

NVIDIA Jetson Product Introduction

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Elite
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Agenda



- NVIDIA Jetson Product Offering & Introduction
- Aetina NVIDIA Jetson Product Core Competency
- Success Stories Sharing

NVIDIA Jetson Product Offering & Introduction

THE JETSON FAMILY

Next-Gen: Jetson Orin

JETSON Orin Nano 4GB

20 TOPs (INT8)



5 - 10W

45mm x 70mm

JETSON Orin Nano 8GB

40 TOPs (INT8)



7 - 15W

45mm x 70mm

JETSON Orin NX 8GB

70 TOPs (INT8)



10 - 20W

45mm x 70mm

JETSON Orin NX 16GB

100 TOPs (INT8)



10 - 25W

45mm x 70mm

JETSON AGX Orin 32/64GB

275 TOPs (INT8)



15- 60W
32GB/64GB

100mm x 87mm

ENTRY

JETSON NANO

0.5 TFLOPS (FP16)



5 - 10W

45mm x 70mm

JETSON TX2 NX

1.33 TFLOPS (FP16)



7.5 - 15W

45mm x 70mm

JETSON TX2 series

1.33 TFLOPS (FP16)



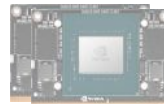
7.5 - 15W*

50mm x 87mm

MAINSTREAM

JETSON Xavier NX series

21 TOPs (INT8)

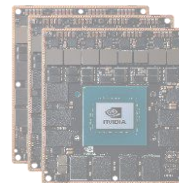


10 - 20W
8GB/16GB

45mm x 70mm

JETSON AGX Xavier Series

32 TOPs (INT8)



10 - 30W**
32GB/64GB

100mm x 87mm

AUTONOMOUS MACHINES

Nvidia Jetson Product Portfolio

Platforms & Development Kits



*Industrial-grade, to approach the customers who want to build their own system

Key Features:

- Support Rich I/O Interfaces
- Compact size
- Wide Operating Temperature

Target Industry:

- **Smart Factory**
- **Drone/AGV/AMR**
- **General Industry**

Fan-based Systems



*Industrial-grade, to approach the customers who want to compact size, high performance Edge AI system

Key Features:

- Compact Size
- Wide Operating Temperature

Target Industry:

- **Smart Factory**
- **General Industry**

Fanless Systems



*Industrial-grade, to approach the customers who concern the reliability

Key Features:

- Compact Size
- Fanless Design

Target Industry:

- **Smart City**
- **Smart Agriculture**

Nvidia Jetson Product Portfolio

Vertical-Oriented (Jetson ORIN series, Planning)

In-Vehicle



Two models: one (ORIN NX/NANO) for DVR (AI inference w/o camera). One (AGX ORIN) for GMSL2 camera + AI inference—commercial cars in USA/EMEA

*Key Features:

- Anti-vibration/shock
- Power management
- Fanless
- Compliant with E-Mark (E-24)

Smart Medical



One model: AGX ORIN in USA/EMEA

*Key Features:

- Compliant with IEC 60601-1-1 and 60601-1-2 (high ESD, surge protection)

NVIDIA Jetson Series—Platform

Small (< 120 x 100 mm)

Middle (< 180 x 140 mm)

AGX ORIN



AIB-MX13/23
1 x GbE/1 x 10 GbE/B-Key/E-
Key/M-Key/120 pin for MIPI



AIB-MX11/21/12/22
1 x GbE/1 x 10 GbE/4 x PSE/B-
Key/E-Key/M-Key/120 pin for
MIPI

AGX Xavier



AX720-X32/X64
3 x GbE/2 x HDMI/E-Key/M-Key/120 pin for
MIPI

ORIN
NX/ORIN
NANO



AIB-SN31/41, AIB-SO21/31
1 x GbE/M-Key(128GB SSD)/E-Key/2 x MIPI(4-
lane/OOB/Recovery)



AIB-MN32/42, AIB-MO22/32
2 x GbE/B-Key/M-Key(128GB SSD)/E-Key/120pin for
MIPI/OOB/Recovery/Daughter Board

Xavier NX



AN110-XNX/XNX16
1 x GbE/MicroSD/E-Key/2 x MIPI



AIB-MN32/42
1 x GbE/B-Key/E-Key/M-key/120 pin for MIPI/

TX2 NX



AT017-TX2NX
1 x GbE/MicroSD/mSATA/E-Key



AIB-ST41
1 x GbE (PD)/B-Key/E-Key/M-Key/2 x
MIPI

Nano



AN110-NAO
1 x GbE/MicroSD/E-Key/2 x MIPI

Platform & Development Kit

AIB-MX13/23

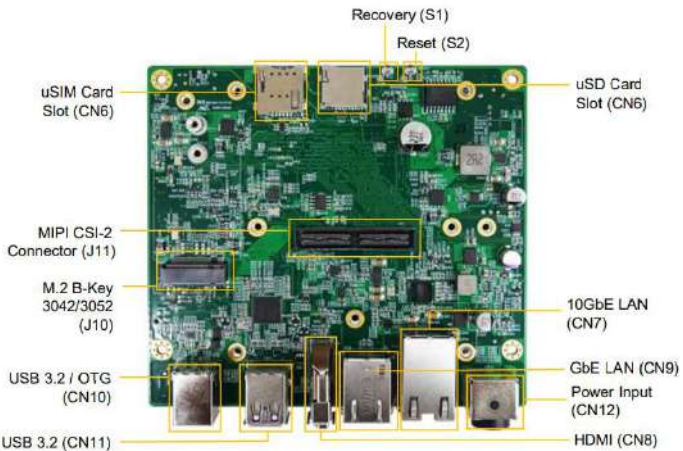
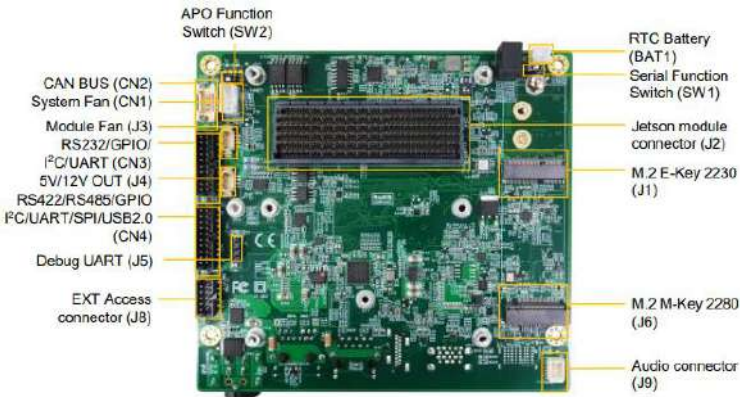


Product Name	AIB-MX13/23
Jetson Module	AGX ORIN 32/64GB
Dimensions	131 x 120 x 63.9 mm
Power Input	9 to 36 VDC
Operating Temperature	-25°C ~ +80°C (-13°F ~ +176°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x USB 3.2 TYPE C
- 1 x 10 GbE
- 1 x 1 GbE
- 1 x M.2 B-Key
- 1 x M.2 E-Key
- 1 x M.2 M-Key
- 120 pins CSI connector
- 2 x isolated CAN

Applications



Platform & Development Kit

AIB-MX11/12/21/22

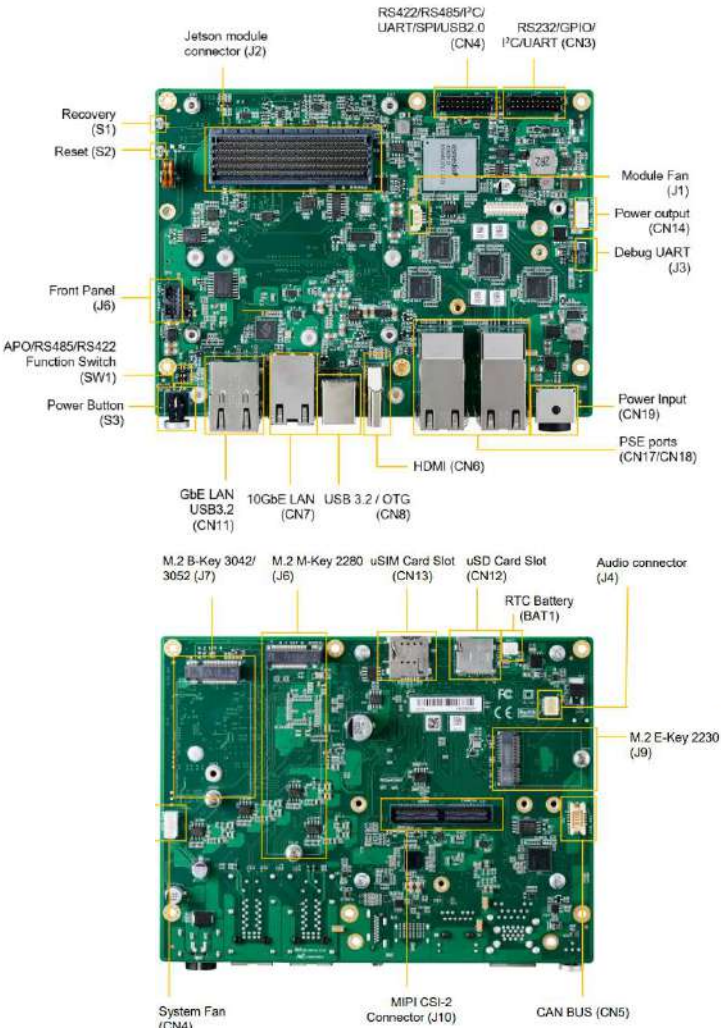


Product Name	AIB-MX11/12/21/22
Jetson Module	AGX ORIN 32/64GB
Dimensions	172 x 136 x 58.92 mm
Power Input	9 to 36 VDC
Operating Temperature	-25°C ~ +80°C (-13°F ~ +176°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x USB 3.2 TYPE C
- 1 x 10 GbE
- 1 x 1 GbE
- 1 x M.2 B-Key
- 1 x M.2 E-Key
- 1 x M.2 M-Key
- 120 pins CSI connector
- 1 x USB 2.0 pin header
- 2/4 PoE ports
- 2 x isolated CAN

