

# DeviceEdge Series

Unlocking the Full Potential of NVIDIA-based Edge AI Systems

# Edge ON ►► AI Beyond

# Leveraging the NVIDIA Jetson Family 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 the NVIDIA Partner Network, Aetina has access to NVIDIA Jetson products, ensuring you to quickly build AI solutions with latest technologies. In collaboration with the NVIDIA Jetson Ecosystem, Aetina helps you easily solve technical issues and even scale the business.



We streamline your path to AI innovation with Aetina's Pro-AI service. Our support is with a comprehensive suite of resources, including a versatile portfolio, advanced peripherals, and unmatched customization options, all backed by collaborative expertise to accelerate your AI projects to life efficiently.



## ◆ 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 Tailored Service

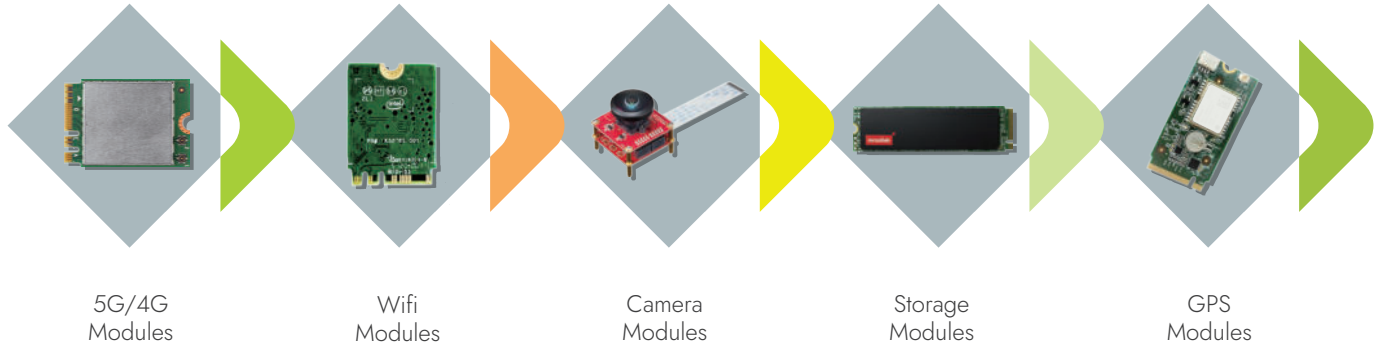
Aetina also offers comprehensive customization service, tailoring exclusive specifications for specific applications that might not be fulfilled with the standard products.

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.



