# EPC-S202

**Intel Atom E3900 series Embedded SBC Fanless Slim System**

## Features
- Intel® Atom™ E3900 series
- Onboard 4GB LPDDR4-2400MT/s, 32GB eMMC
- Independent display by HDMI
- Semi-Industry Fanless slim system, Din Rail or Wall mount design
- Support HDMI x 1, GbE x 2, USB 3.0 x 2, COM x 2, DIO x 2
- Flexible expansion M.2 E key, F/S miniPCIe
- 12V power input, default is 12V phoenix 2 pin connector
- Advantech WISE-PaaS/DeviceOn support

## Software APIs:
- GPIO
- Watch Dog Timer
- System Info
- Memory Monitoring
- Thermal Protection
- Security

## Utilities:
- Website
- System Info
- Memory Monitoring
- Thermal Protection
- Security

## New Features
- Intel® Atom™ E3950 Atom E3930
- Max. Frequency 2.0 GHz 1.80 GHz
- Base Frequency 1.60 GHz 1.30 GHz
- Core/Tread 4/4 2/2
- LLC 2 MB 2 MB
- CPU TDP 12W 6W
- Chipset Intel® Atom SoC processor integrated

## Memory Technology
- LPDDR4-2400MT/s
- Max. Capacity 8GB (default 4GB)
- Channel/Socket Dual Channel/ Onboard LPDDR4

## Graphics Controller
- Intel® Atom SoC integrated
- Burst Frequency 650 MHz 550 MHz
- Graphics Memory 2 GB 2 GB
- 3D/HW Acceleration DX12, OGL4.4, OCL2.0
- HW Encode: H.265/HEVC, H.264, MPEG2
- HW Decode: H.264

## Display Interface
- HDMI HDMI 1.4b: up to 3840 x 2160 at 30Hz

## Ethernet Controller
- Intel® i210
- Speed 10/100/1000 Mbps

## Front I/O Openings
- Ethernet 2 x RJ-45
- HDMI 1
- USB3.0 2
- COM Port 1
- LED 1

## Side I/O Openings
- COM 1 (RS232/422/485)
- Digital I/O 2 (8-bit general purpose input/output)

## Miscellaneous
- LED Indicators Power
- Control Power Switch
- Storage eMMC 32GB (up to 64GB, support by request)

## Expansion M.2
- 1 x Full-size miniPCIe slot (Option to mSATA, support by request)

## MI/O Extension N/A

## Power
- Power type Vin: 12V ± 10%
- Power Input voltage AT
- Connector type 2 Pin Phoenix DC Plug in

## Environment Operating Temperature
- -20 ~ 60 °C w/ 0.7m/s airflow
- Storage Temperature -40 ~ 85 °C (-40~185 °F)
- Relative Humidity 40 °C @ 95%, Non-Condensing
- Vibration During Operation 3Gms, IEC 60068-2-64, random vibration, 5 – 500 Hz, 1 hr/axis
- Shock During Operation 30G, IEC60068-2-27, half sine, 11m duration

## Physical Characteristics
- Mounting Desk/Wall mounting, Din rail mounting
- Dimensions (W x H x D) 139 x100 x 44mm
- Weight 0.6kg

## Regulation
- EMC CE/FCC Class B (*No RED certification), BSMI, CCC(TBD)
- Safety CB, UL, BSMI, CCC(TBD)

*Note: Support by request

All product specifications are subject to change without notice.
EPC-S202

Dimensions

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>CPU</th>
<th>Memory</th>
<th>Storage</th>
<th>HDMI</th>
<th>GbE</th>
<th>USB 3.0</th>
<th>RS-232/422/485</th>
<th>Power Input</th>
<th>Operating Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPC-S202E-S8A1</td>
<td>Atom E3930 1.80 GHz</td>
<td>On-board 4GB LPDDR4</td>
<td>On-board 32G eMMC</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>12V</td>
<td>-20 ~ 60 °C</td>
</tr>
<tr>
<td>EPC-S202E-U0A1</td>
<td>Atom E3950 2.00 GHz</td>
<td>On-board 4GB LPDDR4</td>
<td>On-board 32G eMMC</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>12V</td>
<td>-20 ~ 60 °C</td>
</tr>
</tbody>
</table>

*Default BIOS supports 64 bits OS installation, BIOS for 32 bits OS installation is supported by project.

Packing List

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x EPC-S202 Unit</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Optional Accessories

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>96PSA-A60W12P2-3</td>
<td>DC power 12V/5A 60W, 0 ~ 40 °C, w/ Phoenix Jack type</td>
</tr>
<tr>
<td>1702002600-01</td>
<td>Power cable 3-pin 183 cm, USA type</td>
</tr>
<tr>
<td>1700018704</td>
<td>Power cable 3-pin 180 cm, UK type</td>
</tr>
<tr>
<td>1702002605</td>
<td>Power cable 3-pin 183 cm, Europe type</td>
</tr>
<tr>
<td>170000237-01</td>
<td>Power cable 3-pin 183 cm, PSE type</td>
</tr>
<tr>
<td>ESBC-08RK-WM02</td>
<td>Wall mount kit</td>
</tr>
<tr>
<td>ESBC-08RK-DR01</td>
<td>DIN Rail kit</td>
</tr>
<tr>
<td>EWM-W19S6M201E</td>
<td>WiFi/BT module: 802.11 a/b/g/n/ac, Atheros QCA6174A-S, 2/2T, with BT4.2 (-40 ~ 85 °C/-40 ~ 185 °F)</td>
</tr>
<tr>
<td>1750008717-01</td>
<td>External Antenna, Dipole Ant. D.B 2.4/5G WIFI 3dBi</td>
</tr>
<tr>
<td>1750008799-01</td>
<td>Cable Ant.SMA/F-R-BH MHF4/113 L:170 mm (6.69 in)</td>
</tr>
</tbody>
</table>

Embedded OS/API

<table>
<thead>
<tr>
<th>Embedded OS/API</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIN10</td>
<td>20706WX9VS0088</td>
<td>64-bit (UEFI mode only)</td>
</tr>
<tr>
<td>Software API</td>
<td>N/A</td>
<td>SUSI 4.0/Manager 3.0</td>
</tr>
<tr>
<td>Software API</td>
<td>N/A</td>
<td>WISE-PaaS/DeviceOn</td>
</tr>
<tr>
<td>Ubuntu v20.04</td>
<td>20706U20DS001</td>
<td>img Ubuntu 20.4 EPC-S202 64b 2004 ENU</td>
</tr>
</tbody>
</table>
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

- Request Evaluation
- RD Design
- Verification
- After Service
Embedded Linux Support and Design-in 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 authorizedCanonical 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.
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

<table>
<thead>
<tr>
<th>Comprehensive Management</th>
<th>Remote Access</th>
<th>Efficient Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Devices status</td>
<td>• Real-time monitoring</td>
<td>• Zero-touch on-boarding</td>
</tr>
<tr>
<td>• Peripherals/firmware</td>
<td>• Remote controls</td>
<td>• OTA updates</td>
</tr>
<tr>
<td>• Open for extension</td>
<td>• Troubleshooting</td>
<td>• Batch control</td>
</tr>
</tbody>
</table>

Product Highlights

1. **SOM-6883**
   - High-performance 11th Gen Intel® COMe Type 6 Module
2. **MIO-5375**
   - Compact 11th Gen Intel® Outdoor Focused 8.5” SBC
3. **EPC-B5587**
   - 10th Gen Intel® Xeon® based Edge server
4. **EPC-R3220**
   - Arm based IoT Edge Gateway