Applications



Platform & Development Kit

AIB-MO22/32, AIB-MN32/42

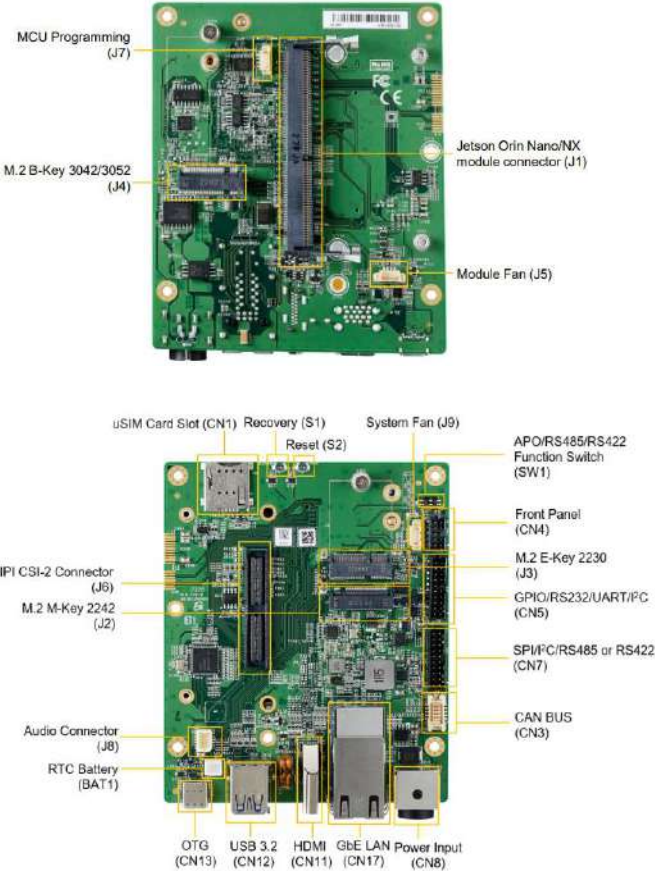
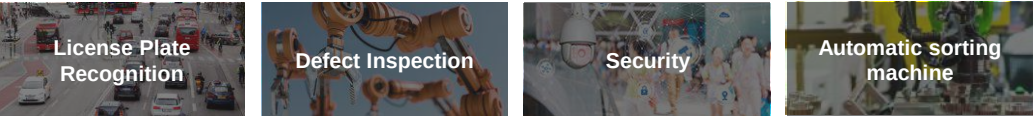


Product Name	AIB-MO22/32, AIB-MN32/42
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	120 x 100 x 57.54 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +80°C (-13°F ~ +176°F)
Certification	CE FC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 2 x 1 GbE
- 120 pins CSI-2 connector
- 1 x isolated CAN
- 1 x M.2 B-Key
- 1 x M.2 E-Key
- 1 x M.2 M-Key (128GB built-in)

Applications



Platform & Development Kit

AIB-SO21/31, AIB-SN31/41

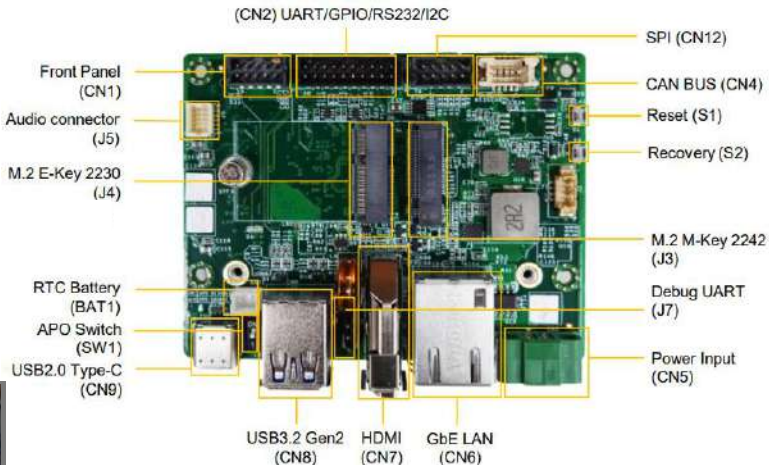


Product Name	AIB-SO21/31, AIB-SN31/41
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	87.4 x 67.4 x 28.45 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +80°C (-13°F ~ +176°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x 1 GbE
- 1 x M.2 M-Key (128GB built-in)
- 1 x M.2 E-Key
- 2 x 22 pins CSI-2 connector
- 1 x isolated CAN

Applications



NVIDIA Jetson Series—Fan System

aetina

Compact (<135 x 135 mm)

Middle (<200 x 150 mm)

Large (>200 x 150 mm)

AGX
ORIN



AIB-KX13/23
1 x GbE/1 x 10 GbE/B-Key/E-Key/M-Key/120 pin for MIPI



AIB-KX11/12/21/22
1 x GbE/1 x 10 GbE/4 x PSE/B-Key/E-Key/M-Key/120 pin for MIPI

AGX
Xavier



AX720-X32/X64
3 x GbE/2 x HDMI/E-Key/M-Key/120 pin for MIPI

ORIN
NX/ORIN
NANO



AIE-KN31/41
1 x GbE/M-Key(128GB SSD)/E-Key/2 x MIPI(4-lane/OOB/Recovery)



AIE-KO21/31
1 x GbE/M-Key(128GB SSD)/E-Key/2 x MIPI(4-lane/OOB/Recovery)



AIB-KN32/42
2 x GbE/B-Key/M-Key(128GB SSD)/E-Key/120pin for MIPI/OOB/Recovery/Daughter Board



AIE-KO22/32
2 x GbE/B-Key/M-Key(128GB SSD)/E-Key/120pin for MIPI/OOB/Recovery/Daughter Board

Xavier
NX



AN810-XXN/XXN16
1 x GbE/MicroSD/B-Key/E-Key/M-Key



AIE-KN13/23
1 x GbE/9 x USB/128GB SSD/E-Key/Recovery

TX2 NX

Nano

Fan-based System

AIE-KX13/23



Product Name	AIE-KX13/23
Jetson Module	AGX ORIN 32/64GB
Dimensions	210 x 124.7 x 79 mm
Power Input	9 to 36 VDC
Operating Temperature	-25°C ~ +70°C (-13°F ~ +158°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0

2 x USB 3.2 TYPE A

1 x USB 3.2 TYPE C

1 x 10 GbE

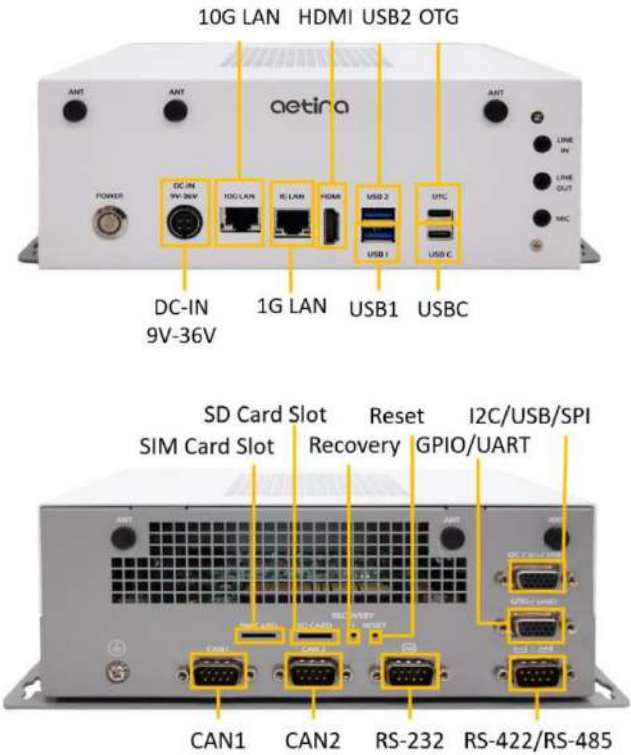
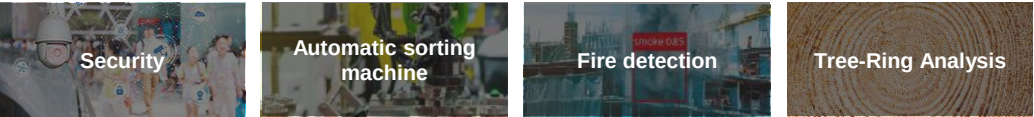
1 x 1 GbE
- 1 x M.2 B-Key

1 x M.2 E-Key

1 x M.2 M-Key

2 x isolated CAN

Applications



Fan-based System

AIE-KX11/12/21/22

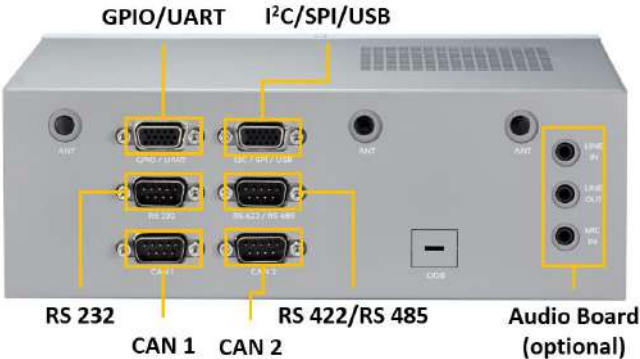
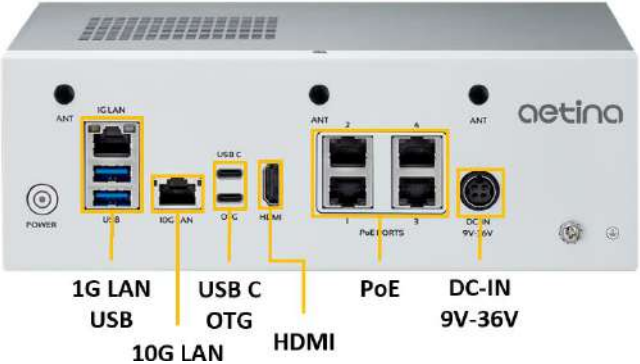


Product Name	AIE-KX11/12/21/22
Jetson Module	AGX ORIN 32/64GB
Dimensions	220 x 170 x 79mm
Power Input	9 to 36 VDC
Operating Temperature	-25°C ~ +70°C (-13°F ~ +158°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x USB 3.2 TYPE C
- 1 x 10 GbE
- 1 x 1 GbE
- 1 x M.2 B-Key
- 1 x M.2 E-Key
- 1 x M.2 M-Key
- 2 x isolated CAN
- 1 x USB 2.0 pin header
- 2/4 PoE ports

Applications



Fan-based System

AIE-KO22/32, AIE-KN32/42

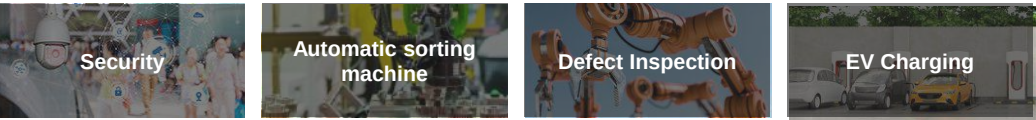


Product Name	AIE-KO22/32, AIE-KN32/42
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	196.5 x 124 x 68 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +70°C (-13°F ~ +158°F)
Certification	CE FCC UK

