



Mini PC & Motherboard Catalog

Cocreate an Intelligent World

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NUCS 1300/D4 BOX Series

NUCS BOX-1360P/D4, NUCS BOX-1340P/D4

Slim Type Fanned Box



KEY FEATURES

- Intel® 13th Gen (Raptor Lake-P) Core™ Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 64GB
- 1 x USB4, 5 x USB 3.2 Gen2, 1 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 2.0b, 2 x DP 1.4a (from Type-C)
- TPM 2.0 onboard IC
- 19V, Power Adapter
- 110.0 x 117.5 x 38mm, Slim Type Fanned Barebone

SPECIFICATIONS

Processor System

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)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

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

Graphics

Controller	Intel® Iris® X ^e Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 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 (2.4Gbps) + BT 5.2 (M.2 Key E, 2230 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	Intel® I226LM with 10/100/1000/2500 Mbps
Connector	1 x RJ-45

Storage

M.2	1 x M.2 (KEY M, 2242/2280) with PCIe Gen4 x4 for SSD
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Front I/O

USB	2 x USB 3.2 Gen2 (Type A) 1 x USB4/Thunderbolt™ 4 (Supports DP1.4a display output) 1 x USB3.2 Gen2 (Type-C, Supports DP1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	2 x HDMI 2.0b
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~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

Construction	Plastic with sheet metal
Mounting	VESA mounting
Dimensions (W x D x H)	110.0 x 117.5 x 38mm
Weight	Net Weight:0.9Kg

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 Screw Package 1 x VESA mounting bracket

NUC 1300/D5 BOX Series

NUC BOX-1360P/D5, NUC BOX-1340P/D5

Fanned BOX



KEY FEATURES

- Intel® 13th Gen (Raptor Lake-P) Core™ Processors
- 2 x 262-pin SO-DIMM up to 32GB DDR5 4800MHz
- 1 x USB4/Thunderbolt™4, 4 x USB3.2 Gen2, 1 x M.2 Key M, 1 x M.2 Key E (Wi-Fi-6E Module), 1 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 1 x DP 2.1 (from USB4), 2 x DP 1.4a (1 from Type-C)
- Supports Intel® vPro
- TPM 2.0 onboard IC
- 19V, 120/90W Power Adapter
- 110.0 x 117.5 x 47.85mm, Fanned Barebone

SPECIFICATIONS

Processor System

CPU	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUC BOX-1360P/D5(i7-1360P, 4P+8E) NUC BOX-1340P/D5(i5-1340P, 4P+8E)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800 MHz
Capacity	32GB (16 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® X® Graphics
HDMI	HDMI 2.0b 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 (2.4Gbps) + BT 5.2 (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, supports vPro LAN2: Intel® I226V 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 Gen4 x4 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) 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output) 1 x USB3.2 gen2 (Type-C, Supports DP1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP1.4a
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~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

Construction	Plastic with sheet metal
Mounting	VESA mounting
Dimensions (W x D x H)	110.0 x 117.5 x 47.85mm
Weight	Net Weight:1.0Kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	19V/120W Power Adapter (i7-1360P) 19V/90W Power Adapter (i5-1340P) 1 x Screw Package 1 x VESA mounting bracket



Model	NUC 1300/D4 BOX Series	NUC 1200 BOX Series	NUC 1100 BOX Series
Chipset/ CPU	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® 12th Gen (Alder Lake-P) Core™ Processors NUC BOX-1260P (i7-1260P, 4P+8E) NUC BOX-1240P (i5-1240P, 4P+8E) NUC BOX-1220P (i3-1220P, 2P+8E)	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors NUC BOX-1165G7 (I7-1165G7, QC) NUC BOX-1135G7 (I5-1135G7, QC) NUC BOX-1115G4 (I3-1115G4, DC)
Dimensions (W x D x H)	110.0 x 117.5 x 47.85mm	110.0 x 117.5 x 47.85mm	110.0 x 117.5 x 47.85mm
Memory	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 3200 MHz
DIMM Slot	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM
Capacity	64GB (32 GB per DIMM)	64GB (32 GB per DIMM)	64GB (32 GB per DIMM)
DP	1 x DP 1.4a, DP++	1 x DP 1.4a, DP++	1 x DP 1.4a, DP++
HDMI	1 x HDMI 2.0b	1 x HDMI 2.0b	1 x HDMI 2.0a
M.2 Key M	1 x 2242/2260/2280 with PCIe Gen4 x4 *M.2 Key M 2280(Supported by bracket)	1 x 2242/2260/2280 with PCIe Gen4 x4 *M.2 Key M 2280(Supported by bracket)	1 x 2242/2260/2280 with PCIe Gen4 x4 and SATA3 for SSD *M.2 Key M 2280(Supported by bracket)
M.2 Key E/WLAN	1 x Wi-Fi 6E 802.11ax (2.4Gbps) + BT 5.2 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless)	1 x Wi-Fi 6E 802.11ax (2.4Gbps) + BT 5.2 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless)	1 x Wi-Fi 6 802.11ax (2.4Gbps) + BT 5.0 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless)
SATA	1x SATA3 (6Gb/s)	1x SATA3 (6Gb/s)	1x SATA3 (6Gb/s)
USB4	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP1.4a display output)	Front: 1 x USB4(Supports DP1.4a display output)	Front: 1 x USB4(Supports DP1.4a display output)
USB 3.2	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 1 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A)	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 1 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A)	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 1 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A)
LAN	2 x Intel I226LM	2 x Intel I225LM	1 x Intel I219V 1 x Intel I225LM
Audio	1 (headphone & microphone jack)	1 (headphone & microphone jack)	1 (headphone & microphone jack)
TPM	TPM 2.0 onboard IC	TPM 2.0 onboard IC	TPM 2.0 onboard IC
Power	12V~19V DC-In Jack	12V~19V DC-In Jack	12V~19V DC-In Jack
Operating Temperature	0 ~ 40° C	0 ~ 40° C	0 ~ 40° C
OS Support	Windows 10/11	Windows 10/11	Windows 10/11
Construction	Plastic with sheet metal	Plastic with sheet metal	Plastic with sheet metal
Mounting	VESA mounting	VESA mounting	VESA mounting
Weight	NetWeight:1.0Kg	NetWeight:1.0Kg	NetWeight:1.0Kg
Packing List	1 x 19V/90W Power Adapter 1 x Screw Package 1 x VESA mounting bracket	1 x 19V/90W Power Adapter 1 x Screw Package 1 x VESA mounting bracket	1 x 19V/90W Power Adapter 1 x Screw Package 1 x VESA mounting bracket



KEY FEATURES

- Intel® Alder Lake-N SoC Processors N100
- 1 x 260-pin SO-DIMM up to 16GB DDR4 3200 MHz
- 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
- 110.0 x 117.5 x 47.85mm, Fanned Barebone

SPECIFICATIONS

Processor System

CPU	Intel® Alder Lake-N SoC Processors N100
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Single Channel DDR4 3200 MHz
Capacity	16GB
Socket	1 x 260-pin SO-DIMM

Graphics

Controller	Intel® Gen 12 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 802.11ac (433 Mbps) + BT 4.2 (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	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 Gen3 x1 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 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

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

Construction	Plastic with sheet metal
Mounting	VESA mounting
Dimensions (W x D x H)	110.0 x 117.5 x 47.85mm
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 Screw Package 1 x VESA mounting bracket

NUC 6000 BOX Series

NUC BOX-J6412

Fanned BOX



KEY FEATURES

- Intel® Elkhart Lake SoC Processors
- 2 x 260-pin SO-DIMM up to 32GB DDR4 3200 MHz
- 4 x USB 3.2 Gen2, 1 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E (WiFi Module), 1 x SATA3
- 2 x Realtek 1 Gigabit LAN
- Supports Dual display, 1 x HDMI 2.0b, 1 x DP 1.4
- TPM 2.0 onboard IC
- 19V/65W Power Adapter
- 110.0 x 117.5 x 47.85mm, Fanned Barebone

SPECIFICATIONS

Processor System

CPU	Intel® Elkhart Lake SoC Processors
Chipset	NUC BOX-J6412 (J6412, QC, Max Speed up to 2.6GHz, 10W)
BIOS	SoC
	AMI SPI 256 Mbit

Memory

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

Graphics

Controller	Intel® Gen 11 Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.4, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Dual-Display

Expansion Slot

M.2/WLAN	1 x 802.11ac (433 Mbps) + BT 4.2 (M.2 Key E, 2230 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	Realtek RTL8111G-CG/RTL8111H-CG with 10/100/1000 Mbps
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe x1 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, 5V/3A)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP1.4
Ethernet	2 x 1 Gigabit LAN
USB	1 x USB 2.0 1 x USB 3.2 Gen2 (Type-A)
DC Jack	1

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

Others

OS Support	Windows 10
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC Class A
Packing List	1 x 19V/65W Power Adapter 1 x Screw Package 1 x VESA mounting bracket

4X4 BOX 7000/D5 Series

4X4 BOX-7735U/D5, 4X4 BOX-7535U/D5

Fanned BOX



KEY FEATURES

- AMD Ryzen™ 7000U-Series
- 2 x 262-pin SO-DIMM up to 64GB DDR5 4800 MHz
- 2 x USB4, 1 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 1 Gigabit LAN (support DASH), 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.1, 3 x DP 1.4a (2 from Type C)
- TPM 2.0 onboard IC
- 19V, 120/90W Power Adapter
- 110.0 x 117.5 x 47.85mm, Fanned Barebone

SPECIFICATIONS

Processor System

CPU	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)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800 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
DisplayPort	DisplayPort 1.4a, DP++ 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 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless) * WiFi throughput speed depends on actual environment and equipment.
Bluetooth	5.2

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 RTL8111EPV with 10/100/1000 Mbps, support DASH function
Connector	2 x RJ-45

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe Gen4 x4 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 USB4 (Type C, Supports DP1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.1
DisplayPort	1 x DP1.4a
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~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

Construction	Plastic
Mounting	VESA mounting
Dimensions (W x D x H)	110.0 x 117.5 x 47.85mm
Weight	Net Weight: 1kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC
Packing List	19V/120W Power Adapter (R7 7735U) 19V/90W Power Adapter (R5 7535U) 1 x Screw Package 1 x VESA mounting bracket

4X4 BOX 5000 Series

4X4 BOX-5800U, 4X4 BOX-5600U, 4X4 BOX-5400U

Fanned BOX



KEY FEATURES

- AMD Ryzen™ 5000U-Series
(4X4 BOX-5800U/4X4 BOX-5600U/4X4 BOX-5400U)
- 2 x 260-pin SO-DIMM up to 64GB DDR4 3200 MHz
- 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 1 Gigabit LAN (support DASH), 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
- 110.0 x 117.5 x 47.85mm, Fanned Barebone