## ◆ 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.



## Industries



Smart Retail



Smart Transportation



Smart Factory



Smart Security



Smart Logistics



Smart Medical

# Jetson Orin Series—Platforms



Model Number	AIB-MX11/12 AIB-MX21/22	AIB-MX13 AIB-MX23	AIB-MO22 AIB-MO32	AIB-MN32 AIB-MN42	AIB-SO21 AIB-SO31	AIB-SN31 AIB-SN41
Module Compatibility	NVIDIA Jetson AGX Orin 32GB NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson AGX Orin 32GB NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	200 TOPS 275 TOPS	200 TOPS 275 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS
Storage	64GB eMMC 5.1	64GB eMMC 5.1	1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 M-Key 2242 (NVMe 128GB built-in)	
Display	1 x HDMI 2.0 Type A	1 x HDMI 2.0 Type A	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	TPM v2.0 (optional)	TPM v2.0 (optional)	–		–	
RTC	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 (optional with daughter board)	Line-out / Line-in / Mic (optional with daughter board)	Line-out / Line-in / Mic (optional with daughter board)		Line-out / Line-in / Mic (optional with daughter board)	
Camera Input	1 x 16-Lane MIPI Expansion Connector (120-Pin)	1 x 16-Lane MIPI Expansion Connector	1 x 8-Lane MIPI Expansion Connector (120-Pin)		2 x 4-Lane MIPI CSI-2 22-Pin Connector	
LAN	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port	2 x RJ-45 GbE Ports		1 x RJ-45 GbE Port	
PoE Interface	2 or 4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*	Not supported	Not supported		Not supported	
USB	2 x USB 3.2 Gen1 Type A, 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C	2 x USB 3.2 Gen1 Type A, 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C	2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C	
I/O Interfaces	2 x UART, 1 x UART (Debug only) 1 x RS-232, 1 x RS-422/485 (2-in1), 2 x CAN 2.0b (isolation; support CAN FD), 2 x I <sup>2</sup> C, 1 x I <sup>2</sup> S, 1 x SPI, 5 x GPIO, 2 x 3.3VDC/0.5A, 3 x 5VDC/0.5A, 1 x 12VDC/0.5A, 1 x USB 2.0, 1 x microSIM Card Slot	2 x I <sup>2</sup> C, 1 x I <sup>2</sup> S, 1 x SPI, 5 x GPIO, 1 x 3.3VDC/0.5A, 2 x 5VDC/0.5A, 1 x 12VDC/0.5A, 1 x USB 2.0, 2 x UART, 1 x UART (Debug only), 1 x RS-232, 1x RS-422/485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD)	5 x GPIO, 1 x SPI, 1 x I <sup>2</sup> S, 3 x I <sup>2</sup> C, 1 x UART, 1 x UART (Debug Only), 1 x RS-232, 1 x CAN (Isolation; support CAN FD), 1 x RS-422/485 (2-in1), 1 x microSIM Card Slot		5 x GPIO, 1 x I <sup>2</sup> C, 1 x I <sup>2</sup> S, 1 x RS-232, 1 x UART, 1 x UART (Debug Only), 1 x SPI, 1 x CAN (Isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x2 Gen3) 1 x microSD Card Slot	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x4 Gen4) 1 x microSD Card Slot	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button	1 x Power / 1 x Recovery / 1 x Reset Button	1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: 10.5 W/Full Loading: 111* W Idle: 12 W/Full Loading: 132* W	Idle: 6.655 W/Full Loading: 52.25* W Idle: 6.9 W/Full Loading: 72.25* W	Idle: 7 W Full Loading: 28.68* W	Idle: 7.3 W Full Loading: 39* W	Idle: 5.4 W Full Loading: 27.08* W	Idle: 5.7 W Full Loading: 37.5* W
Power Input / Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector	DC-in 12 to 24 VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 2-Pin Terminal Block	
Dimension (W x D x H)	176 x 132 x 57.32 mm (6.93 x 5.19 x 2.26")	131 x 120 x 62.9 mm (5.16 x 4.72 x 2.47 in)	120 x 100 x 57.54 mm (4.73 x 3.94 x 2.27 in)		87.4 x 67.4 x 28.45 mm (3.44 x 2.65 x 1.12 in)	
Net Weight	0.980 kg (2.161 lb) w/ Fansink	0.701 kg (1.54 lb) w/ Fansink	0.195 kg (0.43 lb)		0.144 kg (0.32 lb) w/ Fansink	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration	10 G, IEC 60068-2-27, half sine, 11 ms duration	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C	Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C	Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C		Operating Temp. : -25°C ~ +80°C Storage Temp. : -40°C ~ +85°C	
Humidity	95% @ 40°C (104°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)	Linux (Support Jetpack 5.0 above)	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA	CE / FCC Class A / UKCA	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