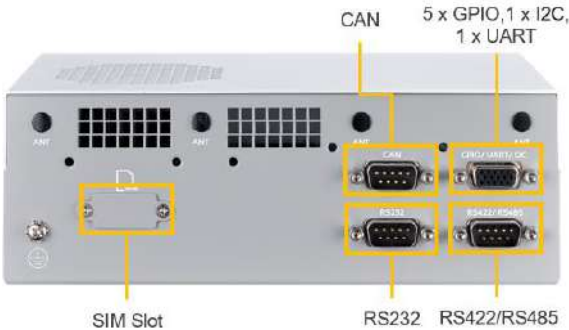
Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 2 x 1 GbE
- 1 x M.2 E-Key
- 1 x isolated CAN
- 1 x M.2 B-Key
- 1 x M.2 M-Key (128GB built-in)

Applications



Audio Board (Optional)

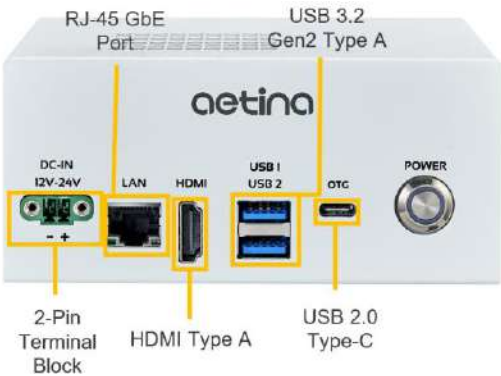


Fan-based System

AIE-KO21/31, AIE-KN31/41



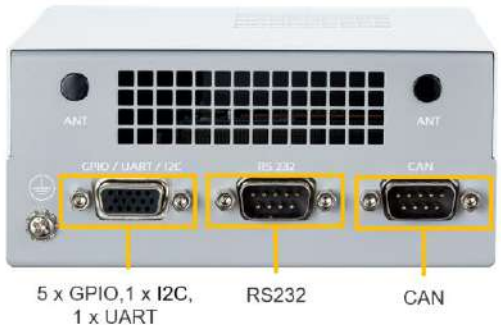
Product Name	AIE-KO21/31, AIE-KN31/41
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	123 x 99 x 56 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +70°C (-13°F ~ +158°F)
Certification	CE FCC UK



Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x 1 GbE
- 1 x M.2 M-Key (128GB built-in)
- 1 x M.2 E-Key
- 1 x isolated CAN

Applications



NVIDIA Jetson Series—Fanless System & Vertical Product

aetina

Fanless

In-Vehicle Market

AGX
ORIN



AGX ORIN



AGX ORIN

2024/H1

AGX
Xavier

ORIN
NX/ORIN
NANO



ORIN NX



ORIN NANO



4 x PoE / 4 x USB / 2 x M-Key

2024/Q2



ORIN NX



ORIN NANO

2024/H1

2024/H1

Xavier
NX



AIE-CN11/21
1 x GbE/1 x PD/128GB
SSD/E-Key/Fanless/
Recovery



AIE-CN21/22
1 x GbE/1 x PSE/128GB SSD/E-
Key/Fanless/
Recovery



AN110-XNX/XNX16
1 x GbE/MicroSD/
E-Key/Fanless



AT017-XNX/XNX16
1 x GbE/MicroSD/
mSATA/E-Key/Fanless

TX2 NX



AIE-CT41
1 x GbE/1 x PD/128GB SSD/E-
Key/Fanless/Recovery



AIE-CT42
1 x GbE/1 x PSE/128GB SSD/E-
Key/Fanless/Recovery

Nano



AN110-NAO
1 x GbE/MicroSD/
E-Key/Fanless



AT017-NAO
1 x GbE/MicroSD/
mSATA/E-Key/Fanless

Fanless System

AIE-PX13/23

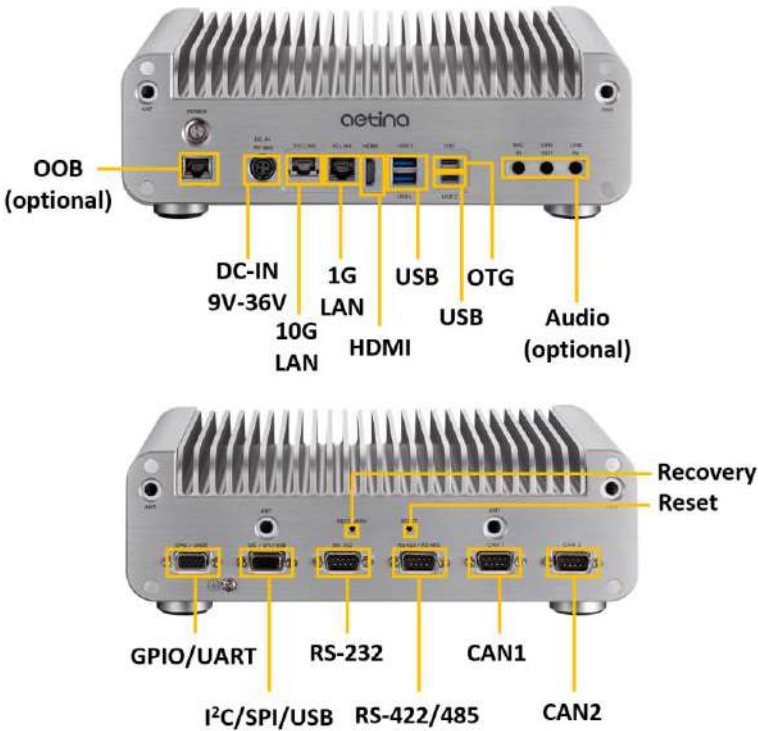
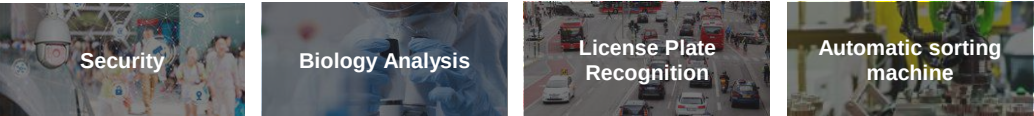


Product Name	AIE-PX13/23
Jetson Module	AGX ORIN 32/64GB
Dimensions	270 x 195 x 80 mm
Power Input	9 to 36 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x USB 3.2 TYPE C
- 1 x 10 GbE
- 1 x 1 GbE
- 1 x M.2 B-Key
- 1 x M.2 E-Key
- 1 x M.2 M-Key
- 2 x isolated CAN

Applications



Fanless System

AIE-PX11/12/21/22



Product Name	AIE-PX11/12/21/22
Jetson Module	AGX ORIN 32/64GB
Dimensions	270 x 195 x 80 mm
Power Input	9 to 36 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FC UK

Features

1 x HDMI 2.0

2 x USB 3.2 TYPE A

1 x USB 3.2 TYPE C

1 x 10 GbE

1 x 1 GbE

1 x M.2 B-Key

1 x M.2 E-Key

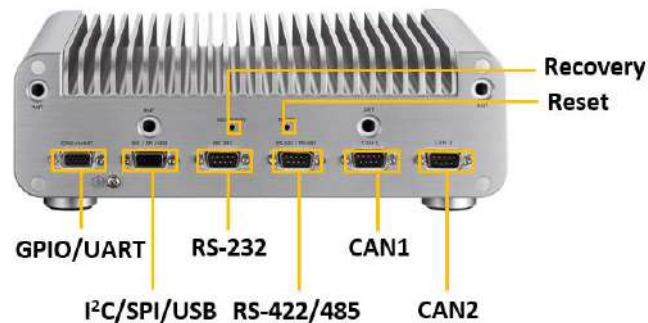
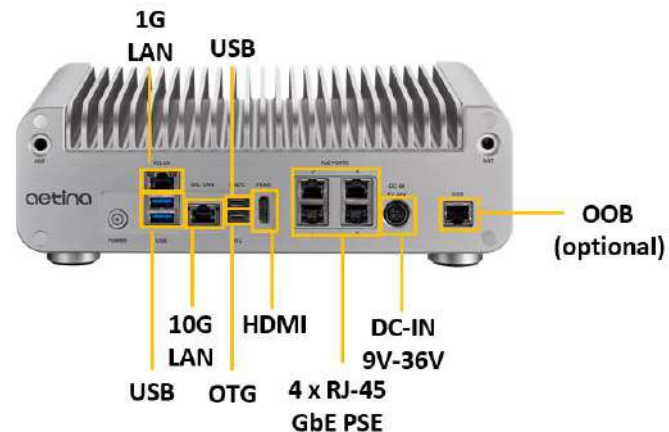
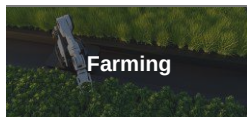
1 x M.2 M-Key

2 x isolated CAN

1 x USB 2.0 pin header

2/4 PoE ports

Applications



Fanless System

AIE-PO22/32, AIE-PN32/42



Product Name	AIE-PO22/32, AIE-PN32/42
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	137.6 x 125 x 71.5 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FCC UK

Features

- 1 x HDMI 2.0

2 x USB 3.2 TYPE A

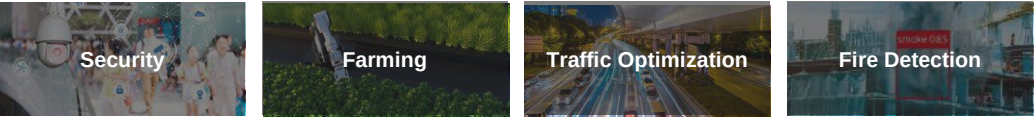
2 x 1 GbE

1 x M.2 E-Key

1 x isolated CAN
- 1 x M.2 B-Key

1 x M.2 M-Key (128GB built-in)

Applications



Fanless System

AIE-CO21/31, AIE-CN31/41



Product Name	AIE-CO21/31, AIE-CN31/41
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	139 x 90.2 x 72 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 1 x 1 GbE
- 1 x M.2 M-Key (128GB built-in)
- 1 x M.2 E-Key
- 1 x isolated CAN

