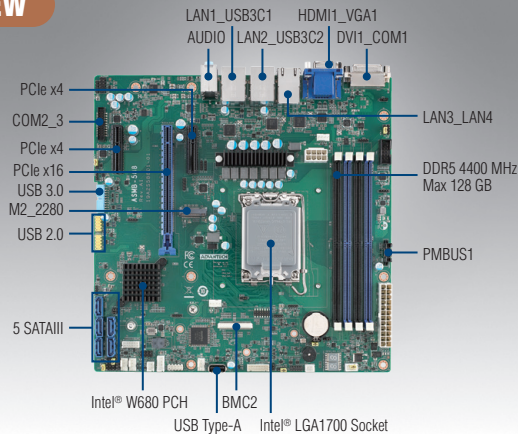


# ASMB-588

**LGA 1700 Intel® 12th Gen. Core™  
MicroATX Server Board with 4 x DDR5,  
3 x PCIe (1 x Gen 5, 2 x Gen 4), 6 x USB  
3.2, 5 x SATA3, Quad/Dual LANs, and IPMI**

**NEW**



CE FCC

## Features

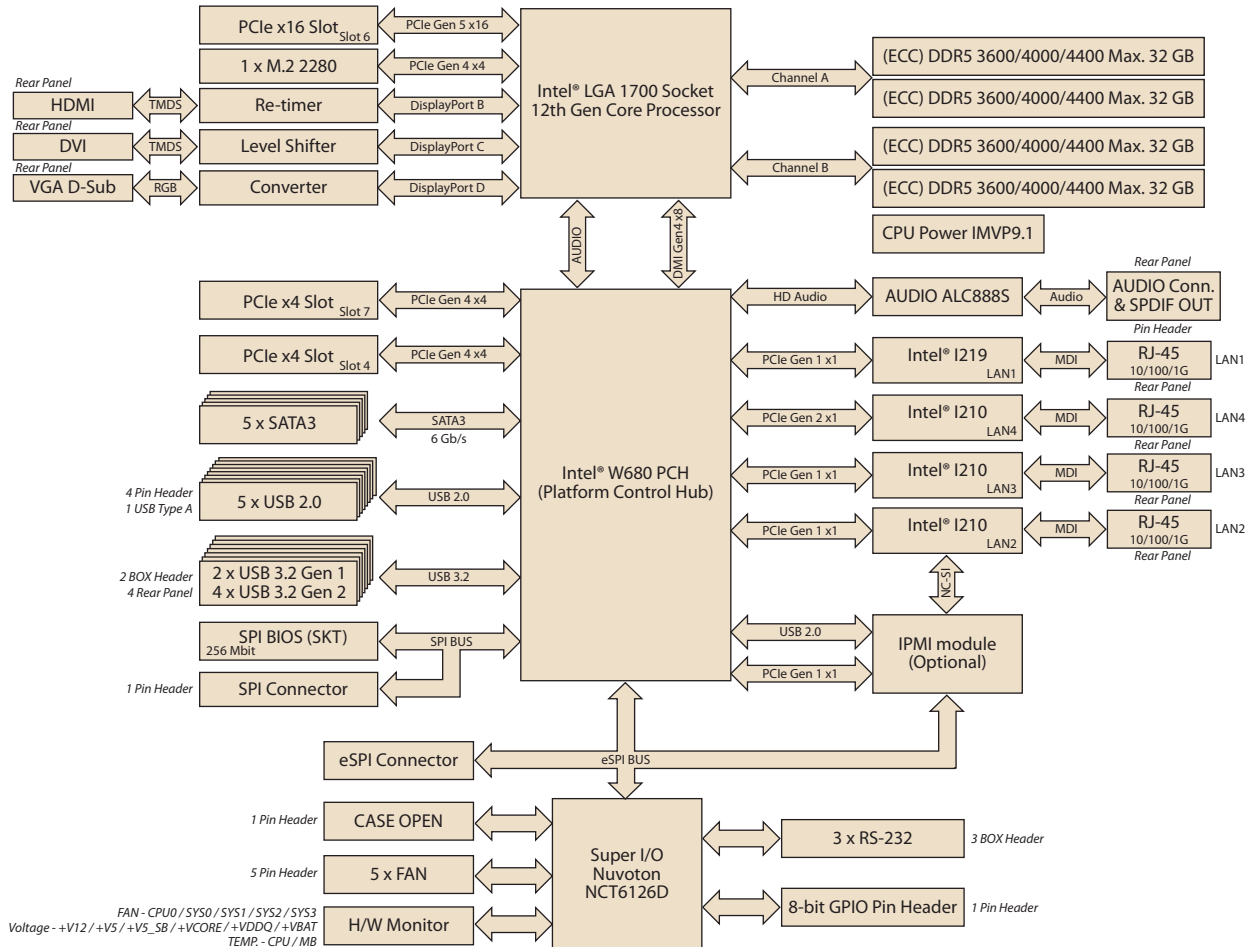
- LGA 1700 Intel® 12th Gen. Core™ i9/i7/i5/i3 processors with W680 chipset
- DDR5 ECC/Non-ECC 4400/4000/3600 MHz UDIMM up to 128 GB
- One PCIe x16 (Gen 5) and two PCIe x4 (Gen 4) slots
- Triple displays - DVI-D, VGA, and HDMI 2.0 ports
- Five SATA 3 ports and six USB 3.2 ports
- One M.2 2280 (PCIe x4)
- Rackmount optimized placement with positive air flow design
- 0 ~ 60 °C (32 ~ 140 °F) ambient operating temperature range

