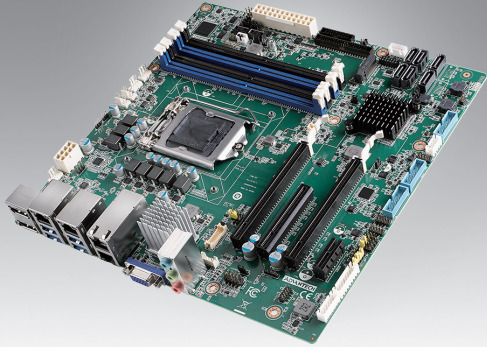


# AIMB-587

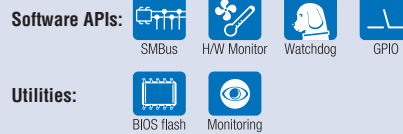
**Intel® Xeon® W10th Gen Core™  
i9/i7/i5/i3 LGA1200, MicroATX with  
2 DP++/VGA/eDP (LVDS)/6 COM, 2 10GbE  
LANs, 2 GbE LANs, 4 USB 3.2 Gen2,  
6 USB 3.2 Gen 1**

Preliminary



## Features

- Supports Intel® Xeon® 10th Gen Core™ i9/i7/i5/i3 processor with W480E/ Q470E/ H420E chipset
- Supports triple displays. (2DP++, eDP, VGA display)
- Supports Intel AMT 12.0 and Intel vPro competent
- Supports PCIe Gen3, max up to 4x USB 3.2 Gen2, 6x USB 3.2 Gen1, 6x USB 2.0, 8x SATAIII, 2 GbE LANs, 2 10GbE LANs, M.2 (M Key)
- Supports Software RAID 0, 1, 5, 10, TPM 2.0 (optional)
- Supports DeviceOn and Embedded Software APIs
- Supports Dual BIOS feature (F sku)

