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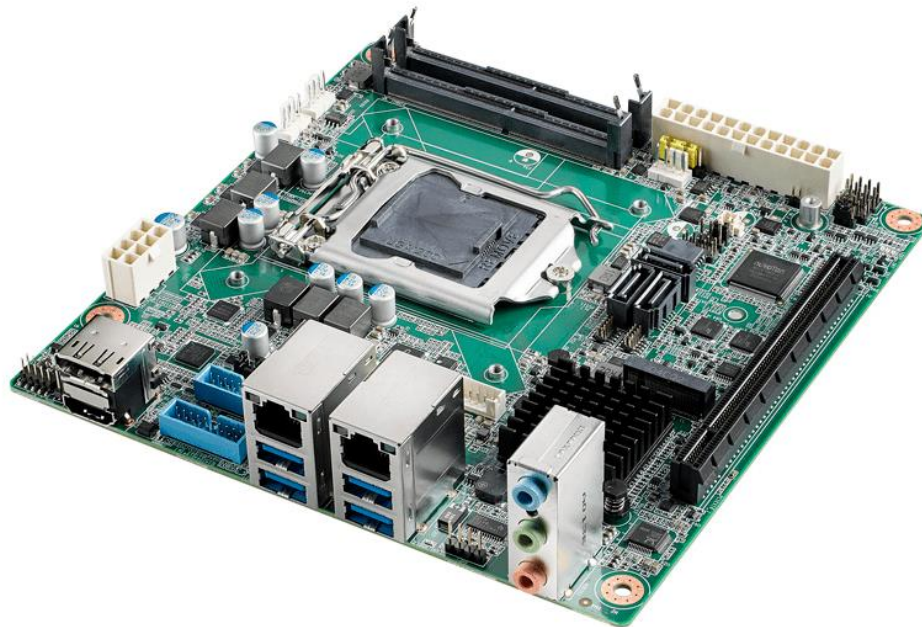


Datasheet

ADVANTECH

AIMB-277

Industrial Mini-ITX Motherboard for 10th Gen. Intel® Core™ i LGA1200 Prozessor
with Intel® Q470E / H420E Chipset



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AIMB-277

Intel® Core™ i9/i7/i5/i3 LGA 1200
Mini-ITX with HDMI/DP/VGA, 2 COM,
Dual LAN, M.2, DDR4, PCIe x16, ATX

Preliminary

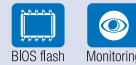
Features

- Supports Intel® 10th Gen Core™ i processor (LGA1200) with Intel Q470E/H420E chipset
- Two 260-pin SO-DIMM up to 64GB DDR4 2933 MHz SDRAM
- Supports displays of HDMI2.0a/DP1.2/VGA/LVDs (or eDP)
- Supports 1 M.2 M key & 1 M.2 E key
- Supports 4 USB3.2 Gen2 & 4 USB3.2 Gen1, and 3 SATAIII
- Supports TPM2.0 and dual channel 3.2W amplifier
- Supports Intel vPro, AMT, Software RAID 0, 1, 5, 10 (G2 sku)
- Supports WISE-PaaS/DeviceOn and Embedded Software APIs

Software APIs:



Utilities:

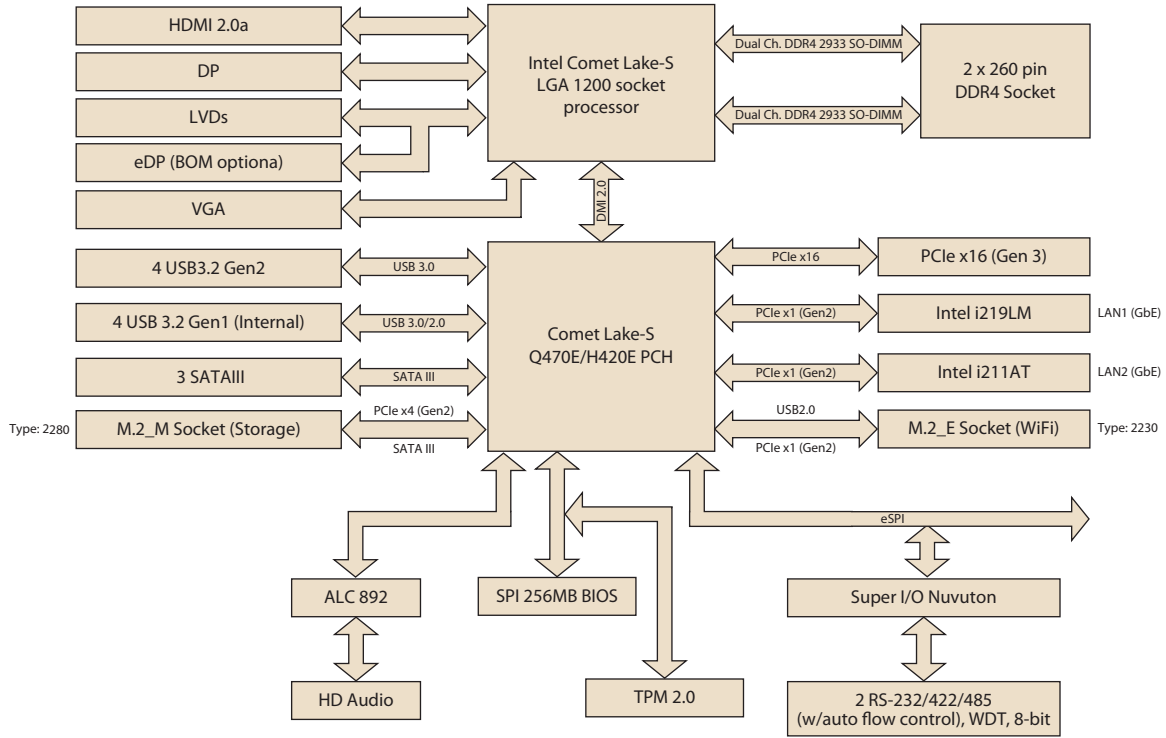


WISE-DeviceOn CE FC RoHS

Specifications

	CPU	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	4/4	2/2	2/2	
	Max Speed	2.8GHz/ 1.8GHz	2.9GHz/ 2.0GHz	3.1GHz/ 2.3GHz	3.2GHz/ 2.3GHz	3.8GHz/ 3.2GHz	3.2GHz/ 3.0GHz	
	SmartCache	20MB/20MB	16MB/16MB	12MB/12MB	6MB/6MB	2MB/2MB	2MB/2MB	
	TDP	65W/35W	65W/35W	65W/35W	65W/35W	58W/35W	58W/35W	
	Chipset	Q470E/H420E						
	BIOS	AMI EFI 256 Mbit SPI						
Expansion Slot	M.2	1 x M key for SSD and 3G/4G (Type: 2280) 1 x E key for wireless (Type: 2230mm)						
	PCIe x16 (Gen3)	16 GB/s per direction, 1 slot						
Memory	Technology	Dual Channel DDR4 2933 MHz SDRAM						
	Max. Capacity	64GB (up to 32GB per SO-DIMM)						
	Socket	2 x 260 PIN DDR4 SO-DIMM (Non-ECC)						
Graphics	Controller	Intel HD Graphics						
	HDMI 2.0a	Yes, supports max. resolution 4096 x 2160 @ 60 Hz (Only for G2 sku)						
	DP1.2	Yes, supports max. resolution 4096 x 2304 @ 60 Hz						
	LVDs	Yes, with internal pin header, supports max. resolution 1920 x 1200 @ 60 Hz (LVDs colay with eDP)						
	eDP	Yes, with internal pin header, supports max. resolution 4096 x 2304 @ 60 Hz (eDP colay with LVDs)						
	VGA	Yes, with internal pin header, supports max. resolution 1920 x 1200 @ 60 Hz						
	Triple Display (G2 sku)	HDMI+DP+VGA, HDMI+DP+LVDS (or eDP), HDMI+VGA+LVDS (or eDP), DP+VGA+LVDS (or eDP)						
	Dual Display (L sku)	VGA+LVDS (or eDP), DP+VGA, DP+LVDS (or eDP)						
Ethernet	Interface	10/100/1000 Mbps						
	Controller	GbE LAN1: Intel i219LM GbE LAN2: Intel i211AT						
	Connector	RJ-45 x 2						
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)						
	Channel	3 SATAIII (for G2 sku), 2 SATAIII (for L sku)						
Rear I/O	DP 1.2 (DP++)	1						
	HDMI 2.0	1						
	Ethernet	2						
	USB	G2 sku: 4 USB3.2 Gen2 L sku: 4 USB3.2 Gen1						
	Audio	1 (Line in/Line out/Mic in)						
Internal Connector	USB	G2 sku: 4 USB3.2 Gen1 L sku: 2 USB3.2 Gen1, 2 USB2.0						
	VGA	1 (pin header)						
	LVDs/eDP	1 (LVDs colay with eDP)						
	Serial	2 (1 RS-232, 1 RS-232/422/485)						
	SATA	G2 sku: 3 SATAIII; L sku: 2 SATAIII						
	M.2	1 x M key for SSD, Type: 2280mm (on top side) 1 x E key for wireless, Type: 2230mm (on bottom side)						
	GPIO	8-bit						
Watchdog Timer	Output	System reset						
	Interval	Programmable 1 ~ 255 sec/min						
Power Requirements	Input power	ATX Input						
Environment		Operating				Non-Operating		
	Temperature	0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution				-40 ~ 85° C (-40 ~ 185° F)		
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")						

Block Diagram



Ordering Information

P/N	Chipset	HDMI 2.0	LVDS/eDP	DP 1.2	VGA	GbE LAN	COM	SATAIII	USB3.2 Gen 2	USB 3.2 Gen1	USB 2.0	M.2 M key	M.2 E key	PCIe x16	TPM2.0	AMP
AIMB-277G2-FLA1E	Q470E	1	1/(1)	1	1	2	2	3	4	4	0	1	1	1	1	1
AIMB-277G2-00A1E	Q470E	1	1/(1)	1	1	2	2	3	4	4	0	1	1	1	0	0
AIMB-277L-00A1E	H420E	0	1/(1)	1	1	2	2	2	0	6	2	1	1	1	(1)	(1)

*() BOM options available on MP version.

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	1
1700018785	SATA power cable (1 port, 25cm)	1
TBD	1-to-1 serial port cable, 22cm	1
TBD	I/O port bracket	1
TBD	Startup manual	1

Optional Chassis

Part Number	Description
AIMB-B2000-15ZE	Mini-ITX chassis with 150W ATX power supply

I/O View

Optional Accessories

Part Number	Description
1700020277-01	Dual port USB 3.0 cable 30cm with IO bracket
1960053207N001	LGA1150 CPU cooler for CPU TDP ≤ 65W, 92.9 (W) x 92.9 (L) x 46 (H) mm
1960060732N001	LGA1150 CPU cooler for CPU TDP ≤ 45W, 80 (W) x 80 (L) x 32.2 (H) mm
1970004515T000	C.L R3 Sunflower LGA115X KabyLake 35W 90x90x25

Embedded OS/API

OS/API	Part No.	968 P/N	Description
Windows 10	TBD	968QW19ELE	TBD
Windows 10	TBD	968QW19HLE	TBD
Windows 10	TBD	968QW19VLE	TBD

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