

AIMB-218

Mini-ITX Motherboard Intel Atom® x6000E Series, Pentium®, Celeron® N and J Series Processor



Features

- Supports Intel Pentium, Celeron, Atom, Quad Core & Dual Core processor
- Two 260-pin SO-DIMM up to 32 GB DDR4 3200 MT/s SO-DIMM
- Supports DP++ 1.2/HDMI 1.4b/eDP (option)/LVDS(option)
- Supports 1 PCIe x1 Gen3 or 2 M.2 (B+E-key), 6 COM (4 COM option), 3 USB 3.2 Gen2x1, and 5 USB 2.0
- Lower total cost of ownership with DC12V support and onboard TPM2.0 (option)
- Supports Device-On and Embedded Software APIs

Software APIs:



Utilities:



ubuntu

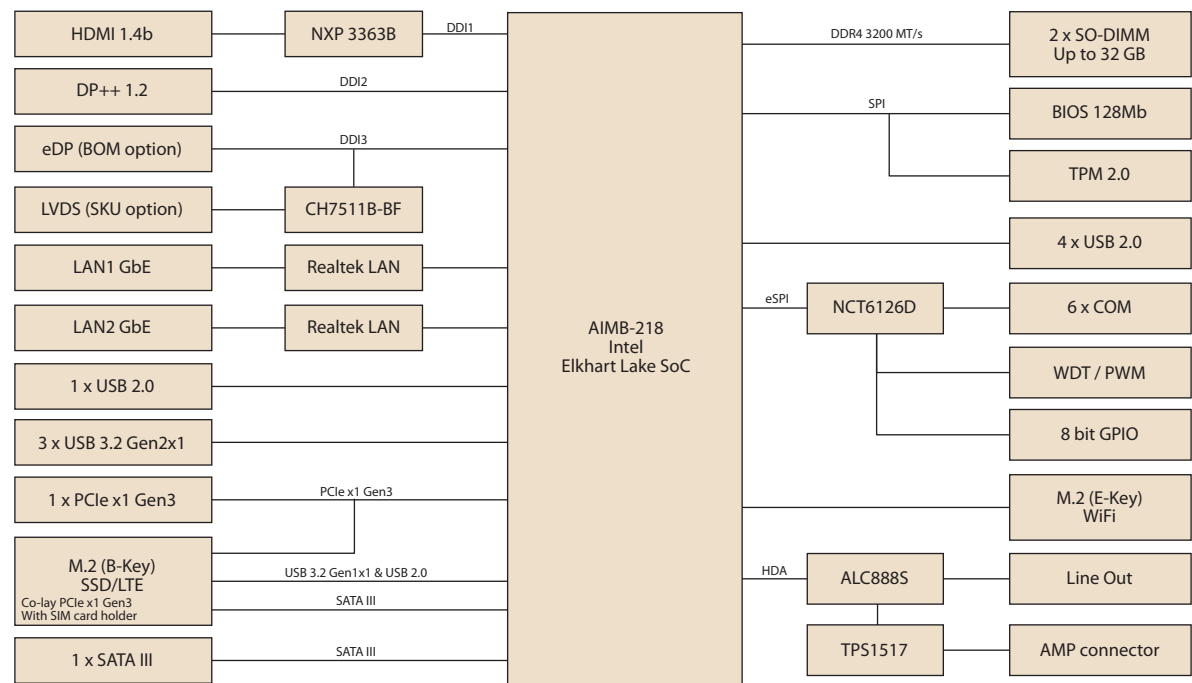
WISE-DeviceOn



Specifications

Processor System	CPU (10nm)	J6413	J6412	J6426	N6211	N6210	x6413E
	Core Number	4	4	4	2	2	4
	Base Frequency (GHz)	1.8	2.0	2.0	1.2	1.2	1.5
	BIOS	AMI 256 Mbit SPI					
Expansion Slot	M.2	1 x E-key (2230, for wireless module) 1 x B-key (3042/2280, for storage and LTE module)					
	PCIe	1 x PCIe x1 Gen3					
Memory	Technology	Dual channel DDR4, up to 3200 MT/s					
	Max. Capacity	32 GB					
	Socket	2 x 260-pin SO-DIMM					
Graphics	Controller	Intel® UHD Graphics for 10th Gen Intel® Processors					
	LVDS/eDP	1 (SKU option) / 1 (BOM option)					
	HDMI	1 x HDMI 1.4b					
	DP	1 x DP++ 1.2					
	Triple display	Triple independent display. DP + HDMI DP + HDMI + eDP (option) DP + HDMI + LVDS (option)					
Ethernet	Interface	10/100/1000 Mbps					
	Controller	LAN1: 1 GbE Realtek 8111H LAN2: 1 GbE Realtek 8111H					
	Connector	2 x RJ45					
Audio	Codec	Realtek ALC888S, High Definition Audio (HD), Line-out by default, converts to Mic in or Line in					
	Amplifier	Yes (Option, 6.0W)					
SATA	Max Data Transfer Rate	600 MB/s					
Rear I/O	Channel	1 (SATA III)					
	DP	1					
	HDMI	1					
	Ethernet	2					
	USB	3 x USB 3.2 Gen2x1 + 1 x USB 2.0					
	Audio	1 (Line out by default, Line in/Line out/Mic in programmable)					
Internal Connector	Power Connector	1 x DC jack					
