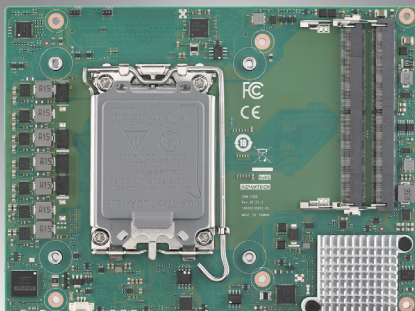


# SOM-C350 / R

Intel® 12th/13th Gen Core Processors  
(Code Name: Alder Lake-S/Raptor Lake-S)  
COM-HPC® Client Size C Module

NEW



## Features

- COM-HPC® client size C module pin out
- High scalability with socket type LGA 1700 CPU + R680E PCH
- 4 SODIMM DDR5 w/ ECC/non-ECC, max. 128GB
- High performance iRIS Xe graphic engine and PCIe x16 Gen5
- High speed Ethernet 2.5GbE and USB 3.2 Gen2x2
- Supports iManager, WISE-PaaS/DeviceOn and embedded software APIs

### Software APIs:



### Utilities:

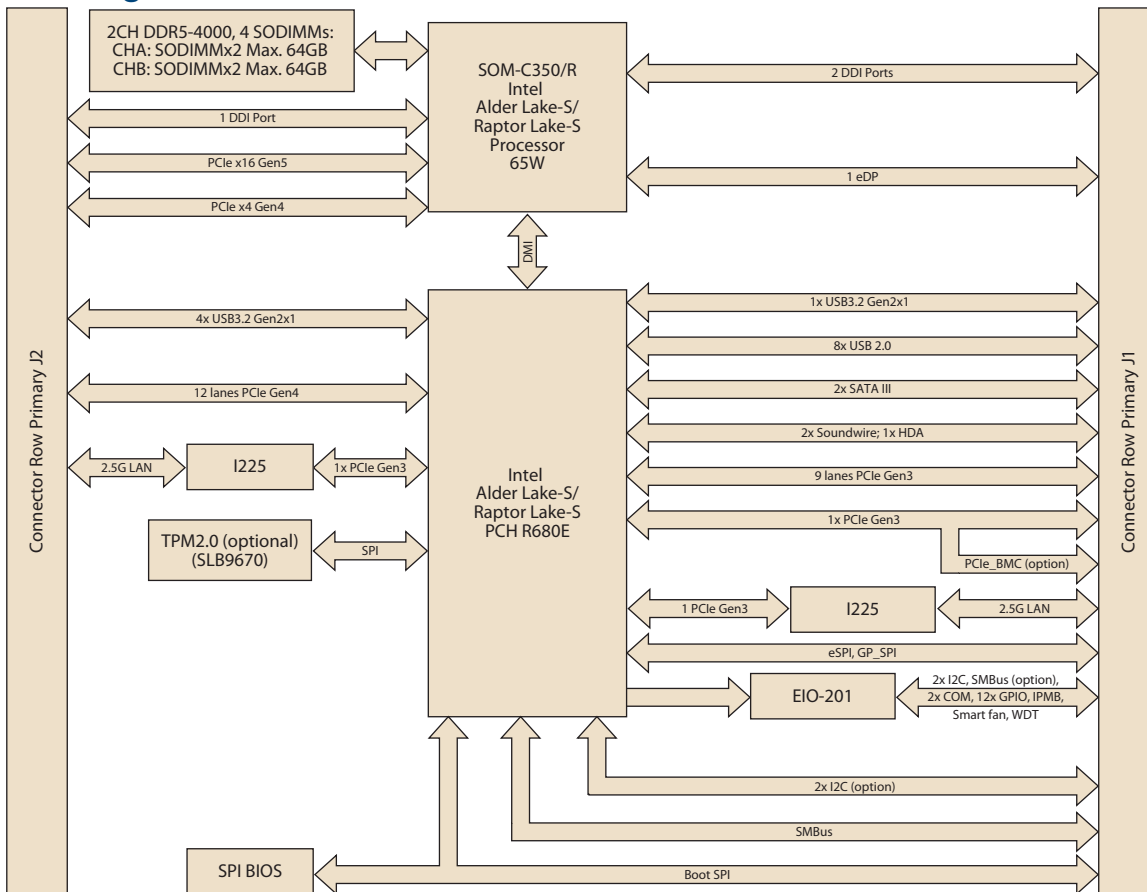


Windows Server Windows Embedded **WISE-PaaS/DeviceOn iManager**

## Specifications

|                  |                                                             |                                                                                                                                             |            |           |           |          |            |           |           |           |
|------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|-----------|----------|------------|-----------|-----------|-----------|
| Form Factor      | Form Factor                                                 | COM-HPC® Size C Module                                                                                                                      |            |           |           |          |            |           |           |           |
|                  | Pin-out Type                                                | Client pin out                                                                                                                              |            |           |           |          |            |           |           |           |
| Processor System | CPU                                                         | i9-12900E                                                                                                                                   | i7-12700E  | i5-12500E | i3-12100E | G7400E   | i9-13900E  | i7-13700E | i5-13500E | i3-13100E |
|                  | P-Core Base Frequency                                       | 2.3GHz                                                                                                                                      | 2.1GHz     | 2.9GHz    | 3.2GHz    | 3.6GHz   | 1.8GHz     | 1.9GHz    | 2.4GHz    | 3.3GHz    |
|                  | P-Core Max Turbo Frequency                                  | 5.0GHz                                                                                                                                      | 4.8GHz     | 4.5GHz    | 4.2GHz    | 3.6GHz   | 5.2GHz     | 5.1GHz    | 4.6GHz    | 4.4GHz    |
|                  | E-Core Base Frequency                                       | 1.7GHz                                                                                                                                      | 1.6GHz     | NA        | NA        | NA       | 1.3GHz     | 1.3GHz    | 1.5GHz    | NA        |
|                  | E-Core Max Turbo Frequency                                  | 3.8GHz                                                                                                                                      | 3.6GHz     | NA        | NA        | NA       | 4.0GHz     | 3.9GHz    | 3.3GHz    | NA        |
|                  | Core (P+E)                                                  | 16C (8+8)                                                                                                                                   | 12C (8+4)  | 6C (6+0)  | 4C (4+0)  | 2C (2+0) | 24C (8+16) | 16C (8+8) | 14C (6+8) | 4C (4+0)  |
|                  | LLC                                                         | 30MB                                                                                                                                        | 25MB       | 18MB      | 12MB      | 6MB      | 36MB       | 30MB      | 20MB      | 12MB      |
|                  | TDP                                                         | 65W                                                                                                                                         | 65W        | 65W       | 60W       | 46W      | 65W        | 65W       | 65W       | 65W       |
|                  | Socket Type                                                 | LGA 1700                                                                                                                                    |            |           |           |          |            |           |           |           |
|                  | Platform Controller Hub                                     | Intel R680E                                                                                                                                 |            |           |           |          |            |           |           |           |
