# EPC-C301

## 8th Gen. Intel® Core Processor SoC Multiple I/Os Fanless Embedded System



## Features

- 8th Gen. Intel Core i7-8665UE/i5-8365UE Quad Core
- Dual Display HDMI + DP, up to 4K2K
- 4 x GbE, 8 x USB3.0/2.0, 4 x UART, 2 x isolated CANBus
- 4 Expansion: M.2 E-Key 2230, M-Key 2280, B-Key 3042, F/S mPCIe
- DC-in 12V, Wall Mount & DIN Rail
- Supports Windows 10 LTSC & Ubuntu 20.04 LTS, embedded software APIs, WISE-DeviceOn

**Software APIs:** GPIO, SMBus/I²C, Watch Dog Timer, Backlight On/Off, Brightness, CAN bus

**Utilities:** Hardware Monitor, System Info, System Throttling, Thermal Protection, Data Security

Windows 10 ubuntu WISE-DeviceOn iManager

## Specifications

| | | | |
|---|---|---|---|
| Platform | Processor | i7-8665UE | i5-8365UE |
| | Base Frequency | 1.70 GHz | 1.60 GHz |
| | Max. Frequency | 4.40 GHz | 4.10 GHz |
| | Core/Tread | 4/8 | 4/8 |
| | LLC | 8MB | 6MB |
| | CPU TDP | 15W | 15W |
| | Chipset | Intel® WHL-U SoC integrated | |
| | BIOS | AMI UEFI 256Mbit | |
| Memory | Technology | DDR4-2400MT/s | |
| | Max. Capacity | 32GB | |
| | Channel/Socket | Dual Channels / 2 Sockets | |
| | ECC Support | N/A | |
| Graphics | Controller | Integrated Intel® UHD Graphics 620 | |
| | 3D/HW Acceleration | DX12, OGL4.4<br>HW Encode: H.264, MPEG2<br>HW Decode: H.264, MPEG2 | |
| Storage | SSD | Support M.2 2280 SATA SSD or NVMe SSD (Default bundled with 128GB SATA SSD) | |
| Display I/O | HDMI/DP | HDMI1.4 up to 4096x2160@30/24Hz<br>DP1.2 up to 4096x2306@60Hz (Note: not support Audio stream & Hot-plug & HDCP) | |
| Ethernet | Controller | LAN1: Intel i219, LAN2: Intel i210, LAN3: Intel i210, LAN 4: Intel i210 | |
| | Speed | 10/100/1000 Mbps | |
| Audio | Audio Codec | Realtek ALC888, High Definition Audio, Line-out, Mic-in | |
| Internal expansion Slot | M.2 3042 B-Key | 1 | |
| | M.2 2230 E-Key | 1 | |
| | M.2 2280 M-Key | 1 (Default bundled with 128G SATA SSD) | |
| | Full Size MiniPCIe | 1 | |
| Front Panel | HDMI | 1 | |
| | DP | 1 | |
| | LAN | 4 x GbE | |
| | USB 3.0 | 4 | |
| | USB 2.0 | 4 | |
| | MIC-In | 1 | |
| | LINE-Out | 1 | |
| | COM | 2 x Full RS-232/422/485 | |
| | DC Jack | 1 | |
| | SIM card | 1 (Nano SIM) | |
| | Power Button | 1 | |
| Side Panel | Antenna | 4 | |
| | COM | 2 (1 x Full RS-232/422/485, 1 x RS-232) | |
| | CANBUS | 2 x isolated CAN Bus | |
| | DIO | 1 x 8bit GPIO | |
| Miscellaneous | LED Indicators | 2 (Power LED , HDD LED) | |
| | Switch | - | |
| | Circular Cutouts | - | |
| Power Requirement | Power Voltage | Vin: DC 12V ± 10%; RTC Battery: Lithium 3V/210mAH | |
| | Power input Type | DC-Jack (only ATX mode) | |
| | Consumption | Idle: 6.683W; Max.: 65.591W | |
| Mechanical | Construction | Aluminum housing | |
| | Mounting | Din-Rail mounting/ Wall-mounting | |
| | Dimension | 170 x 118 x 70 mm | |
| Environment | Operating temperature | With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow without VEGA- 330 / -20 ~ 50 °C with VEGA-330 | |
| | Storage Temperature | -40 ~ 85 °C ( -40 ~ 185 °F) | |
| | Relative Humidity | 95% @ 40 °C (non-condensing) | |
| Regulation | EMC | CE/FCC Class B, CCC (*No RED certification) | |
| | Safety | CB, UL | |

