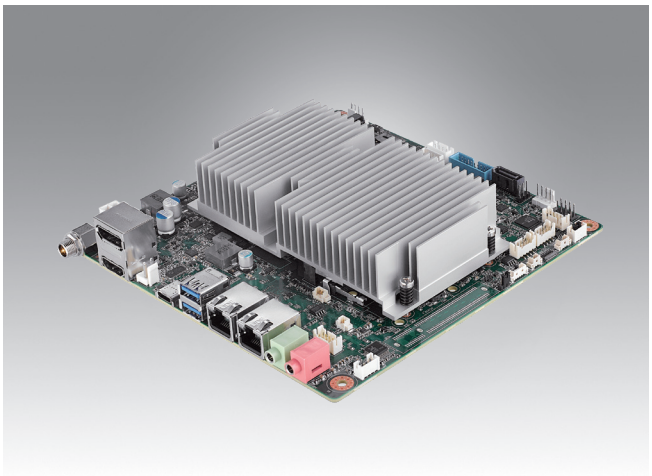
AIMB-234

Mini-ITX Motherboard
Intel® Core™ Ultra Series 3 Processors
Codename: Panther Lake



Windows 11 ubuntu WISE-DeviceOn

Features

- Supports Intel® Core™ Ultra Series 3 Processors
- Supports Xe3-based Intel® Arc™ GPU (up to 12 Xe-cores), enabling four independent 4K displays
- Supports up to 128GB dual-channel DDR5-7200MT/s using CSODIMM modules
- Built-in NPU5 delivering 50 TOPS for dedicated AI acceleration
- 1 x M.2 M-Key 2242/2280 slot (PCIe Gen5 x4) for high-speed NVMe SSDs
- 1 x M.2 B-key 3042 slot for 4G LTE or Hailo
- 1 x M.2 E-Key 2230 slot for WiFi/BT
- Provides extensive I/O expandability—2.5GbE, high-speed PCIe x8 Gen5, USB4 and USB3.2 Gen2 ports, plus SATA 3.0
- WISE-DeviceOn and Embedded Software APIs

