

ADVANTECH

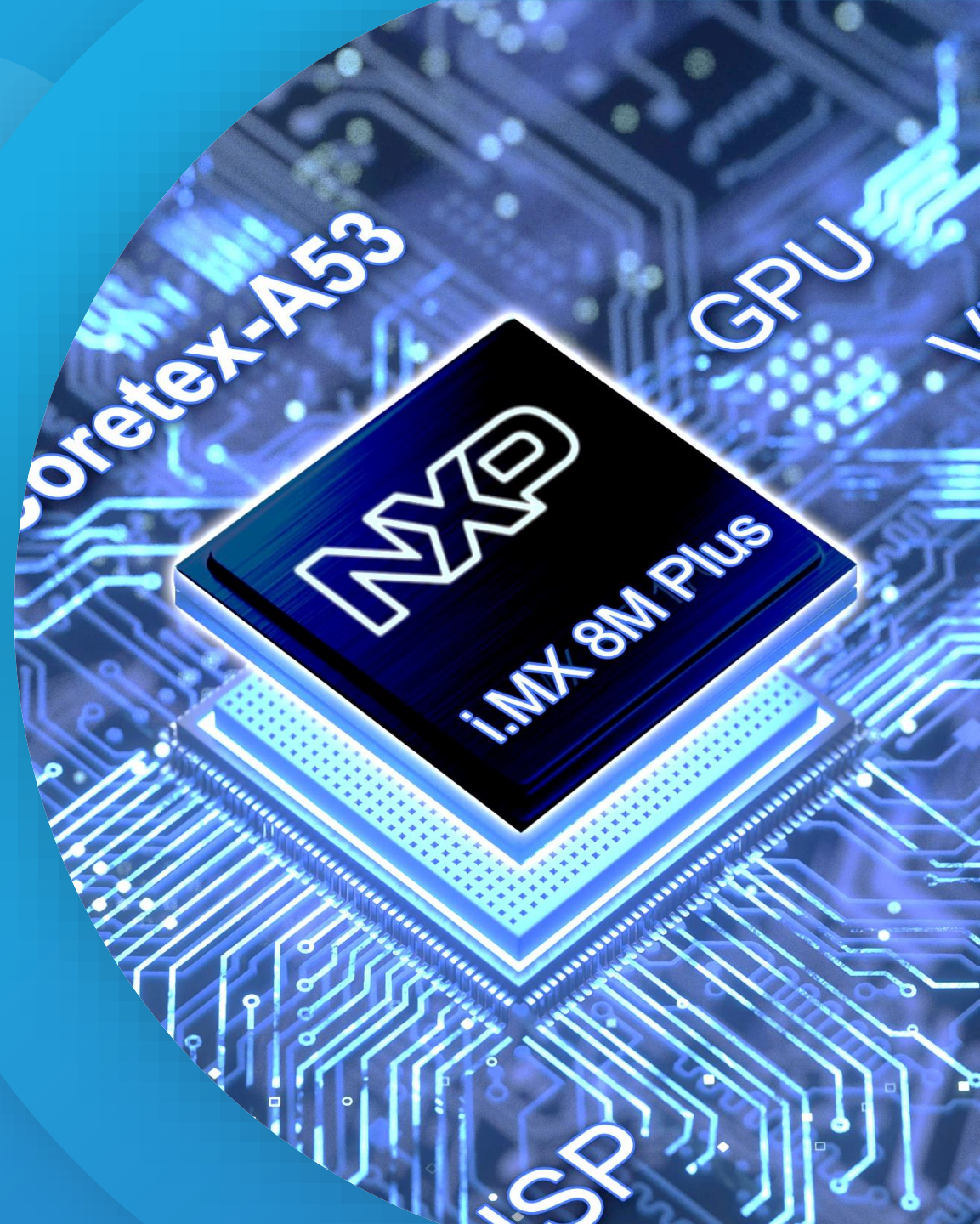
NXP

GOLD
PARTNER



Bring Vision AI to the Industrial Edge by Advantech i.MX 8M Plus-based AI-Native Products

