

Leading Embedded Core Innovation & Design-in Services

Time to Market

Leading Innovation

Design-in Service



Industrial Motherboards

Computer On Module

Embedded Single Boards Computers

Arm-Based Computing Platforms

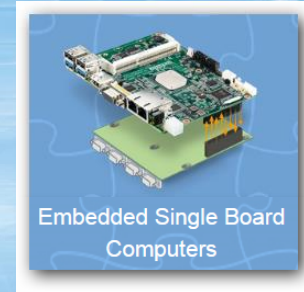
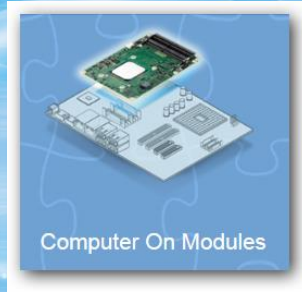
Industrial Flash & Memory

Embedded PCs

Embedded Software

Embedded Wireless Module

Full Range Embedded Board+ Solutions



**Super Fast Time
to Market with
New CPU**

Cabling for
IO Expansion

**Full Range CPU
Module**

Carrier Board
Integrates FPGA,
AISC and IOs

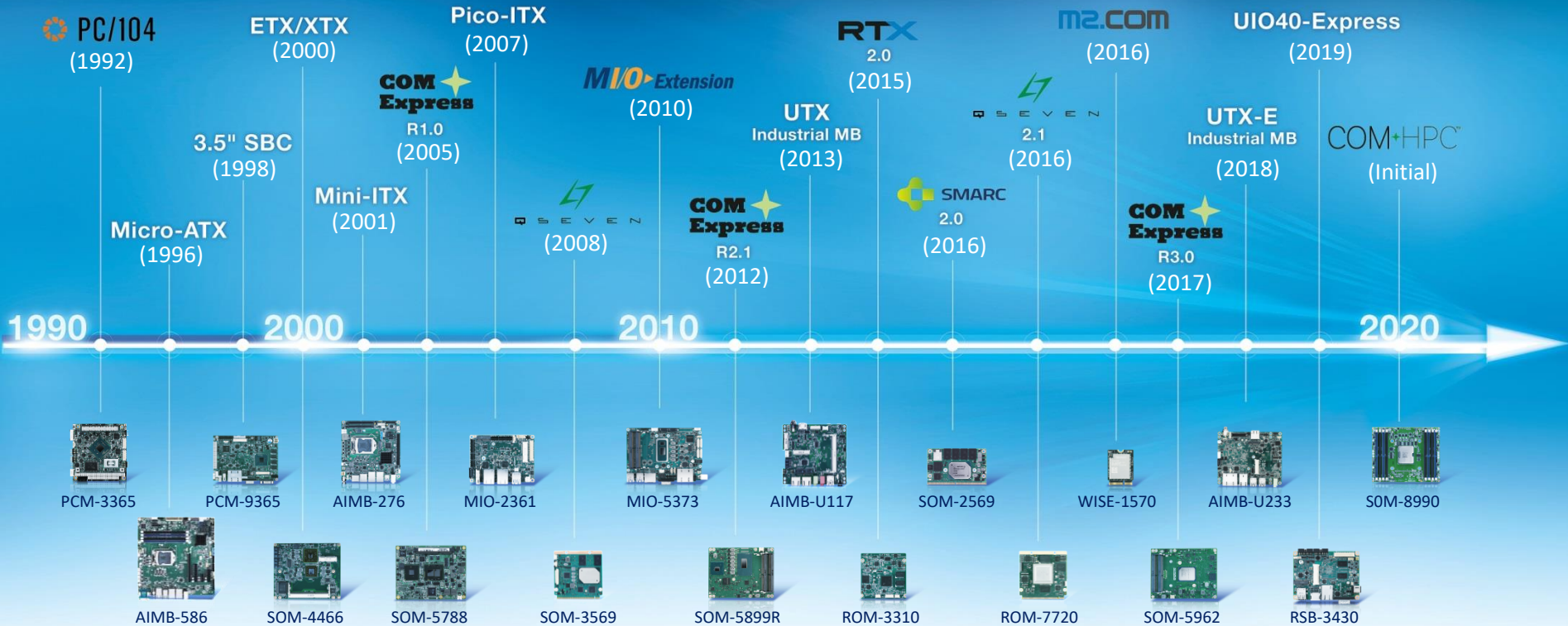
**Extended Temp
3.5" / 2.5"
Computer**

MIOe Module
for Vertical IO
Expansion

**ARM Solution in
All Form Factor**

COM, SBC &
Box Computer

Advantech Embedded Platform Innovation



COM-HPC x Thermal x Vertical-Oriented Modularized Design

Nick Lin, Project Assistant Manager, Advantech



Accelerate Huge Data Processing in IoT Era

In 2025,
130 ZB data will be processed on the edge
150 billions devices will connect to the edge
