

# AIMB-233

**Intel® Core™ i7/i5/i3/Celeron BGA 1528  
Mini-ITX with Type C Alt./HDMI/LVDS(eDP),  
6 COM, Dual LAN, M.2 (miniPCIe), PCIe1, DDR4,  
DC Input, wide temperature**



## Features

- Supports Intel® Core™ core i7-8665UE /i5-8365UE/i3-8145UE/Celeron 4305UE, 15W TDP, BGA 1528 16nm Processor
- Two 260-pin SO-DIMM up to 64GB DDR4 2400 MHz SDRAM
- Multiple display I/O supports versatile Tri display functions for HDMI, Type C Alt., LVDS (eDP)
- Support PCIe1, 2 M.2 (1 F/S miniPCIe), 4 USB 3.1, 2 USB 3.0 and 2 SATA III
- Support wide range 12V~24V DC Input and low profile height
- Support wide temperature
- Supports WISE-PasS/RMM and Embedded Software APIs
- Support SUSI, WISE-DeviceOn and Edge AI Suite

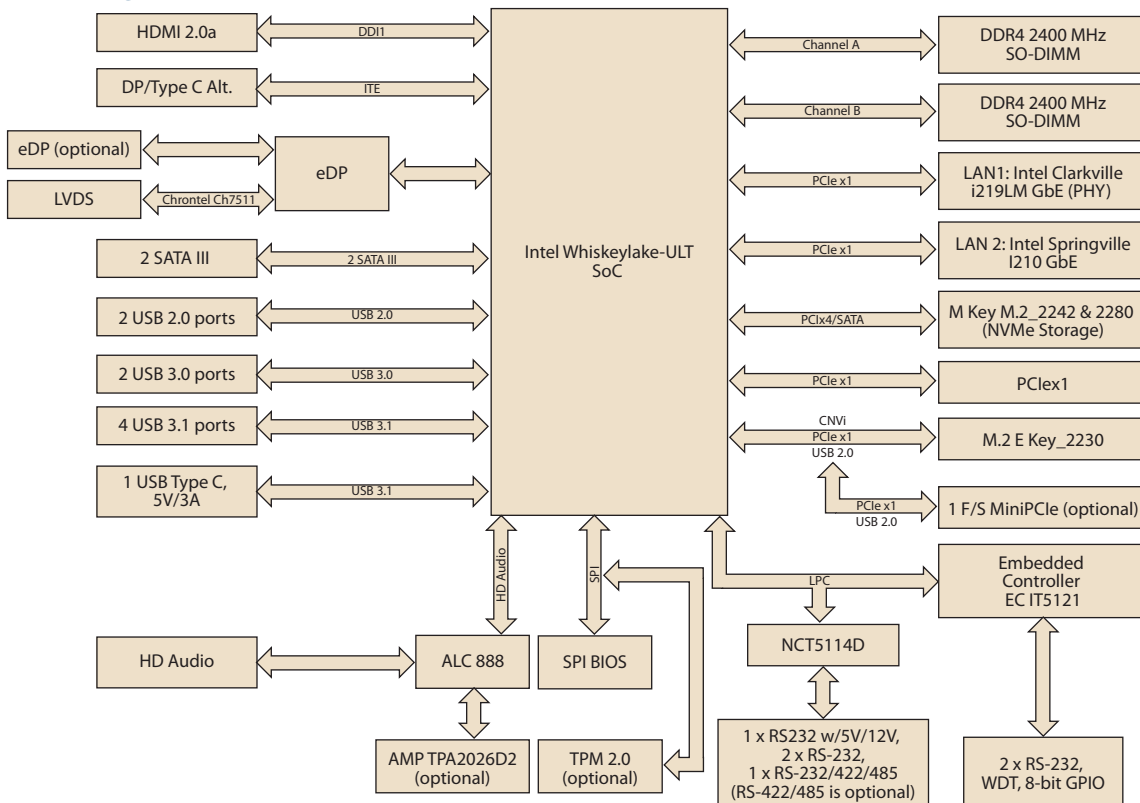
**Software APIs:**

**Utilities:**

## Specifications

		i7-8665UE	i5-8365UE	i3-8145UE	Celeron 4305UE
Processor System	CPU	i7-8665UE	i5-8365UE	i3-8145UE	Celeron 4305UE
	Core Number	4	4	2	2
	Max Speed	1.7G	1.6G	2.2G	2G
	TDP	15W	15W	15W	15W
	Chipset	(w/ Cannon Lake PCH-LP) /ME12			
	BIOS	AMI uEFI 32 MB			
Expansion Slot	Mini-PCIe	1 F/S miniPCIe slot with SIM card holder, M.2 E key_2230 (colay 1 F/S miniPCIe slot w/SIM card holder, optional), M.2 M key_2242&2280, PCIe1(Gen 3)			
Memory	Technology	Dual Channel DDR4 2400 MHz SDRAM			
	Max. Capacity	64GB (up to 32GB per SO-DIMM)			
	Socket	2 x 260 PIN DDR4 SO-DIMM (Non-ECC)			
Graphics	Controller	Support OpenGL 4.5, DirectX 12, OpenCL 2.1.			
	LVDS	Supports dual channel 48-bit up to 1920 x 1200			
	HDMI	Yes, supports max. resolution 4096 x 2160 @ 60 Hz			
	Type C Alt.	Yes, supports max. resolution 4096 x 2304 @ 60Hz, 24bpp			
	Dual Display	Type C Alt.+ HDMI, Type C Alt.+LVDS (or eDP), HDMI+LVDS (or eDP)			
Ethernet	Interface	10/100/1000 Mbps			
	Controller	LAN1: Intel Clarkville i219LM GbE PHY LAN2: Intel Springville I210 GbE			
	Connector	RJ-45 x 2			
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)			
	Channel	2 (SATA III)			
Rear I/O	HDMI	1 (HDMI 2.0a)			
	Type C Alt.	1			
	Ethernet	2			
	USB	4 x USB 3.1 Gen2 (1 x Type C, 3 x Type A)			
	Audio	2 (Mic-in, Line-out)			
	DC Jack	1, 12~24V with phoenix connector.			
Internal Connector	USB	2 (USB 2.0), 2 (USB 3.0)			
	LVDS/inverter	1			
	eDP	1, by BOM optional			
	Serial	6 COM (5 x RS-232, 1 x RS-232/422/485 (RS-422/485 support via BOM option) and supports hardware auto flow control)			
	IDE	-			
	SATA	2 (SATA III)			
	SATA Power	2			
	M.2	2, 1 x E key for WIFI/ BT w/ CNVi(colay with F/S MiniPCIe), type:2230mm 1 x M key for NVMe storage, type:2242mm & 2280mm			
