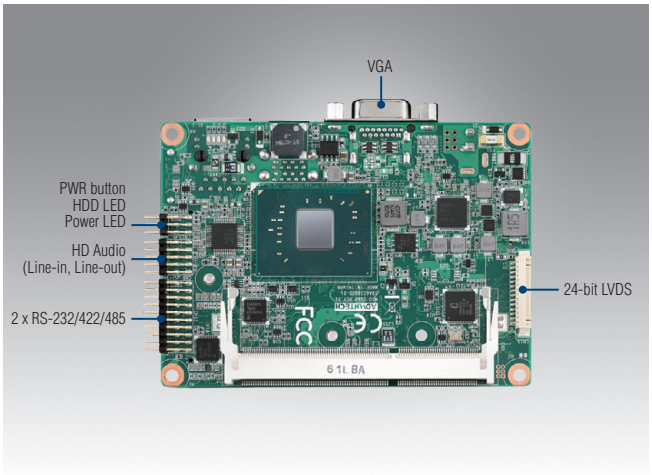
MIO-2360

Intel® Pentium N4200/Celeron N3350/ Atom™ E3900 series Pico-ITX SBC



ubuntu Windows 10 WISE-DeviceOn

Features

- Intel® Pentium N4200/Celeron N3350/Atom™ E3900 series
- DDR3L 1866MHz support up to 8BG
- Dual display: 24-bit LVDS+VGA/HDMI
- mSATA & mPCIe for expansion and MIOe conn.
- USB3.0, SATA3.0, 2 x RS-232/422/485
- WISE-PaaS/RMM and Embedded Software APIs