-- IDC



Embedded Boards



Wireless IoT Gateways



Embedded PCs



Fanless Embedded Computers



Vertical Focused Solutions

Latest Server-grade Motherboard: AIMB-586



Excellent Computing & Graphics

- Intel 8th/9th Gen CFL-S Platform, up to 8 processor cores
- Independent displays, support 4K2K with HDR

High Speed Connectivity & Expansion

- 14 USB with 4 ports USB 3.1 gen2 (10Gbps), 4 PCIe3 expansions
- 4 ports 1000Base-T, M.2 M-key & E-key

Reliable & Flexible Design

- Dual power Design, ATX power input or 12V DC in
- Level 4 ESD Protection Design

Latest Server-grade COM Express: SOM-5962

Extreme Computing Performance

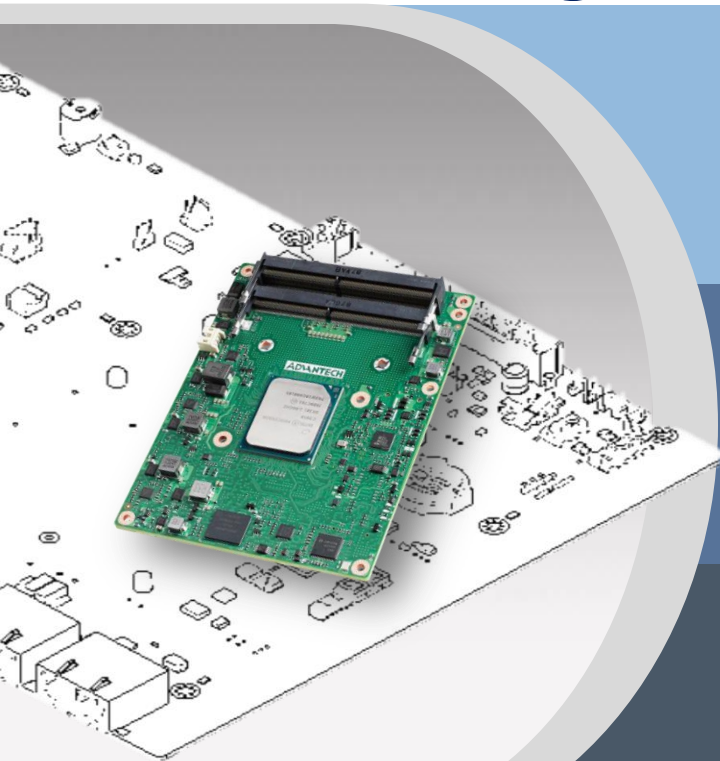
- Intel C3000 Processor Families
- Up to 16 Computer Cores & 128GB memory

Super Speed Expansion & Scalability

- 4 ports 10GBase-KR & 1 port 1000Base-T integrated
- Flexible I/O: PCIe gen3(8Gbps), USB3 & SATA3

Wide Range Operation Design

- 8 ~ 20V power input for system design and stability
- -40 ~ 85 °C operating temperature

