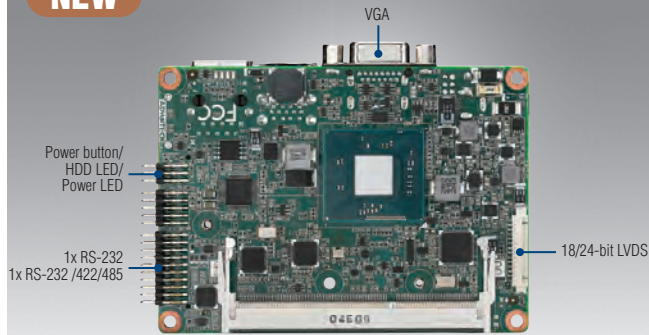


# MIO-2263

## Intel® Atom™ SoC E3825/ J1900, Pico-ITX SBC

**NEW**



**WISE-PaaS/RMM**  **CE FCC**

### Specifications

|                          |  |  |                      |
|--------------------------|--|--|----------------------|
| Processor System         | CPU  | Intel Celeron J1900  | Intel Atom E3825     |
|                          | Frequency  | 2.0 GHz (Quad-Core)  | 1.33 GHz (Dual-Core) |
|                          | L2 Cache   | 2 MB   | 1 MB                 |
|                          | Max Turbo Frequency  | 2.42 GHz   | -                    |
|                          | System Chipset   | Intel Atom SoC processor integrated  |                      |
|                          | BIOS   | AMI EFI 64 Mbit  |                      |
| Memory                   | Technology   | DDR3L 1333 MHz for J1900<br>DDR3L 1066 MHz for E3825   |                      |
|                          | Max. Capacity  | 8 GB   |                      |
| Display                  | Socket   | 1 x 204-pin SODIMM (Support 1.35V DDR3L)   |                      |
|                          | Chipset  | Intel® Atom SoC integrated   |                      |
|                          | Graphic Engine   | DirectX®11, Open GL3.0/ Open CL 1.1, OGL ES 2.0<br>Encode: H264, MPEG2/4, VC1, WMV9<br>Decode: H264, MPEG2                           |                      |
|                          | LVDS   | Supports single channel 24-bit LVDS<br>Resolution: 1440 x 900 at 60Hz  |                      |
|                          | VGA  | Up to 2560 x 1600 at 60Hz  |                      |
|                          | HDMI   | Up to 1920 x 1080 at 60 Hz   |                      |
| Ethernet                 | Dual Display   | Yes (VGA+LVDS or HDMI+LVDS)  |                      |
|                          | Speed  | 10/100/1000 Mbps   |                      |
| Audio                    | Controller   | Intel i210   |                      |
|                          | Connector  | RJ45 on rear I/O   |                      |
| Watchdog Timer           | Chipset  | Realtek ALC888S, High Definition Audio (HD), Line-in, Line-out   |                      |
| Storage                  | Output system reset, programmable counter from 1-255 minutes/seconds |  |                      |
|                          | mSATA  | 1 x half size mini PCIe slot   |                      |
| Rear I/O                 | SATA   | 1, up to 3Gb/s (300MB/s)   |                      |
|                          | Ethernet   | 1  |                      |
|                          | VGA  | 1  |                      |
|                          | USB  | 1 x USB 3.0 compatible with USB 2.0<br>1 x USB 2.0   |                      |
| Internal I/O             | DC Power Jack*   | 1  |                      |
|                          | USB  | 2 x USB 2.0  |                      |
|                          | Serial   | 1 x RS-232 from COM2 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)<br>1 x RS-232/422/485 from COM1 with auto-flow control |                      |
|                          | SMBus  | 1  |                      |
| Expansion                | GPIO   | 8-bit general purpose input/ output  |                      |
|                          | Mini PCI Express   | 1 x Half-size  |                      |
| Power                    | MIOe   | SMBus, 2 x USB2.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset                              |                      |
|                          | Power Type   | Single 12V DC power input (Supports DC power hot plug)   |                      |
|                          | Power supply voltage   | Supports single 12V input, ±10%  |                      |
|                          | Total peripheral power supply output                                 | 5V @ 3A for CPU board and MIOe module totally, 12V @ 2A for MIOe module  |                      |
|                          | Power Consumption (Typical)  | J1900: 0.86A @12V ( 10.59W)<br>E3825: 0.59A @ 12V (7.08W)  |                      |
|                          | Power Consumption (Max, test in HCT)                                 | J1900: 1.04A @12V ( 12.48W)<br>E3825: 0.76A @ 12V (9.12W)  |                      |
| Environment              | Power Management   | ACPI   |                      |
|                          | Battery  | Lithium 3V/ 210mAh   |                      |
| Physical Characteristics | Operation  | 0 ~ 60° C with air flow 0.7m/s (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)                                   |                      |
|                          | Non-Operation  | -40° C ~ 85° C and 60° C @ 95% RH non-condensing   |                      |
| Physical Characteristics | Dimensions (L x W)   | 100 x 72 mm (3.9" x 2.8")  |                      |
|                          | Weight   | 0.46 kg (1.01 lb), weight of total package   |                      |
|                          | Total Height   | 33.63 mm   |                      |