| BIOS             | AMI UEFI 256Mbit                                            |                                                                                                                                             |            |           |           |          |            |           |           |           |
| Memory           | Technology                                                  | DDR5 3600 MT/s<br>1 DIMM 1R/2R-4000 (BIOS Setting Option)<br>2 DIMMs 1R-4000 (BIOS Setting Option)<br>2 DIMMs 2R-4000 (BIOS Setting Option) |            |           |           |          |            |           |           |           |
|                  | ECC Support                                                 | ECC or non-ECC                                                                                                                              |            |           |           |          |            |           |           |           |
|                  | Max. Capacity                                               | up to 128GB                                                                                                                                 |            |           |           |          |            |           |           |           |
|                  | Memory Type                                                 | 4 SODIMM sockets                                                                                                                            |            |           |           |          |            |           |           |           |
|                  | Display                                                     | Interface                                                                                                                                   | 3 PORT DDI |           |           |          |            |           |           |           |
|                  | Resolution                                                  | Up to 8k                                                                                                                                    |            |           |           |          |            |           |           |           |
| Expansion        | PCI Express x16                                             | 1 PCIe x16 Gen5, and bifurcatable to 2 x8                                                                                                   |            |           |           |          |            |           |           |           |
|                  | PCI Express x1 (Gen4)                                       | 1 port PCIe x4 Gen4 (from CPU) and 12 ports PCIe x1 Gen4 (from PCH)                                                                         |            |           |           |          |            |           |           |           |
|                  | PCI Express x1 (Gen3)                                       | 9 ports PCIe x1 Gen3 and 1port PCIe x1 Gen3 reserved for BMC                                                                                |            |           |           |          |            |           |           |           |
| Serial Bus       | SMBus                                                       | Yes                                                                                                                                         |            |           |           |          |            |           |           |           |
|                  | I²C Bus                                                     | Yes. 1 port from EC (100kb/s & 400kb/s master mode support) and 1 port from PCH                                                             |            |           |           |          |            |           |           |           |
| Ethernet         | 2.5GbE                                                      | 2 port 2.5GbE                                                                                                                               |            |           |           |          |            |           |           |           |
| I/O              | SATA                                                        | 2 ports support SATA III 6.0Gb/s                                                                                                            |            |           |           |          |            |           |           |           |
|                  | USB3.2 Gen2x2                                               | 2 ports (Option)                                                                                                                            |            |           |           |          |            |           |           |           |
