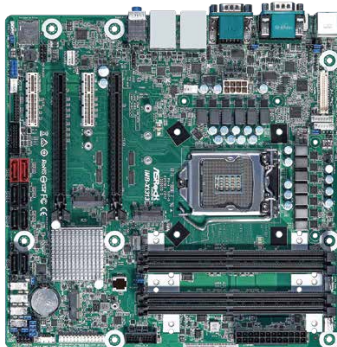




# IMB-1313

Micro-ATX Motherboard



## KEY FEATURES

- Intel® 10<sup>th</sup> Gen (Cometlake-S) Core™ Processors with Q470E chipset
- 4 x 288-pin Long-DIMM, Support Dual Channel DDR4 2933 (i9/i7 CPU) / 2666 (i5/i3 CPU) / 2400 (Pentium/ Celeron CPU), up to 128GB
- 1 x PCIe x16 Gen3, 1 x PCIe x8 Gen3, 2 x PCIe x4 Gen3  
4 x USB 3.2 Gen2, 4 x USB 3.2 Gen1, 4 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 1 x M.2 Key B, 6 x COM, 8 x SATA3
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN
- Support Triple display, 1 x DP1.2, 1 x VGA, 1 x LVDS (eDP1.4 optional), 1 x HDMI 2.0a
- TPM 2.0 onboard
- Supports Intel® vPro, AMT, RAID 0/1/5/10
- ATX-PWR (24+8-pin)

## SPECIFICATIONS

### Form Factor

|            |                             |
|------------|-----------------------------|
| Dimensions | Micro ATX (9.6-in x 9.6-in) |
|------------|-----------------------------|

### Processor System

|         |                                                                         |
|---------|-------------------------------------------------------------------------|
| CPU     | Intel® 10 <sup>th</sup> Gen (Cometlake-S) Core™ Processors, up to 125 W |
| Chipset | Intel® Q470E                                                            |
| Socket  | LGA1200                                                                 |
| BIOS    | AMI SPI 256 Mbit                                                        |

### Memory

|            |                                                                                                                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technology | Dual Channel DDR4 2933/2666/2400 MHz<br>- Intel Core i9/i7 CPUs support DDR4 up to 2933 MHz<br>- Intel Core i5/i3 CPUs support DDR4 up to 2666 MHz<br>- Intel Pentium/Celeron CPU support DDR4 up to 2400 MHz |
| Capacity   | 128GB (32GB per DIMM)                                                                                                                                                                                         |
| Socket     | 4 x 288-pin Long-DIMM                                                                                                                                                                                         |

### Graphics

|              |                                                              |
|--------------|--------------------------------------------------------------|
| Controller   | Intel® UHD Graphics                                          |
| HDMI         | HDMI 2.0a<br>Max resolution up to 4096x2160 @60Hz            |
| DisplayPort  | DisplayPort 1.2, DP++<br>Max resolution up to 4096x2160@60Hz |
| VGA          | Max resolution up to 1920x1200@60Hz                          |
| LVDS         | Dual channel 24 bit up to 1920 x 1200@60Hz                   |
| eDP          | eDP 1.4 Max resolution up to 4096x2304@60Hz                  |
| DVI-D        | N/A                                                          |
| MultiDisplay | Triple Display                                               |

### Expansion Slot

|            |                                                                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PCIe       | 2 x PCIe Gen3 Slots (PCIe1/PCIe3: single at x16 (PCIe1); dual at x8 (PCIe1) / x8 (PCIe3))<br>(PCIe1: Support riser card x8/x8, x8/x4/x4)<br>2 x PCIe x4 (Gen3) |
| PCI        | N/A                                                                                                                                                            |
| Mini-PCIe  | N/A                                                                                                                                                            |
| M.2        | 1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless<br>1 x M.2 (Key B, 3042/3052) with PCIe x1/USB 3.2 Gen1/USB2.0 and SIM for 4G/5G             |
| SIM Socket | 1x SIM socket connected to M.2 key B                                                                                                                           |

### Audio

|           |                                                                          |
|-----------|--------------------------------------------------------------------------|
| Interface | Realtek ALC887/ALC897 HD, High Definition Audio, Line-In/Line-Out/Mic-In |
|-----------|--------------------------------------------------------------------------|

### Ethernet

|                   |                                                                                                               |
|-------------------|---------------------------------------------------------------------------------------------------------------|
| Controller/ Speed | LAN1: Intel® I225LM with 10/100/1000/2500 Mbps<br>LAN2: Intel® I219LM with 10/100/1000 Mbps, support AMT/vPro |
| Connector         | 2 x RJ-45                                                                                                     |

### Rear I/O

|             |                                        |
|-------------|----------------------------------------|
| HDMI        | 1 x HDMI 2.0a                          |
| DisplayPort | 1 x DP1.2                              |
| VGA         | 1                                      |
| DVI         | N/A                                    |
| Ethernet    | 1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN |
| USB         | 4 x USB 3.2 (Gen2), 2 x USB2.0         |
| Audio       | 3 (Line-In, Line-Out, Mic-In)          |
| COM         | 2 x COM (RS-232/422/485)               |
| PS2         | 1                                      |

### Internal Connector

|                 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| USB             | 4 x USB 3.2 Gen1 (2 x USB 3.2 Gen1 header)<br>2 x USB 2.0 (1x2.54 pitch header) |
| COM             | 4 x COM (RS-232)                                                                |
| Parallel        | 1 (shared with GPIO)                                                            |
| GPIO            | 8 x GPI, 8 x GPO, (shared with LPT header)                                      |
| TPM             | TPM 2.0 onboard                                                                 |
| LVDS            | 1                                                                               |
| eDP             | 1 (BOM Option support)                                                          |
| VGA             | N/A                                                                             |
| SATA PWR Output | N/A                                                                             |
| Speaker Header  | 1                                                                               |

### Storage

|       |                                                                                                                                                                                                                                                                              |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M.2   | 1 x M.2 (Key M, 2242/2260/2280) with SATA and PCIe x4 for SSD<br>* Shared with SATA3_5/ SATA3_6 Ports<br>- When using M.2 PCIe x4 SSD, both SATA3_5 and SATA_6 Ports are disabled<br>- When using M.2 SATA SSD, only SATA3_5 Port is disabled, and SATA3_6 Port is available |
| mSATA | N/A                                                                                                                                                                                                                                                                          |
| SATA  | 8 x SATA3 (6Gb/s)<br>*Only SATA3_1 ~ SATA3_6 Ports support RAID function                                                                                                                                                                                                     |
| RAID  | Intel® SATA RAID 0/1/5/10                                                                                                                                                                                                                                                    |
| eMMC  | N/A                                                                                                                                                                                                                                                                          |

### Watchdog Timer

|          |                                  |
|----------|----------------------------------|
| Output   | From Super I/O to drag RESETCON# |
| Interval | 256 Segments, 0, 1, 2, ...255sec |

### Power Requirements

|           |                                                                                                                           |
|-----------|---------------------------------------------------------------------------------------------------------------------------|
| Input PWR | ATX PWR (24+8-pin)                                                                                                        |
| Power On  | AT/ATX Supported<br>- AT : Directly PWR on as power input ready<br>- ATX : Press button to PWR on after power input ready |

### Environment

|                    |                |
|--------------------|----------------|
| Operating Temp     | 0°C ~ 60°C     |
| Storage Temp       | -40° C ~ 85° C |
| Operating Humidity | 5% ~ 90%       |
| Storage Humidity   | 5% ~ 90%       |

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