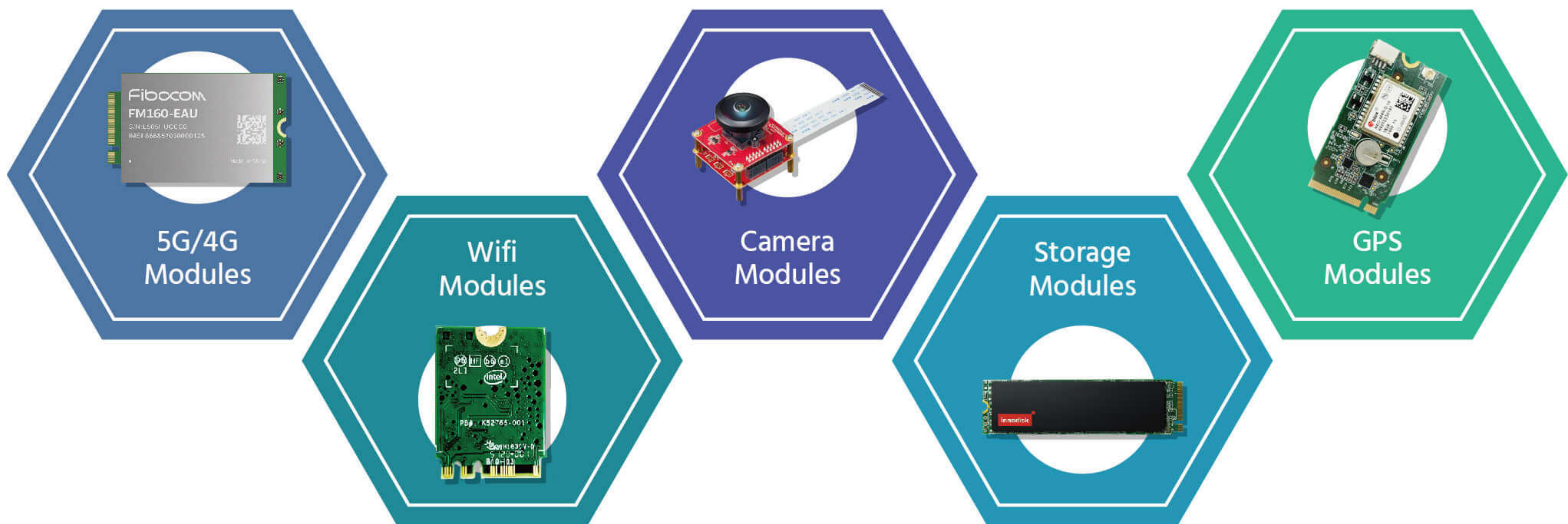## Customization－Comprehensive Service

Aetina also offers comprehensive customization service, tailoring exclusive specifications for specific applications that might not be fulfilled with the standard products.

Our customization services including:

- Customized I/O interfaces and form factor
- Thermal or housing design
- BSP customization for 3rd party devices
- Jetpack version upgrade to support latest NVIDIA software
- 3rd party software pre-installation and device integration
- Compliance test service

Peripherals—Rich Set Of Validated Choices

To accelerate the AI project development, Aetina consistently builds Jetson platforms and systems with rich I/Os and high expansion capabilities, supporting multi-functional, validated peripherals such as 4G/LTE, 5G/LTE, Wifi, camera, storage, and GPS. Aetina helps you to shorten the development time and cost for testing suitable peripherals; furthermore, accelerate the time to market for your AI projects.

