AIMB-585

Intel® Xeon® E3/ Core™ i7/i5/i3 LGA1151 MicroATX with DVI-D/HDMI/DP++/eDP/VGA, 6 COM, Dual LAN, SATA III, 12 USB3.0

Windows Embedded Standard 7 | QNX | Quiet | WISE-PaaS/RMM | ENERGY STAR | CE | FCC | RoHS COMPLIANT 2002/95/EC

Features

- Supports Intel® Xeon®/ 6th & 7th Gen Core™ i7/i5/i3 processor with Q170/ C236/H110 chipset
- Four DIMM sockets support up to 64 GB DDR4 2133 MHz SDRAM
- Supports DVI-D, HDMI, DP++, eDP, VGA (optional) display
- Supports Intel AMT 11.0 and Intel vPro competent
- Supports PCIE Gen3, upto 12 x USB 3.0, 4 x SATAIII and dual GbE LAN, mini-PCIe
- Supports Software RAID 0, 1, 5, 10, TPM 1.2/2.0 (optional)
- Supports WISE-PaaS and Embedded Software APIs

Software APIs: SMBus, H/W Monitor, Watchdog, GPIO

Utilities: BIOS flash, Monitoring

Specifications

Processor System	CPU	E3-1275 v6	E3-1275 v5	E3-1225 v5	E3-1268L v5	I7-7700/ I7-7700T	i7-6700 / i7-6700TE	I5-7500/ I5-7500T	i5-6500 / i5-6500TE	I3-7101E/ I3-7101TE	i3-6100/ i3-6100TE	Pentium G4400 / G4400TE	Celeron G3900 / G3900TE
	Core Number	4	4	4	4	4/4	4 / 4	4/4	4 / 4	2/2	2/2	2/2	2/2
	Max. Speed	3.8GHz	3.6GHz	3.3GHz	2.4GHz	3.6GHz/ 2.9GHz	3.4GHz / 2.4GHz	3.4GHz/ 2.7GHz	3.2GHz / 2.3GHz	3.9GHz/ 3.4GHz	3.7 GHz / 2.7GHz	3.3GHz / 2.9GHz	2.8GHz / 2.6GHz
	Integrated Graphics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	L3 Cache	8M	8M	6M	8M	8M/8M	8M / 8M	6M/6M	6M / 6M	3M/3M	4M / 4M	3M / 3M	2M / 2M
	TDP (W)	80W	80W	80W	35W	65W/35W	65W / 35W	65W/35W	65W / 35W	54W/35W	51W / 35W	54W / 35W	47W / 35W
	Supports Model	WG2	WG2	WG2	WG2	QG2/L	QG2 / L	QG2/L	QG2 / L	QG2/WG2/L	QG2 / WG2 / L	QG2 / WG2 / L	QG2 / WG2 / L
	Chipset	Q170/C236/H110											
	BIOS	AMI EFI 128 Mbit SPI											
Expansion Slot	PCIe x1 (Gen3)	1 GB/s per direction, 1 slot (H110 2*PICex1, Gen2 only)											
	PCIe x4 (Gen3)	4 GB/s per direction, 1 slot (Q170,C236 only)											
	PCIe x8 (Gen3)	8 GB/s per direction, 1 slot (Q170,C236 only)											
	PCIe x16 (Gen3)	16 GB/s per direction, 1 slot (When x8 slot is used, x16 slot only offers x8 bandwidth automatically)											
Memory	Technology	Dual Channel DDR4 2133 MHz SDRAM (L sku: 2 slot)											
	Max. Capacity	64 GB/16 GB per DIMM (L sku: 32GB)											
	Socket	4 x 288-pin DIMM (L sku: 2 x 288)											
Graphics	Controller	Intel HD Graphics Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1											
	VRAM	1 GB maximum shared memory with 2 GB and above system memory installed											
	HDMI	Supports max resolution HDMI 1.2 1920 x 1200 @ 60 Hz (Colay HDMI 2.0,4096 x 2160 @ 60 Hz, optional)											
	VGA	Max resolution 1920 x 1200 @ 60 Hz (on board) (optional)											
	DVI-D	Supports max. resolution 1920 x 1200 @ 60 Hz											
	eDP	Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (on board)											
	Display Port	Supports max resolution 4096 x 2304 @ 60 Hz											
	Triple Display	eDP/ VGA + DP++ + HDMI, eDP/ VGA + HDMI + DVI-D, DP++ + eDP/ VGA + DVI-D, DVI-D + DP++ + HDMI											
	Dual Display	DP++ + HDMI, DP++ + DVI-D, DP++ + eDP/ VGA, HDMI + DVI-D, HDMI + eDP/ VGA, eDP, VGA + DVI-D											
Ethernet	Interface	10/100/1000 Mbps											
	Controller	GbE LAN1: Intel I219LM, GbE LAN2: Intel I211AT (WG2 sku: LAN2 Intel i210/ L sku: only LAN1)											
	Connector	RJ-45 x 2 (L sku: RJ-45 x1)											
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)											
	Channel	4 (L sku: SATA x3)											
Rear I/O	DVI-D	1											
	Display Port	1											
	HDMI	1											
	Ethernet	2 (L sku: only LAN1)											
	USB	8 (QG2,WG2: 6 x USB 3.0, 2 x USB 2.0; L: 4 x USB3.0, 4 x USB2.0)											
	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	6 (Default is 4.BOM option add another controller IC to 2 x USB3.0, and QG2,WG2 sku only; L sku : 0)											
	Serial	5 (4 x RS-232, 1 x RS-232/422/485 to support auto flow control)											
	VGA	1 (optional)											
	SATA	4 (SATA 3.0; L: SATA x3)											
	Extended Display Port (eDP)	1											
	JTAG	1											
	mini-PCIe	1 Full-size colay mSATA											
	GPIO	16-bit GPIO											
Watchdog Timer	Output	System reset											
	Interval	Programmable 1 ~ 255 sec/min											
Power Requirements		Intel Core i7-6700 3.4 GHz, 16 GB DDR4 2133 MHz x 4pcs											
	Power On	+5 V		3.3 V	12 V		5 Vsb		-12 V				
		1.31A		0.35A	4.52A		0.06A		0A				
Environment		Operating							Normal				
	Temperature	0 ~ 60° C (14 ~ 158° F), depends on CPU speed and cooler solution							-40 ~ 85° C (-40 ~ 185° F)				
Physical Characteristics	Dimensions	244 mm x 244 mm (9.6" x 9.6")											
Power	Input Mode	ATX input (Default)											