|                  | USB3.2 Gen2x1                                               | 8 ports (only for Type A)                                                                                                                   |            |           |           |          |            |           |           |           |
|                  | USB2.0                                                      | 8 ports                                                                                                                                     |            |           |           |          |            |           |           |           |
|                  | SPI Bus                                                     | 2 ports (for BIOS ROM and GP_SPI)                                                                                                           |            |           |           |          |            |           |           |           |
|                  | GPIO                                                        | 12 ports GPIO/O                                                                                                                             |            |           |           |          |            |           |           |           |
|                  | Watchdog                                                    | 65536 level, 0 ~ 65535 sec                                                                                                                  |            |           |           |          |            |           |           |           |
|                  | COM Port                                                    | 2 Ports (2-Wire)                                                                                                                            |            |           |           |          |            |           |           |           |
|                  | TPM                                                         | Optional TPM 2.0 (Infineon 9670)                                                                                                            |            |           |           |          |            |           |           |           |
| Smart Fan        | 2 Ports (for COM Module and carrier board. support 12V Fan) |                                                                                                                                             |            |           |           |          |            |           |           |           |
| Power            | Type                                                        | ATX: Vin, VSB, AT: Vin                                                                                                                      |            |           |           |          |            |           |           |           |
|                  | Supply Voltage                                              | Vin: 12V, VSB: 5V±5%, RTC Battery: 2.0-3.3V                                                                                                 |            |           |           |          |            |           |           |           |
|                  | Power Consumption (Max.)                                    | N/A                                                                                                                                         |            |           |           |          |            |           |           |           |
|                  | Power Consumption (Idle)                                    | N/A                                                                                                                                         |            |           |           |          |            |           |           |           |
| Environment      | Temperature                                                 | Operating Standard: 0 ~ 60° C (32 ~ 140° F),<br>Storage: -40 ~ 85° C (-40 ~ 185° F)                                                         |            |           |           |          |            |           |           |           |
|                  | Humidity                                                    | Operating: 40 °C @ 95% relative humidity, non-condensing<br>Storage: 60 °C @ 95%relative humidity, non-condensing                           |            |           |           |          |            |           |           |           |
| Mechanical       | Dimensions                                                  | 160 x 120 mm (6.30" x 4.73")                                                                                                                |            |           |           |          |            |           |           |           |

