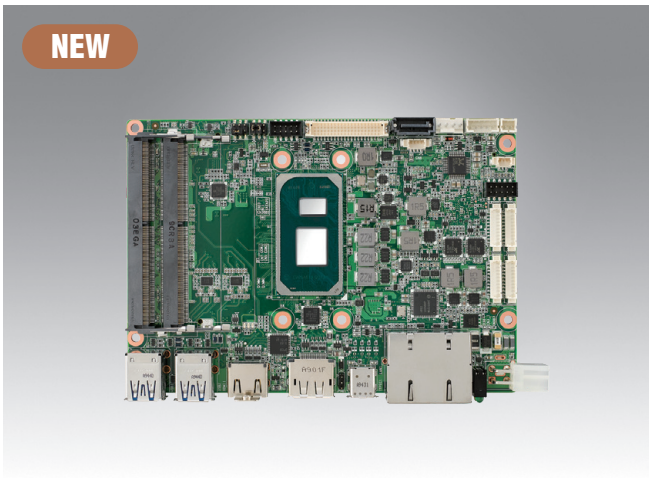
MIO-5375

11th Gen. Intel® Core™ i7/i5/i3/Celeron U-Series 3.5" SBC w/ MIOe



Features

- 11th Gen. Intel® Core™ Processor with Quad/Dual Cores, TDP 15W/ 28W
- Dual Channel DDR4-3200 up to 64GB
- 4 simultaneous displays: LVDS/HDMI/DP/USB Type-C, eDP (optional)
- 2 GbE, 4 USB3.2, CAN Bus, DC-in 12-24V
- Expansion: M.2 E-Key/B-Key/M-Key (supports NVMe), MIOe
- Supports iManager, WISE-PaaS/RMM, SW API, and Edge AI Suite

Software APIs: GPIO, SMBus/I²C, Watch Dog Timer, Backlight On/Off, Brightness, CAN bus, Hardware Monitor, System Throttling, Thermal Protection, Smart Fan, Data Security, System Info

