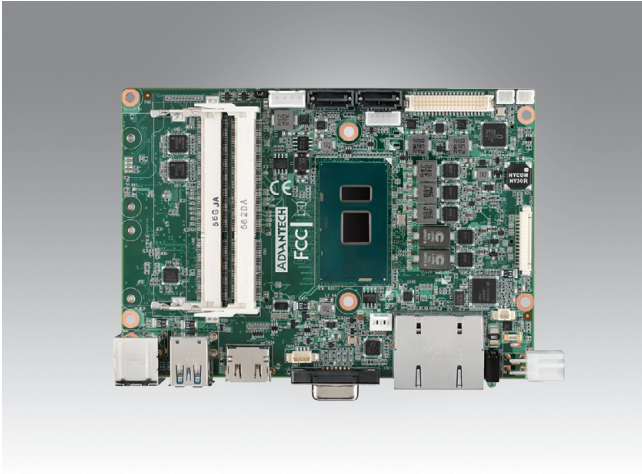


# MIO-5272

## 7<sup>th</sup> & 6<sup>th</sup> Gen. Intel® Core™ U-series (i7/i5/i3/\*Celeron®), 3.5" SBC w/MIOe



### Features

- 7<sup>th</sup> & 6<sup>th</sup> Gen. Intel® Core™ U-series (i7/i5/i3/\*Celeron®)
- Dual SO-DIMM slots support up to 16GB memory
- Multi-Display: VGA + HDMI 1.4 + LVDS (48bit)
- Expansion: 2x Full-size miniPCIe slots (one for mSATA), MIOe connector for I/O extension
- Dual GbE, 6x USB, 2x COM, SMBus/I2C, GPIO, TPM (optional)
- Supports Windows 10 LTSC & Ubuntu 20.04 LTS, embedded software APIs, WISE-DeviceOn

#### Software APIs:



#### Utilities:



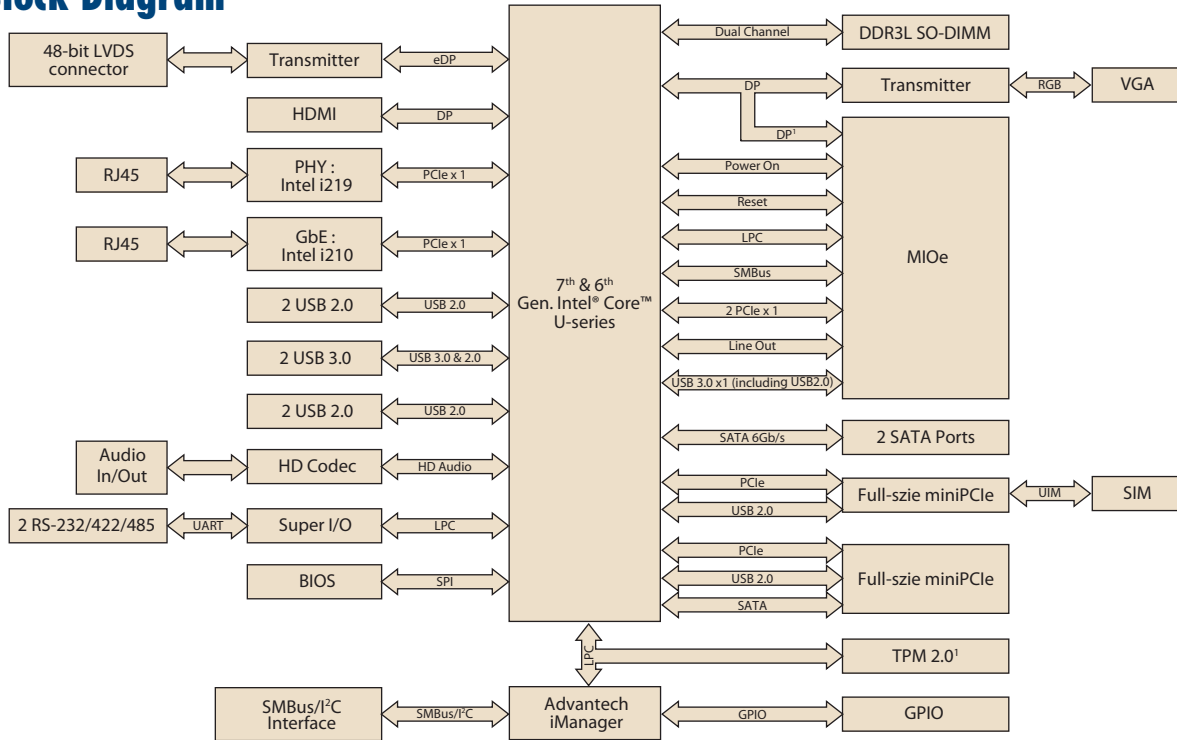
ubuntu yocto Windows 10 iManager WISE-DeviceOn CE FCC