\*For more test condition information, please refer to user manual

# Jetson Orin Series—Fan Based System



Model Number	AIE-KX11/12	AIE-KX21/22	AIE-KX13	AIE-KX23	AIE-KO22/32	AIE-KN32/ 42	AIE-KO21 AIE-KO31	AIE-KN31 AIE-KN41
<b>Module Compatibility</b>	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
<b>AI Performance</b>	200 TOPS	275 TOPS	200 TOPS	275 TOPS	20 TOPS/ 40 TOPS	70 TOPS/ 100 TOPS	20 TOPS/ 40 TOPS	70 TOPS/ 100 TOPS
<b>Storage</b>	64GB eMMC 5.1		64GB eMMC 5.1		1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 M-Key 2242 (128GB built-in)	
<b>Display</b>	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
<b>TPM</b>	TPM v2.0 (optional)		Not supported		Not supported		Not supported	
<b>RTC</b>	Not supported		Not supported		With super capacitor, battery (optional)		With super capacitor, battery (optional)	
<b>Audio</b>	Line-out / Line-in / Mic (optional with daughter board)		Line-out/Line-in/Mic (opt. with Daughter Board)		Line-out / Line-in / Mic (optional with daughter board)		Line-in/out, Microphone (optional with daughter board)	
<b>LAN</b>	1 x RJ-45 GbE port, 1 x RJ-45 10GbE port		1 x RJ-45 GbE port, 1 x RJ-45 10GbE port		2 x RJ-45 GbE Ports		1 x RJ-45 GbE Port	
<b>PoE Interface</b>	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)	Not supported		Not supported		Not supported	
<b>USB</b>	2 x USB 3.2 Gen1 Type A, 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C, 1 x DB-15 USB 2.0		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 (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C	
<b>I/O Interfaces</b>	2 x I <sup>2</sup> C, 1 x SPI, 5 x GPIO, 1 x RS-232, 1 x RS-422 / RS-485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD) 2 x UART, 1 x microSIM Card Slot		2 x I <sup>2</sup> C, 1 x SPI, 5 x GPIO, 1 x RS-232, 1 x RS-422 / RS-485 2 x CAN 2.0b (isolation; support CAN FD) 1 x microSIM Card Slot		5 x GPIO, 1 x UART, 1 x I <sup>2</sup> C, 1 x RS-232, 1 x RS-422/485 (2-in-1), 1 x CAN (isolation; support CAN FD), 1 x OOB (optional), 1 x microSIM Card Slot		5 x GPIO, 1 x I <sup>2</sup> C, 1 x RS-232, 1 x UART, 1 x CAN (isolation; support CAN FD)	
<b>Expansion</b>	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x2 Gen3) 1 x microSD Card Slot		1 x M.2 B-Key 3042/3052 (support USB 3.2 Gen1, USB 2.0) 1 x M.2 E-Key 2230 (support PCIe x1 Gen4, USB 2.0) 1 x M.2 M-Key 2280 (support NVMe, PCIe x2 Gen4) 1 x MicroSD Slot		1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (128GB built-in)	
<b>MISC. Function</b>	1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button 2 x UART, 1 x UART3 (Debug only)		1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button	
<b>Power Consumption</b>	Idle: 14.3 W Full Loading: 115.8* W	Idle: 14.8 W Full Loading: 136.8* W	Idle: 9.655 W Full Loading: 55.25 W	Idle: 9.9 W Full Loading: 75.25 W	Idle: 9.5 W Full Loading: 30.05* W	Idle: 10.5 W Full Loading: 39.55	Idle: 8.5 W Full Loading: 30.25* W	Idle: 7.6 W Full Loading: 40.25* W
<b>Power Input / Connector</b>	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 24VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 2-Pin Terminal Block	
<b>Dimension (W x D x H)</b>	220 x 170 x 79 mm (8.66 x 6.69 x 3.11 in)		210 x 124.7 x 79 mm (8.3 x 4.91 x 3.11 in)		196.5 x 124 x 68 mm (7.73 x 4.88 x 2.67 in)		123 x 99 x 56 mm (48.4 x 38.9 x 22 in)	
<b>Mounting</b>	Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)	
<b>Net Weight</b>	1.852 kg (4 lb)		1.969 kg (4.34 lb)		1.102 kg (2 lb)		0.54 kg (1.2 lb)	
<b>Vibration</b>	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
<b>Shock</b>	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
<b>Temperature</b>	Operating Temp. : -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +70°C (-13° F ~ +158° F) Storage Temp. : -40°C ~ +85°C (-40° F ~ +185° F)		Operating Temp. : -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +70°C (-13°F ~ +158°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
<b>Humidity</b>	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
<b>Software Support</b>	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
<b>Certification</b>	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA		CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