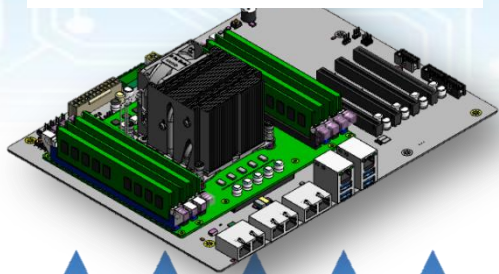


Next Generation Computer-on-Module



Computer-on-Module Revolution: COM-HPC

COM+HPC™



COM
Express®

5x
Memory

4x
Throughput

2x
Expansion

Breakthrough Computing Performance

- 20 core/110W server grade capability
- Max. 1TB reliable ECC memory

Wider Bandwidth and Faster Transmission

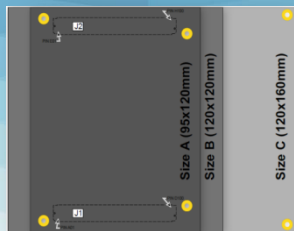
- Max. 100 Gb LAN
- PCI Express Gen5 (32GT/s)
- USB4.0, Thunderbolt (40Gbps)

More Super Speed I/O Expansion

- Max. 65 Lanes PCIe
- 8x 10GbE



COM-HPC: Two Types for Diverse Applications



COM-HPC Client

Medical Application



Industrial automation



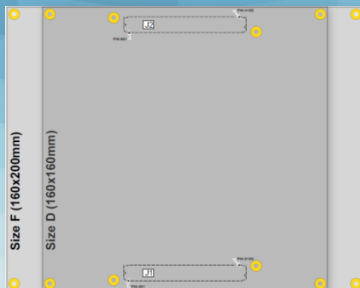
Gaming Application



Digital Signage



CPU & Graphics integrated, and super speed I/O expansion for diverse requirements



COM-HPC Server

Networking



Communication



Defense

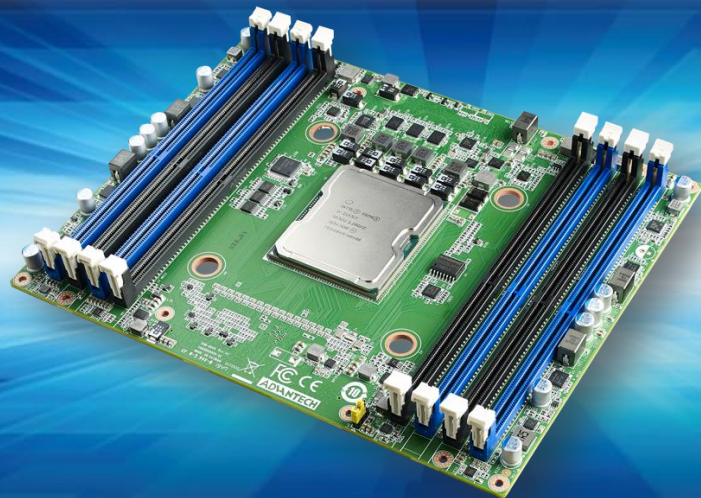


Test Equipment



Server grade performance and 10G LAN integrated, better for system scalability

SOM-8990 First COM-HPC Server Module

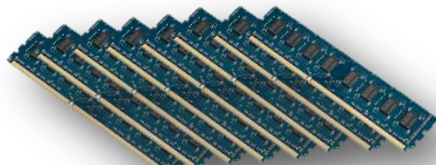


Prototype @ Q2 2020



**16Core
110W**

Intel® Xeon® D
(Skylake-D)



