



BIOSTAR

Bring Solution into Reality

Solution

Automation

IOT

Edge Computing

5G

HMI

Digital Signage

POS / kiosk

ABOUT > BIOSTAR

BIOSTAR, is a professional brand dedicated to the production of motherboards, gaming motherboards, SSD, graphics cards, industrial computing systems, IoT, crypto mining equipment, healthcare solutions and motor start battery. Since its establishment in 1986, BIOSTAR has become a major motherboard supplier in the IT industry. In order to pursue the best quality and aesthetic design, BIOSTAR has invested heavily in ID design, equipment, global marketing research as well as R&D. With a constant emphasis on quality, BIOSTAR always seeks to improve beyond better and race to the future.

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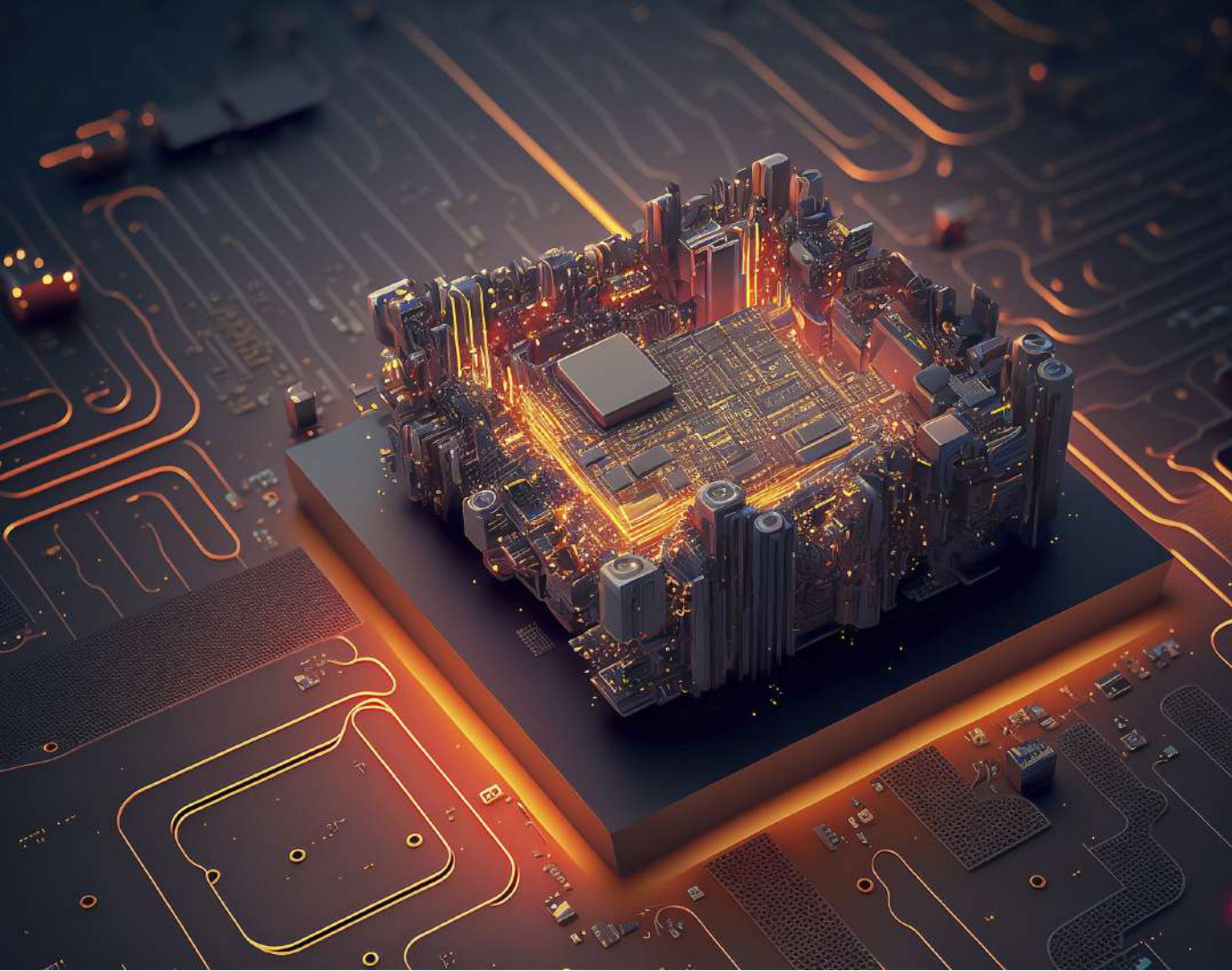
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WHY > BIOSTAR

Flexible Logistic Control

Overseas warehouses for on-time delivery

Excellent R&D Team

Built to order and short developing lead time

Global Branding and Services

Taiwan Top 20 International brand, Worldwide service centers, Strong financial support

Platinum Role in Industry

Intel, AMD direct account with massive and up-to-date support

Advanced Quality

Multi-awarded and recommended by global media and reviewers



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Automation

A detailed industrial robotic arm is shown in the process of welding a metal component on a worktable. The arm is white and silver, with a long, thin welding torch extending from its end. Bright sparks are visible at the point of contact between the torch and the workpiece. The background is a blurred industrial setting with large windows and structural elements.

Automation describes a wide range of technologies that reduce human labor force in process, with the advancement of automation technology, enterprises come to introduce the automation application for the workplace. It literally assists the customers to effectively improve the speed and efficiency of automated production and product yield, besides, it enhances the productivity and the competitiveness. Other than these advantages, it reduces the labor costs.

Automation enables smart factories and autonomous vehicles to transform an intelligent world. It is widely applied to various fields, such as IT automation, technology automation, network automation, industrial automation, agricultural automation, military application and so on. It has been achieved by various means, inevitably we need more flexible I/O for multi device connectors and various specifications to meet the requirements. BIOSTAR can make it, and achieve your needs.



IOT

IOT means “Internet of Things (IoT)”, it refers to the collective network of connected devices and the technologies that can help the communications technology of the cloud and the devices. In simplest terms, the Internet of Things is a network of physical objects that are connected to the Internet, so that they can exchange data and information”, such as the connected car, smart switch, smart lighting system and so on.

Additionally, Internet of Things (IoT) can distinguish IOT from IIOT. IIOT means “Industrial Internet of Things”, such as manufacturing, logistics, transportation and retail industry. From the few points above, IoT application links with our life very closely. In order to improve the productivity, efficiency and service; find more IoT technologies in a growing number of places, especially in industry; enable the concept of the smart home to become reality, even the infrastructure of an entire smart city. To realize the vision, BIOSTAR specialize in supplying the stable systems.

Edge Computing

Edge computing is a type of computing network architecture, its computation moves as close to the source of data as possible, it can enable not only to process at greater speeds and volumes, reduce latency and bandwidth use, but also lead to greater action-led results in real time.

Edge computing has high applicability in Internet of Things field, especially Industrial Internet of Things (IIoT). For edge computing, it brings much more conveniences and advantages to our life. Besides the acceleration of the digital transformation in industry and manufacturer, edge computing technology enable more innovations to artificial intelligence and machine learning. To realize the vision, BIOSTAR specialize in supplying the stable systems.

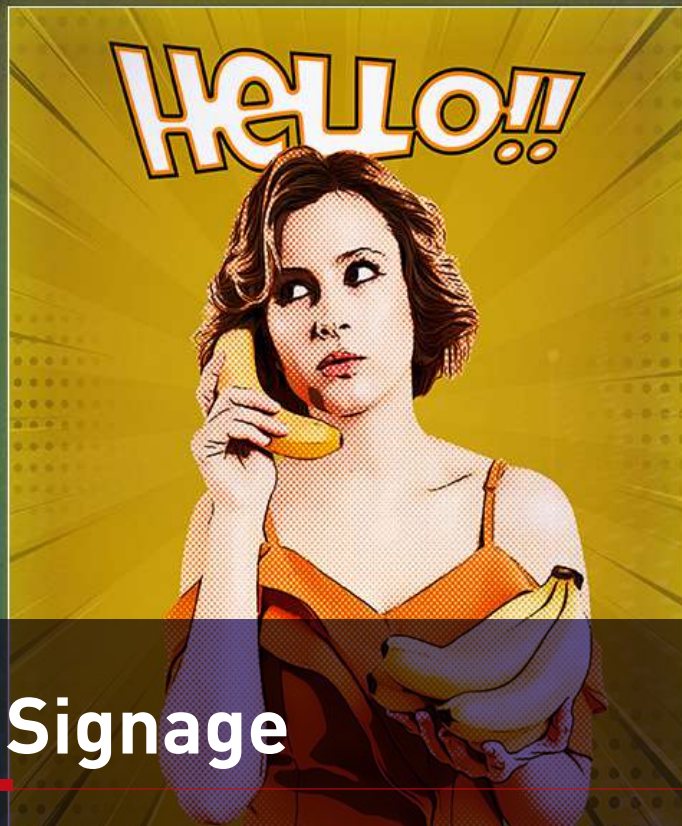




5G

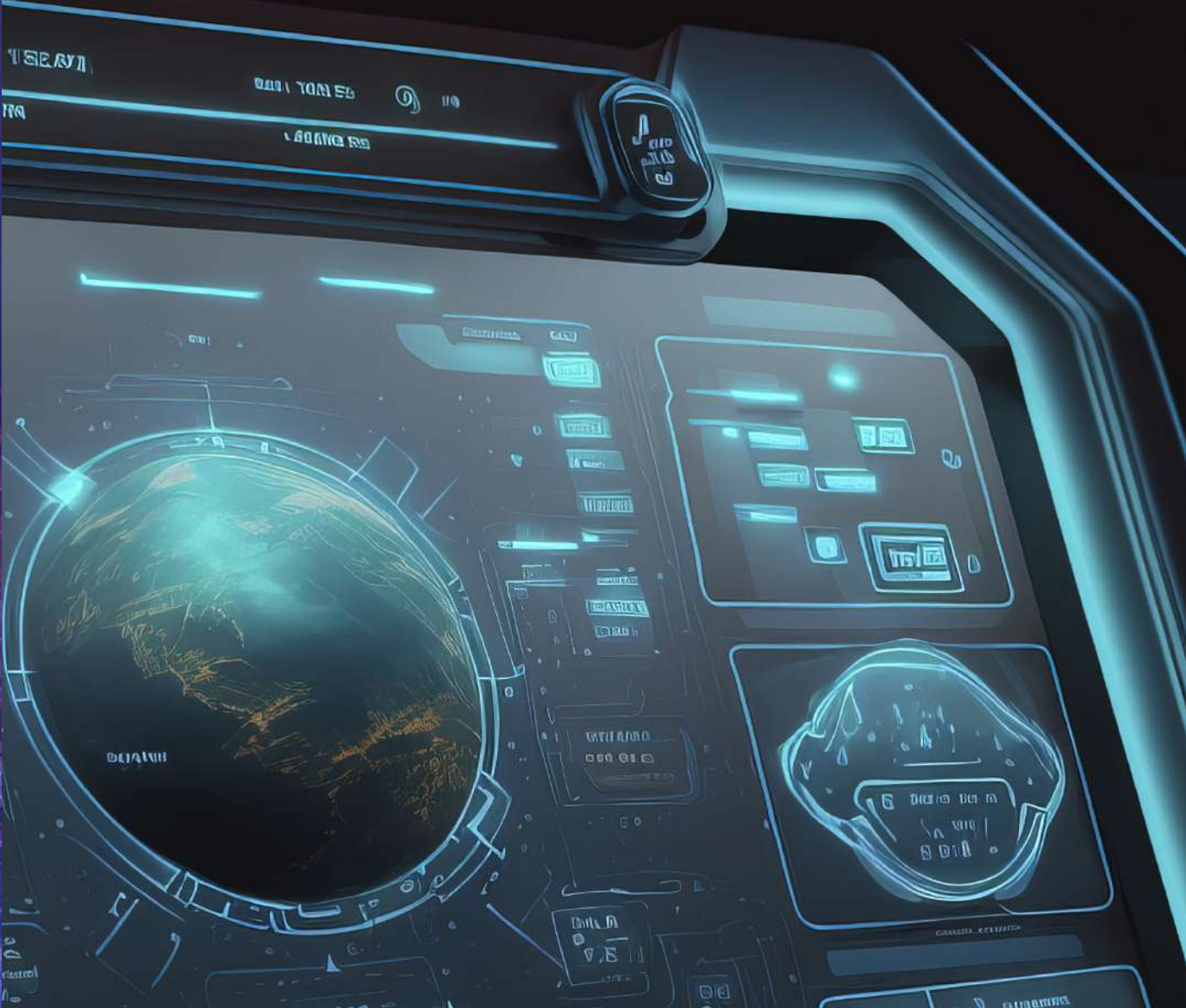
With the rapid development of science and technology, gradually we have more requirements in the speed of network transmission, therefore 5G rolls out. 5G is the fifth generation of mobile data technology, which is designed to expedite the speed, reduce the latency, and improve the resiliency of wireless services. The technology is a great leap forward in terms of bringing new market developments and growth opportunities, and it significantly improves our network connection.

Besides, it can enhance the digital experience through machine learning (ML) automation; most importantly, it performs a new network connecting virtually with everyone and everything together, including the machines, objects, and devices.