5G/4G Modules

Wifi Modules

Camera Modules

Storage Modules

GPS Modules

Collaboration—Value-added Ecosystem

AI is driving competitive advantage, Aetina is dedicated to building a collaborative ecosystem that helps you speed up development and get to market faster. Our robust partner ecosystem is ready to support your AI projects.

antzer   APPRO.PHO   e-con Systems Think Camera. Think e-con.   EDOM TECHNOLOGY CO., LTD.   innodisk   IRONYUN

LIPS Sense The World   MILLITRONIC   NVIDIA.   oToBrite   SMA SOFT TECHNOLOGY   sysinno

TCIT TRACKNIL COMMUNICATION IMAGING TECHNOLOGY   Viscovery   VISIONATICS INC.   VisionLabs MACHINES CAN SEE   YUAN

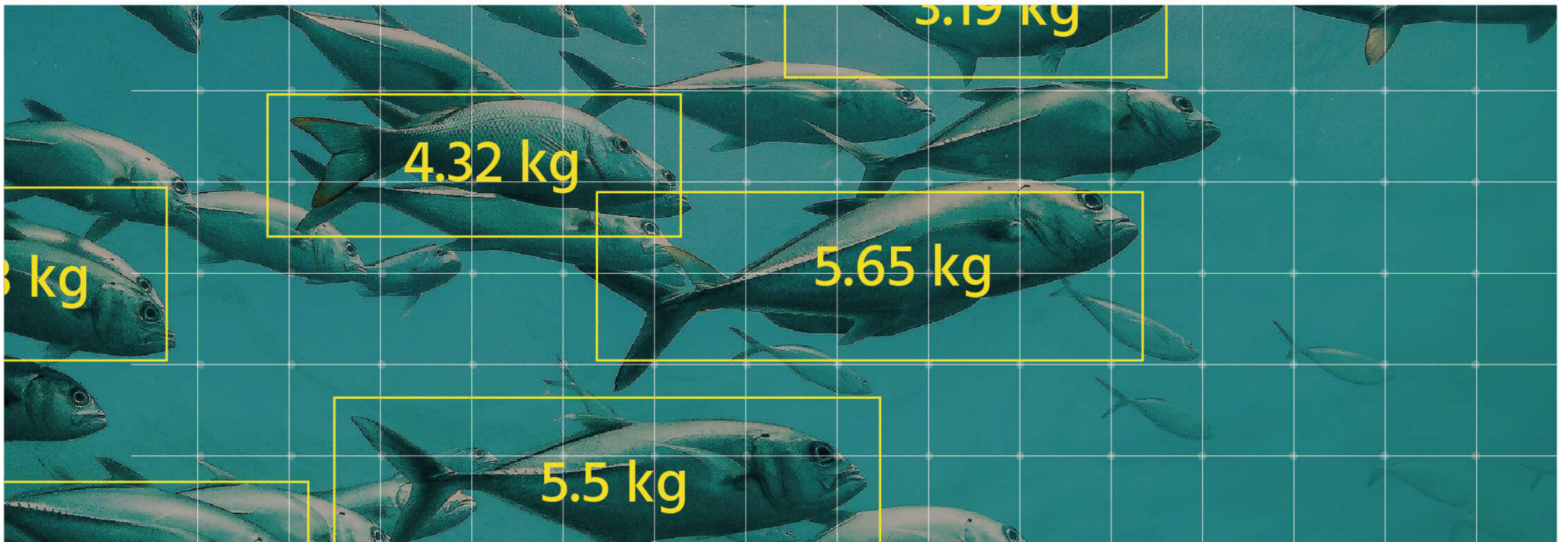# Industries

Smart Retail

Smart Transportation

Smart Factory

Smart Security

Smart Logistics

Smart Medial
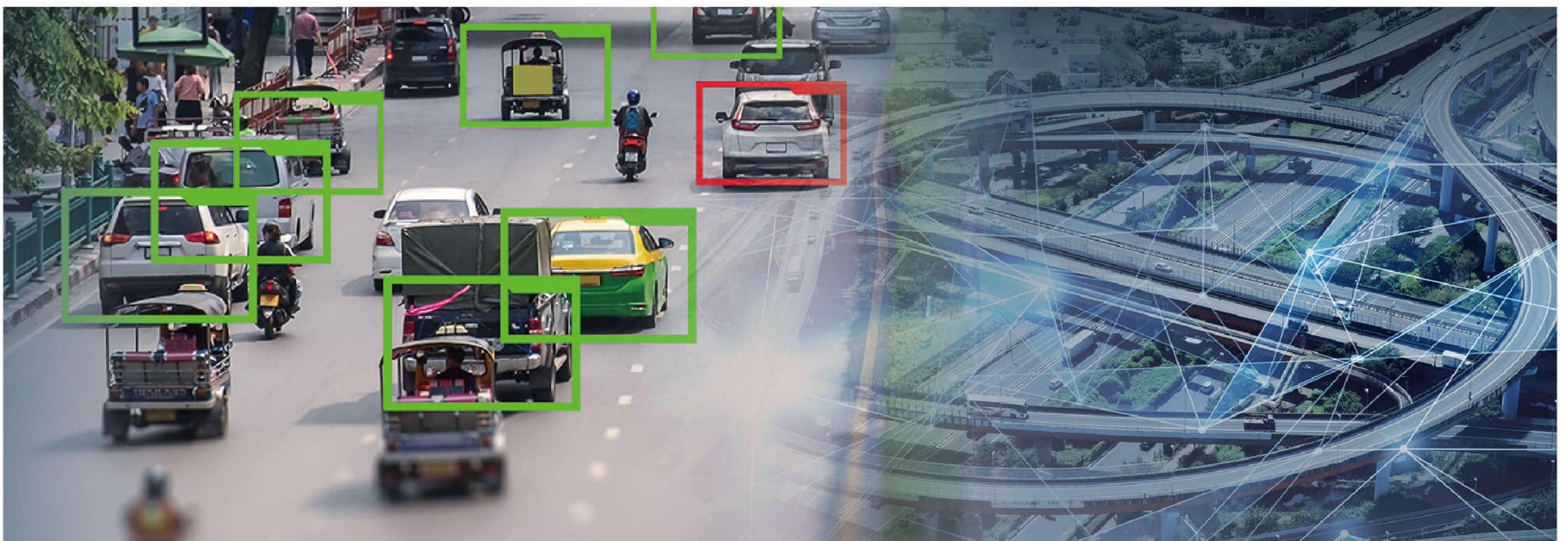
Seamless Fish Health Monitoring Maximums Welfare

Traditionally, it's hard to efficiently monitor the status of fish in real time. For example, major discrepancies often occur between records and actual weight development in the production cycle. Thus, fish farmers are unlikely to sell fish at the right price and order the right transport, causing erratic margins. Fortunately, Aetina collaborates with the partner who targets fish welfare monitoring solutions, helping fish farmers get unique insights into fish health to accurately predict welfare indicators. These solutions consist mainly of Aetina DeviceEdge AX720-X32 powered by NVIDIA Jetson AGX Xavier™ module, cameras, monitoring platforms, and several AI models such as fish growth tracking, fish wounds detection, and lice counting.

As the related images from underwater shooting need to be processed with low latency, AX720-X32 is perfect to execute edge computing with high performance. Above all, AX720-X32 is small enough to be installed in the confined space than other form factors such as PCIe graphic cards.

Improves Traffic Safety via Vehicle Recognition and Device Management

To improve road traffic and safety in many cities, a government team developed AI models that can recognize cars by types, brands, and license plates. With these vehicle data and accurate analytics, the team could work on launching a suitable traffic improvement project.

The team needed a huge amount of edge devices with sufficient computing performance for the AI model to function properly in many locations. Therefore, the team adapted more than 500 Aetina's customized systems powered by NVIDIA Jetson Xavier™ NX and closed-circuit television cameras, allowing the AI model to run the recognition tasks for vehicle data from the traffic analysis.

