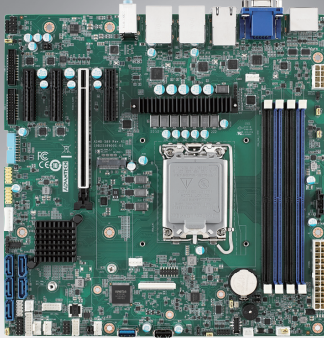


ASMB-589

**LGA 1851 Intel® Core™ Ultra 9/7/5
MicroATX Server Board with 4 x DDR5,
4 x PCIe (2 x Gen 5, 2 x Gen 4),
8 x USB 3.2, 5 x SATA3, Quad/Dual LANs**

NEW



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 x16 (Gen 5), one PCIe x4 (Gen 5) and two PCIe x4 (Gen 4) slots
- Triple displays - DP, VGA, and HDMI 2.0 ports
- Five SATA 3 ports and eight 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.

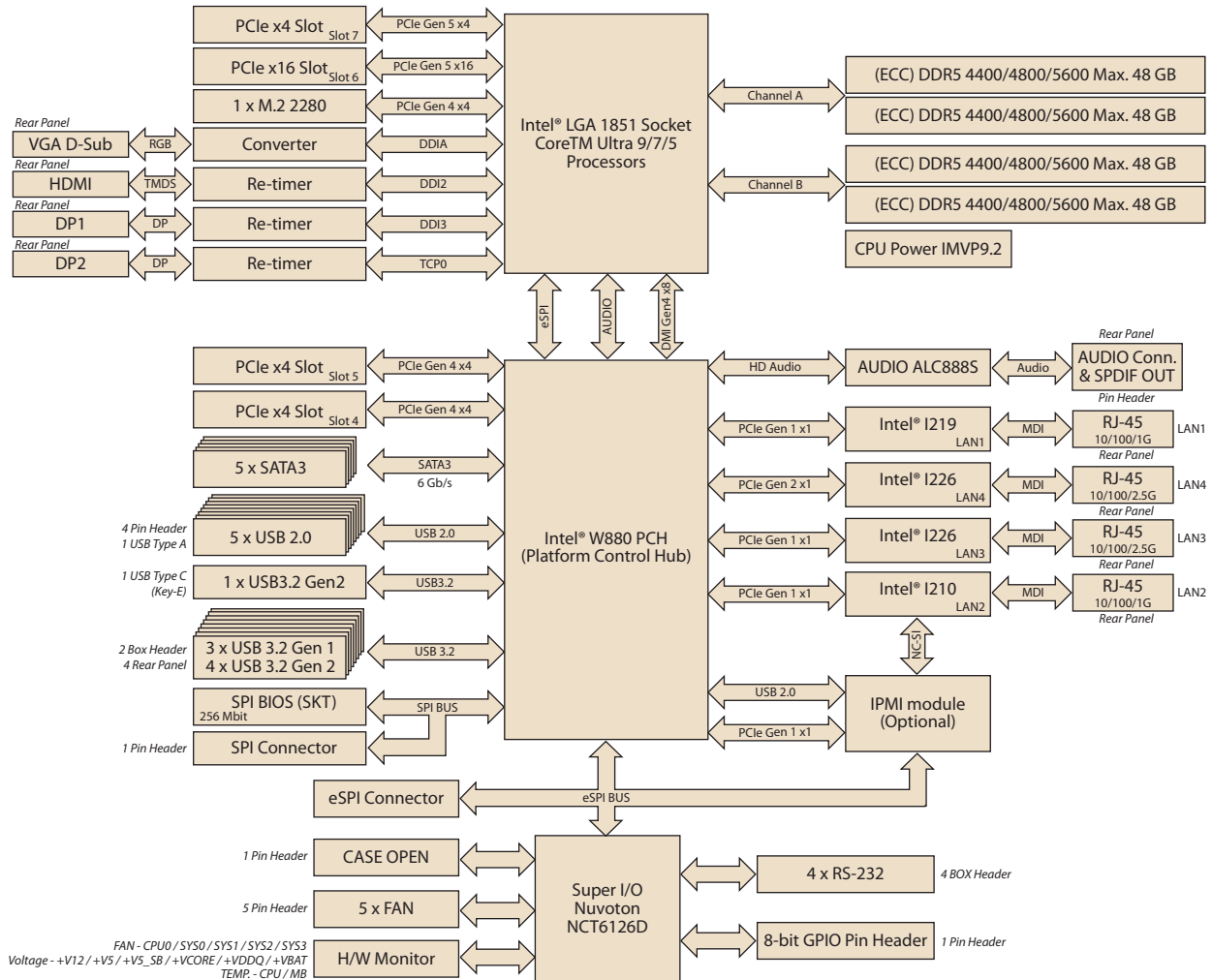
CE FCC

Specifications

Form Factor	Micro 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 (Dual Channel)			
	Capacity	Maximum 192 GB			
	Memory type	DDR5 ECC/Non-ECC 5600*/4800/4400 MT/s UDIMM (288-pin)			
	Memory size	8 GB, 16 GB, 32 GB , 48 GB			
Expansion Slots	Total PCIe slots	4			
	Slot location 1	-			
	Slot location 2	-			
	Slot location 3	-			
	Slot location 4	PCIe x4 slot (Gen 4 x4 link)			
	Slot location 5	PCIe x4 slot (Gen 4 x4 link)			
	Slot location 6	PCIe x16 slot (Gen 5 x16 link)			
Graphics	Slot location 7	PCIe x4 slot (Gen 5 x4 link)			
	Controller	Intel® HD Graphics			
Storage	VRAM	1 GB maximum shared memory with 2 GB and above system memory installed			
	SATA controller	Intel® W880: 5 SATA3 6Gb/s ports with Rapid Storage Technology support (for Windows only) (Supports software RAID 0, 1, 10 & 5)			
	SAS controller	-			
Networking	GbE LAN	1 x Intel® I219LM + 2 x Intel® I226 + 1 x Intel® I210AT			
Onboard I/O Connector	LPT connector	-			
	PSU connector	24-pin SSI power connector + 8-pin SSI 12 V power connector			
	USB connector	9 (2 x USB 3.2 Gen1, 4 x USB 2.0, 1 x USB 2.0 Type-A, 1 x USB3.2 Type-A, 1 x USB 3.2 Gen2 Type-C)			
	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	4 (2 x RS-232 dual-port (2 ports))			
	Audio Header	1 x (ALC 888S)			
	PS/2 KB/Mouse	1 x (Optional PS/2 KB/Mouse cable and bracket required)			