## Block Diagram



## Ordering Information

| Part No.          | CPU       | Cores (P+E) | CPU TDP | CPU Threads | P-Cores Freq. | E-Cores Freq. | Graphic Execution Units | Temp.   |
|-------------------|-----------|-------------|---------|-------------|---------------|---------------|-------------------------|---------|
| SOM-C350C9R-U3A1  | i9-12900E | 16C (8+8)   | 65W     | 24          | 2.3GHz/5.0GHz | 1.7GHz/3.8GHz | 32 EU                   | 0-60 °C |
| SOM-C350C7R-U1A1  | i7-12700E | 12C (8+4)   | 65W     | 20          | 2.1GHz/4.8GHz | 1.6GHz/3.6GHz | 32 EU                   | 0-60 °C |
| SOM-C350C5R-U9A1  | i5-12500E | 6C (6+0)    | 65W     | 12          | 2.9GHz/4.5GHz | NA            | 32 EU                   | 0-60 °C |
| SOM-C350C3R-H2A1  | i3-12100E | 4C (4+0)    | 60W     | 8           | 3.2GHz/4.2GHz | NA            | 24 EU                   | 0-60 °C |
| SOM-C350PTR-H6A1  | G7400E    | 2C (2+0)    | 46W     | 4           | 3.6GHz        | NA            | 16 EU                   | 0-60 °C |
| SOM-C350RC9R-S8A1 | i9-13900E | 24C (8+16)  | 65W     | 32          | 1.8GHz/5.2GHz | 1.3GHz/4.0GHz | 32 EU                   | 0-60 °C |
| SOM-C350RC7R-S9A1 | i7-13700E | 16C (8+8)   | 65W     | 24          | 1.9GHz/5.1GHz | 1.3GHz/3.9GHz | 32 EU                   | 0-60 °C |
| SOM-C350RC5R-U4A1 | i5-13500E | 14C (6+8)   | 65W     | 24          | 2.4GHz/4.6GHz | 1.5GHz/3.3GHz | 24 EU                   | 0-60 °C |
| SOM-C350RC3R-H3A1 | i3-13100E | 4C (4+0)    | 65W     | 8           | 3.3GHz/4.4GHz | NA            | 24 EU                   | 0-60 °C |

## Packing List

| Part No.       | Description                | Quantity |
|----------------|----------------------------|----------|
| -              | SOM-C350/R CPU Module      | 1        |
| 1970005474T001 | Heatspreader of SOM-C350/R | 1        |

## Optional Accessories

| Part No.       | Description               |
|----------------|---------------------------|
| 1970005475T001 | Semi-Cooler 120*120* 34mm |
| 1970005473T001 | QFCS 2.0 120 *143 *29mm   |

## Development Board

| Part No.         | Description                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------|
| SOM-DH3000-00A1  | COM-HPC Development Board for Client Pinout with 5mm High Board to Board Connector (Alderlake-S)  |
| SOM-DH3000R-00A1 | COM-HPC Development Board for Client Pinout with 5mm High Board to Board Connector (Raptorlake-S) |

