

Mini PC & Motherboard Catalog

Cocreate an Intelligent World



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NUCS Ultra 100 BOX Series

NUCS BOX-155H, NUCS BOX-125H

Fanned Embedded BOX PC



KEY FEATURES

- Intel® Core™ Ultra processors (Meteor Lake-H)
- 2 x 262-pin SO-DIMM DDR5 5600MHz up to 96GB (48GB per DIMM)
- 1 x USB4/Thunderbolt™ 4, 5 x USB 3.2 Gen2, 2 x M.2 Key M, 1 x M.2 Key E (WiFi-6E Module)
- 1 x Intel 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1 TMDS, 1 x DP 2.1 (from Type-C), 1 x DP 1.4a (from Type-C)
- Intel® PTT
- 19V Power Adapter
- 117.5 x 110.0 x 38mm(4.63" x 4.33" x 1.50"), Slim Type Fanned Barebone

SPECIFICATIONS

Processor System

CPU	Intel® Core™ Ultra processors (Meteor Lake-H) NUCS BOX-155H (6P+8E) NUCS BOX-125H (4P+8E)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5600 MHz
Capacity	96GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® Xe Graphics
HDMI	HDMI 2.1 TMDS Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a/2.1, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Quad-Display (Included 2 outputs from Type-C)

Expansion Slot

M.2/ WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.3
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Audio

Interface	Realtek ALC256, High Definition Audio.
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Ethernet

Controller/ Speed	Intel® I226LM with 10/100/1000/2500 Mbps
Connector	1 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2280) with PCIe Gen4x4 for SSD 1 x M.2 (KEY M, 2242) with PCIe Gen4x1 for SSD
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Front I/O

USB	2 x USB 3.2 Gen2 (Type A) 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output) 1 x USB 3.2 Gen2x2 (Type-C, Supports DP 1.4a display output) *For Thunderbolt support, please refer to support list.
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.1 TMDS
Ethernet	1 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type-A)
DC Jack	1

Watchdog Timer

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

Power Requirements

Input PWR	12V~24V DC-In Jack
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 Temp	0°C ~ 40°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Mounting	VESA mount
Dimensions (L x W x H)	117.5 x 110.0 x 38mm(4.63" x 4.33" x 1.50")
Weight	Net Weight:1.0Kg

Others

OS Support	Windows 10/11
TPM	Intel® PTT
Certifications	CE, FCC
Packing List	1 x 19V/120W Power Adapter (Core Ultra 7) 1 x 19V/90W Power Adapter (Core Ultra 5) 1 x VESA mount bracket

NUC Ultra 100 BOX Series

NUC BOX-155H, NUC BOX-125H

Fanned Embedded BOX PC



KEY FEATURES

- Intel® Core™ Ultra processors (Meteor Lake-H)
- 2 x 262-pin SO-DIMM DDR5 5600MHz up to 96GB (48GB per DIMM)
- 1 x USB4/Thunderbolt™4, 4 x USB 3.2 Gen2, 2 x M.2 Key M,
1 x M.2 Key E (WiFi-6E Module), 1 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1 TMDS, 1 x DP 2.1 (from USB4),
1 x DP 1.4a (from Type-C)
- Intel® PTT
- 19V Power Adapter
- 117.5 x 110.0 x 49mm (4.63" x 4.33" x 1.93"), Fanned Barebone

SPECIFICATIONS

Processor System

CPU	Intel® Core™ Ultra processors (Meteor Lake-H) NUC BOX-155H (6P+8E) NUC BOX-125H (4P+8E)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5600 MHz
Capacity	96GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® Xe Graphics
HDMI	HDMI 2.1 TMDS Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 2.1/ 1.4a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Quad-Display (Included 2 outputs from Type-C)

Expansion Slot

M.2/ WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.3 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless)
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Audio

Interface	Realtek ALC256, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Intel® I226LM with 10/100/1000/2500 Mbps LAN2: Intel® I226V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2242/2280) with PCIe Gen4x4 for SSD 1 x M.2 (KEY M, 2242) with PCIe Gen4x4 for SSD
SATA	1 x SATA3.0 (6.0 Gb/s)

Front I/O

USB	1 x USB 3.2 Gen2 (Type A) 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output) 1 x USB 3.2 Gen2x2 (Type-C, Supports DP 1.4a display output) *For Thunderbolt support, please refer to support list.
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.1 TMDS
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type-A)
DC Jack	1

Watchdog Timer

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

Power Requirements

Input PWR	12V~24V DC-In Jack
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 Temp	0°C ~ 40°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Mounting	VESA mount
Dimensions (L x W x H)	117.5 x 110.0 x 49mm (4.63" x 4.33" x 1.93")
Weight	Net Weight:1.0Kg

Others

OS Support	Windows 10/11
TPM	Intel® PTT
Certifications	CE, FCC
Packing List	1 x 19V/120W Power Adapter (Core Ultra 7) 1 x 19V/90W Power Adapter (Core Ultra 5) 1 x VESA mount bracket



Model	NUCS 1300/D4 BOX Series	NUC 1300/D4 BOX Series	NUC 1300/D5 BOX Series
Chipset/ CPU	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUCS BOX-1360P/D4 (i7-1360P, 4P+8E) NUCS BOX-1340P/D4 (i5-1340P, 4P+8E)	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUC BOX-1360P/D4 (i7-1360P, 4P+8E) NUC BOX-1340P/D4 (i5-1340P, 4P+8E)	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUC BOX-1360P/D5 (i7-1360P, 4P+8E) NUC BOX-1340P/D5 (i5-1340P, 4P+8E)
Dimensions (L x W x H)	117.5 x 110.0 x 38mm(4.63" x 4.33" x 1.50")	117.5 x 110.0 x 47.85mm (4.63" x 4.33" x 1.88")	
Memory	Dual Channel DDR4 3200 MHz		Dual Channel DDR5 4800 MHz
DIMM Slot	2 x 260-pin SO-DIMM		2 x 262-pin SO-DIMM
Capacity	64GB (32 GB per DIMM)		32GB
MultiDisplay	Quad-Display (Included 2 outputs from Type-C)		
DP	2 x DP 1.4a (from Type-C)	3 x DP 1.4a (2 from Type-C)	1 x DP 2.1 (from USB4) 2 x DP 1.4a (1 from Type-C)
HDMI	2 x HDMI 2.0b	1 x HDMI 2.0b	
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4 x4 for SSD *M.2 Key M 2280(Supported by bracket)		
M.2 Key E/WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.3		
SATA	N/A	1 x SATA3 (6Gb/s)	
USB4	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP 1.4a display output)		Front: 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output)
USB 3.2	Front: 2 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2 (Type-C, Supports DP 1.4a display output) Rear: 2 x USB 3.2 Gen2 (Type-A)	Front: 1 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2 (Type-C, Supports DP 1.4a display output) Rear: 2 x USB 3.2 Gen2 (Type-A)	Front: 1 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2x2 (Type-C, Supports DP 1.4a display output) Rear: 2 x USB 3.2 Gen2 (Type-A)
LAN	1 x Intel® I226LM	1 x Intel® I226LM 1 x Intel® I226LM/I226V	
Audio	1 (headphone & microphone jack)		
TPM	TPM 2.0 onboard IC		
Power	12V~19V DC-In Jack		
Operating Temperture	0°C ~ 40°C		
OS Support	Windows 10/11		
Mounting	VESA mount		
Weight	Net Weight: 1.0Kg		
Packing List	19V/90W Power Adapter 1 x VESA mount bracket	19V/120W Power Adapter (i7-1360P) 19V/90W Power Adapter (i5-1340P) 1 x VESA mount bracket	



KEY FEATURES

- Intel® Alder Lake-N Processors N97
- 1 x 260-pin SO-DIMM DDR4 3200 MHz , up to 32GB
- 5 x USB 3.2 Gen2, 1 x M.2 Key M, 1 x M.2 Key E (WiFi Module), 1 x SATA3
- 2 x Realtek 2.5 Gigabit LAN
- Supports Triple display, 2 x HDMI 2.0b, 2 x DP 1.4a (from Type-C)
- TPM 2.0 onboard IC
- 19V/65W Power Adapter
- 117.5 x 110.0 x 47.85mm (4.63" x 4.33" x 1.88"), Fanned Barebone

SPECIFICATIONS

Processor System

CPU	Intel® Alder Lake-N Processors N97
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Single Channel DDR4 3200 MHz
Capacity	32GB
Socket	1 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Triple-Display (Included 2 outputs from Type-C)

Expansion Slot

M.2/ WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.2
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Audio

Interface	Realtek ALC256, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2(KEY M, 2242/2260/2280) with PCIe Gen3x1 and SATA3 for SSD *M.2 Key M 2280 (Supported by bracket)
SATA	1 x SATA3.0 (6.0 Gb/s)

Front I/O

USB	1 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, Supports DP 1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.0b
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type-A)
DC Jack	1

Watchdog Timer

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

Power Requirements

Input PWR	9V~19V DC-In Jack
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 Temp	0°C ~ 40°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Mounting	VESA mount
Dimensions (L x W x H)	117.5 x 110.0 x 47.85mm (4.63" x 4.33" x 1.88")
Weight	Net Weight:1.0Kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	1 x 19V/65W Power Adapter 1 x VESA mount bracket

4X4 BOX 8040 Series

4X4 BOX-8840U, 4X4 BOX-8640U

Fanned Embedded BOX PC



KEY FEATURES

- AMD Ryzen™ 8040U-Series
- 2 x 262-pin SO-DIMM DDR5 5600 MHz, up to 96GB (48GB per DIMM)
- 2 x USB4, 1 x USB 3.2 Gen2, 2 x USB 2.0, 2 x M.2 Key M, 1 x M.2 Key E (WiFi-6E Module)
- 1 x Realtek Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1, 2 x DP 1.4a (from Type C)
- 19V Power Adapter
- 117.5 x 110.0 x 49mm (4.63" x 4.33" x 1.93"), Fanned Barebone

SPECIFICATIONS

Processor System

CPU	AMD Ryzen™ 8040U-Series - 4X4 BOX-8840U (AMD Ryzen™ 7 8840U, 8Cores, Max Speed up to 5.1GHz) - 4X4 BOX-8640U (AMD Ryzen™ 5 8640U, 6Cores, Max Speed up to 4.9GHz)
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5600 MHz
Capacity	96GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	AMD Radeon™ Graphics
HDMI	HDMI 2.1 Max resolution up to 7680 x 4320@60Hz
DisplayPort	DisplayPort 1.4a Max resolution up to 4096x2160@60Hz
MultiDisplay	Max 4 display (Included 2 outputs from Type-C)

Expansion Slot

M.2/WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.2
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Audio

Interface	Realtek ALC256, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2242/2280) with PCIe Gen4x4 for SSD 1 x M.2 (KEY M, 2242) with PCIe Gen4x4 for SSD
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Front I/O

USB	1 x USB 3.2 Gen2 (Type-A) 2 x USB4 (Supports DP 1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.1
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0
DC Jack	1

Watchdog Timer

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

Power Requirements

Input PWR	12V~24V DC-In Jack
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 Temp	0°C ~ 40°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Mounting	VESA mount
Dimensions (L x W x H)	117.5 x 110.0 x 49mm (4.63" x 4.33" x 1.93")
Weight	Net Weight: 1kg

Others

OS Support	Windows 10/11
TPM	AMD FW TPM
Certifications	CE, FCC
Packing List	1 x 19V/120W Power Adapter (Ryzen 7) 1 x 19V/90W Power Adapter (Ryzen 5) 1 x VESA mount bracket



Model	4X4 BOX 7035U/D5 Series	4X4 BOX 7040 Series
Chipset/ CPU	AMD Ryzen™ 7035U-Series 4X4 BOX-7735U/D5 (AMD Ryzen™ 7 7735U, 8Cores, Max Speed up to 4.75GHz) 4X4 BOX-7535U/D5 (AMD Ryzen™ 5 7535U, 6Cores, Max Speed up to 4.55GHz)	AMD Ryzen™ 7040U-Series 4X4 BOX-7840U (AMD Ryzen™ 7 7840U, 8Cores, Max Speed up to 5.1GHz) 4X4 BOX-7640U (AMD Ryzen™ 5 7640U, 6Cores, Max Speed up to 4.9GHz)
Dimensions (L x W x H)	117.5 x 110.0 x 47.85mm(4.63" x 4.33" x 1.88")	
Memory	Dual Channel DDR5 4800 MHz	Dual Channel DDR5 5600 MHz
DIMM Slot	2 x 262-pin SO-DIMM	
Capacity	64GB (32 GB per DIMM)	
HDMI	1 x HDMI 2.1	2 x HDMI 2.0
DP	3 x DP 1.4a (2 from Type-C)	2 x DP 1.4a (from Type C)
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4x4 for SSD *M.2 Key M 2280(supported by bracket)	
M.2 Key E/WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.2 (M.2 Key E, 2230 with PCIe Gen4 x1, USB 2.0 for Wireless)	
SATA	1x SATA3.0 (6Gb/s)	
USB4	Front: 2 x USB4 (supports DP 1.4a display output)	
USB 3.2	Front: 1 x USB 3.2 Gen2 (Type-A)	
USB 2.0	Rear: 2 x USB 2.0	
LAN	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111EPV with 10/100/1000 Mbps, support DASH function	
Audio	1 (headphone & microphone jack)	
TPM	TPM 2.0 onboard IC	AMD FW TPM
Power	12V~19V DC-In Jack	
Operating Temperature	0 ~ 40° C	
OS Support	Windows 10/11	
Construction	Plastic with sheet metal	
Mounting	VESA mounting	
Weight	Net Weight:1.0Kg	
Packing List	19V/120W Power Adapter (R7 7735U) 19V/90W Power Adapter (R5 7535U) 1 x VESA mount bracket	19V/120W Power Adapter 1 x VESA mount bracket

4X4 BOX-R2000M

Fanned Embedded BOX PC



KEY FEATURES

- AMD Ryzen™ Embedded R-Series R2314
- 2 x 260-pin ECC/non-ECC SO-DIMM DDR4 2666 MHz, up to 64GB (32GB per DIMM)
- 3 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E (WiFi-6E Module), 1 x SATA3
- 1 x Realtek 2.5 Gigabit LAN, 1 x Realtek 1 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0a, 3 x DP 1.2a (2 from Type-C)
- TPM 2.0 onboard IC
- 19V/90W Power Adapter
- 117.5 x 110.0 x 47.85mm (4.63" x 4.33" x 1.88"), Fanned Barebone

SPECIFICATIONS

Processor System

CPU	AMD Ryzen™ Embedded R-Series 4X4 BOX-R2000M (R2314, QC, Max Speed up to 3.5GHz)
Chipset	SoC
BIOS	AMI SPI 64 Mbit

Memory

Technology	Dual Channel ECC/non-ECC DDR4 2666 MHz
Capacity	64GB (32 GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	AMD Radeon™ Graphics
HDMI	HDMI 2.0a Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.2a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Quad Display (Included 2 outputs from Type-C)

Expansion Slot

M.2/WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.2
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Audio

Interface	Realtek ALC256, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3x4 and SATA3 for SSD *M.2 Key M 2280(Supported by bracket)
SATA	1 x SATA3.0 (6.0 Gb/s)

Front I/O

USB	1 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, Supports DP 1.2a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0a
DisplayPort	1 x DP 1.2a
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0
DC Jack	1

Watchdog Timer

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

Power Requirements

Input PWR	12V~24V DC-In Jack
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 Temp	0°C ~ 40°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Mounting	VESA mount
Dimensions (L x W x H)	117.5 x 110.0 x 47.85mm (4.63" x 4.33" x 1.88")
Weight	Net Weight: 1kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	1 x 19V/90W Power Adapter 1 x VESA mount bracket

DSF-A6000

Fanned Embedded BOX PC



KEY FEATURES

- AMD Ryzen™ Embedded R-Series R2314
- 2 x 260-pin ECC/non-ECC SO-DIMM DDR4 2666 MHz, up to 64GB (32GB per DIMM)
- 2 x USB 3.2 Gen2, 1 x USB 2.0, 1 x M.2 Key B, 1 x M.2 Key E, 1 x M.2 Key M, 1 x COM
- 1 x Intel Gigabit LAN, 1 x Realtek Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN with PoE+ function (optional)
- Supports Quad display, 4 x HDMI 2.0b
- TPM 2.0 onboard IC
- Supports OOB function (optional)
- 1 x 19V/90W power adapter
- 182.2 x 175.2 x 25mm (7.1" x 6.9" x 1"), Fanned Barebone

