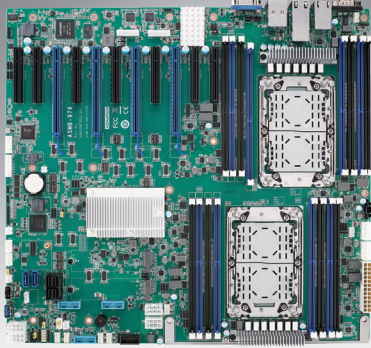


ASMB-976

LGA 4189 Intel® Xeon® Scalable Server Board with 16x DDR4, 4 x PCIe x16, 10 x SATA3, 8 x USB 3.2 (Gen 1), Dual 10GbE, and IPMI



Features

- LGA4189 proprietary server board with 3rd Gen Intel® Xeon® scalable processor
- DDR4 3200 MHz RDIMM up to 2TB supports Intel® Optane™ Persistent Memory
- 4 x PCIe x16 and 7 x PCIe x8
- Intel® X550 dual 10GbE ports
- Ten SATA3 and two M.2 connectors (SATA/PCIe compatible)
- 0 ~ 40 °C (32 ~ 104 °F) ambient operating temperature range

CE FCC

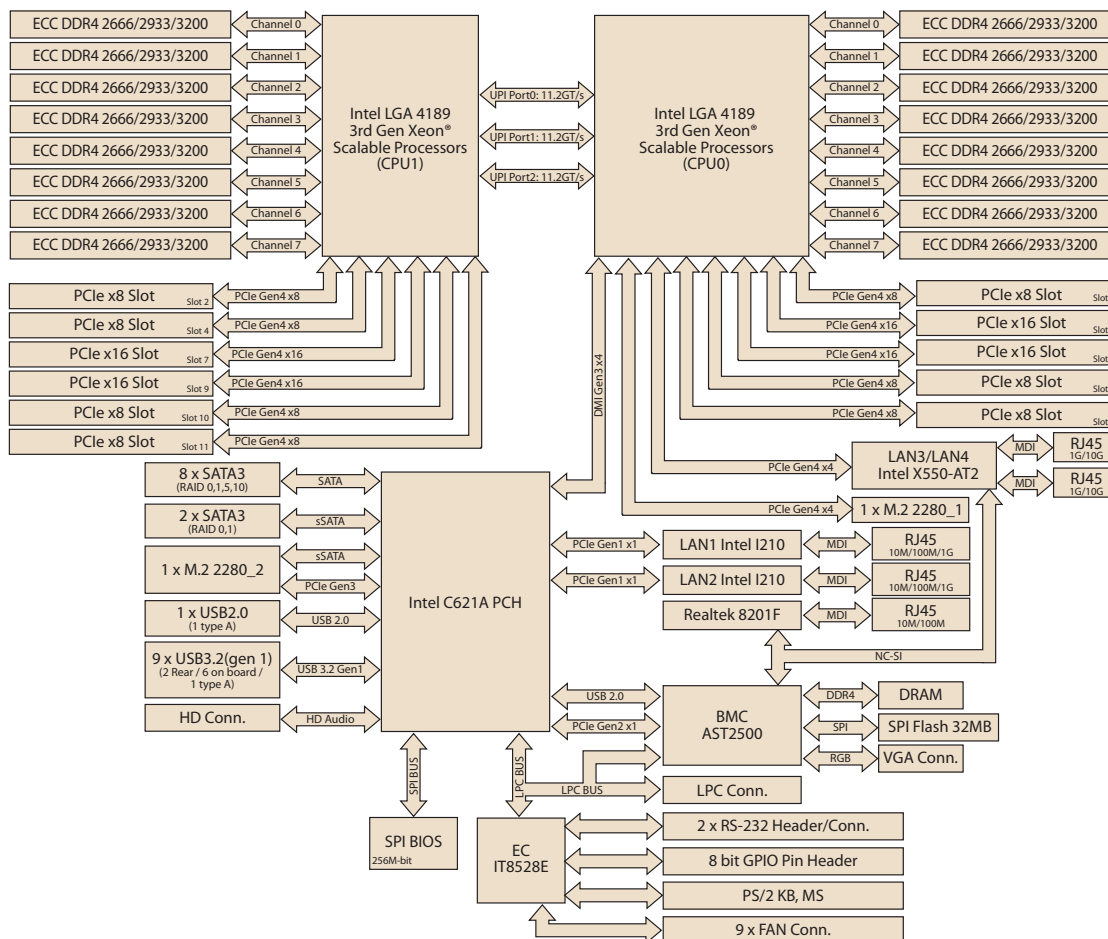
Specifications

Form Factor		Proprietary 380 x 346 mm (14.96" x 13.64")
Processor System	Socket	Dual Intel® LGA4189
	CPU type	3rd Gen Intel® Xeon® Scalable processors (Support Socket P4) (CPU cooler should be purchased separately and TDP up to 270W*)
Core Logic	Chipset	Intel® C621A chipset
Memory	Total slots	16 (1 DIMM per channel)
	Capacity	Maximum 2TB ECC LRDIMM Maximum 1TB ECC RDIMM
	Memory type	DDR4 ECC-REG 2666/2933/3200 MHz RDIMM/LRDIMM, support Intel® Optane™ Persistent Memory**
	Memory size	8 GB, 16 GB, 32 GB, 64 GB, 128 GB (LRDIMM)
Expansion Slots	Total PCIe slots	11
	Slot location 1	PCIe x8 slot (x8 link), signal from CPU0
	Slot location 2	PCIe x8 slot (x8 link), signal from CPU1
	Slot location 3	PCIe x16 slot (x16 link), signal from CPU0
	Slot location 4	PCIe x8 slot (x8 link), signal from CPU1
	Slot location 5	PCIe x16 slot (x16 link), signal from CPU0
	Slot location 6	PCIe x8 slot (x8 link), signal from CPU0
	Slot location 7	PCIe x16 slot (x16 link), signal from CPU1
	Slot location 8	PCIe x8 slot (x8 link), signal from CPU0
	Slot location 9	PCIe x16 slot (x16 link), signal from CPU1
	Slot location 10	PCIe x8 slot (x8 link), signal from CPU1
Slot location 11	PCIe x8 slot (x8 link), signal from CPU1	
Graphics	VGA	Aspeed AST 2500
Storage	SATA controller	Intel C621A: 8 x SATA3.0 (6 Gb/s) via Mini SAS HD (SFF-8643), support software RAID 0,1,5,10 2 x SATA3.0 (6 Gb/s) support software RAID 0,1
	GbE/10GbE LAN	2 x Intel® I210AT / Intel® X550-AT2 (dual 10GbE ports)
Networking	PSU connector	24-pin SSI power connector + 6 x 8-pin SSI 12 V power connector
	USB connector	6 x USB 3.2 Gen 1 ports (three onboard headers) + 1 x Type-A USB 3.2 Gen 1 port + 1 x Type-A USB 2.0 port
	Fan header	9 x 4-pin (2 for CPU + 7 for system)