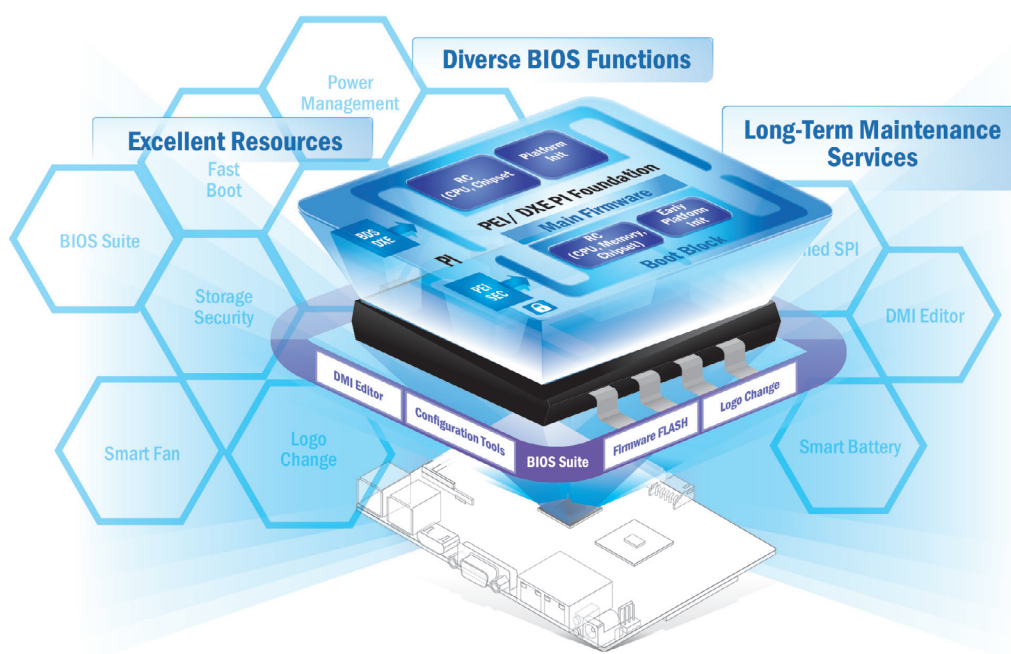
## Embedded OS

| OS    | Part No.       | Description                         |
|-------|----------------|-------------------------------------|
| Win10 | 20706WX1HS0004 | img W10 21HL SOM-C350 64b 21H2 ENU  |
| Win10 | 20706WX1VS0004 | img W10 21VL SOM-C350 64b 21H2 ENU  |
| Win10 | 20706WX1ES0004 | img W10 21EL SOM-C350 64b 21H2 ENU  |
| Win10 | 20706WX1HS0062 | img W10 21HL SOM-C350R 64b 21H2 ENU |
| Win10 | 20706WX1VS0062 | img W10 21VL SOM-C350R 64b 21H2 ENU |
| Win10 | 20706WX1ES0062 | img W10 21EL SOM-C350R 64b 21H2 ENU |

# Reliable Embedded BIOS Solutions

Custom BIOS services with long-term support

Advantech's high-quality embedded BIOS solutions deliver rapid execution and feature expert BIOS team support. These solutions feature multi-functional designs that ensure security and enable power/boot management. Advantech further provides 10+ years of BIOS version management, internal management, and longevity support for both hardware and BIOS — enhancing application efficiency, diversifying functionality, and optimizing performance.



## Embedded BIOS Solution Advantages

### Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with extensive industrial BIOS experience

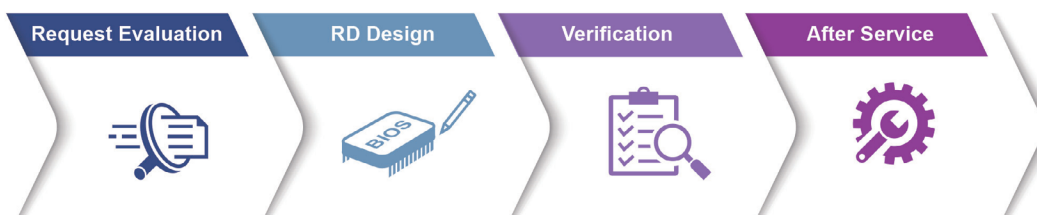
### Diverse BIOS Functions

- Multi-layer security
- 3 second fast boot
- Power management
- BIOS suite utility

### Long-Term Maintenance Services

- Platform longevity support
- 10-year BIOS version control
- BIOS remote backup

## Value-Added Customization Process



# WISE-DeviceOn

## Massive IoT Device Management Utility

IoT deployment and management typically involves numerous disparate devices installed on multiple sites. These devices require effective monitoring, managing, and tracking. Advantech's easy-to-use WISE-DeviceOn interface enables users to remotely monitor device health, troubleshoot problems, and send software/firmware updates over-the-air (OTA). In sum, DeviceOn empowers quick real-time responsiveness to emerging problems.



