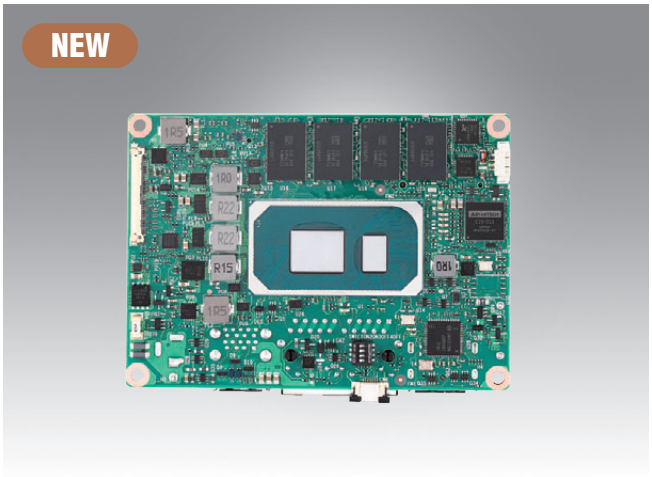
MIO-2375

11th Gen. Intel® Core™ i7/i5/i3/Celeron U-series Pico-ITX SBC



Features

- 11th Gen. Intel® Core™ Processor with Quad/Dual Cores, TDP 15W
- On-board LPDDR4x-4267 up to 32G with IBECC for Industrial Sku
- Dual independent display: eDP/MIPI-DSI, DP up to 8K
- 2 GbE, 2 USB 3.2, COM Port, SMBus/I2C
- Expansion: M.2 E-Key, M.2 B-Key/M-Key NVMe x2
- Supports iManager & Software APIs, WISE-DeviceOn, and Edge AI Suite

Software APIs:



