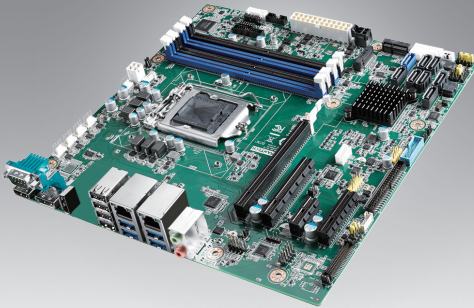


AIMB-586

Micro-ATX Motherboard 8th/9th Gen Intel® Xeon® E3 Processor LGA1151



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 4 x USB 3.1 (Gen2), 2 x USB 3.0, 8 x SATAIII, 4 x GbE LAN, 2 x M.2 (M & E Key)
- Supports Software RAID 0, 1, 5, 10, TPM 1.2/2.0 (optional)
- Supports DeviceOn and Embedded Software APIs

Software APIs:



SMBus



H/W Monitor



Watchdog



GPIO

Utilities:



BIOS flash



Monitoring

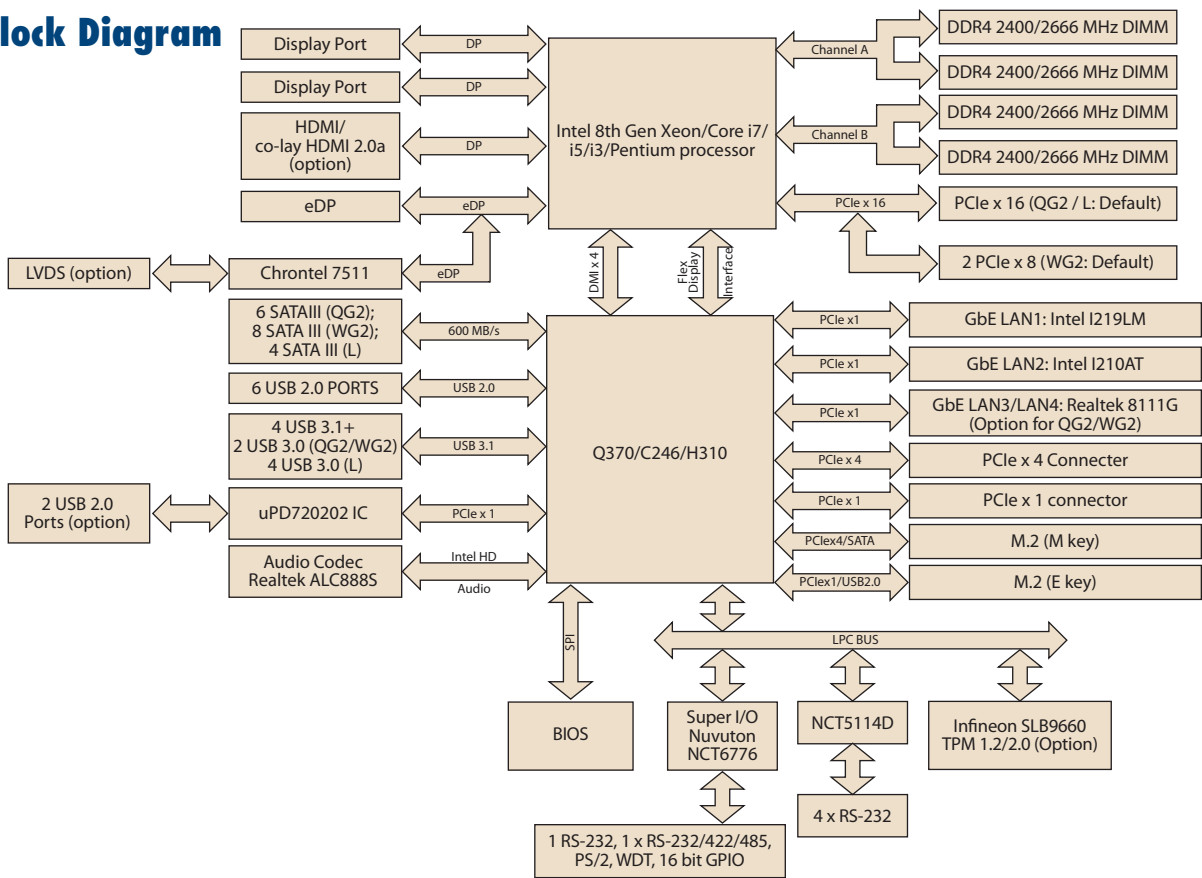


Specifications

Processor System	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
	Core Number	6/ 4	8/ 8	6	8/ 8	6/ 6	6/ 6	6/ 6	4/ 4	4/ 4	2/ 2	2/ 2
	Max. Speed	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
	L3 Cache	12MB/ 8MB	16MB/ 16MB	12MB	12MB/12MB	12MB/12MB	9MB/9MB	9MB/9MB	6MB/6MB	6MB/6MB	4MB/4MB	2MB/2MB
	TDP (W)	80W/ 71W	80W*/ 35W	80W*	65W*/35W	65W/35W	65W/35W	65W/35W	65W/35W	65W/35W	58W/25W	54W/35W
	Supports Model	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
Expansion Slot	Chipset	Q370/C246/H310										
	BIOS	AMI EFI 256 Mbit SPI										
	PCIe x1 (Gen3)	1 GB/s per direction, 1 slot (QG2/WG2 only)										
	PCIe x4 (Gen3)	4 GB/s per direction, 1 slot										
	PCIe x8 (Gen3)	8 GB/s per direction, 1 slot (Default on WG2 sku, BOM Option on QG2 sku)										
Memory	PCIe x16 (Gen3)	16 GB/s per direction, 1 slot (Only x8 Link on WG2 sku)										
	Technology	Dual Channel DDR4 2400/2666MHz Non-ECC SDRAM/ ECC SDRAM (WG2 only)										
	Max. Capacity	128GB (32GB per DIMM)										
	Socket	4 x 288 pin U DIMM (QG2/WG2) 2 x 288 pin U DIMM (L)										
Graphics	Controller	Intel HD Graphics Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1										
	HDMI	1, Supports max resolution HDMI 1.2 1920 x 1200 @ 60 Hz (Colay HDMI 2.0a 4096 x 2160 @ 60 Hz, via BOM Option)										
	eDP	1, Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (Internal pin header)										
	LVDS	1 (option), Supports dual channel 48 bits up to 1920 x 1200 @60Hz (colay wiht eDP)										
	Display Port	2, Supports max resolution 4096 x 2304 @ 60 Hz										
	Triple Display	eDP (LVDS) + DP++ + HDMI, eDP (LVDS) + DP++ + DP++, DP++ + DP++ + HDMI										
Dual Display	DP++ + HDMI, DP++ + DP++, DP++ + eDP (LVDS), HDMI + eDP (LVDS)											
	Ethernet	Controller	LAN1: Intel I219LM (QG2/WG2/L) LAN2: Intel I210AT LAN3/4: Realtek 8111G (BOM Option on QG2/WG2 sku)									
Connector		RJ 45 x 2 (Max up to 4 ports via BOM option on QG2/WG2)										
SATA		Max Data Transfer Rate	600 MB/s Max. (SATA 3.0)									
	Q'ty	6 (QG2); 8 (WG2), 1 colay with M.2 M key; 4 (L)										
Rear I/O	Display Port	2										
	HDMI	1										