### Features

#### Comprehensive Management

- Devices status
- Peripherals/firmware
- Open for extension

#### Remote Access

- Real-time monitoring
- Remote controls
- Troubleshooting

#### Efficient Operations

- Zero-touch on-boarding
- OTA updates
- Batch control

### Product Highlights



**SOM-6883**

High-performance 11<sup>th</sup> Gen Intel®  
COMe Type 6 Module



**MIO-5375**

Compact 11<sup>th</sup> Gen Intel® Outdoor  
Focused 3.5" SBC



**EPC-B5587**

10<sup>th</sup> Gen Intel® Xeon® based Edge  
server



**EPC-R3220**

Arm based IoT Edge Gateway

# Edge AI Suite

AI development for diverse application at the Edge

Increasing demand for AI inference/analytic capabilities at the Edge make AI training models, software development environments, and hardware configuration key factors in successful solution deployment. Advantech's Edge AI Suite helps users build AI demo devices quickly and choose optimal hardware solutions easily.

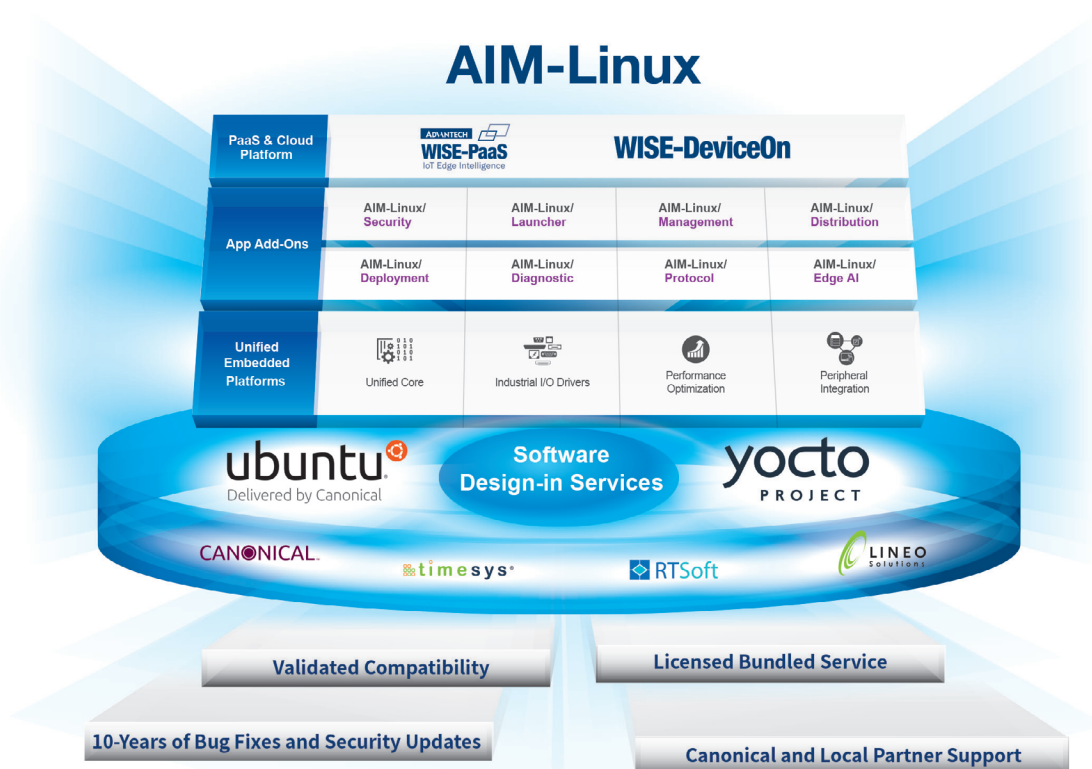


| 5x Performance Boost                                                                                                                | All-in-one Installation                                                                                                       | One Click AI Experience                                                                                                         | Plug-and-play Environment                                                                                                                     | Discover Cost-effective Hardware                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Integrated Intel® OpenVINO™ technology</li> <li>Boost AI using Advantech hardware</li> </ul> | <ul style="list-style-type: none"> <li>Build AI environment in under 5 minutes</li> <li>Ready-to-use configuration</li> </ul> | <ul style="list-style-type: none"> <li>User friendly configuration guidance</li> <li>One-click Benchmark acquisition</li> </ul> | <ul style="list-style-type: none"> <li>Easy access to 100+ AI inference extensions</li> <li>Software development package available</li> </ul> | <ul style="list-style-type: none"> <li>Diverse CPU/RAM options</li> <li>Find hardware solutions for AI development</li> </ul> |

# Embedded Linux Support and Design-in Services

## Hardware Certified Ubuntu and Yocto with Eco Partner Services

Linux is the most popular embedded OS for transportation, outdoor services, factory automation, and mission critical applications. Its open source and kernel reliability features ease security updates, and make it particularly adaptable to new AI and Edge computing technology. Advantech has cooperated with Canonical and other software partners to provide hardware certified Ubuntu image and Yocto BSP as Linux offerings. The Advantech, Embedded Linux, and Android Alliance (ELAA) delivers local software services and consultation.