\* Support by request

### Features

- Intel® Atom™ SoC E3825 and Celeron J1900
- DDR3L 1333, up to 8GB
- Dual independent display by 24-bit LVDS +VGA or 24-bit LVDS + HDMI
- Flexible design using integrated I/O: MIOe to approach vertical applications
- Rich I/O interface with 2 COM, 1 SATA, USB3.0, mini PCIe and mSATA
- Supports WISE-PaaS/RMM and Embedded Software APIs

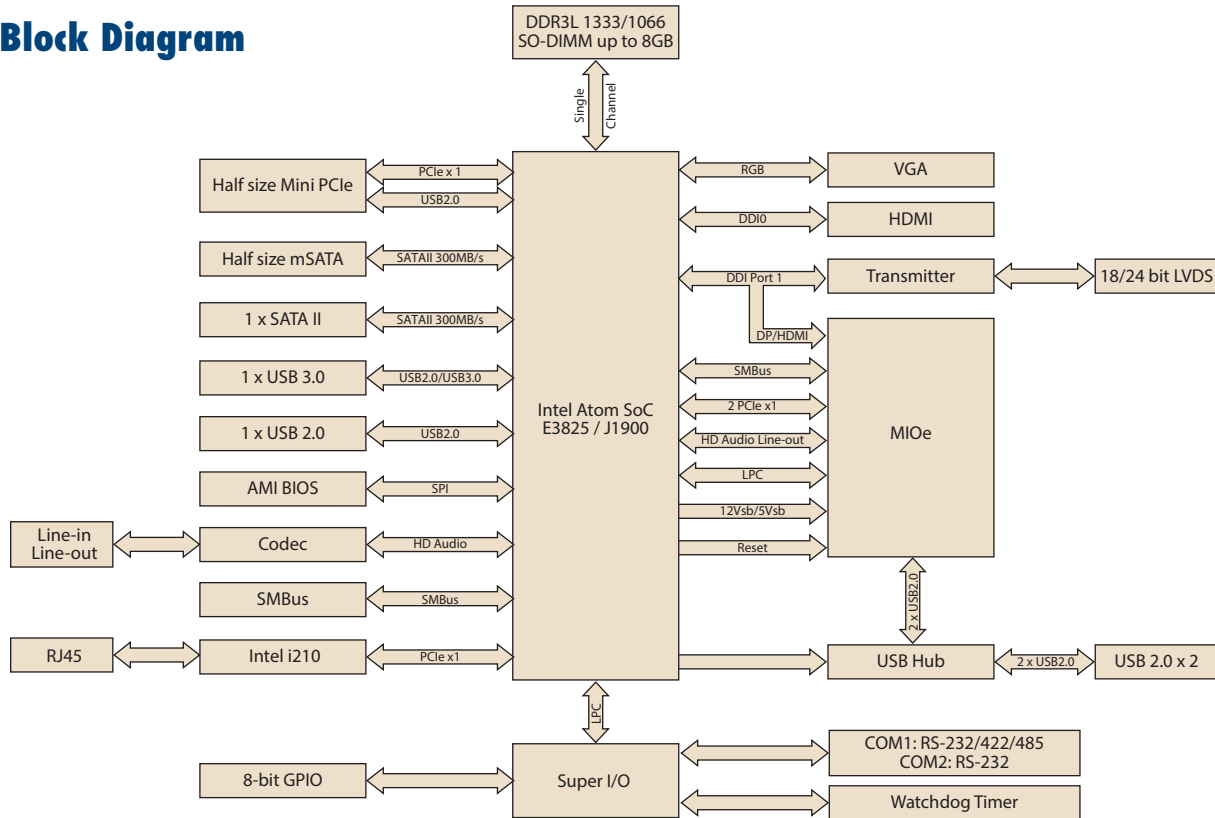
#### Software APIs:



#### Utilities:



## Block Diagram



## Ordering Information

| Part Number       | CPU             | L2 Cache | Memory     | LVDS   | VGA | HDMI | Audio | RS-232 | RS-232/422/485 | USB 3.0 | USB 2.0 | mSATA | SATA II | MIOe | Mini PCIe | Thermal solution | Operating Temp |
|-------------------|-----------------|----------|------------|--------|-----|------|-------|--------|----------------|---------|---------|-------|---------|------|-----------|------------------|----------------|
| MIO-2263E-S3A2    | E3825, 1.33 GHz | 1MB      | SO-DIMM    | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | 0 - 60° C      |
| MIO-2263J-U0A2    | J1900 2.0 GHz   | 2MB      | SO-DIMM    | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | 0 - 60° C      |
| MIO-2263JH-U0A2   | J1900 2.0 GHz   | 2MB      | SO-DIMM    | 24-bit | -   | Yes  | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | 0 - 60° C      |
| MIO-2263EZ-2GS3A2 | E3825, 1.33 GHz | 1MB      | 2GB bundle | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | -20 - 80° C    |
| MIO-2263EZ22GS3A2 | E3825, 1.33 GHz | 1MB      | 2GB bundle | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | -40 - 85° C    |