\*For more test condition information, please refer to user manual

# Jetson Orin Series—Fanless System



\*Preliminary



\*Preliminary

Model Number	AIE-PN33-2PSE / AIE-PN33-4PSE		AIE-PN43-2PSE / AIE-PN43-4PSE	AIE-PO23-6USB / AIE-PO33-6USB	AIE-PN33-6USB / AIE-PN43-6USB
Module Compatibility	NVIDIA Jetson Orin NX 8GB		NVIDIA Jetson Orin NX 16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	70 TOPS		100 TOPS	20/40 TOPS	70/100 TOPS
Storage	1 x M.2 NVMe M-Key 2242 (128GB built-in)			1 x M.2 NVMe M-Key 2242 (128GB built-in)	
Display	1 x HDMI 2.0 Type A			1 x HDMI 2.0 Type A	
TPM	Not supported			Not supported	
RTC	Not supported			Not supported	
Audio	Not supported			Not supported	
LAN	2 x RJ-45 GbE Ports			2 x RJ-45 GbE Ports	
PoE Interface	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W per Port)		2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W per Port)	Not supported	
USB	2 x USB 3.2 Gen2 Type A (support up to 10Gbps shared) 1 x OTG Type-C			2 x USB 3.2 Gen2 Type A (support up to 10 Gbps shared) 4 x USB 3.2 Gen1 Type A 1 x OTG Type-C	
I/O Interfaces	5 x GPIO, 1 x UART, 1 x I <sup>2</sup> C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation; support CAN FD)			5 x GPIO, 1 x UART, 1 x I <sup>2</sup> C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in)
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button			1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: TBD W Full Loading: TBD* W		Idle: TBD W Full Loading: TBD* W	Idle: TBD W Full Loading: TBD* W	Idle: TBD W Full Loading: TBD* W
Power Input / Connector	DC-in 12-24VDC / 4-Pin DC Jack Power Connector			DC-in 12-24VDC / 4-Pin DC Jack Power Connector	
Dimension (W x D x H)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)			270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)			Wall Mount (optional) / Din Rail (optional)	
Net Weight	TBC kg (TBC lb)			TBC kg (TBC lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis			1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration			10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)			Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)			95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)			Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA			CE / FCC Class A / UKCA	

\*For more test condition information, please refer to user manual



**\*Preliminary**

Model Number	AIE-PO23-3M / AIE-PO33-3M		AIE-PN33-3M / AIE-PN43-3M	AIE-PX11/AIE-PX12	AIE-PX21/AIE-PX22
Module Compatibility	NVIDIA Jetson Orin Nano 4GB/8GB		NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB
AI Performance	20/40 TOPS		70/100 TOPS	200 TOPS	275 TOPS
Storage	1 x M.2 NVMe M-Key 2242 (128GB built-in)			64GB eMMC 5.1	
Display	1 x HDMI 2.0 Type A			1 x HDMI 2.0 Type A	
TPM	Not supported			TPM v2.0 (optional)	
RTC	Not supported			Not supported	
Audio	Not supported			Not supported	
LAN	2 x RJ-45 GbE Ports			1 x RJ-45 GbE, 1 x RJ-45 10GbE	
PoE Interface	Not supported			2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*	2/4 x RJ-45 GbE PSE (IEEE 802.3af compliant, Power Output 15W/Port)*
USB	2 x USB 3.2 Gen2 Type A (support up to 10 Gbps shared) 1 x OTG Type-C			2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C	
I/O Interfaces	5 x GPIO, 1 x UART, 1 x I <sup>2</sup> C, 1 x RS-232, 1 x RS-422/485, 1 x CAN (isolation; support CAN FD)			2 x I <sup>2</sup> C, 1 x SPI, 5 x GPIO, 2 x UART, 1 x RS-232, 1 x RS-422/485 (2-in-1), 2 x CAN 2.0b (isolation; support CAN FD) 1 x microSIM Card Slot, 1 x OOB (optional)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in) 2 x M.2 M-Key 2280 (PCIe)	1 x M.2 B-Key 3042/3052 (LTE/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in) 2 x M.2 M-Key 2280 (PCIe)		1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (Wifi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x2 Gen3) 1 x microSD Card Slot	
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button			1 x Power / 1 x Recovery / 1 x Reset Button	
Power Consumption	Idle: TBD W Full Loading: TBD* W		Idle: TBD W Full Loading: TBD* W	Idle: 7.5 W Full Loading: 109* W	Idle: 8 W Full Loading: 130* W
Power Input / Connector	DC-in 12-24VDC / 4-Pin DC Jack Power Connector			DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector	
Dimension (W x D x H)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)			270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)			Wall Mount (optional) / Din Rail (optional)	
Net Weight	TBC kg (TBC lb)			4.3 kg (9.48 lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis			1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration			10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)			Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)			95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)			Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA			CE / FCC Class A / UKCA	