### Specifications

|                          |                             | Intel 7th Core™ U-series   | Intel 6th Core™ U-series | Intel Core i5 6300U   | Intel Core i3 6100U   | Intel Celeron 3955U*  |  |
|--------------------------|-----------------------------|--|--------------------------|-----------------------|-----------------------|-----------------------|--|
| Processor System         | CPU                         | Intel Core i7 7600U  | Intel Core i7 6600U      | Intel Core i5 6300U   | Intel Core i3 6100U   | Intel Celeron 3955U*  |  |
|                          | Base Frequency              | 2.8 GHz (Dual-Core)  | 2.6 GHz (Dual-Core)      | 2.4 GHz (Dual-Core)   | 2.3 GHz (Dual-Core)   | 2.0 GHz (Dual-Core)   |  |
|                          | Max Turbo Frequency         | 3.9 GHz  | 3.4 GHz                  | 3.0 GHz               | -                     | -                     |  |
|                          | L3 Cache                    | 4MB  | 4MB                      | 3MB                   | 3MB                   | 2MB                   |  |
|                          | BIOS                        | AMI UEFI 128 Mbit  |                          |                       |                       |                       |  |
| Memory                   | Technology                  | DDR3L 1600 MHz   |                          |                       |                       |                       |  |
|                          | Max. Capacity               | 16 GB  |                          |                       |                       |                       |  |
|                          | Socket                      | 2 x 204-pin SODIMM   |                          |                       |                       |                       |  |
| Display                  | Controller                  | Intel HD Graphics 620  | Intel HD Graphics 520    | Intel HD Graphics 520 | Intel HD Graphics 520 | Intel HD Graphics 510 |  |
|                          | Processor Graphics          | DirectX 12, DirectX 11.3, OpenGL 4.4, and OpenCL 2.1<br>Full AVC/VC1/MPEG2 HW Decode   |                          |                       |                       |                       |  |
|                          | VGA                         | 1920 x 1200 @ 60Hz or 2048 x 1152 @ 60Hz with reduced blanking   |                          |                       |                       |                       |  |
|                          | LVDS                        | LVDS with 3.3V, 5V and 12V on LCD VDD power, 5V and 12V support on LVDS inverter<br>Dual channel 24-bit LVDS, max resolution up to 1920 x 1200 at 60Hz |                          |                       |                       |                       |  |
|                          | HDMI                        | Supports HDMI 1.4 for HD Video playback<br>Max resolution up to 4096 x 2160 at 24 Hz   |                          |                       |                       |                       |  |
|                          | Multi-Display               | VGA + HDMI, VGA + LVDS, HDMI + LVDS, VGA + HDMI + LVDS   |                          |                       |                       |                       |  |
| Ethernet                 | Speed                       | 10/100/1000Mbps  |                          |                       |                       |                       |  |
|                          | Controller                  | GbE1: Intel i219, GbE2: Intel i210   |                          |                       |                       |                       |  |
|                          | Connector                   | 2 RJ45 on Rear I/O   |                          |                       |                       |                       |  |
| Audio                    | Codec                       | High Definition Audio (HD), Line-in, Line out, Mic-in  |                          |                       |                       |                       |  |
|                          | Amplifier                   | Optional via MIOe  |                          |                       |                       |                       |  |
| WatchDog Timer           |                             | Output System reset, Programmable counter from 1 – 255 minutes/ seconds  |                          |                       |                       |                       |  |
| Storage                  | SATA                        | 2, up to 6.0 Gb/s (600 MB/s)   |                          |                       |                       |                       |  |
|                          | mSATA                       | 1 x Full-size (support either mSATA or miniPCIe)   |                          |                       |                       |                       |  |
| Rear I/O                 | Ethernet                    | 2  |                          |                       |                       |                       |  |