研華i.MX 8M Plus機器視覺方案引領工廠智能轉型



i.MX 8M Series: Scalable Solutions for The Broad Market

i.MX 8M Quad Family



Available NOW



i.MX 8M Quad
i.MX 8M Dual



i.MX 8M QuadLite

i.MX 8M Mini Family



Available NOW

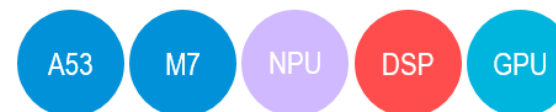


i.MX 8M Mini
Quad/Dual/Solo



i.MX 8M Mini
QuadLite/DualLite/
SoloLite

i.MX 8M Plus Family



Available NOW



i.MX 8M Plus
Quad/Dual



i.MX 8M Plus
Quad/Lite

Pin Compatible

Pin Compatible

Pin Compatible

Software Compatible (including GPU Tools)

ROM-5720



SMARC 2.1

4K Industrial Graphic Performance
for Multimedia Applications

ROM-5721



SMARC 2.1

Power Efficiency for Entry HMI &
Industrial Applications

ROM-5722



SMARC 2.1

2.3 TOPS NPU Built-in for AI and Edge Inference Application

RSB-3720



2.5" PICO-ITX SBC

EPC-R3720



Edge AI System



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▶ Advantech i.MX 8M Plus-based Offerings



SMARC 2.1

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Flexible I/O &
Vertical Feature



2.5" PICO-ITX

RSB-3720

Off-the-shelf for
Vertical Markets



Edge AI Box

EPC-R3720

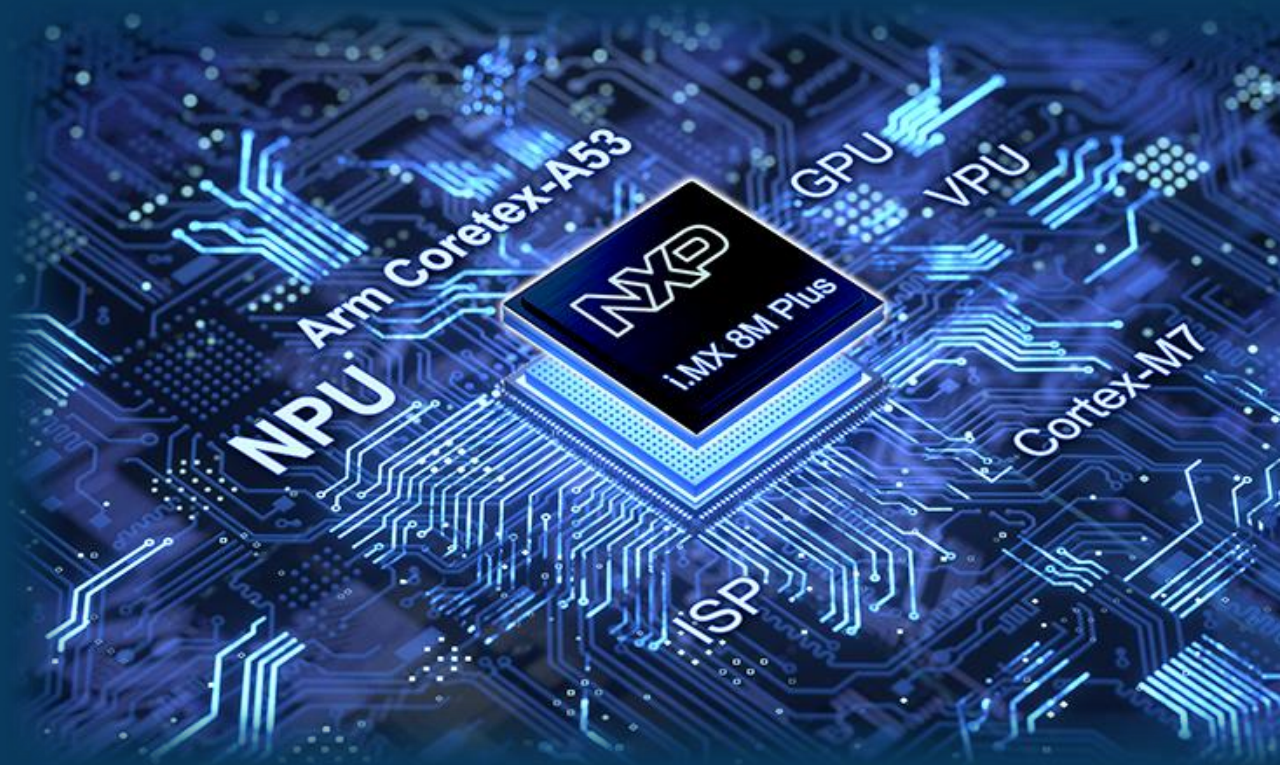
Full Function &
Fast to Market

Fast to Market – Cost Effective – Better Lead-Time

Bring AI-Native Computing to the Edge

The i.MX 8M Plus family of processors is based on ARM® Cortex®-A53, Cortex-M7 cores and a dedicated neural processing unit (NPU) that supplies up to 2.3 TOPS, and dual ISPs support, delivering a new level of:

- ▶ Machine Learning and Vision System
- ▶ Advanced Multimedia
- ▶ Industrial Networking and High Reliability



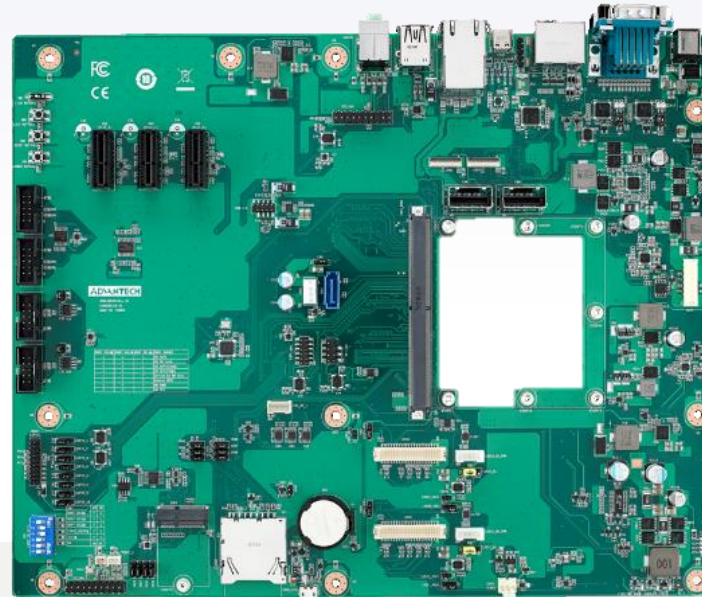
i.MX 8M Plus-based SMARC Offerings

Credit card sized COM gives a flexible and modular option for diverse applications