\*For more test condition information, please refer to user manual



# Jetson Orin Series—Fanless System



Model Number	AIE-PX13	AIE-PX23	AIE-PO22 AIE-PO32	AIE-PN32 AIE-PN42	AIE-CO21 AIE-CO31	AIE-CN31 AIE-CN41
Module Compatibility	NVIDIA Jetson AGX Orin 32GB	NVIDIA Jetson AGX Orin 64GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB	NVIDIA Jetson Orin Nano 4GB/8GB	NVIDIA Jetson Orin NX 8GB/16GB
AI Performance	200 TOPS	275 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS	20 TOPS 40 TOPS	70 TOPS 100 TOPS
Storage	64GB eMMC 5.1		1 x M.2 M-Key 2242 (NVMe 128GB built-in)		1 x M.2 M-Key 2242 (128GB built-in)	
Display	1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A		1 x HDMI 2.0 Type A	
TPM	Not supported		Not supported		Not supported	
RTC	Not supported		Not supported		With super capacitor, battery (optional)	
Audio	Line-out/Line-in/Mic (optional with daughter board)		Not supported		Not supported	
LAN	1 x RJ-45 GbE, 1 x RJ-45 10GbE		2 x RJ-45 GbE Ports		1 x RJ-45 GbE Port	
PoE Interface	Not supported		Not supported		Not supported	
USB	2 x USB 3.2 Gen1 Type A, 1 x USB 2.0 (DB-15), 1 x OTG Type-C, 1 x USB 3.2 Gen2 Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C		2 x USB 3.2 Gen2 Type A (supports up to 10Gbps shared) 1 x OTG Type-C	
I/O Interfaces	2 x I <sup>2</sup> C, 1 x SPI, 5 x GPIO, 2 x UART 1 x RS-232, 1 x RS-422/485 (2-in-1) 2 x CAN 2.0b (isolation; support CAN FD) 1 x microSIM Card Slot		5 x GPIO, 1 x UART, 1 x I <sup>2</sup> C, 1 x RS-232, 1 x RS-422/485 (2-in-1), 1 x CAN (isolation; support CAN FD), 1 x microSIM Card Slot		5 x GPIO, 1 x UART, 1 x I <sup>2</sup> C, 1 x CAN (isolation; support CAN FD)	
Expansion	1 x M.2 B-Key 3042/3052 (LTE/4G/5G) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2280 (supports NVMe; PCIe x4 Gen4) 1 x microSD Card Slot		1 x M.2 B-Key 3042/3052 (LTE/4G/5G) , 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen3)		1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen3) 1 x M.2 E-Key 2230 (WiFi/BT) 1 x M.2 M-Key 2242 (NVMe 128GB built-in; PCIe x4 Gen4)	
MISC. Function	1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button		1 x Power / 1 x Recovery / 1 x Reset Button 1 x CAN 2.0b with isolation	
Power Consumption	Idle: 5.5 W Full Loading: 51.08* W	Idle: 5.9 W Full Loading: 71* W	Idle: 5.5 W Full Loading: 25.95* W	Idle: 6.4 W Full Loading: 35.45* W	Idle: 3.4 W Full Loading: 25.08* W	Idle: 3.7 W Full Loading: 35.5* W
Power Input / Connector	DC-in 9 to 36 VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24VDC / 4-Pin DC Jack Power Connector		DC-in 12 to 24 VDC / 2-Pin Terminal Block	
Dimension (W x D x H)	270 x 195 x 80 mm (10.63 x 7.67 x 3.15 in)		137.6 x 125 x 71.5 mm (5.41 x 4.92 x 2.81 in)		130 x 90.2 x 72 mm (5.11 x 3.55 x 2.83 in)	
Mounting	Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)		Wall Mount (optional) / Din Rail (optional)	
Net Weight	4.2 kg (9.7 lb)		1.36 kg (3 lb)		0.927 kg (2.044 lb)	
Vibration	1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis		1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration		10 G, IEC 60068-2-27, half sine, 11 ms duration	
Temperature	Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)		Operating Temp. : -25°C ~ +55°C (-13°F ~ +131°F) with 0.5 m/s air flow Storage Temp. : -40°C ~ +85°C (-40°F ~ +185°F)	
Humidity	95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)		95% @ 40°C (104°F) (non-condensing)	
Software Support	Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)		Linux (Support Jetpack 5.0 above)	
Certification	CE / FCC Class A / UKCA		CE / FCC Class A / UKCA		CE / FCC Class A / UKCA	