## Specifications

|                          |                                             |                                                                                           |        |        |                               |
|--------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------|--------|--------|-------------------------------|
| Form Factor              | Micro ATX form factor                       |                                                                                           |        |        |                               |
| Processor System         | Socket                                      | Intel® LGA 1700                                                                           |        |        |                               |
|                          | CPU type                                    | 12th Gen Intel® Core™ i9/i7/i5/i3 series processors (TDP up to 125W)                      |        |        |                               |
| Core Logic               | Chipset                                     | Intel® W680 chipset                                                                       |        |        |                               |
| Memory                   | Total slots                                 | 4 (Dual Channel)                                                                          |        |        |                               |
|                          | Capacity                                    | Maximum 128 GB                                                                            |        |        |                               |
|                          | Memory type                                 | DDR5 ECC/Non-ECC 4400/4000/3600 MHz UDIMM (288-pin)*                                      |        |        |                               |
|                          | Memory size                                 | 8 GB, 16 GB, 32 GB                                                                        |        |        |                               |
| Expansion Slots          | Total PCIe slots                            | 3                                                                                         |        |        |                               |
|                          | Slot location 1                             | -                                                                                         |        |        |                               |
|                          | Slot location 2                             | -                                                                                         |        |        |                               |
|                          | Slot location 3                             | -                                                                                         |        |        |                               |
|                          | Slot location 4                             | PCIe x4 slot (Gen 4 x4 link)                                                              |        |        |                               |
|                          | Slot location 5                             | -                                                                                         |        |        |                               |
|                          | Slot location 6                             | PCIe x16 slot (Gen 5 x16 link)                                                            |        |        |                               |
| Graphics                 | Slot location 7                             | PCIe x4 slot (Gen 4 x4 link)                                                              |        |        |                               |
|                          | Controller                                  | Intel® HD Graphics                                                                        |        |        |                               |
| Storage                  | VRAM                                        | 1 GB maximum shared memory with 2 GB and above system memory installed                    |        |        |                               |
|                          | SATA controller                             | Intel® W680: 5 SATA3 6Gb/s ports with Rapid Storage Technology support (for Windows only) |        |        |                               |
|                          | SAS controller                              | -                                                                                         |        |        |                               |
| Networking               | GbE LAN                                     | 1 x Intel® I219LM + 3 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                               | 7, 1 x USB 3.2 Gen 1 (2 ports), 2 x USB 2.0 (4 ports), 1 x USB 2.0 Type-A                 |        |        |                               |
|                          | M.2 connector                               | 1 x M.2 2280 (PCIe)                                                                       |        |        |                               |
|                          | Fan header                                  | 5 x (4-pin)                                                                               |        |        |                               |
|                          | SMBus                                       | 1                                                                                         |        |        |                               |
|                          | Chassis intruder                            | 1                                                                                         |        |        |                               |
|                          | Front LAN LED                               | 2                                                                                         |        |        |                               |
|                          | Serial port header                          | 2, 1 x RS-232 dual-port (2 ports)                                                         |        |        |                               |
|                          | Audio Header                                | 1 x (ALC 888S)                                                                            |        |        |                               |
|                          | PS/2 KB/Mouse                               | -                                                                                         |        |        |                               |
| 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)                                                |        |        |                               |
|                          | DVI port                                    | 1 x (Resolution up to 1920 x 1200 @ 60 Hz)                                                |        |        |                               |
|                          | HDMI                                        | 1 x (Resolution up to 4096 x 2160 @ 60 Hz)                                                |        |        |                               |
|                          | 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 <sub>SB</sub>      |
|                          | (Core i9-12900K 3.2GHz DDR5 4800 16 GB x 4) | 0.76 A                                                                                    | 0.92 A | 0.03 A | 4.82 A 0.15 A                 |
| Environment              | Operating                                   |                                                                                           |        |        | Non-operating                 |
|                          | Temperature                                 | 0 ~ 60 °C, depends on CPU speed and cooler solution                                       |        |        | -40 ~ 85 °C                   |
| Watchdog Timer           | Humidity                                    | 40 °C @ 95% RH Non-condensing                                                             |        |        | 60 °C @ 95% RH Non-condensing |
|                          | Output                                      | System reset                                                                              |        |        |                               |
| Physical Characteristics | Interval                                    | Programmable 1 ~ 255 sec/min                                                              |        |        |                               |
|                          | Dimensions                                  | Programmable 1 ~ 255 sec/min<br>244 x 244 mm (9.6 x 9.6 in)                               |        |        |                               |

\* ECC will not be supported when paired with Core i3 processors.

## Block Diagram



## Ordering Information

| Part Number     | Chipset | Memory                 | Display            | LAN | SATAIII | IPMI     |
|-----------------|---------|------------------------|--------------------|-----|---------|----------|
| ASMB-588G2-00A1 | W680    | DDR5 ECC/Non-ECC UDIMM | VGA + DVI-D + HDMI | 2   | 5       | Optional |
| ASMB-588G4-00A1 | W680    | DDR5 ECC/Non-ECC UDIMM | VGA + DVI-D + HDMI | 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      |
| 1960088021T011 | I/O shield           | x 1      |
| 1930005673-11  | Screw for M.2 device | x 1      |

## Optional Accessories

| Part Number     | Description                                            |
|-----------------|--------------------------------------------------------|
| 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-588/788                         |
| 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 |
| 1700026254-01   | Dual-port RS-232 cable (45 cm / 17.7 in) with bracket  |
| IPMI-2000-00A1  | IPMI Module                                            |
| PCA-TPMSPI-00A1 | TPM 2.0 Module by SPI                                  |
| 1700031926-11   | JFP1 cable for 1U chassis                              |

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

## I/O View



ASMB-588G4-00A1



ASMB-588G2-00A1