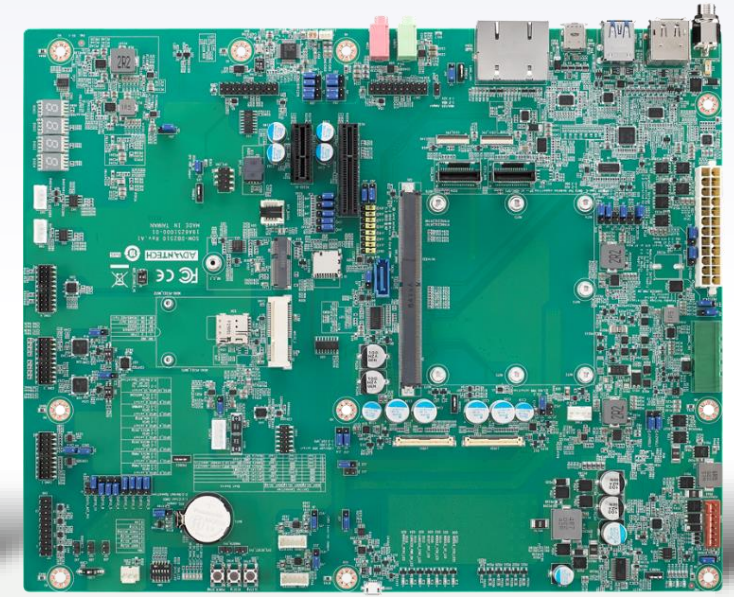
ROM-5722

82 X 50 mm SMARC 2.1



ROM-DB5901

SMARC full function evaluation carrier board



SOM-DB2510

i.MX 8M Plus-based Single Board Computer and Box

Sufficient mainstream I/O arrangement satisfies the needs of AIoT



Peripheral Connection

RS-232/422/485
2 x CAN bus (CAN-FD)
GPIO



Image & Video Capture

2 x 4-Lane MIPI-CSI connects to ISP



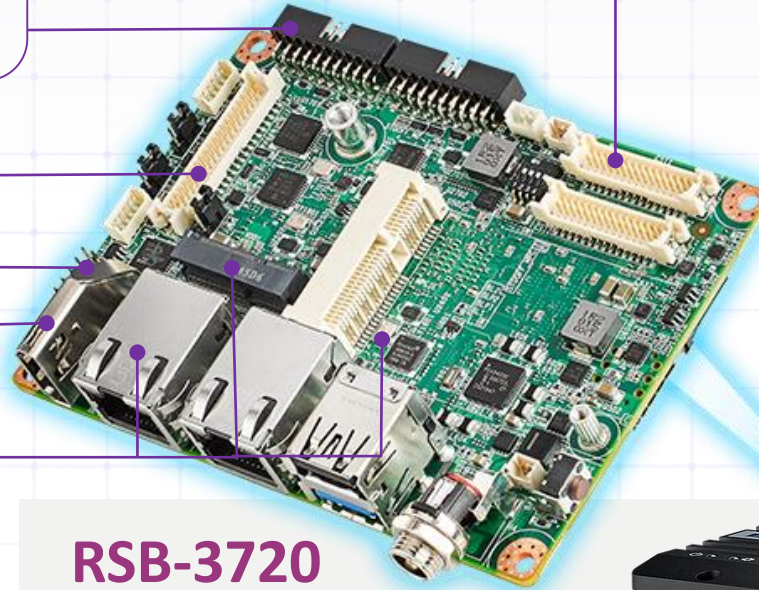
Multi-Displays Support

HDMI 2.0
Dual Channel LVDS/MIPI-DSI



Network Connectivity

M.2 (WLAN)
Mini-PiCe (WWAN)
2 x GbE



RSB-3720

2.5" Pico-ITX SBC



EPC-R3720 Edge AI Box



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UIO40-Express: Application-Oriented I/O Expansion Boards

Speed up application deployments

Self-Service

UIO-4032

1 x GbE LAN, 2 x USB,
2 x RS-232



Network Management

UIO-4036

4 x GbE LAN



UIO-4038

3 x LAN, 1 x WAN



Video Surveillance

UIO-4040

1 x M.2 Key M for
128GB-1TB NVMe SSD



Data Acquisition

UIO-4030

8 GPIO (4 DI/4 DO),
1 x RS-232, 1 x RS-485



UIO-4034

1 x CAN, 2 x RS-232

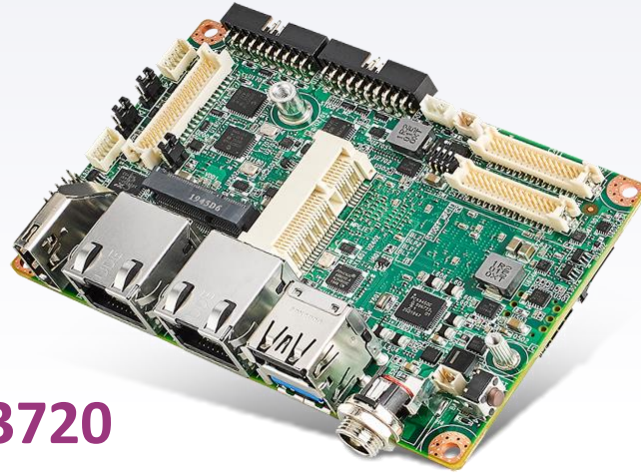


UIO40-Express

2.5" Pico-ITX SBC with modular
I/O expansion boards for AIoT
applications.

