

ASMB-789

LGA 1851 Intel® Core™ Ultra 9/7/5 ATX Server Board with 4 x DDR5, 5 x PCIe (1 x Gen 5, 3 x Gen 4, 1x Gen 3), 7 x USB 3.2, 4 x SATA3, Quad/Dual LANs



Features

- LGA 1851 Intel® Core™ Ultra 9/7/5 processors with W880 chipset
- DDR5 ECC/Non-ECC 5600/4800/4400/MT/s UDIMM up to 192 GB
- one PCIe x 16 (Gen5), one PCIe x 8 (Gen5) and five PCIe x 4 slots
- Triple displays - DP, VGA, and HDMI 2.0 ports
- Four SATA 3 ports and seven USB 3.2 ports
- One M.2 2280 (PCIe x4)
- Rackmount optimized placement with positive air flow design
- 0 ~ 60 °C (32 ~ 140 °F) ambient operating temperature range

Note: Supported OS including Windows 10/ 11 (64-bit) and Server 2022 (64-bit) have been validated.

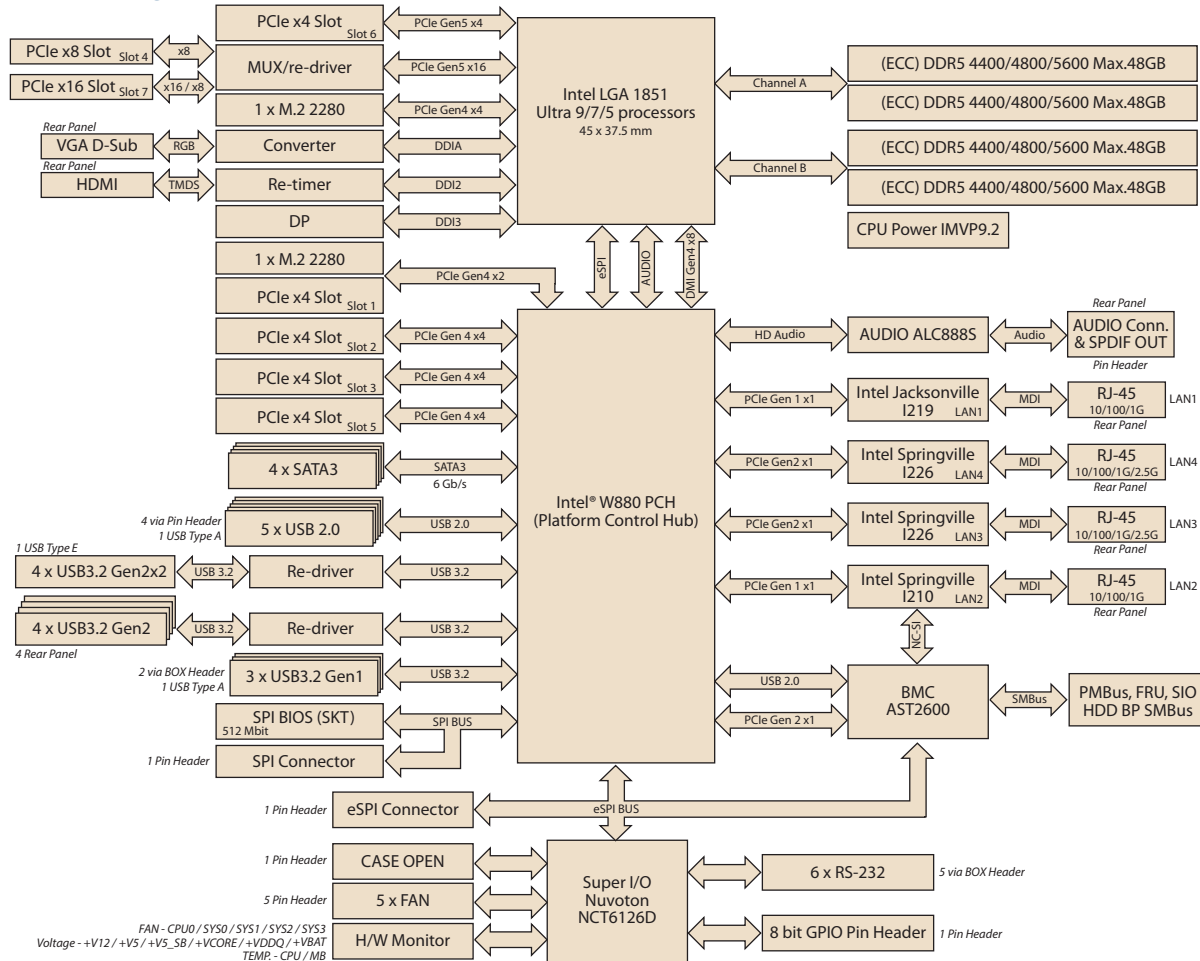
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Specifications

