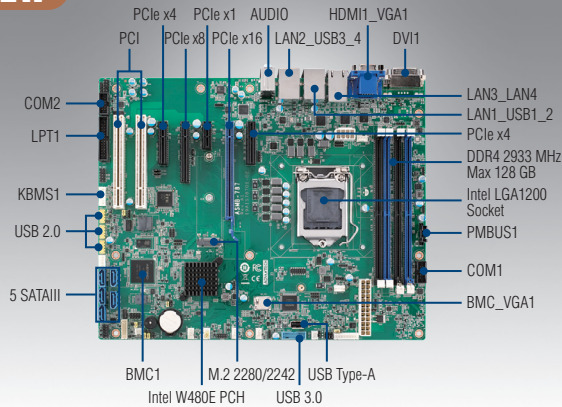


# ASMB-787

**LGA 1200 Intel® Xeon® W & 10th Gen. Core™ ATX Server Board with 4 x DDR4, 5 x PCIe, 2 x PCI, 6 x USB 3.2, 5 x SATA 3, Quad/Dual LANs, and IPMI**

**NEW**



## Features

- LGA 1200 Intel® Xeon® W & 10th Gen. Core™ i9/i7/i5/i3 processors with W480E chipset
- DDR4 2933/2666/2400 MHz ECC/Non-ECC UDIMM up to 128 GB
- One PCIe x16 link (or two x8 link), two PCIe x4, and one PCIe x1 slots
- Triple displays - DVI-D, VGA, and HDMI 2.0 ports
- Five SATA 3 ports and six USB 3.2 ports
- One M.2 2280/2242 (SATA / PCIe compatible)
- Rackmount optimized placement with positive air flow design
- 0 ~ 60 °C (32 ~ 140 °F) ambient operating temperature range

Note: Supported OS including Windows 10 (64-bit) and Server 2019 (64-bit) have been validated.