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

Utilities: Monitoring

Specifications

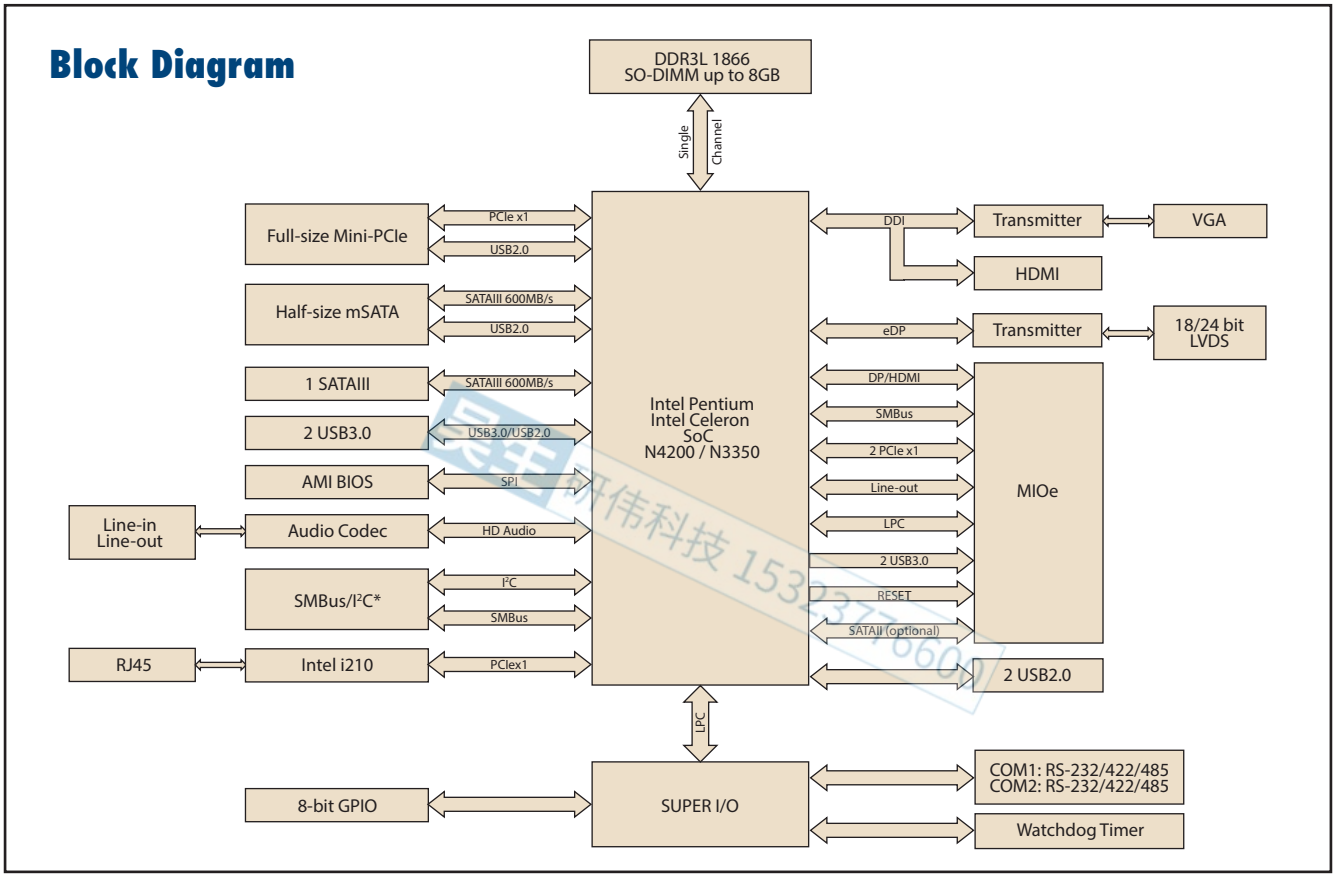
Processor System	CPU	Pentium N4200	Intel Celeron N3350	Intel Atom E3940	Intel Atom E3930
	Frequency	1.10 GHz (Quad-Core)	1.10 GHz (Dual-Core)	1.60 GHz (Quad-Core)	1.30 GHz (Dual-Core)
	L2 Cache	2 MB			
	Max Turbo Frequency	2.50 GHz	2.40 GHz	1.80 GHz	1.80 GHz
	System Chipset	Intel Celeron / Atom SoC processor integrated			
	BIOS	AMI EFI 64 Mbit			
Memory	Technology	DDR3L 1866 MHz			
	Max. Capacity	8 GB			
	Socket	1 x 204-pin SODIMM (Support 1.35V DDR3L)			
Display	Chipset	Intel® Celeron/Atom SoC integrated			
	Graphic Engine	DirectX 12.0, OpenGL 4.3, OpenCL 2.0 HW Decode: MPEG2, H.264 (L5.2), VC-1, WMV9, VP8, JPEG/MJPEG, H.265 (HEVC), MVC			
	LVDS	Supports single channel 24-bit LVDS Resolution: 1440 x 900 at 60Hz			
	VGA	Up to 1920 x 1200 at 60Hz			
	HDMI	Up to 3840 x 2160 at 30Hz			
	Dual Display	Yes (VGA+LVDS+MIOe or HDMI+LVDS+MIOe)			
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 6Gb/s (600MB/s)			
Rear I/O	Ethernet	1			
	VGA	1			
	HDMI	1* (*support by request)			
	USB	2 x USB 3.0			
	DC Power Jack*	1			
Internal I/O	USB	2 x USB 2.0			
	Serial	2 x RS-232/422/485 from COM1 & COM2 with auto-flow control (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)			
	SMBus	1			
	GPIO	8-bit general purpose input/ output			
Expansion	Mini PCI Express	1 x Full-size (*optional: 1 x Half-size)			
	MIOe	SMBus, 2 x USB3.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset, SATA*			
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 (Idle)	4.89 W (12V)	4.61 W (12V)	5.39W (12V)	4.43W (12V)
	Power Consumption (Max)	12.90 W (12V)	17.18 W (12V)	13.55W (12V)	11.59W (12V)
	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	0.47 kg (1.04 lb), weight of total package			
	Total Height	34.10 mm			

* Support by request

All product specifications are subject to change without notice.