Digital Signage

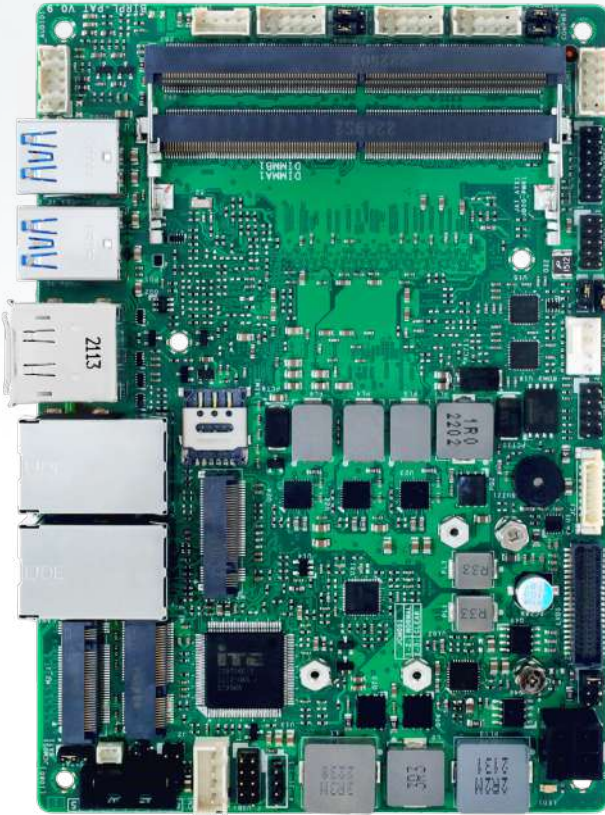
With the rapid development of science and technology, digital signage has become more prevalent and sophisticated, replacing traditional print and posters. Its solutions lie in an interconnected network of digital displays that deliver crucial information, entertainment, and advertisements. It integrates into our society in various forms such as information kiosks, outdoor displays, mobile interactive screens, and more. Using Digital Signage not only ensures information getting more timely, but also draws attention with a modern.



HMI

Industrial control systems progress continuously, Human-Machine Interface (HMI) is a user interface which connects the users to the machine, computer program or system. It's a design method of HMI, and it ensures the high speed and interaction with efficiency. It enhances not only the visibility of factory operation, but also the safety during up and running. Operators and users increasingly prefer to high-performance. In light of the points above, HMI plays a key role in the stable and efficient running of the factories and manufacturing.

BIRPL-PAT



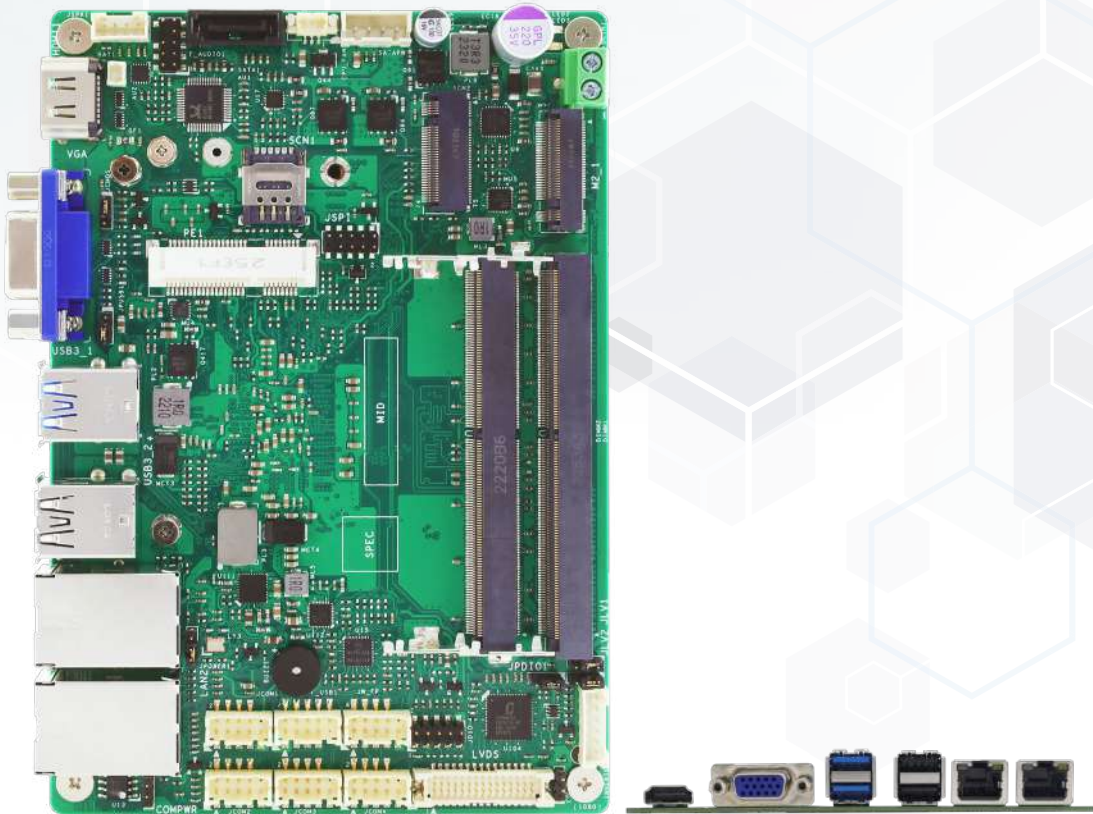
Feature Of Product

- Intel® Raptor Lake P SOC processor series
- Supports display output: LVDS or eDP/HDMI/DP
- DDR5 4800MHZ SO-DIMM, max. 64GB
- Intel® 2 x 2.5GbE LAN
- 2 x USB 2.0, 4 x USB 3.2
- 8-bit GPIO, 4 x COM ports
- 1 x SATAIII
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)
- 1 x M.2 key-M 2242/2260/2280 (SSD storage)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)

Technical Information

Model Name		BIRPL-PAT
Processor Options		Intel® Raptor Lake P U300/I5-1345UE/I3-1315UE/I3-1315URE/I5-1345URE (-URE Support Wide Range Temp.)
Chipset		None
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		148 x 102 mm
System Memory	Sockets	2 x DDR5 4800 MHz SO-DIMM
	Max. Capacity	Up to 64GB
USB 2.0	USB 2.0 Internal	2 x USB 2.0
	USB 2.0 External	None
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.2 Gen2 2 x USB 3.2 Gen2 x 2 (Type C, not support Wide Temp.)(opt.)
Expansion Slots		1 x M.2 (key-B 3042/3052) with PCIe and USB 3.0 w/ SIM slot (for 3G/4G/5G) 1 x M.2 (Key-M 2242/2260/2280) with PCIe x 4 (for storage) 1 x M.2 (Key-E 2230) with USB 2.0 and PCIe x1, support CNVI (for WIFI BT)
Storage	Expansion	1 x SATAIII
Networking	LAN	2 x 2.5GbE, RJ45 connectors
	Controller	1 x Intel® i226V 1 x Intel® i226LM (2 x I226-IT for wide range temperature)
Audio	Codec	ALC897 (opt., not support Wide Temp.)
	I/O Connector	1 x 2*5-pin header for Mic-in/Line-in/Line-out 1 x 1*4 pin wafer box for 2W Speaker
Serial Interface	Serial Standard	4 x COM: 3 x 2*5 pin headers, support RS232/RS422/RS485 with RI/5/12V 1 x 2*5 pin header, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 2*5 8-bit DIO pin header 1 x 1*4 pin CPU Fan (+12V) connector 1 x 1*3 pin clear CMOS 1 x 1*3 pin header, support DIO PWR 12V/5V (default: 5V) 1 x 2*7 front panel pin header 1 x Power LED onboard for APCI power status 1 x 1*3 AT/ATX mode switch pin header (default: ATX) 1 x Buzzer (opt., not support Wide Temp.)
Digital I/O		8 bit
Display	Interface	1 x LVDS/eDP header (share with the same connector, LVDS/eDP switch mode by BIOS setting) 1 x DP 1.4 (up to 4096x2160@60Hz, from 2 x Type C port) (opt., not support Wide Temp.) 1 x DP 1.4++ (up to 4096x2160@60Hz) 1 x HDMI 2.0 (up to 4096x2160@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	DC-IN 9-24V
	ATX Power	1 x 1*2pin terminal block
Edge IO		1 x HDMI connector 1 x DP connector 2 x Type C- combo with USB 3.2 Gen2 connectors (opt., not support Wide Temp.) 2 x RJ45 (GbE)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90% (Wide Range Temperature -40°C ~ 85°C Humidity: 10% ~ 90% by function opt.)
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIELK-PAT



Feature Of Product

- Intel® Elkhart Lake SOC processor series
- Supports display output: LVDS/HDMI/VGA
- DDR4 3200MHZ SO-DIMM, max. 32GB
- Intel® 2 x 2.5GbE LAN
- 4 x USB 2.0, 2 x USB 3.2 Gen1
- 8-bit GPIO, 6 x COM ports
- 1 x SATAIII
- 1 x Mini-PCle (WiFi/Bluetooth/SATA storage, by opt.)
- 1 x M.2 key-M 2242/2280 (SSD storage)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)

Technical Information

Model Name		BIELK-PAT
Processor Options		Intel® J6412/J6413/J6426/X6413E (Elkhart Lake) (X6413E Support Wide Range Temp.)
Chipset		None
BIOS		AMI 128Mbit SPI Flash ROM BIOS
Form factor		146 x 102 mm
System Memory	Sockets	2 x DDR4 3200 SO-DIMM
	Max. Capacity	Up to 32GB
USB 2.0	USB 2.0 Internal	2 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.0
Expansion Slots		1 x M.2 (key-B 3042/3052) with PCIe and USB 3.0 w/ SIM slot (for 3G/4G/5G) 1 x M.2 (Key-M 2242/2280) with PCIe x2 or SATA opt., support NVMe/SATA SSD 1 x Full size Mini-PCIe with USB 2.0 and PCIe for wireless module
Storage	Expansion	1 x SATAIII
Networking	LAN	2 x 2.5GbE RJ45 connectors
	Controller	2 x Intel® I226V LAN (2 x I226-IT for X6413E wide range temp.)
Audio	Codec	ALC897 (opt., not support Wide Temp.)
	I/O Connector	1 x 2*5-pin wafer, support Line-in/Line-out/Mic-in (opt., not support Wide Temp.) 1 x 1*4-pin wafer, support 2 x 2W speakers (opt., not support Wide Temp.)
Serial Interface	Serial Standard	4 x COM: 2 x 2*5 pins headers, support RS232/RS422/RS485 with RI/5V/12V 2 x 2*5 pins headers, support RS232 with RI/5V/12V
Other I/O	Other I/O (internal)	1 x Buzzer (opt., not support Wide Temp.) 1 x 2*5 8-bit DIO pin header 1 x 2*5 front panel pin header 1 x Power LED for motherboard Power-on display 1 x 1*3 AT/ATX mode switch pin header
Digital I/O		8-Bit
Display	Interface	1 x LVDS/eDP header (share with the same connector, LVDS/eDP switch mode by BIOS setting) 1 x HDMI 2.0 (up to 4096x2160@60Hz) 1 x VGA (opt., not support Wide Temp., up to 1920x1200 @60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	1 x 1*2-pin 9~24V DC-in power connector
	ATX Power	None
Edge IO		1 x HDMI 2 x USB 3.0 2 x USB 2.0 2 x RJ45 (GbE) 1 x VGA
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90% (Wide Range Temperature -40°C ~ 85°C Humidity: 10% ~ 90% by function opt.)
OS Support		Windows 10 Linux Ubuntu

BIMTL-PAT



COMING SOON

Feature Of Product

- Intel® Meteor Lake SOC processor series
- Supports display output: LVDS or eDP/HDMI
- DDR5 4800MHZ SO-DIMM, max. 96GB
- Intel® 2 x 2.5GbE LAN
- 4 x USB 2.0, 4 x USB 3.2
- 8-bit GPIO, 4 x COM ports
- 1 x SATAIII
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)
- 1 x M.2 key-M 2242/2260/2280 (SSD storage)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)

Technical Information

Model Name		BIMTL-PAT
Processor Options		Intel® Meteor Lake U Ultra 5 135U/Ultra 7 165U
Chipset		None
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		148 x 102 mm
System Memory	Sockets	2 x DDR5 4800 MHz SO-DIMM
	Max. Capacity	Up to 96GB
USB 2.0	USB 2.0 Internal	2 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.2 Gen2
Expansion Slots		1 x M.2 (key-E 2230) with 1 x USB 2.0 and 1 x PCIe x1 & Intel® CNVi 1 x M.2 (key-B 3042/3052) with PCIe x1 or SATA and USB 3.2 & SIM card slots (by BOM opt.) 1 x M.2 (Key-M 2242/2260/2280) with PCIe x4 for SSD (Gen4)
Storage	Expansion	1 x SATAIII
Networking	LAN	2 x 2.5GbE, RJ45 connectors
	Controller	1 x Intel® i226V 1 x Intel® i226LM
Audio	Codec	ALC897
	I/O Connector	1 x 2*5-pin header for Mic-in/Line-in/Line-out 1 x 1*4 pin wafer box for 2W Speaker
Serial Interface	Serial Standard	4 x COM: 3 x 2*5 pin headers, support RS232/RS422/RS485 with RI/5/12V 1 x 2*5 pin header, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 2*5 8-bit DIO pin header 1 x 1*4 pin CPU Fan (+12V) connector 1 x 1*3 pin clear CMOS 1 x 1*3 pin header, support DIO PWR 12V/5V (default: 5V) 1 x 2*7 front panel pin header 1 x Power LED onboard for APCI power status 1 x 1*3 AT/ATX mode switch pin header (default: ATX) 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x LVDS/eDP header (share with the same connector, LVDS/eDP switch mode by BIOS setting) 4 x HDMI 2.1 (up to 4096x2160@120Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	DC-IN 9-24V or 12V noly (by BOM opt.)
	ATX Power	1 x 1*2pin terminal block
Edge IO		4 x HDMI connectors 2 x USB 3.2 Gen2 2 x USB 2.0 2 x RJ45 (GbE)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIAST-PAT