SPECIFICATIONS

Processor System

CPU	4X4 BOX-5800U (AMD Ryzen™ 7 5800U, 8Cores, Max Speed up to 4.4GHz) 4X4 BOX-5600U (AMD Ryzen™ 5 5600U, 6Cores, Max Speed up to 4.2GHz) 4X4 BOX-5400U (AMD Ryzen™ 3 5400U, 4Cores, Max Speed up to 4.0GHz)
Chipset	SoC
BIOS	AMI SPI 128 Mbit

Memory

Technology	Dual Channel 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	Max 4 display (Included 2 outputs from Type C)

Expansion Slot

M.2/WLAN	1 x Wi-Fi 6E 802.11ax + BT 5.2 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless) * WiFi throughput speed depends on actual environment and equipment.
Bluetooth	5.2

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 x4 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 DP1.2a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0a
DisplayPort	1 x DP1.2a
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0
DC Jack	1

Watchdog Timer

Output Interval	From Super I/O to drag RESETCON# 256 Segments, 0, 1, 2, ...255sec
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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	0°C ~ 40°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Construction	Plastic
Mounting	VESA mounting
Dimensions (W x D x H)	110.0 x 117.5 x 47.85mm
Weight	Net Weight: 1kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC Class A
Packing List	1 x 19V/90W Power Adapter 1 x Screw Package 1 x VESA mounting bracket 1 x Bracket for M.2 2280 support

iBOX 1300/D5 Series

iBOX-1365UE/D5, iBOX-1345UE/D5, iBOX-1315UE/D5

Fanless Embedded BOX PC



KEY FEATURES

- Intel® 13th Gen (Raptor Lake-P) Core™ Processors
- 2 x 262-pin SO-DIMM up to 32GB DDR5 4800MHz
- 1 x USB4, 5 x USB3.2 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 Intel 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 1 x DP 2.1 (from USB4), 2 x DP 1.4a (1 from Type-C)
- Supports Intel® vPro, AMT (iBOX-1365UE/iBOX-1345UE)
- TPM 2.0 onboard IC
- 19V/90W Power Adapter
- 171.8 x 50.05 x 109.45 mm, Fanless Embedded BOX PC

SPECIFICATIONS

Processor System

CPU	iBOX-1365UE/D5 (i7-1365UE, 2P+8E) iBOX-1345UE/D5 (i5-1345UE, 2P+8E) iBOX-1315UE/D5 (i3-1315UE, 2P+4E)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800 MHz
Capacity	32GB (16GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® X® Graphics for i7/i5 CPU Intel® UHD Graphics for i3/Celeron CPU
HDMI	HDMI 2.0b 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	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	iBOX-1365UE/D5 ~ iBOX-1345UE/D5: LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, supports AMT/vPro LAN2: Intel® I226V with 10/100/1000/2500 Mbps NUC-1315UE/D5: 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, 2242/2260/2280) with PCIe Gen4 x4 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) 1 x USB4/Thunderbolt™ 4 (Supports DP 2.1 display output) 1 x USB 3.2 Gen2 (Type-C, Supports DP1.4a display output) 2 x USB 2.0
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP1.4a
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 (Type-A)
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	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

Construction	Aluminum
Mounting	VESA mounting, Wall mounting, Din-rail (By request)
Dimensions (W x H x D)	171.8 x 50.05 x 109.45 mm
Weight	Net Weight:1.6Kg

Others

OS Support	Windows 10/11
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC Class A
Packing List	1 x 19V/90W Power Adapter 1 x Screw Package 1 x Wall mount kit 1 x Bracket for M.2 2280 support



Model	iBOX 1300/D4 BOX Series	iBOX 1200 BOX Series	iBOX 1100 BOX Series
Chipset/ CPU	Intel® 13th Gen (Raptor Lake-P) Core™ Processors iBOX-1365UE/D4 (i7-1365UE, 2P+8E) iBOX-1345UE/D4 (i5-1345UE, 2P+8E) iBOX-1315UE/D4 (i3-1315UE, 2P+4E)	Intel® 12th Gen (Alder Lake-P) Core™ Processors iBOX-1265UE(i7-1265UE, 2P+8E) iBOX-1245UE(i5-1245UE, 2P+8E) iBOX-1215UE(i3-1215UE, 2P+4E)	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors iBOX-1185G7E (I7-1185G7E, QC) iBOX-1145G7E (I5-1145G7E, QC) iBOX-1115G4E (I3-1115G4E, DC) iBOX-6305E (Celeron 6305E, DC)
Dimensions (WxDxH)	171.8 x 50.05 x 109.45 mm	171.8 x 50.05 x 109.45 mm	171.8 x 50.05 x 109.45 mm
Memory	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 3200 MHz
DIMM Slot	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM
Capacity	64GB (32 GB per DIMM)	64GB (32 GB per DIMM)	64GB (32 GB per DIMM)
DP	1 x DP 1.4a, DP++	1 x DP 1.4a, DP++	1 x DP 1.4a, DP++
HDMI	1 x HDMI 2.0b	1 x HDMI 2.0b	1 x HDMI 2.0a
M.2 Key M	1 x 2242/2260/2280 with PCIe Gen4 x4 *M.2 Key M 2280(Supported by bracket)	1 x 2242/2260/2280 with PCIe Gen4 x4 *M.2 Key M 2280(Supported by bracket)	1 x 2242/2260/2280 with PCIe Gen4 x4 and SATA3 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	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless	1 x Wi-Fi 6 802.11ax (2.4Gbps) + BT 5.0 (M.2 Key E, 2230 PCIe x1, USB 2.0 for Wireless)
SATA	1x SATA3 (6Gb/s)	1x SATA3 (6Gb/s)	1x SATA3 (6Gb/s)
USB4	Front: 1 x USB4/Thunderbolt™ 4 (Supports DP1.4a display output)	Front: 1 x USB4(Supports DP1.4a display output)	Front: 1 x USB4(Supports DP1.4a display output)
USB 3.2	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 2 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A) Front: 2 x USB 2.0	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 2 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A) Front: 2 x USB 2.0	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 2 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A) Front: 2 x USB 2.0
LAN	2 x Intel I226LM	2 x Intel I225LM	iBOX-1185G7E/ iBOX-1145G7E: 1 x Intel I219LM 1 x Intel I225LM iBOX-1115G4E/ iBOX-6305E: 1 x Intel I219V 1 x Intel I225LM
COM Port	1 x RS-232 (Rear)	1 x RS-232 (Rear)	1 x RS-232 (Rear)
Audio	1 (headphone & microphone jack)	1 (headphone & microphone jack)	1 (headphone & microphone jack)
TPM	TPM 2.0 onboard IC	TPM 2.0 onboard IC	TPM 2.0 onboard IC
Power	12V~19V DC-In Jack	12V~19V DC-In Jack	12V~19V DC-In Jack
Operating Temperature	0 ~ 40° C	0 ~ 40° C	0 ~ 40° C
OS Support	Windows 10/11	Windows 10/11	Windows 10/11
Construction	Aluminum with sheet metal	Aluminum with sheet metal	Aluminum with sheet metal
Mounting	VESA mounting, Wall mounting, Din-rail (By request)	VESA mounting, Wall mounting, Din-rail (By request)	VESA mounting, Wall mounting, Din-rail (By request)
Weight	Net Weight: 1.6Kg	Net Weight: 1.6Kg	Net Weight: 1.6Kg
Packing List	1 x 19V/90W Power Adapter 1 x Screw Package 1 x Wall mount kit	1 x 19V/90W Power Adapter 1 x Screw Package 1 x Wall mount kit	1 x 19V/90W Power Adapter 1 x Screw Package 1 x VESA mounting bracket

iBOX 6000 Series

iBOX-J6412

Fanless Embedded BOX PC



KEY FEATURES

- Intel® ElkHart Lake SoC Processors
- 2 x 260-pin SO-DIMM up to 32GB DDR4 3200 MHz
- 4 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E, 1 x SATA3
- 2 x Realtek 1 Gigabit LAN
- Supports Dual display, 1 x HDMI 2.0b, 1 x DP 1.2
- TPM 2.0 onboard IC
- 19V/65W Power Adapter
- 135x110x44.5mm, Fanless Barebone

SPECIFICATIONS

Processor System

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

Memory

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

Graphics

Controller	Intel® Gen 11 Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Dual-Display

Expansion Slot

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

Interface	Realtek ALC233, High Definition Audio.
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Ethernet

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

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe x1 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, 5V/3A) 1 x USB 2.0
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP1.2
Ethernet	2 x 1 Gigabit LAN
USB	1 x USB 2.0 1 x USB 3.2 Gen2 (Type-A)
DC Jack	1

Internal Connector

TPM	Infineon SLB9670VQ2.0
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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	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 ~ 50°C (With extended temp. peripherals)
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

Construction	Aluminum housing
Mounting	Wall mounting kit VESA mounting kit (optional) Din rail kit (optional)
Dimensions (W x D x H)	135 x 110 x 44.5mm
Weight	Net Weight: 0.7kg

Others

OS Support	Windows 10
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC Class A
Packing List	1 x 19V/65W Power Adapter 1 x Screw Package 1 x Wall mounting 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 up to 64GB DDR4 3200 MHz
- 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, Fanless Barebone

SPECIFICATIONS

Processor System

CPU	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 x4 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 DP1.4 display output) 2 x USB 2.0
Audio	1 (headphone & microphone jack)
COM	1 x COM(RS-232)

Rear I/O

HDMI	1 x HDMI 2.0a
DisplayPort	1 x DP1.2a
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	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 extended temp. peripherals)
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

Mechanical

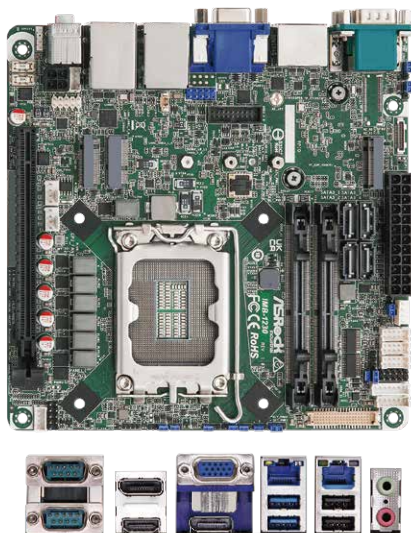
Construction	Aluminum
Mounting	VESA mounting 、 Wall mounting
Dimensions (W x D x H)	171.8 x 109.45 x 50.05mm
Weight	Net Weight:1.6Kg

Others

OS Support	Windows 10
TPM	TPM 2.0 onboard IC
Certifications	CE, FCC Class A
Packing List	1 x 19V/90W Power Adapter 1 x Screw Package 1 x Product DVD 1 x VESA mounting bracket 1 x Bracket for M.2 2280 support

IMB-1230

Mini-ITX Motherboard



KEY FEATURES

- Intel® 13th/12th Gen (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, 1 x USB 3.2 Gen1, 5 x USB 2.0, 1 x M.2 Key B, 1 x M.2 Key E, 1 x M.2 Key M, 5 x COM, 4 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 2 x DP1.4a, 1 x LVDS or eDP, 1 x VGA
- TPM 2.0 onboard IC
- ATX-PWR (24+4-pin) and +12V DC-In co-design

