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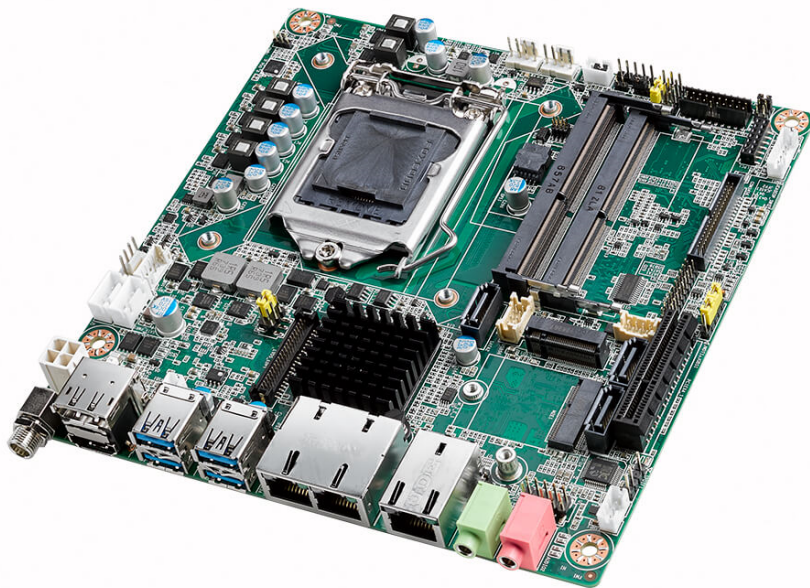


Datasheet

Advantech

AIMB-286

Mini-ITX Motherboard with Intel H310 chipset
for Intel® 8./9. Gen Core i CPUs (LGA1151)



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AIMB-286

Intel® Core™ i7/i5/i3 LGA 1151 Mini-ITX with DP++/HDMI/LVDS(eDP), 6 COM, Dual LAN, PCIe x4, M.2, DDR4, DC Input



Features

- Supports Intel® 9th/8th Gen Core™ i processor (LGA1151) with Intel H310 chipset
- Two 260-pin SO-DIMM up to 64GB DDR4 2666 MHz SDRAM
- Supports dual display of DP++/HDMI/LVDS (or eDP)
- Supports PCIe x4 (Gen 3), 1 M.2 B key & 1 M.2 E key, 4 USB 3.0 & 4 USB 2.0 and 3 SATA III
- Supports 12V DC Input and low profile height
- Supports TPM 1.2 / 2.0
- Supports WISE-PaaS/DeviceOn and Embedded Software APIs

Software APIs:



WISE-DeviceOn CE FC RoHS

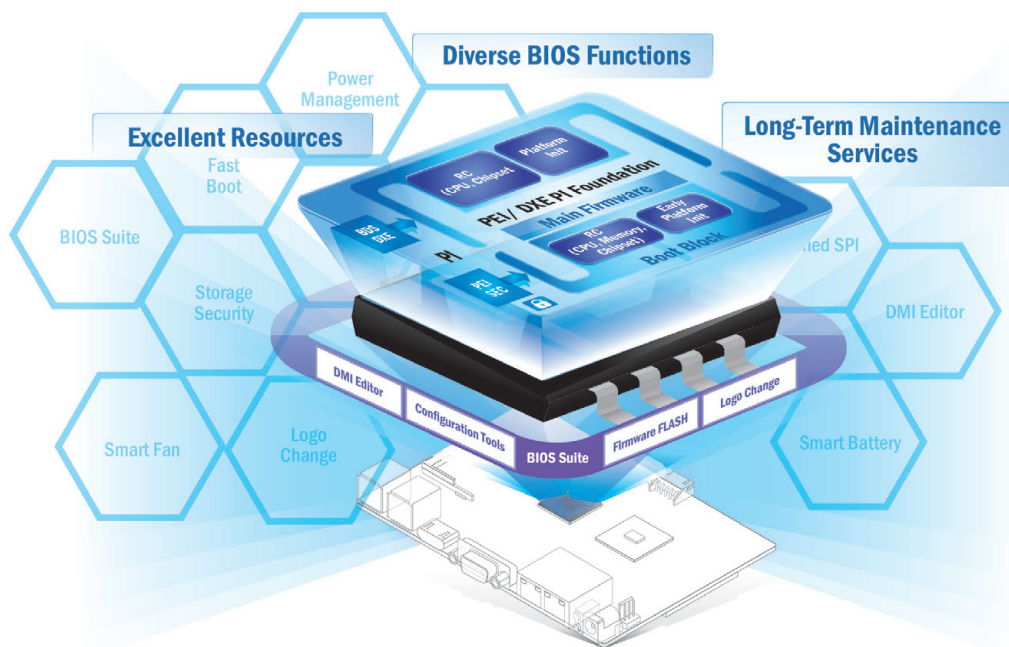
Specifications

Processor System	CPU	i7-9700E/ i7-9700TE	i7-8700/ i7-8700T	i5-9500E/ i5-9500TE	i5-8500/ i5-8500T	i3-9100E/ i3-9100TE	i3-8100/ i3-8100T	G5400/ G5400T	G4900/ G4900T	
	Core Number	8/8	6/6	6/6	6/6	4/4	4/4	2/2	2/2	
	Max Speed	2.6GHz/ 1.8GHz	3.2GHz/ 2.4GHz	3.0GHz/ 2.2GHz	3.0GHz/ 2.1GHz	3.1GHz/ 2.2GHz	3.6GHz/ 3.1GHz	3.7GHz/ 3.1GHz	3.1GHz/ 2.9GHz	
	SmartCache	12MB/12MB	12MB/12MB	9MB/9MB	9MB/9MB	6MB/6MB	6MB/6MB	2MB/2MB	2MB/2MB	
	TDP	65W/35W	65W/35W	65W/35W	65W/35W	65W/35W	65W/35W	58W/35W	54W/35W	
	Chipset	H310								
	BIOS	AMI EFI 128 Mbit SPI								
Expansion Slot	M.2	2, 1 x B key for SSD and 3G/4G (Type: 2242, 3042mm); with SIM card holder 1 x E key for wireless (Type: 2230mm)								
	PCIe x4 (Gen3)	4 GB/s per direction, 1 slot								
Memory	Technology	Dual Channel DDR4 2666 MHz SDRAM								
	Max. Capacity	64GB (up to 32GB per SO-DIMM)								
	Socket	2 x 260 PIN DDR4 SO-DIMM (Non-ECC)								
Graphics	Controller	Intel HD Graphics								
	LVDS	Supports dual channel 24-bit up to 1920 x 1200 (colay with eDP)								
	HDMI 1.4	Yes, supports max. resolution 4096 x 2160 @ 24 Hz								
	eDP	Yes, with internal pin header, supports max. resolution 4096 x 2304 @ 60 Hz (BOM optional)								
	Display Port 1.2	Yes, supports 1 x DP++ with max resolution 4096 x 2304 @ 60 Hz								
Ethernet	Dual Display	DP+HDMI, DP+LVDS (or eDP), HDMI + LVDS (or eDP)								
	Interface	10/100/1000 Mbps								
	Controller	GbE LAN1/2: Realtek 8111H GbE LAN3: Intel i211AT								
SATA	Connector	RJ-45 x 3								
	Max Data Transfer Rate	600 MB/s (SATA 3.0)								
Rear I/O	Channel	3 (SATA III)								
	HDMI	1 (HDMI 1.4)								
	Display Port 1.2	1								
	Ethernet	3								
	USB	4 USB 3.0 (USB04 colay with M.2 B key for USB 3.0)								
	Audio	2 (Mic-in, Line-out)								
	DC Jack	1								
Internal Connector	USB	4 (USB 2.0)								
	LVDS/inverter	1								
	Serial	6 x RS-232 (COM1: RS-232, supports 5V/12V by jumper selection; COM2/3: RS-232/422/485 w/auto flow control, supports RS-232 by default, RS-422/485 supports by BOM option; COM4/5/6: RS-232)								
	SATA	3 (SATA 3.0)								
	M.2	2, 1 x B key for SSD and 3G/4G (M.2 B key USB 3.0 colay with USB04), Type: 2242, 3042mm; 1 x E key for wireless, Type: 2230mm								
	IrDA	-								
	GPIO	16-bit								
Watchdog Timer	Output	System reset								
	Interval	Programmable 1 ~ 255 sec/min								
Power Requirements	Input power	12V DC Input								
		Intel Core i7-8700 3.2GHz, 2pcs 16GB DDR4 2666MHz SDRAM, +12V @ 11.095A								
Environment	Operating	Non-Operating								
	Temperature	0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution						-40 ~ 85° C (-40 ~ 185° F)		
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")								

