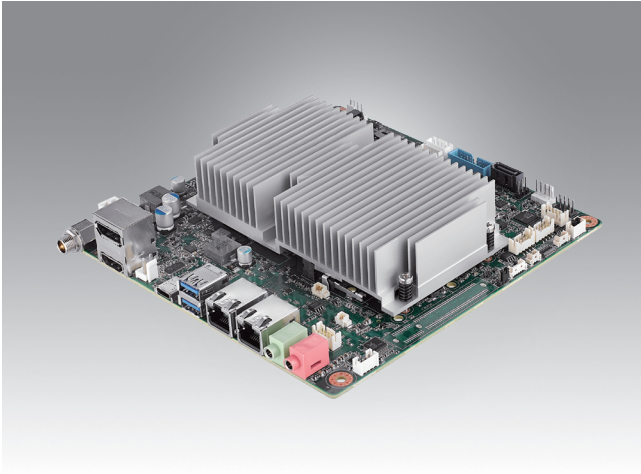


AIMB-234

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



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 NPUs 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:

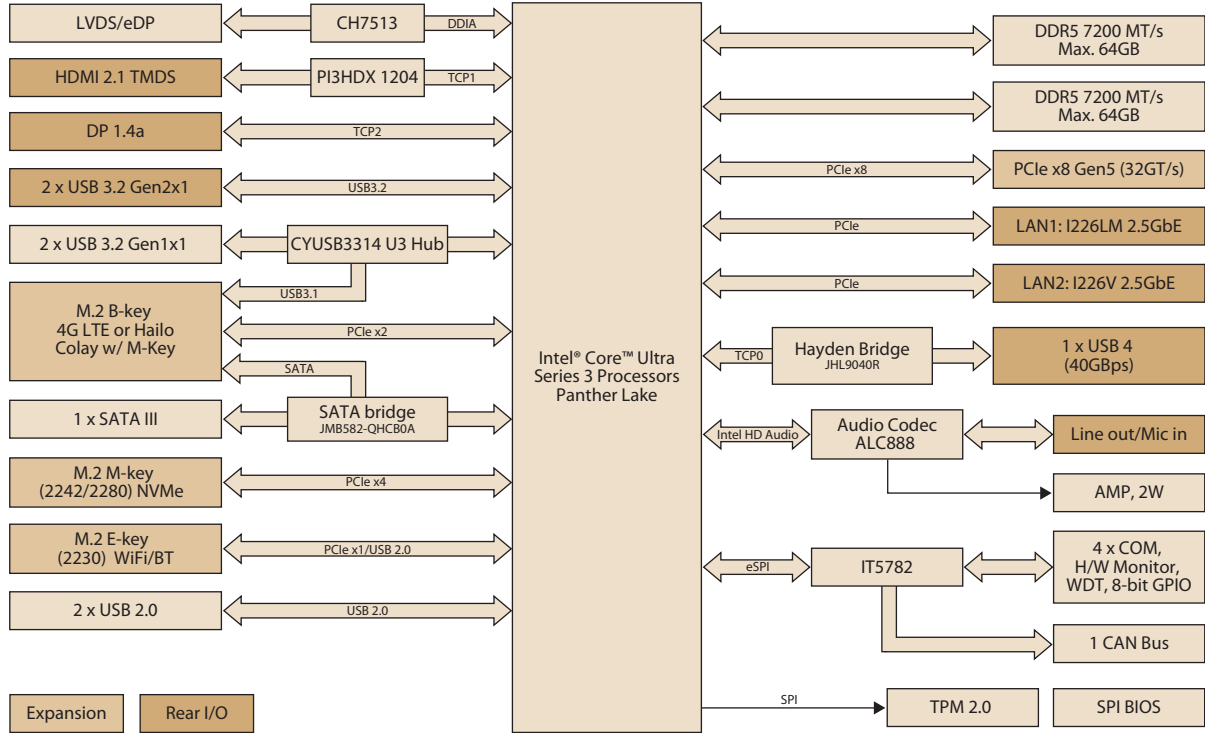
- BIOS flash
- Monitoring



Specifications

Processor	CPU	386H	358H	356H	325
	Cores	16	16	16	8
	Base frequency (GHz)	2.1	1.9	1.9	2.1
	Max frequency (GHz)	4.8	4.8	4.7	4.5
	Smart cache (MB)	18	18	18	12
	TDP (W)	25W	25 W	25 W	25 W
	BIOS	AMI EFI 512Mb SPI			
Memory	Technology	DDR5, Dual Channel, support SODIMM/CSODIMM			
	Frequency	386H/358H/356H: Up to DDR5 7200 MT/s 325: Up to 6400 MT/s			
	Max. Capacity	386H/356H/325: 128GB (Up to 64GB per DIMM) 358H: 96GB (Up to 48GB 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 ALC885, 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 Gen5), 1 x B-key (3042, for 4G LTE or Hailo), 1 x E-key (2230, for wireless connection)			
	PCIe x8	386H/356H: 1 x PCIe x8 Gen5			
Rear I/O	HDMI	1			
	DP	1			
	RJ45	2			
	USB	386H/358H/356H: 1 x USB4.0 Type C with DP alt Mode & 2 x USB3.2 Gen2 x1 Type A 325: 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			
Watchdog Timer	GPIO	1 x 8-bit			
	Output Interval	System Reset 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			
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")			

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

Packing List

P/N	Description	Quantity
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
TBD	Active fan for CPU TDP 25W	1
TBD	Fanless heatsink for CPU TDP 15W	1
TBD	Startup manual	1
TBD	I/O port bracket	1

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

Embedded OS/API

P/N	Description	968 PN	Description

Optional Chassis

OS/API	Part No.

IO View