	M.2	1 x M.2 2280 B+M key (SATA and PCIe) + 1 x M.2 2280 B+M key (PCIe)
	SMBus	1
	Chassis intrusion	1
	Front LAN LED	1
	Audio Header	1
Onboard I/O	PS/2 Keyboard/Mouse header	1
	Serial port header	1
	External serial port	1
	External USB port	2 (USB 3.2 Gen. 1)
Rear I/O Connector	VGA port	1
	RJ-45	5 (1 port dedicated for IPMI function)
Management Solution	Software	Advantech remote monitoring utility
	Out of band remote management	Yes
Monitoring	CPU temperature	Yes
	System monitoring	Yes
Watchdog Timer	Output	System reset
	Interval	Programmable 1 ~ 255 sec/min
Power Requirements	Power On	3.3V 5V 12V 5Vsb -12V 8P_CPU0 8P_CPU1
	(220W CPU@2.6GHz DDR4 2666 32G*16)	1.9A 2.9A 4.0A 0.3A 0A 22.8A 22.8A
Environment	Operating	Non-operating
	Temperature	0 ~ 40 °C (32 ~ 104 °F), depends on CPU speed and cooler solution
	Humidity	10% ~ 95%
Physical Characteristics	Dimensions (L x H)	380 x 346 mm (14.96" x 13.64")

*CPU power design supports up to 270W TDP. Please consider additional air thermal solution while using CPU > 205W TDP.

**Memory frequency depends on the memory speed supported by the CPU

Block Diagram



Ordering Information

Part Number	Chipset	Memory	GbE/10GbE LAN	IPMI	Graphics
ASMB-976-00A1	C621A	16 x DDR4 RDIMM/LRDIMM	2/-	-	AST 2510
ASMB-976T2-00A1	C621A	16 x DDR4 RDIMM/LRDIMM	2/2	Yes	AST 2500
ASMB-976T2-00A1U	C621A	16 x DDR4 RDIMM/LRDIMM	2/2	Yes	AST 2500

Packing List

Part Number	Description	Quantity
2041097600	Startup manual	x 1
1700003194	SATA data cables	x 2
1700022749-11	SATA power cables	x 2
1700019748	CPU power cable	x 2
1930008089	Screw for M.2 device	x 2
1960093947T002	I/O shield	x 1
1651003476-01	LGA4189 CPU carrier	x 2

Optional Accessories

Part Number	Description
PCA-AUDIO-HDB1E	HD Audio-card
PCA-TPM-00B1E	TPM 2.0 Module by LPC
1970004902T010	LGA-4189 narrow CPU cooler for 2U/4U chassis (205W)
1700028024-01	Dual port USB 3.2 (Gen1) cable (45 cm / 17.7 in) with bracket
1701090401	Single port RS-232 COM cable (40 cm / 15.7 in) with bracket
1700019268-11	Cable for onboard KBMS1 connector (35 cm / 13.7 in)
1960063434N000	Cable bracket for 1700019268-11

Note:
 1. PCA-AUDIO-HDB1E is not compatible with Advantech 3U chassis.
 2. Select SATA cable (SFF-8643) from HPC chassis datasheet or contact sales representative.

I/O View



ASMB-976-00A1



ASMB-976T2-00A1