SPECIFICATIONS

Form Factor

Dimensions (LxWxH)	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® 13th/12th Gen (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
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 1920x1200@60Hz
eDP	Max resolution up to 1920 x 1200@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 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 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: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	2 x DP 1.4a++
VGA	1
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 (Gen2), 2 x USB2.0
Audio	2 (Mic-in, Line-out)
COM	COM1, COM2 (RS-232/422/485)

Internal Connector

USB	1 x USB 3.2 Gen1 (1 x USB 3.2 header) 3 x USB 2.0 (1 x 2.54 pitch header)
COM	COM3, COM4, COM5 (RS-232)
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC
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 Gen3 x4 for SSD
SATA	4 x SATA3 (6Gb/s)

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

IMB-1231, IMB-X1231

Mini-ITX Motherboard



KEY FEATURES

- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1231)
- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1231)
- 2 x 260-pin SO-DIMM DDR4 3200 MHz , up to 64GB (32GB per DIMM) (IMB-1231)
- 2 x 260-pin ECC/non-ECC SO-DIMM DDR4 3200 MHz , up to 64GB (32GB per DIMM) (IMB-X1231)
- 1 x PCIe x16 (Gen4), 4 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, 2 x M.2 Key M, 5 x COM, 4 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 2 x DP1.4a, 1 x LVDS or eDP, 1 x VGA
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX-PWR (24+4-pin) and +12V DC-In co-design

SPECIFICATIONS

Form Factor	IMB-1231	IMB-X1231
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® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 65W	
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	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
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 1920x1200@60Hz
eDP	Max resolution up to 1920 x 1200@60Hz
MultiDisplay	Quad Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen4, Support riser card x8/x8)
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-out,Mic-in
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Ethernet

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

Rear I/O	IMB-1231	IMB-X1231
HDMI	1 x HDMI 2.0b	
DisplayPort	2 x DP 1.4a++	
VGA	1	
Ethernet	2 x 2.5 Gigabit LAN	
USB	4 x USB 3.2 (Gen2)	
Audio	2 (Mic-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 (RS-232)
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC
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 Gen3 x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4 x4 and SATA3 for SSD* *Recommend using M2x4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)
SATA	4 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

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) 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

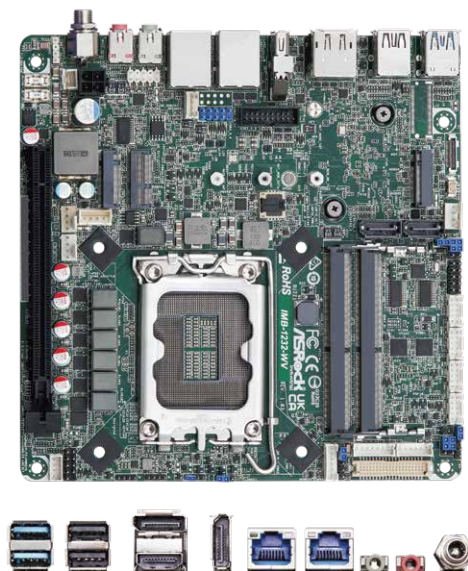
Operating Temp	0°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1232-WV

Mini-ITX Motherboard

KEY FEATURES

- Intel® 13th/12th Gen (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, 1 x USB 3.2 Gen1, 5 x USB 2.0, 1 x M.2 Key B, 1 x M.2 Key E, 1 x M.2 Key M, 4 x COM, 2 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 2 x DP1.4a, 1 x LVDS, 1 x eDP1.4b
- TPM 2.0 onboard IC
- 12~28V DC-In (Lockable DC Jack)



SPECIFICATIONS

Form Factor

Dimensions (LxWxH)	Mini-ITX (6.7-in x 6.7-in x 1.0-in, 17.0 cm x 17.0 cm x 2.5 cm)
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Processor System

CPU	Intel® 13th/12th Gen (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
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920x1200@60Hz
eDP	eDP1.4b Max resolution up to 4096x2160@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 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 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: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	2 x DP 1.4a++
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 (Gen2) 2 x USB 2.0
Audio	2 (Mic-in, Line-out)

Internal Connector

USB	1 x USB 3.2 Gen1 (1 x USB 3.2 header) 3 x USB 2.0 (1 x 2.54 pitch header)
COM	COM1, COM2 (RS-232/422/485) COM3, COM4 (RS-232)
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC
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 Gen3 x4 for SSD
SATA	2 x SATA3 (6Gb/s)

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

IMB-1233-WV, IMB-X1233-WV

Mini-ITX Motherboard



KEY FEATURES

- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1233-WV)
- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1233-WV)
- 2 x 260-pin SO-DIMM DDR4 3200 MHz , up to 64GB (32GB per DIMM) (IMB-1233-WV)
- 2 x 260-pin SO-DIMM ECC/non-ECC DDR4 3200 MHz , up to 64GB (32GB per DIMM) (IMB-X1233-WV)
- 1 x PCIe x16 (Gen4), 4 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, 2 x M.2 Key M, 4 x COM, 2 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 2 x DP1.4a, 1 x LVDS, 1 x eDP1.4b
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1
- 12~28V DC-In (Lockable DC Jack)

SPECIFICATIONS

Form Factor	IMB-1233-WV	IMB-X1233-WV
Dimensions(LxWxH)	Mini-ITX (6.7-in x 6.7-in x 1.0-in, 17.0 cm x 17.0 cm x 2.5 cm)	

Processor System

CPU	Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 65W	
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	64 GB (32 GB per DIMM)	
Socket	2 x 260-pin SO-DIMM	

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0b
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 1920x1200@60Hz
eDP	eDP1.4b Max resolution up to 1920 x 1200@60Hz
MultiDisplay	Quad Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen4, Support riser card x8/x8)
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 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: Intel® I225LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I225LM/I225V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O	IMB-1233-WV	IMB-X1233-WV
HDMI	1 x HDMI 2.0b	
DisplayPort	2 x DP 1.4a++	
Ethernet	2 x 2.5 Gigabit LAN	
USB	4 x USB 3.2 (Gen2)	
Audio	2 (Mic-in, Line-out)	

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	COM1, COM2 (RS-232/422/485) COM3, COM4 (RS-232)
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC
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 Gen3 x4 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4 x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)
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 M1/2 or 2*M.2 Key M SATA interface: SATA port

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

IMB-1234

Mini-ITX Motherboard



KEY FEATURES

- Intel® 12th Gen Alder Lake-P MCP Processors
- 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), VMD RAID 0/1
- 12~28V DC-In (Lockable DC Jack)

SPECIFICATIONS

Form Factor

Dimensions(LxWxH)	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® 12th Gen Alder Lake-P Processors IMB-1234P (i7-1265UE, 2P+8E) IMB-1234M (i5-1245UE, 2P+8E) IMB-1234V (i3-1215UE, 2P+4E)
Chipset	MCP
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
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

M.2	1 x M.2 (Key B, 3042/3052) with PCIe1, USB 3.2, USB 2.0 and SIM for 4G/5G 1 x M.2 (Key E, 2230) with PCIe, USB 2.0 and CNVi for Wireless
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	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
Connector	2 x RJ-45

Rear I/O

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
TPM	TPM 2.0 onboard IC
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 Gen4 x4 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

Watchdog Timer

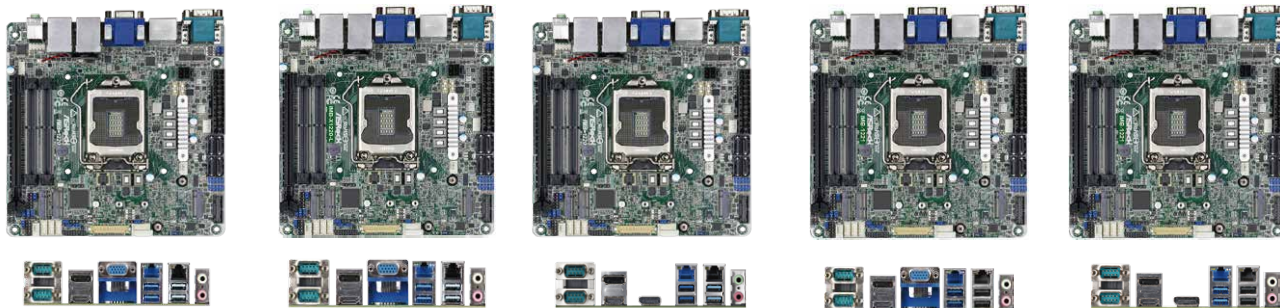
Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