SPECIFICATIONS

Processor System

CPU	AMD Ryzen™ Embedded R-Series (R2314, 4C, 2.1GHz, 12-35W)
BIOS	AMI SPI 64 Mbit

Memory

Technology	Dual Channel ECC/non-ECC DDR4 2666 MHz
Capacity	64 GB (32 GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	AMD Radeon™ Graphics
HDMI	HDMI 2.0b Max resolution up to 7680x4320@60Hz
MultiDisplay	Quad Display

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe Gen3 x1 and USB 2.0 for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe Gen3 x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1 x Socket connected to M.2 Key B

Audio

Interface	Realtek ALC256, High Definition Audio. Line-out, Mic-in
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Ethernet

Controller/ Speed	LAN1: Realtek® RTL8111H with 10/100/1000 Mbps LAN2: Intel® I210 with 10/100/1000 Mbps, supports OOB (optional) LAN3: Realtek® RTL8125BG with 10/100/1000/2500 Mbps, supports PoE+ (optional)
Connector	3 x RJ-45

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen3x4 for SSD
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Front I/O

Ethernet	2 x 1 Gigabit LAN
HDMI	4 x HDMI 2.0b
USB	2 x USB 3.2 Gen2
HDD/WIFI LED	1
Power Button	1

Rear I/O

DC Jack	1
Ethernet	1 x 2.5 Gigabit LAN
Clear EDID Button	1
COM	1 x RS232 (RJ50)
USB	1 x USB 2.0
Audio	1 (Mic-in or Line-out)
SIM Socket	1

Watchdog Timer

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

Power Requirements

Input PWR	12V~19V DC-In Jack
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 Temp	0°C ~ 40°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Mounting	VESA mount/Wall mount/Din Rail
Dimensions (L x W x H)	182.2 x 175.2 x 25 mm (7.1" x 6.9" x 1")
Weight	Net Weight: 0.75kg (1.65lbs)

Others

OS Support	Windows 10
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	1 x 19V/90W Power Adapter 1 x VESA mount bracket



Model	iBOX 1300/D4 Series	iBOX 1300/D5 Series
Chipset/ CPU	Intel® 13th Gen (Raptor Lake-P) Core™ Processors iBOX-1365UE/D4 (i7-1365UE, 2P+8E) iBOX-1335UE/D4 (i5-1335UE, 2P+8E) iBOX-1315UE/D4 (i3-1315UE, 2P+4E)	Intel® 13th Gen (Raptor Lake-P) Core™ Processors iBOX-1365UE/D5 (i7-1365UE, 2P+8E) iBOX-1335UE/D5 (i5-1335UE, 2P+8E) iBOX-1315UE/D5 (i3-1315UE, 2P+4E)
Dimensions (L x W x H)	171.8 x 109.45 x 50.05mm (6.76" x 4.31" x 1.97")	
Memory	Dual Channel DDR4 3200 MHz	Dual Channel DDR5 4800 MHz
DIMM Slot	2 x 260-pin SO-DIMM	2 x 262-pin SO-DIMM
Capacity	64GB (32 GB per DIMM)	32GB (16 GB per DIMM)
MultiDisplay	Quad-Display (Included 2 outputs from Type-C)	
DP	3 x DP 1.4a (2 from Type-C)	1 x DP 2.1 (from USB4) 2 x DP 1.4a (1 from Type-C)
HDMI	1 x HDMI 2.0b	
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4x4 for SSD *M.2 Key M 2280(Supported by bracket)	
M.2 Key E/WLAN	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless	
SATA	1 x SATA3 (6Gb/s)	
USB4	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP 1.4a display output)	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output)
USB 3.2	Front: 2 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2 (Type-C, Supports DP 1.4a display output) Rear: 2 x USB 3.2 Gen2 (Type-A)	
USB 2.0	Front: 2 x USB 2.0	
LAN	1 x Intel® I226LM 1 x Intel® I226LM/I226V	
COM Port	1 x COM(RS-232)	
Audio	1 (headphone & microphone jack)	
TPM	TPM 2.0 onboard IC	
Power	12V~19V DC-In Jack	
Operating Temperature	-20°C ~ 40°C with air flow 0.5~0.8 m/s (with extended temp. peripherals)	
OS Support	Windows 10/11	
Construction	Aluminum housing	
Mounting	VESA mount/Wall mount/Din-rail	
Weight	Net Weight: 1.6Kg	
Packing List	1 x 19V/90W Power Adapter 1 x Wall mount kit	1 x 19V/90W Power Adapter 1 x Wall mount kit 1 x Thermal kit for M.2 SSD/Memory



KEY FEATURES

- Intel® Alder Lake-N SoC Processor N97
- 1 x 260-pin SO-DIMM DDR4 3200 MHz , up to 32GB
- 6 x USB 3.2 Gen2, 1 x M.2 Key E, 1 x M.2 Key M, 1 x SATA3
- 2 x Realtek 2.5 Gigabit LAN
- Supports Triple display, 2 x HDMI 2.0b, 2 x DP 1.4a (From Type-C)
- TPM 2.0 onboard IC
- 19V/65W Power Adapter
- 135 x 110 x 44.5mm (5.31" x 4.33" x 1.75"), Fanless Embedded BOX PC

SPECIFICATIONS

Processor System

CPU	Intel® Alder Lake-N SoC Processors iBOX-N97 (N97, QC, Max Speed Up to 3.6GHz, 12W)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Single Channel DDR4 3200 MHz
Capacity	32GB
Socket	1 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Triple-Display (Included 2 outputs from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless
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Audio

Interface	Realtek ALC256, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3x1 and SATA3 for SSD *M.2 Key M 2280 (Supported by bracket)
SATA	1 x SATA3.0 (6.0Gb/s)

Front I/O

USB	2 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, Supports DP 1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.0b
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type-A)
DC Jack	1

Watchdog Timer

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

Power Requirements

Input PWR	1 x 19V/65W Power Adapter
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 Temp	-20°C ~ 40°C with air flow 0.5~0.8 m/s (with extended temp. peripherals)
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Construction	Aluminum housing
Mounting	VESA mount/Wall mount/Din-rail
Dimensions (L x W x H)	135 x 110 x 44.5mm (5.31" x 4.33" x 1.75")
Weight	Net Weight: 0.7kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	1 x 19V/65W Power Adapter 1 x Wall mount kit

iBOX-250J

Fanless Embedded BOX PC



KEY FEATURES

- Intel® Elkhart Lake SoC Processors J6412
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB(16GB per DIMM)
- 1 x USB 3.2 Gen2, 3 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 3 x COM, 1 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports dual display, 1 x HDMI 2.0b, 1 x VGA
- 1 x 19V/65W AC-DC power brick adapter
- 200 x 134.5 x 39mm (7.87" x 5.3" x 1.54"), Fanless Embedded BOX PC

SPECIFICATIONS

Processor System

CPU	Intel® Elkhart Lake SoC Processors iBOX-250J (J6412, QC, Max Speed Up to 2.6GHz, 10W)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR4 3200 MHz
Capacity	32GB (16GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	Intel® Gen 11 Graphics
HDMI	HDMI 2.0b Max resolution up to 4096 x 2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz
MultiDisplay	Dual Display

Audio

Interface	Realtek ALC233/256 HD, High Definition Audio
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Ethernet

Controller/ Speed	LAN1: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (Key M, 3042/3060/2280) with PCIe x1 for SSD
SATA	1 x SATA3 (6Gb/s)

Front I/O

USB	2 x USB 2.0
COM	3 x COM (RS-232)

Rear I/O

HDMI	1 x HDMI 2.0b
VGA	1
Ethernet	2 x 2.5 Gigabit LAN
USB	1 x USB 3.2 Gen2, 1 x USB 2.0

Watchdog Timer

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

Input PWR Power On	9-36V DC-In AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready
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Environment

Operating Temp	-20°C ~ 50°C with air flow 0.5~0.8 m/s (with extended temp. peripherals)
Storage Temp	-40° C ~ 85° C
Operating Humidity	10% ~ 90%
Storage Humidity	10% ~ 90%

Mechanical

Construction	Aluminum housing
Mounting	VESA mount/Wall mount/Din-rail
Dimensions (L x W x H)	200 x 134.5 x 39mm (7.87" x 5.3" x 1.54")
Weight	Net Weight:1.3kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	1 x 19V/65W Power Adapter 1 x Wall mount kit

iBOX V2000 Series

iBOX-V2000M, iBOX-V2000V

Fanless Embedded BOX PC



KEY FEATURES

- AMD Ryzen™ Embedded V2718/V2516
- 2 x 260-pin non-ECC/ECC SO-DIMM DDR4 3200 MHz, up to 64GB (32GB per DIMM)
- 4 x USB 3.2 Gen2, 4 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E, 1 x COM, 1 x SATA3
- 1 x Realtek 1 Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0a, 3 x DP 1.2a (2 from Type C)
- TPM 2.0 onboard IC
- 19V/90W Power Adapter
- 171.8 x 109.45 x 50.05mm (6.76" x 4.31" x 1.97"), Fanless Embedded BOX PC

SPECIFICATIONS

Processor System

CPU	AMD Ryzen™ Embedded V2000 Series iBOX-V2000M (V2718, 8C, Max Speed up to 4.15GHz) iBOX-V2000V (V2516, 6C, Max Speed up to 3.95GHz)
Chipset	SOC
BIOS	AMI SPI 128 Mbit

Memory

Technology	Dual Channel non-ECC/ECC DDR4 3200 MHz
Capacity	64GB (32 GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	AMD Radeon™ Graphics
HDMI	HDMI 2.0a Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.2a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Quad-Display (Included 2 outputs from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 for Wireless
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Audio

Interface	Realtek ALC233, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek R8111EPV (DASH) with 10/100/1000 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3x4 and SATA3 for SSD *M.2 Key M 2280(Supported by bracket)
SATA	1 x SATA3.0 (6.0 Gb/s)

Front I/O

USB	2 x USB 3.2 Gen2 (Type A) 2 x USB 3.2 Gen2 (Type-C, Supports DP 1.2a display output) 2 x USB 2.0
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0a
DisplayPort	1 x DP 1.2a
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0
DC Jack	1
COM	1 x COM(RS-232)

Watchdog Timer

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

Power Requirements

Input PWR	1 x 19V/90W Power Adapter
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

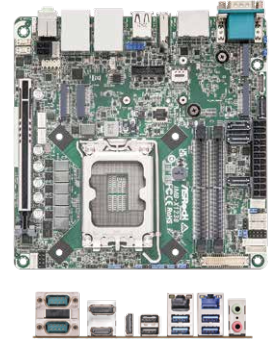
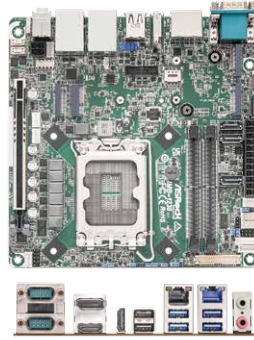
Operating Temp	-20°C ~ 40°C with air flow 0.5~0.8 m/s (with extended temp. peripherals)
Storage Temp	-40° C – 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

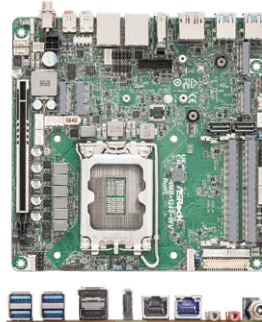
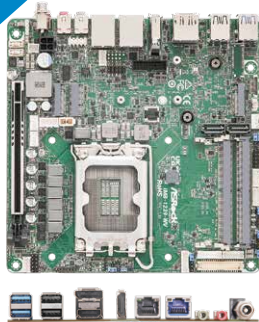
Construction	Aluminum
Mounting	VESA mount/Wall mount/Din-rail
Dimensions (L x W x H)	171.8 x 109.45 x 50.05mm (6.76" x 4.31" x 1.97")
Weight	Net Weight:1.6Kg

Others

OS Support	Windows 10
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	1 x 19V/90W Power Adapter 1 x VESA mount bracket



Model	IMB-1237	IMB-1238	IMB-X1238
Chipset/ CPU	Intel® H610	Intel® Q670	Intel® W680
Socket	LGA1700		
Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 170 cm x 170 cm x 3.8 cm)		
Memory	Dual Channel DDR5 4800/5600 MHz* *Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ *If motherboard ambient temp. is over 55°C, the memory thermal solution should be added to avoid thermal issue		Dual Channel ECC/non-ECC DDR5 4800/5600 MHz* *Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ *If motherboard ambient temp. is over 55°C, the memory thermal solution should be added to avoid thermal issue
DIMM Slot	2 x 262-pin SO-DIMM		
Capacity	96 GB (48 GB per DIMM)		
PCIe	1 x PCIe x16 (Gen5)	1 x PCIe x16 (Gen5, Support riser card x8/x8)	
DP	1 x DP 1.4a		
HDMI	1 x HDMI 2.0b, 1 x HDMI 1.4b		
LVDS/eDP	1 x LVDS or eDP		
M.2 Key M	1 x M.2 (Key M, 2242/2280) with PCIe Gen4x4 for SSD	1 x M.2 (Key M, 2242/2280) with PCIe Gen4x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen3x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)	
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless		
M.2 Key B	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G		
SATA	2 x SATA3 (6Gb/s)	4 x SATA3 (6Gb/s)	
RAID	N/A	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA port	
USB 3.2	Internal: 1 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 2 x USB 3.2 Gen2	Internal: 2 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 4 x USB 3.2 Gen2	
USB 2.0	Internal: 1 x USB 2.0 (From USB 3.2 header) Rear: 4 x USB 2.0	Internal: 2 x USB 2.0 (1 x 2.54 pitch header) Rear: 2 x USB 2.0	
GPIO	4 x GPI, 4 x GPO		
LAN	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I219V with 10/100/1000 Mbps	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I219LM with 10/100/1000 Mbps, supports vPro	
COM Port	Internal: COM3, COM4 (RS-232) Rear: COM1, COM2 (RS-232/422/485)		
Audio	2 (Mic-In, Line-Out)		
TPM	TPM 2.0 onboard IC		
Power	ATX PWR (24+4-pin) and +12V DC-In co-design		
Operating Temperature	-20°C ~ 70°C		



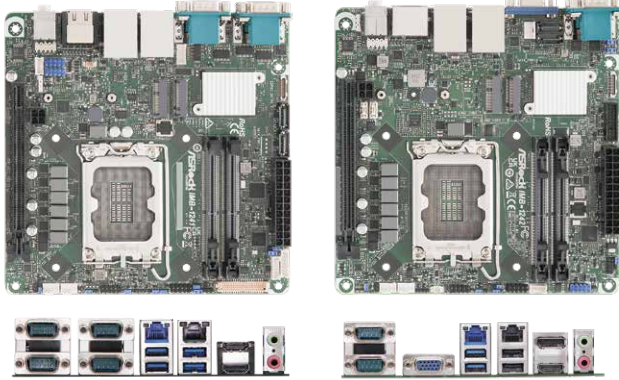
Model	IMB-1239-WV	IMB-1240-WV	IMB-X1240-WV
Chipset/ CPU	Intel® H610	Intel® Q670	Intel® W680
Socket	LGA1700		
Form Factor	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 17.0 cm x 17.0 cm x 2.5 cm)		
Memory	Dual Channel DDR5 4800/5600 MHz* *Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ *If motherboard ambient temp. is over 55°C, the memory thermal solution should be added to avoid thermal issue		Dual Channel ECC/non-ECC DDR5 4800/5600 MHz* *Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ *If motherboard ambient temp. is over 55°C, the memory thermal solution should be added to avoid thermal issue
DIMM Slot	2 x 262-pin SO-DIMM		
Capacity	96 GB (48 GB per DIMM)		
PCIe	1 x PCIe x16 (Gen5)	1 x PCIe x16 (Gen5, Support riser card x8/x8)	
DP	1 x DP 1.4a		
HDMI	2 x HDMI 2.0b		
LVDS/eDP	1 x LVDS, 1 x eDP 1.4b		
M.2 Key M	1 x M.2 (Key M, 2242/2280) with PCIe Gen3x4 for SSD	1 x M.2 (Key M, 2242/2280) with PCIe Gen4x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)	
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless		
M.2 Key B	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G		
SATA	2 x SATA3 (6Gb/s)		
RAID	N/A	Intel VMD RAID 0/1 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA port	
USB 3.2	Internal: 1 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 2 x USB 3.2 Gen2	Internal: 2 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 4 x USB 3.2 Gen2	
USB 2.0	Internal: 3 x USB 2.0 (1 x 2.54 pitch header) Rear: 2 x USB 2.0	Internal: 4 x USB 2.0 (2 x 2.54 pitch header)	
GPIO	4 x GPI, 4 x GPO		
LAN	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I219V with 10/100/1000 Mbps	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I219LM with 10/100/1000 Mbps, supports vPro	
COM Port	Internal: COM1, COM3 (RS-232/422/485)		
Audio	2 (Mic-In, Line-Out)		
TPM	TPM 2.0 onboard IC		
Power	12~28V DC-In with 4-pin wafer PWR cable or DC Jack (Screw type)		
Operating Temperature	-20°C ~ 70°C		