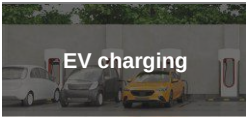
Applications



Defect Detection



Security



EV charging



Automatic sorting machine



5 x GPIO, 1 x I2C,
1 x UART

Fanless System

AIE-PN33/43-2PSE, AIE-PN33/43-4PSE

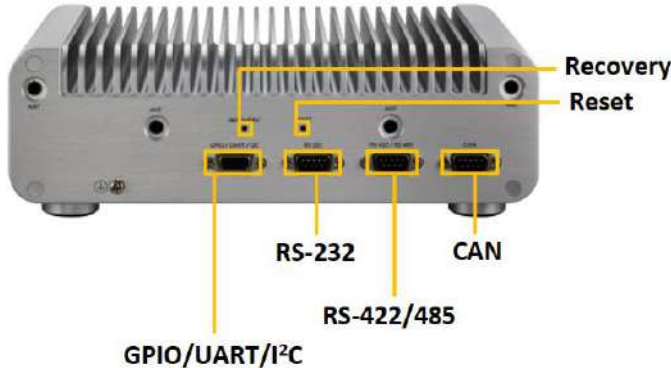
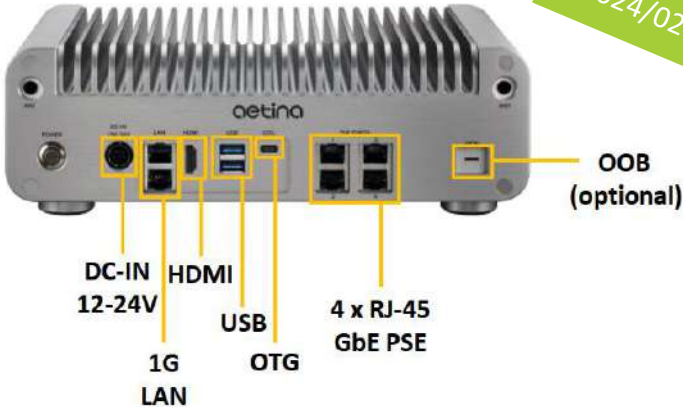
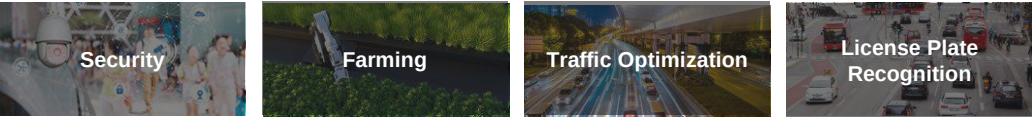


Product Name	AIE-PN33/43-2PSE AIE-PN33/43-4PSE
Jetson Module	ORIN NX 8/16GB
Dimensions	270 x 195 x 80 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FC UK

Features

- 1 x HDMI 2.0
- 2 x USB 3.2 TYPE A
- 2 x 1 GbE
- 1 x M.2 E-Key
- 1 x isolated CAN
- 1 x M.2 B-Key
- 1 x M.2 M-Key (128GB built-in)
- 4 PoE ports

Applications



Fanless System

AIE-PO23/33-6USB, AIE-PN33/43-6USB



Product Name	AIE-PO23/33-6USB AIE-PN33/43-6USB
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	270 x 195 x 80 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FC UK

Features

1 x HDMI 2.0

6 x USB 3.2 TYPE A

2 x 1 GbE

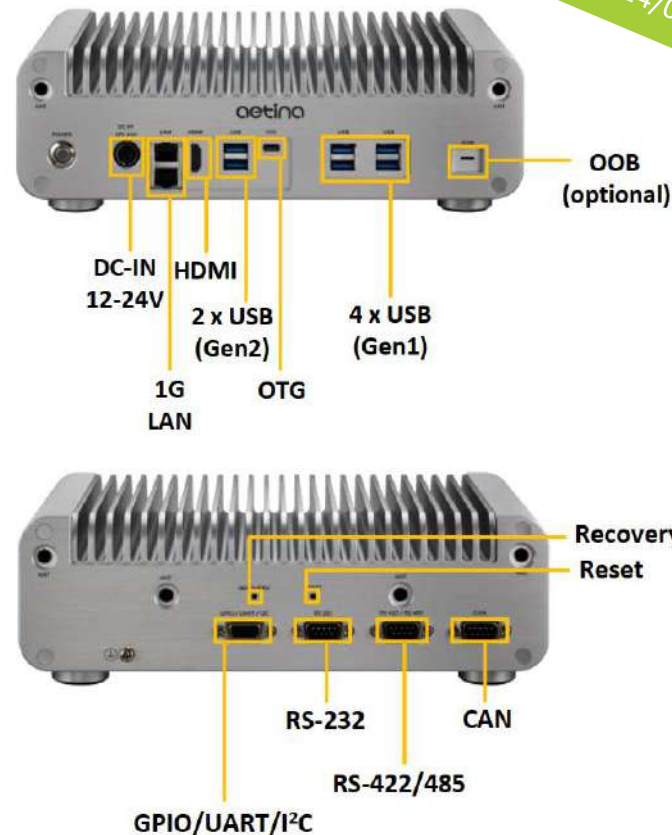
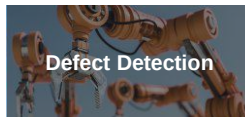
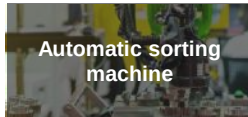
1 x M.2 E-Key

1 x isolated CAN

1 x M.2 B-Key

1 x M.2 M-Key
(128GB built-in)

Applications



Fanless System

AIE-PO23/33-3M, AIE-PN33/43-3M

Product Name	AIE-PO23/33-3M AIE-PN33/43-3M
Jetson Module	ORIN NANO 4/8GB, ORIN NX 8/16GB
Dimensions	270 x 195 x 80 mm
Power Input	12 to 24 VDC
Operating Temperature	-25°C ~ +55°C (-13°F ~ +131°F)
Certification	CE FC UK

Features

1 x HDMI 2.0

2 x USB 3.2 TYPE A

2 x 1 GbE

1 x M.2 E-Key

1 x isolated CAN

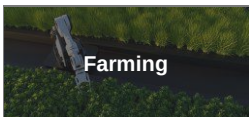
1 x M.2 B-Key

3 x M.2 M-Key
(1 x 128GB built-in)

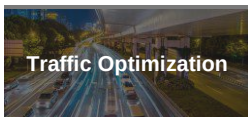
Applications



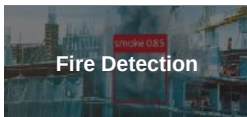
Security



Farming

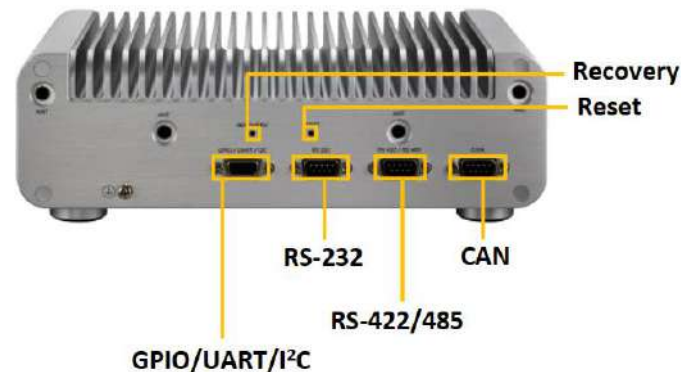
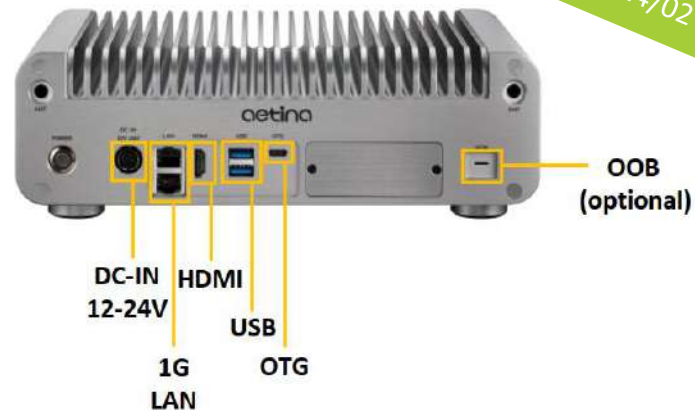


Traffic Optimization

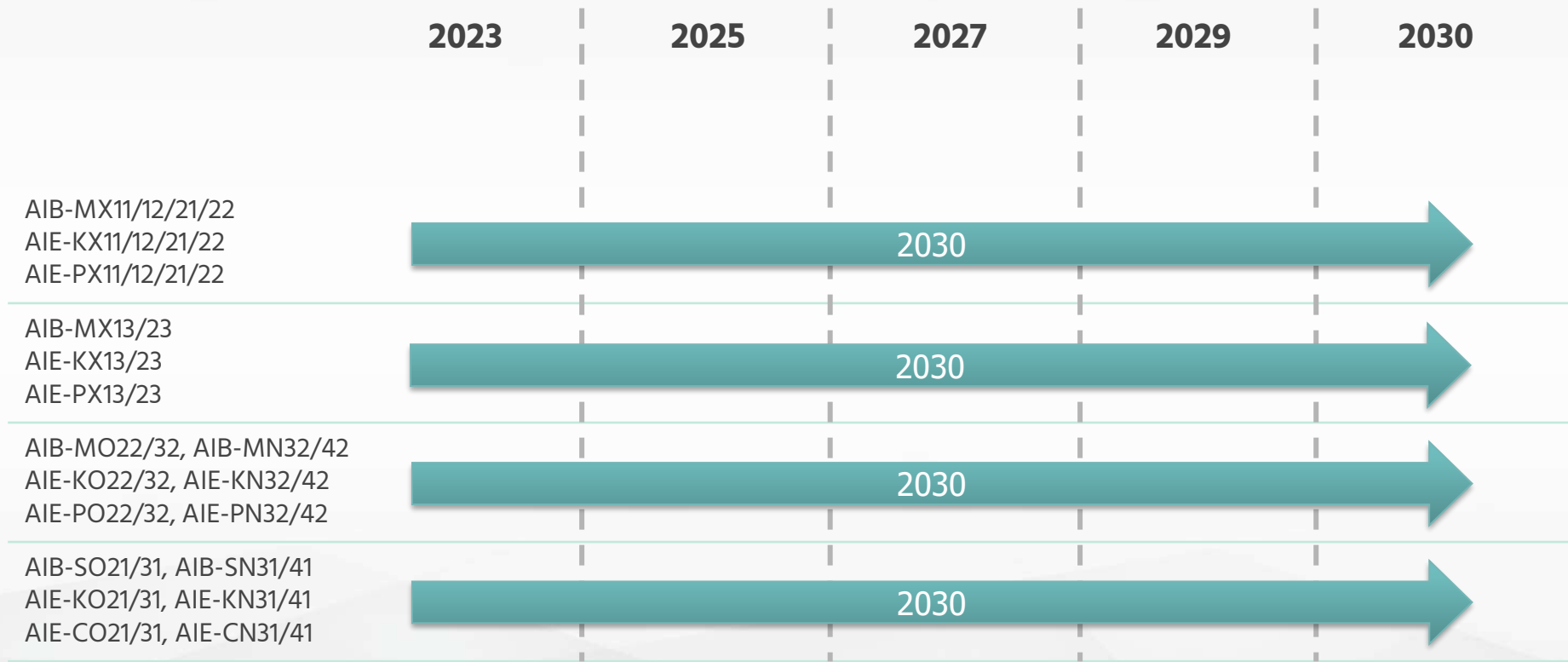


Fire Detection

2024/02



NVIDIA Jetson ORIN Product Lifecycle



*Follow NVIDIA Jetson ORIN product lifecycle (<https://developer.nvidia.com/embedded/lifecycle>)

A large green rectangular banner spans the middle of the slide. In the top-left corner of the banner, there are two overlapping white circles. In the bottom-right corner, there are two parallel white diagonal lines.