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-1220-L		IMB-X1220-L		IMB-1220-D		IMB-1221-L		IMB-1221-D	
Chipset/ CPU	Intel® Q470E		Intel® W480E		Intel® Q470E		Intel® H420E		Intel® H420E	
Socket	1200		1200		1200		1200		1200	
Form Factor	mini-ITX		mini-ITX		mini-ITX		mini-ITX		mini-ITX	
Memory	Dual Channel DDR4 2933/2666/2400 MHz		Dual Channel DDR4 2933/ 2666/2400 MHz ECC support		Dual Channel DDR4 2933/2666/2400 MHz		Dual Channel DDR4 2933/2666/2400 MHz		Dual Channel DDR4 2933/2666/2400 MHz	
DIMM Slot	2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM	
Capacity	64GB (32 GB per DIMM)		64GB (32 GB per DIMM)		64GB (32 GB per DIMM)		64GB (32 GB per DIMM)		64GB (32 GB per DIMM)	
PCIe	1 x PCIe x16 (Gen3, Support riser card)		1 x PCIe x16 (Gen3, Support riser card)		1 x PCIe x16 (Gen3, Support riser card)		1 x PCIe x16 (Gen3)		1 x PCIe x16 (Gen3)	
DP	1 x DP 1.2a, DP++		1 x DP 1.2a, DP++		2 x DP 1.2a, DP++		1 x DP 1.2a, DP++		2 x DP 1.2a, DP++	
HDMI	1 x HDMI 2.0a		1 x HDMI 2.0a		1 x HDMI 2.0a		1 x HDMI 2.0a		1 x HDMI 2.0a	
D-Sub	1		1		N/A		1		N/A	
LVDS/ eDP	1	N/A	1	N/A	N/A	1	1	N/A	N/A	1
M.2 Key M	1 x 2242/2260/2280 with PCIe x4/SATA3		1 x 2242/2260/2280 with PCIe x4/SATA3		1 x 2242/2260/2280 with PCIe x4/SATA3		1 x 2242/2260/2280 with PCIe x2 and shared SATA3 by switch IC (Default M.2)		1 x 2242/2260/2280 with PCIe x2 and shared SATA3 by switch IC (Default M.2)	
M.2 Key E	1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1 and USB 2.0	
M.2 Key B	1 x 3042 with PCIe x1, USB 3.2 Gen1,USB2.0 and SIM		1 x 3042 with PCIe x1, USB 3.2 Gen1,USB2.0 and SIM		1 x 3042 with PCIe x1, USB 3.2 Gen1,USB2.0 and SIM		1 x 3042 with PCIe x1, USB 3.2 Gen1,USB2.0 and SIM		1 x 3042 with PCIe x1, USB 3.2 Gen1,USB2.0 and SIM	
SATA	4 x SATA3 (6Gb/s)		4 x SATA3 (6Gb/s)		4 x SATA3 (6Gb/s)		4 x SATA3 (6Gb/s)		4 x SATA3 (6Gb/s)	
RAID	Intel® SATA RAID 0/1/5/10		Intel® SATA RAID 0/1/5/10		Intel® SATA RAID 0/1/5/10		N/A		N/A	
USB 3.2	4 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)		4 x USB 3.2 (Gen1) (Rear) 2 x USB 3.1 (Gen1) (1 x Internal header)		4 x USB 3.2 (Gen1) (Rear) 2 x USB 3.1 (Gen1) (1 x Internal header)		2 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)		2 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)	
USB 2.0	4 x USB 2.0 (2 x Internal header)		4 x USB 2.0 (2 x Internal header)		4 x USB 2.0 (2 x Internal header)		2 x USB 2.0 (Rear) 2 x USB 2.0 (1 x Internal header)		2 x USB 2.0 (Rear) 2 x USB 2.0 (1 x Internal header)	
GPIO	4 x GPI, 4 x GPO		4 x GPI, 4 x GPO		4 x GPI, 4 x GPO		4 x GPI, 4 x GPO		4 x GPI, 4 x GPO	
LAN	1 x Intel I225LM/I225V 1 x Intel I219LM		1 x Intel I225LM/I225V 1 x Intel I219LM		1 x Intel I225LM/I225V 1 x Intel I219LM		1 x Intel I225LM/I225V 1 x Intel I219V		1 x Intel I225LM/I225V 1 x Intel I219V	
COM Port	3 x RS-232 (Internal) 2 x RS-232/422/485 (Rear)		3 x RS-232 (Internal) 2 x RS-232/422/485 (Rear)		3 x RS-232 (Internal) 2 x RS-232/422/485 (Rear)		3 x RS-232 (Internal) 2 x RS-232/422/485 (Rear)		3 x RS-232 (Internal) 2 x RS-232/422/485 (Rear)	
Audio	2 (Mic-in, Line-out)		2 (Mic-in, Line-out)		2 (Mic-in, Line-out)		2 (Mic-in, Line-out)		2 (Mic-in, Line-out)	
TPM	TPM 2.0 onboard IC		TPM 2.0 onboard IC		TPM 2.0 onboard IC		1 x Header		1 x Header	
Power	ATX PWR (24+4-pin)		ATX PWR (24+4-pin)		ATX PWR (24+4-pin)		ATX PWR (24+4-pin)		ATX PWR (24+4-pin)	
Operating Temperture	0 ~ 60° C		0 ~ 60° C		0 ~ 60° C		0 ~ 60° C		0 ~ 60° C	



Model	IMB-1222-WV		IMB-X1222-WV		IMB-1222		IMB-1223		IMB-1223-WV	
Chipset/ CPU	Intel® Q470E		Intel® W480E		Intel® Q470E		Intel H420E		Intel H420E	
Socket	1200		1200		1200		1200		1200	
Form Factor	mini-ITX		mini-ITX		mini-ITX		mini-ITX		mini-ITX	
Memory	Dual Channel DDR4 2933/2666/2400 MHz		Dual Channel DDR4 2933/ 2666/2400 MHz ECC support		Dual Channel DDR4 2933/2666/2400 MHz		Dual Channel DDR4 2933/2666/2400 MHz		Dual Channel DDR4 2933/2666/2400 MHz	
DIMM Slot	2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM		2 x 260-pin SO-DIMM	
Capacity	64GB (32 GB per DIMM)		64GB (32 GB per DIMM)		64GB (32 GB per DIMM)		64GB (32 GB per DIMM)		64GB (32 GB per DIMM)	
PCIe	1 x PCIe x16 (Gen3, Support riser card)		1 x PCIe x16 (Gen3, Support riser card)		1 x PCIe x16 (Gen3, Support riser card)		1 x PCIe x16 (Gen3)		1 x PCIe x16 (Gen3)	
DP	2 x DP 1.2a, DP++		2 x DP 1.2a, DP++		2 x DP 1.2a, DP++		1 x DP 1.2a, DP++		1 x DP 1.2a, DP++	
HDMI	1 x HDMI 2.0a		1 x HDMI 2.0a		1 x HDMI 2.0a		1 x HDMI 2.0a		1 x HDMI 2.0a	
LVDS/ eDP	1	1	1	1	1	1	1	1	1	1
M.2 Key M	1 x 2242/2260/2280 with PCIe x4 or SATA3		1 x 2242/2260/2280 with PCIe x4 or SATA3		1 x 2242/2260/2280 with PCIe x4 or SATA3		1 x 2242/2260/2280 with PCIe x2 or SATA3		1 x 2242/2260/2280 with PCIe x2 or SATA3	
M.2 Key E	1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1 and USB 2.0		1 x 2230 with PCIe x1		1 x 2230 with PCIe x1	
M.2 Key B	1 x 3042/3052 with PCIe x1, USB 3.2 Gen1, USB2.0 and SIM		1 x 3042/3052 with PCIe x1, USB 3.2 Gen1, USB2.0 and SIM		1 x 3042/3052 with PCIe x1, USB 3.2 Gen1, USB2.0 and SIM		1 x 3042/3052 with PCIe x1, USB 3.2 Gen1, USB2.0 and SIM		1 x 3042/3052 with PCIe x1, USB 3.2 Gen1, USB2.0 and SIM	
SATA	2 x SATA3 (6Gb/s)		2 x SATA3 (6Gb/s)		2 x SATA3 (6Gb/s)		2 x SATA3 (6Gb/s)		2 x SATA3 (6Gb/s)	
RAID	Intel® SATA RAID 0/1/5/10		Intel® SATA RAID 0/1/5/10		Intel® SATA RAID 0/1/5/10		N/A		N/A	
USB 3.2	4 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)		4 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)		4 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)		2 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)		2 x USB 3.2 (Gen1) (Rear) 2 x USB 3.2 (Gen1) (1 x Internal header)	
USB 2.0	4 x USB 2.0 (2 x Internal header)		4 x USB 2.0 (2 x Internal header)		4 x USB 2.0 (2 x Internal header)		2 x USB 2.0 (Rear) 2 x USB 2.0 (1 x Internal header)		2 x USB 2.0 (Rear) 2 x USB 2.0 (1 x Internal header)	
GPIO	4 x GPI, 4 x GPO		4 x GPI, 4 x GPO		4 x GPI, 4 x GPO		4 x GPI, 4 x GPO		4 x GPI, 4 x GPO	
LAN	1 x Intel I225LM/I225V 1 x Intel I219LM		1 x Intel I225LM/I225V 1 x Intel I219LM		1 x Intel I225LM/I225V 1 x Intel I219LM		1 x Intel I225LM/I225V 1 x Intel I219V		1 x Intel I225LM/I225V 1 x Intel I219V	
COM Port	2 x RS-232/422/485, 2 x RS232 (Internal) N/A (Rear)		2 x RS-232/422/485, 2 x RS232 (Internal) N/A (Rear)		2 x RS-232/422/485, 2 x RS232 (Internal) N/A (Rear)		2 x RS-232/422/485, 2 x RS232 (Internal) N/A (Rear)		2 x RS-232/422/485, 2 x RS232 (Internal) N/A (Rear)	
Audio	2 (Mic-in, Line-out)		2 (Mic-in, Line-out)		2 (Mic-in, Line-out)		2 (Mic-in, Line-out)		2 (Mic-in, Line-out)	
TPM	TPM 2.0 onboard IC		TPM 2.0 onboard IC		TPM 2.0 onboard IC		1 x Header		1 x Header	
Power	12V~28V DC-in with 4 pin plug PWR cable or DC Jack (Screw type)		12V~28V DC-in with 4 pin plug PWR cable or DC Jack (Screw type)		12V DC-in with 4 pin plug PWR cable or DC Jack (Screw type)		12V DC-in with 4 pin plug PWR cable or DC Jack (Screw type)		12V~28V DC-in with 4 pin plug PWR cable or DC Jack (Screw type)	
Operating Temperature	0 ~ 60° C		0 ~ 60° C		0 ~ 60° C		0 ~ 60° C		0 ~ 60° C	

IMB-1225

Mini-ITX Motherboard



KEY FEATURES

- Intel® 10th Gen (Comet lake-S) Core™ Processors with H410 chipset
- 2 x 260-pin SO-DIMM Support Dual Channel DDR4 2933 (i9/i7 CPU)/ 2666 (i5/i3 CPU) / 2400 (Pentium/ Celeron CPU), up to 64GB
- 1 x PCIe x16 Gen3, 4 x USB 3.2 Gen1, 4 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
- Support Dual display, 1 x DP1.4, 1 x VGA, 1 x HDMI 1.4, 1 x LVDS
- 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	Intel® 10th Gen (Cometlake-S) Core™ Processors, up to 65W *The performance of CPUs over 65W will be limited due to power design.
Chipset	Intel® H410
Socket	LGA1200
BIOS	AMI SPI 128 Mbit

Memory

Technology	Dual Channel DDR4 2933/2666/2400 MHz - Intel Core i9/i7 CPUs support DDR4 up to 2933 MHz - Intel Core i5/i3 CPUs support DDR4 up to 2666 MHz - Intel Pentium/Celeron CPU support DDR4 up to 2400 MHz
Capacity	64GB (32 GB per DIMM)
Socket	2 x 260-pin SODIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 1.4 Max resolution up to 4096x2160 @30Hz
DisplayPort	DisplayPort 1.4, DP++ Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz
eDP	N/A
DVI	N/A
MultiDisplay	Dual Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen3)
PCI	N/A
mini-PCIe	N/A
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 for Wireless
SIM Socket	N/A

Audio

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

Controller/ Speed	LAN1: Intel® I219V with 10/100/1000 Mbps LAN2: Intel® I210 with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 1.4
DisplayPort	1x DP 1.4
VGA	1
DVI	N/A
Ethernet	2 x 1 Gigabit LAN
USB	2 x USB2.0, 2 x USB 3.2 (Gen1)
Audio	2 (Mic-in, Line-out)
COM	COM1,2 (support RS-232/422/485), COM3(support RS-232 only)
PS2	N/A

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)
Parallel	N/A
GPIO	4 x GPI, 4 x GPO
TPM	N/A
LVDS	1
eDP	N/A
VGA	N/A
SATA PWR Output	N/A
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with PCIe x4
mSATA	N/A
SATA	4 x SATA3 (6Gb/s)
eMMC	N/A

Watchdog Timer

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

Power Requirements

Input PWR	ATX PWR 4pin+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	0°C ~ 60°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1003