COMING SOON

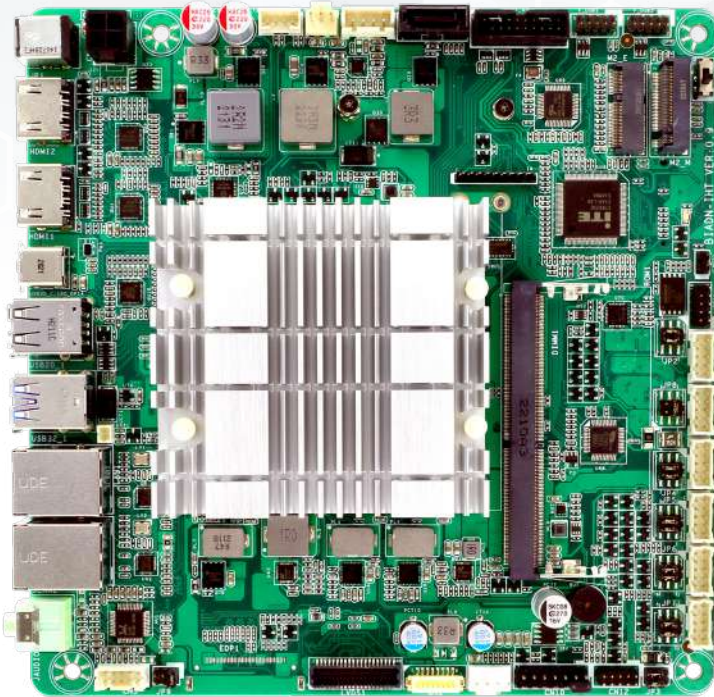
Feature Of Product

- Intel® Amston Lake SOC processor series
- Supports display output: LVDS or eDP/HDMI/DP
- DDR5 4800MHZ SO-DIMM, max. 16GB
- Intel® 2 x 2.5GbE LAN
- 4 x USB 2.0, 2 x USB 3.2
- 8-bit GPIO, 4 x COM ports
- 1 x SATAIII
- 1 x Mini PCIe Full size (WIFI/BT)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)

Technical Information

Model Name		BIAST-PAT
Processor Options		Intel® Amston Lake X7835RE/X7211RE/X7213RE/X7433RE (Support Wide Range Temp.)
Chipset		None
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		148 x 102 mm
System Memory	Sockets	1 x DDR5 4800 MHz SO-DIMM
	Max. Capacity	Up to 16GB
USB 2.0	USB 2.0 Internal	2 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.2 Gen1
Expansion Slots		1 x M.2 (key-B 3042/3052), PCIe x1 and USB 3.0, support 4G/5G, with 1 x SIM card slots 1 x Mini-PCIe Full size, USB 2.0 and PCIe interface, support WIFI/BT
Storage	Expansion	1 x SATAIII
Networking	LAN	2 x 2.5GbE, RJ45 connectors
	Controller	2 x Intel® I226-IT
Audio	Codec	ALC897 (opt., not support Wide Temp.)
	I/O Connector	1 x 2*5-pin header for Mic-in/Line-in/Line-out 1 x 1*4 pin wafer box for 2W Speaker
Serial Interface	Serial Standard	4 x COM: 2 x 2*5 pin headers, support RS232/RS422/RS485 with RI/5/12V 2 x 2*5 pin headers, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 2*5 8-bit DIO pin header 1 x 1*4 pin CPU Fan (+12V) connector 1 x 1*3 pin clear CMOS 1 x 1*3 pin header, support DIO PWR 12V/5V (default: 5V) 1 x 2*5 front panel pin header 1 x Power LED onboard for APCI power status 1 x 1*3 AT/ATX mode switch pin header (default: ATX) 1 x Buzzer (opt., not support Wide Temp.)
Digital I/O		8 bit
Display	Interface	1 x LVDS/eDP header (share with the same connector, LVDS/eDP switch mode by BIOS setting) 1 x DP 1.4++ (up to 4096x2160@60Hz) 1 x HDMI 2.0 (up to 4096x2160@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	DC-IN 9-24V
	ATX Power	1 x 1*2pin terminal block
Edge IO		1 x HDMI connector 1 x DP connector 2 x RJ45 (GbE) 2 x USB 3.2 Gen1 2 x USB 2.0
Operating Temperature		-40°C ~ 85°C Humidity: 10% ~ 90% by function opt.
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIADN-IHT



Feature Of Product

- Intel® Alder Lake N SOC processor series
- Supports display output: LVDS/2 x HDMI/DP
- DDR4 3200MHZ SO-DIMM, max. 16GB
- Realtek 2 x GbE LAN
- 6 x USB 2.0, 4 x USB 3.2 Gen2
- 8-bit GPIO, 6 x COM ports
- 1 x SATAIII
- 1 x M.2 key-M 2242/2280 (SSD storage)
- 1 x M.2 key-B 2242/3042/3052 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)

Technical Information

Model Name		BIADN-IHT
Processor Options		Intel® N97/N100/i3-N305 CPU (Alder Lake N)
Chipset		None
BIOS		AMI 128Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	1 x DDR4 3200 MHz SO-DIMM
	Max. Capacity	Up to 16GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.2 Gen1 1 x Type C USB 3.2 Gen2
Expansion Slots		1 x M.2 (Key-M type 2242/2280) with PCIe and SATA (for storage) (Screw M.2 key-M 2242 colay M.2 key B 2230) 1 x M.2 (key-B 3042/3052) with PCIe x1 and USB 3.2 w/ SIM card slots (for 3G/4G/5G) 1 x M.2 (key-E 2230) with USB 2.0 and PCIe x1, support Intel® CNVi (for WIFI BT)
Storage	Expansion	1 x SATAIII
Networking	LAN	2 x GbE, RJ45 connectors
	Controller	2 x RTL8111H-CG GbE LAN
Audio	Codec	ALC897
	I/O Connector	1 x Audio jack (Line out) 1 x 2*5-pin wafer box, support Line-in/Mic-in/Line-out 1 x 1*4-pin wafer, support 2 x 2W speakers
Serial Interface	Serial Standard	6 x COM: 2 x 2*5 pin headers, support RS232/RS422/RS485 with RI/5/12V 4 x 2*5 pin headers, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 1*4 pin header for CPU FAN 1 x 1*3 pin header for system FAN 1 x 2*5 8-bit DIO pin header 1 x 2*3 pin header for voltage select 1 x 1*4 pin box header for I2C 1 x 2*7 front panel pin header 1 x 1*8 pin wafer LVDS BKLT CONTROL
Digital I/O		8 bit
Display	Interface	1 x LVDS 2 x HDMI 1.4 (4096x2160@30Hz) 1 x Type C (support DP 1.4, up to 4096x2160@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	DC-IN 9-24V Type C PD (20V 5A)
	ATX Power	None
Edge IO		1 x DC 9-24V Jack 2 x HDMI 1 x Type C (USB 3.2 Gen2/PD 5V 20A/DP 1.4) 2 x USB 3.2 Gen1 2 x USB 2.0 2 x RJ45 (GbE) 1 x Audio Jack (Line-out)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIH61-IHP



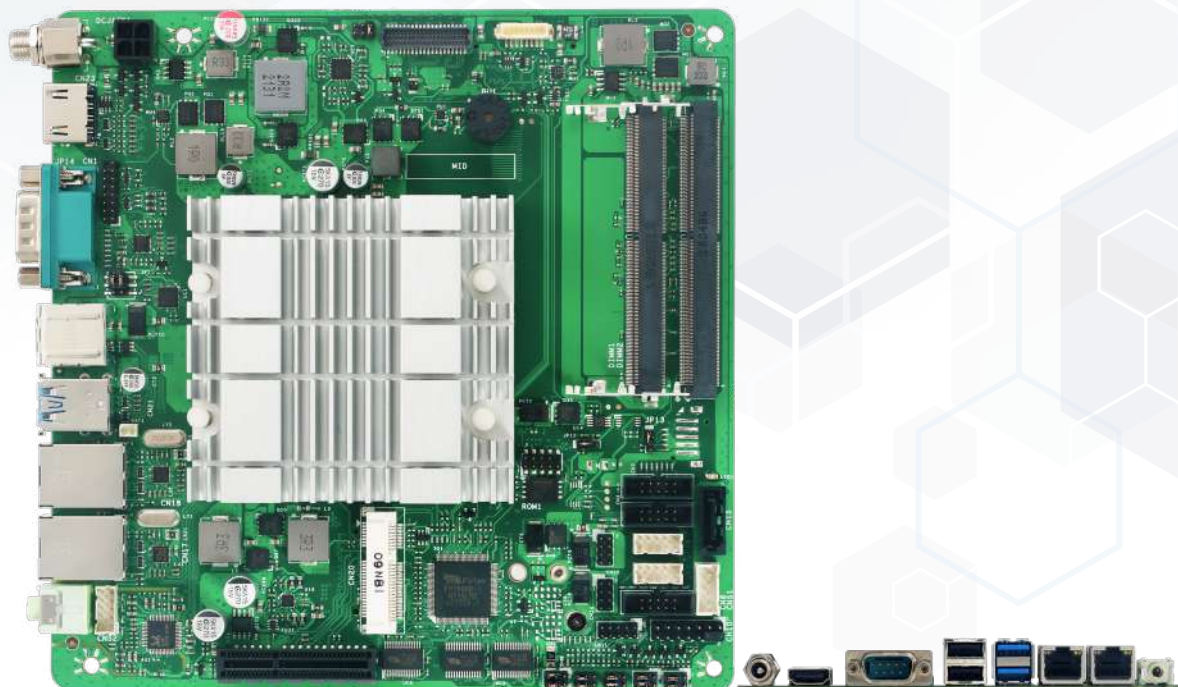
Feature Of Product

- Intel® 12th/13th/14th Gen. Core™ processor series
- Supports display output: LVDS or eDP (opt.)/2 x HDMI/VGA
- DDR4 3200MHZ SO-DIMM, max. 64GB
- Intel® 1 x GbE, 1 x 2.5GbE LAN
- 5 x USB 2.0, 2 x USB 3.2 Gen1
- 8-bit GPIO, 4 x COM ports
- 1 x SATAIII
- 1 x PCIe16
- 1 x Mini-PCIe (WiFi/Bluetooth/SATA storage, by opt.)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)

Technical Information

Model Name		BIH61-IHP
Processor Options		14th/13th/12th Gen. Intel® Core™ processors, LGA1700
Chipset		Intel® H610 Express Chipset
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	2 x DDR4 3200 MHz SO-DIMM
	Max. Capacity	Up to 64GB
USB 2.0	USB 2.0 Internal	3 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.0
Expansion Slots		1 x PCIe x16 slot 1 x Mini-PCIe, support SATA and PCIe or USB 3.0 and PCIe (by BOM opt.) 1 x M.2 (key-B 2242/3042/3052) with PCIe and USB 2.0 or SATA and USB 2.0 (by BOM opt.) 1 x M.2 (key-E 2230) with PCIe x1 and USB 2.0 Intel® CNVI support (for WIFI/BT) 1 x SIM slot
Storage	Expansion	1 x SATAIII
Networking	LAN	1 x 2.5GbE, RJ45 connector 1 x GbE, RJ45 connector
	Controller	1 x Intel® i219V 1 x Intel® I225v
Audio	Codec	ALC897
	I/O Connector	1 x Audio jacks (Line out) 1 x 2*5-pin wafer box, support Line-in/Mic-in/Speaker
Serial Interface	Serial Standard	4 x COM: 1 x D-sub 9 pin connector, support RS232/RS422/RS485 with RI/5/12V 3 x 2*5 pin headers, support RS232
Other I/O	Other I/O (internal)	1 x 1*4 pin-header for CPU fan (Smart Fan) 1 x 1*3 pin system fan (Smart Fan) 1 x 1*3 pin clear CMOS 1 x SIM slot 1 x 2*6 front panel pin header 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x eDP or LVDS 2 x HDMI 1.4 (4096x2160@30Hz) 1 x VGA (2*8pin wafer Box header, up to 1920x1200@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	DC-IN 12~24V 1 x 2*2 pin 12V DC power (ATX connector)
	ATX Power	None
Edge IO		1 x DC 12~24V Jack 2 x HDMI 2 x USB 3.1 2 x RJ45 (GbE) 1 x COM (D-sub 9 pin connector, support RS232/422/485) 1 x Audio Jack (Line-out) 2 x USB 2.0
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIELK-IHT