Furthermore, the Aetina's EdgeEye can efficiently manage hundreds of systems via intranet-connected devices, monitor real-time status of all devices, and support functions of reboot, shutdown, bootup, backup and recovery via out-of-band management modules, reducing maintenance costs.

Jetson Orin Platforms

	AIB-MX11/21 AIB-MX12/22	AIB-MX13/23	AIB-MO22/32 AIB-MN32/42	AIB-SO21/31 AIB-SN31/41
Model Number	AIB-MX11/21 AIB-MX12/22	AIB-MX13/23	AIB-MO22/32 AIB-MN32/42	AIB-SO21/31 AIB-SN31/41
Module Compatibility	NVIDIA Jetson AGX Orin™ 32GB NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson AGX Orin 32/64GB	NVIDIA Jetson Orin Nano™ 4/8GB NVIDIA Jetson Orin™ NX 8/16GB	NVIDIA Jetson Orin Nano 4/8GB NVIDIA Jetson Orin NX 8/16GB
AI Performance	200 TOPS 275 TOPS	200/275 TOPS	20/40 TOPS 70/100 TOPS	20/40 TOPS 70/100 TOPS
Storage	64GB eMMC 5.1	64GB eMMC 5.1	128GB M.2 2242 NVMe PCIe SSD	128GB M.2 2242 NVMe PCIe SSD
Display	1 x HDMI Type A	1 x HDMI Type A	1 x HDMI Type A	1 x HDMI Type A
TPM	TPM v2.0 (optional)	TPM v2.0 (optional)	Not supported	Not supported
RTC battery	With super capacitor, battery optional	With super capacitor, battery optional	With super capacitor, battery optional	With super capacitor, battery optional
Audio	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)
Camera Input	1x 16-Lane MIPI Expansion Connector	1x 16-Lane MIPI Expansion Connector	1x 8-Lane MIPI Expansion Connector (120 Pin)	2 x 4 lane MIPI CSI-2, 22 pin FPC Connector
LAN	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port, 2/4 x RJ-45 IEEE802.3af GbE PSE ports	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port	2 x RJ-45 GbE ports	1 x RJ-45 GbE Port (no PD function)
USB	2 x USB 3.2 Gen1 Type A, 1 x USB 3.2 Gen 1 Type C, 1 x USB 2.0 (DB-15), 1 x USB 2.0 Type C (OTG only)	2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 Type C (OTG only), 1 x USB 3.2 Type C Gen 2	2 x USB 3.2 Gen2 Type A 1x USB 2.0 Type C (OTG only)	2 x USB 3.2 Gen2 Type A 1x USB 2.0 Type C (OTG only)
