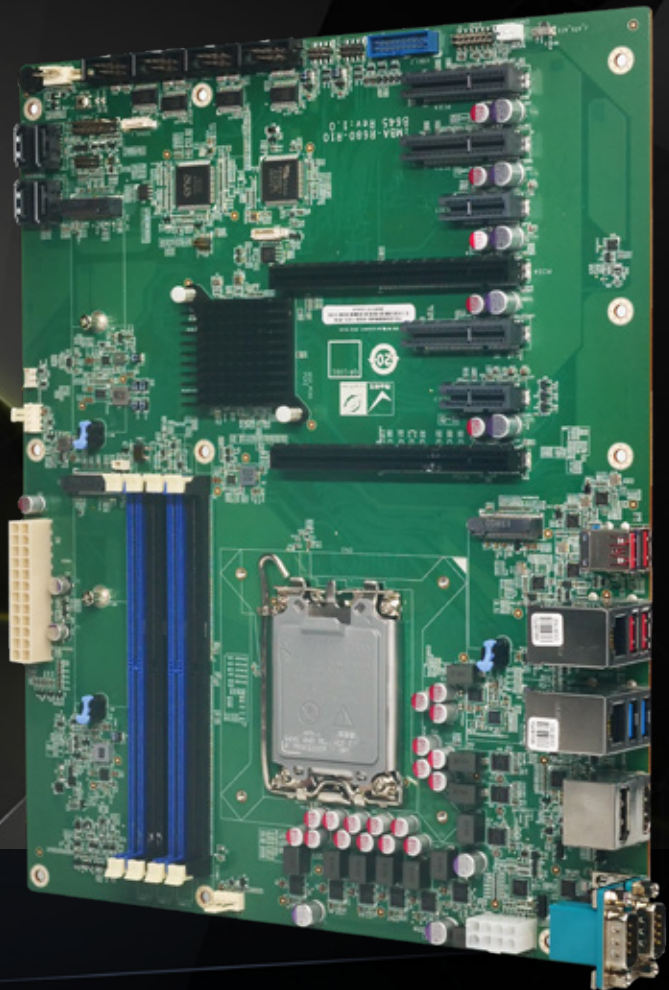


# IMBA-R680

**ATX motherboard supports LGA1700 Intel® 12th/13th/14th Generation Core™ i9/i7/i5/i3, Pentium® and Celeron® processor**

- LGA1700 Intel® 12th/13th/14th Generation Core i9/i7/i5/i3, Pentium and Celeron processor (125W)
- Dual-channel DDR5 up to 4400MHz
- Support DisplayPort 1.4a, HDMI & iDPM module
- Support 2 x M.2 M key for NVMe storage
- High Performance ATX motherboard with PCIe Gen4&Gen5 expansion Slot