Advanced Environmental Adaptability

Extended Temperature x Vibration Resistance



RSB-3720



EPC-R3720

Operating
Temperature

0 ~ 60°C / -40 ~ 85°C

-40 ~ 70°C

Vibration
Resistance

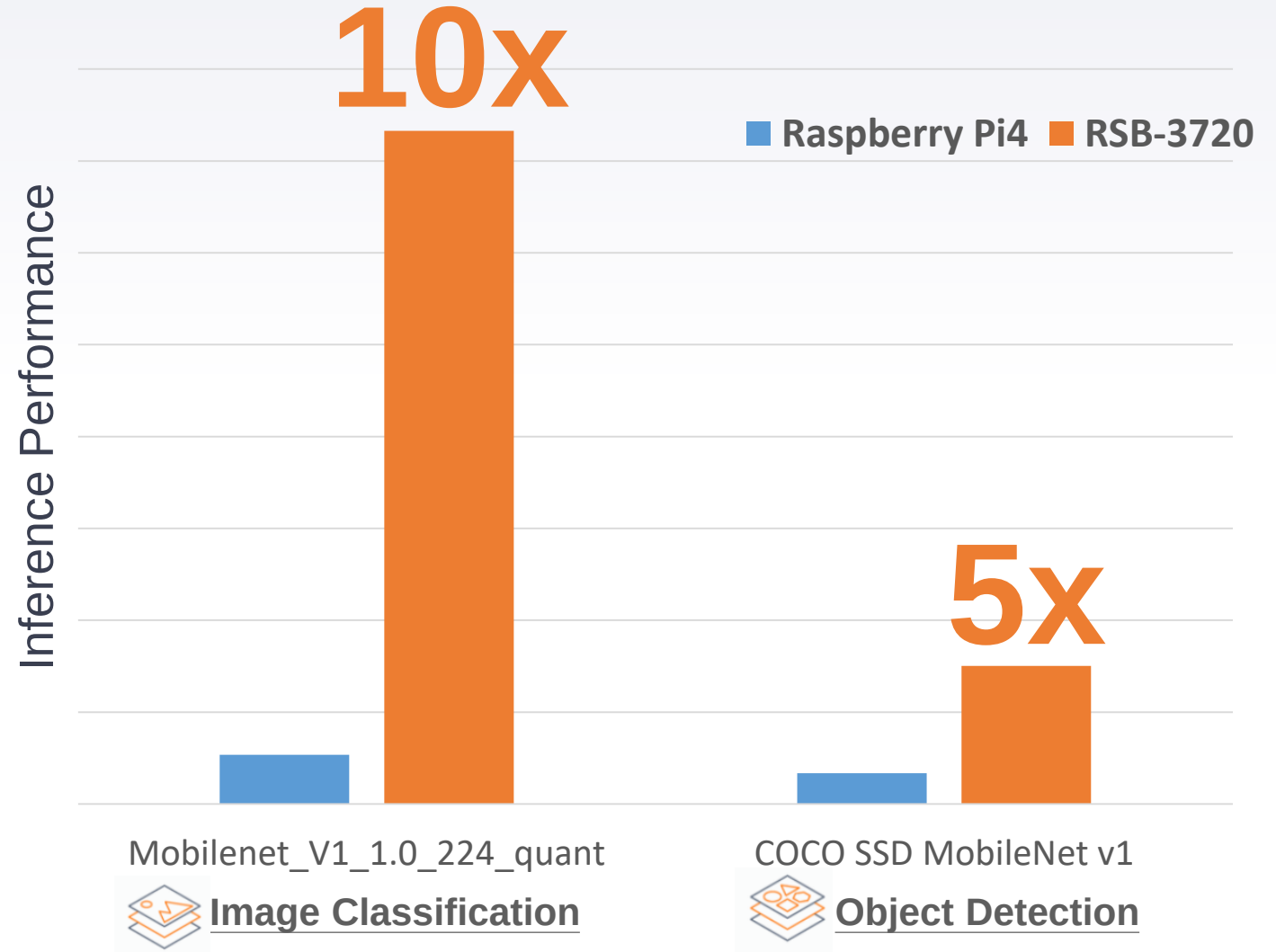
3.5 Grms

3.0 Grms

RSB-3720: Best Single Board Computer for Edge AI



Raspberry Pi 4	Benchmark	RSB-3720
CPU	Inference Engine	CPU + NPU
0 ~ 50°C	Operating Temp.	0 ~ 60°C / -40 ~ 85°C
Not Applicable	Longevity	10 Years



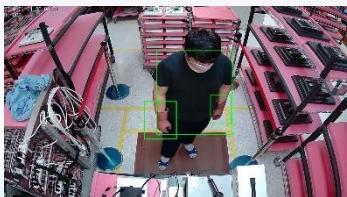
*Inference Models executed on TensorFlow Lite

AIM-Linux Software Services of Vision AI Solution

AIM-Linux/ Edge AI

[Learn More >](#)

