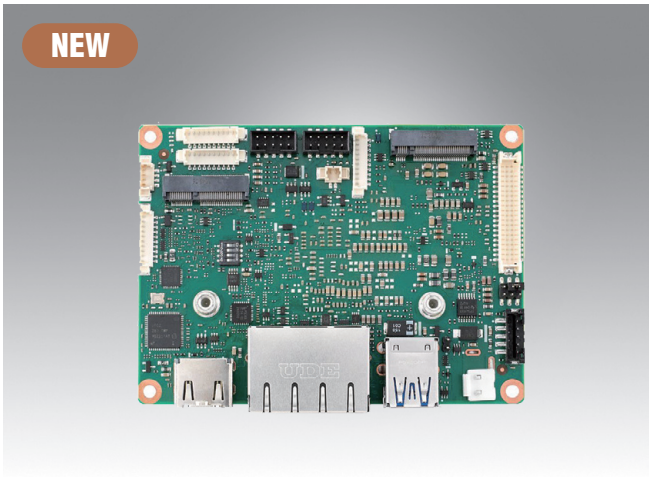
MIO-2363

Intel® Atom® x6000 Series Processor (Code Name: Elkhart Lake) Pico-ITX SBC



Features

- Intel Atom x6000E Series
- Onboard LPDDR4x up to 8GB and EMMC up to 128GB
- Support 12~24V wide voltage range and -40~85°C operating temperature
- 2x GbE LAN, 2x USB3.2, 2x RS-232/422/485, I2C
- M.2 E-Key and B-Key for SATA storage, option to support RS-232 module
- Support iManager & Software APIs, WISE-DeviceOn, and EdgeAI Suite

Software APIs:



ubuntu yocto PROJECT Windows 10 iManager WISE-DeviceOn CE FC

Specifications

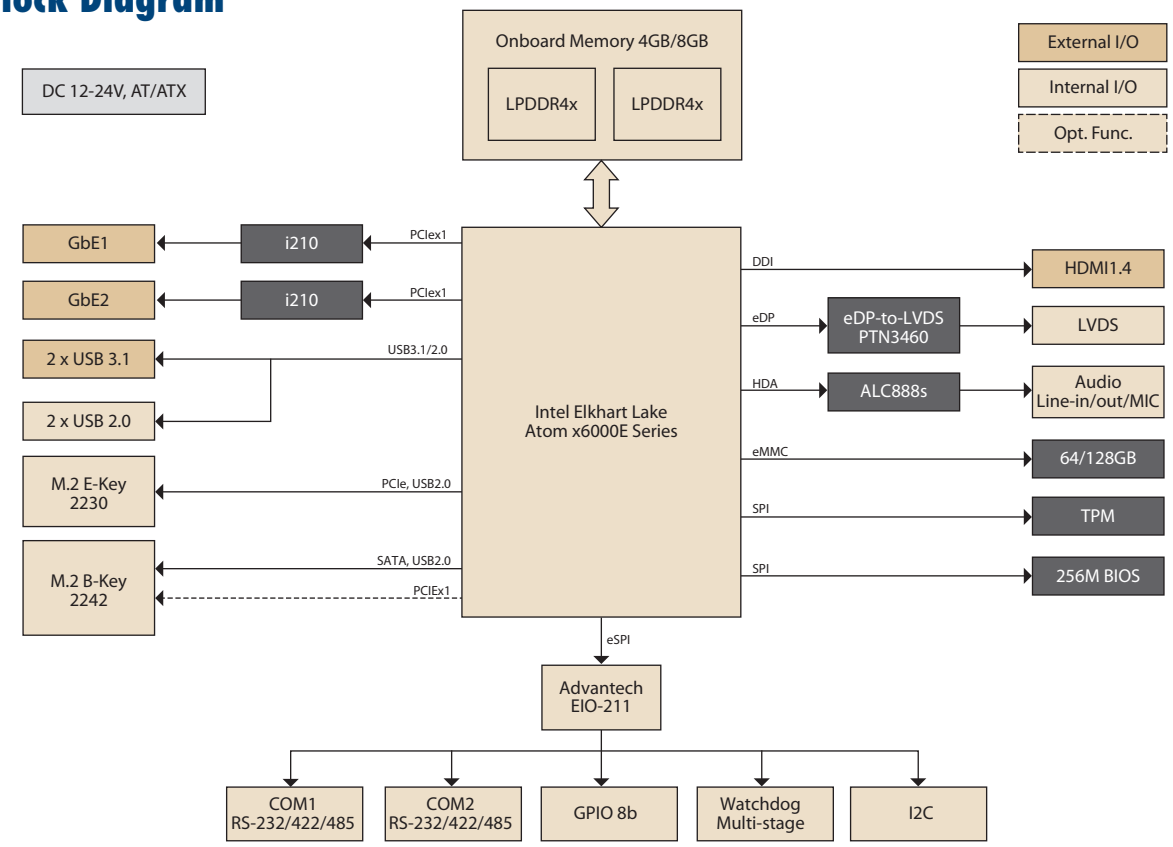
Platform	Processor	x6211E	x6413E	x6425E
	Max. Frequency	3.0GHz	3.0GHz	3.0GHz
	Base Frequency	1.3GHz	1.5GHz	2.0GHz
	Core/Tread	2/2	4/4	4/4
	L2 Cache	1.5 MB	1.5 MB	1.5 MB
	CPU TDP	6W	9W	12W
	Chipset	Intel® Chipset (SoC Integrated)		
	BIOS	AMI UEFI 256Mbit		
Memory	Technology	LPDDR4x-3200	LPDDR4x-3200	LPDDR4x-3733
	Max. Capacity	4GB	4GB	8GB
	Channel/Socket	Dual Channels / Onboard		
	ECC Support	IBECC	IBECC	IBECC
Storage	eMMC	64GB	64GB	128GB
Graphics	Controller	Intel® UHD Graphics for 10th Gen Intel® Processors		
	Max. Frequency	750MHz	750MHz	750MHz
	Base Frequency	350MHz	500MHz	500MHz
	3D/HW Acceleration	DX12, OGL4.5, OCL1.2, Vulkan 1.1; HW encode HEVC/H.265, MPEG2, JPEG/MJPEG		
Display I/F	LCD	LVDS Dual Channel 18/24-bit LVDS		
	HDMI	Up to 2160 x 3840 @ 30Hz		
	Multiple Display	LVDS+HDMI		
Ethernet	Controller	2 x RJ-45,LAN1: Intel i210, LAN2: Intel i210		
	Speed	10/100/1000 Mbps		
External I/O	Ethernet	2 x RJ-45		
	VGA/HDMI/DP	-/1/-		
	USB3.2/USB2.0	2/-		
	Power DC-Jack	Optional		
Internal I/O	SATA	-		
	USB2.0	2		
	Serial Bus	1x I²C		
	COM Port	2 x RS-232/422/485		
	GPIO	8-bit general purpose input output I/O		
	Audio	Realtek ALC888, Line-in/Line-out/MIC		
	Invertor	12V/5V		
	LPC/SPI Bus	eSPI for EIO-211 / SPI for TPM / no LPC		
	Front Panel Control	Power-on, Reset, Buzzer, SATA LED, CaseOpen		
Board Feature	Watchdog Timer	Programmable 1 ~ 65535 sec/min		
	TPM	TPM2.0 (Infineon SLB 9670)		
	iManager 3.0	SW API for Hardware Monitor, Smart Fan Control, Brightness Control, I2C, GPIO, WDT		
Expansion	M.2	1x M.2 E-Key for 2230 module (PCIex1, USB 2.0 to support wireless module) 1x M.2 B-Key for 2242 module (SATA, USB2.0 to support SATA storage; BOM option to PCIex1 to support PCIe storage or RS-232 module)		
Power	Supply Voltage	Vin: DC 12~24V +/- 10%; RTC Battery: Lithium 3V/210mAH		
	Connector	2pin Power Connector (180D); Optional: DC-IN Jack		
	Power Management	AT, ATX		
	Max. Consumption	22.30W (12V), 23.86W (24V)	27.40W (12V), 29.65W (24V)	27.86W (12V), 29.81W (24V)
	Idle Consumption	9.26W (12V), 11.21W (24V)	9.41W (12V), 11.90W (24V)	8.95W (12V), 11.37W (24V)
Environment	Temperature	Operating Standard: 0 ~ 60 °C (32 ~ 140 °F), Operating Extend: -40 ~ 85 °C (-40 ~ 185 °F) Storage: -40 ~ 85 °C (-40 ~ 185 °F)		
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95%relative humidity, non-condensing		
	Vibration Resistance	3.5 Grms		
Certification	EMC	CE, FCC Class B		
Mechanical	Dimensions	100 x 72 mm (3.9" x 2.8")		
	Net Weight	86g		

*Note: xxxx

All product specifications are subject to change without notice.