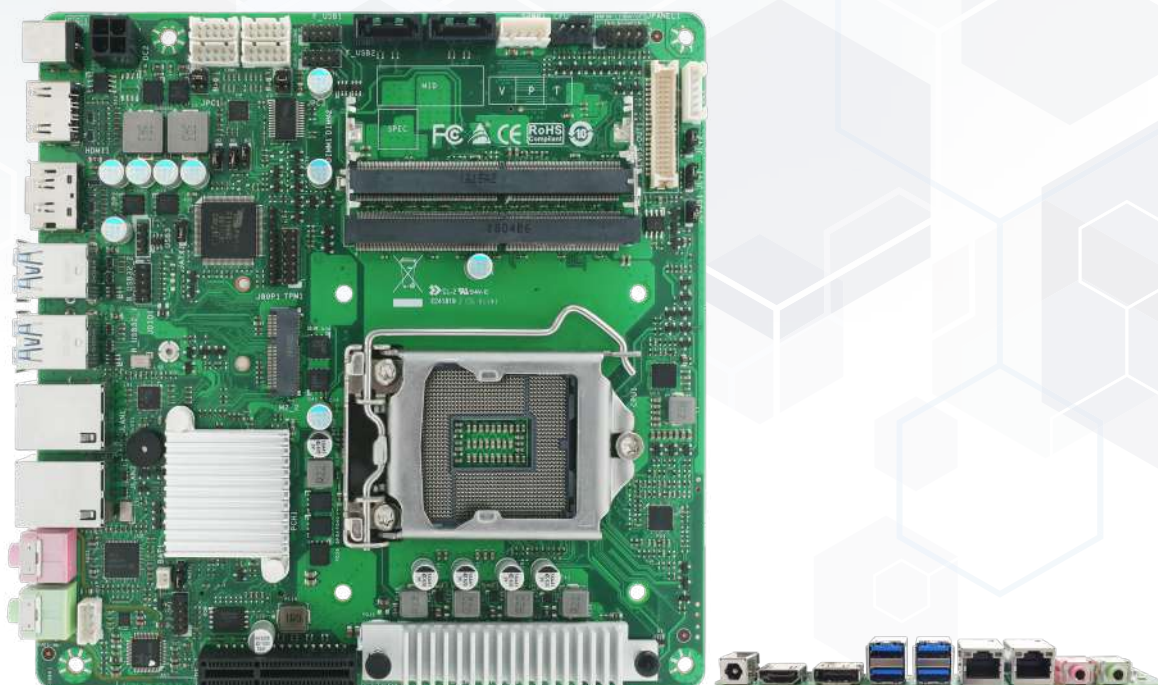
Feature Of Product

- Intel® Elkhart Lake SOC processor series
- Supports display output: LVDS or eDP (opt.)/HDMI/VGA
- DDR4 3200MHZ SO-DIMM, max. 32GB
- Realtek 2 x GbE LAN
- 6 x USB 2.0, 2 x USB 3.2 Gen1
- 8-bit GPIO, 6 x COM ports
- 1 x SATAIII
- 1 x PCIe4
- 1 x Mini-PCIe (WiFi/Bluetooth/SATA storage, by opt.)
- 1 x M.2 key-B 2242/3042/3052 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)

Technical Information

Model Name		BIELK-IHT
Processor Options		Intel® J6412/J6413/J6426/X6413E (Elkhart Lake)
Chipset		None
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	2 x DDR4 3200 MHz SO-DIMM
	Max. Capacity	Up to 32GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.0
Expansion Slots		1 x full size Mini PCIe, support PCIe and USB 2.0 or SATA (by BOM opt.) 1 x M.2 (key-B 2242/3042/3052) with PCIe and USB 3.1 or SATA and PCIe (by BOM opt.) 1 x PCIe x4 Slot with PCIe x2 Signal 1 x SIM slot
Storage	Expansion	1 x SATAIII (by BOM opt.)
Networking	LAN	2 x GbE, RJ45 connectors
	Controller	2 x RTL8111H-CG
Audio	Codec	ALC897
	I/O Connector	1 x 2*5-pin box header for Mic-in/Line-in/SPK-out 1 x Audio Jack (Line-out)
Serial Interface	Serial Standard	6 x COM: 1 x D-sub 9 pin connector, support RS232/422/485 with RI/5V/12V 1 x 2*5 pins header, support RS232/422/485 with RI/5V/12V 4 x 2*5 pins headers, support RS232 with RI/5V/12V
Other I/O	Other I/O (internal)	1 x 2*8 pin header, support VGA display 1 x 2*7 front panel 1 x 2*5 8-bit DIO 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x LVDS or eDP 1 x HDMI 1.4 (up to 4096x2160@30Hz) 1 x VGA (2*8pin wafer Box header, up to 1920 x 1200@60Hz)
TPM	Support / Not	Support TPM 2.0 module
Power Supply	DC Power	DC-IN 9~20V (9-24 by opt.) 1 x 2*2 pin 12V DC power (ATX connector)
	ATX Power	None
Edge IO		1 x DC 9~20V Jack (9-24 by opt.) 1 x HDMI 2 x USB 3.0 2 x USB 2.0 2 x RJ45 (GbE) 1 x Audio Jack (Line out)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10 Linux Ubuntu

BICMA-IHP



Feature Of Product

- Intel® 10/11th Gen. Core™ processor series
- Supports display output: LVDS or eDP (opt.)/DP/HDMI
- DDR4 2933MHZ SO-DIMM, max. 64GB
- Intel® 2 x GbE LAN
- 5 x USB 2.0, 4 x USB 3.2 Gen1
- 8-bit GPIO, 4 x COM ports
- 1 x SATAIII
- 1 x PCIe4
- 1 x M.2 key-M 2242/2260/2280 slot (for SSD)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)

Technical Information

Model Name		BICMA-IHP
Processor Options		10th/11th Gen. Intel® Core™ processors (Comet Lake-S/Rocket Lake-S), LGA 1200
Chipset		Intel® Q470E/H420E Express Chipset
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	2 x DDR4 2933 MHz SO-DIMM
	Max. Capacity	Up to 64GB
USB 2.0	USB 2.0 Internal	5 x USB 2.0
	USB 2.0 External	None
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	4 x USB 3.0
Expansion Slots		1 x PCIe x4 slot 1 x M.2 (key-M 2242/2260/2280) with PCIe x4 and SATA for NVME 1 x M.2 (key-E 2230) with PCIe x1 and USB 2.0 for Intel® CNVI support
Storage	Expansion	2 x SATAIII
Networking	LAN	2 x GbE, RJ45 connectors
	Controller	1 x I211-AT 1 x I219-LM
Audio	Codec	ALC897
	I/O Connector	2 x Audio Jack, support Line-out/Mic-in 1 x 1*4 pin 2.0 pitch wafer box for 2 x 2W/4ohm speakers
Serial Interface	Serial Standard	4 x COM: 1 x 2*5 pins header, supports RS232/RS422/RS485 3 x 2*5 pins headers, support RS232
Other I/O	Other I/O (internal)	1 x 1*4pin (2.54) CPU fan header 1 x 2*7pins TPM module header 1 x 1*3pin (2.0) clear CMOS header 1 x 2*5 pins front panel header 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x LVDS or eDP 1 x DP 1.4 (up to 4096x2304@60Hz) 1 x HDMI 1.4 (up to 4096 x 2160@30Hz)
TPM	Support / Not	Supports TPM 2.0 module
Power Supply	DC Power	1 x 12V DC Jack 1 x 2*2 pins 12V DC power (ATX connector)
	ATX Power	None
Edge IO		2 x RJ45 (GbE) 1 x HDMI 1 x DP 4 x USB 3.0 1 x DC 12V Jack 2 x Audio Jack (Mic-in/Line-out)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10

BIWLA-IHT



Feature Of Product

- Intel® 8th Gen. Core™ processor series
- Supports display output: LVDS or eDP (opt.)/ HDMI/DP/VGA
- DDR4 2400 MHZ SO-DIMM, max. 64GB
- Intel® 2 x GbE LAN
- 4 x USB 2.0, 4 x USB 3.1 Gen1
- 8-bit GPIO, 6 x COM ports
- 2 x SATAIII
- 1 x M.2 key-M 2242/2260/2280 (SSD storage)
- 1 x M.2 key-B 3042 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth)

Technical Information

Model Name		BIWLA-IHT
Processor Options		Intel® 4305UE/i3-8145UE/i5-8365UE/i7-8665UE (Whiskey Lake U CPU)
Chipset		None
BIOS		AMI 128Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	2 x DDR4 2400 MHz SO-DIMM
	Max. Capacity	Up to 64GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	None
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	4 x USB 3.0
Expansion Slots		1 x M.2 (key-M 2242/2260/2280) with PCIe x4 and SATA for NVME 1 x M.2 (key-B 3042), supports PCIe and USB w/ SIM card slots (for 3G/4G) 1 x M.2 (key-E 2230) with PCIe x1 and USB 2.0 for wireless and Intel® CNVI support
Storage	Expansion	2 x SATAIII
Networking	LAN	2 x GbE, RJ45 connectors
	Controller	1 x Intel® I211 (colay I210) 1 x Intel® I219-LM
Audio	Codec	ALC897/888S
	I/O Connector	1 x 1*4 pin 2.0 pitch wafer box pin header fo SPK-out 2 x Audio Jack, support Line out/Mic in
Serial Interface	Serial Standard	6 x COM: 2 x 2*5 pins headers, support RS232/422/485 4 x 2*5 pins headers, support RS232
Other I/O	Other I/O (internal)	1 x 1*4 pin CPU Fan header 1 x 1*6 pin header for PS/2 1 x 1*2 pin clear CMOS header 1 x 2*5 pins front panel header 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x LVDS 1 x HDMI 1.4 (up to 4096x2160@30Hz) 1 x DP 1.4 (up to 3480x2160@60Hz) 1 x VGA (up to 1920x1200@60Hz), colay DP
TPM	Support / Not	Supports TPM 2.0 module
Power Supply	DC Power	1 x 12~28V DC Jack 1 x 2*2 pin 12V DC power (ATX connector)
	ATX Power	None
Edge IO		1 x 12~28V DC Jack 2 x RJ45 (GbE) 1 x HDMI 1 x DP 4 x USB 3.0 2 x Audio Jack (Mic-in/Line-out)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10 Ubuntu

BIH60-IHP



Feature Of Product

- Intel® 12th/13th/14th Gen. Core™ processor series
- Supports display output: LVDS or eDP (opt.)/DP/HDMI/VGA
- DDR4 3200MHZ SO-DIMM, max. 64GB
- Intel® 1 x GbE, 1 x 2.5GbE LAN
- 5 x USB 2.0, 2 x USB 3.2 Gen1
- 8-bit GPIO, 4 x COM ports
- 1 x SATAIII
- 1 x PCIe16
- 1 x Mini-PCIe (WiFi/Bluetooth/SATA storage, by opt.)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)

Technical Information

Model Name		BIH60-IHP
Processor Options		14th/13th/12th Gen. Intel® Core™ processors, LGA1700
Chipset		Intel® H610 Express Chipset
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	2 x DDR4 3200 MHz SO-DIMM
	Max. Capacity	Up to 64GB
USB 2.0	USB 2.0 Internal	1 x USB 2.0
	USB 2.0 External	4 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.0
Expansion Slots		1 x PCIe x16 slot 1 x Mini-PCIe, support SATA and PCIe or USB 3.0 and PCIe signal (by BOM opt.) 1 x M.2 (key-B 2242/3042/3052) with PCIe and USB 2.0 or SATA and USB 2.0 signal (by BOM opt.) 1 x M.2 (key-E 2230) with PCIe x1 and USB 2.0 Intel® CNVI support (for WIFI/BT) 1 x SIM slot
Storage	Expansion	1 x SATAIII
Networking	LAN	1 x 2.5GbE, RJ45 connector 1 x GbE, RJ45 connector
	Controller	1 x Intel® i219V 1 x Intel® I225v
Audio	Codec	ALC897
	I/O Connector	1 x 2*5-pin 2.0 mm wafer box for Line-in/SPK-out 2 x Audio jacks (Line-out/Mic-in)
Serial Interface	Serial Standard	4 x COM: 1 x D-sub 9 pin connector, support RS232/RS422/RS485 with RI/5/12V 1 x D-sub 9 pin connector, support RS232 2 x 2*5 pin headers, support RS232
Other I/O	Other I/O (internal)	1 x 1*4pin CPU fan (Smart Fan) 1 x 1*3pin system fan (Smart Fan) 1 x 2*5-pin audio (Line-in/Line-in/speaker) 1 x Buzzer 1 x 1*3 pin clear CMOS 1 x 2*7 pin header power button, Reset button, HDD Led, power LED 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x eDP or LVDS 1 x DP (4096x2304@60Hz) 1 x HDMI (4096x2160@30Hz) 1 x VGA (up to 1920x1200@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board Module (opt.)
Power Supply	DC Power	None
	ATX Power	Supports 1 x ATX power 24 pin header 1 x 12V ATX 4P connector
Edge IO		2 x RJ45 (GbE) 4 x USB 2.0 2 x Audio Jack (Line-out/Mic-in) 1 x DP 2 x USB 3.0 1 x HDMI 1 x VGA (D-sub 15 pin connector) 2 x COM (D-sub 9 pin connector, support 1 x RS232/422/485, 1 x RS232)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIH41-IHP