|                          | VGA                         | 1  |                          |                       |                       |                       |  |
|                          | HDMI                        | 1  |                          |                       |                       |                       |  |
|                          | USB 2.0                     | 2  |                          |                       |                       |                       |  |
|                          | USB 3.0                     | 2  |                          |                       |                       |                       |  |
|                          | LED                         | Power, HDD   |                          |                       |                       |                       |  |
|                          | DC Jack*                    | Support by request   |                          |                       |                       |                       |  |
| Internal I/O             | Serial                      | 2 x RS-232/422/485 with auto flow control (ESD protection: Air gap ±15kV, Contact ±8kV)  |                          |                       |                       |                       |  |
|                          | USB                         | 2  |                          |                       |                       |                       |  |
|                          | FC                          | 1 (Shares with SMBus pin)  |                          |                       |                       |                       |  |
|                          | SMBus                       | 1  |                          |                       |                       |                       |  |
| Security                 | GPIO                        | 8-bit general purpose input/output   |                          |                       |                       |                       |  |
|                          | TPM2.0*                     | Support by request   |                          |                       |                       |                       |  |
| Expansion                | Mini PCIe                   | 2 x Full-size (One with SIM card holder. Another one with mSATA support, default support mSATA)  |                          |                       |                       |                       |  |
|                          | MIOe                        | Displayport*, SMBus, USB3.0, LPC, 2 x PCIe x1, line out, +5 Vsb/+12 Vsb power, Power On, Reset   |                          |                       |                       |                       |  |
| Power                    | Power Type                  | Single 12V DC power input  |                          |                       |                       |                       |  |
|                          | Power Supply Voltage        | Supports single 12V input, ± 10%   |                          |                       |                       |                       |  |
|                          | Power Consumption (Typical) | i7 7600U: 6.46W, i7 6600U: 6.46 W, i5 6300U: 5.26 W, i3 6100U: 5.02 W, Celeron 3955U: 4.88 W   |                          |                       |                       |                       |  |
|                          | Power Consumption (Max)     | i7 7600U: 22.03W, i7 6600U: 22.03 W, i5 6300U: 20.87 W, i3 6100U: 20.45 W, Celeron 3955U: 17.81 W  |                          |                       |                       |                       |  |
|                          | Power Management            | ACPI   |                          |                       |                       |                       |  |
| Environment              | Battery                     | Lithium 3 V / 210 mAh  |                          |                       |                       |                       |  |
|                          | Operating                   | 0 – 60 °C (32 – 140 °F); Extend: -40 – 85 °C (-40 – 185 °F) (Operating humidity: 40 °C @ 95% RH Non-Condensing)  |                          |                       |                       |                       |  |
|                          | Non-Operating               | -40 °C – 85 °C and 60 °C @ 95% RH Non-Condensing   |                          |                       |                       |                       |  |
| Physical Characteristics | Dimensions (L x W)          | 146 x 102 mm (5.7" x 4"), same as 3.5"   |                          |                       |                       |                       |  |
|                          | Weight                      | 0.67kg, weight of total package  |                          |                       |                       |                       |  |
|                          | Height                      | Top Side: 16.5 mm; Bottom Side: 7.8 mm; PCB: 2.0 mm  |                          |                       |                       |                       |  |

\* Supported by request; please contact Advantech if this function is needed.