Form Factor	ATX form factor	
Processor System	Socket	Intel® LGA 1851
	CPU type	Intel® Core™ Ultra 9/7/5 processors (TDP up to 125W)
Core Logic	Chipset	Intel® W880 chipset
Memory	Total slots	4 x (Dual Channel)
	Max. capacity	192GB
	Memory type	5600*/4800/4400 MT/s UDIMM(288-pin)
	Memory size	8 GB, 16 GB, 32 GB , 48 GB
Expansion Slots	Total PCI/PCIe slots	7
	Slot location 1	PCIe x 4 slot (Gen 4 x 2 link) or (Option: 1 x M.2 2280 for G4 SKU)
	Slot location 2	PCIe x 4 slot (Gen 4 x 4 link)
	Slot location 3	PCIe x4 slot (Gen 4 x4 link)
	Slot location 4	PCIe x 8 slot (Gen 5 x16 link)
	Slot location 5	PCIe x 4 slot (Gen 4 x 4 link)
	Slot location 6	PCIe x 4 slot (Gen 4 x 4 link)
Graphics	Slot location 7	PCIe x16 slot (Gen 5 x16 link)
	Controller	Intel® HD Graphics
Storage	VRAM	1 GB maximum shared memory with 2 GB and above system memory installed
	SATA controller	Intel® W880: 4 SATA3 6 Gb/s ports with Intel Rapid Storage Technology support (for Windows only) (Supports software RAID 0, 1, 10, & 5)
Networking	SAS controller	-
	Interface	10/100/1000 Mbps
Onboard I/O Connector	Controller	GbE LAN1: Intel® I219; GbE LAN2: Intel® I210-AT; GbE LAN 3-4: Intel® I226
	Connector	RJ-45 x 2 for G2 version; RJ-45 x 4 for G4 version
Rear I/O Connector	Printer Port connector	-
	PSU connector	24-pin SSI power connector + 8-pin SSI 12V power connector
	USB connector	9 (3 x USB 3.2 Gen 1 (2 ports), 5 x USB 2.0 (6 ports), 1 x USB Gen2 Type E)
	M.2 connector	1 x M.2 2280 (PCIe G4 x4 link)
	Fan header	5 x (4-pin)
	SMBus	1
	Chassis intrusion	1
	Front LAN LED	2
	Serial port header	5 (2 x RS-232 dual-port (4 ports), 1 x RS-232 single-port)
	Audio connector	1 x (ALC 888S)
Watchdog Timer	PS/2 KB/Mouse	-
	External serial port	1 (via COM cable in the package)
	External USB port	4 x (USB 3.2 Gen 2)
	VGA port	1 x (Resolution up to 1920 x 1200 @ 60 Hz)
	HDMI port	1 x (Resolution up to 4096 x 2160 @ 60 Hz)
	Display Port	2 x (Resolution up DP* with DSC to 8K60 Hz 30bpp)
	RJ-45	2 for G2 version; 4 for G4 version
	Audio connector	2 x (Mic-in, Line-out)
	PS/2 KB/Mouse	-
	Output	System reset
Power Requirement	Interval	Programmable 1 ~ 255 sec
	Power On	3.3 V 5 V 12 V 12 V_8P 5 VSB
Environment	(Ultra9 285 3.7GHz DDR5 5600 32 GB x 4)	2.02 A 2.54 A 0.39 A 0.69 A 0.09 A
	Operating	Non-operating
Physical Characteristics	Temperature	0 ~ 60 °C, depends on CPU speed and cooler solution
	Humidity	40 °C @ 95% RH Non-condensing
Dimensions		304.8 x 244 mm (12 x 9.6 in)

* 5600MT/s can only be supported with 1 DIMM per channel configuration (2 DIMMs in total).

Block Diagram



Ordering Information

Part Number	Chipset	Memory	Display	LAN	SATAIII	IPMI
ASMB-789G2-00A1	W880	DDR5 Non-ECC/ECC UDIMM	VGA + DP + HDMI	2	4	-
ASMB-789G4-00A1	W880	DDR5 Non-ECC/ECC UDIMM	VGA + DP + HDMI	4	4	Y
ASMB-789G4-00A1U	W880	DDR5 Non-ECC/ECC UDIMM	VGA + DP + HDMI	4	4	Y

Packing List

Part Number	Description	Quantity
2042078900	Startup manual	x 1
1700003194	SATA data cables	x 2
1700022749-11	SATA power cables	x 2
1700001788	COM1 cable	x 1
1960119032T001	I/O shield (for 2U chassis or higher)	x 1
1930005673-11	Screw for M.2 device	x 1

I/O View



ASMB-789G4-00A1

Optional Accessories

Part Number	Description
1700029038-01	BMC VGA cable with bracket (35 cm / 13.7 in, for G4 SKU)

Note: If you need BMC KVM function, please select this cable.

Part Number	Description
1970005958N001	LGA 1700 CPU Cooler for 3U/4U Tower Cooler (CPU 230W at ambient 30°C)
1970005436T001	LGA 1700 CPU cooler for 2U/4U chassis (CPU 125W)
1970005349T000	LGA 1700 CPU cooler for 2U/4U chassis (CPU under 65W)
1700002204	Dual-port USB 2.0 cable (27 cm / 10.6 in) with bracket
1700008461	Four-port USB 2.0 cable (30.5 cm / 12 in) with bracket
1700028292-01	Dual-port USB 3.0 cable (30 cm / 11.8 in) with bracket
1701090401	Single port RS-232 COM cable (40 cm / 15.7 in) with bracket
1700026254-01	Dual-port RS-232 COM cable (45 cm / 17.7 in) with bracket
PCA-TPMSPI-00A1	TPM 2.0 Module by SPI

Note: Users need to purchase the ASMB-789 proprietary CPU cooler from Advantech. Other brands of CPU cooler may NOT be compatible with ASMB-788.