IMB-1241, IMB-1242

Mini-ITX Motherboard

KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with H610 chipset
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 64GB (32GB per DIMM)
- 1 x PCIe x16 (Gen4), 2 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 5 x COM, 2 x SATA3 (IMB-1241)
- 1 x PCIe x16 (Gen4), 2 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 2 x COM, 2 x SATA3 (IMB-1242)
- 1 x Intel Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN
- Supports Triple display, 2 x HDMI 2.0b, 1 x LVDS or eDP (IMB-1241)
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP 1.4a, 1 x VGA (IMB-1242)
- ATX-PWR (24+4-pin) (IMB-1241)
- ATX-PWR (24+4-pin) and 12V DC-In co-design (IMB-1242)



IMB-1241

IMB-1242

SPECIFICATIONS

Form Factor	IMB-1241	IMB-1242
Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.4-in, 17.0 cm x 17.0 cm x 3.6 cm)	
Processor System		
CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 65W	
Chipset	Intel® H610	
Socket	LGA1700	
BIOS	AMI SPI 256 Mbit	

Memory		
Technology	Dual Channel DDR4 3200 MHz	
Capacity	64 GB (32 GB per DIMM)	
Socket	2 x 260-pin SO-DIMM	

Graphics		
Controller	Intel® UHD Graphics	
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz	
LVDS	Dual channel 24 bit up to 1920x1200@60Hz (Connector shared with eDP)	N/A
eDP	eDP 1.4b Max resolution up to 1920x1200@60Hz (Connector shared with LVDS)	N/A
DisplayPort	N/A	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
VGA	N/A	Max resolution up to 1920x1200@60Hz
MultiDisplay	Triple Display	

Expansion Slot	
PCIe	1 x PCIe x16 (Gen4)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless

Audio	
Interface	Realtek ALC662/ALC897, High Definition Audio. Mic-in, Line-out

Ethernet	
Controller/ Speed	LAN1: Intel® I219V with 10/100/1000 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O	IMB-1241	IMB-1242
HDMI	2 x HDMI 2.0b	1 x HDMI 2.0b
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN	
VGA	N/A	1
USB	2 x USB 3.2 Gen2, 2 x USB 3.2 Gen1	2 x USB 3.2 Gen2, 2 x USB 2.0
Audio	2 (Mic-in, Line-out)	
COM	COM1(RS-232/422/485) COM2, COM3, COM4(RS-232)	COM1, COM2 (RS-232/422/485)

Internal Connector		
USB (IMB-1241)	4 x USB 2.0 (2 x 2.54 pitch header)	
USB (IMB-1242)	2 x USB 3.2 Gen1 (1 x USB 3.2 header) 2 x USB 2.0 (1 x 2.54 pitch header)	
COM	COM5(RS-232)	N/A
GPIO	4 x GPI, 4 x GPO	N/A
LVDS	1 (Connector share with eDP)	N/A
SATA PWR Output	N/A	1
Speaker Header	1	N/A

Storage	
M.2 (IMB-1241)	1 x M.2 (Key M, 2242/2280) with PCIe Gen3x4, SATA3 and USB 2.0
M.2 (IMB-1242)	1 x M.2 (Key M, 2260/2280) with PCIe Gen3x4 and SATA3 for SSD
SATA	2 x SATA3 (6Gb/s)

Security		
TPM	Intel® PTT	TPM Header

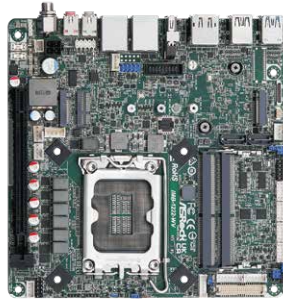
Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ..., 255sec

Power Requirements	
Input PWR (IMB-1241)	ATX-PWR (24+4-pin)
Input PWR (IMB-1242)	ATX-PWR (24+4-pin) and 12V DC-In co-design
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

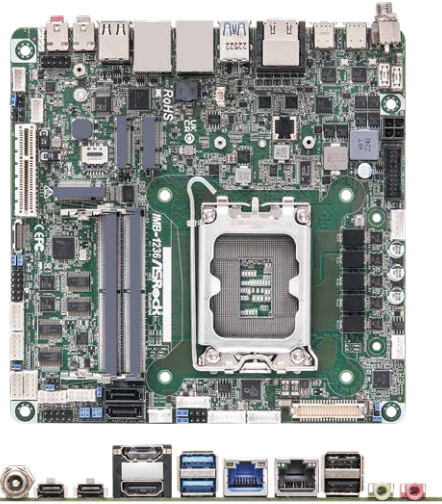
Environment	
Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%



Model	IMB-1230	IMB-1231	IMB-X1231
Chipset/ CPU	Intel® H610	Intel® Q670	Intel® W680
Socket	LGA1700		
Form Factor	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 17.0 cm x 17.0 cm x 3.8 cm)		
Memory	Dual Channel DDR4 3200 MHz		Dual Channel ECC/non-ECC DDR4 3200 MHz
DIMM Slot	2 x 260-pin SO-DIMM		
Capacity	64GB (32 GB per DIMM)		
PCIe	1 x PCIe x16 (Gen4)	1 x PCIe x16 (Gen4, Support riser card x8/x8)	
DP	2 x DP 1.4a, DP++		
HDMI	1 x HDMI 2.0b		
D-Sub	1		
LVDS/eDP	1 x LVDS or eDP		
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen3 x4 for SSD	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen3x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)	
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless		
M.2 Key B	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G		
SATA	4 x SATA3 (6Gb/s)		
RAID	N/A	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA port	
USB 3.2	Internal: 1 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 2 x USB 3.2 Gen2	Internal: 2 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 4 x USB 3.2 Gen2	
USB 2.0	Internal: 3 x USB 2.0 (1 x 2.54 pitch header) Rear: 2 x USB 2.0	Internal: 4 x USB 2.0 (2 x 2.54 pitch header)	
GPIO	4 x GPI, 4 x GPO		
LAN	LAN1: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
COM Port	Internal: COM3, COM4, COM5 (RS-232) Rear: COM1, COM2 (RS-232/422/485)		
Audio	2 (Mic-in, Line-out)		
TPM	TPM 2.0 onboard IC		
Power	ATX PWR (24+4-pin) and +12V DC-In co-design		
Operating Temperature	-20°C ~ 70°C		



Model	IMB-1232-WV	IMB-1233-WV	IMB-X1233-WV
Chipset/ CPU	Intel® H610	Intel® Q670	Intel® W680
Socket	LGA1700		
Form Factor	Mini-ITX (6.7-in x 6.7-in x 1.0-in, 17.0 cm x 17.0 cm x 2.5 cm)		
Memory	Dual Channel DDR4 3200 MHz		Dual Channel ECC/non-ECC DDR4 3200 MHz
DIMM Slot	2 x 260-pin SO-DIMM		
Capacity	64GB (32 GB per DIMM)		
PCIe	1 x PCIe x16 (Gen4)	1 x PCIe x16 (Gen4, Support riser card x8/x8)	
DP	2 x DP 1.4a, DP++		
HDMI	1 x HDMI 2.0b		
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen3x4 for SSD	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen3x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)	
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless		
M.2 Key B	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G		
SATA	2 x SATA3 (6Gb/s)		
RAID	N/A	Intel® VMD RAID 0/1 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA port	
USB 3.2	Internal: 1 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 2 x USB 3.2 Gen2	Internal: 2 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 4 x USB 3.2 Gen2	
USB 2.0	Internal: 3 x USB 2.0 (1 x 2.54 pitch header) Rear: 2 x USB 2.0	Internal: 4 x USB 2.0 (2 x 2.54 pitch header)	
GPIO	4 x GPI, 4 x GPO		
LAN	LAN1: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
COM Port	Internal: COM1, COM2 (RS-232/422/485) COM3, COM4 (RS-232)		
Audio	2 (Mic-in, Line-out)		
TPM	TPM 2.0 onboard IC		
Power	12~28V DC-In with 4-pin wafer PWR cable or DC Jack(Screw type)		
Operating Temperature	-20°C ~ 70°C		



KEY FEATURES

- Intel® Alder Lake-PS Processors
- 2 x 262-pin SO-DIMM DDR5 4800 MHz, up to 64GB (32GB per DIMM)
- 1 x PCIe x4 (Gen4), 2 x USB4/Thunderbolt™4, 2 x USB 3.2 Gen2, 1 x USB 3.2 Gen1, 3 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, 2 x SATA3
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.0b, 2 x DP 1.4a (2 from Type-C), 1 x LVDS, 1 x eDP
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1
- 12~28V DC-In (Lockable DC Jack)

SPECIFICATIONS

Form Factor

Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 17.0 cm x 17.0 cm x 3.8 cm)
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Processor System

CPU	Intel® Alder Lake-PS Core™ Processors, up to 45W
Chipset	LGA 1700
BIOS	AMI SPI 256 Mbit
Secure Flash	AMI SPI 32Mbit (Optional)

Memory

Technology	Dual Channel DDR5 4800 MHz
Capacity	64GB (32GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® Xe Graphics
HDMI	2 x HDMI 2.0b Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz
eDP	eDP 1.4b Max resolution up to 4096x2160@60Hz
DisplayPort	2 x DisplayPort 1.4a Max resolution up to 4096x2160@60Hz
MultiDisplay	Quad display (Included 2 outputs from Type-C)

Expansion Slot

PCIe	1 x PCIe x4 (Gen4)
M.2	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2, USB 2.0 and SIM for 4G/5G 1 x M.2 (Key E, 2230) with PCIe and USB 2.0
SIM Socket	1x SIM socket connected to M.2 key B

Audio

Interface	Realtek ALC897 HD, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I210AT with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	2 x HDMI 2.0b
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0 2 x USB 3.2 Gen2 2 x USB4/Thunderbolt™4 (5V/3A, Support DP 1.4a display output) * For Thunderbolt support, please refer to support list.
Audio	2 (Mic-In/Line-Out)
DC Jack	1 DC-in

Internal Connector

USB	1 x USB 3.2 Gen1 and 1 x USB 2.0 (1 x USB 3.2 header)
COM	COM1, COM2 (RS-232/422/485) COM3, COM4, COM5, COM6 (RS-232)
GPIO	4 x GPI, 4 x GPO
LVDS	1
eDP	1
SATA PWR Output	1
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4x4 for SSD
SATA	2 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B+ M.2 Key M SATA interface: 2 x SATA port

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

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

Power Requirements

Input PWR	12V~28V DC-in with Lockable DC Jack
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 Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1234, IMB-1235

Mini-ITX Motherboard



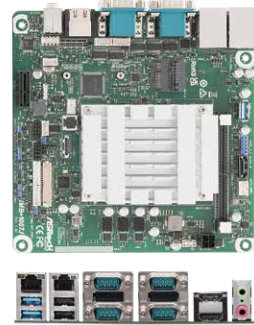
KEY FEATURES

- Intel® 12th Gen Alder Lake-P Processors (IMB-1234 Series)
- Intel® 13th Gen Raptor Lake-P Processors (IMB-1235 Series)
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 64GB (32GB per DIMM)
- 2 x USB4/Thunderbolt™4, 2 x USB 3.2 Gen2, 1x USB 3.2 Gen1, 3 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, 2 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.0b, 2 x DP 1.4a (2 from Type C), 1 x LVDS, 1 x eDP
- TPM 2.0 onboard IC
- Supports Intel® vPro (IMB-1234P/IMB-1234M/IMB-1235P/IMB-1235M), VMD RAID 0/1
- 12~28V DC-In (Lockable DC Jack)

SPECIFICATIONS

Form Factor	IMB-1234	IMB-1235
Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 17.0 cm x 17.0 cm x 3.8 cm)	
Processor System		
CPU	Intel® 12th Gen Alder Lake-P Processors IMB-1234P (i7-1265UE, 2P+8E) IMB-1234M (i5-1245UE, 2P+8E) IMB-1234V (i3-1215UE, 2P+4E)	Intel® 13th Gen (Raptor Lake-P) Core™ Processors IMB-1235P (i7-1365UE, 2P+8E) IMB-1235M (i5-1335UE, 2P+8E) IMB-1235V (i3-1315UE, 2P+4E)
BIOS	AMI SPI 256 Mbit	
Memory		
Technology	Dual Channel DDR4 3200 MHz	
Capacity	64GB (32GB per DIMM)	
Socket	2 x 260 SO-DIMM	
Graphics		
Controller	Intel® Iris® Xe Graphics	
HDMI	2 x HDMI 2.0b Max resolution up to 4096x2160@60Hz	
DisplayPort	2 x DisplayPort 1.4a	
LVDS	Max resolution up to 4096x2160@60Hz Dual channel 24 bit up to 1920 x 1200@60Hz	
eDP	eDP 1.4b Max resolution up to 4096x2160@60Hz	
MultiDisplay	Quad display (Included 2 outputs from Type-C)	
Expansion Slot		
M.2	1 x M.2 (Key E, 2230) with PCIe, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2, USB 2.0 and SIM for 4G/5G	
SIM Socket	1x SIM socket connected to M.2 key B	
Audio		
Interface	Realtek ALC897 HD, High Definition Audio.	
Ethernet		
Controller/ Speed (IMB-1234)	IMB-1234P/IMB-1234M LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps IMB-1234V LAN1: Intel® I225LM with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
Controller/ Speed (IMB-1235)	IMB-1235P/IMB-1235M LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I226V with 10/100/1000/2500 Mbps IMB-1235V LAN1: Intel® I226LM with 10/100/1000/2500 Mbps LAN2: Intel® I226V with 10/100/1000/2500 Mbps	
Connector	2 x RJ-45	

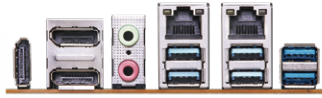
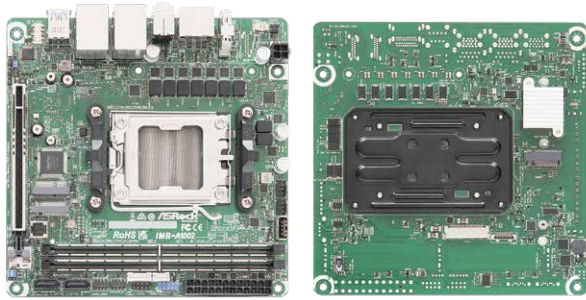
Rear I/O	IMB-1234	IMB-1235
HDMI	2 x HDMI 2.0b	
Ethernet	2 x 2.5 Gigabit LAN	
USB	2 x USB 2.0 2 x USB 3.2 Gen2 2 x USB4/Thunderbolt™4 (5V/3A, supports DP 1.4a display output) * For Thunderbolt support, please refer to support list.	
Audio	2 (Mic-In/Line-Out)	
DC Jack	1 DC-in	
Internal Connector		
USB	1 x USB 3.2 Gen1 and 1 x USB 2.0 (1 x USB 3.2 header)	
COM	COM1, COM2 (RS-232/422/485) COM3, COM4, COM5, COM6 (RS-232)	
GPIO	4 x GPI, 4 x GPO	
LVDS	1	
eDP	1	
SATA PWR Output	1	
Speaker Header	1	
Storage		
M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4x4 for SSD	
SATA	2 x SATA3 (6Gb/s)	
RAID	Intel® VMD RAID 0/1 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B+ M.2 Key M SATA interface: 2 x SATA port	
Security		
TPM	TPM 2.0 onboard IC	
Watchdog Timer		
Output	From Super I/O to drag RESETCON#	
Interval	256 Segments, 0, 1, 2, ...255sec	
Power Requirements		
Input PWR	12V~28V DC-in with Lockable DC Jack	
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 Temp	-20°C ~ 70°C	
Storage Temp	-40° C ~ 85° C	
Operating Humidity	5% ~ 90%	
Storage Humidity	5% ~ 90%	