512GB Memory
ECC/non-ECC



4 x 10GbE



45 pairs lanes

ADVANTECH

SMARC Modules: Full Range Performance Offering

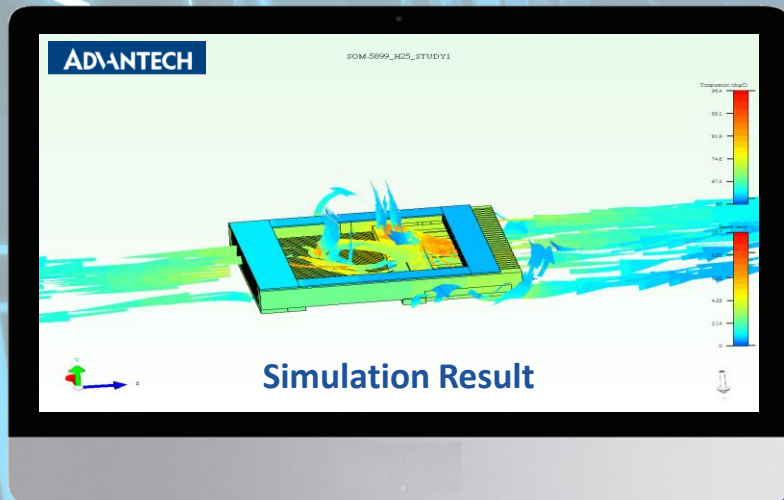


What a Good Thermal Solution Looks Like?

3 DNA

Efficiency Thinness Quiet

Improvement on 3 Ways



Heat Flow

- Heat Dissipation for Key Chips
- Low Heat Resistance

QFCS

Conduct

- Hard Contact
- Heat Pipe

Mechanism

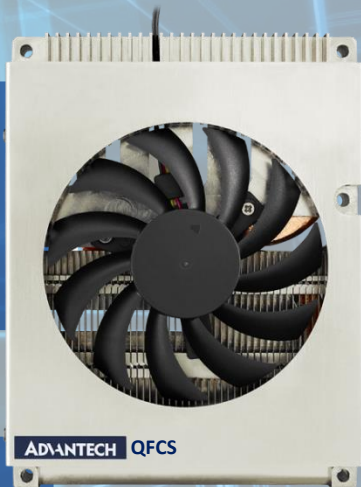
- Twin-Fins
- Two-Stages Spring Screws

Quadro Flow Cooling System, QFCS

3axis AIRFLOW | **45w** DISSIPATION | **27mm** THICKNESS | **45dB** DECIBEL

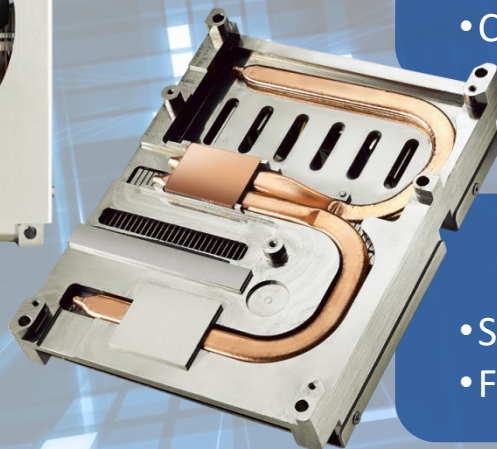
Mix Fin

- Stacked & Extrusion Fins
- Increase Airflow Exchange



Hard Contact

- Chip Heat Dissipation
- Contact Copper Directly



Venting Hole

- Cool Down Memory
- 15% Wight Reduced

Heat Pipe

- Speed up Heat Diffusion
- Flexible Mechanism

Diverse Platforms for Extreme Computing Performance

High Efficiency

Achieve 10°C+ Cooler Down

Silence Operating

45db required by Library



Ultra Thin

Max 27mm w/ Weight 250g

Compatible Design

Support Embedded STD FF.



