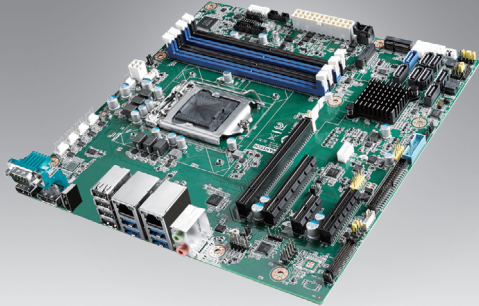


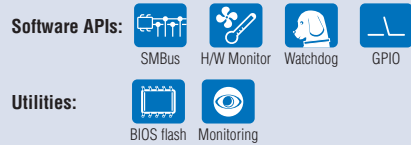
# AIMB-586

Intel® Xeon® E3/ 8th & 9th Gen Core™  
i7/i5/i3 LGA1151, MicroATX with  
HDMI/2 DP++/eDP (LVDS)/6 COM, 4 LANs,  
USB 3.1, ATX or 12V DC-IN



## Features

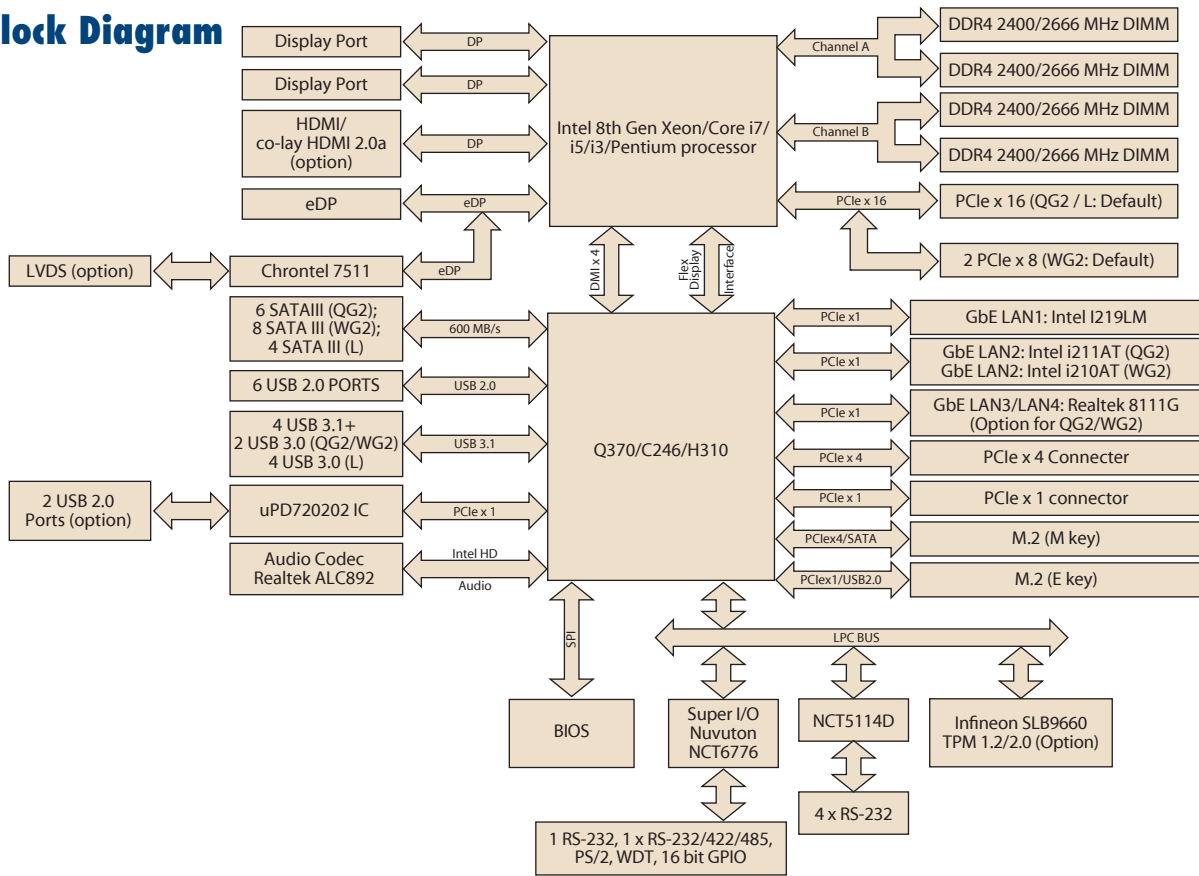
- Supports Intel® Xeon® 8th / 9th Gen Core™ i7/i5/i3 processor with Q370/ C246/H310 chipset
- Supports triple displays. (HDMI, 2DP++, eDP or LVDS display)
- Supports Intel AMT 12.0 and Intel vPro competent
- Supports PCIe Gen3, max up to 4x USB 3.1 (Gen2), 2x USB 3.0, 8x SATAIII, 4 GbE LAN, 2x M.2 (M & E Key)
- Supports Software RAID 0, 1, 5, 10, TPM 1.2/2.0 (optional)
- Supports DeviceOn and Embedded Software APIs