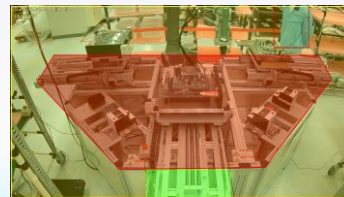
Application-Focused AI Model



Hands Tracking



Face Recognition



Human Detection



Run Card Recognition

Development SDK



AI Framework



Video Transfer Protocol

• UVC • RTMP • RTSP • RTP



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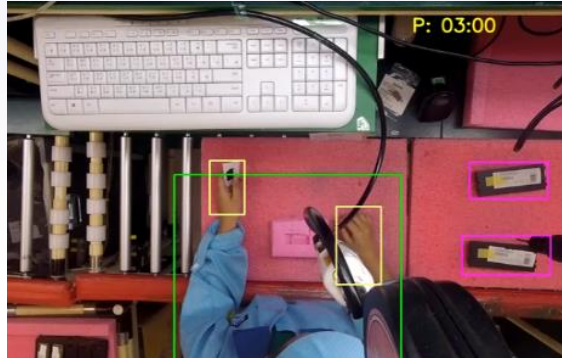


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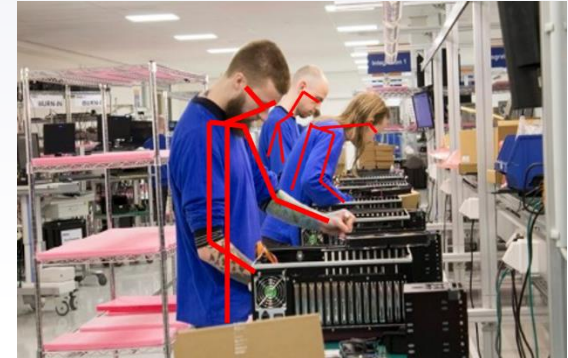
Vision AI: The Eyes of Industry 4.0

Realize the Intelligence Factory with

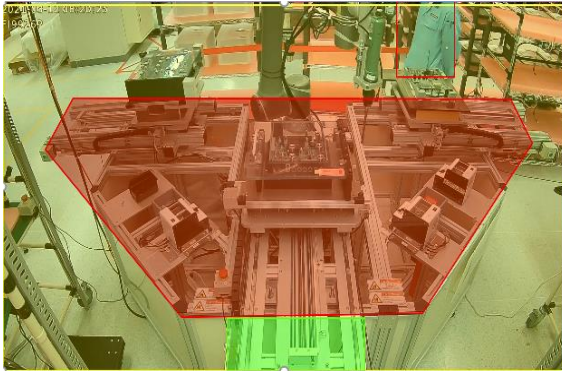
- ▶ Operation Time Calculation



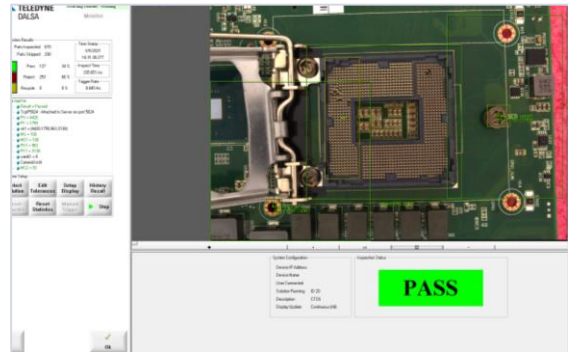
- ▶ Action Recognition in Manufacturing Assembly