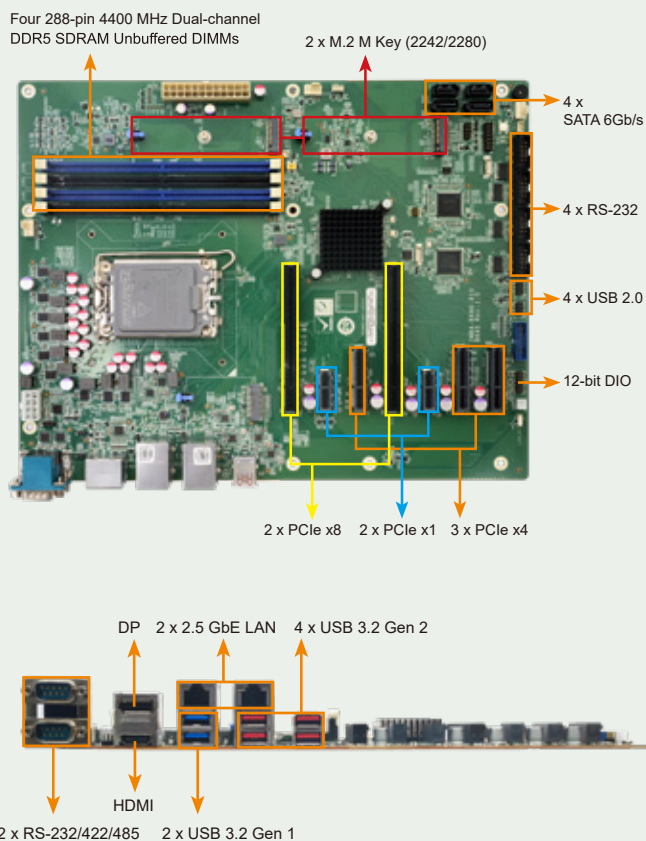
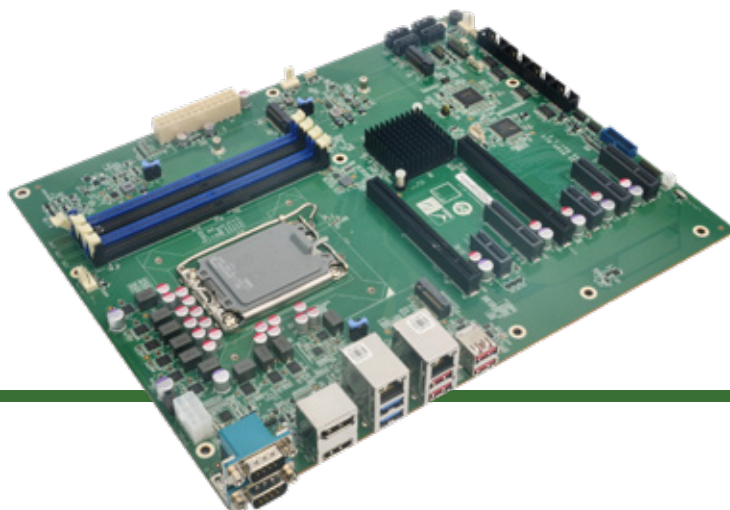
**High Performance Capability  
with multi-tasking function**



[www.ieiworld.com](http://www.ieiworld.com)

# IMBA-R680

ATX motherboard supports LGA1700 Intel® 12th/13th/14th Generation Core™ i9/i7/i5/i3, Pentium® and Celeron® processor, DDR5, Triple independent displays, dual 2.5GbE LAN, M.2, USB 3.2, SATA 6Gb/s, and RoHS



## Support 12th/13th/14th Gen Intel® Core™ CPU

Support LGA1700 socket 12th/13th/14th generation Alder Lake-S Intel® Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor (up to 125W TDP CPU), up to 24cores/32threads for outstanding Multi Threaded performance



## Support DDR5 4400MHz

iEi design the IMBA-R680 support 4 x 288-pin Dual-Channel DDR5 (up to 4400 MHz) SDRAM Unbuffered DIMMs, system up to 192GB (ECC&non-ECC support)



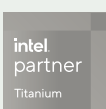
## Pure PCIe Expansion Slot

It supports 2 x PCIe Gen5 x16 slot with x8 Signal ,3 x PCIe Gen4 x4 slot open-end and 2 x PCIe Gen3 x1 slot, for more PCI express card to install

