AIMB-218

Intel Pentium , Celeron & Atom Mini-ITX with HDMI/DP/eDP or LVDS, 6 COM, and Dual LAN

Features

- Supports Intel Pentium, Celeron, Atom, Quad Core & Dual Core processor
- Two 260-pin SO-DIMM up to 32 GB DDR4 3200 MHz SDRAM
- Supports DP++ 1.2/HDMI 1.4b/eDP (optional)/LVDS(optional)
- Supports 1 PCIE x1 or 2 M.2 (B+E key), 6 COMs(4 COM optional), 3 USB 3.2 Gen2, and 5 USB 2.0
- Lower total cost of ownership with DC12V support and onboard TPM2.0 (optional)
- Supports Device-On and Embedded Software APIs

Software APIs: H/W Monitor, Brightness, Watchdog, GPIO

Utilities: BIOS flash, Monitoring

Windows Embedded

WISE-DeviceOn

Specifications

Processor System	CPU (10nm)	J6413	J6412	J6426	N6211	N6210	x6413E
	Core Number	4	4	4	2	2	4
	Base Frequency	1.8GHz	2.0GHz	2.0GHz	1.2GHz	1.2GHz	1.5GHz
	BIOS	AMI 256 Mbit SPI					
Expansion Slot	M.2	E key for wireless module (Type: 2230) B key for storage and LTE module, only support PCIex1 signal (Type: 2242/2280)					
	PCIe	PCI Express x1					
Memory	Technology	Dual channel DDR4 3200 MHz SDRAM					
	Max. Capacity	32 GB/32 GB per SO-DIMM					
	Socket	2 x 260-pin SO-DIMM (Non-ECC)					
Graphics	Controller	Intel Gen 11 Graphics Engines					
	LVDS/eDP	1 (Sku option) / 1 (BOM option)					
	HDMI	1 HDMI 1.4b					
	DP++	1 DP 1.2					
	Triple display	DP + HDMI, DP + HDMI + eDP (optional), DP + HDMI + LVDS(optional)					
Ethernet	Interface	10/100/1000 Mbps					
	Controller	GbE LAN1: Realtek 8111H GbE LAN2: Realtek 8111H					
	Connector	Max. RJ-45 x 2					
SATA	Max Data Transfer Rate	600 MB/s					
	Channel	1					
Rear I/O	DP 1.2	1					
	HDMI 1.4b	1					
	Ethernet	2					
	USB	4 (3USB 3.2 Gen2 + 1USB2)					
	Audio	1 (supports Line-out by default, converts to Mic in or Line in)					
	DC jack	1 (2.5 mm)					
Internal Connector	LVDS & Inverter	1 (optional)					
	eDP	1 (optional)					
	USB	4 USB2.0					
	Serial	6 (COM1 support 5V/12V selection; COM2 support RS-232/422/485, set by Jumper; COM3~COM6 support RS-232 (COM3~6 BOM option))					
	SATA	1					
	SATA PWR Connector	1					
	M.2	2 (B key for storage and LTE module, E key for wireless module support)					
	GPIO	8-bit					
Watchdog Timer	Output	System reset					
	Interval	Programmable 1 ~ 255 sec/min					
Power	Power Type	Single voltage 12V DC input; 1 x External DC jack; 1 x Internal 4-pin (2x2) power connector; Supports AT/ATX mode					
	Typical Power Consumption	TBD					
Environment		Operating			Non-Operating		
	Temperature	0 ~ 60 °C (32 ~ 140 °F) with 0.7m/s air flow (for D/J/L SKU) -20 ~ 70 °C (-4 ~ 158 °F) with 0.7m/s air flow (for Z SKU)			-40 ~ 85 °C (-40 ~ 185 °F)		
Physical Characteristics	Dimensions	170 x 170 mm (6.69" x 6.69")					