\*For more test condition information, please refer to user manual

# Maximizing Food Production with Edge AI-Enhanced Smart Farm Systems

The escalating global population is amplifying the demand for increased food production, compelling the agricultural industry to urgently seek additional labor resources. However, the inherently labor-intensive nature of this industry has confronted persistent challenges related to workforce shortages. Exacerbating this situation are factors such as the aging rural demographic, diminishing interest in agriculture among the younger generation, and declining birth rates in various regions around the world.

To address the pressing issue of labor scarcity, it is becoming more popular to adopt agricultural harvesting robots. Aetina's Smart Farm System, powered by Aetina's AIB-MX22, stands out by providing robust AI performance. Fueled by the NVIDIA Jetson AGX Orin module, the AIB-MX22 achieves up to 275 TOPS, facilitating server-class AI inference at the edge with minimal latency. Featuring built-in M.2 B-Key, M.2 E-Key, and M.2 M-Key, the system accommodates LTE/5G, Wifi/BT, and storage functionalities, respectively.

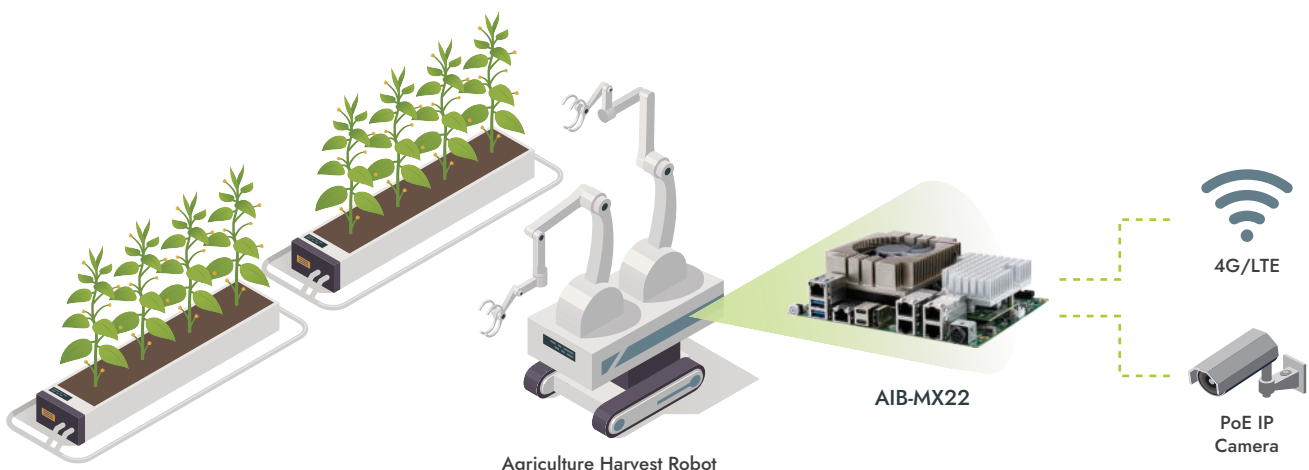
The inclusion of four PSE ports supports connectivity with four PoE cameras, while the 10GbE port ensures data transfer speeds of up to 10 GB per second, surpassing the traditional GbE port by tenfold. With a wide input power range of 9 to 36 VDC, the AIB-MX22 is well-suited for diverse embedded applications in challenging environmental conditions and climates.

## Benefits

- The NVIDIA Jetson AGX Orin module offers up to 275 TOPS and enables server-class AI inference at the edge with low latency.
- Equipped with comprehensive M.2 expansion and LAN ports, AIB-MX22 offers high flexibility and expansion ability, which makes it ideal for various applications.
- Aetina offers one-stop service from project evaluation to after-sales training, which accelerates the harvesting process and optimizes the crop yields.