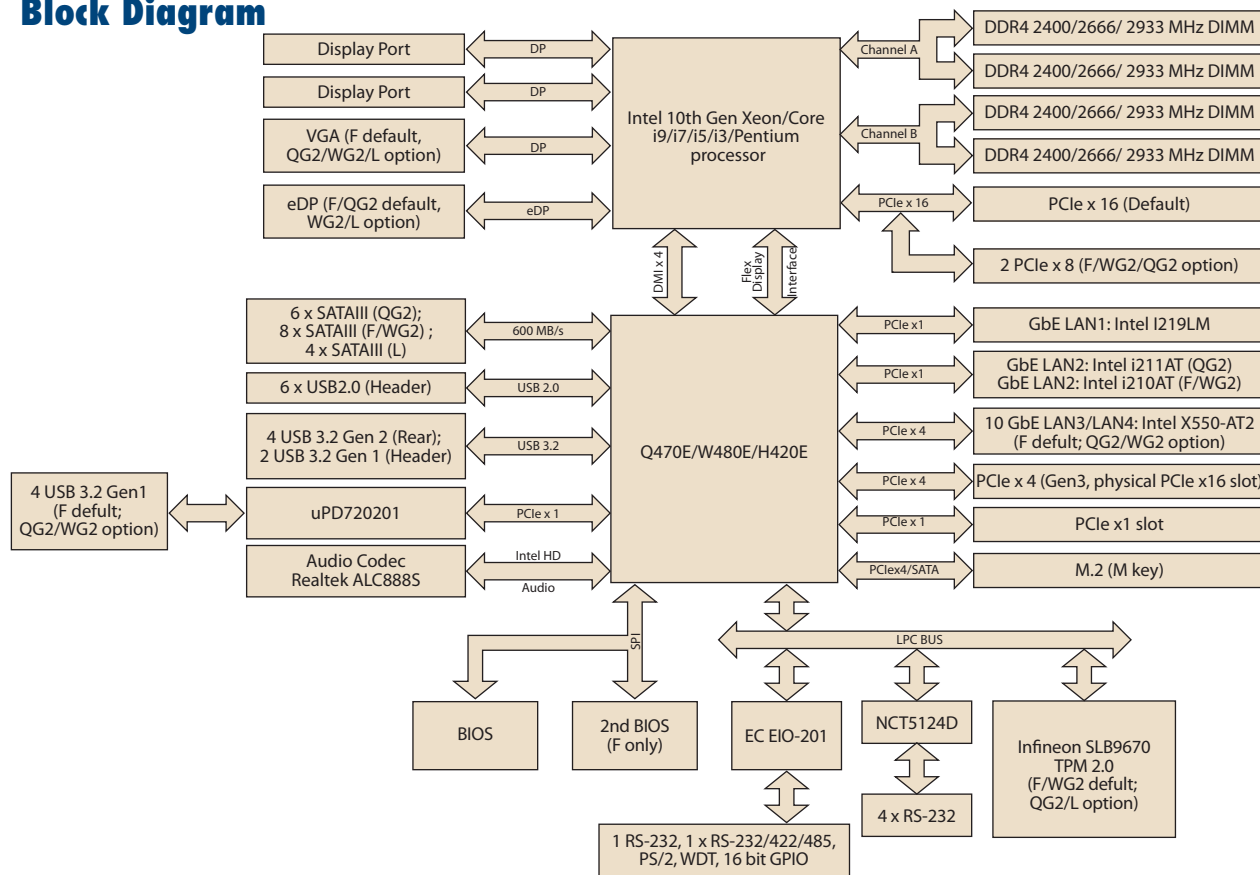


WISE-DeviceOn Quiet

## Specifications

	CPU	*W1290E/ *W1290TE	*W1270E/ *W1270TE	*W1250/ *W1250TE	i9-10900E/ i9-10900TE	i7-10700E/ i7-10700TE	i5-10500E/ i5-10500TE	i3-10100E/ i3-10100TE	G6400E/ G6400TE	G5900E/ G5900TE
Processor System	Core Number	10/10	8/8	6/6	10/10	8/8	6/6	4/4	2/2	2/2
	Max. Speed	3.5GHz/ 1.8GHz	3.4GHz/ 2.0GHz	3.5GHz/ 2.4GHz	2.8GHz/ 1.8GHz	2.9GHz/ 2.0GHz	3.1GHz/ 2.3GHz	3.2GHz/ 2.3GHz	3.8GHz/ 3.2GHz	3.2GHz/ 3.0GHz
	L3 Cache	20MB/20MB	16MB/16MB	12MB/12MB	20MB/20MB	16MB/16MB	12MB/12MB	6MB/6MB	4MB/4MB	2MB/2MB
	TDP (W)	95W/35W	80W/35W	80W/35W	65W/35W	65W/35W	65W/35W	65W/35W	58W/35W	58W/35W
	Supports Model	WG2/F	WG2/F	WG2/F	QG2/WG2/F/L	QG2/WG2/F/L	QG2/WG2/F/L	QG2/WG2/F/L	QG2/L	QG2/L
	Chipset	Q470E/W480E/H420E								
	BIOS	AMI EFI 256 Mbit SPI, i9/i7/i5/i3/pentium/ celeron supports Legacy mode								
Expansion Slot	PCIe x1 (Gen3)	1 GB/s per direction, 1 slot								
	PCIe x4 (Gen3)	4 GB/s per direction, 1 slot (Gen3, physical PCIe x16 slot)								
	PCIe x8 (Gen3)	8 GB/s per direction, 1 slot (Gen3, via BOM option for QG2/WG2/F)								
	PCIe x16 (Gen3)	16 GB/s per direction, 1 slot (Gen3, x8 link when PCIe x8 slot is on board)								
Memory	Technology	Supports Dual Channel DDR4 2933 (Xeon/i9/i7 CPU) / 2666 (i5/i3 CPU) / 2400 (Pentium/ Celeron CPU), ECC memory supported by CPU in WG2/ F								
	Max. Capacity	128GB (32GB per DIMM)								
	Socket	4 x 288 pin U DIMM (QG2/WG2)								
Graphics	Controller	Intel HD Graphics Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1								
	VGA	1, Max resolution 1920 x 1200 @ 60Hz (BOM option in QG2/WG2)								
	eDP	1, Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (Internal pin header) (default in QG2/ F sku, BOM option in WG2)								
	Display Port	2, Supports max resolution 4096 x 2304 @ 60 Hz								
	Triple Display	eDP + DP++ + VGA, eDP + DP++ + DP++, DP++ + DP++ + VGA								
	Dual Display	DP++ + VGA, DP++ + DP++ + eDP, VGA + eDP								
Ethernet	Controller	LAN1: Intel I219LM (QG2/WG2/L) LAN2: Intel I211AT (QG2) Intel I210AT (WG2/F) LAN3/4: Intel X550-AT2 (F default; BOM option on QG2/WG2)								
	Connector	RJ 45 x 2 ((Max up to 4 ports via BOM option on QG2/WG2) / RJ 45 x 4 (F)								
SATA	Max Data Transfer Rate	600 MB/s Max. (SATA 3.0)								
	Q'ty	6 (QG2); 8 (WG2/F), 1 colay with M.2 M key; 4(L)								
Rear I/O	Display Port	2								
	VGA	1 (F default; QG2/WG2/L via BOM option)								
	Ethernet	2 (Default in QG2/WG2, Max 4 ports via BOM option); 4 (F); 1 (L)								
	USB	(4 USB 3.2 Gen2; USB3.2 Gen1 for L sku)								
	Audio	2 (Mic-in/ Line-out) (Mic-in could be configured as "Line-in" under Win OS.)								
Internal Connector	USB 3.2 Gen1	2 (QG2/WG2/L, Max 6 ports via BOM option); 6 (F)								
	USB 2.0	6 (QG2/WG2/F); 2 (L)								
	Serial	6 (5 x RS-232, 1 x RS-232/422/485 with auto flow control supported on QG2/F) 2 (1x RS-232, 1 x RS-232/422/485with auto flow control supported on WG2/L)								
	SATA 3.0	6 (QG2); 8 (WG2/F); 4(L)								
	Extended Display Port (eDP)	1 (QG2/ F), 0 (WG2/L)								
	PS/2 (KBMS1)	1								
	M.2 (M key)	1 (2280 NVMe PCIe4 and SATA M.2 support, QG2/WG2/F)								
	GPIO	16-bit GPIO								
Watchdog Timer	Output	System reset								
	Interval	Programmable 1 ~ 255 sec/min								
Power Requirements	Power On	+5 V	3.3 V	12 V	12V_8P	5 Vsb				
		1.84A	0.45A	0.168A	0.318A	0.612A				
Environment	Operating	0 ~ 60° C (14 ~ 158° F), depends on CPU speed and cooler solution							Non-Operating	
	Temperature								-40 ~ 85° C (-40 ~ 185° F)	
Physical Characteristics	Dimensions	244 mm x 244 mm (9.6" x 9.6")								
Power	Input Mode	ATX input								