I/O Interfaces	5V power supply (5 Watt), 12V power supply (5 Watt), 2 x I^2C, 1 x I2S, 1 x SPI, 5 x GPIO	2 x I^2C, 1 x I2S, 1 x SPI, 5 x GPIO, 1 x 3.3VDC/0.5A, 2 x 5VDC/0.5A, 1 x 12VDC/0.5A, 1 x USB 2.0	5 x GPIO, 1 x SPI, 3 x I^2C, 1x UART1, 1x UART3 (Debug only), 1 x RS-232, 1x CAN (Isolation), 1 x RS-422/485	5 x GPIO,1 x I^2C, 1 x RS-232, 1 x UART1, 1 x UART3 (Debug only), 1 x SPI, 1 x CAN (Isolation)
Expansion	1 x M.2 B-Key 3042/3052 1 x M.2 E-Key 2230 1 x M.2 M-Key 2242 1 x microSD slot	1 x M.2 B-Key 3042/3052 1 x M.2 E-Key 2230 1 x M.2 M-Key 2280 1 x microSD slot	1 x M.2 B-Key 3042/3052 1 x M.2 E-Key 2230 1 x M.2 M-Key 2242	1 x M.2 E-Key 2230 1 x M.2 M-Key 2242
MISC. Function	1 x Power/Recovery/Reset button 2 x UART, 1 x UART3 (Debug only) 1 x RS-232, 1x RS-422/485 2 x CAN 2.0b	1 x Power/Recovery/Reset button 2 x UART, 1 x UART3 (Debug only) 1 x RS-232 1x RS-422/485 2 x CAN 2.0b	1x Power/Recovery/Reset button	1x Power/Recovery/Reset button
Power Consumption	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD
Power Input / Connector	DC-in 9 to 36 VDC / 4-pin DC Jack Power Connector	DC-in 9 to 36 VDC / 4-pin DC Jack Power Connector	DC-in 12 to 24 VDC / 4-pin DC Jack Power Connector	DC-in 12-24VDC / 2-Pin Euro block
Dimension (W x D x H)	172 x 136 x 58.92 mm	131 x 120 x 63.9 mm	100 x 120 x 57.5 mm	87.4 x 67.4 x 28.45 mm
Net Weight	TBD	688g (with Fansink)	TBD	TBD
Temperature	Operating: -25 ~ + 80℃ Storage: -40~ + 85℃	Operating: -25 ~ + 80℃ Storage: -40~ + 85℃	Operating: -25 ~ + 80℃ Storage: -40~ + 85℃	Operating: -25 ~ + 80℃ Storage: -40~ + 85℃
Humidity	5 to 90% (non-condensing) 40℃	5 to 90% (non-condensing) 40℃	5 to 90% (non-condensing) 40℃	5 to 90% (non-condensing) 40℃
OS Support	Ubuntu 20.04	Ubuntu 20.04	Ubuntu 20.04	Ubuntu 20.04
Certification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A