*Note: Support by request

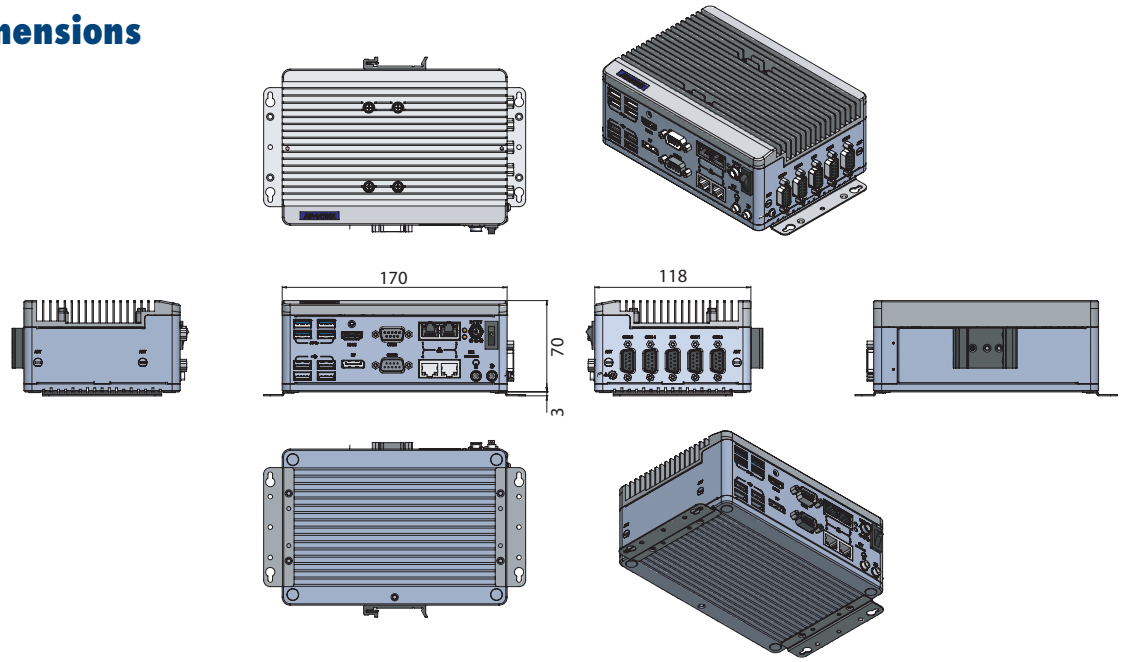


All product specifications are subject to change without notice.

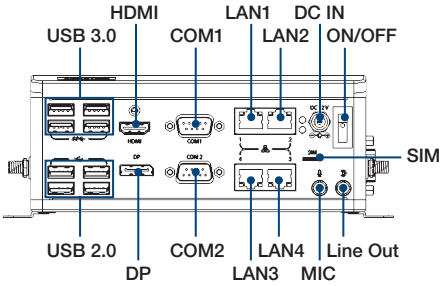
Last updated: 15-Apr-2024

## Dimensions

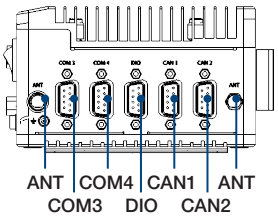
Unit: mm




## Front Panel External I/O Mechanical Layout/Drawing




## Side Panel External I/O mechanical Layout/ Drawing




## Ordering Information

| Part Number | CPU | Max. Frequency | Core | Memory | Storage | OS | Adapter | AI Accelerator Card | Operating Temp |
|---|---|---|---|---|---|---|---|---|---|
| EPC-C301C7-S7A1 | i7-8665UE | 4.40 GHz | 4 | 16GB (Dual Channel) | 128G SATA SSD | N/A | No | No | -20 ~ 60 degree |
| EPC-C301C5-S6A1 | i5-8365UE | 4.10 GHz | 4 | 8GB (Single Channel) | 128G SATA SSD | N/A | No | No | -20 ~ 60 degree |