### Block Diagram



### Ordering Information

P/N	Chipset	USB3.2 Gen2	USB3.2 Gen1	USB2.0	DP/VGA	eDP	GbE LAN	10GbE LAN	SATA III	COM	PCIex16***	PCIex8***	PCIex4	PCIex1	M.2 M-key	TPM	Dual BIOS
AIMB-587QG2-00A1E	Q470E	4	2+(4)**	6	2/(1)	1	2	(2)	6	6	1	(2)	1	1	1	(1)	No
AIMB-587F-00A1E	W480E	4	6	6	2/1	1	2	2	8	6	1	(2)	1	1	1	1	Yes
AIMB-587WG2-00A1E	W480E	4	2+(4)**	6	2/(1)	(1)	2	(2)	8	2+(4)	1	(2)	1	1	1	1	No
AIMB-587L-00A1E	H420E	0	6+(4)**	2	2/(1)	(1)	1	0	4	2	1	0	1	0	0	(1)	No

\* ( ) means BOM option  
 \*\* BOM option with added USB 3.2 Gen 1 from controller IC  
 \*\*\* (PCIEX16\_1 / PCIEX8\_1: single at x16 (PCIEX16\_1); dual at x8 (PCIEX16\_1)/ x8 (PCIEX8\_1)

### Riser Card

Part Number	Description
AIMB-RF10F-01A1E	1U riser card with 1 PCIe16 expansion

### Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1700022749-13	SATA power cable	2
1960101473T001	I/O port bracket	1
2046058700	Startup manual	1
1930001071	M.2 device screw	2

### I/O View



### Optional Accessories

Part Number	Description
1700026162-01	Dual port USB 2.0 (pitch 2.0) cable 30cm with bracket
1700020277-01	Dual port USB 3.0 cable 30cm with bracket
1960067860N001	LGA1155 CPU cooler for 4U and wallmount chassis, for CPU TDP ≤ 125W
1960047669N001	LGA1156 CPU cooler for 4U and wallmount chassis, for CPU TDP ≤ 84W, 4.72" (W) x 4.72" (L) x 3.03" (H)
1960052651N021	LGA1155 CPU for cooler 2U and backplane version of chassis, for CPU TDP ≤ 65W, 3.54" (W) x 3.54" (L) x 2.68" (H)
1960053207N001	LGA1155 CPU cooler for 2U and wallmount chassis, for CPU TDP ≤ 45W, D=3.66" (W) x 3.66" (L) x 1.81" (H)
1700018699	PS/2 KB/MS cable (KMBS1) 1*6P-2.5/M-DIN 6P(F)*2 25cm
1700000447	1-to-4 serial ports cable kit, 45cm
1701400181	1-to-4 serial ports cable kit, 18cm
TBD	1U IO bracket for chassis ACP-1010MB & HPC-7120S (should order screws separately)

Note: Purchasing AIMB-587's proprietary CPU cooler from Advantech is a must, other CPU cooler might be not compatible with AIMB-587.  
 Note: screws P/N: 1933030500 for ACP-1010MB, 1930004607 for HPC-7120S

### Embedded OS/API

OS/API	Part No.	
win10 IoT Ent	TBD	img W10 16HL(Eng)
	TBD	img W10 16VL(Eng)