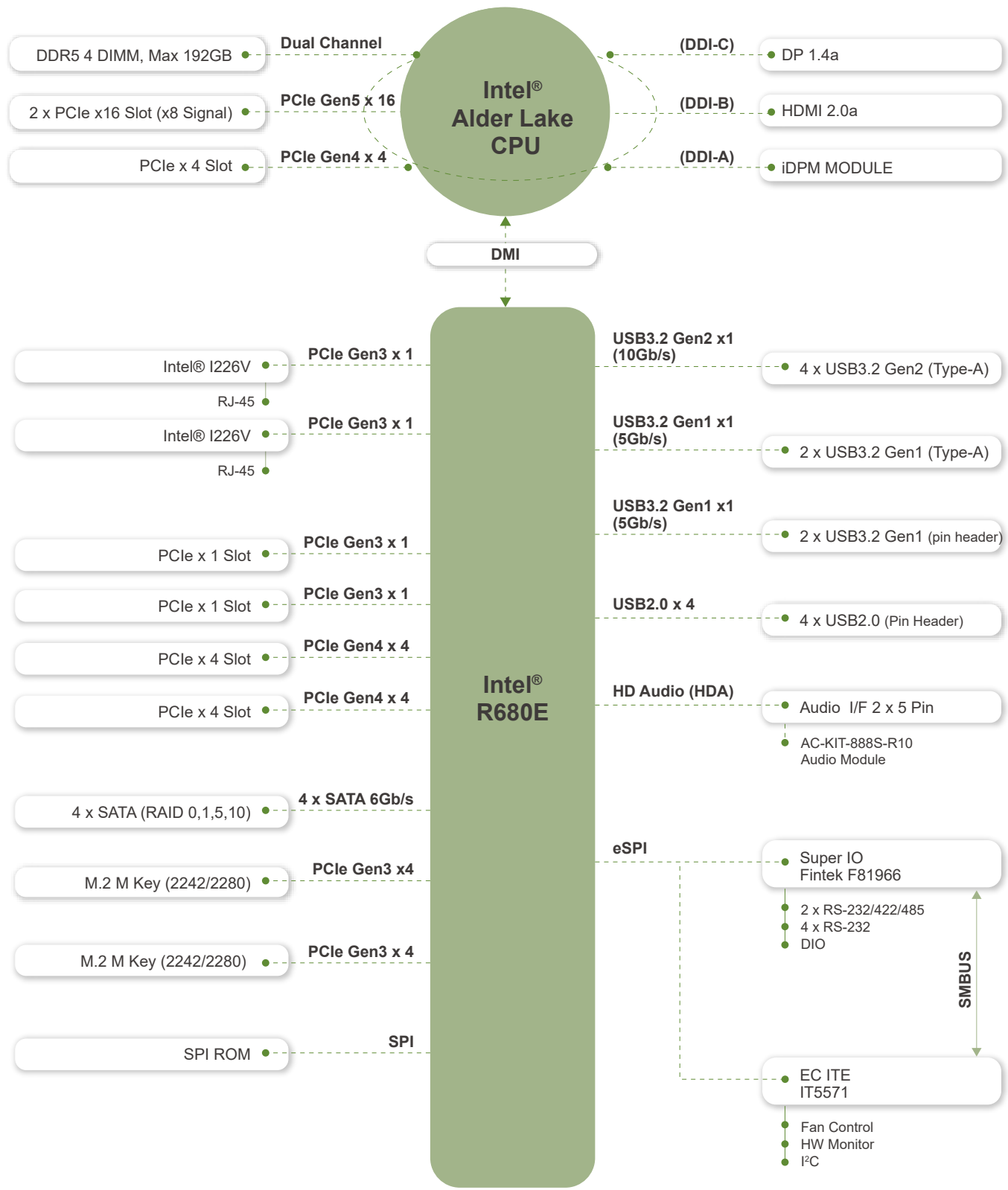


## Support Four SATA for Storage

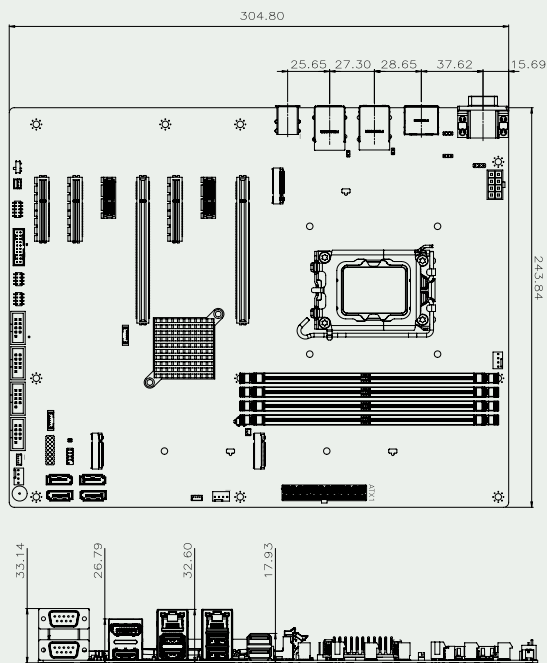
It supports 4 x SATA 6Gb/s, and RAID 0/1/5/10 supported. Otherwise, there are 2 x M.2 M key with PCIe signal support NVMe storage



# IMBA-R680 Block Diagram



## Dimensions



## Specifications

| Model                  | IMBA-R680                                                                                                                                                           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                    | LGA1700 socket supports Intel® 12th/13th/14th Generation Alder Lake-S/Raptor Lake-S Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor (up to 125W TDP CPU)              |
| Chipset                | Intel® R680E                                                                                                                                                        |
| BIOS                   | AMI UEFI BIOS                                                                                                                                                       |
| Memory                 | Four 288-pin Dual-Channel DDR5 (up to 4400 MHz) SDRAM Unbuffered DIMMs supported up to 192GB (ECC&non-ECC support)                                                  |
| Graphics Engine        | New Intel® Xe Graphics architecture with SRIOV, Genlock                                                                                                             |
| Display Output         | Triple independent display<br>1 x DP (up to 4096 x 2304 @60Hz)<br>1 x HDMI (up to 3840*2160 @30Hz)<br>1 x iDPM support iEi eDP/ LVDS/ VGA module                    |
| Ethernet               | LAN1: Intel® I226LM 2.5GbE controller (CO-LAYI226V support vPro)<br>LAN2: Intel® I226V 2.5GbE controller                                                            |
| External I/O Interface | 4 x USB 3.2 Gen2 (Type-A) (10Gb/s)<br>2 x USB 3.2 Gen1 (Type-A) (5Gb/s)<br>2 x RS-232/422/485 (RS-485 support AFC)                                                  |
| Internal I/O Interface | 4 x SATA 6Gb/s (RAID 0/1/5/10 supported)<br>4 x USB 2.0 (2x4 pin, P=2.54)<br>2 x USB 3.2 Gen1 (2 X 10PIN P=2.00 pin wafer ) (5Gb/s)<br>4 x RS-232 (2x5 pin, P=2.54) |
| SMBus                  | 1 x SMBus (1x4 pin)                                                                                                                                                 |
| I <sup>2</sup> C       | 1 x I2C (1x4 pin)                                                                                                                                                   |
| Audio                  | 1 x iAUDIO supports IEI AC-KIT-888S Audio Kit (2x5 pin)                                                                                                             |
| Front Panel            | 1 x Front Panel (2x7 pin, Power LED, HDD LED, Speaker, Power Button, Reset Button)                                                                                  |