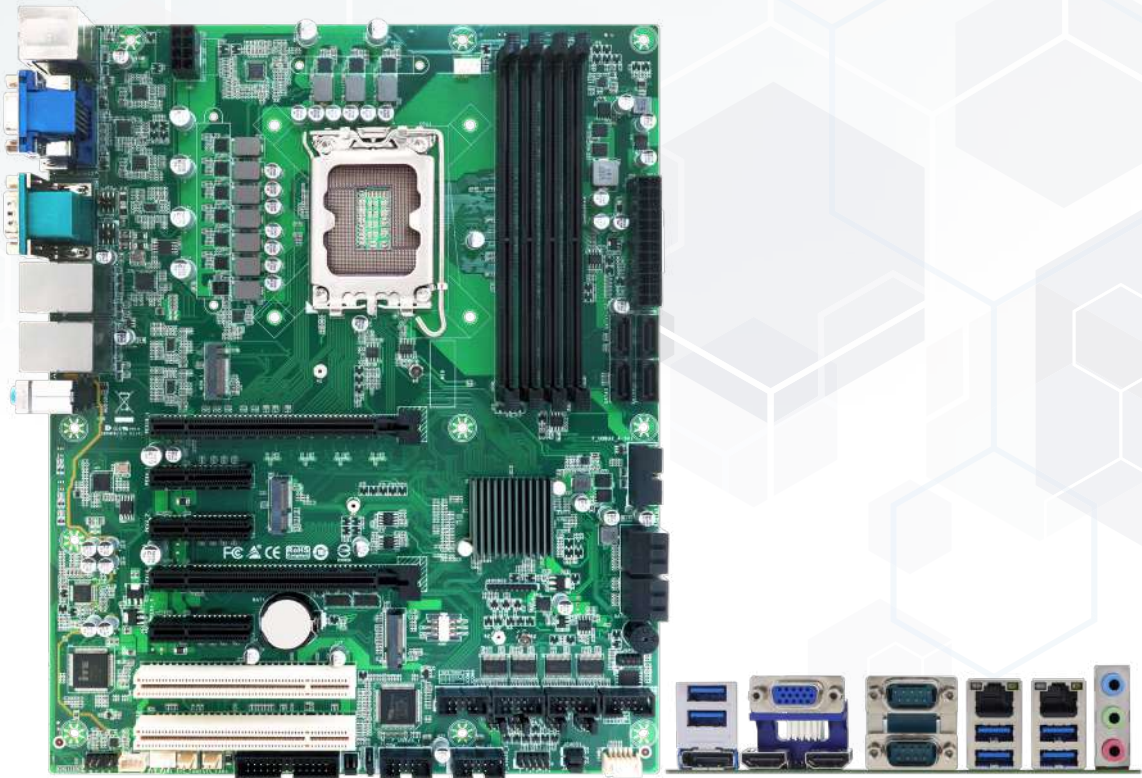
Feature Of Product

- Intel® 10th/11th Gen. Core™ processor series
- Supports display output: eDP/DP++/HDMI/VGA
- DDR4 2933MHZ SO-DIMM, max. 64GB
- Intel® 2 x GbE LAN
- 5 x USB 2.0, 2 x USB 3.2 Gen1
- 8-bit GPIO, 6 x COM ports
- 1 x SATAIII
- 1 x PCIe16
- 1 x Mini-PCIe (WiFi/Bluetooth)
- 1 x M.2 key-B 2242/2280/3042/3052 slot (3G/4G/5G/storage, by opt.)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth, includes CNVi)

Technical Information

Model Name		BIH41-IHP
Processor Options		10th/11th Gen. Intel® Core™ processors, LGA1700 (Comet Lake/Rocket Lake-S)
Chipset		Intel® H410 Express Chipset
BIOS		AMI 128Mbit SPI Flash ROM BIOS
Form factor		170 x 170 mm
System Memory	Sockets	2 x DDR4 2933 MHz SO-DIMM
	Max. Capacity	Up to 64GB
USB 2.0	USB 2.0 Internal	1 x USB 2.0
	USB 2.0 External	4 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.0
Expansion Slots		1 x PCIe x16 Slot 1 x PCI Express Mini card (For WIFI BT) 1 x (M.2 key-B 2242/2280/3042/3052) PCIe x2, PCIe and SATA 3.0, PCIe and USB 3.1 interfaces by BOM opt. (Default is PCIe and USB 3.0) 1 x (M.2 key-E 2230) with PCIe x1 and USB 2.0 (For WIFI BT)
Storage	Expansion	2 x SATAIII
Networking	LAN	2 x GbE, RJ45 connectors
	Controller	1 x Intel® I219-V 1 x Intel® I211-AT
Audio	Codec	ALC897
	I/O Connector	2 x Audio jacks (Line-out/Mic-in)
Serial Interface	Serial Standard	6 x COM: 1 x D-sub 9 pin connector, support RS232/422/485 with RI/5V/12V 1 x D-sub 9 pin connector, support RS232 with RI/5V/12V 4 x 2*5 pins headers, support RS232 with RI/5V/12V
Other I/O	Other I/O (internal)	1 x 1*4pin CPU fan (Smart Fan) 1 x 1*3pin system fan (Smart Fan) 1 x Buzzer 1 x 1*3 pin clear CMOS 1 x 2*7 pin header power button, Reset button, HDD Led, power LED 1 x Green LED for 5V standby power indicator
Digital I/O		8 bit
Display	Interface	1 x eDP 1 x DP 1.4 (4096x2304@60Hz) 1 x HDMI 1.4 (4096x2160@30Hz) 1 x VGA (up to 1920x1200@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board Module (opt.)
Power Supply	DC Power	None
	ATX Power	Supports 1 x ATX power 24 pin header 1 x 12V ATX 4P connector
Edge IO		2 x RJ45 (GbE) 2 x USB 3.0 4 x USB 2.0 2 x Audio Jack (Line-out/Mic-in) 1 x DP 1 x HDMI 1 x VGA 2 x COM (D-sub 9 pin connector, support 1 x RS232/422/485, 1 x RS232)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10 Linux Ubuntu

BIW68-AHP



Feature Of Product

- Intel® 12th/13th/14th Gen. Core™ processor series
- Supports display output: VGA/HDMI/DP++
- DDR4 3200MHZ LONG-DIMM, max. 128GB (Support ECC Function)
- Intel® 2 x 2.5GbE LAN
- 4 x USB 2.0, 8 x USB 3.2
- 16-bit GPIO, 6 x COM ports
- 8 x SATAIII (4 x SATAIII share with 1 x PCIe4)
- Expansion slots: 1 x PCIe16, 1 x PCIe8, 3 x PCIe4, 2 x PCI slots
- 1 x M.2 key-M 2242/2280 slot (SATA SSD)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth)

Technical Information

Model Name		BIW68-AHP
Processor Options		Intel® 14th/13th/12th CPU for LGA1700 Socket CPU (Max. TDP at 125W)
Chipset		Intel® W680 Express Chipset
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		ATX 305 x 244 mm
System Memory	Sockets	4 x DDR4 3200 MHz U-DIMM, support ECC Function
	Max. Capacity	Up to 128GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	None
USB 3.0	USB 3.0 Internal	2 x USB 3.2 Gen1
	USB 3.0 External	6 x USB 3.2 Gen2
Expansion Slots		1 x PCIe Gen4 x16 (PCIe share to PCIe Gen4 x8 slot) 1 x PCIe Gen4 x8 (by PCIe x16 slot) 3 x PCIe x4 (1 x PCIe x4 share with 4 x SATAIII) 2 x PCI slots 1 x M.2 (key-M 2242/2280) with PCIe Gen4 x4 (for storage) 1 x M.2 (key-B 3042/3052) with PCIe x1 and USB 3.0 w/ SIM card slot (for 3G/4G/5G) 1 x M.2 (key-E 2230) with PCIe x1 and USB 2.0 Intel® CNVI support (for WIFI/BT)
Storage	Expansion	8 x SATAIII (4 x SATAIII share with 1 x PCIe x 4)
Networking	LAN	2 x 2.5GbE, RJ45 connectors
	Controller	1 x Intel® i226V 1 x Intel® i226LM
Audio	Codec	ALC897
	I/O Connector	3 x Audio jack (Line-in/Line-out/Mic-in) 1 x 2*5 front audio, support Mic-in/Line-out 1 x 1*4-pin wafer, support 2 x 2W speakers
Serial Interface	Serial Standard	6 x COM: 2 x D-sub 9 pin connectors, support RS232/RS422/RS485 with RI/5/12V 4 x 2*5 pin headers, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 1*4pin CPU smart fan 1 x 1*4pin System smart fan 2 x 1*3pin System fans 1 x 2*13 pin parallel port (Multi-function with DIO), switch by BIOS control, default DIO 1 x 1*3 pin clear CMOS 1 x 2*5 pin header, support power button, Reset button, HDD Led, power LED, Reset LED 1 x Buzzer
Digital I/O		16 bit
Display	Interface	2 x HDMI 2.0 (up to 4096x2160@60Hz) 1 x DP 1.4++ (up to 4096x2160@60Hz) 1 x VGA (up to 1920x1200@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	None
	ATX Power	1 x 24 pin ATX power connector 1 x 2*4 pin ATX power connector
Edge IO		2 x RJ45 (GbE) 6 x USB 3.2 Gen2 1 x VGA (D-sub 15 pin connector) 2 x HDMI 1 x DP ++ 2 x COM (D-sub 9 pin connector, support 2 x RS232/422/485) 3 x Audio Jack (Line-in/Line-out/Mic-in)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIQ67-AHP



Feature Of Product

- Intel® 12th/13th/14th Gen. Core™ processor series
- Supports display output: VGA/HDMI/DP ++
- DDR4 3200MHZ LONG-DIMM, max. 128GB
- Intel® 2 x 2.5GbE LAN
- 4 x USB 2.0, 8 x USB 3.2
- 16-bit GPIO, 6 x COM ports
- 8 x SATAIII (4 x SATAIII share with 1 x PCIe4)
- Expansion slots: 1 x PCIe16, 1 x PCIe8, 3 x PCIe4, 2 x PCI slots
- 1 x M.2 key-M 2242/2280 slot (SATA SSD)
- 1 x M.2 key-B 3042/3052 slot (3G/4G/5G)
- 1 x M.2 key-E 2230 slot (WiFi/Bluetooth)

Technical Information

Model Name		BIQ67-AHP
Processor Options		Intel® 14th/13th/12th CPU for LGA1700 Socket CPU (Max. TDP at 125W)
Chipset		Intel® Q670 Express Chipset
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		ATX 305 x 244 mm
System Memory	Sockets	4 x DDR4 3200 MHz U-DIMM
	Max. Capacity	Up to 128GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	None
USB 3.0	USB 3.0 Internal	2 x USB 3.2 Gen1
	USB 3.0 External	6 x USB 3.2 Gen2
Expansion Slots		1 x PCIe Gen4 x16 (PCIe share to PCIe Gen4 x8 slot) 1 x PCIe Gen4 x8 (by PCIe x16 slot) 3 x PCIe x4 (1 x PCIe x4 share with 4 x SATAIII) 2 x PCI slots 1 x M.2 (key-M 2242/2280) with PCIe Gen4x4 (for storage) 1 x M.2 (key-B 3042/3052) with PCIe x1 and USB 3.0 w/ SIM card slot (for 3G/4G/5G) 1 x M.2 (key-E 2230) with PCIe x1 and USB 2.0 Intel® CNVI support (for WIFI/BT)
Storage	Expansion	8 x SATAIII (4 x SATAIII share with 1 x PCIe x 4)
Networking	LAN	2 x 2.5GbE, RJ45 connectors
	Controller	1 x Intel® i226V 1 x Intel® i226LM
Audio	Codec	ALC897
	I/O Connector	3 x Audio jack (Line-in/Line-out/Mic-in) 1 x 2*5 front audio, support Mic-in/Line-out 1 x 1*4-pin wafer, support 2 x 2W speakers
Serial Interface	Serial Standard	6 x COM: 2 x D-sub 9 pin connectors, support RS232/RS422/RS485 with RI/5/12V 4 x 2*5 pin headers, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 1*4pin CPU smart fan 1 x 1*4pin system smart fan 2 x 1*3pin system fans 1 x 2*13 pin parallel port (Multi-function with DIO), switch by BIOS control, default DIO 1 x 1*3 pin clear CMOS 1 x 2*5 pin header, support power button, Reset button, HDD Led, power LED, Reset LED 1 x Buzzer
Digital I/O		16 bit
Display	Interface	2 x HDMI 2.0 (up to 4096x2160@60Hz) 1 x DP 1.4++ (up to 4096x2160@60Hz) 1 x VGA (up to 1920x1200@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	None
	ATX Power	1 x 24 pin ATX power connector 1 x 2*4 pin ATX power connector
Edge IO		2 x RJ45 (GbE) 6 x USB 3.2 Gen2 1 x VGA (D-sub 15 pin connector) 2 x HDMI 1 x DP ++ 2 x COM (D-sub 9 pin connector, support 2 x RS232/422/485) 3 x Audio Jack (Line-in/Line-out/Mic-in)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIH61-AHA