### Features

| Certified OS and BSP                                                                                                                    | Licensed Services                                                                                                                                                    | Numerous AI and Edge Resources                                                                                                                                          | Local Partner Alliance                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Platform compatibility tests</li> <li>Preloaded functional driver and software stacks</li> </ul> | <ul style="list-style-type: none"> <li>License authorized Canonical delivers 10-years of bug fixes and security updates</li> <li>In-house bundled service</li> </ul> | <ul style="list-style-type: none"> <li>Containerized technology for service provision and deployment</li> <li>AI resources from Caffe, TensorFlow, and mxnet</li> </ul> | <ul style="list-style-type: none"> <li>Embedded Linux and Android Alliance (ELAA)</li> </ul> |

# Tento produkt můžete zakoupit u společnosti AutoCont IPC a.s.



## AutoCont IPC a.s.

Váš dodavatel průmyslových počítačů, komponent a speciálních průmyslových IT systémů.

 Uhlířská 1064/3, 710 00 Ostrava, Česká republika

 obchod@autocont-ipc.cz

 +420 552 301 002

 [www.autocont-ipc.cz](http://www.autocont-ipc.cz)



### PRŮMYSLOVÉ POČÍTAČE

*fanless embedded PC, do racku, ...*



### POČÍTAČE S DISPLEJEM

*panelové PC, terminály, do vozidel, ...*



### AUTOMATIZACE A SBĚR DAT

*převodníky, karty, moduly, switche, ...*



### PERIFERIE A KOMPONENTY

*monitory, klávesnice, desky, skříně, ...*



### NOTEBOOKY A TABLETY

*odolné, windows, android, IP65, ...*



### INFORMAČNÍ KIOSKY

*interiérové, venkovní, ...*



### MEDICÍNSKÁ TECHNIKA

*počítače, tablety, LCD, klávesnice, ...*



### SOFTWAREVÁ ŘEŠENÍ

*pro výrobu, zaměstnance, kiosky, ...*



### PŘEJÍT DO E-SHOPU

[eshop.autocont-ipc.cz](http://eshop.autocont-ipc.cz)



### DOPRAVA ZDARMA

Doprava zdarma v ČR a SR při objednávce nad 10 000 Kč bez DPH nebo nad 400 EUR.



### PRODLOUŽENÁ ZÁRUKA

Záruka 2 roky na vyráběné počítače s možností jejího prodloužení až na 5 let.



### ODMĚNA ZA VĚRNOST

Pravidelní zákazníci u nás nakupují za nižší ceny. Výše slevy se odvíjí od realizovaného obrátu.



### SERVIS ON-SITE A IN-TIME

K projektovým dodávkám nabízíme rozšířenou podporu a servis s garancí výměny zařízení do 48 hodin.