	Mini-PCIe	1 (F/S, option)			
	IrDA	-			
	CPU/System/Chassis Fan Connector	1 CPU fan with 4pin header 2 System fan with 4pin header			
	Power Connector	Phoenix connector for 12~24V DCIN			
	GPIO	8-bit			
Watchdog Timer	Output	System reset			
	Interval	Programmable 1 ~ 255 sec/min			
Power Requirements	Input power	12 ~ 24V DC Input			
	Power Consumption (Max, test in HCT)	Typical: 26.74W @12V, 29.04W @24V Boost: 63.28W @12V, 64.73W @24V (intel i7-8665UE/DDR4 2133MHz 16F x2)			
Environment	Operating	0 ~ 60° C (32 ~ 140° F) with 0.7m/s air flow, depends on CPU speed and cooler solution		Non-Operating	
	Temperature			-40 ~ 85 °C (-40 ~ 185 °F)	
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")			

### Block Diagram



### Ordering Information

Order Number	CPU	DP	LVDS/eDP	HDMI 2.0a	COM	GbE LAN	TPM 2.0	AMP	SATA III	M.2 M key	M.2 E key/miniPCIe (F/S)	USB 3.1/ 3.0/ 2.0	PCIe x 1	Operating Temp.
AIMB-233G2-U7A1E	i7-8665UE													0 - 60° C
AIMB-233G2-U5A1E	i5-8365UE													0 - 60° C
AIMB-233G2-U3A1E	i3-8145UE													0 - 60° C
AIMB-233G2-U0A1E	Celeron 4305UE	1	1/(1)	1	6	2	(1)	(1)	2	1	1/(1)	4 (1 x Type C, 3 x Type A)/2/2	1	0 - 60° C
AIMB-233G2Z-U7A1E	i7-8665UE													-20 - 70° C
AIMB-233G2Z-U5A1E	i5-8365UE													-20 - 70° C
AIMB-233G2Z-U3A1E	i3-8145UE													-20 - 70° C
AIMB-233G2Z-U0A1E	Celeron 4305UE													-20 - 70° C

\*() BOM options available on MP version

### Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1700018785	SATA Power cable	2
1700022363-01	1-to-1 serial port cable kit, 17cm	2
1700029538-01	1-to-4 serial port cable, 35cm	1
2046023300	Startup manual	1
1960062823N011	Fanless Heat Sink	1
1960095272T001	IO port bracket	1

### Rear I/O



### Optional Accessories

Part Number	Description
96PSA-A120W12P4	ADP A/D 100-240V 120W 12V C14 TERMINAL BLOCK 4P
96PSA-A220W24P4-1	ADP A/D 100-240V 220W 24V C14 TERMINAL BLOCK 4P
1700025084-01	ATX 5Vsb 3pin power cable
1702002600	Power cable 3-pin 180 cm, USA type
1702002605	Power cable 3-pin 180 cm, Europe type
1702031801	Power cable 3-pin 180 cm, UK type
1700000237	Power cable 3-pin PSE Mark 183 cm
1960084865N001	Fan Cooler
1700029719-01	USB3.0 cable
1700024790-01	USB 2.0 cable

### Embedded OS/API

OS/API	Part No.	Description
Windows 10	20706WX9ES0097	img W10 19EL AIMB-233 64b 1809 ENU
Windows 10	20706WX9HS0083	img W10 19HL AIMB-233 64b 1809 ENU
Windows 10	20706WX9VS0087	img W10 19VL AIMB-233 64b 1809 ENU

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