Feature Of Product

- Intel® 12th/13th/14th Gen. Core™ processor series
- Supports display output: VGA/HDMI/DP ++
- DDR5 4800MHZ LONG-DIMM, max. 96GB
- Intel® 1 x GbE, 1 x 2.5GbE LAN
- 6 x USB 2.0, 4 x USB 3.2 Gen1
- 16-bit GPIO, 10 x COM ports
- 4 x SATAIII (1 x SATAIII share with M.2 Key-M)
- Expansion slots: 1 x PCIe16, 1 x PCIe4, 5 x PCI slots
- 1 x M.2 key-M 2242/2280 slot (SATA SSD)

Technical Information

Model Name		BIH61-AHA
Processor Options		Intel® 14th/13th/12th CPU for LGA1700 Socket CPU (Max. TDP at 125W)
Chipset		Intel® H610 Express Chipset
BIOS		AMI 256Mbit SPI Flash ROM BIOS
Form factor		ATX 305 x 244 mm
System Memory	Sockets	2 x DDR5 4800 MHz U-DIMM
	Max. Capacity	Up to 96GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	4 x USB 3.2 Gen1
Expansion Slots		1 x PCIe Gen4 x16 1 x PCIe Gen3 x4 5 x PCI slots 1 x M.2 (key-M 2242/2280) with PCIe x2 and SATA (SATA by opt.) (for storage)
Storage	Expansion	4 x SATAIII (1 x SATAIII share with M.2 key-M)
Networking	LAN	1 x 2.5GbE, RJ45 connector 1 x GbE, RJ45 connector
	Controller	1 x Intel® i219V 1 x Intel® i225V
Audio	Codec	ALC897
	I/O Connector	3 x Audio jack (Line-in/Line-out/Mic-in) 1 x 2*5 front audio, support Mic-in/Line-out 1 x 1*4-pin wafer, support 2 x 2W speakers
Serial Interface	Serial Standard	10 x COM: 2 x D-sub 9 pin connectors, support RS232/RS422/RS485 with RI/5/12V 8 x 2*5 pin headers, support RS232 with RI/5/12V
Other I/O	Other I/O (internal)	1 x 1*4pin CPU smart fan 1 x 1*4pin system smart fan 2 x 1*3pin system fans 1 x 2*13 pin parallel port (Multi-function with DIO), switch by BIOS control, default DIO 1 x 1*3 pin clear CMOS 1 x 2*5 pin header, support power button, Reset button, HDD Led, power LED, Reset LED 1 x Buzzer
Digital I/O		16 bit
Display	Interface	1 x HDMI 2.0 (up to 4096x2160@60Hz) 1 x DP 1.4++ (up to 4096x2160@60Hz) 1 x VGA (up to 1920x1200@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board
Power Supply	DC Power	None
	ATX Power	1 x 24 pin ATX power connector 1 x 2*4 pin ATX power connector
Edge IO		2 x RJ45 (GbE) 4 x USB 3.2 Gen1 1 x PS2 1 x VGA (D-sub 15 pin connector) 1 x HDMI 1 x DP ++ 2 x COM (D-sub 9 pin connector, support 2 x RS232/422/485) 3 x Audio Jack (Line-in/Line-out/Mic-in)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 10/Windows 11 Linux Ubuntu

BIH11-AHB



Feature Of Product

- Intel® 6th/7th/8th Gen. Core™ processor
- Supports display output: VGA/HDMI/DP ++
- DDR4 2400MHZ LONG-DIMM, max. 32GB
- Intel® 2 x GbE LAN
- 6 x USB 2.0, 4 x USB 3.2 Gen1
- 8-bit GPIO, 6 x COM ports
- 4 x SATAIII
- Expansion slots: 1 x PCIe16, 1 x PCIe4, 5 x PCI slots
- 1 x M.2 key-M 2242/2260/2280 slot (SATA SSD)

Technical Information

Model Name		BIH11-AHB
Processor Options		8th/7th/6th Gen. Intel® Core™ processors (Skylake-S/Kabylake-S), LGA 1151
Chipset		Intel® H110 Express Chipset
BIOS		AMI 64Mbit SPI Flash ROM BIOS
Form factor		ATX 305 x 244 mm
System Memory	Sockets	2 x DDR4 2400 Long-DIMM
	Max. Capacity	Up to 32GB
USB 2.0	USB 2.0 Internal	4 x USB 2.0
	USB 2.0 External	2 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	4 x USB 3.0
Expansion Slots		1 x PCIe x16 Slot 1 x PCIe x4 Slot 5 x PCI slots 1 x M.2 (key-M 2242/2260/2280) socket for SATA SSD (share with 1 x SATA)
Storage	Expansion	4 x SATA III
Networking	LAN	1 x 2.5GbE RJ45 connector 1 x GbE, RJ45 connector
	Controller	1 x Intel® I225-V 1 x Intel® I219-V
Audio	Codec	ALC897
	I/O Connector	3 x Audio Jack, support Line-in/Line-out/Mic-in 1 x 2*5 pin header, support Line-out/Mic-in
Serial Interface	Serial Standard	6 x COM: 1 x D-sub 9 pin connector, support RS232/RS422/RS485 with RI/5V/12V 1 x D-sub 9 pin connector, support RS232 with RI/5V/12V 4 x 2*5 pins headers, support RS232 with RI/5V/12V
Other I/O	Other I/O (internal)	1 x 2*5 pins front panel header 1 x 2*5 8-bit DIO 1 x 2*13 pins parallel port box-header 1 x 1*4 pins, CPU PWM-Smart FAN header 2 x 1*3 pins, System DC-FAN header 1 x Buzzer
Digital I/O		8-Bit
Display	Interface	1 x VGA (up to 1920x1200@60Hz) 1 x HDMI 1.4 (up to 4096x2160@30Hz) 1 x DP 1.4++ (up to 4096x2160@60Hz)
TPM	Support / Not	Support SLB9670 TPM 2.0 on board Module (opt.)
Power Supply	DC Power	None
	ATX Power	Supports 1 x ATX power 24 pin header 1 x 12V ATX 4P connector
Edge IO		1 x PS/2 Keyboard 1 x VGA (D-sub 15 pin connector) 1 x DP ++ 1 x HDMI 2 x COM (D-sub 9 pin connector, support 1 x RS232/RS422/RS485, 1 x RS232) 4 x USB 3.0 2 x USB 2.0 2 x RJ45 (GbE) 3 x Audio Jack (Line-in/Line-out/Mic)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 7/Windows 8.1/Windows 10 Linux Ubuntu

EIB7B-AXI



Feature Of Product

- LGA 1155, Supports 3rd Intel® Core processor with Intel® B75 chipset, TDP at 95W
- Supports display output: VGA/DVI-D
- DDR3 LONG-DIMM, max. 32GB
- Intel® 2 x GbE LAN
- 9 x USB 2.0, 2 x USB 3.2 Gen1
- 8-bit GPIO, 6 x COM ports
- 5 x SATAII, 1 x SATAIII
- Expansion slots: 1 x PCIe16, 1 x PCIe4, 5 x PCI slots

Technical Information

Model Name		EIB7B-AXI
Processor Options		3rd Generation Intel® Core™ processors (Ivy Bridge), LGA 1155
Chipset		Intel® B75 Express Chipset
BIOS		AMI 64Mbit SPI Flash ROM BIOS
Form factor		ATX 305 x 220 mm
System Memory	Sockets	4 x DDR3L 1333/1066 LONG-DIMM
	Max. Capacity	Up to 32GB
USB 2.0	USB 2.0 Internal	5 x USB 2.0
	USB 2.0 External	4 x USB 2.0
USB 3.0	USB 3.0 Internal	None
	USB 3.0 External	2 x USB 3.0
Expansion Slots		1 x PCIe x16 Slot 1 x PCIe x4 Slot 5 x PCI slots
Storage	Expansion	5 x SATAII, 1 x SATAIII
Networking	LAN	2 x GbE, RJ45 connectors
	Controller	2 x Intel® I211-AT
Audio	Codec	ALC897
	I/O Connector	1 x 2*5 pins wafer, support Line-out/Mic-in 3 x Audio Jack, support Line-in/Line-out/Mic-in
Serial Interface	Serial Standard	6 x COM: 2 x D-sub 9 pin connectors, support RS232/RS422/RS485, mode with 0/5V/12V 4 x 2*5 pins headers, support RS232 with RI/5V/12V
Other I/O	Other I/O (internal)	1 x 2*5 pins front panel header 1 x 2*13 pins parallel port box-header 4 x 1*3 pins headers, support 5V/5V dual switch for USB function 1 x 1*3 pins header, support 5V/ 5V dual switch for PS/2 function 1 x 1*2 pins header, support VGA Dummy Load 4 x 2*5 pins, 4 COM box-headers (4 x RS-232 with jumper select for 5V/12V @ pin 10) 1 x 1*4 pins, CPU Smart-FAN header 2 x 1*3 pins, System DC-FAN header 2 x power LEDs 1 x 1*3 pins, clear CMOS 1 x Buzzer
Digital I/O		8 bit
Display	Interface	1 x VGA (up to 1920x1200@60Hz) 1 x DVI-D (up to 1920x1200@60Hz)
TPM	Support / Not	Support TPM 1.2 module
Power Supply	DC Power	None
	ATX Power	Supports 1 x ATX power 24 pin header 1 x 12V ATX 4P connector
Edge IO		1 x PS/2 1 x VGA (D-sub 15 pin connector) 1 x DVI-D 2 x COM (D-sub 9pin connector, support 2x RS232/422/485) 4 x USB 2.0 2 x USB 3.0 2 x RJ45 (GbE) 3 x Audio Jack (Line-in/Line-out/Mic)
Operating Temperature		0°C ~ 60°C Humidity: 5% ~ 90%
OS Support		Windows 7/Windows 10

ERX93-AXP



Feature Of Product

- Industrial human machine interface (HMI)
- Industrial vision
- Scanning and printing
- EV Charging
- Industrial automation
- Touchless access control
- Energy meter
- Energy grid equipment

Technical Information

Model Name	ERX93-AXP
NXP I.MX 93	Dual Cortex®-A55 1.7 GHz processors Cortex® -M33 250 Mhz MCU processor Arm Ethos U-65 microNPU Neon Media Processor Engine (MPE)
Memory	LPDDR4X 2GB
Storage	eMMC 16GB up to 64GB (Support eMMC 5.1)
System OS	Linux
USB	2 x USB 2.0 (External) 2 x USB 2.0 (Internal) + 2 x USB 2.0 (opt.)
Ethernet	2 x RJ45 GbE LAN
Audio	Stereo PDM digital microphone connector Stereo 3W speaker amplifier output (opt.) Analog Line-in/Line-out (opt.)
GPIO	20pin interface 13 x GPIOs (Mux Pin UART TX/RX/CTS/RTS & I2C & SPI) 1 x ADC 2 x Power 3V output 2 x Power 5V output 2 x GND
CAN bus	2 x CAN-FD bus with built-in transceiver
Serial Ports	2 x Full functional RS232 (including DSR/DTR/DCD/RI) (opt.) 1 x RS232/RS422/RS485 combo (opt.)
Camera	MIPI CSI with 24pin FFC
Wireless	1 x M.2 WiFi (SDIO + UART) (opt.) 1 x WiFi module on board (SDIO + UART) (opt.) 1 x Mini PCIe for WAN LTE + uSIM slot (opt.)
SD slot	1 x uSD slot, speed up to SDR104
RTC	1 x RTC IC with coin battery connector
Display	1 x LVDS single channel (up to 1366 x 768 p60 or 1280 x 800 p60) 1 x MIPI (up to 1920 x 1200 p60)
Dimension	122 x 100 mm
Power Input	DC 12V
Temperature	Operation: -25°C ~ 70°C Storage: -30°C ~ +80°C

MP-J4125



Feature Of Product

- On board Intel® J4125
- Supports Dual Channel DDR4-1866/2133/2400, max. supports up to 8GB Memory
- Supports HDMI
- Supports USB 3.1 (Gen1)



Technical Information

Model Name	MP-J4125
Processor Options	Intel® Celeron J4125 (4core, up to 2.7GHz, TDP 10W)
Chipset	Intel® Celeron J4125
Graphic	Intel® UHD Graphics 600
Display	1 x HDMI 1 x VGA
Memory	Supports 2DIMM Dual Channel DDR4 up to 8GB memory
Expansion Slots	N/A
Storage	1 x SATA III (6Gb/s) 1 x M.2 (M Key)
Serial Ports	1 x RS232
USB	2 x USB 3.1 (Gen1) ports 4 x USB 2.0 ports
Ethernet	RTL8111H 10/100/1000 Mb/s auto negotiation, Half/Full duplex capability
Audio	Audio Codec: ALC897
External I/O	1 x DC 12V Jack 1 x HDMI 1 x VGA 1 x COM port 1 x RJ45 (GbE) 3 x Audio Jack 1 x Power LED / 1 x HDD LED 1 x Earphone & MIC Jack 1 x Power Key
Power Supply	60W adapter (12V/5A)
Dimension (LxWxH)	235 x 192 x 100 mm
Operating Temperature	0 ~ 45 °C (32 ~ 113 °F)
Non-operating Temperature	10 ~ 60 °C (14 ~ 140 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04

MP-J6412



Feature Of Product

- Equipped with quad-core Intel® J6412 processor up to @2.6GHz TDP 10W
- Fanless design. Noiseless
- Supports 4K monitors
- Ventilation holes increase heat dissipation
- With com port connection, it is convenient to use POS or special equipment