Last updated: 9-Nov-2022

Block Diagram



Ordering Information

PN	CPU	Max Frequency	Core	Memory	eMMC	USB3.2	GbE	RS232/422/485	TPM2.0	Thermal Solution	Operating Temperature
MIO-2363AW-P1A1	x6211E	3.0GHz	2	4GB	64GB	2	2	2	Y	Passive	-40 ~ 85 °C
MIO-2363AW-P2A1	x6413E	3.0GHz	4	4GB	64GB	2	2	2	Y	Passive	-40 ~ 85 °C
MIO-2363AW-P3A1	x6425E	3.0GHz	4	8GB	128GB	2	2	2	Y	Passive	-40 ~ 85 °C

Packing List

Part No.	Description	Quantity
	MIO-2363 SBC	1
2006236300	Startup Manual	1
1970005240T001	MIO-2363 Passive Heatsink	1
1700030406-01	USB cable (2 ports, 20cm)	1
1700030404-01	COM port cable (20cm)	2
1700019584-01	Audio cable (3 phone jacks, 20cm)	1
1700019705-01	ATX 2x2P power cable (20cm)	1

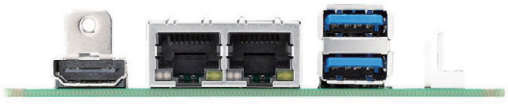
Optional Accessories

Part No.	Description
1970005500N001	MIO-2363 heatspreader

Embedded OS/API

OS	Part No.	Description
Win10	20706WX9ES0160	64-bit (UEFI mode only)
Ubuntu	20706U20DS0026	Ubuntu Desktop 20.04 LTS 64-bit Image & License Sticker for MIO-2363
Yocto BSP	Support by Request	Yocto BSP and Test Image
Software API	Website Download	SUSI v4.0

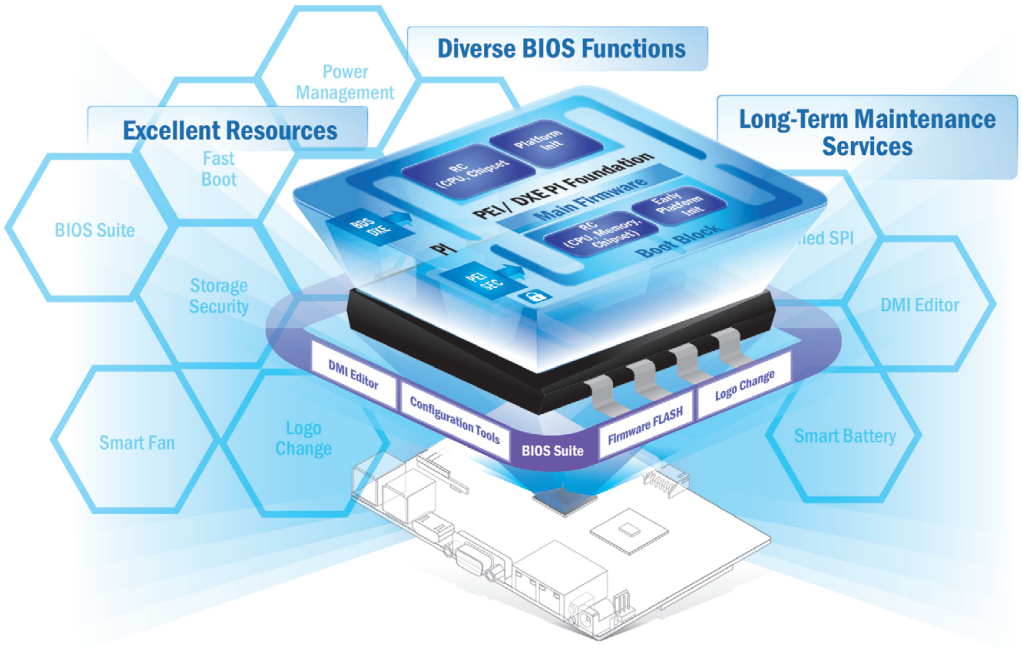
Rear I/O View



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.



Embedded BIOS Solution Advantages

Sufficient Sources

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

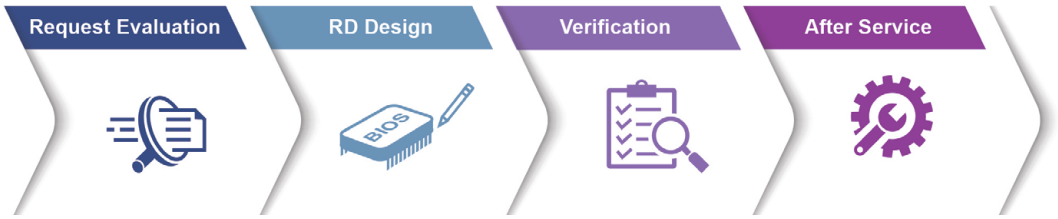
Diverse BIOS Functions

- 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