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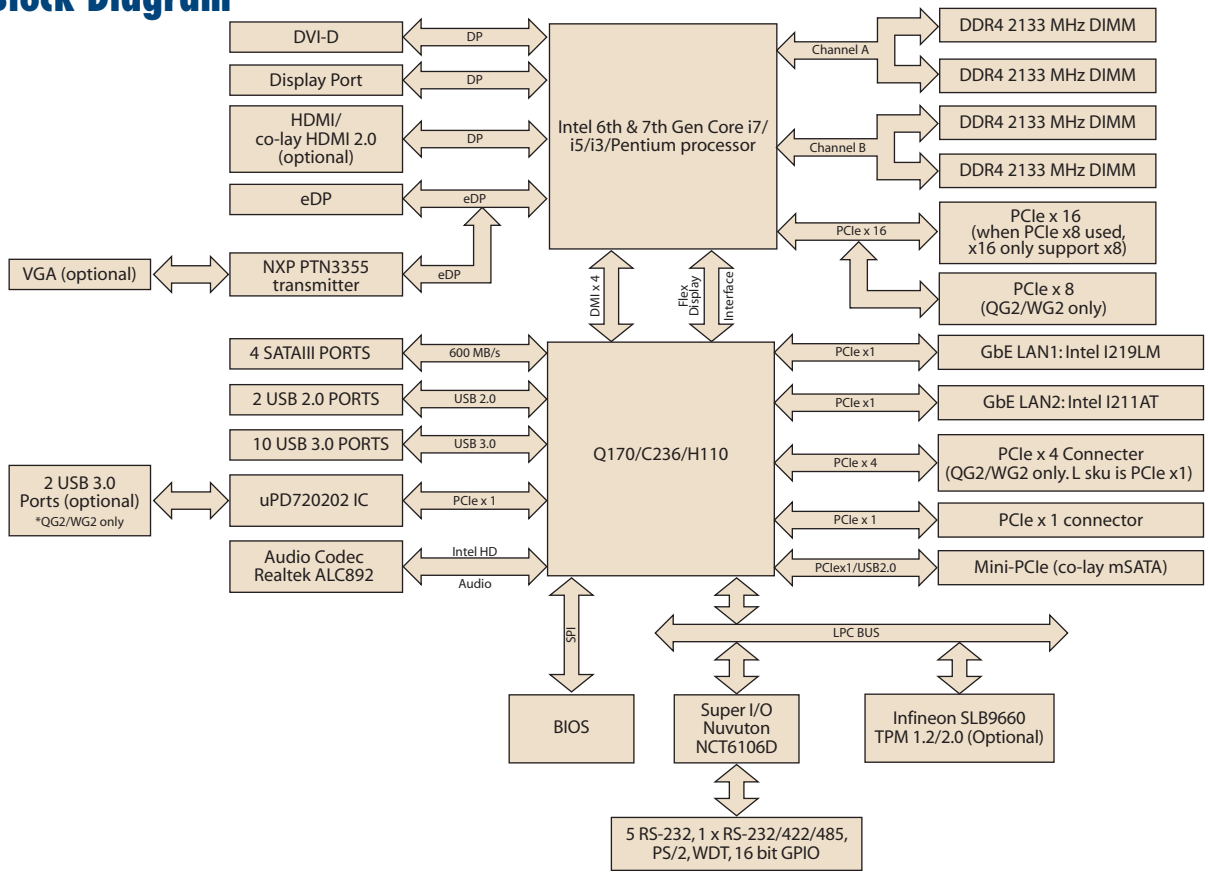
Block Diagram