Aetina NVIDIA Jetson Product Core Competency

Peripherals Support

Wireless (GPS/WIFI/Cellular), Camera, Storage
BSP driver integration & customization



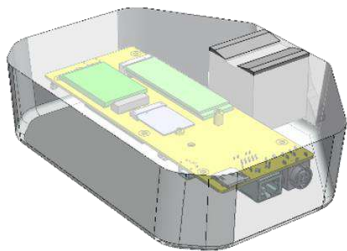
aetina

NVIDIA Jetson Products



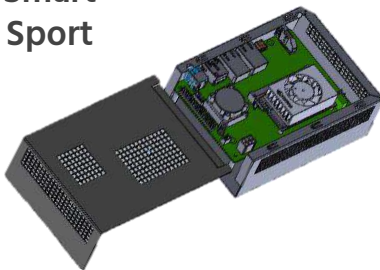
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Customization—HW/SW Integration

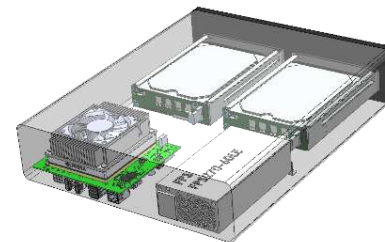


Smart Transportation

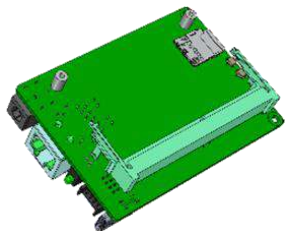
Smart Sport



Smart IoT

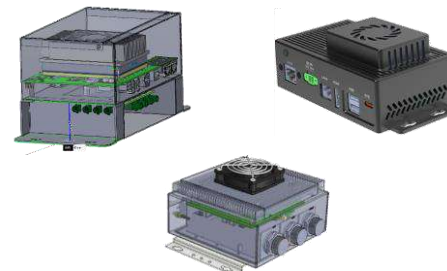


Smart Factory



Board/System Level customization
Different form factor / size
Fanless, waterproof, dustproof
design
Camera integration.....

Smart City



Success Stories Sharing

Smart Energy—Working Safety Protection



● Region: USA/North Europe

● Application:

- Drilling System
- Working safety protection
- Accuracy compensation

● Challenge:

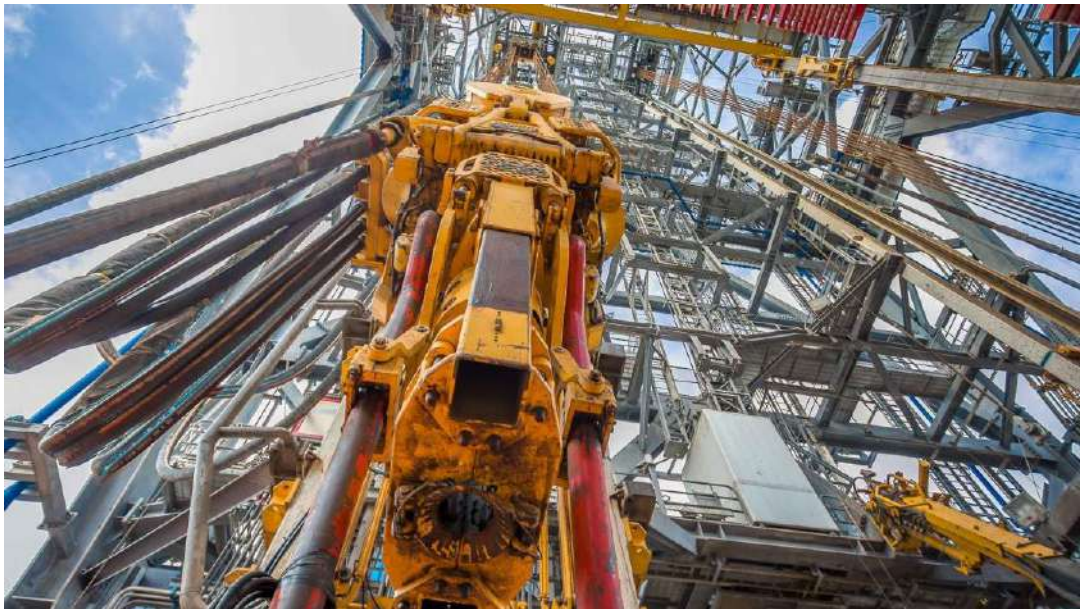
- Small space
- Harsh environment

● Aetina Solution:

- AIB-MX13 (AGX ORIN 32GB, 200TOPS)
- -25°C ~ +80°C Operating Temperature



AIB-MX13 (AGX ORIN 32GB)



Smart Agriculture—Collaborative Robot



● Region: USA

● Application:

- Smart Farm System
- Blueberries/Table Grapes/Security/solar cleaning

● Challenge:

- Low power consumption
- Wide temperature
- Small space
- GPS/Cellular/PoE function support

● Aetina Solution:

- AIB-MX22 (AGX ORIN 64GB, 275 TOPS) with PoE
- -25°C ~ +80°C Operating Temperature
- Support B/E/M key



AIB-MX22 (AGX ORIN 64GB)



Smart Building—Smart Elevator

- Region: TW

- Application:

- Active detection of trapped systems

- Challenge:

- Small size
- High computing power
- WIFI support

- Aetina Solution:

- AIB-SO31 (ORIN NANO 8GB, 40 TOPS)
- 87.4 x 67.4 x 28.45 mm
- Support E key for WIFI extension



AIB-SO31 (ORIN NANO 8GB)



Smart Agriculture—Intelligent Agricultural Machinery

- Region: USA

- Application:

- optimize chemical usage, reimagine routine processes

- Challenge:

- Small size
- High computing power
- WIFI support

- Aetina Solution:

- AIB-SO31 (ORIN NANO 4GB, 20TOPS)
- 87.4 x 67.4 x 28.45 mm
- Support E key for WIFI extension



AIB-SO21 (ORIN NANO 4GB)



Smart Factory—OCR (optical character recognition)



- Region: ASIA

- Application:

- OCR combine with Robotic Process Automation to speed up the government/company process efficiency

- Challenge:

- Small size
- High computing power
- Rich I/O interfaces

- Aetina Solution:

- AIB-MX13 (AGX ORIN 32GB, 200TOPS)
- Support B/E/M key, GPIO, UART, RS-232, RS-485, etc.



AIB-MX13 (AGX ORIN 32GB)



Smart Factory—Collaborative Robot

- Region: ASIA

- Application:

- Maintenance and cable fixing

- Challenge:

- Small size

- High computing power

- Aetina Solution:

- AIB-SO31 (ORIN NANO 4GB, 20TOPS)

- 87.4 x 67.4 x 28.45 mm



AIB-SO21 (ORIN NANO 4GB)



Smart Ocean—Ocean Current Monitoring/Analysis



- Region: China

- Application:

- Ocean Current Monitoring/Analysis

- Challenge:

- Small size

- High computing power

- Extension capability

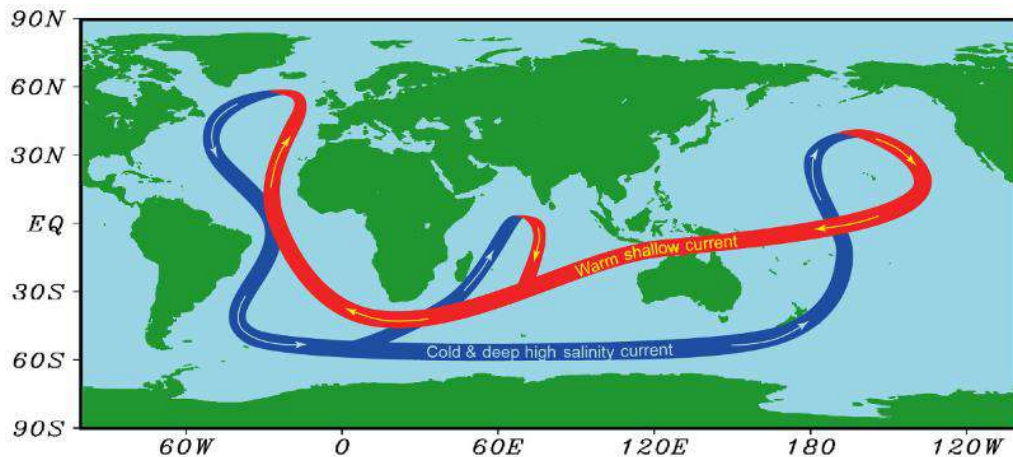
- Aetina Solution:

- AIB-MO32 (ORIN NANO 8GB, 40TOPS)

- B/E/M key for WIFI/cellular/storage extension



AIB-MO32 (ORIN NANO 8GB)



Smart Factory—Conveyor Object Detection



- Region: China

- Application:

- Conveyor Object Detection

- Challenge:

- Small size

- High computing power

- Wide temperature

- Aetina Solution:

- AIB-SO21 (ORIN NANO 4GB, 20TOPS)

- AIB-MX13 (AGX ORIN 32GB, 200TOPS)