Rear I/O Connector	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	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	4			
	PS/2 KB/mouse	-			
Power Requirement	Audio	2 x (Mic-in , Line-out)			
	Power On	3.3 V	5 V	12 V	12V_8P 5 V _{SB}
	(Ultra5 245K 4.2GHz DDR5 5600 16 GB x 4)	1.56 A	1.91 A	0.36 A	0.33 A 0.63 A
Environment	Operating	0 ~ 60 °C, depends on CPU speed and cooler solution			Non-operating -40 ~ 85 °C
	Humidity	40 °C @ 95% RH Non-condensing			60 °C @ 95% RH Non-condensing
Watchdog Timer	Output	System reset			
	Interval	Programmable 1 ~ 255 sec/min			
Physical Characteristics	Dimensions	244 x 244 mm (9.6 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-589G2-00A1	W880	DDR5 ECC/Non-ECC UDIMM	VGA + HDMI + DPx2	2	5	Optional
ASMB-589G4-00A1	W880	DDR5 ECC/Non-ECC UDIMM	VGA + HDMI + DPx2	4	5	Optional
ASMB-589G4-00A1U	W880	DDR5 ECC/Non-ECC UDIMM	VGA + HDMI + DPx2	4	5	Optional

Packing List

Part Number	Description	Quantity
2042058800	Startup manual	x 1
1700003194	SATA data cables	x 2
1700022749-11	SATA power cables	x 2
1700001788	COM1 cable	x 1
1960118666T001	I/O shield (for 2U chassis or higher)	x 1
1930005673-11	Screw for M.2 device	x 1

Optional Accessories

Part Number	Description
1970005958N001	LGA 1700 CPU Cooler for 3U/4U Tower Cooler (CPU 230W at ambient 30°C)
1970005531T001	LGA 1700 CPU heatsink for 1U chassis
1970005436T001	LGA 1700 CPU cooler for 2U/4U chassis (CPU 125W)
1970005349T000	LGA 1700 CPU cooler for 2U/4U chassis (CPU under 65W)
1960088060T011	1U I/O shield for ASMB-589
1700031926-11	JFP1 cable for 1U chassis
1990040376T000	1U air duct for ASMB-588 + HPC-7120S
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
1700036239-01	M cable USB-E 20P(M)/USB-C 24P(F) 65cm W/BKT 3.2
PCA-TPMSPI-00A1	TPM 2.0 Module by SPI

Note: Users need to purchase the ASMB-589 proprietary CPU cooler from Advantech. Other brands of CPU coolers may NOT be compatible with ASMB-588.

Last updated: 4-Aug-2025

I/O View



ASMB-589G4-00A1