Ordering Information

Part Number	Chipset	Memory	USB 3.0	USB 2.0	VGA	DP	HDMI 1.2	DVI-D	eDP	SATAIII	PCIe x16/ PCIex8	PCIe x4	PCIe x 1	COM	TPM	GbE LAN	AMP
AIMB-585QG2-00A1E	Q170	Non-ECC	10+(2)***	2	(1)	1	1 **	1	1	4	1/1	1	1	6	(1)	2	(1)
AIMB-585WG2-00A1E	C236	ECC/Non-ECC	10+(2)***	2	(1)	1	1 **	1	1	4	1/1	1	1	6	(1)	2	(1)
AIMB-585L-00A1E	H110	Non-ECC	4	4	(1)	1	1	1	0	3	1/0	0	2	6	(1)	1	(1)

*() BOM options available on MP version.
** HDMI 1.2 colay HDMI2.0(BOM option)
*** there is BOM option with added USB 3.0 from controller IC, only support in QG2,WG2 sku

Riser Card

Part Number	Description
AIMB-RF10F-01A1E	1U riser card with 1 PCIex16 expansion
AIMB-R430P-03A2E	2U PCIe x4 to 3 PCI
AIMB-R43PF-21A1E	2U PCIe x16/PCIe x4 to 1PCIe x16 + 2 PCI

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1700022749-13	SATA power cable	2
19Z0001200T000	I/O port braket	1
2006058510	Startup manual	1

I/O View

Optional Accessories

Part Number	Description
1700020277-01	Dual port USB 3.0 cable 30cm with IO 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)
1960047831N001	LGA1156 CPU cooler for 2U and backplane version of chassis, for CPU TDP =< 65W, 3.27" (W) x 3.27" (L) x 2.17" (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)
1703060191	KBMS cable 1*6P-2.0/DIN-6P(F)*2, 22 cm
1700025715-01	KBMS cable 1*6P WAFER/PS2*2 w/ BRAKET 35CM
1700000447	1-to-4 serial ports cable kit, 45cm
1701400181	1-to-4 serial ports cable kit, 18cm
1700025673-01	A VGA CABLE 30CM (on board)
1700026163-01	COM2,1 to 1 COM cable 60cm (IDE 10P-2.0) w/ Braket

Note: Purchasing AIMB-585's proprietary CPU cooler from Advantech is a must, other CPU cooler are NOT compatible with AIMB-585.
The complete thermal solution is composed of CPU cooler and system fans for the CPU TDP as above.

Embedded OS/API

OS/API	Part No.
WES7P	2070014308
WE8.1	2070014247
win10 IoT Ent	2070014621