## Specifications

	CPU	E-2176G/ E-2124G	E-2278GE/ E-2278GEL	E-2226GE	i7-9700E/ i7-9700TE	i7-8700/ i7-8700T	i5-9500E/ i5-9500TE	i5-8500/ i5-8500T	i3-9100E/ i3-9100TE	i3-8100/ i3-8100T	G5400/ G5400T	G4900/ G4900T	
Processor System		6/4	8/ 8	6	8/ 8	6/6	6/6	6/6	4/4	4/4	2/2	2/2	
Core Number		3.7GHz/ 3.4 GHz	3.3GHz/ 2.0 GHz	3.4GHz	2.6GHz/ 1.8GHz	3.2GHz/ 2.4GHz	3.0GHz/ 2.2GHz	3.0GHz/ 2.1GHz	3.1GHz/ 2.2GHz	3.6GHz/ 3.1GHz	3.7GHz/ 3.1GHz	3.1GHz/ 2.9GHz	
Max. Speed		12MB/ 8MB	16MB/ 16MB	12MB	12MB/12MB	12MB/12MB	9MB/9MB	9MB/9MB	6MB/6MB	6MB/6MB	4MB/4MB	2MB/2MB	
L3 Cache		80W/ 71W	80W/ 35W	80W	65W/35W	65W/35W	65W/35W	65W/35W	65W/35W	65W/35W	58W/25W	54W/35W	
TDP (W)		WG2	WG2	WG2	WG2/QG2/L	WG2/QG2/L	WG2/QG2/L	WG2/QG2/L	WG2/QG2/L	WG2/QG2/L	WG2/QG2/L	WG2/QG2/L	
Supports Model		Q370/C246/H310											
Chipset		AMI EFI 256 Mbit SPI											
BIOS		1 GB/s per direction, 1 slot (QG2/WG2 only)											
Expansion Slot		4 GB/s per direction, 1 slot											
PCIe x1 (Gen3)		8 GB/s per direction, 1 slot (Default on WG2 sku, BOM Option on QG2 sku)											
PCIe x4 (Gen3)		16 GB/s per direction, 1 slot (Only x8 Link on WG2 sku)											
PCIe x8 (Gen3)		Dual Channel DDR4 2400/2666MHz Non-ECC SDRAM/ ECC SDRAM (WG2 only)											
PCIe x16 (Gen3)		128GB (32GB per DIMM)											
Memory		4 x 288 pin U DIMM (QG2/WG2)											
Technology		2 x 288 pin U DIMM (L)											
Max. Capacity		Intel HD Graphics											
Socket		Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1											
Controller		1, Supports max resolution HDMI 1.2 1920 x 1200 @ 60 Hz (Colay HDMI 2.0a 4096 x 2160 @ 60 Hz, via BOM Option)											
Graphics		eDP 1, Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (Internal pin header)											
HDMI		LVDS 1 (option), Supports dual channel 48 bits up to 1920 x 1200 (colay with eDP)											
eDP		2, Supports max resolution 4096 x 2304 @ 60 Hz											
LVDS		eDP (LVDS) + DP++ + HDMI, eDP (LVDS) + DP++ + DP++, DP++ + DP++ + HDMI											
Display Port		Triple Display DP++ + HDMI, DP++ + DP++, DP++ + eDP (LVDS), HDMI + eDP (LVDS)											
Triple Display		LAN1: Intel I219LM (QG2/WG2/L)											
Dual Display		LAN2: Intel I211AT (QG2)											
Controller		Intel I210AT (WG2)											
LAN1		LAN3/4: Realtek 8111G (BOM Option on QG2/WG2 sku)											
LAN2		RJ 45 x 2 (Max up to 4 ports via BOM option on QG2/WG2)											
LAN3/4		600 MB/s Max. (SATA 3.0)											
Connector		Q'ty 6 (QG2); 8 (WG2), 1 colay with M.2 M key; 4 (L)											
Max Data Transfer Rate		Display Port 2											
Q'ty		HDMI 1											
Display Port		Ethernet 2 (Default, Max 4 ports via BOM option on QG2/WG2)											
HDMI		USB 8 (4 USB 3.1, 4 USB 2.0 on QG2/WG2)											
Ethernet		8 (4 USB 3.0, 4 USB 2.0 on L)											
USB		Audio 2 (Mic-in/ Line-out) (Mic-in could be configured as "Line-in" under Win OS.)											
USB 3.0		Serial 1 (RS-232)											
USB 2.0		USB 3.0 2 (QG2/WG2 only)											
Audio		USB 2.0 2; can up to 4 (via BOM option)											
Serial		Serial 5 (4 x RS-232, 1 x RS-232/422/485 with auto flow control supported on QG2/WG2)											
Internal Connector		1 (1 x RS-232/422/485with auto flow control supported on L)											
Extended Display Port (eDP)/LVDS		SATA 3.0 6 (QG2); 8 (WG2), 1 colay M.2 M-key; 4 (L)											
PS/2 (KBMS1)		1 (Default: eDP)											
M.2 (M key)		1 (2280 NVMe PCIe4 and SATA M.2 support, QG2/WG2 only)											
M.2 (E key)		1 (2230 for WIFI, QG2/WG2 only)											
GPIO		16-bit GPIO											
Watchdog Timer		Output System reset											
Interval		Programmable 1 ~ 255 sec/min											
Power Requirements		Power On +5V 3.3 V 12 V 12V_4P 5 Vsb -12 V											
Operating		+1.361A 0.473A 0.365A 5.985A 0A 0A											
Non-Operating		0 ~ 60° C (14 ~ 158° F), depends on CPU speed and cooler solution											
Temperature		-40 ~ 85° C (-40 ~ 185° F)											
Dimensions		244 mm x 244 mm (9.6" x 9.6")											
Input Mode		ATX input (Default)/DC-IN 12V (BOM option)											