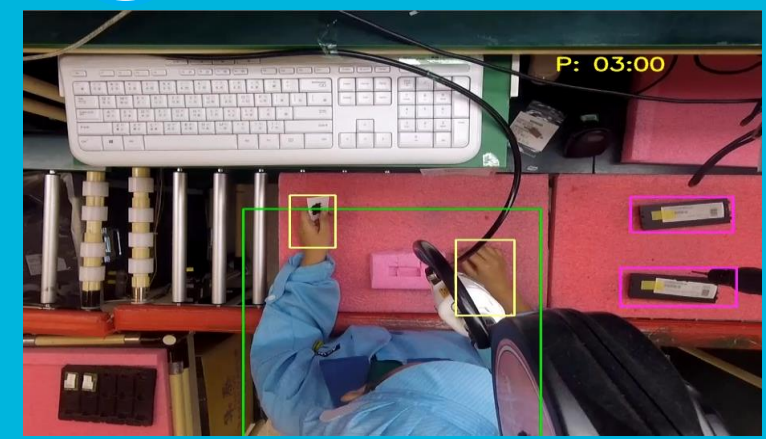
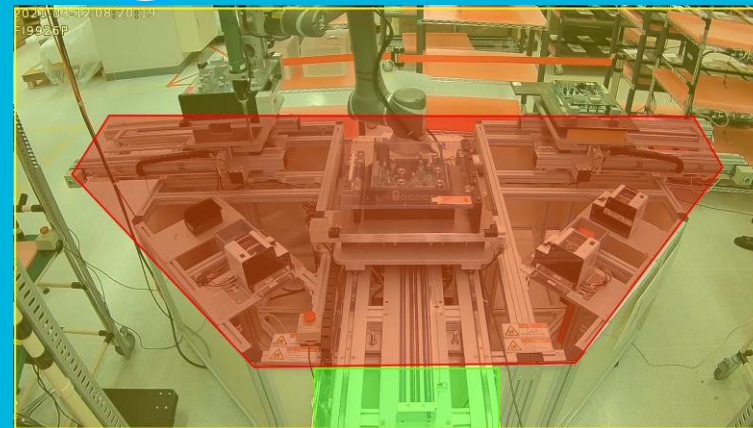
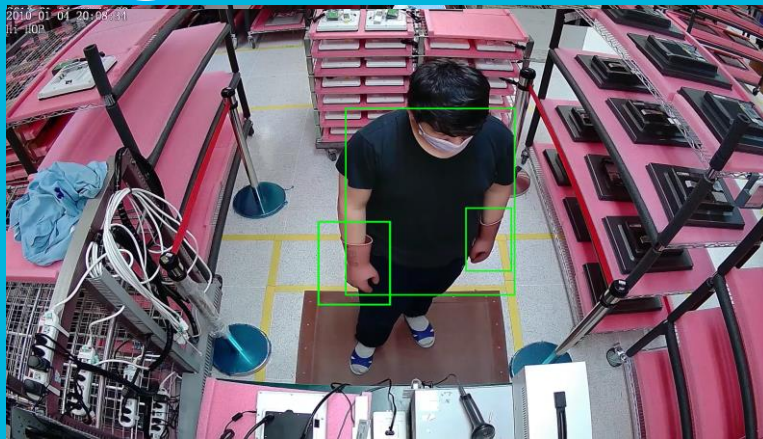
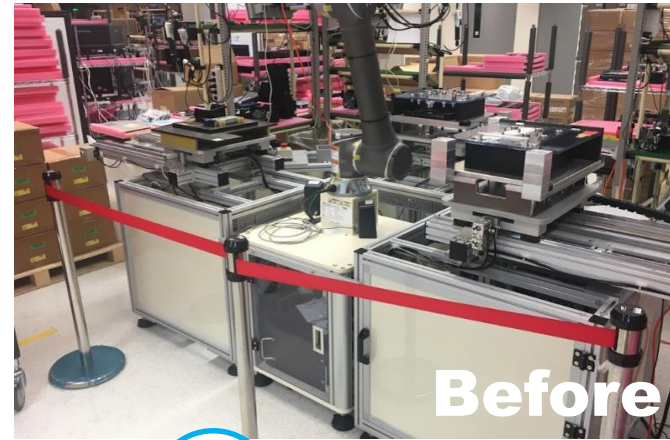
- ▶ Safety Monitoring



- ▶ Automated Optical Inspection



Vision AI Solution Deploys in Advantech Factory



Enable AI in Factory by Edge Intelligent Solution



Real-time Video Inference

EPC-R3720



Safety Monitoring

EPC-R3720



Operation Time
Calculation

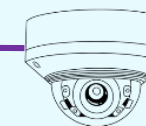
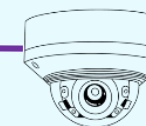
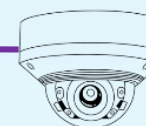
EPC-R3720