## Results

- Lower workforce overheads
- Higher crop yield
- Robots take up a much smaller space than conventional farming equipment
- Fewer errors in planting seeds, irrigation, and sprinkling pesticides
- Lower usage of pesticides



# Improving Safety and Shortening Ride Times with Smart Elevator Solutions

In the age of digital transformation, Aetina and her partner stand at the forefront of revolutionizing the elevator industry. Addressing the challenges of traditional maintenance, our partner has pioneered an intelligent elevator solution, integrating IoT, big data, and AI. This technology transforms elevators into 'smart devices', equipped with embedded sensors that transmit real-time data to the cloud. This allows for immediate fault detection, consumable tracking, and proactive maintenance, greatly enhancing user experience and reducing downtime.

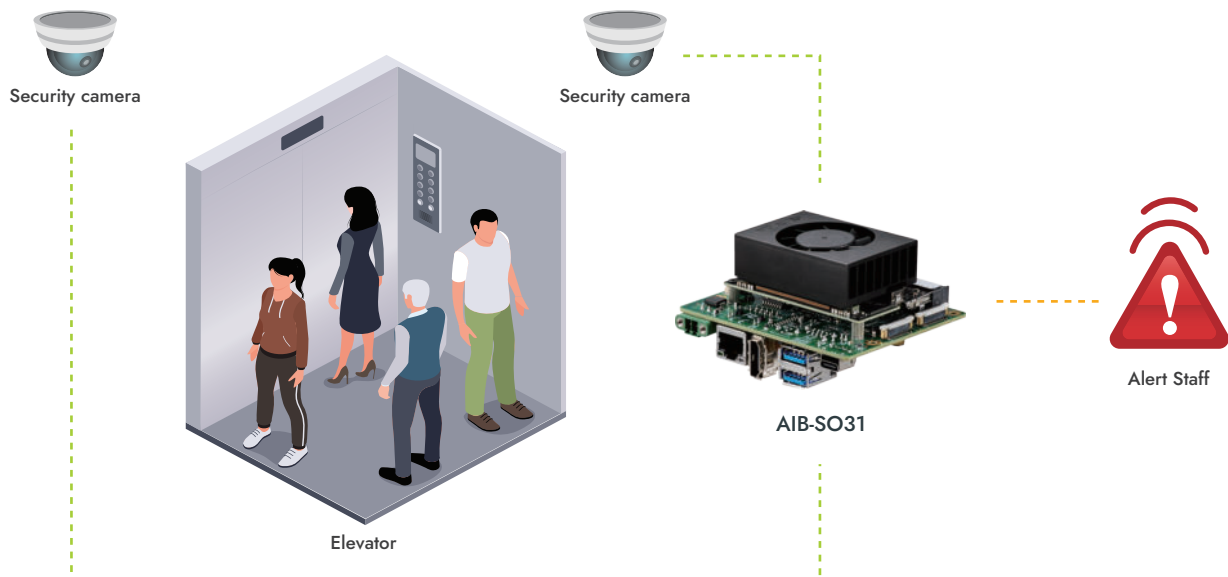
Beyond fault detection, Aetina's solution incorporates AI to optimize elevator dispatch and space utilization, ensuring efficiency even during peak hours. Our Jetson Orin Nano platform, AIB-SO31, is specially designed for the elevator environment, combining a small footprint with high computational power and supporting a range of functions from sensor data collection to complex image analysis. The innovative approach not only caters to the immediate needs of users but also addresses long-term operational challenges by minimizing maintenance costs, enhancing safety, and ensuring efficient operation.

## ► Benefits

- Palm-sized platform design with high computing abilities
- Supports E-Key for Wi-Fi card

## ► Results

- Safety enhanced with earthquake warnings and emergency stops
- Improve emergency reaction times
- Reduce elevator ride times





# Real-Time Fire Warning Avoids Accidents

The construction industry deals with a variety of hazards, and fire hazard on construction sites is the most common one. Construction projects are taking place in densely populated metropolitan cities and the completion date is often on tight schedule, any accident leads to a delay of schedule and even affects profitability.

