



IMB-156

Mini-ITX Motherboard

Spotlight Features

- BGA1296 for Intel® Apollo Lake SoC
 - IMB-156D (N4200)
 - IMB-156L (N3350)
 - IMB-156M (E3940)
- Intel® HD Graphics
- Supports Dual Channel DDR3L 1867MHz, 2 x SO-DIMM, up to 16GB system memory
- 1 x VGA, 1 x HDMI, 1 x LVDS (eDP by BOM option)
- 4 xUSB 3.0, 4 x USB 2.0, 1 x SATA3
- 1 x Mini-PCle, 1 x PCIe x1 Slot, 2 x M.2 (1 x KEY M, 1 x KEY E)
- Gigabit LAN : 2 x Realtek LAN
- 1 x TPM Header
- +12V or +19V~+24V DC-In (4-pin ATX PWR Con / ATX)

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	BGA1296 for Intel® Apollo Lake SoC
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L2 Cache	(By CPU)
Chipset	N/A
BIOS	UEFI
Expansion Slot	
PCIe	1 x PCIe x1 slot
Mini PCIe	1 (full/half size) with PCIe x1 and USB 2.0 (Shared)
M.2	1 x KEY M (2260/2280) with SATA III signal for SSD 1 x KEY E (2230) with PCIe x1 and USB 2.0 (Shared) for Wireless
mSATA	0
Memory	
Technology	Dual Channel DDR3L 1867MHz
Max.	16GB
Socket	2 x SO-DIMM
Graphics	
Controller	Intel® HD Graphics
VRAM	Shared Memory
VGA	Supports max resolution up to 1920 x 1200
LVDS	Supports max resolution up to 1920 x 1200@60Hz
eDP	Supports max resolution up to 4096 x 2160@60Hz
HDMI	Supports max resolution up to 4096 x 2160@24Hz
DVI	No
DisplayPort	No
Multi Display	Yes (Triple Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	2 x Realtek RTL8111G
Connector	2 x RJ45
SATA	
Max Data Transfer Rate	SATA3 (6.0Gb/s)

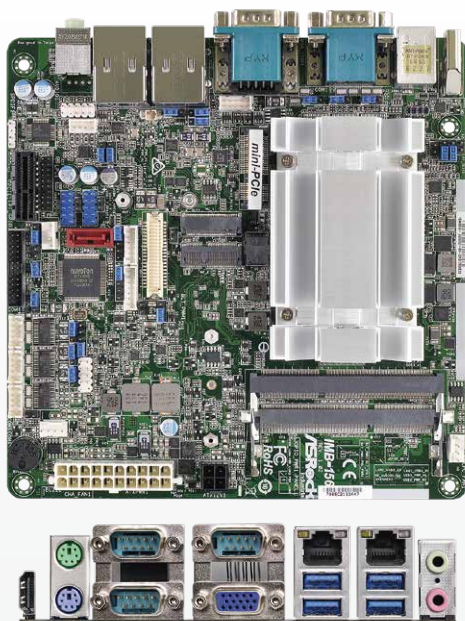
Rear I/O	
VGA	1
DVI	0
HDMI	1
DisplayPort	0
Ethernet	2
USB	4 x USB 3.0
Audio	2 (Mic-in, Line-out)
Serial	3 x COM (Supports RS-232/422/485)
PS/2	2

Internal Connector	
USB	4 x USB 2.0 (2 x 2.54 pitch header)
LVDS/inverter	1/1
eDP	1 (BOM Option)
VGA	1
Serial	3 x COM (Supports RS-232 only)
SATA	1
mPCIe	1
Parallel	1 (shared with GPIO)
mSATA	0
IrDA	0
GPIO	8 x GPI + 8 x GPO (shared with LPT header)
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements	
Input PWR	+12V or +19V~+24V DC-In (4-pin ATX PWR Con / ATX)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C



IMB-156J

Mini-ITX Motherboard

Spotlight Features

- Intel® Apollo Lake SoC Processor J3455
- Supports Dual Channel DDR3L SO-DIMM 1867, up to 8GB
- 1 x VGA, 1 x HDMI, 1 x LVDS (eDP by BOM option)
- 4 x USB 3.0, 4 x USB 2.0, 1 x SATA3, 6 x COM
- 1 x Mini-PCIe, 1 x PCIe x1, 1 x M.2 (KEY E), 1 x M.2 (KEY M)
- 2 x Realtek LAN
- 1 x TPM Header
- +12V or +19V~+24V DC-In (4-pin ATX PWR Con / ATX)

Specifications

Processor System

Dimensions	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Apollo Lake SoC Processor J3455, QC, 1.50 GHz, 10 W
Chipset	SOC

Expansion Slot

PCIe	1 x PCIe x1
Mini-PCIe	1 x full/half size with PCIe x1 and shared USB2.0
M.2	1 x M.2 (KEY E, 2230) with PCIe x1 and shared USB2.0 for Wireless 1 x M.2 (KEY M, 2242/2260) with SATA3 for SSD
mSATA	N/A

Memory

Technology	Dual Channel DDR3L 1867MHz
Max	8GB
Socket	2 x SO-DIMM

Graphics

Controller	Intel® HD Graphics
VGA	Supports max resolution up to 1920 x 1200
LVDS	Supports max resolution up to 1920 x 1200@60Hz
eDP	Supports max resolution up to 4096 x 2160@60Hz
HDMI	Supports max resolution up to 4096 x 2160@24Hz
DVI	N/A
DisplayPort	N/A
Multi Display	Triple Display

Ethernet

Interface	10/100/1000 Mbps
Controller	2 x Realtek RTL8111G

Rear I/O

VGA	1
DVI	N/A
HDMI	1
DisplayPort	N/A
Ethernet	2
USB	4 x USB 3.0
Audio Jack	2 (Mic-in, Line-out)
Serial	3 x COM (RS-232/422/485)
PS/2	2 (1 x keyboard, 1 x mouse)

Internal Connector

USB	4 x USB 2.0
LVDS	1
eDP	1 (BOM Option)
VGA	1
Serial	3 x COM (RS-232)
SATA	1 x SATA3
Parallel	1 (shared with GPIO)
GPIO	8 x GPI + 8 x GPO (shared with LPT header)
SATA PWR Output Con	1
Speaker Header	1
TPM	1 x Header

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	+12V or +19V~+24V DC-In (4-pin ATX PWR Con / ATX)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment

Operating Temperature	0°C – 60°C
Storage Temperature	-40°C – 85°C