Computer on Module
SOM-5898



Single Board Computer
MIO-5393



Embedded Motherboard
AIMB-506

Quadro Flow Cooling System, QFCS

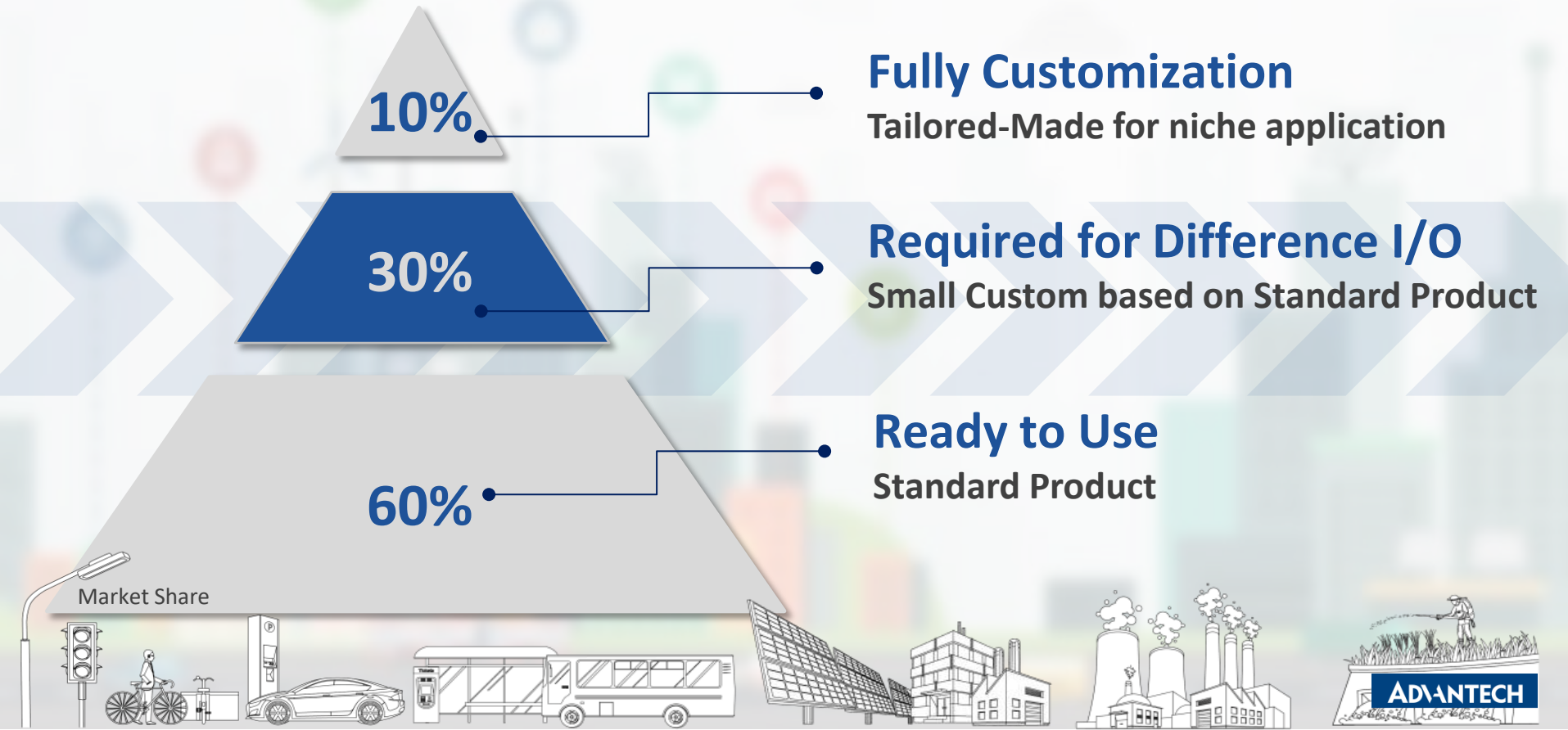
What a Good Thermal Solution Looks Like?

