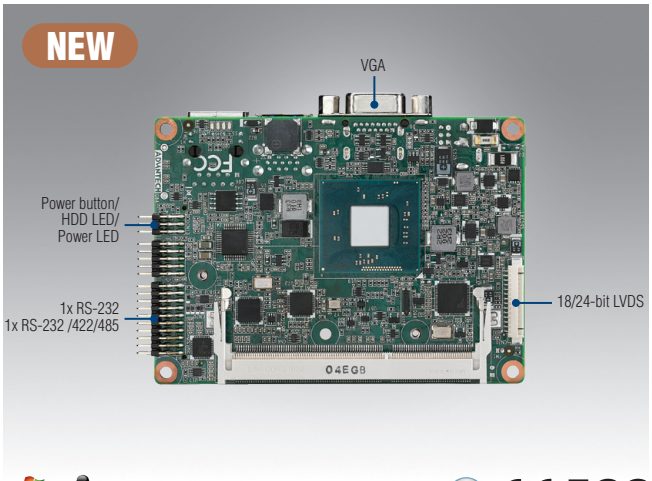
MIO-2263

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



Windows Embedded

WISE-PaaS/RMM

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: Programmable GPIO, H/W Monitor, Brightness, Watchdog, Backlight On/Off, SMBus

Utilities: Monitoring

Specifications

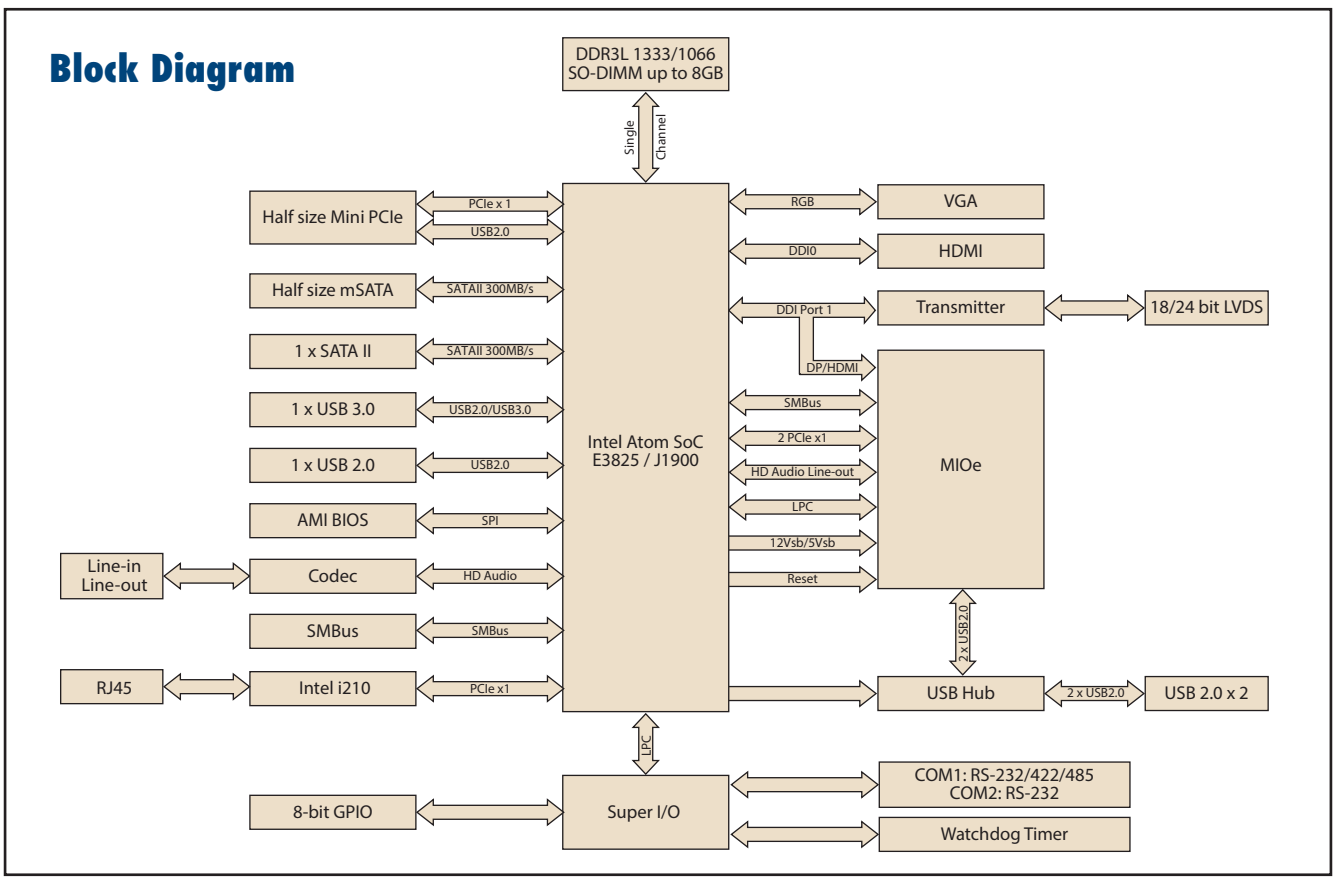
Processor System	CPU	Intel Celeron J1900	Intel Atom E3825
	Frequency	2.0 GHz (Quad-Core)	1.33 GHz (Dual-Core)
	L2 Cache	2 MB	1 MB
	Max Turbo Frequency	2.42 GHz	-
	System Chipset	Intel Atom SoC processor integrated	
	BIOS	AMI EFI 64 Mbit	
Memory	Technology	DDR3L 1333 MHz for J1900 DDR3L 1066 MHz for E3825	
	Max. Capacity	8 GB	
	Socket	1 x 204-pin SODIMM (Support 1.35V DDR3L)	
Display	Chipset	Intel® Atom SoC integrated	
	Graphic Engine	DirectX®11, Open GL3.0/ Open CL 1.1, OGL ES 2.0 Encode: H264, MPEG2/4, VC1, WMV9 Decode: H264, MPEG2	
	LVDS	Supports single channel 24-bit LVDS Resolution: 1440 x 900 at 60Hz	
	VGA	Up to 2560 x 1600 at 60Hz	
	HDMI	Up to 1920 x 1080 at 60 Hz	
	Dual Display	Yes (VGA+LVDS or HDMI+LVDS)	
Ethernet	Speed	10/100/1000 Mbps	
	Controller	Intel i210	
	Connector	RJ45 on rear I/O	
Audio	Chipset	Realtek ALC888S, High Definition Audio (HD), Line-in, Line-out	
Watchdog Timer		Output system reset, programmable counter from 1~255 minutes/ seconds	
Storage	mSATA	1 x half size mini PCIe slot	
	SATA	1, up to 3Gb/s (300MB/s)	
Rear I/O	Ethernet	1	
	VGA	1	
	USB	1 x USB 3.0 compatible with USB 2.0 1 x USB 2.0	
	DC Power Jack*	1	
Internal I/O	USB	2 x USB 2.0	
	Serial	1 x RS-232 from COM2 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV) 1 x RS-232/422/485 from COM1 with auto-flow control	
	SMBus	1	
	GPIO	8-bit general purpose input/ output	
Expansion	Mini PCI Express	1 x Half-size	
	MIOe	SMBus, 2 x USB2.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset	
Power	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) E3825: 0.59A @ 12V (7.08W)	
	Power Consumption (Max, test in HCT)	J1900: 1.04A @12V (12.48W) E3825: 0.76A @ 12V (9.12W)	
	Power Management	ACPI	
	Battery	Lithium 3V/ 210mAH	
Environment	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