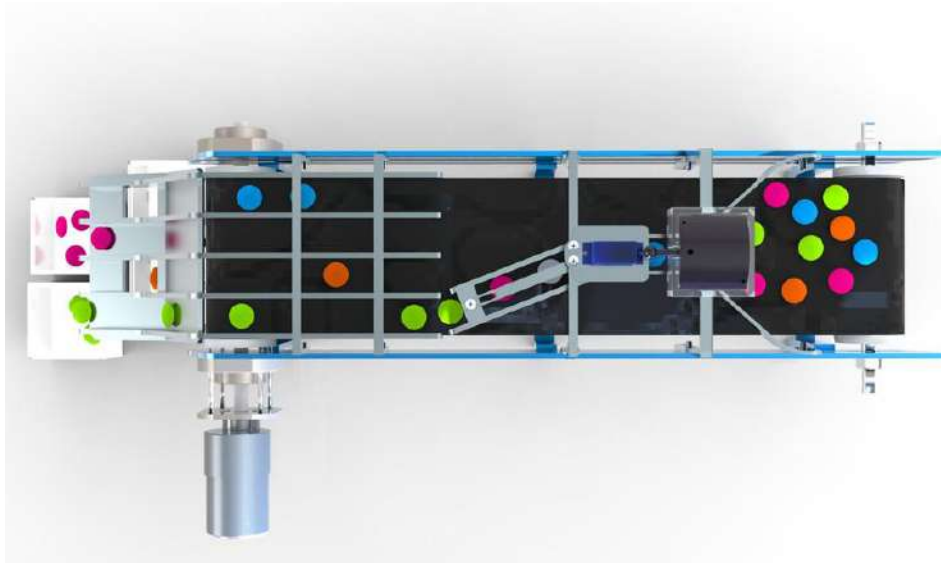
- -25°C ~ +80°C Operating Temperature



AIB-SO21 (ORIN NANO 4GB)



AIB-MX13 (AGX ORIN 32GB)



Smart Factory—License Plate Recognition

- Region: North Europe

- Application:

- License Plate Recognition

- Challenge:

- PoE camera support

- High computing power

- Wide temperature

- Aetina Solution:

- AIE-PX22 (AGX ORIN 64GB, 275TOPS)

- 4 x PoE support for PoE camera

- -25°C ~ +55°C Operating Temperature



AIE-PX22 (AGX ORIN 64GB)



Smart Factory—Visual Inspection

- Region: Japan

- Application:

- Visual Inspection for food and beverage

- Challenge:

- Small size

- High computing power

- Rich I/O interfaces

- Aetina Solution:

- AIB-MX13 (AGX ORIN 32GB, 200TOPS)

- Support B/E/M key, GPIO, UART, RS-232, RS-485, etc.



AIB-MX13 (AGX ORIN 32GB)



Smart Factory—Safety

- Region: Japan

- Application:

- Dynamic alert section detection

- Challenge:

- High computing power

- Rich I/O interfaces

- Wide temperature

- Aetina Solution:

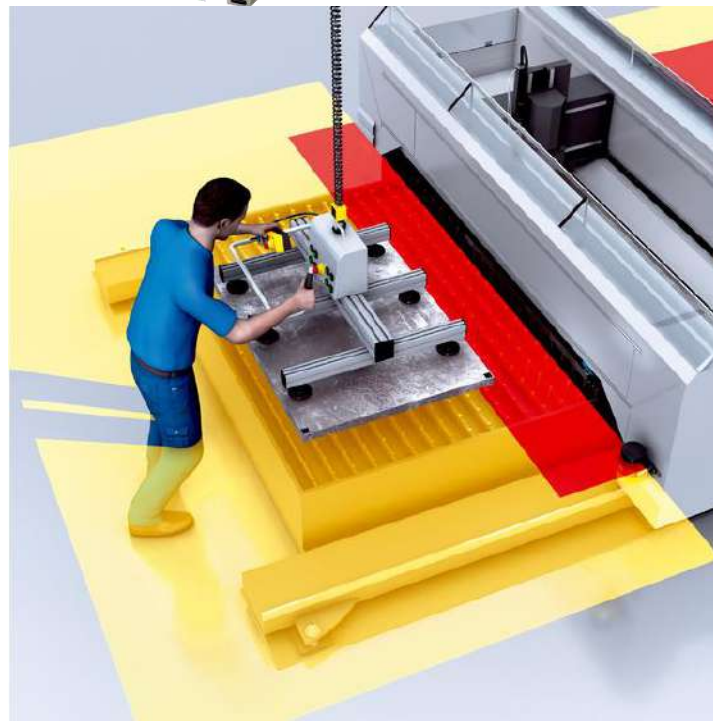
- AIB-MX13 (AGX ORIN 32GB, 200TOPS)

- Support B/E/M key, GPIO, UART, RS-232, RS-485, etc.

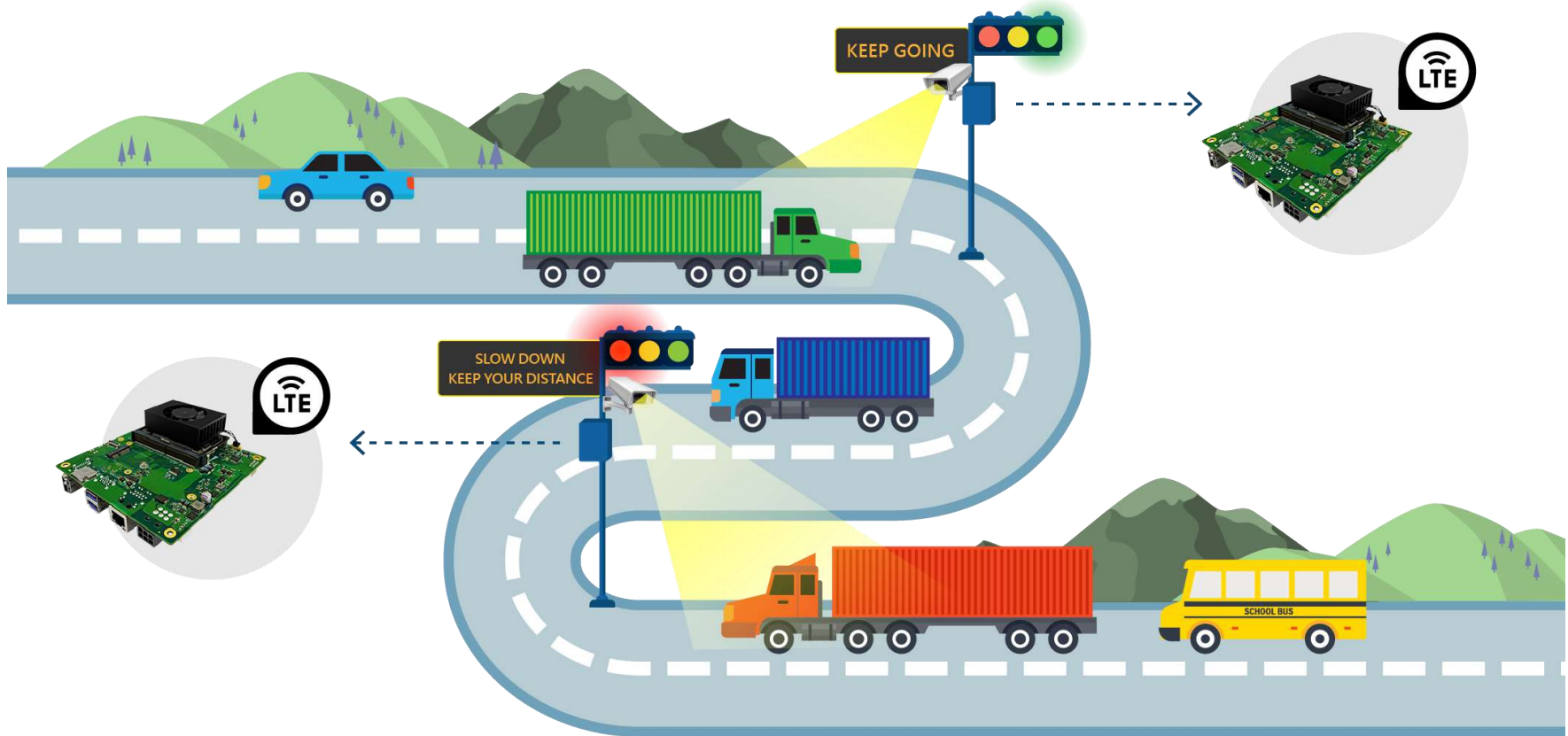
- -25°C ~ +80°C Operating Temperature



AIB-MX13 (AGX ORIN 32GB)

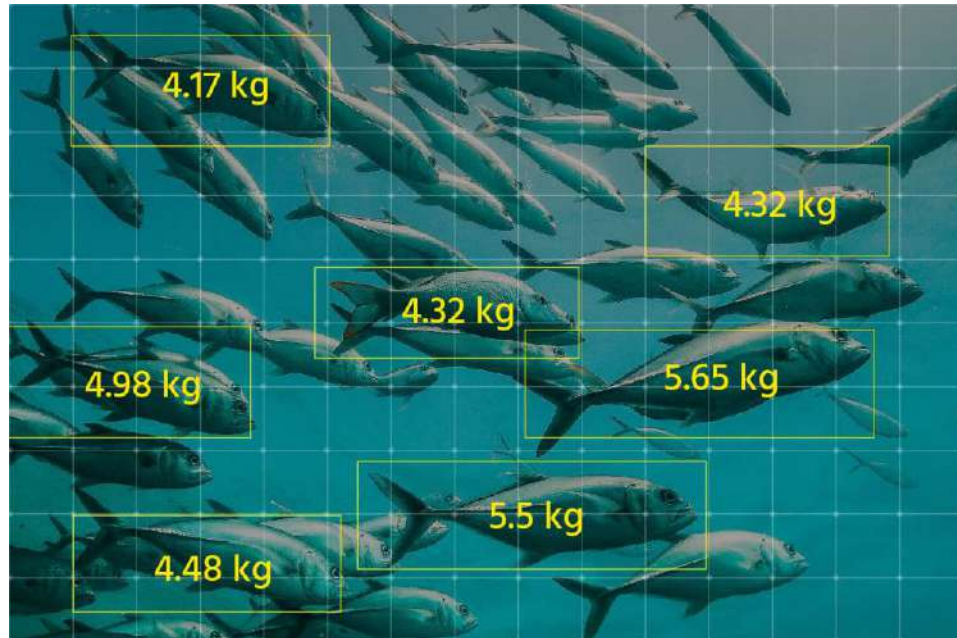


Smart City: Traffic Optimization



Smart Fish health Monitoring & Analysis

- **Region:** Europe
- **Application:**
 - Weight, welfare, and lice on fish Recognition
- **Challenge:**
 - Small size for installation
- **Aetina Solution:**
 - AX720 with AGX Xavier



Smart City—License Plate Recognition

- **Region:** Asia

- **Application:**

- License Plate Recognition

- **Challenge:**

- Small size for installation

- Once the device is failed, the engineer has to drive to the field site for trouble-shooting

- Once the OS is crashed, the engineer has to go to the field site to reboot or recover the OS