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

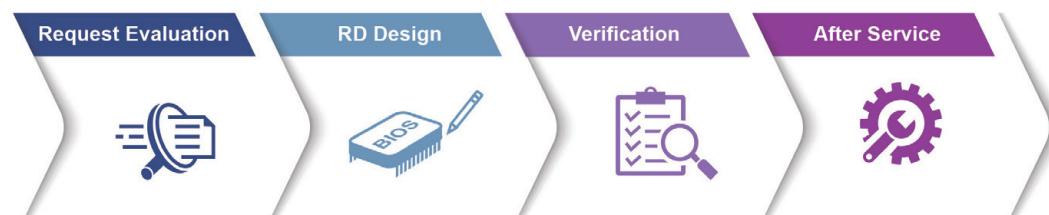
Diverse BIOS Functions

- 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



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
<ul style="list-style-type: none"> • Devices status • Peripherals/firmware • Open for extension 	<ul style="list-style-type: none"> • Real-time monitoring • Remote controls • Troubleshooting 	<ul style="list-style-type: none"> • Zero-touch on-boarding • OTA updates • Batch control

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.

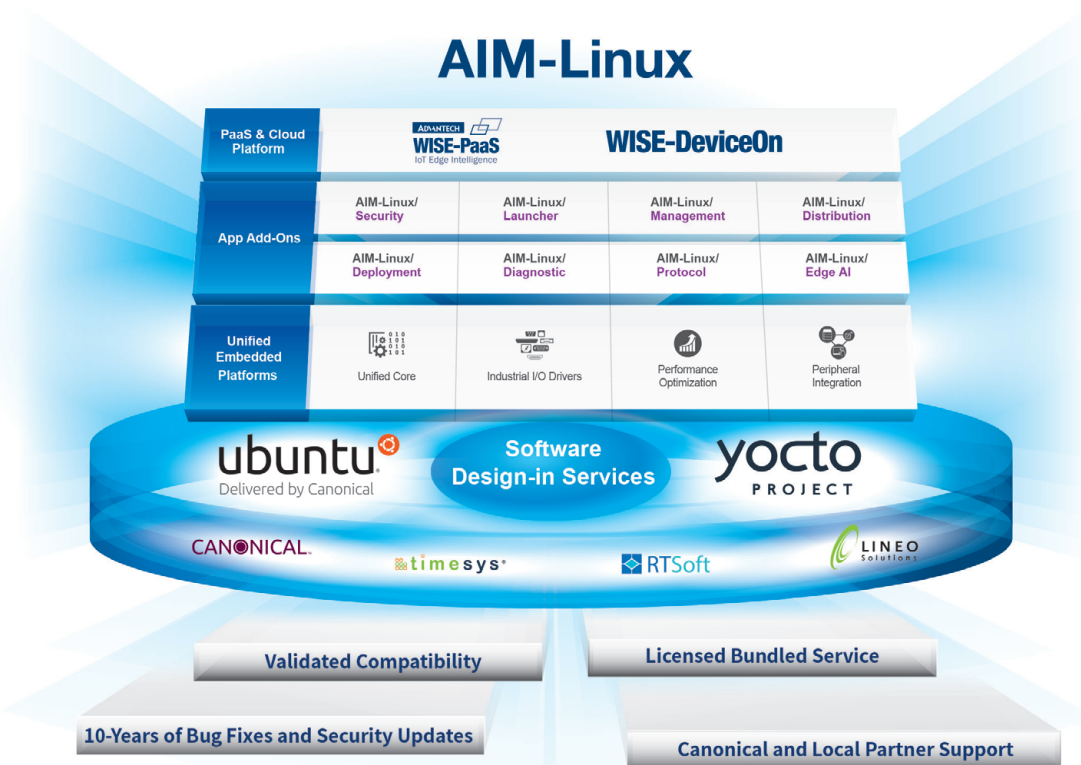


5x Performance Boost	All-in-one Installation	One Click AI Experience	Plug-and-play Environment	Discover Cost-effective Hardware
<ul style="list-style-type: none"> Integrated Intel® OpenVINO™ technology Boost AI using Advantech hardware 	<ul style="list-style-type: none"> Build AI environment in under 5 minutes Ready-to-use configuration 	<ul style="list-style-type: none"> User friendly configuration guidance One-click Benchmark acquisition 	<ul style="list-style-type: none"> Easy access to 100+ AI inference extensions Software development package available 	<ul style="list-style-type: none"> Diverse CPU/RAM options Find hardware solutions for AI development

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
<ul style="list-style-type: none"> Platform compatibility tests Preloaded functional driver and software stacks 	<ul style="list-style-type: none"> License authorized Canonical delivers 10-years of bug fixes and security updates In-house bundled service 	<ul style="list-style-type: none"> Containerized technology for service provision and deployment AI resources from Caffe, TensorFlow, and mxnet 	<ul style="list-style-type: none"> Embedded Linux and Android Alliance (ELAA)

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