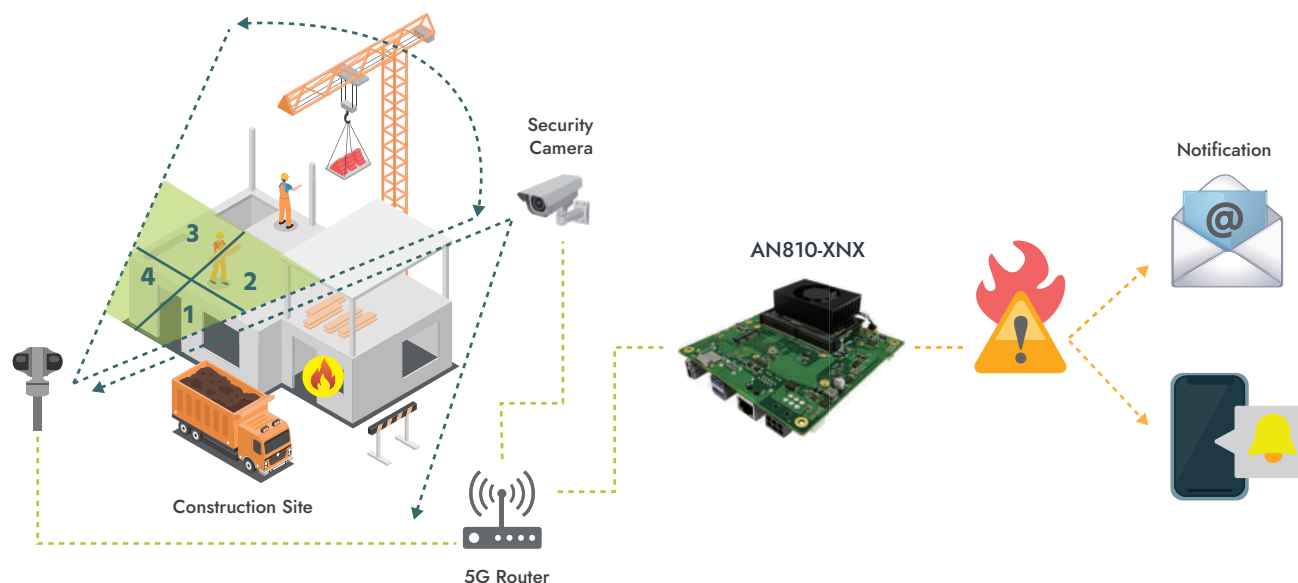
To detect fire in construction site on the spot, Aetina collaborates with the partner to provide a fire detection solution, including high-definition cameras, and Aetina's DeviceEdge AN810-XNX powered by NVIDIA Jetson Xavier™ NX Module. The AN810-XNX is designed in a compact platform, supporting 5G network, and delivering up to 21 TOPS.

## ► Benefits

- High computing capability for processing images from multiple interface cameras
- M.2 B-Key 3050 supporting 5G
- Perfect for space-constrained challenging environments

## ► Results

- Accurately detecting at early-stage fire daytime and night-time
- Completes construction projects on time





# 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.

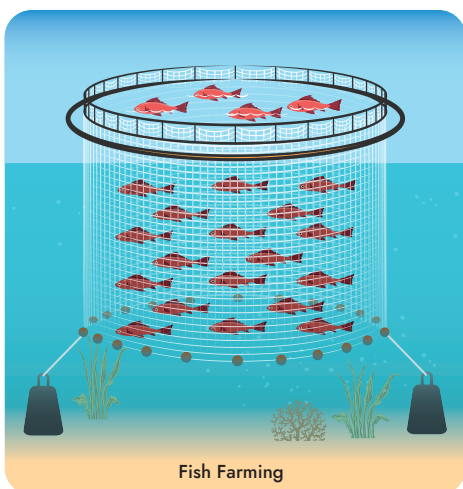
As the related images from underwater shooting need to be processed with low latency, AX720-X32 is perfect to execute edge computing with high performance. Above all, AX720-X32 is small enough to be installed in the confined space than other form factors such as PCIe graphic cards.

## ► Benefits

- Tiny edge computing platforms to be installed in confined space
- Energy-efficient, while providing high performance
- Easy to integrate MIPI camera with BSP customization support

## ► Results

- Efficiently monitors fish health data in real time
- Enable to accurately predict the right selling price and transport for fish welfare
- Increase the overall fish farming profits



Waterproof Box + Camera



AX720-X32