- **Aetina Solution:**

- NVIDIA Jetson NX system

- Innodisk InnoAgent for out of band function to support remote reset and recovery/backup

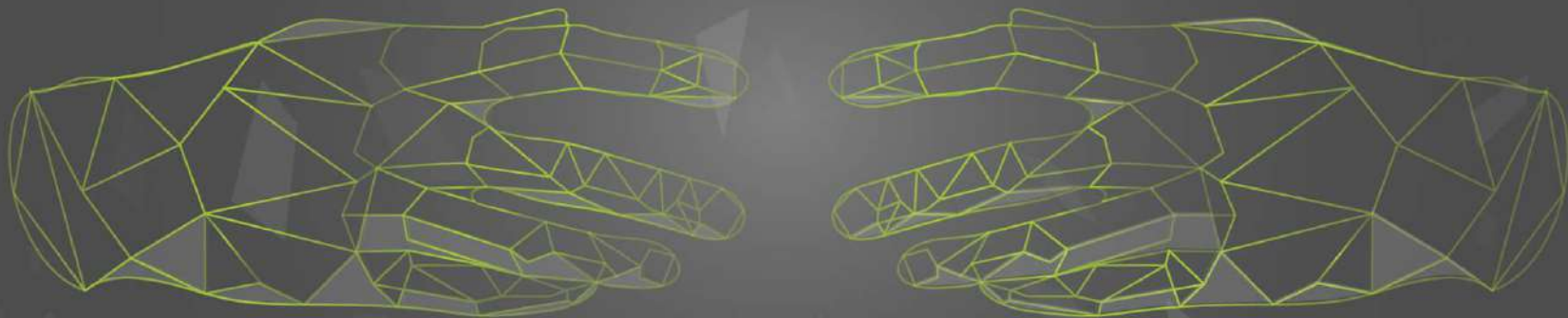
- BSP customization support



Jetson System
InnoAgent Inside



Leading Edge AI Solution Provider



Smart Factory--Stacker

- Region: Taiwan

- Application:

- Fatigue driving detection
- helmet/clothes recognition
- Driver behavior analysis

- Challenge:

- Small space
- Low power consumption
- MIPI camera integration

- Aetina Solution:

- AN110 with NVIDIA Jetson NANO
- Small size: 87.4 x 67.4 x 28.7mm
- MIPI camera BSP integration



Smart Healthcare--Hemodialysis

aetina

— Serial
— Ethernet

- Region: Taiwan

- Application:

- Realtime Hemodialysis for heart failure prediction and alert

- Challenge:

- Small space

- Offline analysis

- Low power consumption

- Aetina Solution:

- Mini M1 with Xavier NX

- Small size: 132.6 x 88.7 x 63.6mm



Mini M1

Gateway



Smart Security—Fire detection system

- Region: China

- Application:

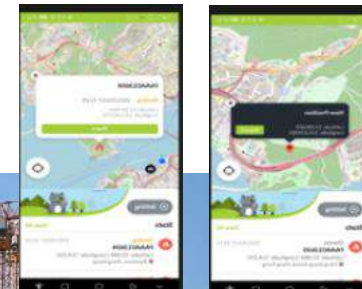
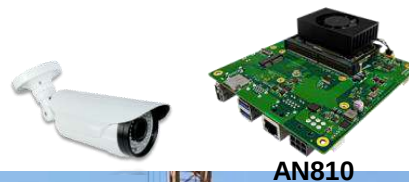
- Fire detection for construction with 5G communication

- Challenge:

- 5G communication
- Low power consumption

- Aetina Solution:

- AN810 with Xavier NX
- B-key for LTE/5G communication



Smart Security—Access Control

- **Region:** America
- **Application:**
 - Access control
- **Challenge:**
 - Small size with WIFI/5G function
 - Low power consumption
- **Aetina Solution:**
 - AN810 with Xavier NX
 - B-key for LTE/5G communication
 - E-key for WIFI communication
 - BSP customization

5G^{LTE}

WiFi 6E



AN810





Smart Factory

Successfully lift the produce accuracy by over 90% and release the excessive works for inspector.

Optimizing productivity with intelligent and automated inspection equipment



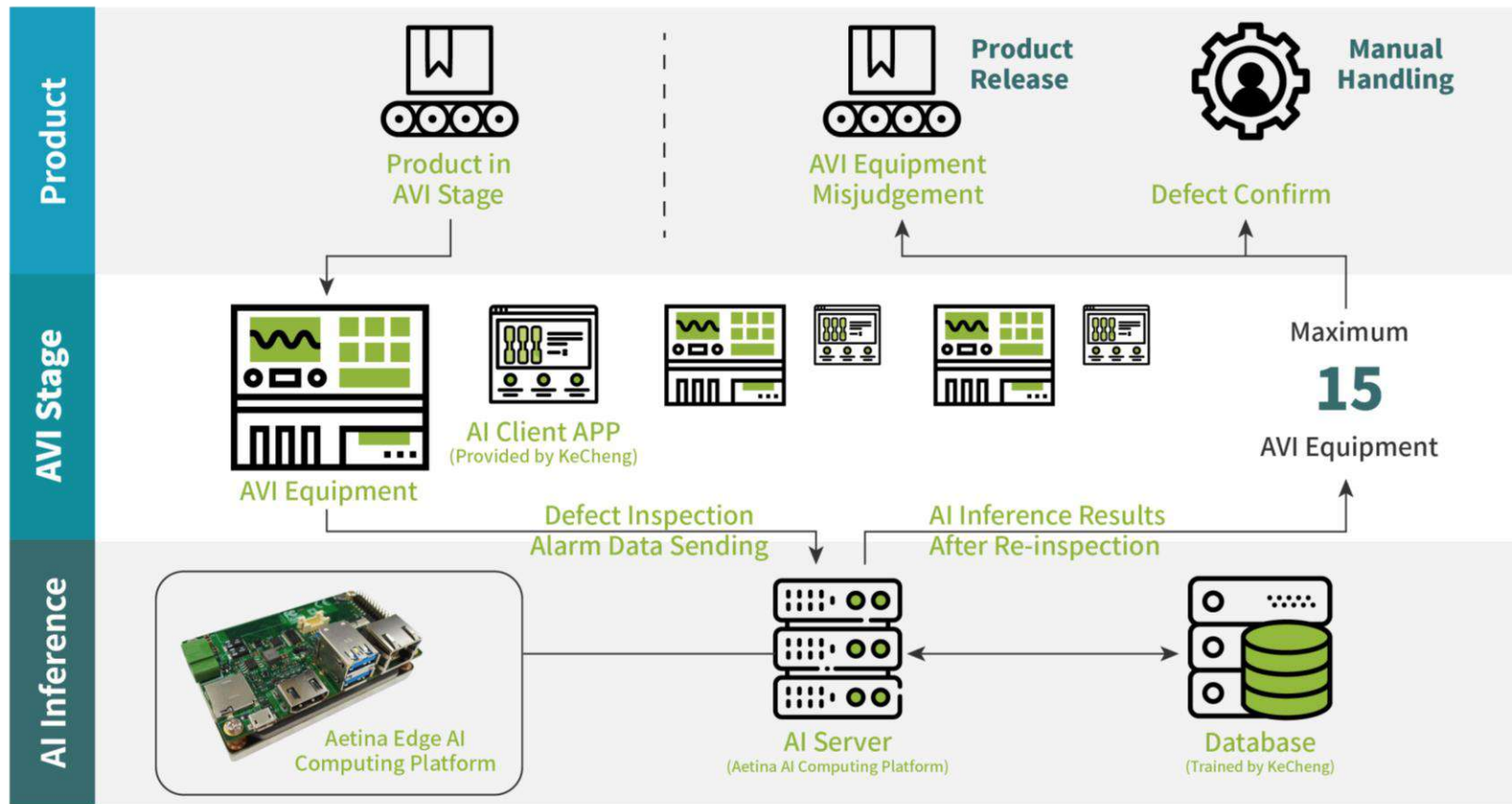
Challenge

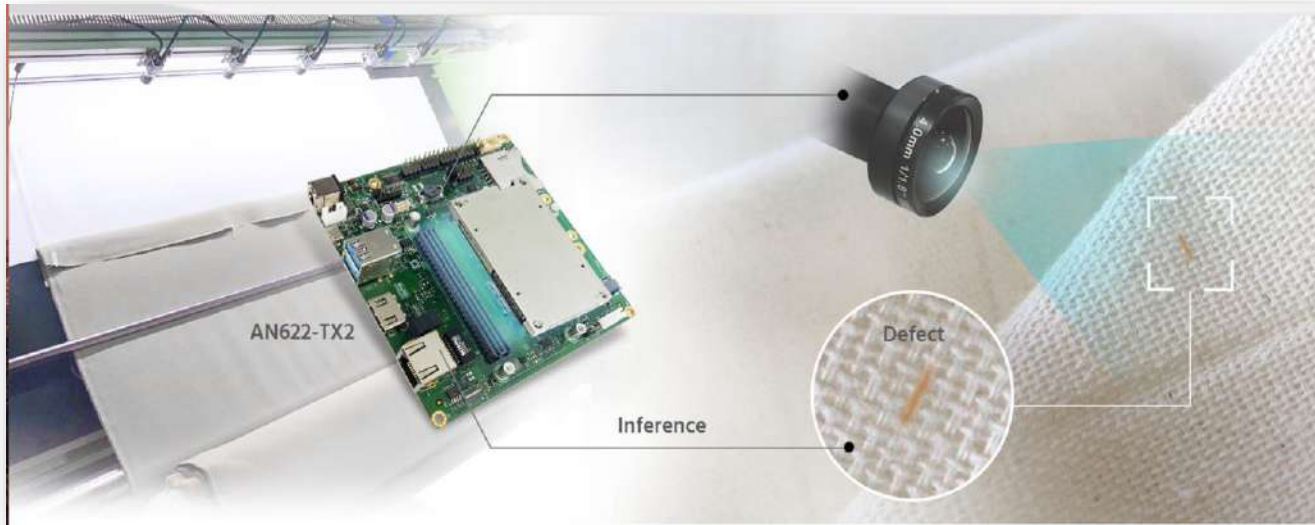
The antique AVI equipment are no longer keen enough for the product nowadays, which made the workforce overload. And the deployment in factory is limited for equipment upgrading.



Solutions

Aetina Jetson platform as a computing center at the edge could be the brain supply for AVI equipment. With ability to cascade up to 15 AVI equipment and inspect 8 kinds of defect types, the accuracy of defect detection is lifted up from 60-70% to over 90%.