ubuntu® WISE-DeviceOn iManager yocto PROJECT CE FC

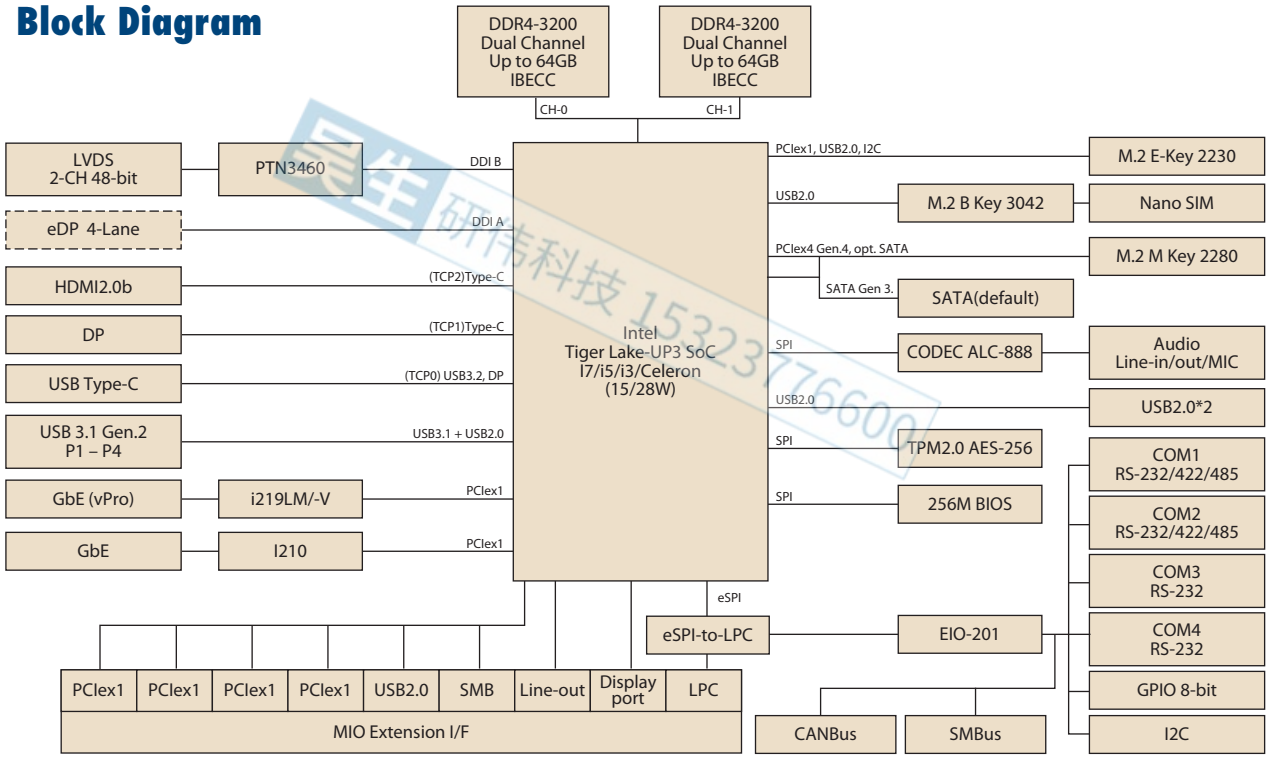
Specifications

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	-
	Base Frequency	1.80/ 2.8 GHz	1.80/ 2.8 GHz	1.50/ 2.6 GHz	2.20/ 3.0 GHz	1.80GHz
	Core/Tread	4/8	4/8	4/8	2/4	2/2
	LLC	12MB	12MB	8MB	6MB	4MB
	CPU cTDP-down/ Up/ Nominal	12W/ 15W/ 28W	12W/ 15W/ 28W	12W/ 15W/ 28W	12W/ 15W/ 28W	12W/15W/28W
	Chipset	Intel® 300 Series Chipset (SoC Integrated)				
	BIOS	AMI EFI 256Mbit				
Memory	Technology	DDR4-3200				
	Max. Capacity	Up to 64GB				
	Channel/Socket	Dual Channels / 2 Sockets				
	ECC Support	No	Yes	No	No	No
Graphics	Controller	Intel® Iris® Xe graphics, up to 96 graphics execution units (EU)				
	Max. Frequency	3200MT/s	3200MT/s	3200MT/s	3200MT/s	
Display I/F	LCD	1 x LVDS: Dual Channel 18/24-bit, up to 1920 x 1200 Optional eDP1.4 HBR3, up to 4096x2304x36bpp@60Hz or 5120x3200x24bpp@24Hz				
	HDMI/DP	1 x HDMI 2.0b, up to 4Kx2Kx24bpp@60Hz 1 x DP1.4a, up to 4096x2304x36bpp@60Hz or 5120x3200x24bpp@60Hz				
	Multiple Display	4 simultaneous displays with each display interface combinations				
External I/O	Ethernet	2 x GbE, LAN1: Intel i219LM, LAN2: Intel i210AT/IT (for industrial grade)				
	HDMI/DP	1/1				
	USB Type-C	1 x USB3.2 Gen. 2x2 20Gbps, support DP1.4a via Alt. Mode				
	USB3.2	4 x USB3.2 Gen. 2x1 10Gbps				
	LED	Power status, SATA R/W				
	Power DC-Jack	Optional				
Internal I/O	SATA	1 x SATA GenIII 6.0 Gbps				
	USB2.0	2				
	Serial Bus	I2C, SMBus				
	COM Port	2 x RS-232/422/485, 2 x RS-232 (4-wire)				
	GPIO	8-bit general purpose input output I/O				
	Audio	Realtek ALC888, Line-in/Line-out/MIC				
	Invertor	12V/5V/3.3V selectable				
	LPC/SPI Bus	LPC				
	CAN Bus	1 x CANBus 2.0				
	Fan	4-wire smart fan				
	Front Panel Control	Power-on, Reset, Buzzer, SATA LED, CaseOpen				
Board Feature	Watchdog Timer	65536 level, 0~65535 sec				
	TPM	TPM2.0, Infineon SLB9670				
	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, I2C)				
	M.2 B-Key	1 x B-Key 3042 (USB2.0) w/ Nano-SIM				
	M.2 M-Key	1 x M-Key 2280 (PCIe x4 Gen.4 for PCIe SSD), optional SATA				
	MI/O Extension	4 PCIe x1 (Gen 3), 1 x USB2.0, LPC, SMBus, Line-out, Optional DP, Power-on, Reset				
Power	Supply Voltage	Vin: DC 12V-24V ± 5%; RTC Battery: Lithium 3V/210mAH				
	Connector	ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D				
	Power Management	AT, ATX				
	Max. Consumption	43.3W (12V) / 46.8W (24V)	TBU	TBU	TBU	
	Idle Consumption	16.6W (12V) / 19.2W (24V)	TBU	TBU	TBU	
Environment	Temperature	Operating: Standard: 0 ~ 60 °C (32 ~ 140 °F), 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	146 x 102 mm (5.7" x 4")				

All product specifications are subject to change without notice.

Last updated: 10-Jun-2022

Block Diagram



Ordering Information

Part Number	CPU	cTDP	Max. Frequency	Core	Gbe	USB	RS232/422/485	RS-232	MIOe	TPM2.0	Thermal solution	Operating Temp
MIO-5375C7P-Q4A1	i7-1185G7E	28W	4.4 GHZ	4	2	USB3.0*4 USB Type-C*1	2	2	1	Y	Active	0 ~ 60 °C
MIO-5375C7-Q4A1	i7-1185G7E	15W	4.4 GHZ	4	2	USB3.0*4 USB Type-C*1	2	2	1	Y	Passive	0 ~ 60 °C
MIO-5375C5-Q1A1	i5-1145G7E	15W	4.1 GHZ	4	2	USB3.0*4 USB Type-C*1	2	2	1	Y	Passive	0 ~ 60 °C
MIO-5375C3-P9A1	i3-1115G4E	15W	3.9 GHZ	2	2	USB3.0*4 USB Type-C*1	2	2	1	Y	Passive	0 ~ 60 °C
MIO-5375C7X-Q4A1	i7-1185GRE	15W	4.4 GHZ	4	2	USB3.0*4 USB Type-C*1	2	2	1	Y	Passive	-40~ 85 °C
MIO-5375CR-S8A1	Celeron® 6305E	15W	-	2	2	USB3.0*4 USB Type-C*1	2	2	1	Y	Passive	0 ~ 60 °C

Note: Standard product has two different cTDP setting (28/15W), and it has different BIOS setting. Please choose the correspond cTDP sku for your application.