	LVDS/eDP	1 (LVDS or eDP by option)					
	USB	4 x USB2.0					
	Serial	6, COM1 support 5V/12V selection COM2 support RS-232/422/485, select by jumper COM3~COM6 support RS-232 (by BOM option)					
	SATA	1					
	M.2	1 x E-key (2230, for wireless module) 1 x B-key (3042/2280, for storage and LTE module)					
Watchdog Timer	GPIO	8-bit					
	Output	System reset					
Power Requirements	Interval	Programmable 1 ~ 255 (second or minute)					
	Input voltage	12V DC input					
	Connector	DC Jack, Internal 4-pin ATX, Supports AT/ATX mode					
	Power consumption	Configuration	Intel J6425 processor, 2pcs DDR4 2666 MT/s 32 GB				
Environment		Max.	21.3 W				
		Typical	19.2 W				
		Operating	Non-Operating				
Physical Characteristics	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)	
	Dimensions	170 x 170 mm (6.69" x 6.69")					

Block Diagram



Ordering Information

Part Number	CPU	Memory	LVDS/eDP	HDMI	DP	GbE LAN	COM	SATA III	USB 3.2/2.0	M.2	TPM	AMP	PCIe x1	Thermal Solution	Operating Temp.
AIMB-218L-S0A2E	N6211	2	-/-	1	1	1	2 (RS-232 only)	1	3/5	2	-	-	1	Passive	0 ~ 60 °C
AIMB-218L-S1A2E	N6210	2	-/-	1	1	1	2 (RS-232 only)	1	3/5	2	-	-	1	Passive	0 ~ 60 °C
AIMB-218D-S0A2E	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-S0A2E	J6413	2	(1)/(1)	1	1	2	2 (+4)	1	3/5	2	(1)	(2 x 6W)	1	Passive	0 ~ 60 °C
AIMB-218J-S1A2E	J6412	2	(1)/(1)	1	1	2	2 (+4)	1	3/5	2	(1)	(2 x 6W)	1	Passive	0 ~ 60 °C
AIMB-218Z-S0A2E	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 15cm cable	1
1930006770-01	M.2 screw (M2.5x4L)	2
1910001675	M.2 Post (M2.5x4L)	1

Optional Chassis

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

I/O View



Optional Accessories

Part Number	Description
1700023474-01	1-to-2 USB-A cable, 34.5 cm
96PSA-A60W12V1-4	Adapter AC100-240V 60W +12V/5A
96PSA-A84W12V1-4	Adaptor AC100-240V 84W, 12V/7A
1700031300-01	Dual ports USB cable for B2000
1700024790-01	USB-A 4P(F)*2/2*5P-2.0 20CM

