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 | 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 HW Encode: H.264, MPEG2 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 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 (*Intel EVK SKU will default bundled with VEGA-330, Intel® Movidius™ Accelerator Card)	
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	

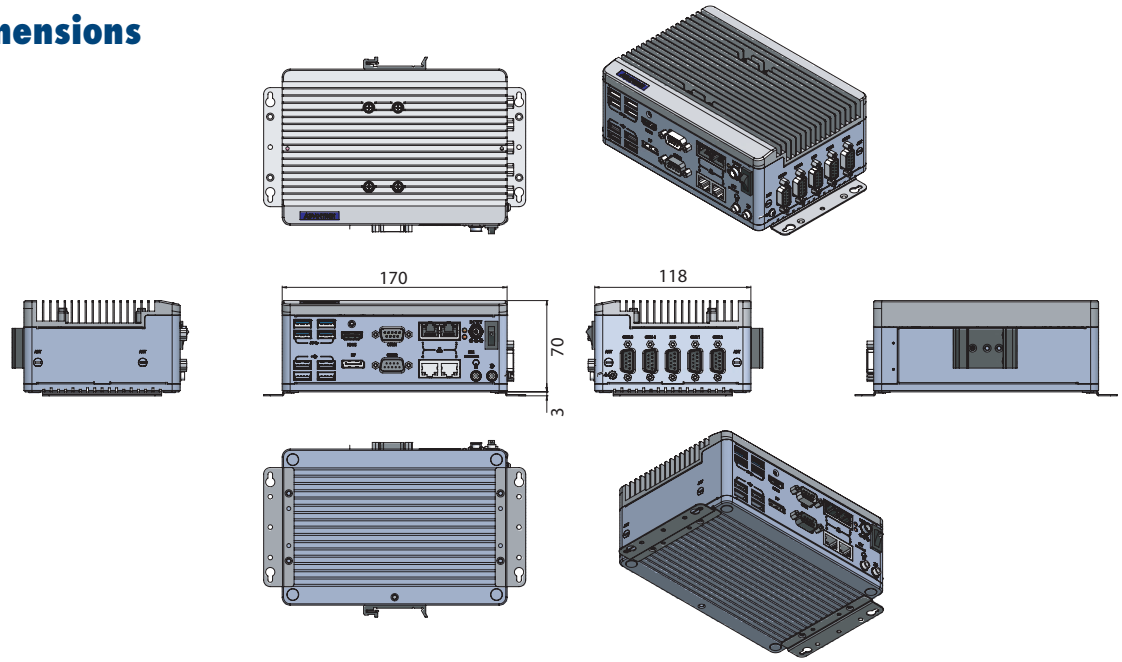
*Note: Support by request

All product specifications are subject to change without notice.

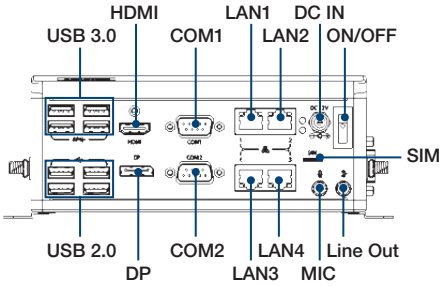
Last updated: 7-Jul-2023

Dimensions

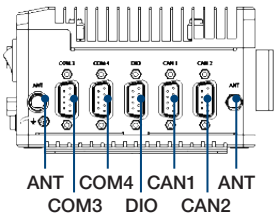
Unit: mm



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-C301EVK-S7A1	i7-8665UE	4.40 GHz	4	16GB (Dual Channel)	128G SATA SSD	Ubuntu v18.04	Yes	Yes (VEGA-330)	-20 ~ 50 degree
EPC-C301C7-S7A1	i7-8665UE	4.40 GHz	4	16GB (Dual Channel)	128G SATA SSD	N/A	No	No	-20 ~ 60 degree
EPC-C301EVK-S6A1	i5-8365UE	4.10 GHz	4	8GB (Single Channel)	128G SATA SSD	Ubuntu v18.04	Yes	Yes (VEGA-330)	-20 ~ 50 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	1
	Quick Start Guide (for EVK SKU only)	1
	China RoHS	1