## Packing List

| Part No. | Description | Quantity |
|---|---|---|
| | EPC-C301 system (DIN-Rail Bracket Assembled) | 1 |
| | Wall-Mount Bracket (2pcs per system) | 1 |
| | Screw Kit | 1 |

## Embedded OS/API

| Embedded OS/API | Part No. | Description |
|---|---|---|
| Win10 LTSC (High End for Core i7) | 20706WX9HS0135 | Win10 IoT Ent. 2019 LTSC 64bit |
| Win10 LTSC (Value for Core i5/i3) | 20706WX9VS0139 | Win10 IoT Ent. 2019 LTSC 64bit |
| Ubuntu 20.04 LTS | 20706U20DS0002 | Ubuntu Desktop 20.04 LTS 64bit |
| Software API | N/A | SUSI 4.0/iManager 3.0 |
| Software API | N/A | WISE-PaaS/DeviceOn |

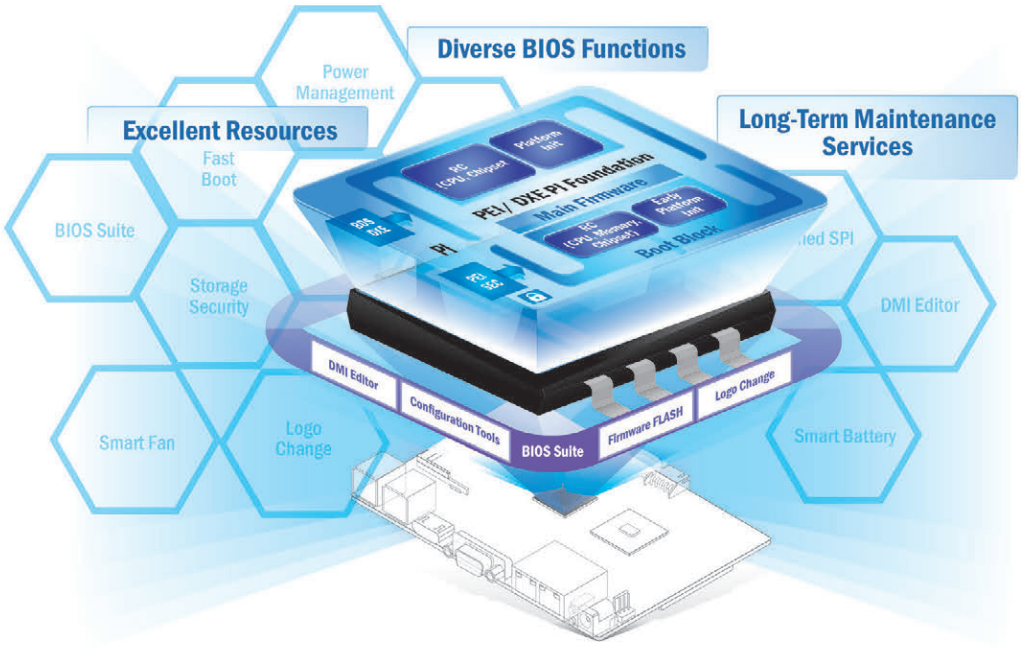
## Optional Accessories

| Part No. | Description |
|---|---|
| 96PSA-A120W12W7-3 | Adapter 100-240V 120W 12V, LOCKABLE DC JACK |
| 1702002600-01 | Power cable 3-pin 183 cm, USA type |
| 1700018704 | Power cable 3-pin 180 cm, UK type |
| 1702002605 | Power cable 3-pin 183 cm, Europe type |
| 1700000237-01 | Power cable 3-pin 183 cm, PSE type |
| 1960092891N001 | Heat Spreader for VEGA-330 |