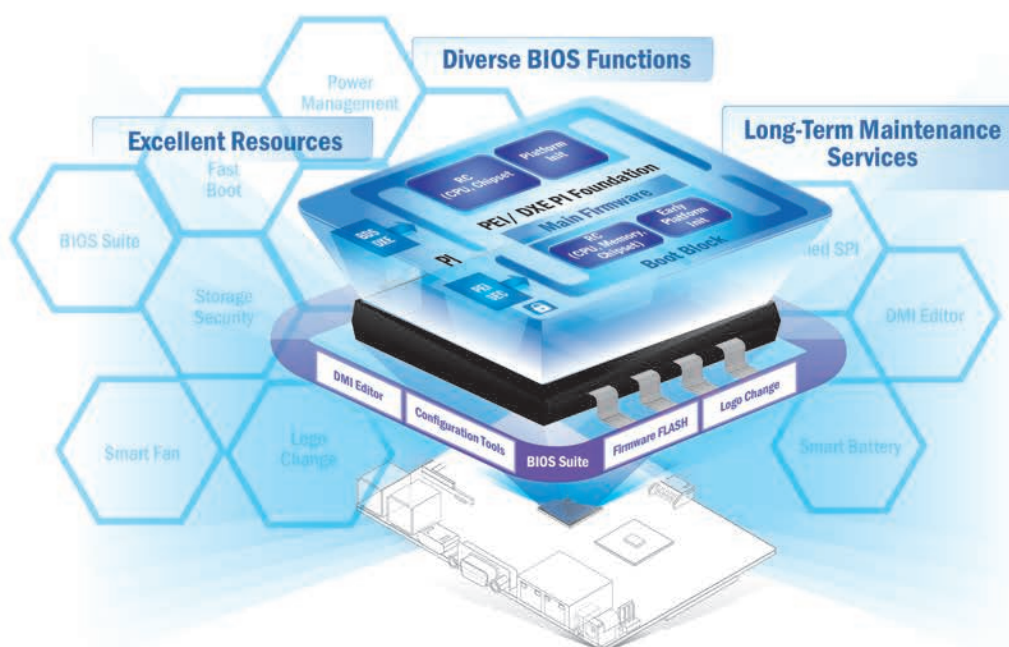
Embedded OS/API

OS	Part Number	Description
Windows 11	20706WLE1S0092	img W11 24EL 64b 24H2 ENU
Windows 11	20706WLH1S0092	img W11 24HL 64b 24H2 ENU
Windows 11	20706WLV1S0092	img W11 24VL 64b 24H2 ENU
Windows 10	20706WX9HS0131	img W10 19HL AIMB-218 64b 1809 ENU
Windows 10	20706WX9VS0135	img W10 19VL AIMB-218 64b 1809 ENU
Windows 10	20706WX9ES0145	img W10 19EL AIMB-218 64b 1809 ENU
Windows 10	20706WX1HM0001	img W10 21HL AIMB-218 64b 21H2 ENU
Windows 10	20706WX1VM0001	img W10 21VL AIMB-218 64b 21H2 ENU
Windows 10	20706WX1EM0001	img W10 21EL AIMB-218 64b 21H2 ENU
Ubuntu 20.04	20706U20DS0045	Ubun20.4 AIMB-218 64b 2004 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

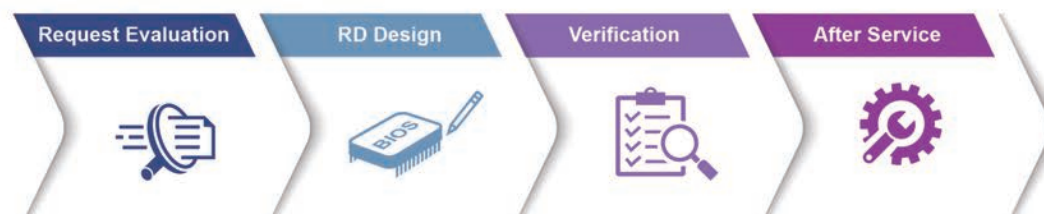
Diverse BIOS Functions

- 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

- Devices status
- Peripherals/firmware
- Open for extension

Remote Access

- Real-time monitoring
- Remote controls
- Troubleshooting

Efficient Operations

- 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
- 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	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)