Mini-ITX Motherboard



KEY FEATURES

- Intel® Elkhart Lake SoC Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB
- 1 x PCIe x1 Gen3, 4 x USB 3.2 Gen1, 7 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 Realtek 2.5 Gigabit LAN, 1 x Realtek 1 Gigabit LAN
- Support Triple display, 1 x LVDS or eDP, 1 x HDMI2.0b, 1 x VGA
- TPM Header
- ATX-PWR (24+4-pin) and 12~28V DC-In co-design

SPECIFICATIONS

Form Factor

Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.6-in, 17.0 cm x 17.0 cm x 4.1 cm)
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Processor System

CPU	Intel® Elkhart Lake SoC Processors IMB-1003J (J6412, QC, Max Speed Up to 2.6GHz, 10W) IMB-1003D (J6426, QC, Max Speed Up to 3.0GHz, 10W) IMB-1003L (N6210, DC, Max Speed Up to 2.6GHz, 6.5W) IMB-1003N (N6415, QC, Max Speed Up to 3.0GHz, 6.5W)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR4 3200 MHz
Capacity	32GB (16 GB 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 1920 x 1200@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

PCIe	1 x PCIe x1 (Gen3)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 1 x M.2 (Key B, 3042/3052) with PCIe x1, USB 3.2, USB2.0 and SIM for 4G/5G
SIM Socket	1x SIM 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 RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI2.0b
VGA	1
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 3.2 (Gen1), 2 x USB2.0
Audio	2 (Mic-In, Line-Out)
COM	COM1, COM3, COM4 (RS-232/422/485)
PS2	1 x PS/2 combo

Internal Connector

USB	2 x USB 3.2 Gen1 (1xUSB3.2 header) 5 x USB 2.0 (2x2.54 pitch header, 1 x USB 2.0 Type-A vertical con)
COM	COM2, COM5, COM6 (RS-232)
GPIO	4 x GPI, 4 x GPO
TPM	TPM Header
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 IMB-1003D, IMB-1003N)

Storage

M.2	1 x M.2 (Key M, 2242/2260/2280) with SATA3 and PCIe x1 for SSD
SATA	2 x SATA3 (6Gb/s), SATA3_2 shared with M.2 Key M

Watchdog Timer

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

Power Requirements

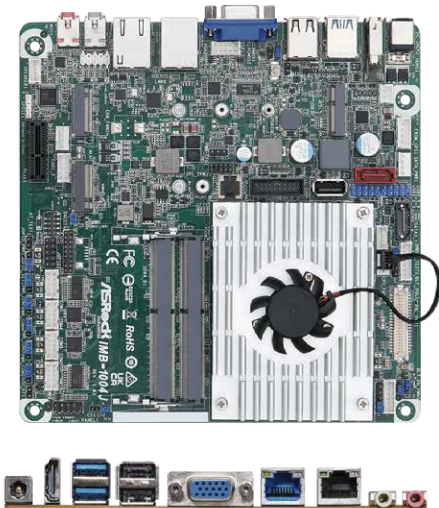
Input PWR	ATX PWR (24+4-pin) and 12V~28V DC-In co-design
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

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

IMB-1004

Mini-ITX Motherboard



KEY FEATURES

- Intel® Elkhart Lake SoC Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB
- 1 x PCIE x1 Gen3, 4 x USB 3.2 Gen1, 7 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, 2 x SATA3
- 1 x Realtek 2.5 Gigabit LAN, 1 x Realtek 1 Gigabit LAN
- Support Triple display, 1 x LVDS or eDP, 1 x HDMI2.0b, 1 x VGA
- TPM Header
- 12~28V DC-In

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® Elkhart Lake SoC Processors IMB-1004J (J6412, QC, Max Speed Up to 2.6GHz, 10W) IMB-1004D (J6426, QC, Max Speed Up to 3.0GHz, 10W) IMB-1004L (N6210, DC, Max Speed Up to 2.6GHz, 6.5W) IMB-1004N (N6415, QC, Max Speed Up to 3.0GHz, 6.5W)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR4 3200 MHz
Capacity	32GB
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 1920 x 1200@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

PCIe	1 x PCIe x1 (Gen3)
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 1 x M.2 (Key B, 3042/3052) with PCIe x1/USB 3.2/USB2.0 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 RTL8111G/RTL8111H-CG with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI2.0b
VGA	1
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
USB	2 x USB 3.2 (Gen1), 2 x USB2.0
Audio	2 (Mic-In, Line-Out)
DC Jack	1

Internal Connector

USB	2 x USB 3.2 Gen1 (1xUSB3.2 header) 5 x USB 2.0 (2x2.54 pitch header, 1 x USB 2.0 Type-A vertical con)
COM	2 x COM (RS-232) 2 x COM (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
TPM	TPM Header
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
VGA	1
SATA PWR Output	1
Speaker Header	1
CAN Bus	2 x CAN Bus (1 x 2.00 pitch header) (Supported by IMB-1004D, IMB-1004N)

Storage

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

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

IMB-V2000

Mini-ITX Motherboard



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 DP1.2, 1 x DP1.4
- TPM 2.0 onboard IC
- Support DASH, Teaming function
- 12~28V DC-In (Lockable DC Jack)

SPECIFICATIONS

Form Factor

Dimensions(LxWxH)	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 DP1.2a, Max resolution up to 3840x2160 @60Hz 1 x DP1.4, 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
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 x2/USB 3.2 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, Teaming function
Connector	2 x RJ-45

Rear I/O

DisplayPort	3 x DP1.2a, 1 x DP1.4
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 USB2.0
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
TPM	TPM 2.0 onboard IC
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
mSATA	N/A
SATA	2 x SATA3 (6Gb/s)
eMMC	N/A

Watchdog Timer

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

Power Requirements

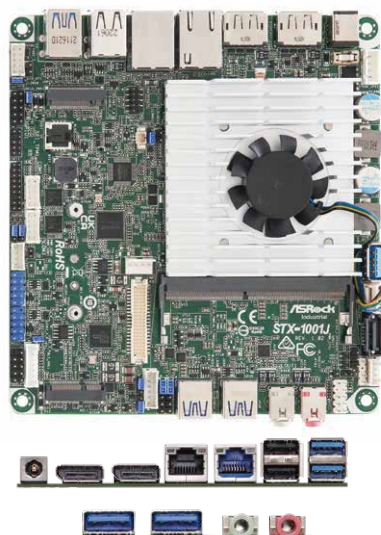
Input PWR	12~28V DC-In with 4-pin wafer PWR cable or DC Jack (Screw Type)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

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



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
- TPM Header
- 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 and DP 1.2++ 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 Gen3 x1 and USB 2.0 for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe Gen3 x1, 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	DISPLAY1: DP 1.2++, DISPLAY2: 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
TPM	TPM Header
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 Gen3 x1 for SSD
SATA	1 x SATA3 (6Gb/s)

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

STX-1500

Mini-STX Motherboard



KEY FEATURES

- Intel® Tiger Lake-UP3 MCP Processor
- 2 x 260-pin SO-DIMM, Support Dual Channel up to 64GB DDR4 3200 MHz
- 3 x USB 3.2 Gen2, 5 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 1 x M.2 Key B, 2 x COM, 2 x SATA3
- 1 x Intel 2.5 Gigabit LAN, 1 x Intel 1 Gigabit LAN
- Support Quad display, 1 x LVDS, 1 x eDP1.4, 4 x HDMI 2.0a
- TPM Header (STX-1500E/STX-1500V)
TPM 2.0 IC onboard, supports Intel® vPro (STX-1500M/STX-1500P)
- Supports RAID 0/1
- 12~28V DC-In

SPECIFICATIONS

Form Factor

Dimensions	Mini-STX (5.5-in x 5.8-in)
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Processor System

CPU	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors - STX-1500P (i7-1185G7E, QC, Max Speed up to 4.4GHz, up to 28W) - STX-1500M (i5-1145G7E, QC, Max Speed up to 4.1GHz, up to 28W) - STX-1500V (i3-1115G4E, DC, Max Speed up to 3.9GHz, up to 28W) - STX-1500E (Celeron 6305E, DC, 1.8GHz, 15W)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

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

Graphics

Controller	Intel® Iris® Xe Graphics for i7/i5 CPU Intel® UHD Graphics for i3/Celeron CPU
HDMI	HDMI 2.0a Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz
eDP	eDP 1.4 Max resolution up to 4096x2304@60Hz
MultiDisplay	Quad display

Expansion Slot

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, 3042/3052/2280) with PCIe x1, USB 3.2, USB2.0 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	STX-1500E/STX-1500V: LAN1: Intel® I225LM/I255V with 10/100/1000/2500 Mbps LAN2: Intel® I219V with 10/100/1000 Mbps STX-1500M/STX-1500P: LAN1: Intel® I225LM/I255V with 10/100/1000/2500 Mbps LAN2: Intel® I219LM with 10/100/1000 Mbps, support vPro
Connector	2 x RJ-45

Front I/O

USB	1 x USB 3.2 Gen2, 1 x USB2.0
HDMI	1 x HDMI 2.0a
Audio	2 (Mic-In, Line-Out)

Rear I/O

HDMI	3 x HDMI 2.0a
Ethernet	1 x 2.5 Gigabit LAN 1 x 1 Gigabit LAN
USB	2 x USB 3.2 Gen2, 2 x USB2.0
DC Jack	1

Internal Connector

USB	2 x USB 2.0 (1x2.54 pitch header)
COM	COM1 (RS232/422/485) COM2 (RS232)
GPIO	4 x GPI, 4 x GPO
TPM	STX-1500M/STX-1500P: TPM 2.0 IC onboard STX-1500E/STX-1500V: TPM Header
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 Gen4x4 for SSD * Shared with SATA3_0
SATA	2 x SATA3 (6Gb/s)
RAID	Intel® SATA RAID 0/1

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
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 ~ 60°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® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1314)
- Intel® 13th/12th Gen (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 Type C, 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 HDMI2.0b, 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® 13th/12th Gen (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	128GB (32GB 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
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz
MultiDisplay	Quad 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 PCIe4 (Gen4)* *If using PCIe8/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 B, 3042/3052) with PCIe1, 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	
Interface	Realtek ALC897, High Definition Audio. Line-in, Line-out, Mic-in

Ethernet		
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 (20G) (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)
TPM	TPM 2.0 onboard IC
LVDS	1
PS2	1 x PS2 header
Thunderbolt header	1 (only PCIe4 support)

Storage	
M.2	1 x M.2 (Key M, up to 25110) with PCIe4 Gen4 for SSD 1 x M.2 (Key M, 2242/2260/2280) with PCIe4 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

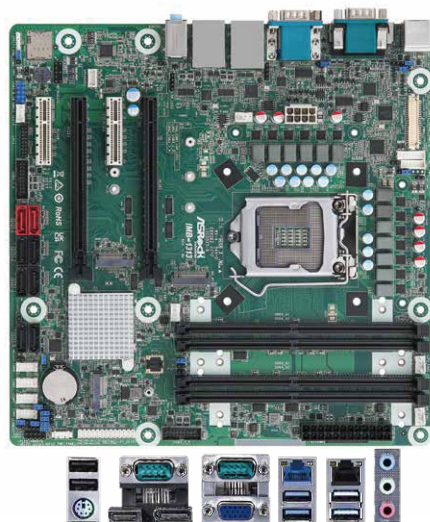
Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