CE FCC

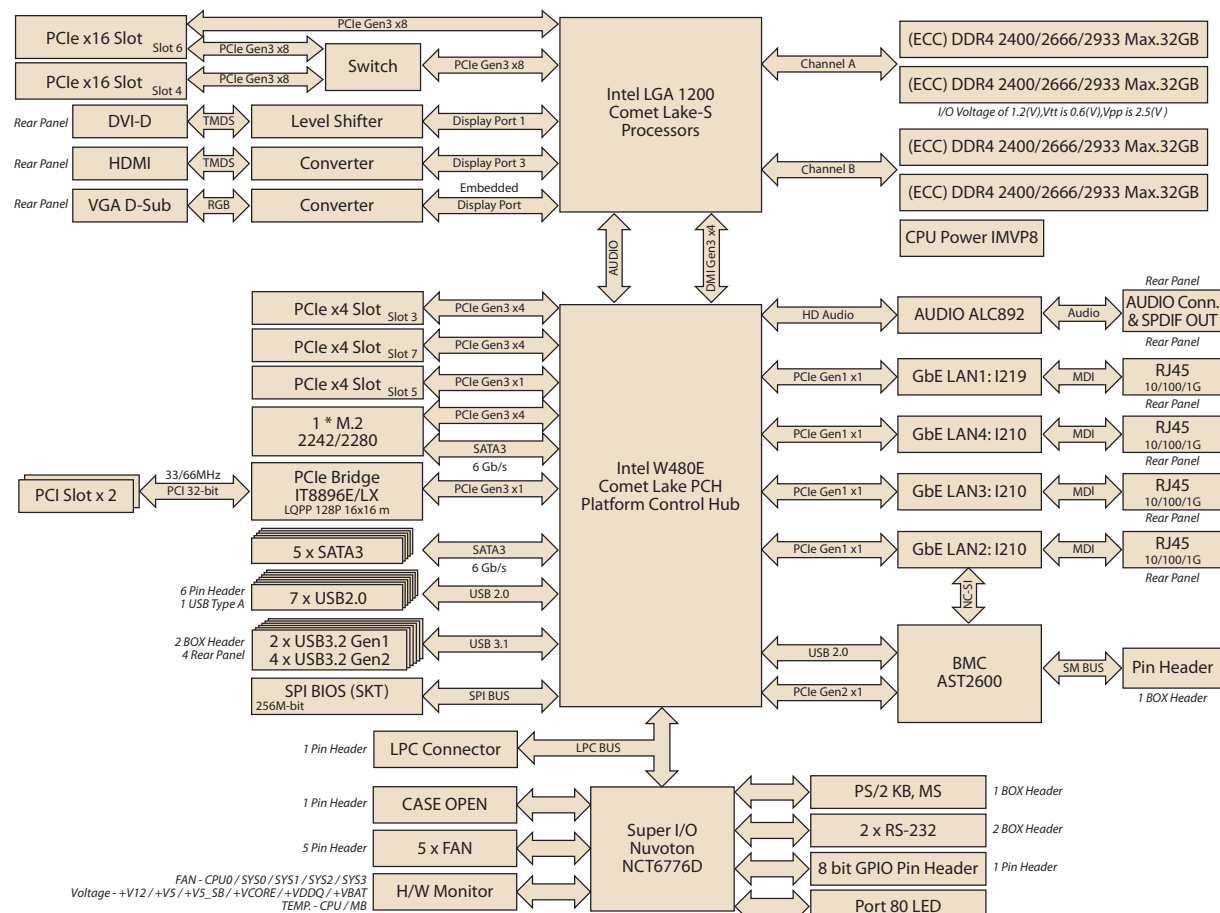
## Specifications

|                          |                                       |                                                                                                                                          |
|--------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Form Factor              | ATX form factor                       |                                                                                                                                          |
| Processor System         | Socket                                | Intel® LGA 1200                                                                                                                          |
|                          | CPU type                              | Intel® Xeon® W-1270x/W-1290x and 10th Generation Core™ i3/i5/i7/i9 series (TDP up to 125W)                                               |
| Core Logic               | Chipset                               | Intel W480E chipset                                                                                                                      |
| Memory                   | Total slots                           | 4 x (Dual Channel)                                                                                                                       |
|                          | Max. capacity                         | 128 GB                                                                                                                                   |
|                          | Memory type                           | DDR4 ECC/Non-ECC 2933/2666/2400 MHz UDIMM (288-pin)*                                                                                     |
|                          | Memory size                           | 4 GB, 8 GB, 16 GB, 32GB                                                                                                                  |
| Expansion Slots          | Total PCI/PCIe slots                  | 7                                                                                                                                        |
|                          | Slot location 1                       | PCI slot                                                                                                                                 |
|                          | Slot location 2                       | PCI slot                                                                                                                                 |
|                          | Slot location 3                       | PCIe x4 slot (Gen3 x4 link)                                                                                                              |
|                          | Slot location 4                       | PCIe x8 slot (Gen3 x8 link)                                                                                                              |
|                          | Slot location 5                       | PCIe x1                                                                                                                                  |
|                          | Slot location 6                       | PCIe x16 slot (Gen3 x8 or x16 link)                                                                                                      |
| Graphics                 | Slot location 7                       | PCIe x4 slot (Gen3 x4 link)                                                                                                              |
|                          | Controller                            | Intel® HD Graphics**                                                                                                                     |
|                          | VRAM                                  | 1 GB maximum shared memory with 2 GB and above system memory installed                                                                   |
| Storage                  | SATA controller                       | Intel® W480E: 5 SATA 3 6 Gb/s ports with Intel Rapid Storage Technology support (for Windows only) (Supports software RAID 0, 1, 10 & 5) |
|                          | SAS controller                        | -                                                                                                                                        |
| Networking               | Interface                             | 10/100/1000 Mbps                                                                                                                         |
|                          | Controller                            | GbE LAN1: Intel® I219; GbE LAN 2-4: Intel I210-AT                                                                                        |
|                          | Connector                             | RJ-45 x 2 for G2 version; RJ-45 x 4 for G4 version                                                                                       |
| Onboard I/O Connector    | Printer Port connector                | 1                                                                                                                                        |
|                          | PSU connector                         | 24-pin SSI power connector + 8-pin SSI 12V power connector                                                                               |
|                          | USB connector                         | 1 x USB 3.2 Gen 1 (2 ports), 3 x USB 2.0 (6 ports), 1 x USB Type-A                                                                       |
|                          | M.2 connector                         | 1 x M.2 2280/2242 (PCIe/SATA)                                                                                                            |
|                          | Fan header                            | 5 x (4-pin)                                                                                                                              |
|                          | SMBus                                 | 1                                                                                                                                        |
|                          | Chassis intrusion                     | 1                                                                                                                                        |
|                          | Front LAN LED                         | 2                                                                                                                                        |
|                          | Serial port header                    | 2 x (RS-232)                                                                                                                             |
|                          | Audio connector                       | 1 x (ALC 892)                                                                                                                            |
|                          | PS/2 KB/Mouse                         | 1 x (Optional PS/2 KB/Mouse cable and bracket required)                                                                                  |
|                          | External serial port                  | - (via COM cable in the package)                                                                                                         |
| Rear I/O Connector       | 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 port                             | 1 x (Resolution up to 4096 x 2160 @ 60 Hz)                                                                                               |
|                          | RJ-45                                 | 2 x for G2 version; 4 for G4 version                                                                                                     |
|                          | Audio connector                       | 2 x (Mic-in, Line-out)                                                                                                                   |
|                          | PS/2 KB/Mouse                         | -                                                                                                                                        |
| Watchdog Timer           | Output                                | System reset                                                                                                                             |
|                          | Interval                              | Programmable 1 ~ 255 sec                                                                                                                 |
| Power Requirement        | Power On                              | 3.3 V      5 V      12 V      12V_8P      5 V <sub>SB</sub> -12 V                                                                        |
|                          | (Xeon W-1290E 3.5GHz DDR4 2666 32G*4) | 1.69A      1.68A      0.31A      9.25A      0.1A      0.01A                                                                              |
| Environment              | Temperature                           | Operating<br>0 ~ 60 °C, depends on CPU speed and cooler solution                                                                         |
|                          | Humidity                              | Non-operating<br>-40 ~ 85 °C<br>40 °C @ 95% RH Non-condensing<br>60 °C @ 95% RH Non-condensing                                           |
| Physical Characteristics | Dimensions                            | 304.8 x 244 mm (12 x 9.6 in)                                                                                                             |