## Block Diagram



<sup>1</sup> Supported by request

## Ordering Information

| Part No.                              | CPU <sup>1</sup>           | L3 Cache | Memory | LVDS   | VGA | HDMI | GbE | HD Audio | RS-232/422/485 | USB 3.0 | USB 2.0 | SATAIII | Full-size Mini PCIe <sup>2</sup> | MIOe | Power connector <sup>3</sup> | Thermal Solution | Operating Temp. |
|---------------------------------------|----------------------------|----------|--------|--------|-----|------|-----|----------|----------------|---------|---------|---------|----------------------------------|------|------------------------------|------------------|-----------------|
| <b>7th Gen. Intel® Core™ U-series</b> |                            |          |        |        |     |      |     |          |                |         |         |         |                                  |      |                              |                  |                 |
| MIO-5272U-U8A2                        | Intel i7 7600U, 2.8GHz 15W | 4MB      | SODIMM | 48 bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | 0 - 60 °C       |
| MIO-5272Z-U8A2                        | Intel i7 7600U, 2.8GHz 15W | 4MB      | SODIMM | 48 bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | -20 - 80 °C     |
| MIO-5272Z2-U8A2                       | Intel i7 7600U, 2.8GHz 15W | 4MB      | SODIMM | 48 bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | -40 - 85 °C     |
| <b>6th Gen. Intel® Core™ U-series</b> |                            |          |        |        |     |      |     |          |                |         |         |         |                                  |      |                              |                  |                 |
| MIO-5272U-U6A2                        | Intel i7 6600U 2.6GHz 15W  | 4MB      | SODIMM | 48-bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | 0 - 60 °C       |
| MIO-5272U-U4A2                        | Intel i5 6300U 2.4GHz 15W  | 3MB      | SODIMM | 48-bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | 0 - 60 °C       |
| MIO-5272U-U3A2                        | Intel i3 6100U 2.3GHz 15W  | 3MB      | SODIMM | 48-bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | 0 - 60 °C       |
| MIO-5272Z2-U6A2                       | Intel i7 6600U 2.6GHz 15W  | 4MB      | SODIMM | 48-bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | -40 - 85 °C     |
| MIO-5272Z2-U4A2                       | Intel i5 6300U 2.4GHz 15W  | 3MB      | SODIMM | 48-bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | -40 - 85 °C     |
| MIO-5272Z2-U4A2                       | Intel i5 6300U 2.4GHz 15W  | 3MB      | SODIMM | 48-bit | Yes | Yes  | 2   | 1        | 2              | 2       | 4       | 2       | 2                                | 1    | 2x2 pin                      | Passive          | -20 - 80 °C     |

<sup>1</sup> Intel Celeron 3955U is supported by request

<sup>2</sup> One Mini PCIe default support mSATA

<sup>3</sup> DC jack is supported by request

## Packing List

| Part No.       | Description                                    | Quantity |
|----------------|--|----------|
| MIO-5272 SBC   | MIO-5272 SBC                                   | 1        |
| 2006527200     | Startup Manual                                 | 1        |
| 1700006291     | SATA cable, 7P, 30cm                           | 1        |
| 1700018785     | SATA power cable, 35cm                         | 1        |
| 1701200220     | COM Cable, D-SUB 9P (M)*2, 22cm                | 1        |
| 1700019584-01  | Audio cable, Audio jack*3, 20cm                | 1        |
|                | Mini Jumper pack                               | 1        |
| 1960068763T011 | Heatsink (H: 24 mm) for 0 ~ 60 °C              | 1        |
| 1960072272T001 | Heatsink (H: 34 mm) for -40 ~ 85 & -20 ~ 80 °C | 1        |

## Rear I/O View



## Optional Accessories

| Part No.       | Description                          |
|----------------|--------------------------------------|
| 1960074236N001 | Heat spreader (H: 16mm) for MIO-5272 |
| 1700002172     | Internal 2 ports USB cable 17cm      |