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

IMB-1313, IMB-X1313

Micro-ATX Motherboard



KEY FEATURES

SPECIFICATIONS

Form Factor	IMB-1313	IMB-X1313
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® 10th Gen (Comet Lake-S) Core™ Processors, up to 125W	
Chipset	Intel® Q470E	Intel® W480E
Socket	LGA1200	
BIOS	AMI SPI 256 Mbit	

Memory

Technology	Dual Channel DDR4 2933 MHz	Dual Channel ECC/non-ECC DDR4 2933 MHz
Capacity	128GB (32GB per DIMM)	
Socket	4 x 288-pin Long-DIMM	

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 2.0a Max resolution up to 4096x2160 @60Hz
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz
MultiDisplay	Triple Display

Expansion Slot

PCIe	2 x PCIe Gen3 Slots (PCIe1/PCIe3: single at x16 (PCIe1); dual at x8 (PCIe1) / x8 (PCIe3)) (PCIe1: Support riser card x8/x8, x8/x4/x4) 2 x PCIe x4 (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, USB3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1x SIM socket connected to M.2 key B

Audio

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

Controller/ Speed	LAN1: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I219LM with 10/100/1000 Mbps, support AMT/vPro
Connector	2 x RJ-45

Rear I/O	IMB-1313	IMB-X1313
HDMI	1 x HDMI 2.0a	
DisplayPort	1 x DP 1.2++	
VGA	1	
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN	
USB	4 x USB 3.2 (Gen2) 2 x USB2.0	
Audio	3 (Line-In, Line-Out, Mic-In)	
COM	COM1, COM2 (RS-232/422/485)	
PS2	1	

Internal Connector

USB	4 x USB 3.2 Gen1 (2 x USB 3.2 header) 2 x USB 2.0 (1 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)
TPM	TPM 2.0 onboard
LVDS	1

Storage

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

Watchdog Timer

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

Power Requirements

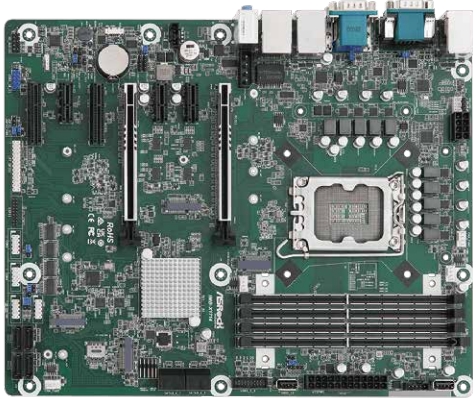
Input PWR	ATX PWR (8+24 Pin)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

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

IMB-1714, IMB-X1714

ATX Motherboard



KEY FEATURES

- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1714)
- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with W680 chipset (IMB-X1714)
- 4 x 288-pin Long-DIMM DDR5 4400 MHz , up to 128GB (32GB per DIMM) (IMB-1714)
- 4 x 288-pin ECC/non-ECC Long-DIMM DDR5 4400 MHz , up to 128GB (32GB 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 USB3.2 Gen2x2 Type C, 5 x USB3.2 Gen2, 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 DP1.4a, 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 (LxWxH)	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® 13th/12th Gen (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)
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 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, 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	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)	
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)
TPM	TPM 2.0 onboard IC
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 Gen4 x4 for SSD
M.2(IMB-X1714)	1 x M.2 (Key M, 3042/2260/2280/22110/25110) with PCIe Gen4 x4 for SSD 1 x M.2 (Key M, 3042/2260/2280/22110/25110) with PCIe Gen3 x4 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

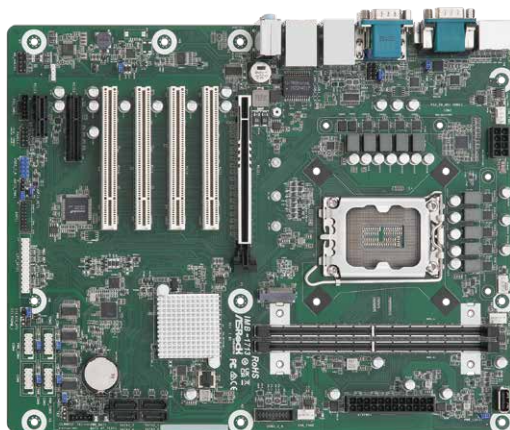
Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

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

KEY FEATURES

- Intel® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with H610 chipset
- 2 x 288-pin Long-DIMM DDR5 4800 MHz (Alder Lake-S); DDR5 4800/5600 MHz (Raptor Lake-S), up to 64GB (32GB 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® 13th/12th Gen (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 5600/4800MHz (Raptor Lake-S), DDR5 4800 MHz (Alder Lake-S) - Intel Core i9/i7 CPUs support DDR5 up to 5600 MHz (Raptor Lake-S) - Intel Core i5/i3/Pentium/Celeron CPUs support DDR5 up to 4800 MHz (Raptor Lake-S)
Capacity	64GB (32GB 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 USB2.0
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 USB2.0 (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 Gen3 x1
SATA	4 x SATA3 (6Gb/s)

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	0°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® 13th/12th Gen (Raptor Lake-S/Alder Lake-S) Core™ Processors with Q670 chipset (IMB-1712)
- Intel® 13th/12th Gen (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 USB3.2 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 DP1.4a, 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® 13th/12th Gen (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, 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
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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
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)	
TPM	TPM 2.0 onboard IC	
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 Gen4 x4 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	

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

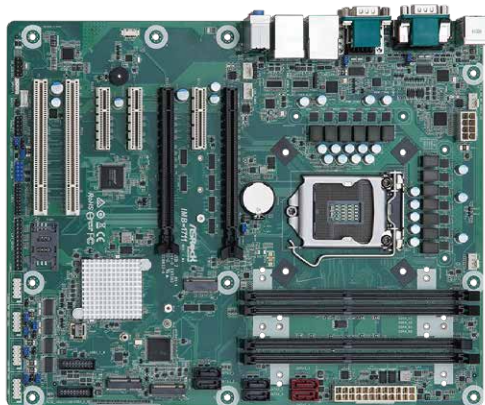
Operating Temp	0°C ~ 70°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1711, IMB-X1711

ATX Motherboard

KEY FEATURES

- Intel® 10th Gen (Comet Lake-S) Core™ Processors with Q470E chipset (IMB-1711)
- Intel® 10th Gen (Comet Lake-S) Core™ Processors with W480E chipset (IMB-X1711)
- 4 x 288-pin Long-DIMM DDR4 2933 MHz, up to 128GB (32GB per DIMM) (IMB-1711)
- 4 x 288-pin ECC/non-ECC Long-DIMM DDR4 2933 MHz, up to 128GB (32GB per DIMM) (IMB-X1711)
- 1 x PCIe x16 (Gen3), 1 x PCIe x8 (Gen3), 3 x PCIe x4 (Gen3), 2 x PCI, 4 x USB 3.2 Gen2, 4 x USB 3.2 Gen1, 4 x USB 2.0,
- 1 x M.2 Key E, 1 x M.2 Key M, 1 x M.2 Key B, 6 x COM, 6 x SATA3
- 1 x Intel 2.5 Gigabit LAN, 1 x Intel 1 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 1 x DP1.2, 1 x VGA
- TPM 2.0 onboard IC
- Supports Intel® vPro, AMT, VMD RAID 0/1/5/10



SPECIFICATIONS

Form Factor	IMB-1711	IMB-X1711
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® 10th Gen (Comet Lake-S) Core™ Processors, up to 125W	
Chipset	Intel® Q470E	Intel® W480E
Socket	LGA1200	
BIOS	AMI SPI 256 Mbit	

Memory		
Technology	Dual Channel DDR4 2933 MHz	Dual Channel ECC/non-ECC DDR4 2933 MHz
Capacity	128GB (32GB per DIMM)	
Socket	4 x 288-pin Long-DIMM	

Graphics	
Controller	Intel® UHD Graphics
HDMI	HDMI 2.0a Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz
MultiDisplay	Triple Display

Expansion Slot	
PCIe	3 x PCIe Gen3 Slots (PCIe1/PCIe2/PCIe3: single at x16 (PCIe1); dual at x8 (PCIe1) / x8 (PCIe3); triple at x8 (PCIe1) / x4 (PCIe2) / x4 (PCIe3)) 2 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, USB3.2 Gen1, USB 2.0 and SIM for 4G/5G
SIM Socket	1x SIM socket connected to M.2 key B

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

Ethernet	
Controller/ Speed	LAN1: Intel® I225LM/I225V with 10/100/1000/2500 Mbps LAN2: Intel® I219LM with 10/100/1000 Mbps, support AMT/vPro
Connector	2 x RJ-45

Rear I/O	IMB-1711	IMB-X1711
HDMI	1 x HDMI 2.0a	
DisplayPort	1 x DP 1.2++	
VGA	1	
Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN	
USB	4 x USB 3.2 Gen2 2 x USB 2.0	
Audio	3 (Mic-in, Line-in, Line-out)	
COM	COM1, COM2 (RS-232/422/485)	

Internal Connector	
USB	4 x USB 3.2 Gen1 (2 x USB 3.1 header) 2 x USB2.0 (1x2.54 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)
TPM	TPM 2.0 onboard

Storage	
M.2	1 x M.2 (Key M, 2242/2260/2280) with SATA3 and PCIe x4 for SSD * Shared with SATA3_5/ SATA3_6 Ports - When using M.2 PCIe x4 SSD, both SATA3_5 and SATA_6 Ports are disabled - When using M.2 SATA SSD, only SATA3_5 Port is disabled, and SATA3_6 Port is available
mSATA	6 x SATA3 (6Gb/s)
SATA	Intel® SATA RAID 0/1/5/10

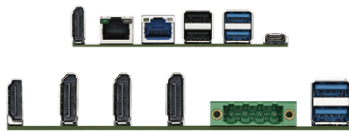
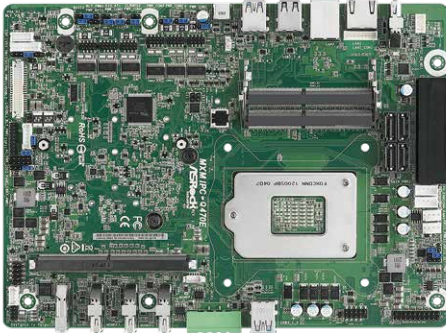
Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

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

MXM IPC-Q470E

MXM Motherboard



KEY FEATURES

- Intel® 10th Gen (Comet lake-S) Core™ Processors with Q470E chipset
- 2 x 260-pin SO-DIMM, Support Dual Channel DDR4 2933 (i9/i7 CPU) / 2666 (i5/i3 CPU) / 2400 (Pentium/ Celeron CPU), up to 64GB
- Supports MXM Graphics Card (Type-A or Type-B , Up to 150W)
- 1 x PCIe x4 Gen3, 1 x mini-PCIe
- 4 x USB 3.2 Gen1, 1 x USB 3.2 Gen1 (Type-C), 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, 4 x SATA3
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN
- Support Hepta display, 1 x DP 1.2, 1 x VGA, 1 x eDP 1.4 / LVDS (from CPU) and 3 x DP 1.2, 1 x HDMI 2.0a (from MXM)
- TPM 2.0 on Board
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN
- Supports Intel® vPro, AMT, RAID 0/1/5/10
- 18~26V DC-In wide range DC input with lockable connector (Max power 300W)

