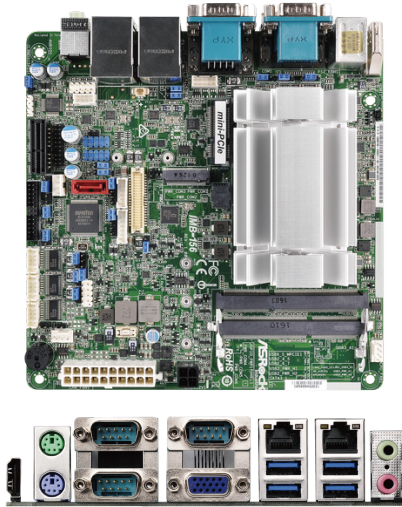




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# IMB-156

Mini-ITX Motherboard

## KEY FEATURES

- Intel® Apollo Lake SoC Processor
- 2 x 204-pin SO-DIMM up to 16GB DDR3L 1866 MHz (8GB per DIMM)
- 1 x PCIe x1 (Gen2), 4 x USB 3.1 Gen1, 4 x USB 2.0, 1 x mini-PCIe, 1 x M.2 Key M, 1 x M.2 Key E, 6 x COM, 1 x SATA3
- 2 x Realtek 1 Gigabit LAN
- Supports triple display, 1 x HDMI 1.4b, 1 x VGA, 1 x LVDS
- TPM header
- 12V or +19V~+24V DC-In/ ATX PWR

## SPECIFICATIONS

### Form Factor

|            |                                     |
|------------|-------------------------------------|
| Dimensions | Mini-ITX (6.7-in x 6.7-in x 1.5-in) |
|------------|-------------------------------------|

### Processor System

|         |                                                                                                                                                                                             |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU     | Intel® Apollo Lake SoC Processor<br>IMB-156M (E3940, QC, 1.6 GHz, 9.5 W)<br>IMB-156J (J3455, QC, 1.5 GHz, 10 W)<br>IMB-156D (N4200, QC, 1.1 GHz, 6 W)<br>IMB-156L (N3350, DC, 1.1 GHz, 6 W) |
| Chipset | SoC                                                                                                                                                                                         |
| Socket  | N/A                                                                                                                                                                                         |
| BIOS    | AMI SPI 128 Mbit                                                                                                                                                                            |

### Memory

|            |                             |
|------------|-----------------------------|
| Technology | Dual Channel DDR3L 1866 MHz |
| Capacity   | 16 GB (8 GB per DIMM)       |
| Socket     | 2 x 204-pin SO-DIMM         |

### Graphics

|              |                                                    |
|--------------|----------------------------------------------------|
| Controller   | Intel® Gen9 Graphics DX 12                         |
| HDMI         | HDMI 1.4b<br>Max resolution up to 4096 x 2160@24Hz |
| DisplayPort  | N/A                                                |
| VGA          | Max resolution up to 1920 x 1200@60Hz              |
| LVDS         | Dual channel 24 bit up to 1920x1200@60Hz           |
| eDP          | N/A                                                |
| DVI          | N/A                                                |
| MultiDisplay | Triple Display                                     |

### Expansion Slot

|           |                                                               |
|-----------|---------------------------------------------------------------|
| PCIe      | 1 x PCIe x1 (Gen2)                                            |
| PCI       | N/A                                                           |
| mini-PCIe | 1 x Full size with PCIe x1 and shared USB 2.0                 |
| M.2       | 1 x Key E (2230) with PCIe x1 and shared USB 2.0 for Wireless |

### Audio

|           |                                                                |
|-----------|----------------------------------------------------------------|
| Interface | Realtek ALC887/ALC897, High Definition Audio. Line-out, Mic-in |
|-----------|----------------------------------------------------------------|

### Ethernet

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| Controller/ Speed | 2 x Realtek RTL8111G/RTL8111H-CG with 10/100/1000 Mbps |
| Connector         | 2 x RJ-45                                              |

### Rear I/O

|             |                          |
|-------------|--------------------------|
| HDMI        | 1 x HDMI 1.4b            |
| DisplayPort | N/A                      |
| VGA         | 1                        |
| DVI         | N/A                      |
| Ethernet    | 2 x 1 Gigabit LAN        |
| USB         | 4 x USB 3.1 (Gen1)       |
| Audio       | 2 (Mic-in, Line-out)     |
| COM         | 3 x COM (RS-232/422/485) |
| PS2         | 1 x PS/2 combo           |

### Internal Connector

|                 |                                           |
|-----------------|-------------------------------------------|
| USB             | 4 x USB 2.0 (2 x 2.54 pitch header)       |
| COM             | 3 x COM (RS232)                           |
| Parallel        | 1 (shared with GPIO)                      |
| GPIO            | 8 x GPI, 8 x GPO (shared with LPT header) |
| TPM             | TPM Header                                |
| LVDS            | 1                                         |
| eDP             | N/A                                       |
| VGA             | N/A                                       |
| SATA PWR Output | 1                                         |
| Speaker Header  | 1                                         |

### Storage

|       |                                                  |
|-------|--------------------------------------------------|
| M.2   | 1 x Key M (2242/2260) with SATA3 for SSD         |
| mSATA | N/A                                              |
| SATA  | 1 x SATA3 (6Gb/s), SATA3_1 shared with M.2_Key M |
| eMMC  | N/A                                              |

### Watchdog Timer

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

### Power Requirements

|           |                                                                                                                           |
|-----------|---------------------------------------------------------------------------------------------------------------------------|
| Input PWR | 12V or +19V~+24V DC-In/ ATX PWR                                                                                           |
| 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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