Jetson Orin Fan-Based Systems

*Preliminary (AIE-KO21/31 AIE-KN31/41)
*Preliminary (AIE-KO22/32 AIE-KN32/42)

	AIE-KX11/21 AIE-KX12/22	AIE-KX13/23	AIE-KO21/31 AIE-KN31/41	AIE-KO22/32 AIE-KN32/42
Model Number				
Module Compatibility	NVIDIA Jetson AGX Orin™ 32GB NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson AGX Orin 32/64GB	NVIDIA Jetson Orin Nano 4/8GB NVIDIA Jetson Orin NX 8/16GB	NVIDIA Jetson Orin Nano™ 4/8GB NVIDIA Jetson Orin™ NX 8/16GB
Storage	64GB eMMC 5.1	64GB eMMC 5.1	128GB M.2 2242 NVMe PCIe SSD	128GB M.2 2242 NVMe PCIe SSD
Display	1 x HDMI Type A	1 x HDMI 2.1 Type A	1 x HDMI Type A	1 x HDMI Type A
TPM	TPM v2.0 (optional)	TPM v2.0 (optional)	Not supported	Not supported
RTC battery	With super capacitor, battery optional	With super capacitor, battery optional	With super capacitor, battery optional	With super capacitor, battery optional
Audio	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)
LAN	1 x RJ-45 1GbE ports, 1 x RJ-45 10GbE port, 2/4 x RJ-45 IEEE802.3af GbE PSE ports	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port	1 x RJ-45 GbE Port (no PD function)	1 x RJ-45 GbE Ports, 1 x RJ45 2.5GbE Ports
USB	2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x USB Type C (OTG only), 1x USB 3.2 Gen1 Type C	2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x USB 2.0 Type C (OTG only), 1 x USB 3.2 Type C Gen 2	2 x USB 3.2 Gen2 Type A 1 x USB2.0 Type C (OTG only)	2 x USB 3.2 Gen2 Type A, 1 x USB 2.0 Type C (OTG only)
I/O Interfaces	2 x I²C, 1 x I2S, 1 x SPI, 5 x GPIO 1 x RS-232, 1x RS-422/485 2 x CAN 2.0b	2 x I²C, 1 x I2S, 1 x SPI, 5 x GPIO 1 x RS-232, 1x RS-422/485 2 x CAN 2.0b w/ isolation 1 x microSD Slot, 1 x SIM Card Slot	5 x GPIO,1 x I²C, 1 x RS-232, 1 x UART, 1 x CAN (Isolation)	5 x GPIO, 3 x I²C, 1 x UART, 1 x RS-232, 1 x CAN (Isolation), 1 x RS-422/485
Expansion	1 x M.2 B-Key 3042/3052 1 x M.2 E-Key 2230 1 x M.2 M-Key 2280 1 x microSD slot	1 x M.2 B-Key 3042/3052 1 x M.2 E-Key 2230 1 x M.2 M-Key 2280	1 x M.2 E-Key 2230 1 x M.2 M-Key 2242	1 x M.2 B-Key 3042/3052 1 x M.2 E-Key 2230 1 x M.2 M-Key 2242
MISC. Function	1 x Power / Recovery / Reset Button 2 x UART, 1 x UART3 (Debug only)	1 x Power / Recovery / Reset Button 2 x UART, 1 x UART3 (Debug only)	1 x Power / Recovery / Reset Button 2 x UART, 1 x UART3 (Debug only)	1 x Power / Recovery / Reset Button
Power Consumption	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD
Power Input / Connector	DC-in 9 to 36 VDC / 4-pin DC Jack Power Connector	DC-in 9 to 36 VDC / 4-pin DC Jack Power Connector	DC-in 12-24VDC / 2-Pin Euro block	DC-in 12 to 24 VDC / 4-pin DC Jack Power Connector
Dimension (W x D x H)	220 x 170 x 79mm	210 x 124.7 x 84mm	123 x 99 x 56 mm	TBD
Mounting	Wall Mount / Din Rail (Optional)	Wall Mount / Din Rail (Optional)	Wall Mount / Din Rail (Optional)	Wall Mount / Din Rail (Optional)
Net Weight	TBD	1969g	TBD	TBD
Temperature	Operating: -20 ~ +70°C Storage: -40 ~ +85°C	Operating: -20 ~ +70°C Storage: -40 ~ +85°C	Operating: -20 ~ +70°C Storage: -40 ~ +85°C	Operating: -20 ~ +70°C Storage: -40 ~ +85°C
Humidity	5 to 90% @ 40°C Related Humidity, Non-condensing	5 to 90% @ 40°C Related Humidity, Non-condensing	5 to 90% @ 40°C Related Humidity, Non-condensing	5 to 90% @ 40°C Related Humidity, Non-condensing
OS Support	Ubuntu 20.04	Ubuntu 20.04	Ubuntu 20.04	Ubuntu 20.04
Certification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A