Model	IMB-1005	IMB-1006	IMB-1007
Chipset/ CPU	Intel® Alder Lake-N SoC Processors N97		
Form Factor	Mini-ITX		
Dimensions	6.7-in x 6.7-in x 1.6-in, 170 cm x 170 cm x 4.1 cm	6.7-in x 6.7-in x 1.5-in, 170 cm x 170 cm x 3.8 cm	6.7-in x 6.7-in x 1.6-in, 170 cm x 170 cm x 4.0 cm
Memory	Single Channel DDR4 3200 MHz		Single Channel DDR5 4800 MHz
DIMM Slot	1 x 260-pin SO-DIMM		1 x 262-pin SO-DIMM
Capacity	32GB		
PCIe	1 x PCIe x1 (Gen3)		
DP	1 x DP 1.4a		
HDMI	2 x HDMI 2.0b	1 x HDMI 2.0b	2 x HDMI 2.0b
LVDS/eDP	1 x LVDS or eDP		
VGA	1		N/A
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen3 x1 or SATA3 for SSD	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen3 x1 or SATA3 and USB 2.0 for SSD	1 x M.2 (Key M, 2242/2280) with PCIe Gen3 x1 or SATA3 for SSD
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless		
M.2 Key B	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G		N/A
SATA	1 x SATA3 (6Gb/s)		
USB 3.2	Internal: 2 x USB 3.2 Gen1 (1 x USB 3.2 header) Rear: 2 x USB 3.2 Gen1	Internal: 4 x USB 2.0 (2 x 2.54 pitch header) Rear: 1 x USB 3.2 Gen2 (Type-C, 5V/3A, supports DP 1.4a display output) 1 x USB 3.2 Gen1	Internal: 1 x USB 3.2 Gen2 (Type-A vertical con) Rear: 2 x USB 3.2 Gen2
USB 2.0	Internal: 3 x USB 2.0 (1 x 2.54 pitch header, 1 x USB 2.0 Type-A vertical con) Rear: 2 x USB 2.0	Internal: 3 x USB 2.0 (1 x 2.54 pitch header, 1 x USB 2.0 Type-A vertical con) Rear: 2 x USB 2.0	Internal: 2 x USB 2.0 (1 x 2.54 pitch header) Rear: 2 x USB 2.0
GPIO	4 x GPI, 4 x GPO		
LAN	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps		LAN1: Realtek RTL8111H with 10/100/1000 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
COM Port	Internal: COM4 (RS-232) COM5 (RS-232 or TTL (optional)) COM6 (RS-232 or ccTalk (optional)) Rear: COM1, COM2, COM3 (RS-232/422/485)	Internal: COM1, COM2 (RS-232/422/485) COM3, COM4 (RS-232/TTL-5V)	Internal: COM5, COM6 (RS-232) Rear: COM1 (RS-232/422/485) COM2, COM3, COM4 (RS-232)
Audio	2 (Mic-In, Line-Out)		
TPM	TPM Header		Intel PTT
Power	ATX-PWR (24+4-pin) and 12~28V DC-In co-design	12~28V DC-In with 4-pin wafer PWR cable or DC Jack	12V DC-In with 4-pin plug PWR cable
Operating Temperature	-20°C ~ 70°C		

IMB-A1002

Mini-ITX Motherboard



KEY FEATURES

- AMD Ryzen™ Embedded 7000 Series processors with B650 Chipset
- 2 x 288-pin Long-DIMM DDR5 5200 MHz, up to 64GB (32GB per DIMM)
- 1 x PCIe x16 (Gen5), 6 x USB 3.2 Gen2, 3 x USB 2.0, 1 x M.2 Key B, 1 x M.2 Key M, 1 x M.2 Key E, 2 x COM, 2 x SATA3
- 2 x Realtek Gigabit LAN
- Supports Quad display, 3 x DP 1.2, 1 x eDP 1.4b
- TPM 2.0 onboard IC
- ATX PWR (24+4-pin)

SPECIFICATIONS

Form Factor

Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.5-in, 17.0 cm x 17.0 cm x 3.7 cm)
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Processor System

CPU	AMD Ryzen™ Embedded 7000 Series processors, up to 65W Ryzen™ 9 PRO 7945 (12cores, 3.7GHz, 65W) Ryzen™ 7 PRO 7745 (8cores, 3.8GHz, 65W) Ryzen™ 5 PRO 7645 (6cores, 3.8GHz, 65W)
Chipset	AMD B650
Socket	AM5
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5200 MHz
Capacity	64GB (32GB per DIMM)
Socket	2 x 288-pin Long-DIMM

Graphics

Controller	AMD RDNA™ 2 Architecture
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz
eDP	eDP 1.4b Max resolution up to 4096x 2160@60Hz
MultiDisplay	Quad Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen5)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.0, USB 2.0 and SIM Socket for 4G/5G
SIM Socket	1 x Socket connected to M.2 Key B

Audio

Interface	Realtek ALC662/ALC897, High Definition Audio. Mic-in, Line-out
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8111H with 10/100/1000 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

DisplayPort	3 x DP 1.2
Ethernet	2 x 1 Gigabit LAN
USB	6 x USB 3.2 Gen2
Audio	2 (Mic-in, Line-out)

Internal Connector

USB	3 x USB 2.0 (1 x 2.54 pitch header, 1 x USB 2.0 Type-A vertical con)
COM	COM1, COM2 (RS-232/422/485)
eDP	1

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen4x4, SATA3 and USB 2.0
SATA	2 x SATA3 (6Gb/s)

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

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

Power Requirements

Input PWR	ATX PWR (24+4-pin)
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 Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%



KEY FEATURES

- AMD Ryzen™ Embedded V2000 SoC processors
- 2 x 260-pin ECC/non-ECC SO-DIMM DDR4 3200 MHz, up to 64GB (32GB per DIMM)
- 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, 1 x PCIe x8, 5 x COM, 2 x SATA3
- 1 x Realtek 1 Gigabit LAN (Support DASH), 1 x Realtek 2.5 Gigabit LAN
- Support Quad display, 1 x LVDS, 1 x eDP, 3 x DP 1.2a, 1 x DP 1.4
- TPM 2.0 onboard IC
- Support DASH
- 12~28V DC-In (Lockable DC Jack)

SPECIFICATIONS

Form Factor

Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.5-in)
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Processor System

CPU	AMD Ryzen™ Embedded V2000 SoC processors, up to 54W IMB-V2000P(V2748, 2.9GHz, 35-54W) IMB-V2000S(V2546, 3.0GHz, 35-54W) IMB-V2000M(V2718, 1.7GHz, 10-25W) IMB-V2000V(V2516, 2.1GHz, 10-25W)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel ECC/non-ECC DDR4 3200 MHz
Capacity	64GB (32GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	AMD Radeon™ Graphics
DisplayPort	3 x DP 1.2a, Max resolution up to 3840x2160 @60Hz 1 x DP 1.4, Max resolution up to 5120x2880 @120Hz
LVDS	LVDS shared with DP_1 Dual channel 24 bit up to 1920 x 1200@60Hz
eDP	eDP shared with DP_0 Max resolution up to 3840x2160 @60Hz
MultiDisplay	Quad display

Expansion Slot

PCIe	1 x PCIe x8 (Gen3)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1x SIM socket connected to M.2 key B

Audio

Interface	Realtek ALC897 HD , High Definition Audio. Mic-In / Line-Out
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek R8111EPV with 10/100/1000 Mbps Support DASH
Connector	2 x RJ-45

Rear I/O

DisplayPort	3 x DP 1.2a, 1 x DP 1.4
COM	1 x COM (RS-232) 1 x COM (RS-232/422/485)
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 3.2 (Gen1), 2 x USB 2.0
Audio	2 (Mic-in, Line-out)
DC Jack	1 (Screw Type)

Internal Connector

USB	2 x USB 3.2 Gen1 (1 x USB 3.2 Gen1 header) 2 x USB 2.0 (1 x 2.54 pitch header)
COM	3 x COM (RS-232)
GPIO	8 x GPI, 8 x GPO
LVDS	1
eDP	1
SATA PWR Output	1
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with SATA3 and PCIe x4 for SSD
SATA	2 x SATA3 (6Gb/s)

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

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

Power Requirements

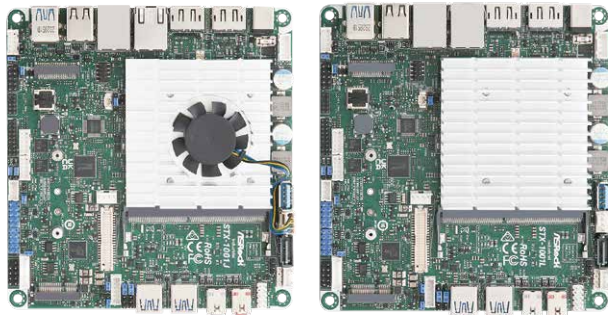
Input PWR	12~28V DC-In with 4-pin wafer PWR cable or DC Jack (Screw Type)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

STX-1001

Mini-STX Motherboard



STX-1001D/ STX-1001J

STX-1001N/ STX-1001L



KEY FEATURES

- Intel® Elkhart Lake SoC Processor
- 1 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB
- 1 x USB 3.2 Gen2, 4 x USB 3.2 Gen1, 6 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key B, 1 x M.2 Key M, 2 x COM, 1 x SATA3
- 1 x Realtek 2.5 Gigabit LAN, 1 x Realtek 1 Gigabit LAN
- Supports Triple display, 2 x DP 1.2, 1 x LVDS or eDP
- 12~28V DC-In

SPECIFICATIONS

Form Factor

Dimensions	Mini-STX (5.5-in x 5.8-in x 1-in, 14.0 cm x 14.7 cm x 2.5 cm)
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Processor System

CPU	Intel® Elkhart Lake SoC Processor -STX-1001D (J6426, QC, Max Speed Up to 3.0GHz, 10 W) -STX-1001J (J6412, QC, Max Speed Up to 2.6GHz, 10 W) -STX-1001N (N6415, QC, Max Speed Up to 3.0GHz, 6.5 W) -STX-1001L (N6210, DC, Max Speed Up to 2.6GHz, 6.5 W)
Chipset	SoC
BIOS	AMI SPI 128 Mbit

Memory

Technology	Single Channel DDR4 3200 MHz
Capacity	32 GB
Socket	1 x 260-pin SO-DIMM

Graphics

Controller	Intel® Gen11 Graphics
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1080@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1080@60Hz (Connector shared with LVDS)
MultiDisplay	Triple Display

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe Gen3x1 and USB 2.0 for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe Gen3x1, USB 3.2 Gen2, and USB 2.0 and SIM for 4G/5G
SIM Socket	1 x Socket connected to M.2 Key B

Audio

Interface	Realtek ALC897, High Definition Audio. Line-out, Mic-in
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8111H-CG with 10/100/1000 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O

DisplayPort	2 x DP 1.2
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen1 2 x USB 2.0

Front I/O

USB	2 x USB 3.2 Gen1
Audio	2 (Mic-in, Line-out)

Internal Connector

USB	1 x USB 3.2 Gen2 (1 x Type-A vertical con) 4 x USB 2.0 (2 x 2.54 pitch header)
COM	COM1, COM3 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
SATA PWR Output	1
Speaker Header	1
CAN Bus	2 x CAN Bus (1 x 2.00 pitch header) (Supported by STX-1001D, STX-1001N)

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen3x1 for SSD
SATA	1 x SATA3 (6Gb/s)

Security

TPM	TPM Header
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Watchdog Timer

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

Power Requirements

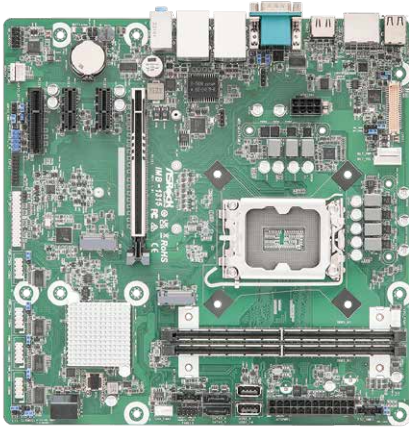
Input PWR	12~28V DC-In
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1315

Micro-ATX Motherboard



KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with H610 chipset
- 2 x 288-pin Long-DIMM DDR5 4800/5600 MHz, up to 96GB (48 GB per DIMM)
- 1 x PCIe x16 (Gen5), 1 x PCIe x4 (Gen3), 2 x PCIe x1 (Gen3), 4 x USB 3.2 Gen1, 6 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 6 x COM, 4 x SATA3
- 2 x Intel 1 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 1 x HDMI 1.4b, 1 x DP 1.4a, 1 x LVDS or eDP
- TPM 2.0 onboard IC
- ATX PWR (8+24 Pin)

SPECIFICATIONS

Form Factor

Dimensions	Micro-ATX (9.6-in x 9.6-in x 1.56-in, 24.4 cm x 24.4 cm x 3.97 cm)
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Processor System

CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/ Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 65W
Chipset	Intel® H610
Socket	LGA 1700
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800/5600 MHz* * Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ.
Capacity	96GB (48GB per DIMM)
Socket	2 x 288-pin Long-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 1.4b: Max resolution up to 4096 x 2160@30Hz HDMI 2.0b: Max resolution up to 4096 x 2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1080@60Hz (Connector shared with LVDS)
MultiDisplay	Triple Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen5) 1 x PCIe x4 (Gen3) 2 x PCIe x1 (Gen3)
M.2	1 x M.2 (Key E, 2230) with CNVi for Wireless

Audio

Interface	Realtek ALC897 HD, High Definition Audio. Line-In, Line-Out, Mic-In
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Ethernet

Controller/ Speed	LAN1: Intel® I210AT with 10/100/1000 Mbps (Optional: supports PoE) LAN2: Intel® I219V with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b 1 x HDMI 1.4b
DisplayPort	1 x DP++
Ethernet	2 x 1 Gigabit LAN
USB	4 x USB 3.2 Gen1 2 x USB 2.0
Audio	3 (Line-In/Line-Out/Mic-In)
Serial Port	COM1 (RS-232/422/485), COM2 (RS-232)

Internal Connector

USB	4 x USB 2.0 (1 x 2.54 pitch header, 2 x USB 2.0 Type-A vertical con)
COM	COM3, COM4, COM5, COM6 (RS-232)
Parallel	1 (shared with GPIO)
GPIO	8 x GPI, 8 x GPO (shared with LPT header)
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
Speaker Header	1
PS/2	1 x PS/2 header
Thunderbolt header	1

Storage

M.2	1 x M.2 (Key M, 2242/2280/25110) with PCIe x 1 for SSD
SATA	4 x SATA3

Security

TPM	TPM 2.0 onboard IC
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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 - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