Technical Information

Model Name	MP-J6412
Processor Options	Intel® Celeron J6412 (4core, up to 2.6GHz, TDP 10W)
Chipset	Intel® Celeron J6412
Graphic	Intel® UHD Graphics
Display	1 x HDMI 1 x VGA (opt.)
Memory	DDR4 3200Mhz SO-DIMM, up to 32GB
Expansion Slots	1 x M.2 (key-B 2242/3042/3052) with PCIe + USB 3.1 or SATA + PCIe signal (opt.) 1 x SIM slot"
Storage	1 x SATAIII
Serial Ports	1 x RS232/422/485 (COM1) 1 x RS232/422/485 (COM2) (opt.)
USB	2 x USB 3.0 4 x USB 2.0
Ethernet	2 x RTL8111H-CG GbE LAN Support PXE boot form LAN, wake on LAN
Audio	Audio Codec: ALC897
External I/O	1 x DC 9~24V Jack 1 x HDMI 1 x COM port 2 x RJ45 (GbE) 1 x Audio Jack (Line-out) 1 x Power LED / 1 x HDD LED 1 x Earphone & MIC Jack 1 x Power Key
Power Supply	60W adapter (12V/5A)
Dimension (LxWxH)	196.5 x 193 x 45 mm
Operating Temperature	0 ~ 45 °C (32 ~ 113 °F)
Non-operating Temperature	-10 ~ 60 °C (14 ~ 140 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 64bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04

MT-N305 / MT-N100



Feature Of Product

- Intel® Alder Lake SoC processors
- Fanless embedded PC. Noiseless
- Supports three monitors output and 4K display
- Supports dual Intel® 2.5GbE LAN
- With COM port connection, it is convenient to use POS or special equipment
- Supports 4G/5G SIM card for IOT computer devices



Technical Information

Model Name	MT-N305 / MT-N100
Processor Options	Intel® Core i3-N305 (8core, up to 3.8GHz, TDP 15W) Intel® N100 Processor (4core, up to 3.4GHz, TDP 6W)
Chipset	Intel® N100 Processor Intel® Core i3-N305
Graphic	Intel® UHD Graphics
Display	2 x HDMI 1 x DP (USB Type C) with power delivery (max. 100W 20V/5A)
Memory	DDR4 3200Mhz SO-DIMM, up to 16GB
Expansion Slots	1 x M.2 key-E type 2230 w/ 1 x USB 2.0 + 1 x PCIe X1 1 x M.2 key-B type 3042/3052 with PCIe x1 + USB 3.2 & SIM card slots
Storage	1 x SATAIII 1 x M.2 key-M type 2242/2280 w/ PCIe x1
Serial Ports	1 x RS232/422/485 (COM1) (opt.)
USB	2 x USB 3.2 Gen1 1 x USB 3.2 Gen2 for 1 x Rear Type C connector 4 x USB 2.0
Ethernet	2 x RTL8111H-CG GbE LAN Support PXE boot form LAN, wake on LAN
Audio	Audio Codec: ALC897 + ALC105
External I/O	1 x DC 9~24V Jack 2 x HDMI 1 x USB Type C 2 x RJ45 (GbE) 1 x Audio Jack (Line-out) 1 x Power LED / 1 x HDD LED 1 x Earphone & MIC Jack 1 x Power Key 1 x TPM 2.0 onboard
Power Supply	60W adapter (12V/5A)
Dimension (LxWxH)	196.5 x 193 x 45 mm
Operating Temperature	-20 ~ 60 °C (-4 ~ 140 °F)
Non-operating Temperature	-30 ~ 70 °C (-22 ~ 158 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 64bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04

MT-J6412



Feature Of Product

- Equipped with quad-core Intel® J6412 processor up to @2.6GHz TDP 10W
- Fanless design. Noiseless
- Supports 4K monitors
- Ventilation holes increase heat dissipation
- With com port connection, it is convenient to use POS or special equipment



Technical Information

Model Name	MT-J6412
Processor Options	Intel® Celeron J6412 (4core, up to 2.6GHz, TDP 10W)
Chipset	Intel® Celeron J6412
Graphic	Intel® UHD Graphics
Display	1 x HDMI 1 x VGA (opt.)
Memory	DDR4 3200Mhz SO-DIMM, up to 32GB
Expansion Slots	1 x M.2 key-B (2242/3042/3052) with PCIe + USB 3.1 or SATA + PCIe signal (opt.) 1 x SIM slot
Storage	1 x SATAIII
Serial Ports	1 x RS232/422/485 (COM1) 1 x RS232/422/485 (COM2) (opt.)
USB	2 x USB 3.0 4 x USB 2.0
Ethernet	2 x RTL8111H-CG GbE LAN Support PXE boot form LAN, wake on LAN
Audio	Audio Codec: ALC897
External I/O	1 x DC 9~24V Jack 1 x HDMI 1 x VGA (opt.) 1 x COM port 2 x RJ45 (GbE) 1 x Audio Jack (Line-out) 1 x Power LED / 1 x HDD LED 1 x Power Key
Power Supply	60W adapter (12V/5A)
Dimension (LxWxH)	196.5 x 193 x 45 mm
Operating Temperature	-20 ~ 60 °C (-4 ~ 140 °F)
Non-operating Temperature	-30 ~ 70 °C (-22 ~ 158 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 64bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04

MT PRO-J6412



Feature Of Product

- Intel® Elkhart Lake SoC processors (J6412, QC, max. speed up to 2.6GHz, 10W)
- Low power consumption
- Fanless embedded PC. Noiseless
- Supports 4K monitors and dual-monitors output
- With com port connection, it is convenient to use POS or special equipment
- Support 4G/5G SIM card for IOT computer devices



Technical Information

Model Name	MT PRO-J6412
Processor Options	Intel® Celeron J6412 (4core, up to 2.6GHz, TDP 10W)
Chipset	Intel® Celeron J6412
Graphic	Intel® UHD Graphics
Display	1 x HDMI 1 x VGA
Memory	DDR4 3200Mhz SO-DIMM, up to 32GB
Expansion Slots	1 x M.2 key-B (2242/3042/3052) with PCIe + USB 3.1 or SATA + PCIe signal (opt.) 1 x SIM slot
Storage	1 x SATAIII
Serial Ports	2 x RS232/422/485 (COM1/COM2) 4 x RS232 (COM3~COM6)
USB	2 x USB 3.0 4 x USB 2.0
Ethernet	2 x RTL8111H-CG GbE LAN Support PXE boot form LAN, wake on LAN
Audio	Audio Codec: ALC897
External I/O	1 x DC 9~24V Jack 1 x HDMI 1 x VGA 6 x COM ports 2 x RJ45 (GbE) 1 x Audio Jack (Line-out) 1 x Power LED / 1 x HDD LED 1 x Power Key
Power Supply	60W adapter (12V/5A)
Dimension (LxWxH)	200 x 182 x 50 mm
Operating Temperature	-20 ~ 60 °C (-4 ~ 140 °F)
Non-operating Temperature	-30 ~ 70 °C (-22 ~ 158 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 64bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04

MS-J6412



Feature Of Product

- Intel® Elkhart Lake SoC processors (J6412, QC, max. speed up to 2.6GHz, 10W)
- Fanless embedded PC. Noiseless
- Supports 4K monitors and dual-monitors output
- Supports dual Intel 2.5GbE LAN
- With com port connection, it is convenient to use POS or special equipment
- Supports 4G/5G SIM card for IOT computer devices



Technical Information

Model Name	MS-J6412
Processor Options	Intel® Celeron J6412 (4core, up to 2.6GHz, TDP 10W)
Chipset	Intel® Celeron J6412
Graphic	Intel® UHD Graphics
Display	1 x HDMI 1 x VGA
Memory	DDR4 3200Mhz SO-DIMM, up to 32GB
Expansion Slots	1 x Mini-PCIe slot 1 x M.2 key-B type w/ SIM card slot
Storage	1 x SATAIII 1 x M.2 key-M type 2242/2260/2280
Serial Ports	2 x RS232/422/485 (COM1/COM2) 2 x RS232 (COM3~COM4)
USB	2 x USB 3.0 4 x USB 2.0
Ethernet	2 x 2.5GbE LAN (Intel® I225V) Support AC power loss, wake on LAN
Audio	Audio Codec: ALC897
External I/O	1 x DC 9~24V Jack 1 x HDMI 1 x VGA 2 x RJ45 (2.5GbE) 1 x Audio Jack (Line-out) 1 x Power LED / 1 x HDD LED 1 x Power Key
Power Supply	60W adapter (12V/5A)
Dimension (LxWxH)	160 x 130 x 50 mm
Operating Temperature	-20 ~ 60 °C (-4 ~ 140 °F)
Non-operating Temperature	-30 ~ 70 °C (-22 ~ 158 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 64bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04