| LAN LED                | 2 x LAN LED (1x2 pin)                                                                                                                                               |
| Expansion              | **2 x PCIe Gen5 x16 slot with x8 Signal<br>**1 x PCIe Gen4 x4 open-end<br>2 x PCIe Gen4 x4 open-end<br>2 x PCIe Gen3 x1<br>2 x M.2 M key 2242/80(Pcie Gen3 x4)      |
| Digital I/O            | 1 x 12-bit digital I/O (2x7 pin)                                                                                                                                    |
| TPM                    | Intel® PTT (TPM 2.0)                                                                                                                                                |
| Fan Connector          | 1 x CPU fan connector (1x4 pin)<br>2 x System fan connector (1x4 pin)                                                                                               |
| Chassis Open           | 1 x Chassis intrusion (1x2 pin)                                                                                                                                     |
| Power Supply           | ATX/AT power supply<br>Support AT/ATX mode<br>ErP/EuP Compliant                                                                                                     |
| Watchdog Timer         | Software Programmable support 1~255 sec. System reset                                                                                                               |
| Power Consumption      | 3.3V@0.89A, 5V@10.05A, 12V@6.05A, 5VSB@0.64A (Intel® Core™ i7-12700E CPU with four 16 GB 4800 MHz DDR5 memory, EuP mode enabled)                                    |
| Operating Temperature  | 0°C~60°C                                                                                                                                                            |
| Storage Temperature    | -30°C ~ 70°C                                                                                                                                                        |
| Operating Humidity     | 5% ~95%, non-condensing                                                                                                                                             |
| Dimensions             | 244mm x 305mm                                                                                                                                                       |
| Weight                 | GW:1200g / NW:700g                                                                                                                                                  |
| Certification          | CE/FCC compliant                                                                                                                                                    |