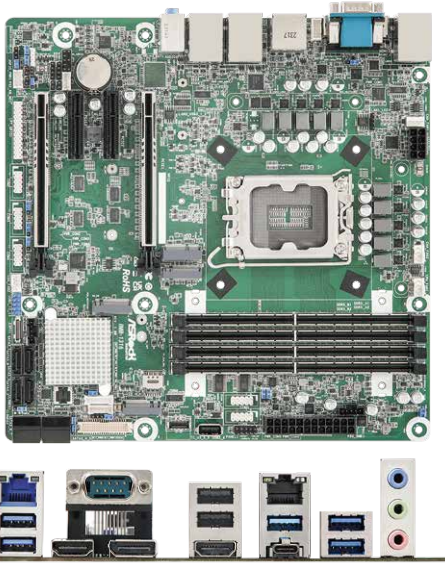
Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1316, IMB-X1316, IMB-X1316-10G

Micro-ATX Motherboard

KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1316)
- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1316, IMB-X1316-10G)
- 4 x 288-pin Long-DIMM DDR5 4400 MHz , 192GB (48GB per DIMM) (IMB-1316)
- 4 x 288-pin ECC/non-ECC Long-DIMM DDR5 4400 MHz, up to 192GB (48GB per DIMM) (IMB-X1316, IMB-X1316-10G)
- 1 x PCIe x16 (Gen5), 1 x PCIe x8 (Gen5), 2 x PCIe x4 (Gen4), 1 x USB 3.2 Gen2x2, 6 x USB 3.2 Gen2, 1 x USB 3.2 Gen1, 2 x USB 2.0, 1 x M.2 Key E, 2 x M.2 Key M, 1 x M.2 Key B, 6 x COM, 8 x SATA3 (IMB-1316)
- 1 x PCIe x16 (Gen5), 1 x PCIe x8 (Gen5), 2 x PCIe x4 (Gen4), 1 x USB 3.2 Gen2x2, 7 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key E, 2 x M.2 Key M, 1 x M.2 Key B, 6 x COM, 8 x SATA3 (IMB-X1316, IMB-X1316-10G)
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN (IMB-1316, IMB-X1316)
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN, 1 x Marvell 10 Gigabit LAN (IMB-X1316-10G)
- Supports Quad display, 2 x HDMI 2.0b, 1 x DP 1.4a, 1 x LVDS
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX PWR (8+24 Pin)



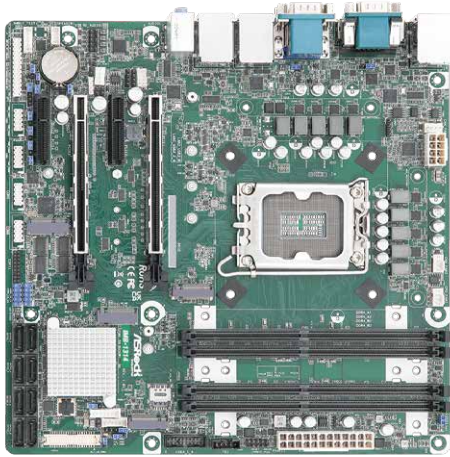
SPECIFICATIONS

Form Factor	IMB-1316	IMB-X1316, IMB-X1316-10G
Dimensions	Micro-ATX (9.6-in x 9.6-in x 1.4-in, 24.4 cm x 24.4 cm x 3.6 cm)	
Processor System		
CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 125W	
Chipset	Intel® Q670	Intel® W680
Socket	LGA1700	
BIOS	AMI SPI 256 Mbit	
Memory		
Technology (IMB-1316)	DDR5 4400 MHz (2DPC - 1DIMM) DDR5 4000 MHz (2DPC - 2DIMM 1R) DDR5 3600 MHz (2DPC - 2DIMM 2R)	
Technology (IMB-X1316,IMB-X1316-10G)	ECC/non-ECC DDR5 4400 MHz (2DPC - 1DIMM) ECC/non-ECC DDR5 4000 MHz (2DPC - 2DIMM 1R) ECC/non-ECC DDR5 3600 MHz (2DPC - 2DIMM 2R)	
Capacity	192GB (48GB per DIMM)	
Socket	4 x 288-pin Long-DIMM	
Graphics		
Controller	Intel® UHD Graphics	
HDMI	2 x HDMI 2.0b Max resolution up to 4096x2160@60Hz	
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz	
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz	
MultiDisplay	Quad Display	
Expansion Slot		
PCIe	2 x PCIe Gen5 Slots (PCIe1/PCIe4:single at x16(PCIe1); dual at x8 (PCIe1) / x8 (PCIe4)) (PCIe1: Support riser card x8/x8) 2 x PCIe4 (Gen4)* *If using PCIex8/x16 card on PCIe2/PCIe4 slot, M.2 Key M2(M2_M2) and M.2 Key E(M2_E1) are limited to install.	
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB3.2 Gen1, USB 2.0 and SIM for 4G/5G	
SIM Socket	1 x SIM Socket connected to M.2 Key B	
Audio		
Interface	Realtek ALC897, High Definition Audio. Line-in, Line-out, Mic-in	
Ethernet		
Controller/ Speed (IMB-1316)	LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, support vPro LAN2: Intel® I210AT with 10/100/1000 Mbps	
Controller/ Speed (IMB-X1316,IMB-X1316-10G)	LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, support vPro LAN2: Intel® I210AT with 10/100/1000 Mbps LAN3: Marvell AQC113 with 10/100/1000/2500/10000 Mbps (IMB-X1316-10G)	
Connector	2 x RJ-45 (IMB-1316/IMB-X1316) 3 x RJ-45 (IMB-X1316-10G)	

Rear I/O	IMB-1316	IMB-X1316, IMB-X1316-10G
HDMI	2 x HDMI 2.0b	
DisplayPort	1 x DP 1.4a++	
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN 1 x 10 Gigabit LAN (IMB-X1316-10G)
USB	2 x USB 2.0 5 x USB 3.2 Gen2 1 x USB 3.2 Gen2x2 (Type C, 5V/3A)	
Audio	3 (Mic-in, Line-in, Line-out)	
COM	COM1 (RS-232/422/485)	
Internal Connector		
USB	1 x USB 3.2 Gen1 vertical Con 1 x USB 3.2 Gen2 vertical Con	2 x USB 3.2 Gen2 vertical Con
COM	COM2 (RS-232/422/485) COM3, COM4, COM5, COM6 (RS-232)	
Parallel	1 (shared with GPIO)	
GPIO	8 x GPI, 8 x GPO (shared with LPT header)	
LVDS	1	
PS2	1 x PS2 header	
Thunderbolt header	1 (only PCIe3 support)	
Storage		
M.2	1 x M.2 (Key M, 2242/2280/25110) with PCIe4 Gen4 for SSD 1 x M.2 (Key M, 2242/2280) with PCIe x4 Gen3 for SSD	
SATA	8 x SATA3 (6Gb/s)	
RAID	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA port	
Security		
TPM	TPM 2.0 onboard IC	
Watchdog Timer		
Output	From Super I/O to drag RESETCON#	
Interval	256 Segments, 0, 1, 2, ...255sec	
Power Requirements		
Input PWR	ATX PWR (8+24 Pin)	
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 Temp	-20°C ~ 70°C	
Storage Temp	-40° C ~ 85° C	
Operating Humidity	5% ~ 90%	
Storage Humidity	5% ~ 90%	

IMB-1314, IMB-X1314

Micro-ATX Motherboard



KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1314)
- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1314)
- 4 x 288-pin Long-DIMM DDR4 3200 MHz , up to 128GB (32GB per DIMM) (IMB-1314)
- 4 x 288-pin ECC/non-ECC Long-DIMM DDR4 3200 MHz, up to 128GB(32GB per DIMM) (IMB-X1314)
- 1 x PCIe x16 (Gen4), 1 x PCIe x8 (Gen4), 2 x PCIe x4 (Gen4), 1 x USB3.2 Gen2x2
- 5 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0
- 1 x M.2 Key E, 2 x M.2 Key M, 1 x M.2 Key B, 6 x COM, 8 x SATA3
- 2 x Intel 2.5 Gigabit LAN (IMB-1314)
- 3 x Intel 2.5 Gigabit LAN (IMB-X1314)
- Supports Quad display, 1 x HDMI 2.0b, 1 x DP 1.4a, 1 x VGA, 1 x LVDS
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX PWR (8+24 Pin)

SPECIFICATIONS

Form Factor	IMB-1314	IMB-X1314
Dimensions	Micro-ATX (9.6-in x 9.6-in x 1.4-in, 24.4 cm x 24.4 cm x 3.6 cm)	
Processor System		
CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 125W	
Chipset	Intel® Q670	Intel® W680
Socket	LGA1700	
BIOS	AMI SPI 256 Mbit	

Memory	IMB-1314	IMB-X1314
Technology	Dual Channel DDR4 3200 MHz	Dual Channel ECC/non-ECC DDR4 3200 MHz
Capacity	128GB (32GB per DIMM)	
Socket	4 x 288-pin Long-DIMM	

Graphics	IMB-1314	IMB-X1314
Controller	Intel® UHD Graphics	
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz	
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz	
VGA	Max resolution up to 1920 x 1200@60Hz	
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz	
MultiDisplay	Quad Display	

Expansion Slot	IMB-1314	IMB-X1314
PCIe	2 x PCIe Gen4 Slots (PCIe1/PCIe3:single at x16(PCIe1); dual at x8 (PCIe1) / x8 (PCIe3)) (PCIe1: Support riser card x8/x8) 2 x PCIe x4 (Gen4)* <small>*If using PCIe/x16 card on PCIe2/PCIe4 slot, M.2 Key M2(M2_M2) and M.2 Key E(M2_E1) are limited to install.</small>	
M.2	1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G 1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless	
SIM Socket	1x SIM socket connected to M.2 key B	

Audio	IMB-1314	IMB-X1314
Interface	Realtek ALC897, High Definition Audio. Line-in, Line-out, Mic-in	

Ethernet	IMB-1314	IMB-X1314
Controller/ Speed (IMB-1314)	LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
Controller/ Speed (IMB-X1314)	LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN3: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
Connector	2 x RJ-45	3 x RJ-45

Rear I/O	IMB-1314	IMB-X1314
HDMI	1 x HDMI 2.0b	
DisplayPort	1 x DP 1.4a++	
VGA	1	
Ethernet	2 x 2.5 Gigabit LAN	3 x 2.5 Gigabit LAN
USB	5 x USB 3.2 Gen2 1 x USB 3.2 Gen2x2 (Type-C, 5V/3A)	
Audio	3 (Mic-in, Line-in, Line-out)	
COM	COM1, COM2 (RS-232/422/485)	

Internal Connector	IMB-1314	IMB-X1314
USB	2 x USB 3.2 Gen1 (1 x USB 3.2 header) 4 x USB 2.0 (2 x 2.54 pitch header)	
COM	COM3, COM4, COM5, COM6 (RS-232)	
Parallel	1 (shared with GPIO)	
GPIO	8 x GPI, 8 x GPO (shared with LPT header)	
LVDS	1	
PS2	1 x PS2 header	
Thunderbolt header	1 (only PCIe4 support)	

Storage	IMB-1314	IMB-X1314
M.2	1 x M.2 (Key M, up to 25110) with PCIe x4 Gen4 for SSD 1 x M.2 (Key M, 2242/2260/2280) with PCIe x4 Gen3 for SSD	
SATA	8 x SATA3 (6Gb/s)	
RAID	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M SATA interface: SATA port	

Security	IMB-1314	IMB-X1314
TPM	TPM 2.0 onboard IC	

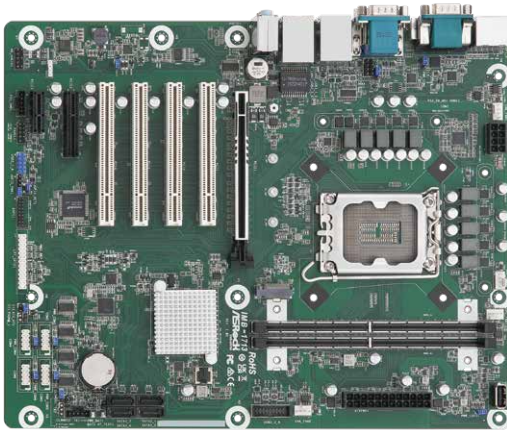
Watchdog Timer	IMB-1314	IMB-X1314
Output	From Super I/O to drag RESETCON#	
Interval	256 Segments, 0, 1, 2, ...,255sec	

Power Requirements	IMB-1314	IMB-X1314
Input PWR	ATX PWR (8+24 Pin)	
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready	

Environment	IMB-1314	IMB-X1314
Operating Temp	-20°C ~ 70°C	
Storage Temp	-40°C ~ 85°C	
Operating Humidity	5% ~ 90%	
Storage Humidity	5% ~ 90%	

IMB-1713

ATX Motherboard



KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with H610 chipset
- 2 x 288-pin Long-DIMM DDR5 4800/5600 MHz, up to 96GB (48GB per DIMM)
- 1 x PCIe x16 (Gen5), 1 x PCIe x4 (Gen3), 1 x PCIe x1 (Gen3), 4 x PCI
- 2 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 5 x USB 2.0
- 1 x M.2 Key M, 6 x COM, 4 x SATA3
- 1 x Intel 1 Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN with PoE function
- Supports Triple display, 1 x HDMI 2.0b, 2 x DP 1.4a, 1 x VGA
- TPM 2.0 onboard IC
- ATX PWR (8+24pin)

SPECIFICATIONS

Form Factor

Dimensions	ATX (12-in x 9.6-in x 1.4-in, 30.5 cm x 24.4 cm x 3.6 cm)
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Processor System

CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 125 W
Chipset	Intel® H610
Socket	LGA1700
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800/5600 MHz* * Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ.
Capacity	96GB (48GB per DIMM)
Socket	2 x 288-pin Long-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz
MultiDisplay	Triple Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen5) 1 x PCIe x4 (Gen3) 1 x PCIe x1 (Gen3)
PCI	4

Audio

Interface	Realtek ALC897, High Definition Audio. Line-In, Line-Out, Mic-In
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Ethernet

Controller/ Speed	LAN1: Realtek® RTL8125BG with 10/100/1000/2500 Mbps, supports PoE LAN2: Intel® I219V with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	2 x DP 1.4a++
VGA	1
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	2 x USB 3.2 (Gen2) 2 x USB 2.0
Audio	3 (Line-In, Line-Out, Mic-In)
COM	COM1, COM2 (RS-232/422/485)
PS2	1 x PS/2 combo

Internal Connector

USB	2 x USB 3.2 Gen1 (1 x USB 3.1 header) 3 x USB 2.0 (1 x 2.54 pitch header, 1 x USB 2.0 Type-A vertical con)
COM	COM3, COM4, COM5, COM6 (RS-232)
Parallel	1 (shared with GPIO)
GPIO	8 x GPI, 8 x GPO (shared with LPT header)
TPM	TPM 2.0 onboard IC
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 3042/2260/2280/22110) with PCIe Gen3x1
SATA	4 x SATA3 (6Gb/s)

Watchdog Timer

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

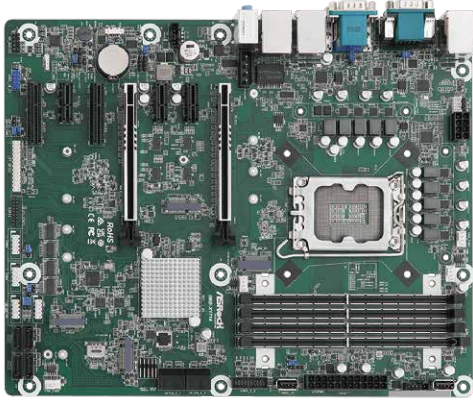
Input PWR	ATX-PWR (24+8-pin)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1714, IMB-X1714

ATX Motherboard



KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1714)
- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1714)
- 4 x 288-pin Long-DIMM DDR5 4400 MHz , up to 192GB (48GB per DIMM) (IMB-1714)
- 4 x 288-pin ECC/non-ECC Long-DIMM DDR5 4400 MHz , up to 192GB (48GB per DIMM) (IMB-X1714)
- 1 x PCIe x16 (Gen5), 1 x PCIe x8 (Gen5), 2 x PCIe x4 (Gen4), 3 x PCIe x1 (Gen3)
- 1 x USB 3.2 Gen2 x2 Type C, 5 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0
- 1 x M.2 Key B, 1 x M.2 Key E, 1 x M.2 Key M, 6 x COM, 8 x SATA3 (IMB-1714)
- 1 x M.2 Key B, 1 x M.2 Key E, 2 x M.2 Key M, 6 x COM, 8 x SATA3 (IMB-X1714)
- 3 x Intel 2.5 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP 1.4a, 1 x VGA
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX PWR (8+24 Pin)