SPECIFICATIONS

Form Factor

Dimensions	(7.0-in x 9.6-in)
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Processor System

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

Memory

Technology	Dual Channel DDR4 2933 / 2666 / 2400 MHz - Intel Core i9 / i7 CPUs support DDR4 up to 2933 MHz - Intel Core i5 / i3 CPUs support DDR4 up to 2666 MHz - Intel Pentium/Celeron CPU support DDR4 up to 2400 MHz
Capacity	64GB (32GB per DIMM)
Socket	2 x 260-pin SO-DIMM

Graphics

Controller	- CPU integrated graphics to support 1 x DP + 1 x VGA + 1 eDP / LVDS (Gen9 Intel® Graphics, Support for DirectX 11/12, OpenCL 2.0) - Add on MXM Graphic Card (Type B) to support 3 x DP + 1 x HDMI - NVIDIA® Quadro series P5000, NVIDIA® GeForce GTX 1050 / 1060 / 1070 / 1080
HDMI	HDMI 2.0a Max resolution up to 4096 x 2160 @60Hz
DisplayPort	DisplayPort 1.2 , DP++ Max resolution up to 4096 x 2160 @60Hz
VGA	Max resolution up to 1920 x 1200 @60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200 @60Hz
eDP	eDP 1.4 Max resolution up to 4096 x 2304 @60Hz
MultiDisplay	Hepta Display

Expansion Slot

PCIe	1 x PCIe x4 Gen3
mini-PCIe	1 x Full Size with PCIe x1 and USB 2.0
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless and BT 1 x M.2 (Key B, 3042 / 3052) with PCIe x1 / USB 3.0 / 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. Line-In / Line-Out / Mic-In 3W audio amplifier supported (Realtek ALC122)
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Ethernet

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

Front I/O

Power In	Phoenix Contact
HDMI	1 x HDMI 2.0a from MXM
DisplayPort	3 x DP 1.2 from MXM
USB	2 x USB 3.2 (Gen1)

Rear I/O

DisplayPort	1 x DP 1.2 from CPU
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0 2 x USB 3.2 (Gen1) 1 x USB 3.2 (Gen1) Type-C

Internal Connector

USB	2 x USB 2.0 (1 x 2.54 pitch header)
COM	4 x COM (RS-232), 2 x COM (RS-232 / 422 / 485)
GPIO	8 x GPI, 8 x GPO
TPM	TPM 2.0 onboard
LVDS	1 (shared with eDP)
eDP	1 (shared with LVDS)
VGA	1
SATA PWR Output	2
Audio Header	1
PS2 Header	1

Storage

M.2	1 x M.2 (Key M, 2242 / 2260 / 2280) with SATA3_2 and PCIe x4 for SSD 1 x M.2 (Key M, 2242 / 2260 / 2280) with SATA3 or PCIe x4 for SSD
SATA	4 x SATA3 (6Gb/s)
RAID	Intel® SATA RAID 0/1/5/10

Watchdog Timer

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

Power Requirements

Input PWR	18~26V DC-In Jack (220W for Quadro P5000, GTX1060/1070, 270W for GTX1080)
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 ~ 60°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

KEY FEATURES

- Intel® Alder Lake-PS MCP 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 ALC233 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 (2x2.00 pitch header)
COM	COM1, COM2 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC
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)

Watchdog Timer

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

Power Requirements

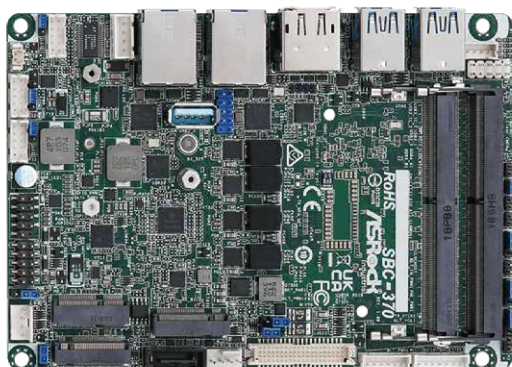
Input PWR	12~28V DC-In with 4-pin wafer PWR
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

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

SBC-370

3.5"SBC Motherboard



KEY FEATURES

- Intel® 12th Gen Alder Lake P MCP Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 64 GB (32GB per DIMM)
- 1 x PCIe x1, 2 x USB 3.2 Gen2x2, 3 x USB 3.2 Gen2, 2 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E, 1 x M.2 Key B, 3 x COM, 1 x SATA3
- 2 x Intel 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 3 x DP 1.4a (2 from Type-C), 1 x LVDS or eDP
- TPM 2.0 onboard IC
- Supports Intel® vPro (SBC-370P/SBC-370M), VMD RAID 0/1
- 12~36V DC-In PWR/ 12V DC-In only (BOM option)

SPECIFICATIONS

Form Factor

Dimensions	3.5"SBC (5.8-in x 4-in x 0.94-in, 14.7 cm x 10.2 cm x 2.40 cm)
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Processor System

CPU	Intel® 12th Gen Alder Lake P MCP Processors SBC-370P (i7-1265UE, 2P+8E) SBC-370M (i5-1245UE, 2P+8E) SBC-370V (i3-1215UE, 2P+4E)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

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

Graphics

Controller	Intel® Iris® Xe Graphics
HDMI	HDMI 2.0b Max resolution up to 4096 x 2160@60Hz
DisplayPort	DP 1.4a Max resolution up to 4096 x 2160@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 2 output from Type-C)

Expansion Slot

PCIe	1 x PCIe x1 Gen3 (supports up to 10W)
M.2	1 x M.2 (Key E, 2230) with PCIe x1 and USB 2.0 for Wireless 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
SIM Socket	1 x SIM socket connected to M.2 key B

Audio

Interface	Realtek ALC233 HD, High Definition Audio. Line-out, Mic-in
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Ethernet

Controller/ Speed	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
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP 1.4++
Ethernet	2 x 2.5 Gigabit LAN
USB	2 x USB 3.2 Gen2 2 x USB 3.2 Gen2x2 (Type-C, 5V/3A, support DP1.4a display output)

Internal Connector

USB	1 x USB 3.2 Gen2 2 x USB 2.0 (1x2.54 pitch header)
COM	COM1, COM3, COM4 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC
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 x4 for SSD
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

Watchdog Timer

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

Power Requirements

Input PWR	12~36V DC-In with 4-pin wafer PWR cable or DC Jack 12V DC-In only (BOM option)
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® Elkhart Lake SoC Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB (16GB per DIMM)
- 1 x USB 3.2 Gen2, 1 x USB 3.2 Gen1, 6 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
- 2 x Intel 2.5 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 1 x VGA 1 x LVDS or eDP
- TPM 2.0 onboard IC
- 9~36V DC-In



SPECIFICATIONS

Form Factor

Dimensions	3.5"SBC (5.8-in x 4-in x 0.87-in, 14.7 cm x 10.2 cm x 2.20 cm)
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Processor System

CPU	Intel® Elkhart Lake SoC Processors SBC-250J (J6412, QC, Max Speed Up to 2.6GHz, 10W) SBC-250D (J6426, QC, Max Speed Up to 3.0GHz, 10W) SBC-250L (N6210, DC, Max Speed Up to 2.6GHz, 6.5W) SBC-250N (N6415, QC, Max Speed Up to 3.0GHz, 6.5W)
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 1920 x 1200
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 B, 3042/3052) with PCIe x1/USB3.2 and USB2.0 and SIM for 4G/5G 1 x M.2 (Key E, 2230) with PCIe x1 and USB 2.0 for Wireless
SIM Socket	1x SIM socket connected to M.2 key B

Audio

Interface	Realtek ALC233 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

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

Internal Connector

USB	1 x USB 3.2 Gen1 (1 x USB 3.1 header) 1 x USB 2.0 (1 x USB 3.1 header) 4 x USB 2.0 (2 x 2.54 pitch header)
COM	COM1, COM2, COM4 (RS-232) COM3 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
TPM	TPM 2.0 onboard IC
SATA PWR Output	1
Speaker Header	1

Storage

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

Watchdog Timer

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

Power Requirements

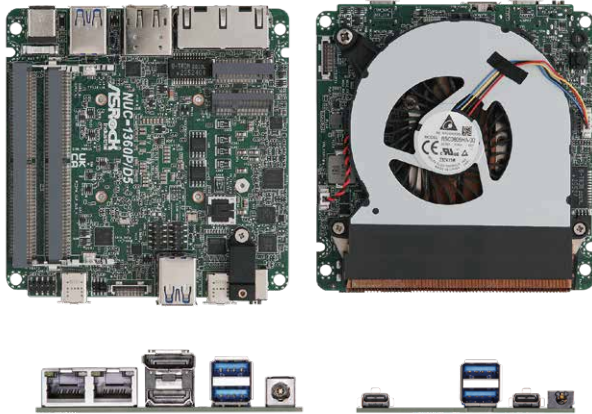
Input PWR	9~36V DC-In with 4-pin wafer PWR
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

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

NUC 1300/D5 Motherboard Series

NUC Motherboard



KEY FEATURES

- Intel® 13th Gen (Raptor Lake-P) Core™ Processors
- 2 x 262-pin SO-DIMM up to 32GB DDR5 4800MHz
- 1 x USB4/Thunderbolt™ 4, 5 x USB3.2 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 Intel 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.0b, 1 x DP 2.1 (from USB4), 2 x DP 1.4a (1 from Type-C)
- TPM 2.0 onboard IC
- Supports Intel® vPro (NUC-1365UE/D5, NUC-1335UE/D5, NUC-1360P/D5, NUC-1340P/D5)

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	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)
Chipset	MCP
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800 MHz
Capacity	32GB (16 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® Iris® Xe Graphics for i7/i5 CPU Intel® UHD Graphics for i3/Celeron CPU
HDMI	HDMI 2.0b 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.
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Ethernet

Controller/ Speed	NUC-1365UE/D5, NUC-1335UE/D5, NUC-1360P/D5, NUC-1340P/D5: LAN1: Intel® I226LM with 10/100/1000/2500 Mbps, supports vPro LAN2: Intel® I226V with 10/100/1000/2500 Mbps NUC-1315U(E)/D5: 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	2 x USB 3.2 Gen2 (Type A) 1 x USB4/Thunderbolt™ 4 (5V/3A, Supports DP 2.1 display output) 1 x USB3.2 gen2x2 (Type-C, 5V/3A, Supports DP 1.4a display output)
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP1.4a
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(RS-232/RS-422/RS-485)
TPM	TPM 2.0 onboard IC

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen4 x4 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
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%