All product specifications are subject to change without notice.

Last updated: 26-Sep-2022

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)

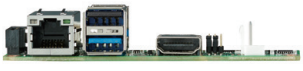
Embedded OS/API

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

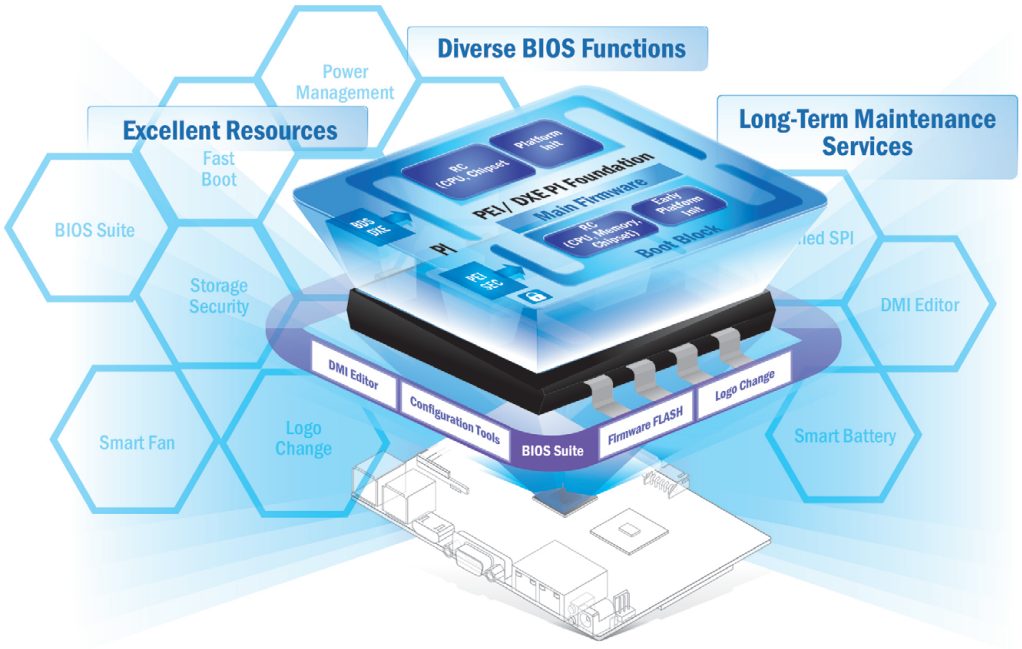


MIO-2263 w/DC Jack (by request)

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

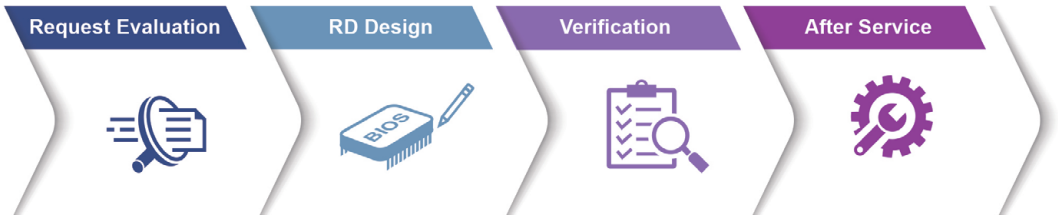
Diverse BIOS Functions

- 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

- 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