SPECIFICATIONS

Form Factor	IMB-1714	IMB-X1714
Dimensions	ATX (12-in x 9.6-in x 1.4-in, 30.5 cm x 24.4 cm x 3.6 cm)	

Processor System

CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S)Core™ Processors, up to 125W	
Chipset	Intel® Q670	Intel® W680
Socket	LGA1700	
BIOS	AMI SPI 256 Mbit	

Memory

Technology	DDR5 4400 MHz (2DPC - 1DIMM) DDR5 4000 MHz (2DPC - 2DIMM 1R) DDR5 3600 MHz (2DPC - 2DIMM 2R)	ECC/non-ECC DDR5 4400 MHz (2DPC - 1DIMM) ECC/non-ECC DDR5 4000 MHz (2DPC - 2DIMM 1R) ECC/non-ECC DDR5 3600 MHz (2DPC - 2DIMM 2R)
Capacity	192GB (48GB per DIMM)	
Socket	4 x 288-pin Long-DIMM	

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920 x 1200@60Hz
MultiDisplay	Triple Display

Expansion Slot

PCIe	2 x PCIe Gen5 Slots (PCIe1/PCIe4:single at x16(PCIe1); dual at x8 (PCIe1) / x8 (PCIe4)) (PCIe1: Support Riser card x8/x8) 2 x PCIe x4 (Gen4) 3 x PCIe x1 (Gen3)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1 x SIM socket connected to M.2 Key B

Audio

Interface	Realtek ALC897, High Definition Audio. Line-in, Line-out, Mic-in
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Ethernet

Controller/ Speed	LAN1: Intel® I226V with 10/100/1000/2500 Mbps, supports PoE LAN2: Intel® I226LM with 10/100/1000/2500 Mbps, supports vPro LAN3: Intel® I226V with 10/100/1000/2500 Mbps
Connector	3 x RJ-45

Rear I/O	IMB-1714	IMB-X1714
HDMI	1 x HDMI 2.0b	
DisplayPort	1 x DP 1.4a++	
VGA	1	
Ethernet	3 x 2.5 Gigabit LAN	
USB	5 x USB 3.2 Gen2 1 x USB 3.2 Gen2x2 (Type-C, 5V/3A)	
Audio	3 (Mic-in, Line-in, Line-out)	
COM	COM1, COM2 (RS-232/422/485)	

Internal Connector

USB	2 x USB 3.2 Gen1 (1 x USB 3.2 header) 4 x USB 2.0 (1 x 2.54 pitch header, 2 x USB 2.0 Type-A vertical con)
COM	COM3, COM4, COM5, COM6 (RS-232)
Parallel	1
GPIO	8 x GPI, 8 x GPO (shared with LPT header)
PS2	1 x PS2 header
Thunderbolt header	1

Storage

M.2(IMB-1714)	1 x M.2 (Key M, 3042/2260/2280/22110/25110) with PCIe Gen4x4 for SSD
M.2(IMB-X1714)	1 x M.2 (Key M, 3042/2260/2280/22110/25110) with PCIe Gen4x4 for SSD 1 x M.2 (Key M, 3042/2260/2280/22110/25110) with PCIe Gen3x4 for SSD
SATA	8 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M (IMB-1714) PCIe interface: M.2 Key B + M.2 Key M1/2 or 2*M.2 Key M (IMB-X1714) SATA interface: SATA port

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

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

Power Requirements

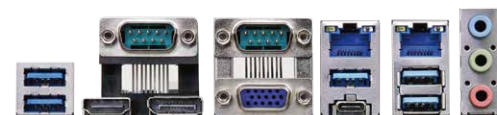
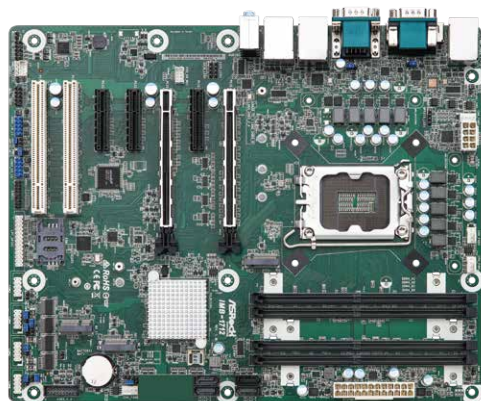
Input PWR	ATX PWR (8+24 Pin)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1712, IMB-X1712

ATX Motherboard



KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1712)
- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1712)
- 4 x 288-pin Long-DIMM DDR4 3200 MHz , up to 128GB (32GB per DIMM) (IMB-1712)
- 4 x 288-pin ECC/non-ECC Long-DIMM DDR4 3200 MHz, up to 128GB(32GB per DIMM) (IMB-X1712)
- 1 x PCIe x16 (Gen4), 1 x PCIe x8 (Gen4), 2 x PCIe x4 (Gen4)
- 1 x PCIe x4 (Gen3), 2 x PCI
- 1 x USB 3.2 Gen2x2 Type C, 5 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0
- 1 x M.2 Key B, 1 x M.2 Key E, 1 x M.2 Key M
- 6 x COM, 4 x SATA3 (IMB-1712)
- 6 x COM, 8 x SATA3 (IMB-X1712)
- 2 x Intel 2.5 Gigabit LAN (IMB-1712)
- 3 x Intel 2.5 Gigabit LAN (IMB-X1712)
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP 1.4a, 1 x VGA
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX PWR (8+24 Pin)

SPECIFICATIONS

Form Factor	IMB-1712	IMB-X1712
Dimensions	ATX (12-in x 9.6-in x 1.4-in, 30.5 cm x 24.4 cm x 3.6 cm)	

Processor System

CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 125W	
Chipset	Intel® Q670	Intel® W680
Socket	LGA1700	
BIOS	AMI SPI 256 Mbit	

Memory

Technology	Dual Channel DDR4 3200 MHz	Dual Channel ECC/non-ECC DDR4 3200 MHz
Capacity	128 GB (32 GB per DIMM)	
Socket	4 x 288-pin Long-DIMM	

Graphics

Controller	Intel® UHD Graphics	
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz	
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz	
VGA	Max resolution up to 1920 x 1200@60Hz	
MultiDisplay	Triple Display	

Expansion Slot

PCIe	2 x PCIe Gen4 Slots (PCIe1/PCIe3:single at x16(PCIe1); dual at x8 (PCIe1) / x8 (PCIe3)) (PCIe1: Support riser card x8/x8) 2 x PCIe x4 (Gen4) 1 x PCIe x4 (Gen3)	
PCI	2 x PCI	
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2 Gen1, USB 2.0 and SIM for 4G/5G	
SIM Socket	1 x SIM socket connected to M.2 Key B	

Audio

Interface	Realtek ALC897, High Definition Audio. Line-in,Line-out,Mic-in
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Ethernet

Controller/ Speed (IMB-1712)	LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
Controller/ Speed (IMB-X1712)	LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN3: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	
Connector	2 x RJ-45	3 x RJ-45

Rear I/O	IMB-1712	IMB-X1712
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HDMI	1 x HDMI 2.0b	
DisplayPort	1 x DP 1.4a++	
VGA	1	
Ethernet	2 x 2.5 Gigabit LAN	3 x 2.5 Gigabit LAN
USB	5 x USB 3.2 Gen2 1 x USB 3.2 Gen2x2 (Type C)	
Audio	3 (Mic-in, Line-in, Line-out)	
COM	COM1, COM2 (RS-232/422/485)	

Internal Connector

USB	2 x USB 3.2 Gen1 (1 x USB 3.2 header) 4 x USB 2.0 (2 x 2.54 pitch header)	
COM	COM3, COM4, COM5, COM6 (RS-232)	
Parallel	1 (shared with GPIO)	
GPIO	8 x GPI, 8 x GPO (shared with LPT header)	
PS2	1 x PS2 header	
Thunderbolt header	1 (only PCIe4 support)	

Storage

M.2	1 x M.2 (Key M, 3042/2260/2280/22110/25110) with PCIe Gen4x4 for SSD	
SATA	4 x SATA3 (6Gb/s)	8 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1/5/10 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B + M.2 Key M SATA interface: SATA port	

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

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

Power Requirements

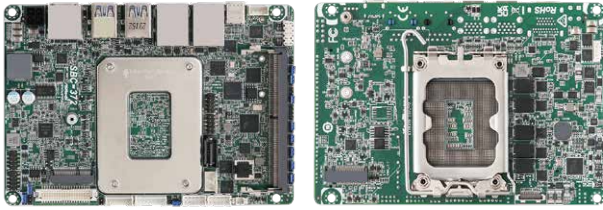
Input PWR	ATX PWR (8+24 Pin)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

KEY FEATURES

- Intel® Alder Lake-PS Processors
- 1 x 262-pin SO-DIMM DDR5 4800 MHz, up to 32GB
- 1 x USB4/Thunderbolt™4, 4 x USB 3.2 Gen2, 4 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 2 x COM, 1 x SATA3
- 1 x Intel 2.5 Gigabit LAN, 1 x Intel 1 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 2 x DP 1.4a (1 from Type-C), 1 x LVDS or eDP
- TPM 2.0 onboard IC
- Support Intel® vPro
- 12~28V DC-In PWR



SPECIFICATIONS

Form Factor

Dimensions	3.5" SBC (5.8-in x 4-in x 1.2-in, 14.7 cm x 10.2 cm x 2.95 cm)
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Processor System

CPU	Intel® Alder Lake-PS Core™ Processors, up to 45W
Socket	LGA 1700
BIOS	AMI SPI 256 Mbit
Secure Flash	AMI SPI 32Mbit (Optional)

Memory

Technology	Dual Channel DDR5 4800 MHz
Capacity	32GB
Socket	1 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® Xe Graphics
HDMI	HDMI 2.0b Max resolution up to 4096 x 2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1080@60Hz (Connector shared with LVDS)
MultiDisplay	Quad display (Included 1 output from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe x1 and USB 2.0 for Wireless
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Audio

Interface	Realtek ALC256 HD, High Definition Audio.
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Ethernet

Controller/ Speed	LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I210AT with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP 1.4a++
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	4 x USB 3.2 Gen2 1 x USB4/Thunderbolt™4 (5V/3A, Support DP 1.4a display output) * For Thunderbolt support, please refer to support list.

Internal Connector

USB	4 x USB 2.0 (2 x 2.00 pitch header)
COM	COM1, COM2 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
SATA PWR Output	1
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4x4 for SSD
SATA	1 x SATA3 (6Gb/s)

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

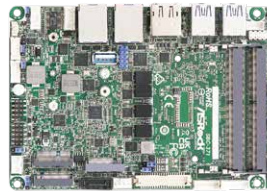
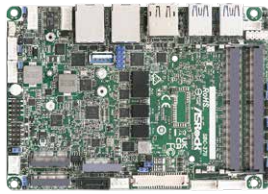
Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	12~28V DC-In with 4-pin wafer PWR
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 Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%



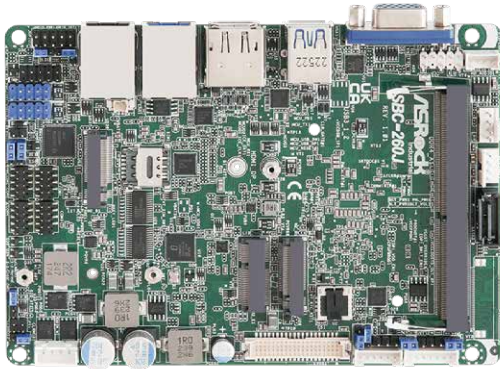
Model	SBC-370	SBC-371	SBC-373-WT
Chipset/ CPU	Intel® 12th Gen Alder Lake Processors SBC-370P (i7-1265UE, 2P+8E) SBC-370M (i5-1245UE, 2P+8E) SBC-370V (i3-1215UE, 2P+4E)	Intel® 13th Gen Raptor Lake-P Core™ Processors SBC-371P (i7-1365UE, 2P+8E) SBC-371M (i5-1335UE, 2P+8E) SBC-371V (i3-1315UE, 2P+4E)	Intel® 13th Gen Raptor Lake-P Core™ Processors SBC-373P-WT (i7-1365URE, 2P+8E) SBC-373M-WT (i5-1345URE, 2P+8E) SBC-373V-WT (i3-1315URE, 2P+4E)
Form Factor	3.5"SBC (5.8-in x 4-in x 0.94-in, 14.7 cm x 10.2 cm x 2.40 cm)		
Memory	Dual Channel DDR4 3200 MHz		
DIMM Slot	2 x 260-pin SO-DIMM		
Capacity	64GB (32 GB per DIMM)		
PCIe	1 x PCIe x1 Gen3 (supports up to 10W)		
DP	3 x DP 1.4a (2 from Type-C)		
HDMI	1 x HDMI 2.0b		
LVDS/eDP	1 x LVDS or eDP		
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe x4 for SSD		
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless		
M.2 Key B	1 x M.2 (Key B, 3042/3052) with PCIe x1 or SATA3 and USB 3.2 and USB 2.0 and SIM for 4G/5G		
SATA	1 x SATA3 (6Gb/s)		
RAID	Intel® VMD RAID 0/1 **supported by PCIe interface PCIe interface: M.2 Key B + M.2 Key M		
USB 3.2 Gen2x2	Rear: 2 x USB 3.2 Gen2x2 (Type-C, 5V/3A, support DP1.4a display output)		
USB 3.2	Internal: 1 x USB 3.2 Gen2 (Type A connector) Rear: 2 x USB 3.2 Gen2		
USB 2.0	Internal: 2 x USB 2.0 (1 x 2.54 pitch header)		
GPIO	4 x GPI, 4 x GPO		
LAN	SBC-370P/SBC-370M LAN1: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps SBC-370V LAN1: Intel® I225LM with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps	SBC-371P/SBC-371M LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I226V with 10/100/1000/2500 Mbps SBC-371V LAN1: Intel® I226LM with 10/100/1000/2500 Mbps LAN2: Intel® I226V with 10/100/1000/2500 Mbps	SBC-373P-WT/SBC-373M-WT LAN1: Intel® I226IT with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I210IT with 10/100/1000 Mbps SBC-373V-WT LAN1: Intel® I226IT with 10/100/1000/2500 Mbps LAN2: Intel® I210IT with 10/100/1000 Mbps
COM Port	Rear: COM1, COM3, COM4 (RS-232/422/485)		
Audio	2 x Interface (Line-out, Mic-in)		
TPM	TPM 2.0 onboard IC		
Power	12~36V DC-In with 4-pin wafer PWR cable or DC Jack 12V DC-In only (BOM option)		
Operating Temperature	-20°C ~ 70°C		

SBC-260, SBC-261

3.5" SBC Motherboard

KEY FEATURES

- Intel® Alder Lake-N Processors
- 1 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB (SBC-260)
- 1 x 262-pin SO-DIMM DDR5 4800 MHz, up to 32GB (SBC-261)
- 2 x USB 3.2 Gen2, 4 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 1 x M.2 Key B, 4 x COM, 1 x SATA3 (SBC-260)
- 4 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 4 x COM, 1 x SATA3 (SBC-261)
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN (SBC-260)
- 2 x Realtek 1 Gigabit LAN (SBC-261)
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP 1.4a, 1 x VGA, 1 x LVDS or eDP (SBC-260)
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP 1.4b, 1 x LVDS or eDP (SBC-261)
- TPM 2.0 onboard IC (SBC-260)
- 9~36V DC-In PWR (SBC-260)
- 12V DC-In (SBC-261)



SPECIFICATIONS

Form Factor	SBC-260	SBC-261
Dimensions	3.5" SBC (5.8-in x 4-in x 1.02-in, 14.7 cm x 10.2 cm x 2.60 cm)	