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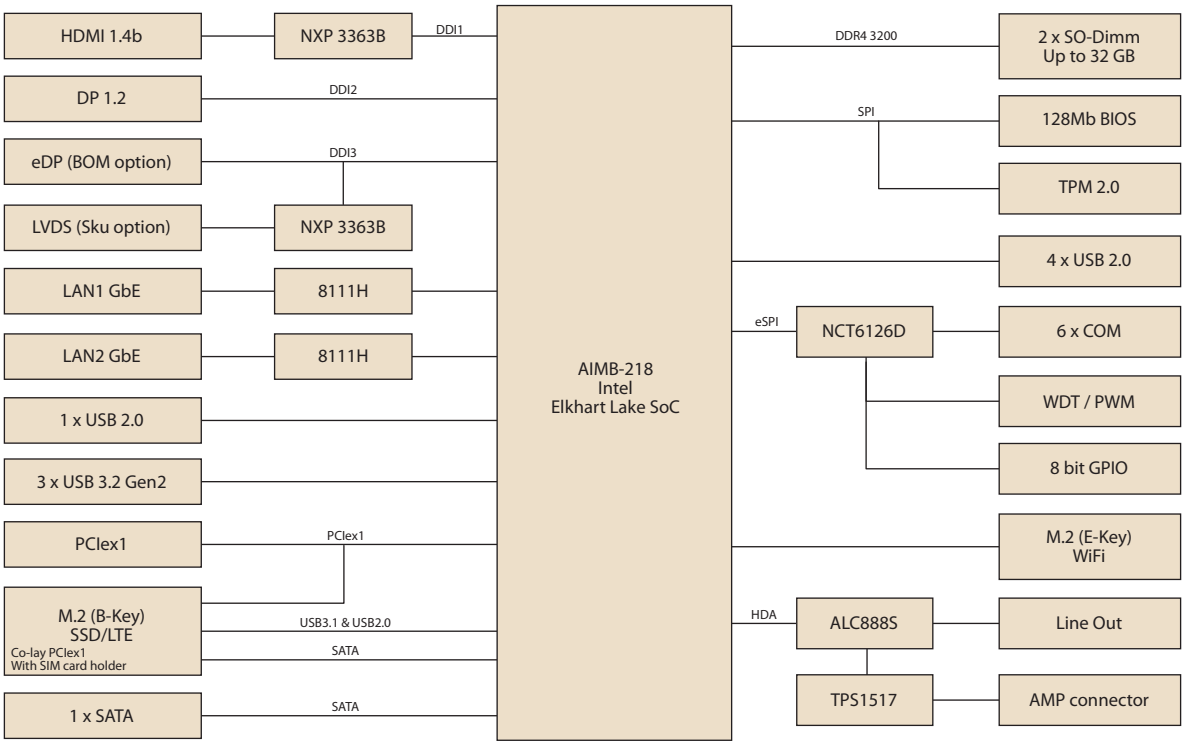
All product specifications are subject to change without notice.

Block Diagram



Ordering Information

Part Number	CPU	Memory	LVDS/eDP	HDMI	DP	GbE LAN	COM	SATA III	USB3.2/2.0	M.2	TPM	AMP	PCIex1	Thermal Solution	Operating Temp.
AIMB-218L-S0A1E	N6211	2	-/-	1	1	1	2	1	3/5	2	-	-	1	Passive	0 ~ 60 °C
AIMB-218L-S1A1E	N6210	2	-/-	1	1	1	2	1	3/5	2	-	-	1	Passive	0 ~ 60 °C
AIMB-218D-S0A1E	J6426	2	1/(1)	1	1	2	6(High Speed)	1	3/5	2	1	2 x 6W	1	Passive	0 ~ 60 °C
AIMB-218J-S0A1E	J6413	2	(1)/(1)	1	1	2	2(+4)	1	3/5	2	(1)	(2 x 6W)	1	Passive	0 ~ 60 °C
AIMB-218J-S1A1E	J6412	2	(1)/(1)	1	1	2	2(+4)	1	3/5	2	(1)	(2 x 6W)	1	Passive	0 ~ 60 °C
AIMB-218Z-S0A1E	x6413E	2	1/(1)	1	1	2	6(High Speed)	1	3/5	2	(1)	(2 x 6W)	1	Passive	-20 ~ 70 °C

Note:
1. Passive = fanless
2. () BOM options available on MP version
3. AIMB-218L: w/o Cables, Startup manual, M.2 Screw