Last updated: 29-Jun-2022

Block Diagram



Ordering Information

Part Number	CPU	Max. frequency	Core	Memory	VGA	Mini PCIe	Thermal solution	Operating Temp
MIO-2360N-S2A2	Pentium N4200E	2.50 GHz	4	SODIMM	Yes	Yes	Passive	0 ~ 60 °C
MIO-2360N-S1A2	Celeron N3350E	2.40 GHz	2	SODIMM	Yes	Yes	Passive	0 ~ 60 °C
MIO-2360AX-S8A2	Atom E3940	1.80 GHz	4	SODIMM	Yes	Yes	Passive	-40 ~ 85 °C

Packing List

Part No.	Description	Quantity
	MIO-2360 SBC	1
	Startup Manual	1
1700006291	SATA cable 30cm	1
1700027546-01	A cable 1*5P-2.0/1*5P-2.0+SATA 15P 15cm MIO-2360	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
1960078695T001	MIO-2360 Heatsink for N series sku	1
1970004885T001	MIO-2360 Heatsink for E39XX sku	1

Optional Accessories

Part No.	Description
1960085302N001	MIO-2360 heatspreader for N series sku
IDK-1110WP-50XGA1E	10.1" LED PANEL 500N
IDK-1115P-50XGA1E	15" LED PANEL 500N
1960085302N011	MIO-2360 heatspreader for E39XX sku

Embedded OS/API

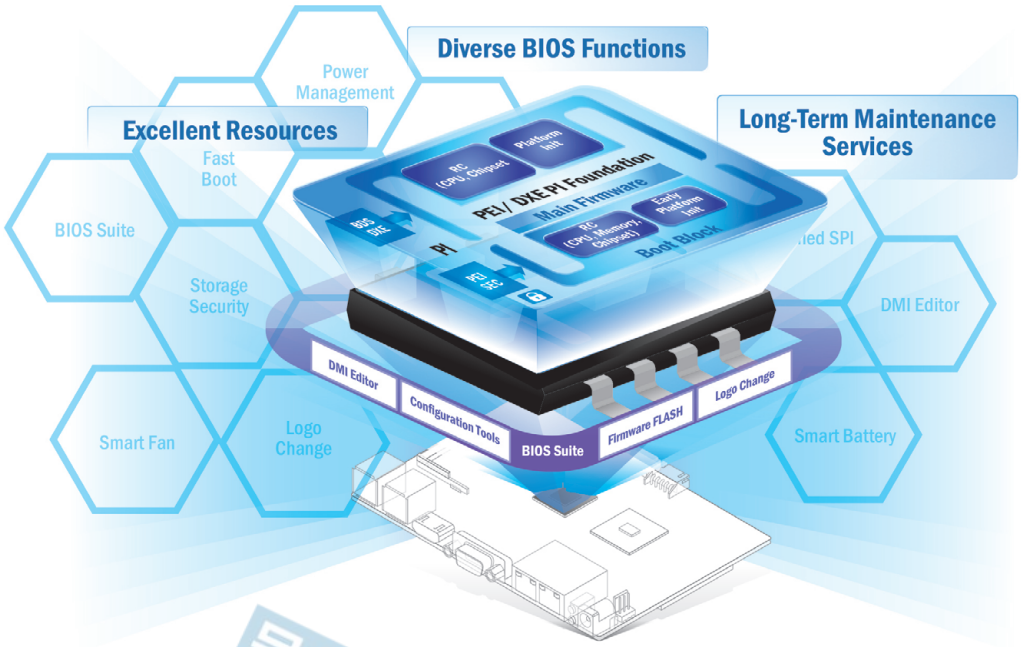
Embedded OS/API	Part No.	Description
Windows 10	20706WX6ES0015	64-bit (UEFI Mode Only)
VxWorks	TBD	
Software API	Website Download	SUSI v4.0
Ubuntu 20.04 LTS	20706U20DS0036	Ubuntu Desktop 20.04 LTS 64-bit Image & License Sticker for MIO-2360

Rear I/O View

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.



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Embedded BIOS Solution Advantages

Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with extensive industrial BIOS experience

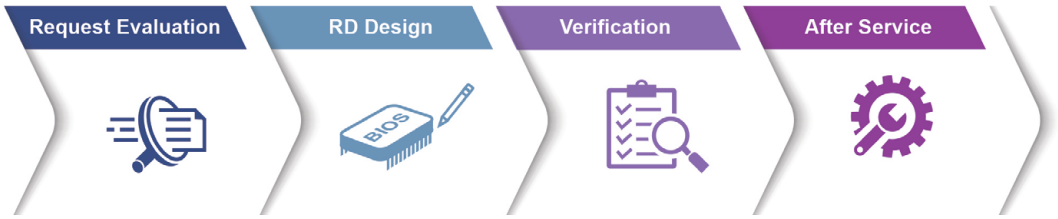
Diverse BIOS Functions

- 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