\* ECC will not be supported when paired with Core i5/i7/i9 processors.

\*\* Some Xeon processors have no graphic support. Please check Intel specification for processor graphics availability.

## Block Diagram



## Ordering Information

| Part Number     | Chipset | Memory                  | Display            | LAN | SATAIII | IPMI |
|-----------------|---------|-------------------------|--------------------|-----|---------|------|
| ASMB-787G2-00A1 | W480E   | DDR4 Non-ECC/ECC UDIMM  | VGA + DVI-D + HDMI | 2   | 5       | -    |
| ASMB-787G4-00A1 | W480F   | DDR4 Non-ECC/ECC tUDIMM | VGA + DVI-D + HDMI | 4   | 5       | Y    |

## Packing List

| Part Number    | Description          | Quantity |
|----------------|----------------------|----------|
| 2041B78700     | Startup manual       | x 1      |
| 1700003194     | SATA data cables     | x 2      |
| 1700022749-11  | SATA power cables    | x 2      |
| 1700001788     | COM1 cable           | x 1      |
| 1960088021T001 | I/O shield           | x 1      |
| 1700031926-11  | JFP1 cable           | x 1      |
| 1930005673-11  | Screw for M.2 device | x 1      |

## 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                                                 |
|------------------|-------------------------------------------------------------|
| 1960067860N001   | LGA 1200 CPU cooler for 2U/4U chassis (CPU 125W)            |
| 1960052651N021   | LGA 1200 CPU cooler for 2U/4U chassis (CPU under 95W)       |
| 1700008809       | Printer port cable kit (25 cm / 9.84 in)                    |
| 1700020294-01    | Printer port cable kit (42 cm / 16.5 in)                    |
| 1701090401       | Single port RS-232 COM cable (40 cm / 15.7 in) with bracket |
| 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       |
| 1700019268-11    | Cable for onboard KBMS1 connector (35 cm/ 13.7 in)          |
| 1960063434N000   | Cable bracket for 1700019268-11 (4U)                        |
| PCA-COM232-00A1E | 4 ports RS-232 module to LPC connector                      |
| PCA-COM485-00A1E | 4 ports RS-485 module to LPC connector                      |
| PCA-TPM-00B1E    | TPM 2.0 Module by LPC                                       |

Note: Users need to purchase ASMB-787's proprietary CPU cooler from Advantech. Other brands' CPU coolers may NOT be compatible with ASMB-787.

## I/O View



ASMB-787G4-00A1



ASMB-787G2-00A1