Processor System

CPU	N97, QC, Max Speed up to 3.6GHz, 12W	
BIOS	AMI SPI 256 Mbit	

Memory

Technology	SBC-260	SBC-261
Technology	Single Channel DDR4 3200 MHz	Single Channel DDR5 4800 MHz
Capacity	32GB	
Socket	1 x 260-pin SO-DIMM	1 x 262-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics	
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz	
DisplayPort	DisplayPort 1.4a Max resolution up to 4096x2160@60Hz	
VGA	Max resolution up to 1920x1200	
LVDS	Dual channel 24 bit up to 1920x1200@60Hz (Connector shared with eDP)	
eDP	Max resolution up to 1920x1080@60Hz (Connector shared with LVDS)	
MultiDisplay	Triple Display	

Expansion Slot

M.2 (SBC-260)	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe x1/USB 3.2/USB 2.0 and SIM for 4G/5G	
M.2 (SBC-261)	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless	
SIM Socket	1 x SIM Socket connected to M.2 Key B	N/A

Audio

Interface	Realtek ALC256 HD, High Definition Audio.
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Ethernet

Controller/ Speed (SBC-260)	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I210AT with 10/100/1000 Mbps
Controller/ Speed (SBC-261)	LAN1: Realtek RTL8111H with 10/100/1000 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O	SBC-260	SBC-261
HDMI	1 x HDMI 2.0b	
DisplayPort	1 x DP 1.4a	1 x DP 1.4b
VGA	1	N/A
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN	2 x 1 Gigabit LAN
USB	2 x USB 3.2 Gen2	4 x USB 3.2 Gen2

Internal Connector

USB (SBC-260)	4 x USB 2.0 (2 x 2.54 pitch header)	
USB (SBC-261)	2 x USB 2.0 (1 x 2.54 pitch header)	
COM	COM3, COM4 (RS-232) COM1, COM2 (RS-232/422/485)	COM1 (RS-232/422/485) COM2, COM3, COM4 (RS232)
GPIO	4 x GPI, 4 x GPO	
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)	
SATA PWR Output	1	
Speaker Header	1	
MIPI Camera Header	1 (Optional)	N/A

Storage

M.2 (SBC-260)	1 x M.2 (Key M, 2242/2260/2280) with PCIe x1 and SATA3 for SSD	
M.2 (SBC-261)	1 x M.2 (Key M, 2242/2260/2280) with PCIe x1 and SATA3 and USB 2.0 for SSD	
SATA	1 x SATA3 (6Gb/s)	

Security

TPM	TPM 2.0 onboard IC	Intel® PTT
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Watchdog Timer

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

Power Requirements

Input PWR	9~36V DC-In PWR	12V DC-In
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready	

Environment

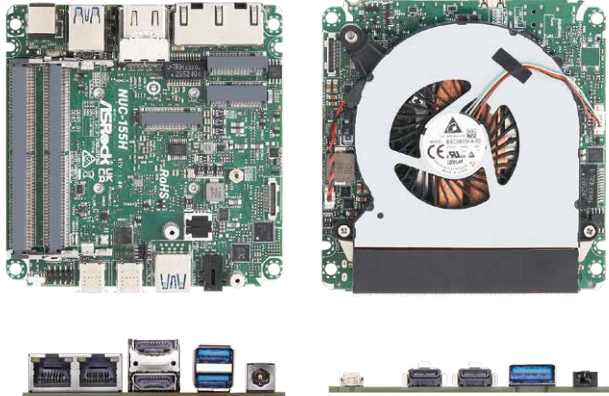
Operating Temp	-20°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

NUC Ultra 100 Motherboard Series

NUC-155H, NUC-125H

NUC Motherboard

KEY FEATURES



- Intel® Core™ Ultra processors (Meteor Lake-U/H)
- 2 x 262-pin SO-DIMM DDR5 5600 MHz up to 96GB (48GB per DIMM)
- 1 x USB4/Thunderbolt™4, 4 x USB 3.2 Gen2, 2 x M.2 Key M, 1 x M.2 Key E, 1 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1 TMDS, 1 x DP 2.1 (from USB4), 1 x DP 1.4a (from Type-C)
- Intel® PTT
- 12V~24V DC-in

SPECIFICATIONS

Form Factor

Dimensions	NUC (4.09-in x 4.02-in x 1.5-in, 10.4 cm x 10.2 cm x 3.8 cm)
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Processor System

CPU	Intel® Core™ Ultra processors (Meteor Lake-H/U) NUC-155H (6P+8E) NUC-125H (4P+8E)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5600 MHz
Capacity	96GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Graphics
HDMI	HDMI 2.1 TMDS Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 2.1/ 1.4a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Max 4 display (Included 2 outputs from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless
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Audio

Interface	Realtek ALC256, High Definition Audio.
-----------	--

Ethernet

Controller/ Speed	LAN1: Intel® I226LM with 10/100/1000/2500 Mbps LAN2: Intel® I226V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Front I/O

USB	1 x USB 3.2 Gen2 (Type A) 1 x USB4/Thunderbolt™4 (5V/3A, Supports DP 2.1 display output) 1 x USB 3.2 Gen2x2 (Type-C, 5V/3A, Supports DP 1.4a display output) *For Thunderbolt support, please refer to support list.
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.1 TMDS
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type A)
DC Jack	1

Storage

M.2	1 x M.2 (KEY M, 2242) with PCIe Gen4x4 for SSD 1 x M.2 (KEY M, 2242/2280) with PCIe Gen4 x4 for SSD
SATA	1 x SATA3.0 (6.0 Gb/s)

Security

TPM	Intel® PTT
-----	------------

Watchdog Timer

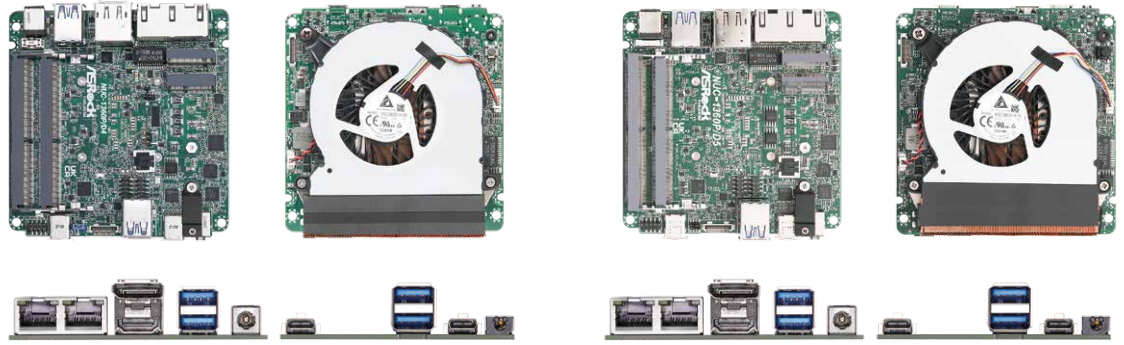
Output Interval	From Super I/O to drag RESETCON# 256 Segments, 0, 1, 2, ...,255sec
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Power Requirements

Input PWR	12V~24V DC-In Jack
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

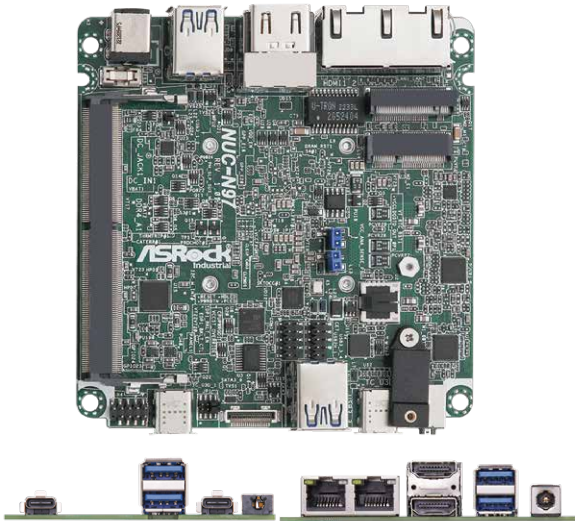
Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%



Model	NUC 1300/D4 Motherboard Series	NUC 1300/D5 Motherboard Series
Chipset/ CPU	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUC-1360P/D4 (i7-1360P, 4P+8E) NUC-1340P/D4 (i5-1340P, 4P+8E) NUC-1365UE/D4 (i7-1365UE, 2P+8E) NUC-1335UE/D4 (i5-1335UE, 2P+8E) NUC-1315UE/D4 (i3-1315UE, 2P+4E) NUC-1315U/D4 (i3-1315U, 2P+4E)	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUC-1360P/D5 (i7-1360P, 4P+8E) NUC-1340P/D5 (i5-1340P, 4P+8E) NUC-1365UE/D5 (i7-1365UE, 2P+8E) NUC-1335UE/D5 (i5-1335UE, 2P+8E) NUC-1315UE/D5 (i3-1315UE, 2P+4E) NUC-1315U/D5 (i3-1315U, 2P+4E)
Form Factor	NUC (4.09-in x 4.02-in x 1.5-in, 10.4 cm x 10.2 cm x 3.8 cm)	
Memory	Dual Channel DDR4 3200 MHz	Dual Channel DDR5 4800 MHz
DIMM Slot	2 x 260-pin SO-DIMM	2 x 262-pin SO-DIMM
Capacity	64GB (32 GB per DIMM)	
MultiDisplay	Max 4 display (Included 2 outputs from Type-C)	
DP	3 x DP 1.4a (2 from Type-C)	1 x DP 2.1 (from USB4), 2 x DP 1.4a (1 from Type-C)
HDMI	1 x HDMI 2.0b	
M.2 Key M	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4x4 for SSD *M.2 Key M 2280(Supported by bracket)	
M.2 Key E	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless	
SATA	1 x SATA3 (6Gb/s)	
USB4	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP 1.4a display output)	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output)
USB 3.2	Front: 2 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2 (Type-C, 5V/1.5A, supports DP 1.4a display output) Rear: 2 x USB 3.2 Gen2 (Type-A)	Front: 2 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2x2 (Type-C, 5V/1.5A, Supports DP 1.4a display output) Rear: 2 x USB 3.2 Gen2 (Type-A)
USB 2.0	Internal: 2 x USB 2.0 (1 x 2.00 pitch header)	
LAN	1 x Intel® I226LM 1 x Intel® I226LM/I226V	1 x Intel® I226LM 1 x Intel® I226V
COM Port	1 x COM (RS-232/RS-422/RS-485)	
Audio	1 (headphone & microphone jack)	
TPM	TPM 2.0 onboard IC	
Power	12V~19V DC-In Jack	
Operating Temperature	-20°C ~ 70°C	

NUC-N97

NUC Motherboard



KEY FEATURES

- Intel® Alder Lake-N Processors
- 1 x 260-pin SO-DIMM DDR4 3200 MHz , up to 32GB
- 6 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E, 1 x COM, 1 x SATA3
- 2 x Realtek 2.5 Gigabit LAN
- Supports Triple display, 2 x HDMI 2.0b, 2 x DP 1.4a (from Type-C)
- TPM 2.0 onboard IC
- 9V~19V DC-In

SPECIFICATIONS

Form Factor

Dimensions	NUC (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm)
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Processor System

CPU	Intel® Alder Lake-N Processors N97
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Single Channel DDR4 3200 MHz
Capacity	32GB
Socket	1 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Triple-Display (Included 2 outputs from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0
-----	---

Audio

Interface	Realtek ALC256, High Definition Audio.
-----------	--

Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Front I/O

USB	2 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, 5V/3A, Supports DP1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.0b
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type-A)
DC Jack	1

Internal Connector

USB	2 x USB 2.0 (1 x 2.00 pitch header)
COM	1 x COM(RS232/422/485)
Audio header	line in /out (share with audio Jack, by BIOS setting)

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3x1 and SATA3 for SSD *M.2 Key M 2280(Supported by bracket)
SATA	1 x SATA3.0 (6.0 Gb/s)

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

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

Power Requirements

Input PWR	9V~19V DC-In Jack
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 Temp	-20°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

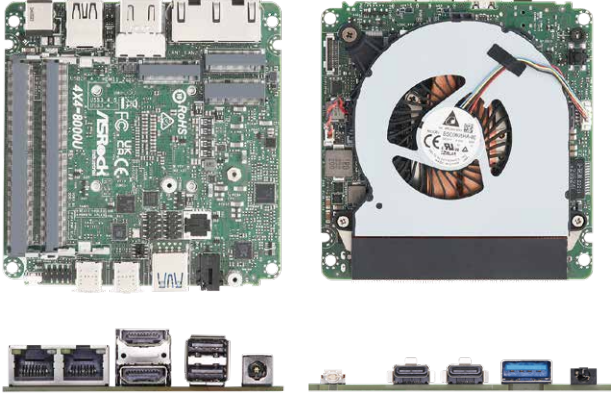
4X4 8040 Motherboard Series

4X4-8840U, 4X4-8640U

4X4 Motherboard

KEY FEATURES

- AMD Ryzen™ 8040U-Series
- 2 x 262-pin SO-DIMM DDR5 5600 MHz, up to 96GB (48GB per DIMM)
- 2 x USB4, 1 x USB 3.2 Gen2, 2 x USB 2.0, 2 x M.2 Key M, 1 x M.2 Key E
- 1 x Realtek Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1, 2 x DP 1.4a (from Type-C)
- 12V~24V DC-In



SPECIFICATIONS

Form Factor

Dimensions	4X4 (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm)
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Processor System

CPU	AMD Ryzen™ 8040U-Series - AMD Ryzen™ 7 8840U (Max Speed up to 5.1GHz) - AMD Ryzen™ 5 8640U (Max Speed up to 4.9GHz)
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5600 MHz
Capacity	96GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	AMD Radeon™ Graphics
HDMI	2 x HDMI 2.1 Max resolution up to 7680 x 4320@60Hz
DisplayPort	DisplayPort 1.4a Max resolution up to 4096x2160@60Hz
MultiDisplay	Max 4 display (included 2 outputs from Type-C)

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe Gen4x1, USB 2.0 for Wireless
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Audio

Interface	Realtek ALC256, High Definition Audio
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Front I/O

USB	1 x USB 3.2 Gen2 (Type-A) 2 x USB4 (Type-C, 5V/3A, supports DP1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.1
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0
DC Jack	1

Storage

M.2	1 x M.2 (KEY M, 2242/2280) with PCIe Gen4x4 for SSD 1 x M.2 (KEY M, 2242) with PCIe Gen4x4 for SSD
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Internal Connector

COM	TTL-3V
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Security

TPM	AMD FW TPM
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Watchdog Timer

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

Power Requirements

Input PWR	12V~24V DC-In Jack
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

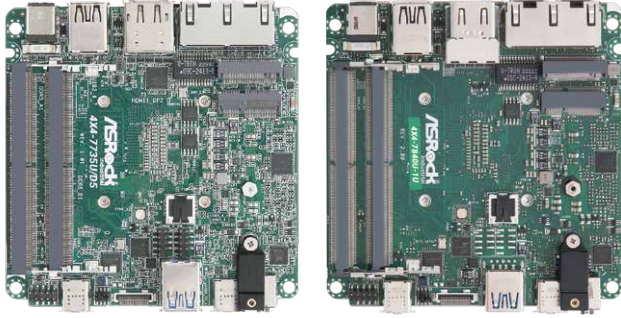
Environment

Operating Temp	0°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

4X4 7035/D5 Motherboard Series

4X4 7040 Motherboard Series

4X4 Motherboard



KEY FEATURES

- AMD Ryzen™ 7 7735U/ Ryzen™ 5 7535U (4X4 7035 Series)
- AMD Ryzen™ 7 7840U/ Ryzen™ 5 7640U (4X4 7040 Series)
- 2 x 262-pin SO-DIMM DDR5 4800MHz up to 64GB (32GB per DIMM) (4X4 7035 Series)
- 2 x 262-pin SO-DIMM DDR5 5600 MHz, up to 64GB (32GB per DIMM) (4X4 7040 Series)
- 2 x USB4, 2 x USB 3.2 Gen2, 4 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 1 x COM, 1 x SATA3 (4X4 7035 Series)
- 2 x USB4, 1 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 1 x SATA3 (4X4 7040 Series)
- 1 x Realtek 1 Gigabit LAN, 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.1, 3 x DP 1.4a (2 from Type-C) (4X4 7035 Series)
- Supports Quad display, 2 x HDMI 2.0, 2 x DP 1.4a (from Type-C) (4X4 7040 Series)
- TPM 2.0 onboard IC (4X4 7035 Series)
- 12V~19V DC-In