### Block Diagram



### Ordering Information

P/N	Chipset	USB3.1	USB 3.0	USB 2.0	DP/HDMI	eDP (LVDS)	GbE LAN	SATA III	COM	PCIex16	PCIex8	PCIex4	PCIex1	M.2 E-key	M.2 M-key	TPM
AIMB-586QG2-00A1E	Q370	4	2	6+(2)***	2/1**	1/(1)	2+(2)	6	6	1	(2)	1	1	1	1	(1)
AIMB-586WG2-00A1E	C246	4	2	6+(2)***	2/1**	1/(1)	2+(2)	8	6	(1)	2	1	1	1	1	(1)
AIMB-586L-00A1E	H310	0	4	6+(2)***	2/1	(1)/0	1	4	2+(4)	1	0	1	0	0	0	(1)

\*() BOM options available on MP version.  
 \*\* Default: HDMI 1.2, co-layout HDMI 2.0 (BOM Option)  
 \*\*\* BOM option with added USB 2.0 from controller IC

### Riser Card

Part Number	Description
AIMB-RF10F-01A1E	1U riser card with 1 PCIex16 expansion

### Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1700022749-13	SATA power cable	2
1960088075T000	I/O port bracket	1
2006B58610	Startup manual	1
1930001071	M.2 device screw	2

### I/O View



### Optional Accessories

Part Number	Description
1700020277-01	Dual port USB 3.0 cable, 30cm with IO bracket
1700002204	Dual port USB 2.0 cable 27cm with bracket
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-2.5M-DIN 6P(F)*2 25cm
1700000447	1-to-4 serial ports cable kit, 45cm
1701400181	1-to-4 serial ports cable kit, 18cm
1700026163-01	COM2, 1 to 1 COM cable 60cm (IDE 10P-2.0) w/ Bracket
1960087944N001	1U IO bracket for chassis ACP-1010MB & HPC-7120S (should order screws separately)

Note: Purchasing AIMB-586's proprietary CPU cooler from Advantech is a must, other CPU cooler might be not compatible with AIMB-586.  
 Note: screws P/N: 1933030500 for ACP-1010MB, 1930004607 for HPC-7120S

### Embedded OS/API

OS/API	Part No.	
win10 IoT Ent	20706WX9HS0019	img W10 16HL(Eng)
	20706WX9VS0022	img W10 16VL(Eng)