ubuntu · yocto PROJECT · Windows 10 · iManager · WISE-DeviceOn · CE · FC

Specifications

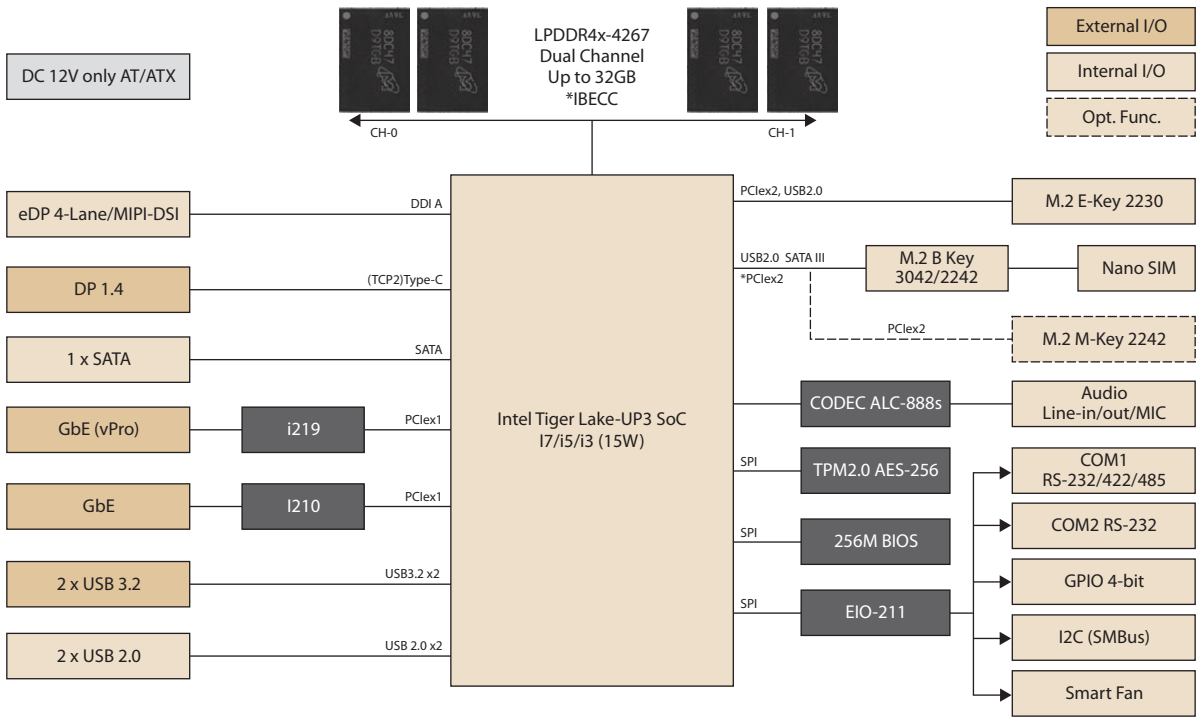
Platform	Processor	i7-1185G7E	i7-1185GRE	i5-1145G7E	i3-1115G4E	Celeron® 6305E
	Max. Frequency	4.40 GHz	4.40 GHz	4.10 GHz	3.90 GHz	N/A
	Base Frequency	1.80 GHz	1.80 GHz	1.50 GHz	2.20 GHz	1.80GHz
	Core/Tread	4/8	4/8	4/8	2/4	2/2
	LLC	12MB	12MB	8MB	6MB	4MB
	CPU TDP	15W	15W	15W	15W	15W
	Chipset	Intel 300 Series Chipset (SoC Integrated)				
	BIOS	AMI EFI 256Mbit				
Memory	Technology	LPDDR4x-4267	LPDDR4x-4267	LPDDR4x-4267	LPDDR4x-3733	LPDDR4x-3733
	Max. Capacity	Up to 32GB				
	Channel/Socket	Single or Dual Channels / Onboard				
	ECC Support	No	Yes	No	No	No
Graphics	Controller	Integrated Intel® Iris® Xe Graphics			Intel® UHD Graphics	Intel® UHD Graphics
	Max. Frequency	1.35 GHz	1.35 GHz	1.30 GHz	1.25 GHz	1.25 GHz
	3D/HW Acceleration	DX12, OGL4.0, OCL1.2, HW Encode: H.265/HEVC, H.264, MPEG2, HW Decode: H.264				
Display I/F	LCD	eDP1.4 HBR3, up to 4096x2304x36bpp@60Hz; with DSC 7680x4320x30bpp@60 Hz Optional MIPI-DSI 2.5GHz, up to 3200x2000x24bpp@60Hz; with DSC 5120x3200x24bpp@60 Hz				
	HDMI/DP	1 x DP1.4 (DP++), up to 4096x2304x36bpp@60Hz; with DSC 7680x4320x30bpp@60 Hz				
	Multiple Display	Dual simultaneous displays by eDP/MIPI-DSI + DP				
Ethernet	Controller	LAN1: Intel 219LM, LAN2: Intel 210AT/IT				
	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	1 x SATA GenIII 6.0Gbps				
	USB2.0	2				
	Serial Bus	I2C (default), SMBus*(optional)				
	COM Port	1 x RS-232/422/485, 1 x RS-232				
	GPIO	4-bit general purpose input output I/O				
	Audio	Realtek ALC888s, Line-in/Line-out/MIC				
	Invertor	12V				
	Fan	1 smart fan 4-wire @ 12V				
	Front Panel Control	Power-on, Reset, Buzzer, SATA LED, CaseOpen				
Board Feature	Watchdog Timer	65536 level, 0~65535 sec				
	TPM	TPM2.0				
	iManager 3.0	SW API for Hardware Monitor, Smart Fan Control, Brightness Control, I2C, GPIO, WDT				
Expansion	M.2 E-Key	1 x E-Key 2230 (PCIe x1, USB2.0)				
	M.2 B-Key/ M.2 M-Key	1 x B-Key 3042/2242 (SATA x1, USB2.0 x1) w/ Nano-SIM *Optional 1 x M-Key 2242 (PCIe x2 NVMe)				
Power	Supply Voltage	Vin: DC 12V ± 10%; RTC Battery: Lithium 3V/210mAH				
	Connector	ATX 2pin 180D, optional DC-Jack				
	Power Management	AT, ATX				
	Max. Consumption	61.608W	59.496W	43.704W	32.76W	
	Idle Consumption	17.368W	8.820W	16.872W	13.991W	
Environment	Temperature	Operating: Standard: 0 ~ 60 °C (32 ~ 140 °F) Operating: Extend: -40 ~ 85 °C (-40 ~ 185 °F) for Industrial Sku 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	80g				

*Note: Support by request

All product specifications are subject to change without notice.