# 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

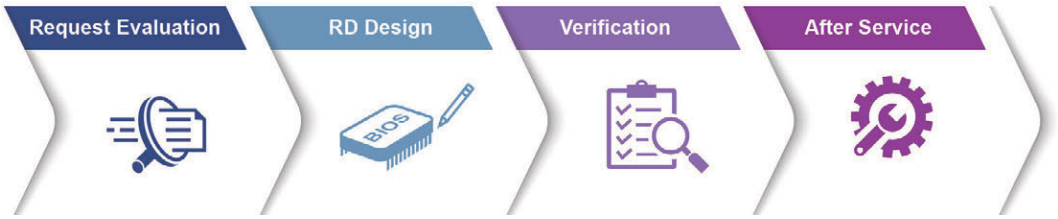
**Diverse BIOS Functions**

- 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

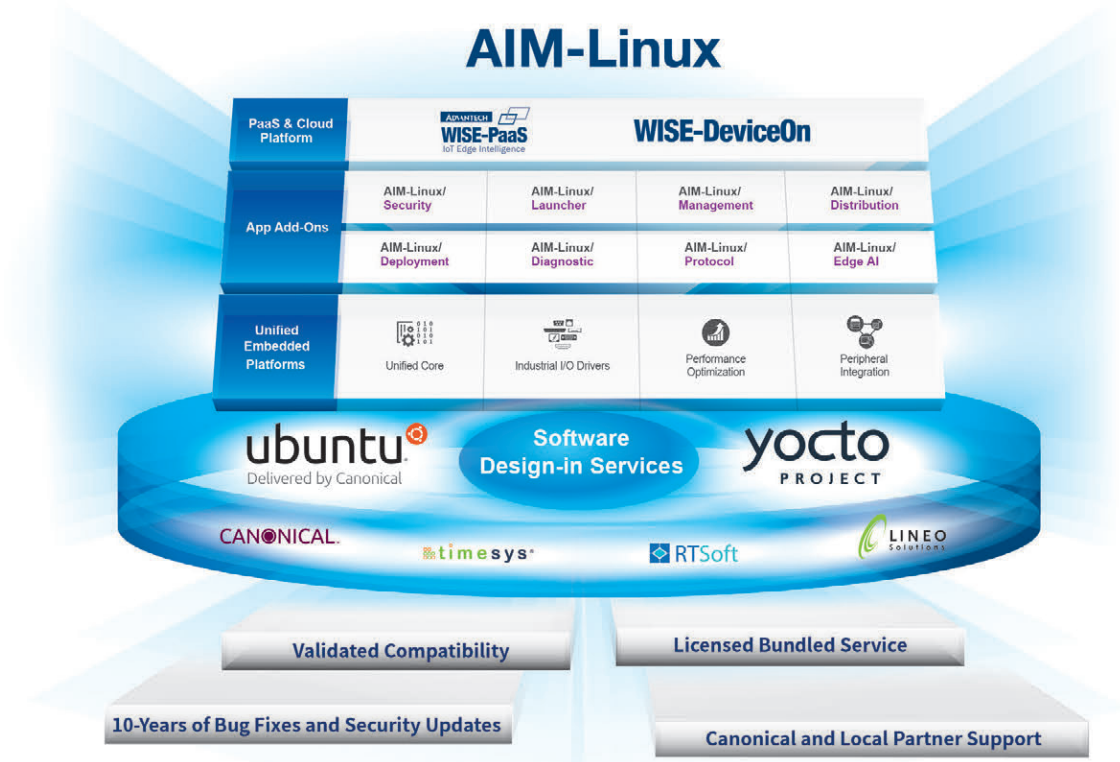
### Value-Added Customization Process



# 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**

- Platform compatibility tests
- Preloaded functional driver and software stacks

**Licensed Services**

- License authorized Canonical delivers 10-years of bug fixes and security updates
- In-house bundled service

**Numerous AI and Edge Resources**

- Containerized technology for service provision and deployment
- AI resources from Caffe, TensorFlow, and mxnet

**Local Partner Alliance**

- Embedded Linux and Android Alliance (ELAA)

# 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 |
|---|---|---|---|---|
| • Integrated Intel® OpenVINO™ technology<br>• Boost AI using Advantech hardware | • Build AI environment in under 5 minutes<br>• Ready-to-use configuration | • User friendly configuration guidance<br>• One-click Benchmark acquisition | • Easy access to 100+ AI inference extensions<br>• Software development package available | • Diverse CPU/RAM options<br>• Find hardware solutions for AI development |

# 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 |
|---|---|---|
| • Devices status<br>• Peripherals/firmware<br>• Open for extension | • Real-time monitoring<br>• Remote controls<br>• Troubleshooting | • Zero-touch on-boarding<br>• OTA updates<br>• Batch control |

### Product Highlights



**SOM-6883**
High-performance 11th Gen Intel® COMe Type 6 Module



**MIO-5375**
Compact 11th Gen Intel® Outdoor Focused 3.5" SBC



**EPC-B5587**
10th Gen Intel® Xeon® based Edge server



**EPC-R3220**
Arm based IoT Edge Gateway