Efficiency Less Quiet

Quadro Flow Cooling System



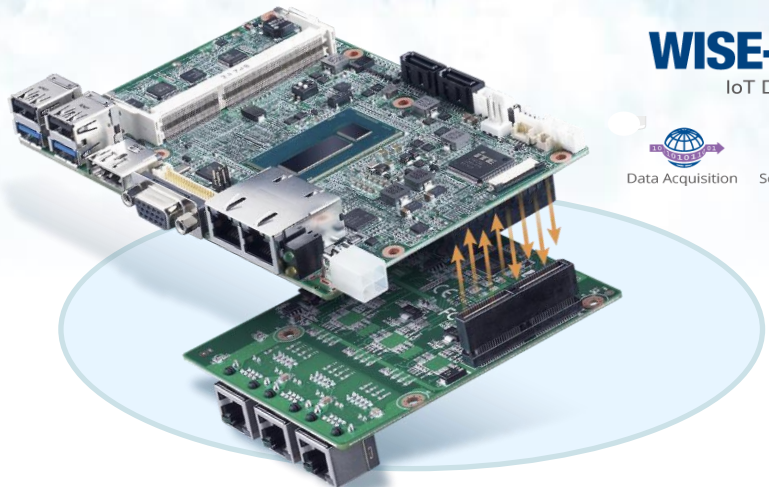
The Challenges of Rich Demand for IoT



Build Solution for Your Vertical Application

WISE-PaaS/ DeviceOn
IoT Device Operation Management

- Data Acquisition
- Sensor/Protocol Management
- Edge Analytics
- Real-Time Response
- Cloud Connectivity



MI/O-Extension



UIO40-Express

intel AMD

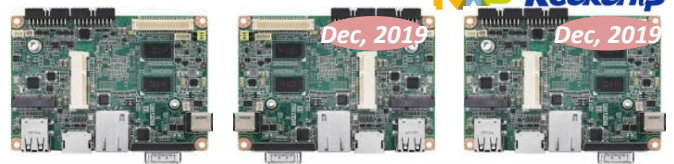


MIO-5391

MIO-5393

MIO-5373

NXP Rockchip



RSB-3430

RSB-3710

RSB-3720

MI/O Extension - Satisfy All Your x86 Needs



- *Compact Size*
- *Rugged B/B Connection*
- *High Bandwidth PCIe*
- *Off-the-Self MIOe Module*

MI/O Extension
Flexible Design Made Easy

MIO SBC

Vertical MIOe Module

Off-the-Shelf Enclosure



Smart Packing
MIOe-210
6 UARTs



Surveillance
MIOe-3674
4 PoE



Medical Equipment
MIOe-3680
4 CAN w/ 15KV



Automation
MIOe-220
3 GbE



AI
MIOe-260
GbE, M.2, mPCIe



WISE-PaaS/DeviceOn
ADVANTECH

High Performance SBC in Edge - MIO-5393



High Computing Power

- Intel 9th Xeon & Core-I Processor Families.
- Up to 6 Computer Cores.

Advanced Interfaces

- LVDS/eDP + HDMI + DP Displays with 4K Decode.
- M.2 Wireless & NVME SSD modules with Intel RST.

Wide Range Operating

- Power Input DC +12C with 10% tolerance.
- Operating Temperature -40 ~ 85 °C.