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

Utilities: BIOS flash, Monitoring

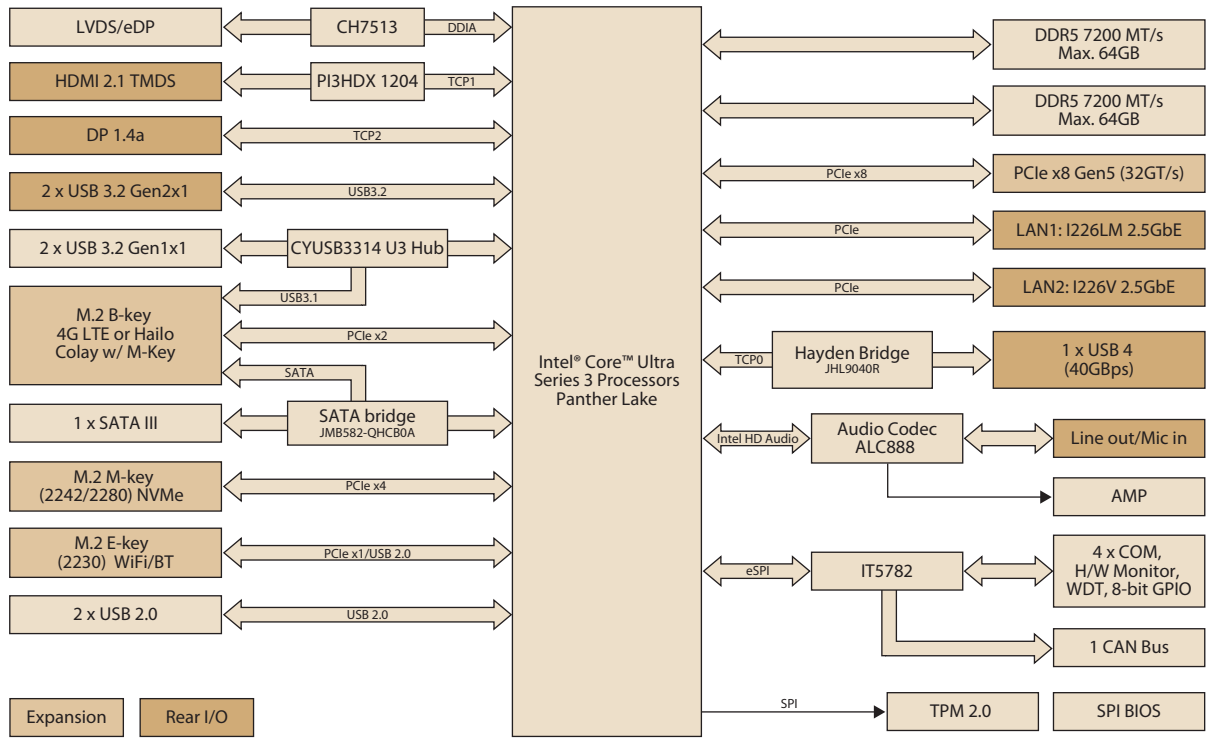
Specifications

Processor	CPU	386H	358H	356H	325	336H
	Cores	16	16	16	8	12
	Base frequency (GHz)	2.1	1.9	1.9	2.1	1.9
	Max frequency (GHz)	4.8	4.8	4.7	4.5	4.5
	Smart cache (MB)	18	18	18	12	18
	TDP (W)	25W	25 W	25 W	25 W	25 W
	BIOS	AMI EFI 512Mb SPI				
Memory	Technology	DDR5, Dual Channel, support SODIMM/CSODIMM				
	Frequency	386H/358H/356H/336H: Up to DDR5 7200 MT/s 325: Up to 6400 MT/s				
	Max. Capacity	386H/358H/356H/325/336H: 128GB (Up to 64GB per DIMM)				
	ECC Support	In-Band ECC				
	Socket	2 x 262 pins SO-DIMM				
Graphics	Controller	Intel® Arc™ Graphics (Xe3) supports up to 12 Xe-cores				
	HDMI	1 x HDMI 2.1, up to 4096 x 2160 @ 60Hz				
	DP	1 x DP 1.4, up to 4096 x 2160 @ 120Hz				
	eDP	1 x eDP, up to 1920 x 1080@60Hz				
	LVDS	1 x LVDS dual channel 24bits, up to 1920 x 1200@60Hz				
	Multi Displays	Up to 4 independent displays				
TPM	IC	1 x Infineon SLB9672				
	fTPM	Support (bios default disable)				
Network	Ethernet	10/100/1000/2500 Mbps				
	Controller	LAN 1: 1 x I226-LM 2.5GbE; LAN 2: 1 x I226-V 2.5GbE				
	Connector	2 x RJ45				
Audio	Codec	Realtek ALC888S, High Definition Audio (HD)				
	Amplifier	Option (Max. 3W)				
SATA3.0	Max Data Transfer Rate	Max. 600 MB/s				
	Channel	1				
Expansion Slot	M.2	1 x M-key (2242/2280, for NVMe SSD, PCIe x4 Gen 5), 1 x B-key (3042, for 4G LTE or Hailo), 1 x E-key (2230, for Wireless connection)				
	PCIe x8	386H/356H/336H: 1 x PCIe x8 Gen5				
Rear I/O	HDMI	1				
	DP	1				
	RJ45	2				
	USB	1 x USB4.0 Type C with DP alt Mode & 2 x USB3.2 Gen2 x1 Type A				
	Audio	1 x Mic in, 1 x Line out				
	Power Connector	DC IN				
Internal Connector	USB	1 x USB 3.2 Gen1 internal header (supports 2 ports), 1 x USB 2.0 internal header (supports 2 ports)				
	eDP/LVDS	1 (LVDS colay with eDP)				
	Serial	2 x RS-232, 1 x RS-232/422/485, by BOM option Speed, 1 x RS-232 supports 5V/12V/RI by jumper selection				
	SATA	1 x SATA3.0				
	M.2	1 x M-key + 1 x B-key + 1 x E-key				
	CPU & System Fan Connector	1 x PWM CPU FAN 1 x PWM SYS FAN				
	Power Connector	1 x ATX 4pin Power Connector 1 x ATX 3pin 5Vsb Power Connector				
	GPIO	1 x 8-bit				
Watchdog Timer	Output	System Reset				
	Interval	Programmable 1 ~ 255 (second or minute)				
Power Requirements	Input voltage	12~24V DC in				
	Connector	Rear DC in, Internal 4-pin ATX + 3-pin 5VSB				
Power Consumption	Configuration	Intel® Core™ Ultra 7 358H, 2 pcs 64GB DDR5 6400 MT/s CSO-DIMM				
	Max.	83W				
	Typical.	37W				
Environment	Temperature	Operating: 0 ~ 60 °C (32 ~ 140 °F)				
	Storage	Non-Operating: -40 ~ 85° C (-40 ~ 185° F)				
Physical Characteristics	Dimensions	170 x 170 mm (6.69" x 6.69")				