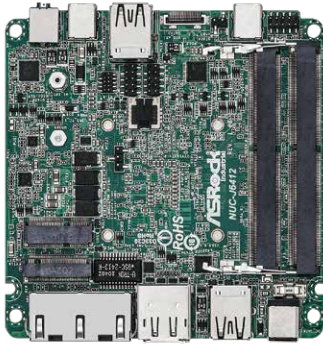


Model	NUC 1300/D4 Motherboard Series	NUC 1200 Motherboard Series	NUC 1100 Motherboard Series
Chipset/ CPU	Intel® 13th Gen (Raptor Lake-P) Core™ Processors NUC-1360P/D4 (i7-1360P, 4P+8E) NUC-1340P/D4 (i5-1340P, 4P+8E) NUC-1365UE/D4 (i7-1365UE, 2P+8E) NUC-1345UE/D4 (i5-1345UE, 2P+8E) NUC-1315UE/D4 (i3-1315UE, 2P+4E) NUC-1315U/D5 (i3-1315U, 2P+4E)	Intel® 12th Gen (Alder Lake-P) Core™ Processors NUC-1260P (i7-1260P, 4P+8E) NUC-1240P (i5-1240P, 4P+8E) NUC-1220P (i3-1220P, 2P+8E) NUC-1265UE (i7-1265UE, 2P+8E) NUC-1245UE (i5-1245UE, 2P+8E) NUC-1215UE (i3-1215UE, 2P+4E) NUC-7305 (Celeron-7305, 1P+4E)	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors NUC-1165G7 (i7-1165G7, QC) NUC-1135G7 (i5-1135G7, QC) NUC-1115G4 (i3-1115G4, DC) NUC-1185G7E (i7-1185G7E QC) NUC-1145G7E (i5-1145G7E QC) NUC-1115G4E (i3-1115G4E DC) NUC-6305E (Celeron 6305E, DC)
Form Factor	NUC	NUC	NUC
Memory	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 3200 MHz
DIMM Slot	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM
Capacity	64GB (32 GB per DIMM)	64GB (32 GB per DIMM)	64GB (32 GB per DIMM)
DP	1 x DP 1.4a, DP++	1 x DP 1.4a, DP++	1 x DP 1.4a, DP++
HDMI	1 x HDMI 2.0b	1 x HDMI 2.0b	1 x HDMI 2.0a
M.2 Key M	1 x 2242/2260/2280 with PCIe Gen4 x4 *M.2 Key M 2280(Supported by bracket)	1 x 2242/2260/2280 with PCIe Gen4 x4 *M.2 Key M 2280(Supported by bracket)	1 x 2242/2260/2280 with PCIe Gen4 x4 and SATA3 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	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless
SATA	1 x SATA3 (6Gb/s)	1 x SATA3 (6Gb/s)	1 x SATA3 (6Gb/s)
USB4	Front: 1 x USB4 (Supports DP1.4a display output)	Front: 1 x USB4 (Supports DP1.4a display output)	Front: 1 x USB4 (Supports DP1.4a display output)
USB 3.2	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 2 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A)	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 2 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A)	Front: 1 x USB 3.2 (Gen2, Type C) (Supports DP1.4a display output) 2 x USB 3.2 (Gen2, Type A) Rear: 2 x USB 3.2 (Gen2, Type A)
USB 2.0	2 x USB 2.0 (1 x internal header)	2 x USB 2.0 (1 x internal header)	2 x USB 2.0 (1 x internal header)
LAN	2 x Intel I226LM	2 x Intel I225LM	NUC-1185G7E/ NUC-1145G7E: 1 x Intel I219LM 1 x Intel I225LM NUC-1165G7/NUC-1135G7/ NUC-1115G4/NUC-1115G4E/NUC-6305E: 1 x Intel I219V 1 x Intel I225LM
COM Port	1 x RS-232/422/485 (Internal)	1 x RS-232/422/485 (Internal)	1 x RS-232/422/485 (Internal)
Audio	1 (headphone & microphone jack)	1 (headphone & microphone jack)	1 (headphone & microphone jack)
TPM	TPM 2.0 onboard IC	TPM 2.0 onboard IC	TPM 2.0 onboard IC
Power	12V~19V DC-In Jack	12V~19V DC-In Jack	12V~19V DC-In Jack
Operating Temperature	-20 ~ 70° C	0 ~ 70° C	0 ~ 60° C

NUC 6000 Motherboard Series

NUC-J6412, NUC-J6426, NUC-N6210, NUC-N6415

NUC Motherboard



KEY FEATURES

- Intel® Elkhart Lake SoC Processors
- 2 x 260-pin SO-DIMM DDR4 3200 MHz, up to 32GB
- 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
- 2 x Realtek 1 Gigabit LAN
- Supports Dual display, 1 x HDMI 2.0b, 1 x DP 1.2
- TPM 2.0 onboard IC
- 12V~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® Elkhart Lake SoC Processors NUC-J6412 (J6412, QC, Max Speed up to 2.6GHz, 10W) NUC-J6426 (J6426, QC, Max Speed up to 3.0GHz, 10W) NUC-N6210 (N6210, DC, Max Speed up to 2.6GHz, 6.5W) NUC-N6415 (N6415, QC, Max Speed up to 3.0GHz, 6.5W)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

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

Graphics

Controller	Intel® Gen 11 Graphics
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
DisplayPort	DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz
MultiDisplay	Max 2 display

Expansion Slot

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

Interface	Realtek ALC233, High Definition Audio.
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Ethernet

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

Front I/O

USB	1 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, 5V/3A) 1 x USB 2.0
Audio	1 (headphone & microphone jack)

Rear I/O

HDMI	1 x HDMI 2.0b
DisplayPort	1 x DP1.2
Ethernet	2 x 1 Gigabit LAN
USB	1 x USB 2.0 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	1 x COM(RS232/422/485)
TPM	TPM 2.0 onboard IC
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 x1 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
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 7000/D5 Motherboard Series

4X4-7735U/D5, 4X4-7535U/D5

4X4 Motherboard

KEY FEATURES



- AMD Ryzen™ 7 7735U/ Ryzen™ 5 7535U
- 2 x 262-pin SO-DIMM up to 64GB DDR5 4800 MHz
- 2 x USB4, 2 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
- 1 x Realtek 1 Gigabit LAN (support DASH), 1 x Realtek 2.5 Gigabit LAN
- Supports Quad display, 1 x HDMI 2.1, 3 x DP 1.4a (2 from Type C)
- TPM 2.0 onboard IC
- 12V~19V 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™ 7 7735U (Max Speed up to 4.75GHz) AMD Ryzen™ 7 7535U (Max Speed up to 4.55GHz)
Chipset	SoC
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800 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
DisplayPort	DisplayPort 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 for Wireless
-----	--

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 RTL8111EPV with 10/100/1000 Mbps, support DASH function
Connector	2 x RJ-45

Front I/O

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

Rear I/O

HDMI	1 x HDMI 2.1
DisplayPort	1 x DP1.4a
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 USB2.0 (1 x 2.00mm pitch header)
COM	1 x COM(RS-232/422/485)
TPM	TPM 2.0 onboard IC

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen4 x 4 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
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

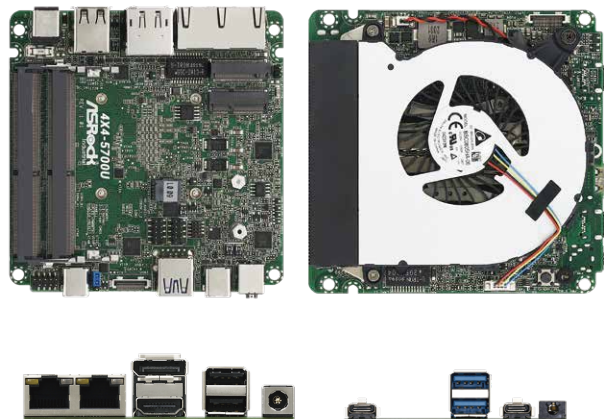
Environment

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

4X4-5000, V2000 Series

4X4 Motherboard

KEY FEATURES



- AMD Ryzen™ 7 5800U/ Ryzen™ 5 5600U/ Ryzen™ 3 5400U (4X4-5000 Series)
- AMD Ryzen™ Embedded V2718/V2516 (4X4-V2000 Series)
- 2 x 260-pin 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 (support DASH), 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
- 12V~19V DC-In

SPECIFICATIONS

Form Factor	4X4-5000 Series	4X4-V2000 Series
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 (4X4-5000 Series)	AMD Ryzen™ 7 5800U (Max Speed up to 4.4GHz) AMD Ryzen™ 5 5600U (Max Speed up to 4.2GHz) AMD Ryzen™ 3 5400U (Max Speed up to 4.0GHz)	
CPU (4X4-V2000 Series)	4X4-V2000M (V2718, 8C, Max Speed up to 4.15GHz) 4X4-V2000V (V2516, 6C, Max Speed up to 3.95GHz)	
BIOS	AMI SPI 128 Mbit	

Memory

Technology	Dual Channel DDR4 3200 MHz	Dual Channel ECC/non-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
DisplayPort	DisplayPort 1.2a, DP++
MultiDisplay	Quad Display

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

Front I/O	4X4-5000 Series	4X4-V2000 Series
USB	2 x USB 3.2 Gen2 (Type A) 2 x USB 3.2 Gen2 (Type C, 5V/3A, Supports DP1.2a 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

Internal Connector

USB	2 x USB 2.0 (1 x 2.54 pitch header)
COM	1 x COM(RS-232/422/485)
TPM	TPM 2.0 onboard IC
SATA PWR Output	1

Storage

M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3 x4 and SATA3 for SSD *M.2 Key M 2280(Supported by bracket)
SATA	1 x SATA3 (6Gb/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
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 ~ 60°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 USB3.2 Gen2, 8 x USB2.0, 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	eDP1.4b 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 USB2.0
COM	Two UART Ports
GPIO	4 x GPI, 4 x GPO
TPM	TPM 2.0 onboard IC (optional)

Storage

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

Watchdog Timer

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

Power Requirements

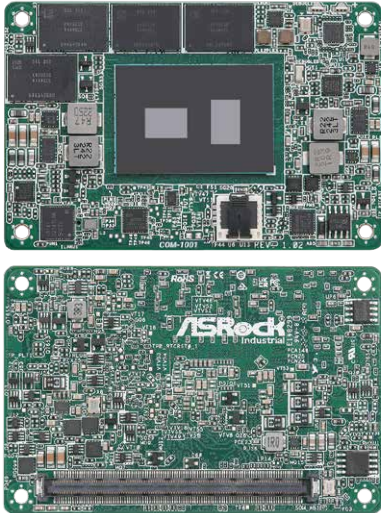
Input PWR	ATX: 12V±5%/5Vsb±5% AT: 12V±5%
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

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

COM-1001

COM Express



KEY FEATURES

- Intel® Elkhart Lake SoC 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, 1x eDP, 1x 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)
Chipset	SoC
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 PCIe1 (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%



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