/Factory

Automated inspection by AI computing cutting down the TCO and increase the business hours

Optimizing productivity with intelligent and automated inspection equipment



Challenge

Traditional machines use manual inspection of fabrics, which have been unable to load the variety of fabrics and the higher precision.



Solution

The textile company combines Jetson AI edge platform and the accumulated big data in the past as the basis for research and development. Developed a fast and accurate AI automated fabric inspection system that is compatible with existing inspection machines.



Product

Weaving Machine with x5 Cameras

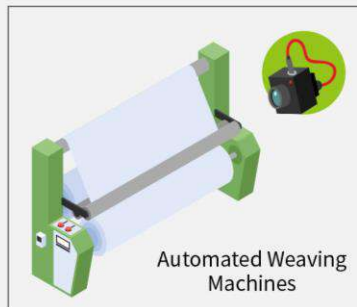


Image
Collection

Jetson-based edge AI Computing Platform

NVIDIA Jetson Module & Aetina Carrier Board
+ High-speed Communication Solutions



Aetina AN622-TX2



Millitronic USB Dongle

Algorithm
Embedded



TTRI Textile
Algorithm

60GHz
High Speed
Transmission



WiGi Hub

60GHz
High-speed
Transmission

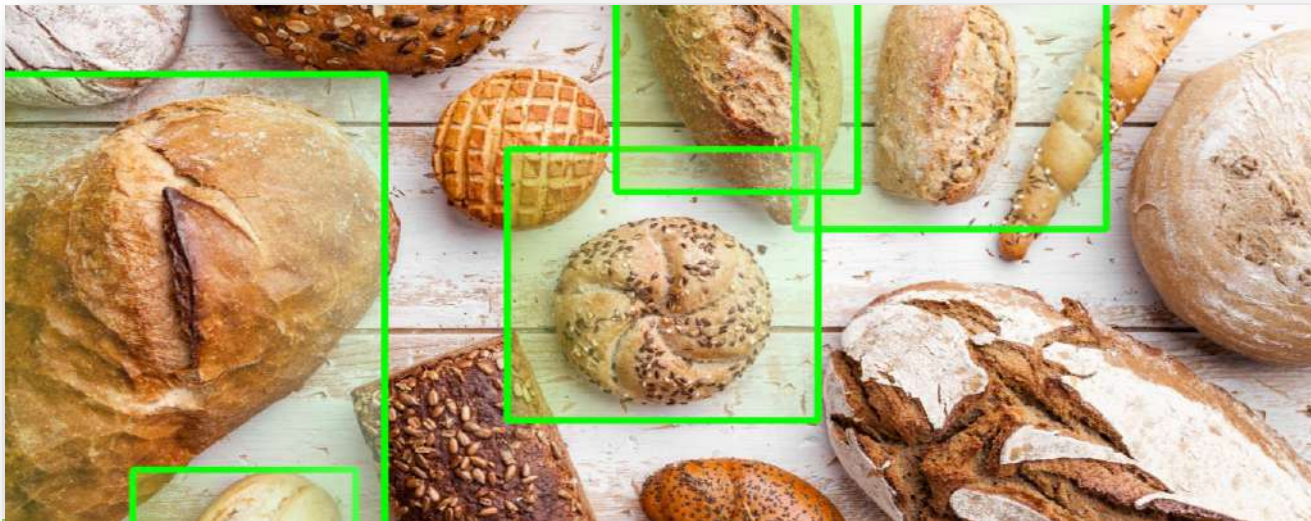
Factory Control



Cloud Database



Control Room



/ Retail

*Small & Intelligent
GPU-powered PC
benefit modern AI
visual identification
and analytics*

Taking advantage of edge AI platforms to offer smart & automated visual check-out in retail



Challenge

Retailers are facing rapid growth demands of digitalization and intelligent deployment but there are challenges of limited space, latency when connecting to cloud databases, and high-temperatures in greasy and harsh environments.



Solution

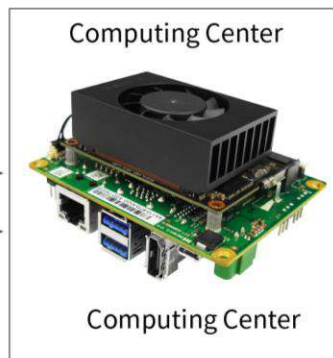
Aetina Jetson-based edge AI platform combined the visual identification and AI algorithm as a small and reliable computing and recognition host at the front line. It provides retailers a flexible and quick deployment for an auto-checkout system, lifts the check-out efficiency and user experience.

Checkout



AI Inference

Images Analytics
Data Visualization



MQTT

Data Manage



Visualization Dashboard





/ Healthcare

*5G+AI+IoT
supercharge the
intelligent &
convenient daily
life*

Customized 5G for self-driving wheelchair keeps elders away from harm



Challenge

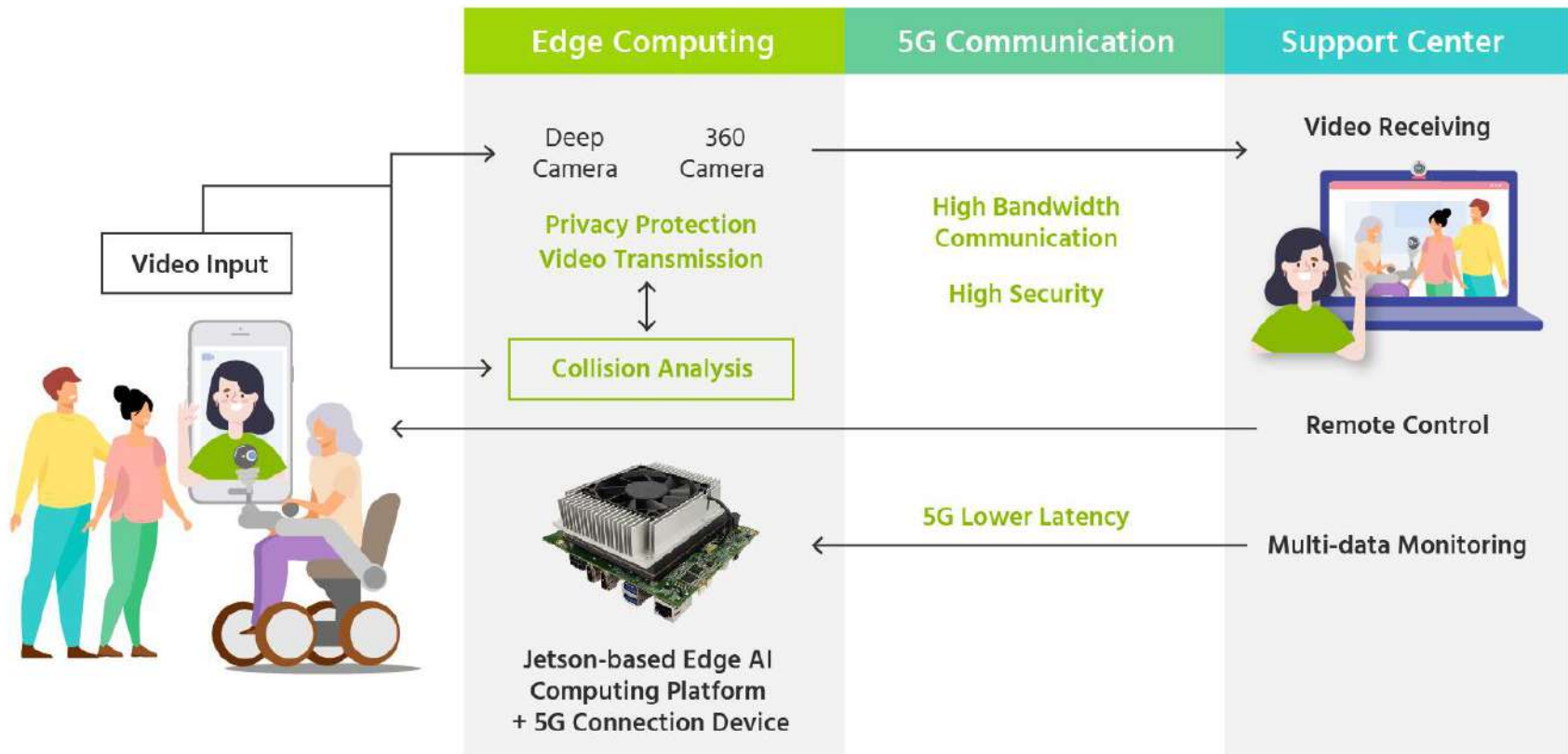
The aging population is a critical issue nowadays, further exacerbated by the limited nursing workforce, and together causing a challenging situation for society. Especially in long-term care facilities.



Solution

Aetina and eco-partner streamline this issue with a powerful Jetson-based edge AI platform and 5G function fitted onto an electric self-driving wheelchair. It helps create a car-like autonomous robot and assists the wheelchair in recognizing the dangerous environment and escaping harmful situations with 5G super-speed wireless data transfer.

Smart Healthcare: Autonomous Wheelchair





/ Healthcare

Multi-functional AI healthcare assists front end staffs in epidemic prevention

Defense COVID-19 : Leveraging edge AI computing to set inspection & warning smart sensors



Challenge

Once an epidemic is out of control, the medical workforce will get tighter. The most general treatment for infectors is isolation, keep distancing, and self-defense, such as wearing a facemask. It is challenging to execute effective prevention methods with the limit of human resources.



Solution

Adopting Aetina AN110-NAO edge computing platform to build the smart sensor with higher AI performance and warning function for detection. Aetina offers it in small, compact, and well-used I/O with the complete BSP supporting, allowing clients to build one single device quickly and efficiently.



Cloud

Edge

Device Management

In-band Management
Out-of-band Management

Innodisk iCAP Cloud
Administration Platform



iCAP

Visualization Dashboard

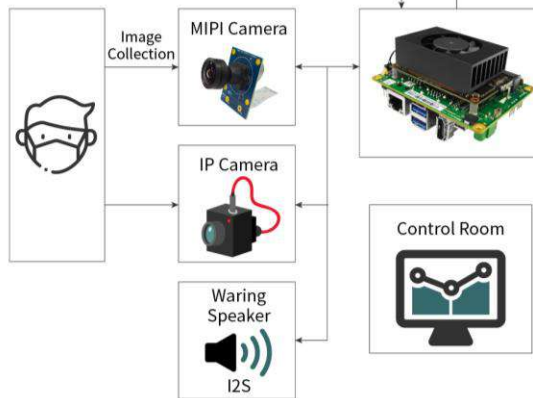


Inference

Jetson-based edge AI computing platform

NVIDIA Jetson Module + Aetina Carrier Board

MQTT



Training

TensorRT

DeepStream

AI-powered Healthcare Assistant