MS-1315URE / MS-1345URE



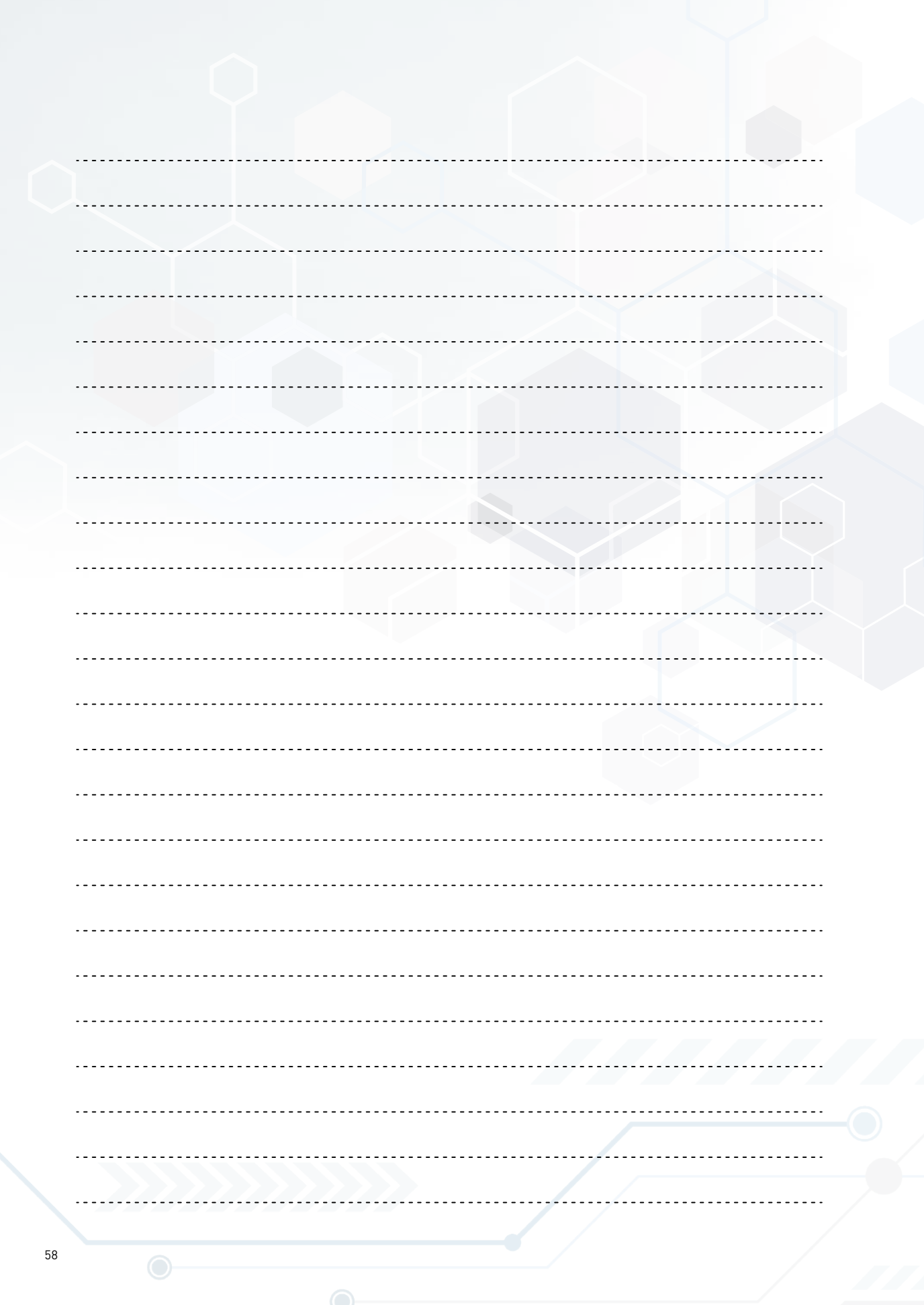
Feature Of Product

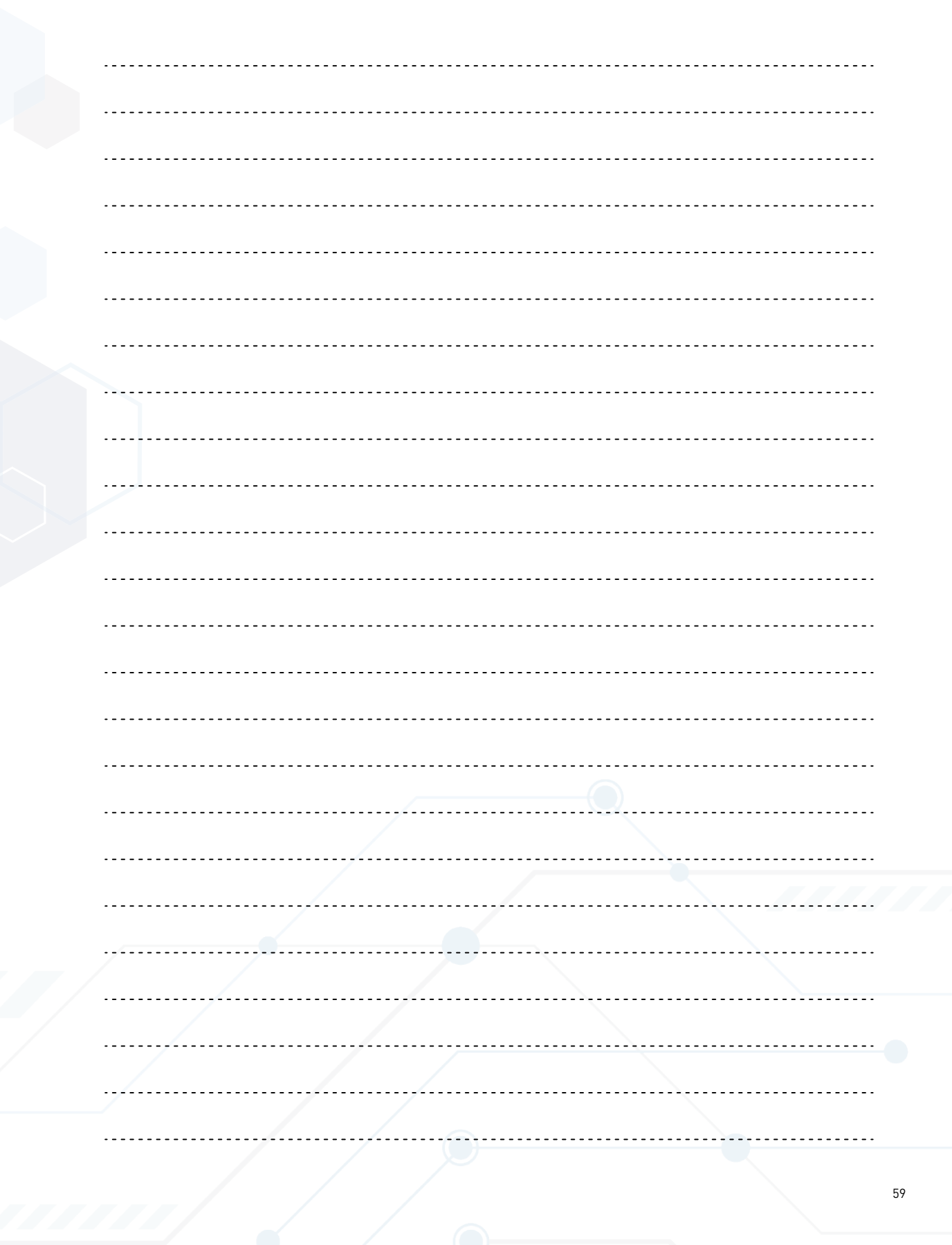
- Intel® Raptor Lake SoC processors
- Fanless embedded PC. Noiseless
- Supports 2 x DDR5 4800 MHz SO-DIMM, up to 64GB
- Supports M.2 key-M slot, supports PCIe x4 (2242/2260/2280)
- Supports quad-monitors output and 4K display
- Supports dual Intel® 2.5GbE LAN
- With COM port connection, it is convenient to use POS or special equipment
- Supports 4G/5G SIM card for IOT computer devices

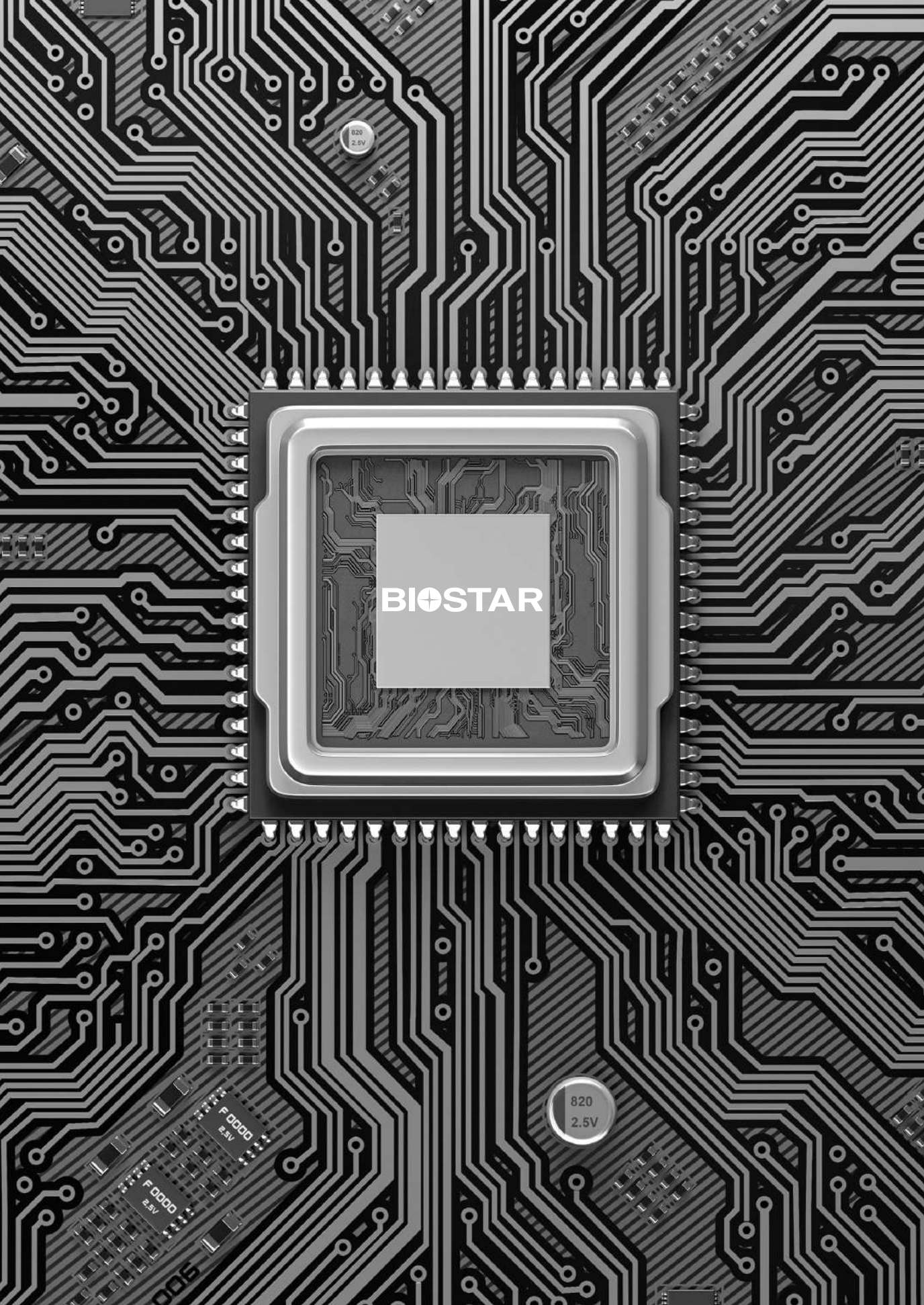


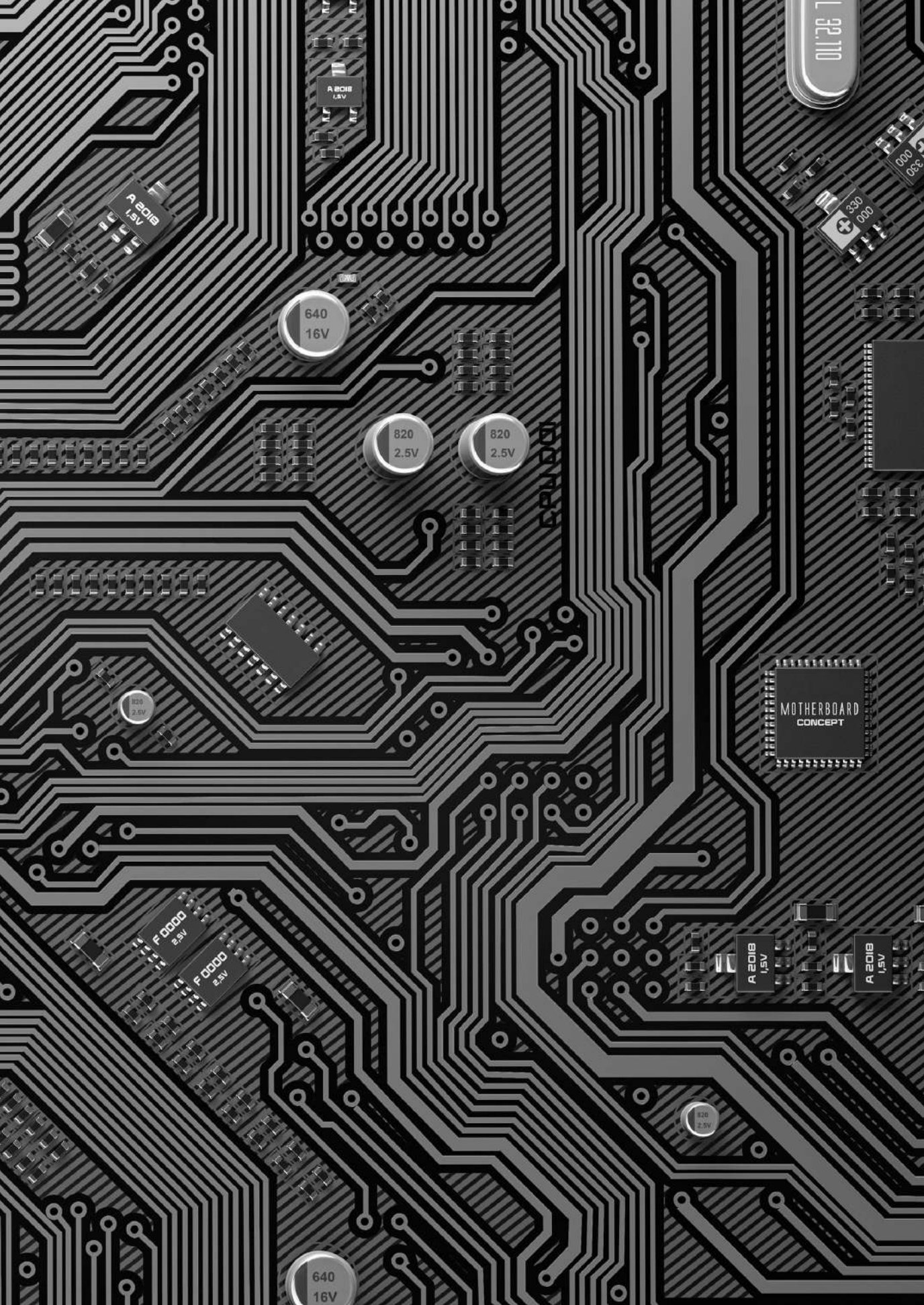
Technical Information

Model Name	MS-1315URE / MS-1345URE
Processor Options	Intel® Core i5-1345URE (10core, up to 4.6GHz, 15W/55W (opt.) Intel® Core i3-1315URE (6core, up to 4.5GHz, 15W/55W) (opt.)
Chipset	Intel® Core i5-1345URE (opt.) Intel® Core i3-1315URE (opt.)
Graphic	Intel® Iris® Xe (for i5-1345URE) Intel® UHD Graphics for 13th Gen Intel® processors (for i3-1315URE)
Display	1 x HDMI 1 x DP 2 x DP (USB Type C)
Memory	DDR5 4800Mhz SO-DIMM, up to 64GB
Expansion Slots	1 x M.2 key-E type 2230 w/ x USB 2.0 + 1 x PCIe x1 1 x M.2 key-B type 3042/3052 with PCIe x1 or SATA and USB 3.2 & SIM card slots (opt.)
Storage	1 x SATAIII 1 x M.2 key-M type 2242/2260/2280 w/ PCIe x4 for SSD (Gen4)
Serial Ports	3 x RS232/422/485 (COM1/COM2/COM3) 1 x RS232 (COM4)
USB	2 x USB 3.2 Gen2 (20G) signal for 2 x Type C connectors (5V/3A) 2 x USB 3.2 Gen2 (10G) signal for 2 x Type A connectors 2 x USB 2.0"
Ethernet	2 x 2.5GbE LAN (Intel® 1 x I226V / 1 x I226LM) Support PXE boot form LAN, wake on LAN, vPRO LAN1 support vPro
Audio	Audio Codec: ALC897 + ALC105
External I/O	1 x DC 9~24V Jack 1 x HDMI 1 x DP 2 x DP (USB Type C) 4 x COM ports 2 x RJ45 (2.5GbE) 1 x Power LED / 1 x HDD LED 1 x Power Key
Power Supply	120W adapter (12V/10A)
Dimension (LxWxH)	182 x 50 x 45 mm
Operating Temperature	-20 ~ 60 °C (-4 ~ 140 °F)
Non-operating Temperature	-30 ~ 70 °C (-22 ~ 158 °F) and 40 °C (104 °F) @ 90% RH Non-Condensing
OS Support	Windows 10/11 64bit Windows 10 IoT Enterprise 2021 Linux Ubuntu 20.04









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