All product specifications are subject to change without notice.

Last updated: 21-Oct-2026

Block Diagram



Ordering Information

P/N	Thermal	CPU	TDP	HDMI	LVDS/ eDP	DP	USB4	GbE	COM	SATAIII	USB3.2	USB2.0	M.2 E key	M.2 M key	M.2 B/ M key	PCIex8	TPM	AMP	temp.	Memory
AIMB-234F86-YDA1	Active	Core Ultra 9H 386H	25W	1	1	1	1	2	4	1	4	2	1	1	1/(1)	1	1	(1)	0~60	2
AIMB-234F58-NDA1	Active	Core Ultra 7H 358H	25W	1	1	1	1	2	4	1	4	2	1	1	1/(1)	-	1	(1)	0~60	2
AIMB-234F56-YDA1	Active	Core Ultra 7H 356H	25W	1	1	1	1	2	4	1	4	2	1	1	1/(1)	1	1	(1)	0~60	2
AIMB-234F25-NDA1	Active	Core Ultra 5 325	25W	1	1	1	1	2	4	1	4	2	1	1	1/(1)	-	1	(1)	0~60	2
AIMB-234F36-YDA1	Active	Core Ultra 5 336	25W	1	1	1	1	2	4	1	4	2	1	1	1/(1)	1	1	(1)	0~60	2

Packing List

P/N	Description	Quality
AIMB-234 Board	AIMB-234 Motherboard	1
1700003194-21	SATA HDD cable	1
1700018785-01	SATA power cable (1 port, 35cm)	1
1700034404-02	1-to-1 serial port cable 50cm	1
1700023082-11	ATX 2*10P to 1*3P-2.0 25cm cable	1
1970006470T001	Active fan for CPU TDP 25W	1
TBD	Fanless heatsink for CPU TDP 15W	1
2046023400	Startup manual	1
1960122118T001	I/O port bracket	1

Embedded OS/API

P/N	Description	Description
Windows 11	20706WLE1S0160	img W11 24EL AIMB-234 64b 24H2 ENU
Windows 11	20706WLH1S0159	img W11 24HL AIMB-234 64b 24H2 ENU
Windows 11	20706WLV1S0159	img W11 24VL AIMB-234 64b 24H2 ENU

Optional Chassis

OS/API	Part No.

Optional Accessories

P/N	Description
1700020277-01	USB 3.0 cable 30cm with IO bracket
1700034405-01	USB 2.0 Cable USB-A 4P(F)x2/2x5P-2.0 50cm

IO View