Jetson Fanless Systems

Model Number	AIE-CO21/31 AIE-CN31/41	AIE-PO22/32 AIE-PN32/42	AIE-CN11/21 AIE-CT41	AIE-CN12/22 AIE-CT42
Module Compatibility	NVIDIA Jetson Orin Nano 4/8G NVIDIA Jetson Orin™ NX 8/16G	NVIDIA Jetson Orin Nano 4/8G NVIDIA Jetson Orin NX 8/16G	NVIDIA Jetson Xavier NX™ 8/16GB NVIDIA Jetson™ TX2 NX	NVIDIA Jetson Xavier NX 8/16GB NVIDIA Jetson TX2 NX
AI Performance	20/40 TOPS 70/100 TOPS	20/40 TOPS 70/100 TOPS	14/21TOPS 1.33 TFLOPs	14/21TOPS 1.33 TFLOPs
Storage	128GB M.2 2242 NVMe PCIe SSD	128GB M.2 2242 NVMe PCIe SSD	16GB eMMC 5.1 Flash	16GB eMMC 5.1 Flash
Display	1 x HDMI Type A	1 x HDMI Type A	1 x HDMI 2.0 With Micro HDMI Type D Connector	1 x HDMI 2.0 With Micro HDMI Type D Connector
TPM	Not supported	Not supported	Not supported	Not supported
RTC battery	With super capacitor, battery optional	With super capacitor, battery optional	With super capacitor	With super capacitor
Audio	Line-out/Line-in/Mic (opt. with Daughter Board)	Line-out/Line-in/Mic (opt. with Daughter Board)	HDMI Integrated	HDMI Integrated
LAN	1 x RJ-45 GbE port (no PD function)	1 x RJ-45 GbE port, 1 x RJ45 2.5GbE Ports	2 x RJ-45 for GbE port (1 For PoE PD 802.3 af)	3 x RJ-45 for GbE port (2 for PoE PSE 802.3 af)
USB	2 x USB 3.2 Gen2 Type A 1 x USB2.0 Type C (OTG Only)	2 x USB 3.2 Gen2 Type A, 1 x USB 2.0 Type C (OTG only)	2 x USB 3.2 Gen1 Type A 1 x USB Type C (OTG Only)	2 x USB 3.2 Gen1 Type A 1 x USB Type C (OTG Only)
I/O Interfaces	5 x GPIO,1 x I^{2}C, 1 x UART, 1 x CAN (Isolation)	5 x GPIO, 3 x I^{2}C, 1 x UART, 1 x RS-232, 1 x CAN (Isolation), 1 x RS-422/485	5 x GPIO, 1 x UART, 1 x I^{2}C, 1 x CAN Bus	5 x GPIO, 1 x UART, 1 x I^{2}C, 1 x CAN Bus
Expansion	1 x M.2 E-Key 2230 (PCIe/USB2): WIFI/BT Module 1 x M.2 M-Key (NVMe) 2242: Storage	1 x M.2 B-Key 3042/3052 (LTE/5G - USB3) w/ sim holder: cellular function 1 x M.2 E-Key 2230 (PCIe/USB2): WIFI/BT Module 1 x M.2 M-Key (NVMe) 2242: Storage	1 x M.2 E-key 2230 : Wifi/BT GPS Function 1 x M.2 M-key 2242 : NVMe 128G SSD (Build-in)	1 x M.2 E-key 2230 : Wifi/BT GPS Function 1 x M.2 M-key 2242 : NVMe 128G SSD (Build-in)
MISC. Function	1 x Power / Recovery / Reset Button	1 x Power / Recovery / Reset Button	TBD	TBD
Power Consumption	Idle: TBD Full Loading: TBD	Idle: TBD Full Loading: TBD	Idle: 3.29W Full Loading: 26.76W	Idle: 3.29W Full Loading: 26.76W
Power Input / Connector	DC-in 12 to 24VDC / 2-Pin Euro block	DC-in 12 to 24VDC / 4-pin DC Jack Power Connector	DC-in 12V to 19VDC / DC Jack 4 Pin	DC-in 12V to 19VDC / DC Jack 4 Pin
Dimension (W x D x H)	130 x 90.2 x 73.2mm	135 x 125 x 79mm	132.6 x 88.7 x 63.6mm	132.6 x 88.7 x 63.6mm
Mounting	VESA Mount / Din Rail (Optional)	VESA Mount / Din Rail (Optional)	VESA Mount / Din Rail (Optional)	VESA Mount / Din Rail (Optional)
Net Weight	TBD	TBD	970g	970g
Temperature	Operating: -20 ~ +55°C Storage: -40 ~ +85°C	Operating: -20 ~ +55°C Storage: -40 ~ +85°C	Operating: -20 ~ +50°C Storage: -40 ~ +85°C	Operating: -20 ~ +50°C Storage: -40 ~ +85°C
Humidity	5 to 90% (non-condensing) 40°C	5 to 90% (non-condensing) 40°C	5 to 90% (non-condensing) 40°C	5 to 90% (non-condensing) 40°C
OS Support	Ubuntu 20.04	Ubuntu 20.04	Ubuntu 18.04	Ubuntu 18.04
Certification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A