Action Recognition

Factory Production Line

IP Camera
Network



Event Monitoring and Alert

Advantech i.MX 8M Plus-based Offerings

SMARC 2.1

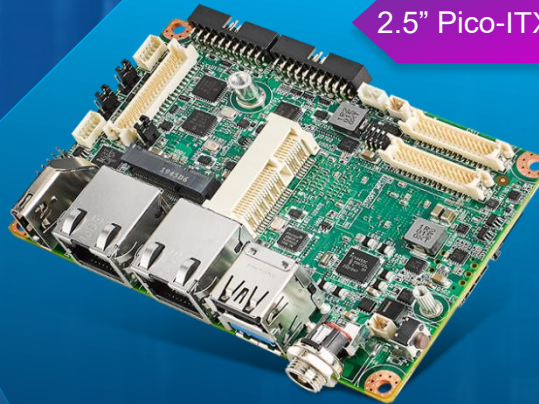


ROM-5722

- 0 ~ 60 °C / -40 ~ 85 °C
- 3.5G vibration tolerance
- 3.7 W (max.)
- SOM-DB2510 and ROM-DB5901 carrier boards compatible

[Learn More](#)

2.5" Pico-ITX



RSB-3720

- 0 ~ 60 °C / -40 ~ 85 °C
- 3.5G vibration tolerance
- 7.13 W (max.)
- M.2 (Key E) and mini PCIe
- 2 x MIPI-CSI interfaces

[Learn More](#)

Edge AI Box



EPC-R3720

- -40 ~ 70 °C
- 3.0G vibration tolerance
- 9.2 W (max.)
- Lockable DC jack
- Plug-and-play COM/CAN port

[Learn More](#)

Advantech i.MX 8M-Based SMARC Offerings

i.MX 8M Quad



ROM-5720

SMARC 2.1

4K Industrial Graphic
Performance for Multimedia
Applications

i.MX 8M Mini

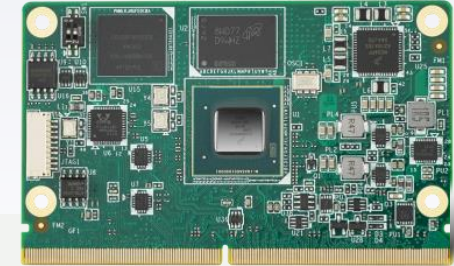


ROM-5721

SMARC 2.1

Power Efficiency for Entry HMI &
Industrial Applications

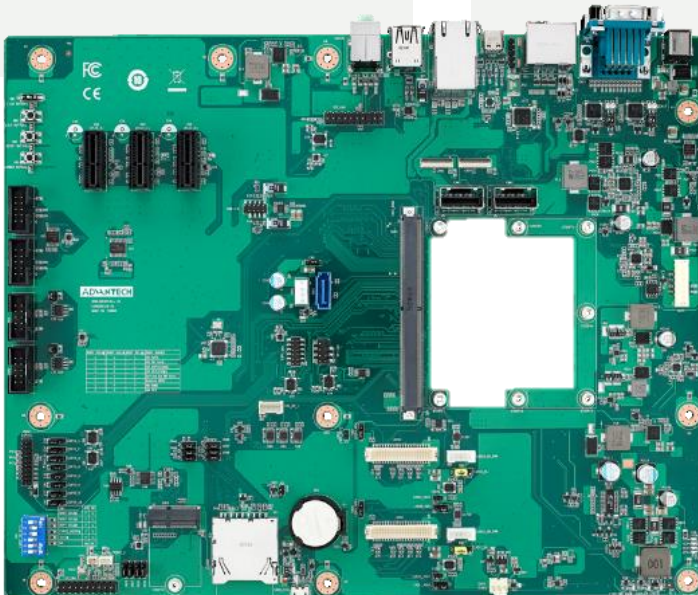
i.MX 8M Plus



ROM-5722

SMARC 2.1

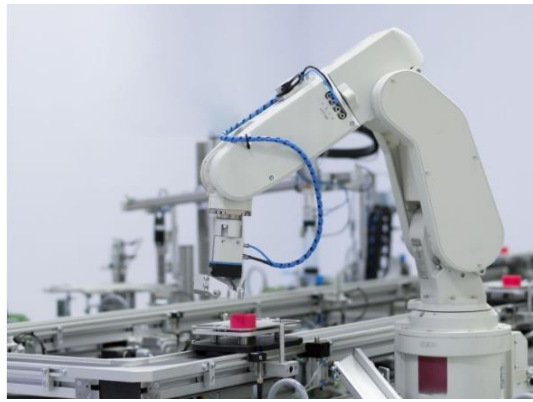
2.3 TOPS NPU Built-in
for AI and Edge Inference
Applications



ROM-DB5901

SMARC Full Function Evaluation Carrier Board
One Board for i.MX8M Family Modules





Make Your Vision Reality