## Embedded OS/API

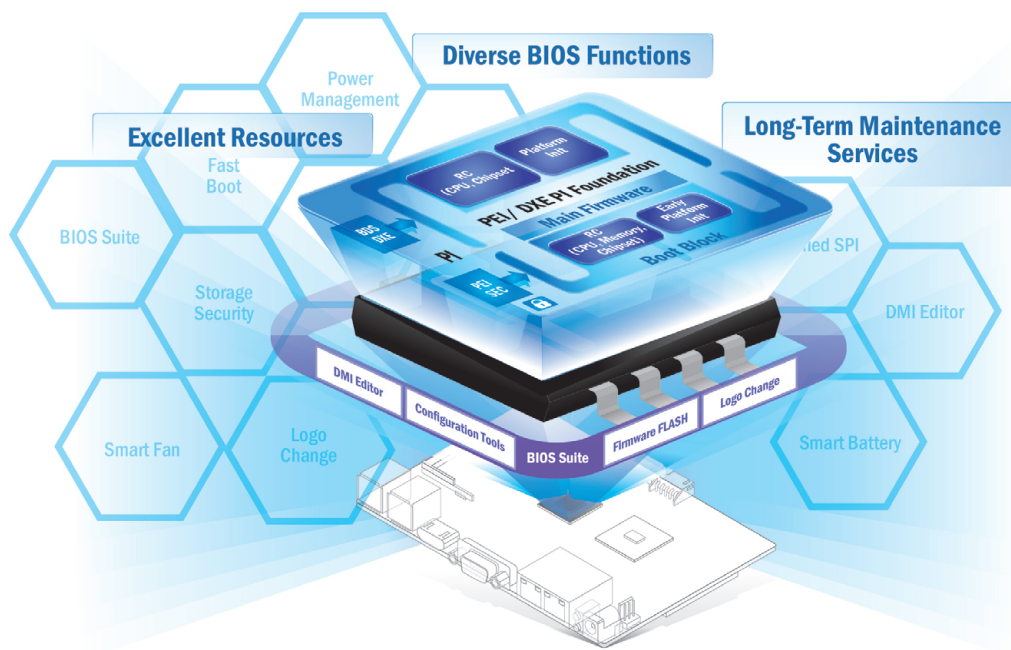
| Embedded OS/API      | Part No.           | Description  |
|----------------------|--------------------|--|
| Win10 IoT Enterprise | 20706WX9VS0105     | 2019 LTSC, 64bit, 1809, Value: Core i3/i5                              |
|                      | 20706WX9HS0101     | 2019 LTSC, 64bit, 1809, High End: Core i7                              |
| Win Emb Std. 7       | 20706WE7PS0018     | WES7P, 64bit, 1709, 10 MUI (Legacy mode only)                          |
| Yocto BSP            | Support by Request | Yocto BSP and Test Image   |
| Linux                | 20706U20DS0022     | Ubuntu Desktop 20.04, LTS, 64bit, Image & License Sticker for MIO-5272 |
| Software API         | Website Download   | SUSI 4.0   |

Note: Intel i7 7600U support Win10 only

# 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

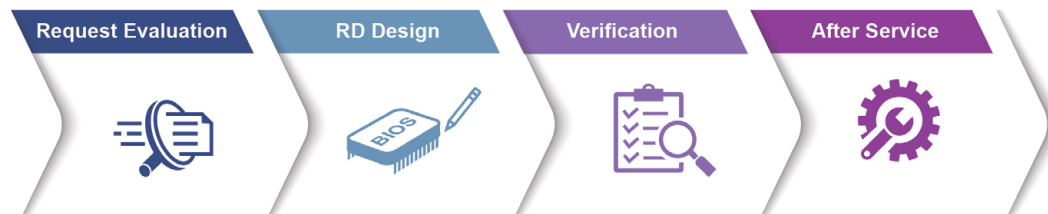
### Diverse BIOS Functions

- 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



# 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> |



# 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> |

# 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   | Remote Access  | Efficient Operations   |
|--|--|--|
| <ul style="list-style-type: none"> <li>• Devices status</li> <li>• Peripherals/firmware</li> <li>• Open for extension</li> </ul> | <ul style="list-style-type: none"> <li>• Real-time monitoring</li> <li>• Remote controls</li> <li>• Troubleshooting</li> </ul> | <ul style="list-style-type: none"> <li>• Zero-touch on-boarding</li> <li>• OTA updates</li> <li>• Batch control</li> </ul> |

### 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

# 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.