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

## Packing List

| Part No.       | Description   | Quantity |
|----------------|---|----------|
|                | MIO-2263 SBC  | 1        |
|                | Startup Manual  | 1        |
| 1700006291     | SATA cable 30cm   | 1        |
| 1700019656     | SATA power cable 5P-1.25/5P-2.0+SATA 5P 15 cm                                     | 1        |
| 1701200220     | RS-232 x 2 ports 2.0mm pitch 22cm   | 1        |
| 1700022444-01  | Audio cable 2.0 mm pitch 20 cm (line-in & line-out)                               | 1        |
| 1700002172     | USB cable 2.0 mm pitch USB-A(F) 17 cm   | 1        |
| 1700019705     | AT power cable 12 cm  | 1        |
| 9666226300E    | Screw and stud pack (2 screw for Mini PCIe, 4 x M3 studs and screws for heatsink) | 1        |
| 1960063455T001 | CPU heatsink for MIO-2263   | 1        |

## Optional Accessories

| Part No.         | Description                                     |
|------------------|---|
| 96PSA-A60W12W7-3 | ADP A/D 100-240V 60W 12V C14 LOCKABLE DC PLUG   |
| 1700021335-41    | A Cable 2*2P-4.2/DC Jack 20cm                   |
| 1960065074N001   | MIO-2263 Heat spreader ( 99.5 x 70.5 x 11.2 mm) |

## Embedded OS/API

| Embedded OS/API | Part No.   | Description                            |
|-----------------|------------|--|
| WES8            | TBD        | WES8E ENG                              |
| WES7            | 2070012999 | WES7E MIO-2263 x64 V5.6.8 US/ CN/TW/JP |
| WEC7            | TBD        | CE7.0 ENG                              |
| VxWorks         |            | 6.9                                    |
| Linux           |            | Ubuntu V13.10                          |
| Software        |            | SUSI V4.0                              |

## Rear I/O View



MIO-2263E-S3A1E  
MIO-2263J-U0A1E



MIO-2263JH-U0A1E

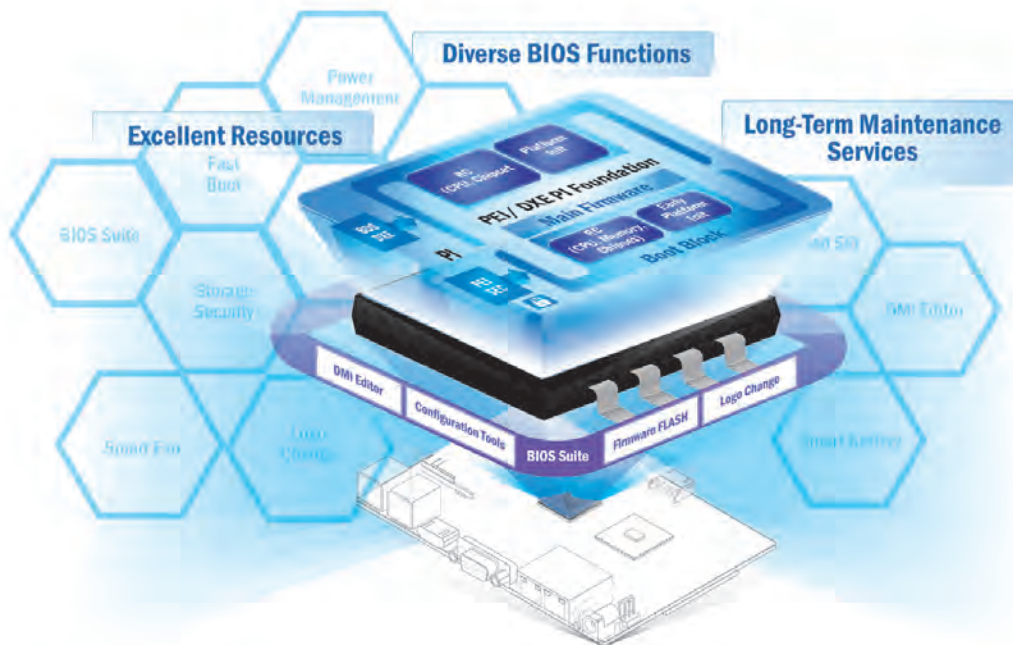


MIO-2263 w/DC Jack (by request)

# 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