Optional Accessories

Part No.	Description
1970004833N001	Heat spreader

Embedded OS/API

OS	Part No.	Description
WIN10	20706WX9HM0017	64-bit (UEFI mode only)
Software API	Download by website	
Ubuntu 20.04	20706U20DS0003	Desktop 20.04 LTS 64-bit

Rear I/O View

Packing List

Part No.	Description	Quantity
	MIO-5375 SBC	1
	Startup Manual	1
1700006291	SATA cable, 7P 30cm	1
1700031583-01	SATA Power cable, 15P/1*2P-2.0 35cm	1
1700030406-01	USB2.0 cable, 2*5P-2.0/USB-A 4P(F)*2 20cm	1
1700030404-01	COM1/2 Cable, D-SUB 9P(M)/1*10P-1.25 20cm	2
1700031582-01	COM3/4 Cable, D-SUB 9P(M)/1*5P-1.25 20cm	2
1700019584-01	Audio cable, 2*5P-2.0/Audio JACK*3 20cm	1
1970004794T001	MIO-5375 heatsink	1
1970004884T001	MIO-5375 QFCS Cooler	1
96665375000	Screws kit	1
	mini Jumper pack	1

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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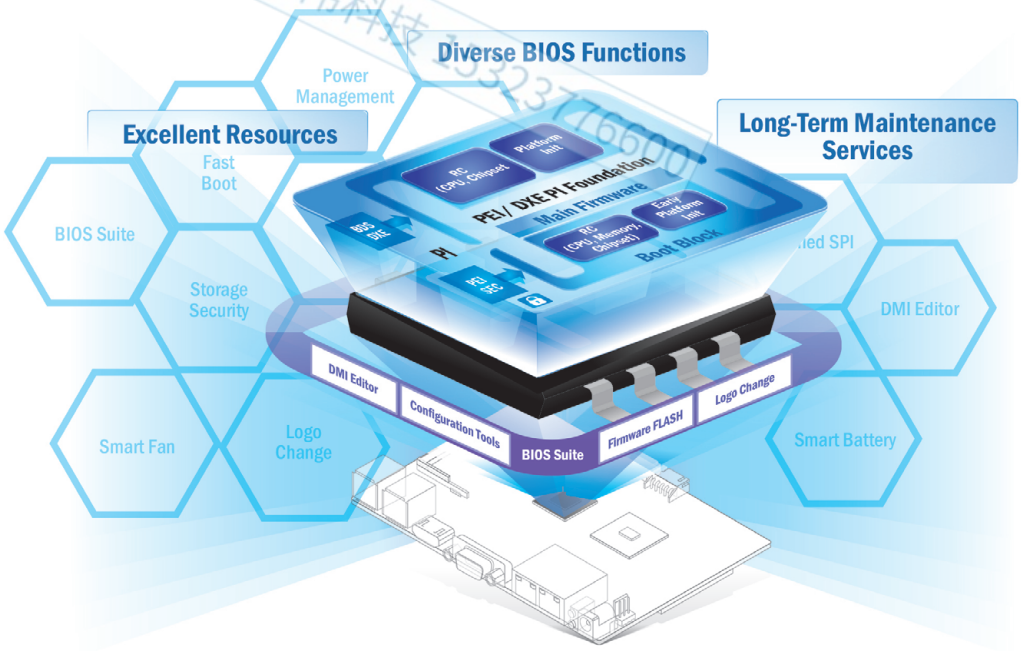


Embedded BIOS Solution Advantages

Sufficient Sources

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

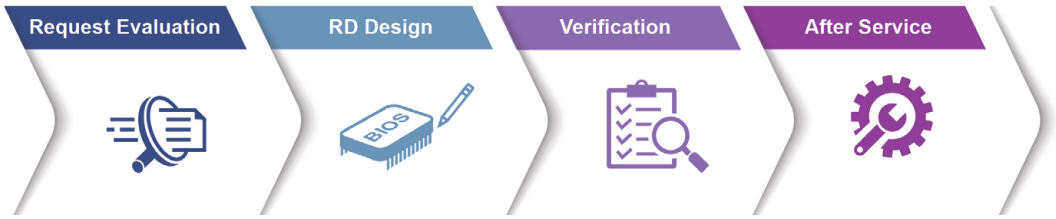
Diverse BIOS Functions

- 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	Licensed Services	Numerous AI and Edge Resources	Local Partner Alliance
• Platform compatibility tests • Preloaded functional driver and software stacks	• License authorized Canonical delivers 10-years of bug fixes and security updates • In-house bundled service	• Containerized technology for service provision and deployment • AI resources from Caffe, TensorFlow, and mxnet	• 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