Packing List

Part Number	Description	Quantity
1700003194-21	SATA HDD cable	1
1700018785-01	SATA power cable	1
1701200220-01	1-to-2 serial ports cable kit, 22 cm	1
1700029538-01	1-to-4 serial port cable, 35cm for AIMB-218D	1
1960100026T001	I/O port bracket	1
2046021800	Startup manual	1
1960064228T011	Fanless heatsink for AIMB-218L/J/D	1
1700023082-11	ATX 2*10P to 1*3P-2.0 25cm cable	1

I/O View

Optional Accessories

Part Number	Description
96PSA-A60W12V1-4	Adapter AC100-240V 60W +12V/5A
96PSA-A84W12V1-3	Adaptor AC100-240V 84W, 12V/7A

Optional Chassis

Part Number	Description
AIMB-B2000-00YE	Mini-ITX chassis with optional DC Adaptor

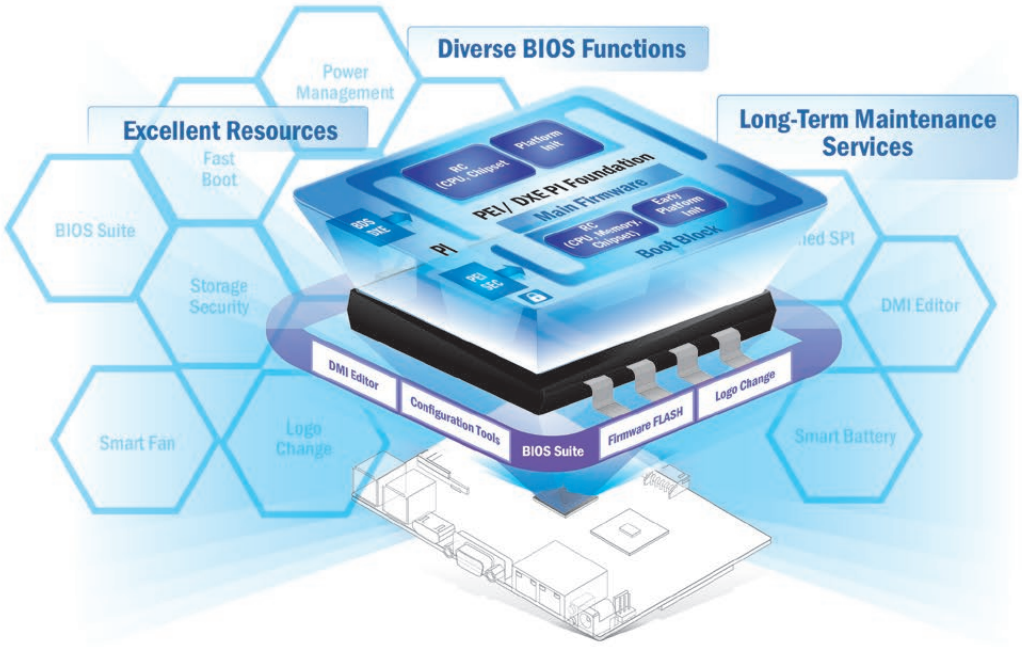
Embedded OS/API

OS/API	Part No.	Description
Win 10	20706WX9ES0145	img W10 19EL AIMB-218 64b 1809 ENU

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

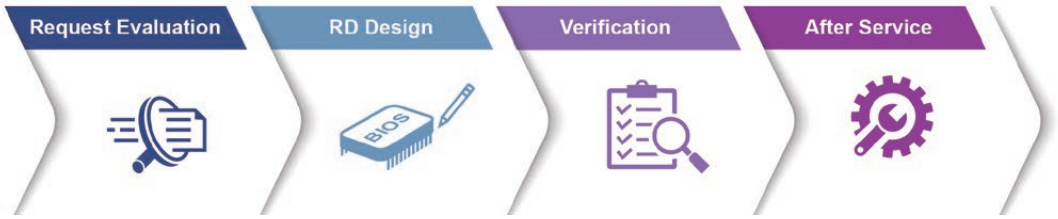
Diverse BIOS Functions

- 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
• 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

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

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)