4X4 7035/D5 Series

4X4 7040 Series

SPECIFICATIONS

Form Factor	4X4-7735U/D5, 4X4-7535U/D5	4X4-7840U-1U, 4X4-7640U-1U
Dimensions	4X4 (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm)	

Processor System

CPU (4X4-7735U/D5, 4X4-7535U/D5)	AMD Ryzen™ 7035U-Series AMD Ryzen™ 7 7735U (Max Speed up to 4.75GHz) AMD Ryzen™ 5 7535U (Max Speed up to 4.55GHz)	
CPU (4X4-7840U-1U, 4X4-7640U-1U)	AMD Ryzen™ 7040U-Series AMD Ryzen™ 7 7840U (Max Speed up to 5.1GHz) AMD Ryzen™ 5 7640U (Max Speed up to 4.9GHz)	
BIOS	AMI SPI 256 Mbit	

Memory

Technology	Dual Channel DDR5 4800 MHz	Dual Channel DDR5 5600 MHz
Capacity	64GB (32 GB per DIMM)	
Socket	2 x 262-pin SO-DIMM	

Graphics

Controller	AMD Radeon™ Graphics	
HDMI	HDMI 2.1 Max resolution up to 7680 x 4320@60Hz	HDMI 2.0 Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz	DisplayPort 1.4a Max resolution up to 4096x2160@60Hz
MultiDisplay	Max 4 display (included 2 outputs from Type-C)	

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe Gen4 x1, USB 2.0 for Wireless
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Audio

Interface	Realtek ALC233, High Definition Audio	Realtek ALC256, High Definition Audio
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Ethernet

Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111EPV with 10/100/1000 Mbps, support DASH function
Connector	2 x RJ-45

Front I/O	4X4-7735U/D5, 4X4-7535U/D5	4X4-7840U-1U, 4X4-7640U-1U
USB 3.2 Gen2 (Type-A)	2	1
USB4	2 x USB4 (Type-C, 5V/3A, supports DP 1.4a display output)	
Audio	1 (headphone & microphone jack)	

Rear I/O

HDMI	1 x HDMI 2.1	2 x HDMI 2.0
DisplayPort	1 x DP 1.4a	NA
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN	
USB	2 x USB 2.0	
DC Jack	1	

Internal Connector

USB	2 x USB 2.0 (1 x 2.00mm pitch header)	NA
COM	1 x COM (RS-232/422/485)	NA

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen4x4 for SSD *M.2 Key M 2280 (supported by bracket)
SATA	1 x SATA3 (6Gb/s)

Security

TPM	TPM 2.0 onboard IC	AMD FW TPM
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Watchdog Timer

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

Power Requirements

Input PWR	12V~19V DC-In Jack
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

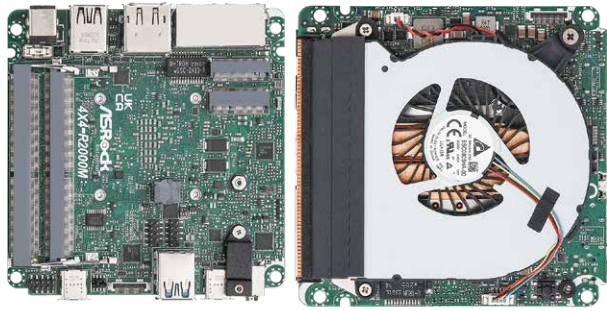
Operating Temp	0°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

4X4-V2000 Motherboard Series

4X4-R2000 Motherboard Series

4X4 Motherboard

KEY FEATURES



- AMD Ryzen™ Embedded V2718 (4X4-V2000M), V2516 (4X4-V2000V)
- AMD Ryzen™ Embedded R2314 (4X4-R2000M), R2312 (4X4-R2000V)
- 2 x 260-pin ECC/non-ECC SO-DIMM DDR4 3200 MHz (4X4-V2000M/4X4-V2000V), DDR4 2666 MHz (4X4-R2000M), DDR4 2400 MHz (4X4-R2000V), up to 64GB (32GB per DIMM)
- 4 x USB 3.2 Gen2, 4 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E, 1 x COM, 1 x SATA3
- 1 x Realtek 2.5 Gigabit LAN, 1 x Realtek 1 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0a, 3 x DP 1.2a (2 from Type C) (4X4-V2000M/4X4-V2000V/4X4-R2000M)
- Supports Triple display, 1 x HDMI 2.0a, 2 x DP 1.2a (1 from Type-C) (4X4-R2000V)
- TPM 2.0 onboard IC
- 12V~19V DC-In (4X4-V2000M/4X4-V2000V)
- 12V~24V DC-In (4X4-R2000M/4X4-R2000V)

SPECIFICATIONS

Form Factor	4X4-V2000	4X4-R2000
Dimensions	4X4 (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm)	

Processor System	
CPU (4X4-V2000)	AMD Ryzen™ Embedded V2000 Series 4X4-V2000M (V2718, 8C, Max Speed up to 4.15GHz) 4X4-V2000V (V2516, 6C, Max Speed up to 3.95GHz)
CPU (4X4-R2000)	AMD Ryzen™ Embedded R2000 Series 4X4-R2000M (R2314, QC, Max Speed up to 3.5GHz) 4X4-R2000V (R2312, DC, Max Speed up to 3.5GHz)
Chipset	SoC
BIOS	AMI SPI 128 Mbit

Memory	
Technology (4X4-V2000)	Dual Channel non-ECC/ECC DDR4 3200 MHz
Technology (4X4-R2000)	Dual Channel ECC/non-ECC DDR4 2666 MHz (4X4-R2000M) Dual Channel ECC/non-ECC DDR4 2400 MHz (4X4-R2000V)
Capacity	64GB (32 GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics	
Controller	AMD Radeon™ Graphics
HDMI	HDMI 2.0a Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.2a, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay (4X4-V2000)	Quad Display (Included 2 outputs from Type C)
MultiDisplay (4X4-R2000)	Quad Display (Included 2 outputs from Type-C) (4X4-R2000M) Triple Display (Included 1 output from Type-C) (4X4-R2000V)

Expansion Slot	
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 for Wireless

Audio		
Interface	Realtek ALC233, High Definition Audio.	Realtek ALC256, High Definition Audio.

Ethernet	
Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Front I/O	4X4-V2000	4X4-R2000
USB (4X4-V2000)	2 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, 5V/3A, Supports DP 1.2a display output)	
USB (4X4-R2000)	4X4-R2000M: 2 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, 5V/3A, Supports DP 1.2a display output) 4X4-R2000V: 2 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2 (Type-C, 5V/3A) 1 x USB 3.2 Gen2 (Type-C, 5V/3A, Supports DP 1.2a display output)	
Audio	1 (headphone & microphone jack)	

Rear I/O	
HDMI	1 x HDMI 2.0a
DisplayPort	1 x DP 1.2a
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0
DC Jack	1

Internal Connector	
USB	2 x USB 2.0 (1 x 2.00 pitch header)
COM	1 x COM (RS-232/RS-422/RS-485)

Security	
TPM	TPM 2.0 onboard IC

Storage	
M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3x4 and SATA3 for SSD *M.2 Key M 2280 (Supported by bracket)
SATA	1 x SATA3.0 (6.0 Gb/s)

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

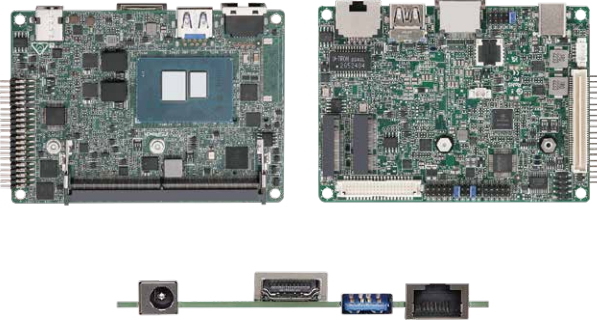
Power Requirements		
Input PWR	12V~19V DC-In Jack	12V~24V DC-In Jack
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready	

Environment	
Operating Temp	-20°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

SOM-P104

Pico-ITX Motherboard

KEY FEATURES



- Intel® Alder Lake-N Processors
- 1 x 262-pin SO-DIMM DDR5 4800 MHz, up to 32GB
- 1 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 2 x COM
- 1 x MIOe slot
- 1 x Realtek 2.5 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP 1.4a, 1 x LVDS or eDP
- 12V DC-In

SPECIFICATIONS

Form Factor

Dimensions	Pico-ITX (3.9-in x 2.8-in x 0.76-in, 10 cm x 7.2 cm x 1.93 cm)
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Processor System

CPU	Intel® Alder Lake-N Processors
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800 MHz
Capacity	32GB
Socket	1 x 262-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b Max resolution up to 4096 x 2160@60Hz
DisplayPort	Display Port 1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1080@60Hz (Connector shared with LVDS)
MultiDisplay	Triple display

Expansion Slot

M.2	1 x M.2 (Key E, 2230) with PCIe Gen3x1 and USB 2.0 for Wireless
MIOe	1 (HDMI or DP, 1 x USB 3.2 Gen2, 1 x USB 2.0, 3 x PCIe x1)

Audio

Interface	Realtek ALC897 HD, High Definition Audio. Line-in, Line-out, Mic-in
-----------	---

Ethernet

Controller/ Speed	Realtek RTL8125BG with 10/100/1000/2500 Mbps
Connector	1 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b
Ethernet	1 x 2.5 Gigabit LAN
USB	1 x USB 3.2 Gen2 (Type A)
DC Jack	1

Internal Connector

USB	2 x USB 2.0 (1 x 2.00 pitch header)
COM	COM1, COM2 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
MIPI Camera Header	1 (Optional)

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen3x1 and SATA3 and USB 2.0 for SSD
-----	---

Watchdog Timer

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

Power Requirements

Input PWR	12V DC-In
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 Temp	-20°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

KEY FEATURES

- Intel® 12th Gen (Alder Lake-P) Core™ Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 64GB (32GB per DIMM)
- 1 x PCIe x8 (Gen4) (Support by 45W CPU SKUs), 1 x PCIe x4 (Gen4), 4 x PCIe x1 (Gen3), 4 x USB 3.2 Gen2, 8 x USB 2.0, 2 x UART, 2 x SATA3
- 1 x Intel 2.5 Gigabit LAN
- Supports Quad display, 3 x DDI, 1 x VGA, 1 x LVDS or eDP (optional)
- TPM 2.0 onboard IC (optional)
- Supports Intel® vPro, AMT (For i7/i5 SKU), VMD RAID 0/1/5/10
- ATX: 12V±5%/5Vsb±5%
- AT: 12V±5%



SPECIFICATIONS

Form Factor

Dimensions	COM Express Type6 (3.74-in x 3.74-in x 0.52-in, 9.5 cm x 9.5 cm x 1.3 cm)
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Processor System

CPU	Intel® 12th Gen (Alder Lake-P) Core™ Processors -COM-654P (i7-1265UE, 2P+8E) -COM-654M (i5-1245UE, 2P+8E) -COM-654V (i3-1215UE, 2P+4E) *45W CPU SKUs are available upon request
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR4 3200 MHz
Capacity	64 GB (32 GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	Intel® Iris® Xe Graphics
HDMI	HDMI 2.1 Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2304@60Hz
VGA	Max resolution up to 1920x1200@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz
eDP	eDP 1.4b Max resolution up to 4096 x 2304@60Hz (optional)
MultiDisplay	Quad Display

Expansion Slot

PCIe	1 x PCIe x8 (Gen4) (Support by 45W CPU SKUs) 1 x PCIe x4 (Gen4) 4 x PCIe x1 (Gen3)
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Ethernet

Controller/ Speed	COM-654P / COM-654M: 1 x Intel® I225LM with 10/100/1000/2500 Mbps, support AMT/vPro COM-654V: 1 x Intel® I225LM with 10/100/1000/2500 Mbps
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I/O

HDMI	DDI1/2 support HDMI/DP
DisplayPort	DDI1/2 support HDMI/DP DDI3 support DP
VGA	1
LVDS	1
eDP	1 (optional)
Ethernet	1 x 2.5 Gigabit LAN
USB	4 x USB 3.2 (Gen2), 8 x USB 2.0
COM	Two UART Ports
GPIO	4 x GPI, 4 x GPO

Storage

SATA	2 x SATA3 (6Gb/s)
RAID	SATA: Intel® VMD RAID 0/1 PCIe: Intel® VMD RAID 0/1/5/10

Security

TPM	TPM 2.0 onboard IC (optional)
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Watchdog Timer

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

Power Requirements

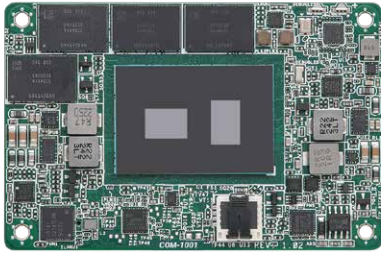
Input PWR	ATX: 12V±5%/5Vsb±5% AT: 12V±5%
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

COM-1001

COM Express



KEY FEATURES

- Intel® Elkhart Lake Processors
- 4 x 4GB IBECC onboard LPDDR4/4x 3200 MHz
- 4 x PCIe x1 (Gen3), 2 x USB 3.2 Gen2, 8 x USB 2.0, 2 x UART, 2 x SATA3
- 1 x Intel 2.5Gigabit LAN
- Supports Dual Display, 2 x DDI, 1 x eDP, 1 x DP or HDMI
- TPM 2.0 onboard IC (optional)
- ATX: 12V±5%/5Vsb±5%
- AT: 9~20V±5%

SPECIFICATIONS

Form Factor

Dimensions	COM Express Type10 (2.2-in x 3.3-in x 0.32-in, 5.50 cm x 8.40 cm x 0.83 cm)
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Processor System

CPU	Intel® Elkhart Lake SoC Processors COM-1001J (J6412, QC, Max Speed Up to 2.6GHz, 10W) COM-1001D (J6426, QC, Max Speed Up to 3.0GHz, 10W) COM-1001L (N6210, DC, Max Speed Up to 2.6GHz, 6.5W) COM-1001N (N6415, QC, Max Speed Up to 3.0GHz, 6.5W)
BIOS	AMI SPI 256 Mbit

Memory

Technology	IBECC onboard LPDDR4/4x 3200 MHz
Capacity	16GB

Graphics

Controller	Intel® Gen 11 Graphics
HDMI	HDMI 2.0b Max resolution up to 4096 x 2160@60Hz
DisplayPort	DP 1.4 Max resolution up to 4096 x 2160@60Hz
eDP	eDP 1.3 Max resolution up to 4096 x 2160@60Hz
MultiDisplay	Dual Display

Expansion Slot

PCIe	4 x PCIe x1 (Gen3)
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Ethernet

Controller/ Speed	1 x Intel® I226V 10/100/1000/2500 Mbps
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I/O

USB	2 x USB 3.2 Gen2, 8 x USB 2.0
COM	Two UART Ports (SoC) (UART2 share with CAN Bus, only supported by COM-1001D, COM-1001N)
GPIO	4 x GPI, 4 x GPO
eDP	DDIO support eDP
DisplayPort	DDI1 support DP/HDMI
HDMI	DDI1 support DP/HDMI
Ethernet	1
CAN Bus	1 (share with UART2) (Supported by COM-1001D, COM-1001N)

Storage

SATA	2 x SATA3 (6Gb/s)
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Security

TPM	TPM 2.0 onboard IC (optional)
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Watchdog Timer

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

Power Requirements

Input PWR	ATX: 12V±5%/5Vsb±5% AT: 9~20V±5%
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 Temp	0°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%



ASRock Industrial Computer Corporation

TEL: +886-2-5588-2688

FAX: +886-2-2858-1369

E-mail: Info_ipc@asrockind.com

www.asrockind.com

7F., No.9, Ln. 79, Ligong St., Beitou Dist., Taipei City 112, Taiwan (R.O.C.)



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