	Ethernet	2 (Default, Max 4 ports via BOM option on QG2/WG2)										
	USB	8 (4 USB 3.1, 4 USB 2.0 on QG2/WG2) 8 (4 USB 3.0, 4 USB 2.0 on L)										
	Audio	2 (Mic-in/ Line-out) (Mic-in could be configured as "Line-in" under Win OS.)										
	Serial	1 (RS-232)										
Internal Connector	USB 3.0	2 (QG2/WG2 only)										
	USB 2.0	2; can up to 4 (via BOM option)										
	Serial	5 (4 x RS-232, 1 x RS-232/422/485 with auto flow control supported on QG2/WG2) 1 (1 x RS-232/422/485with auto flow control supported on L)										
	SATA 3.0	6 (QG2); 8 (WG2), 1 colay M.2 M-key; 4 (L)										
	Extended Display Port (eDP)/LVDS	1 (Default: eDP)										
	PS/2 (KBMS1)	1										
	M.2 (M key)	1 (2280 NVMe PCIe x4 and SATA M.2 support, QG2/WG2 only)										
	M.2 (E key)	1 (2230 for WIFI, QG2/WG2 only)										
Watchdog Timer	GPIO	16-bit GPIO										
	Output	System reset										
Power Requirements	Interval	Programmable 1 ~ 255 sec/min										
	Operation	+5V	3.3V	12V	12V_4P							
	Configuration: Intel® Core™ i7-8700 6-Core Processor 3.2GHz, with UDIMM DDR4 2666 16GB*4pcs	1.361A	0.473A	0.365A	5.985A							
	Standby (5Vsb)	2A										
Environment	Operating	Non-Operating										
	Temperature	0 ~ 60° C (14 ~ 158° F), depends on CPU speed and cooler solution										
Physical Characteristics	Dimensions	244 mm x 244 mm (9.6" x 9.6")										
	Power	ATX input (Default)/DC-IN 12V (BOM option)										

*The performance of CPUs will be limited due to power design.

Block Diagram



Ordering Information

P/N	Chipset	ATX*****	USB3.1	USB 3.0	USB 2.0	DP/HDMI	eDP (LVDS)	GbE LAN	SATA III	COM	PClex16	PClex8	PClex4	PClex1	M.2 E-key	M.2 M-key	TPM
AIMB-586QG2-00A1E	Q370	Yes	4	2	6+(2)***	2/1***	1/(1)	2+(2)	6	6	1	(2)	1	1	1	1	(1)
AIMB-586QG2-00A1U	Q370	Yes	4	2	6+(2)***	2/1***	1/(1)	2+(2)	6	6	1	(2)	1	1	1	1	(1)
AIMB-586WG2-00A1E	C246	Yes	4	2	6+(2)***	2/1**	1/(1)	2+(2)	8	6	(1)	2	1	1	1	1	(1)
AIMB-586L-00A1E	H310	Yes	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
*****ATX input (Default), DC-IN 12V (BOM option)

Riser Card

Part Number	Description
AIMB-RF10F-01A1E	1U riser card with 1 PClex16 expansion

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1700022749-13	SATA power cable	2
1960088075T000	I/O port bracket	1
2006B58611	Startup manual	1
1930006770-01	M.2 device screw	2

I/O View



Last updated: 11-Nov-2025

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	1-to-2 PS/2 KB/MS cable cable 25cm
1700000447	1-to-4 serial ports cable kit, 45cm
1701400181	1-to-4 serial ports cable kit, 18cm
1700026163-01	1-to-1COM2 cable 60cm with IO 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)
Ubuntu 20.04	20706WX9VS0022	img W10 16VL(Eng)
	20706U20DS0048	Ubuntu 20.04 LTS Desktop 64bit