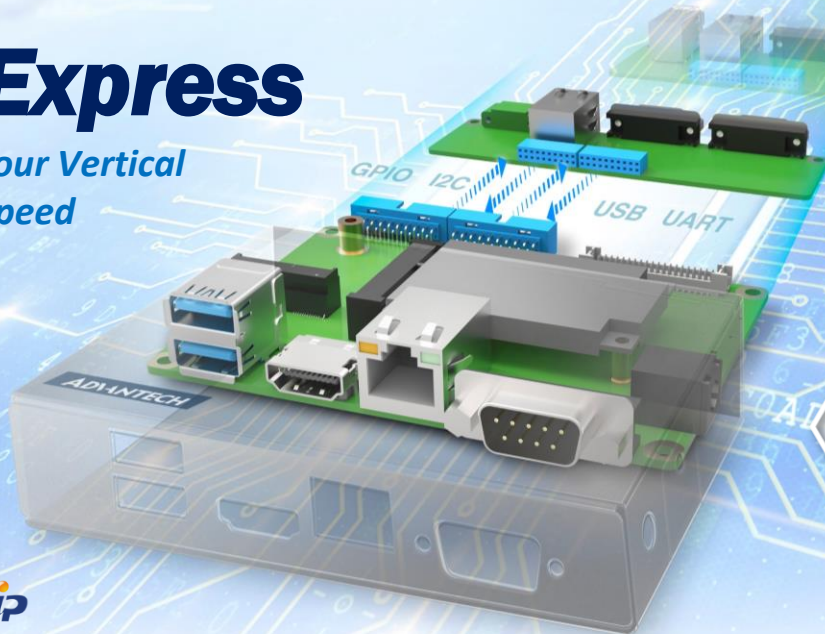


MIO>Extension
Flexible Design Made Easy



UIO40-Express

*Build Systems for Your Vertical
Applications with Speed*



Various I/O
Options



Compact
Structure



Unified
Software
Package



Step 1

2.5" Core Board



RSB-3430
NXP i.MX6 Cortex-
A9 Dual Lite Cores



RSB-3710
Rockchip RK3399
Cortex-A72/53
Dual/Quad Cores

Step 2

Vertical I/O Board



UIO-4030
RS-485 x 1, RS-232 x 1, GPI x 4, GPO x 4



UIO-4032
USB 2.0 x 2, RS-232 x 2, GbE x 1



UIO-4034
CAN x 1, RS-232 x 2

Step 3

Vertical Application System



EPC-R3430 with RSB-3430 2.5" SBC
EPC-R3710 with RSB-3710 2.5" SBC

Step 4

AIM-Linux & AIM/Android



Modularized
Framework



Value-added
Industrial App & SDK



Longevity BSP
Maintenance

Step 5

WISE-PaaS/DeviceOn



IoT Devices Operation
Management

Take Your Device Everywhere - RSB-3430

Powerful but Fan-less

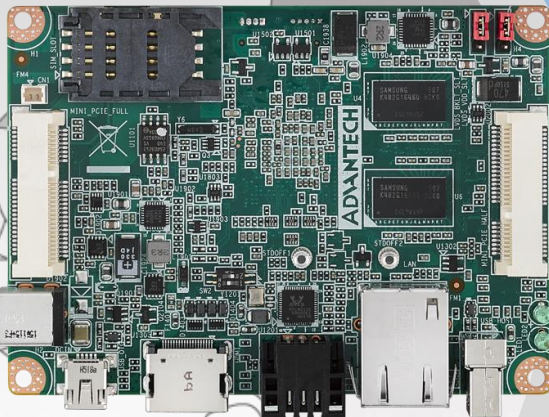
- NXP i.MX 6 Cortex-A9 Processor Family.
- Max Power Consumption 2W.

Small but Complete

- Standard Pico-ITX 2.5" SBC.
- HDMI, LVDS, GbE, Wireless Connectivity.
- UIO 40-Express Expansion

Reliable Foundation

- Longevity BSP Maintenance.
- Remote Maintenance thru DeviceON.



UIO40-Express



WISE-PaaS/ DeviceOn

Empowers Edge Intelligence



Device Management

- Device Monitoring and Diagnostics
- Device Control & Updating



Data Management

- Data Acquisition and Storage
- Secure Data Access



Connectivity Service

- Device Connectivity
- Plug-n-Play Peripherals

DeviceOn.Dev



OTA

- Software & Firmware Updates
- Advantech BIOS Updates



Rule Engine

- Distributed Rule Monitoring
- Flexible Trigger and Action



Data Security

- McAfee Threat Protection
- Acronis Backup Recovery

DeviceOn.App

DeviceOn
OTA

OTA

- Software, firmware & configuration updates
- Advantech BIOS updates

DeviceOn
FaceView

FaceView

- Facial recognition
- People counting
- Behavior detection

DeviceOn
E2I

E2I

- Protocol conversion
- Edge intelligence
- Real-time virtualization

DeviceOn
ePaper

ePaper Manager

- EPD device auto-discover
- Fast transmission
- Device association

Co-Creating the Future of the IoT World