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

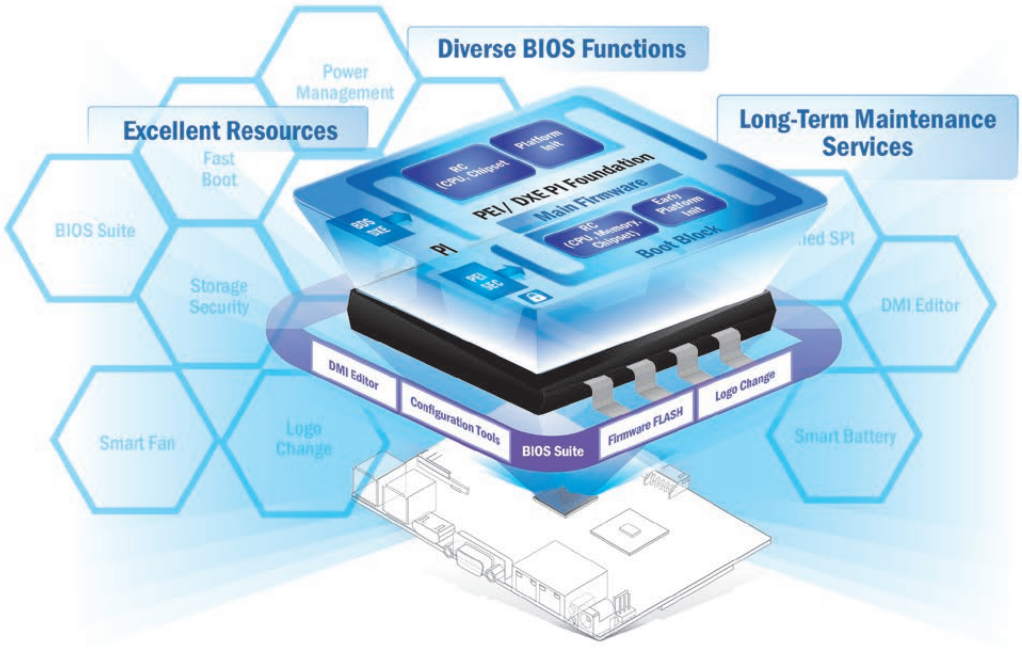
Embedded OS/API

Embedded OS/API	Part No.	Description
Win10 (High End for Core i7)	20706WX9HS0135	img W10 19HL EPC-C301 64b 1809 ENU
Win10 (Value for Core i5/i3)	20706WX9VS0139	img W10 19VL EPC-C301 64b 1809 ENU
Ubuntu v18.04	36OSC301000101	Ubuntu V18.04 image w/ Intel OpenVINO Toolkit
Ubuntu v20.04	20706U20DS0002	img Ubun20.4 EPC-C301 64b 2004 ENU
Software API	N/A	SUSI 4.0/iManager 3.0
Software API	N/A	WISE-PaaS/DeviceOn

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

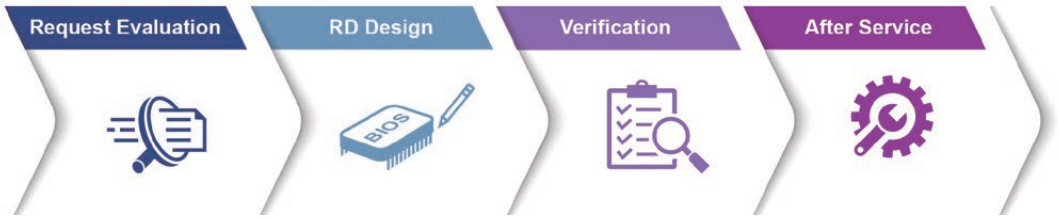
Diverse BIOS Functions

- 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 • Boost AI using Advantech hardware	• Build AI environment in under 5 minutes • Ready-to-use configuration	• User friendly configuration guidance • One-click Benchmark acquisition	• Easy access to 100+ AI inference extensions • Software development package available	• Diverse CPU/RAM options • 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 • Peripherals/firmware • Open for extension	• Real-time monitoring • Remote controls • Troubleshooting	• Zero-touch on-boarding • OTA updates • 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