\*\*Intel® recommends that Alder Lake-S CPU PCIe ports are only used for discrete graphics and storage devices

## Optional accessories



AC-KIT-888S-R10



CB-USB02A-RS



19800-010500-200-RS



32102-000100-200-RS



32205-000702-100-RS



19100-000323-00-RS



19100-000326-00-RS



19100-000319-00-RS



19100-000333-00-RS



19100-000327-00-RS



iDPM-eDP-R10



iDPM-VGA-R10



iDPM-LVDS-R10



iDPM-DP-R10



iDPM-VBO-R10

## Packing List

|                                          |                                            |
|------------------------------------------|--------------------------------------------|
| 1 x IMBA-R680 single board computer      | 1 x I/O shielding (PN: 45014-0096C0-00-HF) |
| 2 x SATA cable (PN: 32801-012500-100-RS) | 1 x QIG                                    |

## Ordering Information

|               |                                                                                                                                                                                                              |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IMBA-R680-R11 | ATX motherboard supports LGA1700 Intel® 12th/13th/14th Generation Core™ i9/i7/i5/i3, Pentium® and Celeron® processor, DDR5, Triple independent displays, dual 2.5GbE LAN, M.2, USB 3.2, SATA 6Gb/s, and RoHS |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Optional Accessories

|                     |                                                                  |
|---------------------|------------------------------------------------------------------|
| AC-KIT-888S-R10     | Realtek ALC888S 7.1 Channel HD Audio peripheral board,RoHS       |
| CB-USB02-RS         | Dual-port USB cable with bracket, 300mm, p=2.54                  |
| 19800-010500-200-RS | USB 3.0 cable 457mm with bracket                                 |
| 32102-000100-200-RS | SATA power cable, MOLEX 5264-4P to SATA15P                       |
| 32205-000702-200-RS | RS-232 cable, 230mm, P=2.54                                      |
| 19100-000323-00-RS  | LGA1700 cooler kit, 65W                                          |
| 19100-000326-00-RS  | LGA1700 cooler kit,125W                                          |
| 19100-000319-00-RS  | High-performanc 1 U LGA1700 cooler, 65W, 95*90*27.45mm           |
| 19100-000333-00-RS  | High-performance LGA1700 cooler, 80W, 72*48.5*73.5mm             |
| 19100-000327-00-RS  | High-performance LGA1700 cooler, 125W, 96.5*91.4*119.5mm         |
| iDPM-eDP-R10        | eDP to eDP DisplayPort converter board (for IEI iDPM connector)  |
| iDPM-LVDS-R10       | eDP to LVDS DisplayPort converter board (for IEI iDPM connector) |
| iDPM-VGA-R10        | eDP to VGA Conneter converter board (For IEI Display Module)     |
| iDPM-VBO-R10        | eDP to VBO DisplayPort converter board (for IEI iDPM connector)  |
| iDPM-DP-R10         | eDP to DP DisplayPort converter board (for IEI iDPM connector)   |