Last updated: 31-Aug-2023

Block Diagram



Ordering Information

Part No.	CPU	Max. Frequency	Core	Memory	Sim Holder	TPM	Thermal Solution	Operating Temperature
MIO-2375C7P-Q4A1	i7-1185G7E	4.40 GHz	4	16GB	Yes	Yes	Active	0 ~ 60 °C
MIO-2375C5P-Q1A1	i5-1145G7E	4.10 GHz	4	16GB	Yes	Yes	Active	0 ~ 60 °C
MIO-2375C3P-P9A1	i3-1115G4E	3.90 GHz	2	8GB	Yes	Yes	Active	0 ~ 60 °C
MIO-2375C7PX-Q4A1	i7-1185GRE	4.40 GHz	4	16GB	Yes	Yes	Active	-40 ~ 85°C
MIO-2375CRP-S8A1	Celeron 6305E	NA	2	8GB	Yes	Yes	Passive	0 ~ 60 °C

Packing List

Part No.	Description	Quantity
	MIO-2375 SBC	
	Startup Manual	
1700006291	SATA cable 30cm	1
1700027546-01	A CABLE SATA Power 15P/1*4P-2.5 15cm	1
1700030406-01	M Cable 2*5P-2.0/USB-A 4P(F)*2 20cm	1
1700030404-01	RS-232 9P(M)/1*10P-1.25 20cm	2
1700019584-01	A Cable 2*5P-2.0/Audio JACK*3 20cm	1
1700019705-01	AT power cable 12 cm	1
1970004956T001	MIO-2375 Cooler	1

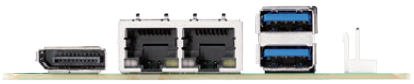
Optional Accessories

Part No.	Description
1970004968N001	MIO-2375 Heatspreader

Embedded OS/API

Embedded OS/API	Part No.	Description
Windows 10	20706WX9HM0020	64-bit (UEFI Mode Only)
Ubuntu 20.04	20706U20DS0013	Ubuntu Desktop 20.04 LTS 64-bit Image & License Sticker for MIO-2375
Yocto	Support by Request	Yocto BSP and Test Image
Software API	Website Download	SUSI v4.0

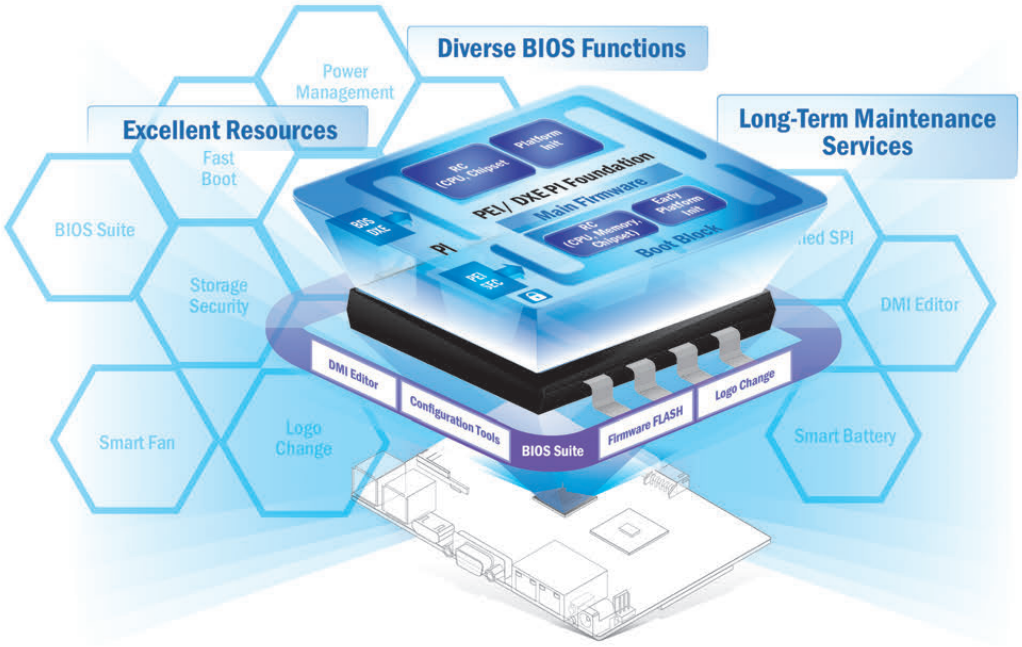
Rear I/O View



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

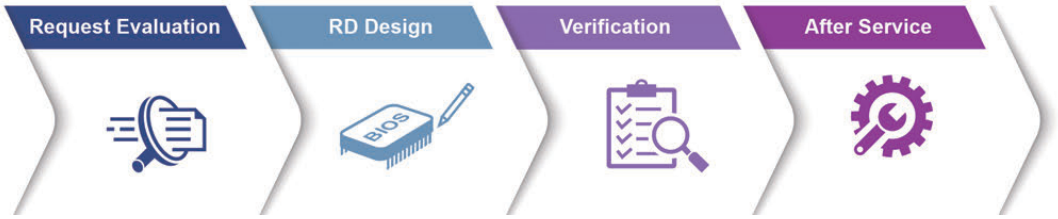
Diverse BIOS Functions

- 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