ASUS

Trusted Business Solutions

2019

AIoT&Business Motherboard
Product Portfolio

Edge Computers
Industrial Motherboards
Single Board Computers
Mini PCs
Business Motherboards
Pro Workstation Motherboards

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ABOUT ASUS

ASUS is a multinational company known for the world's best motherboards, PCs, monitors, graphics cards and routers, and driven to become the most-admired innovative leading technology enterprise. With a global workforce that includes more than 5,000 R&D professionals, ASUS leads the industry through cutting-edge design and innovations made to create the most ubiquitous, intelligent, heartfelt and joyful smart life for everyone. Inspired by the In Search of Incredible brand spirit, ASUS won thousands of prestigious awards in 2018 and ranked as one of Forbes' Global 2000 Top Regarded Companies, Thomson Reuters' Top 100 Global Tech Leaders and Fortune's World's Most Admired Companies.

2018 THOMSON REUTERS
TOP 100
GLOBAL TECH LEADER

ASUS is named as 2018 Top 100 Global Technology Leaders

Interbrand

No. 1 most valuable brand in Taiwan for 6 consecutive years (since 2013)

Forbes 2018
GLOBAL
BEST REGARDED
COMPANIES
2000

Top Regarded Companies for 2 consecutive years (2017 & 2018)

Fortune has praised ASUS as one of the World's Most Admired Companies for 4 years (2015, 2016, 2018 & 2019)

EXCLUSIVE
BUSINESS FEATURES

168hr Aging time
45°C Temperature
80% Relative Humidity

Tested for 24/7 Reliability

Each motherboard is tested under temperatures of up to 45°C and humidity levels of up to 80% to ensure it can handle 24/7 operation in a wide range of conditions.

EOL Notice and ECN Control

ASUS issues an engineering change notice (ECN) before product revisions, an end-of-life (EOL) notice six months before a product's EOL, and a last buy order (LBO) notice three months prior to EOL, ensuring time to prepare for product transitions.

*ECN control for mini PCs is available on request.

Customized BIOS

BIOS customization enables more efficient IT systems and lower software-management costs. Customization can be applied to your PCs during manufacturing, according to your network and security needs.
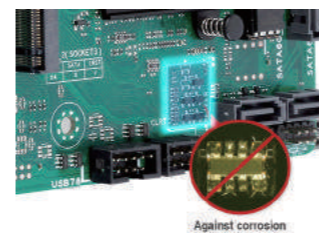
Anti-sulfur Resistors

ASUS business motherboards are equipped with anti-sulfur resistors that feature a high-quality ceramic body to provide protection against sulfurization, ensuring long-term reliability and the ability to withstand even the harshest environments.

Against corrosion
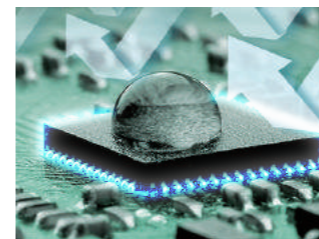
Protective Coating

An innovative moisture-resistant coating protects against the high levels of humidity present in densely populated environments, such as factories, libraries, data centers and internet cafes, minimizing internal corrosion and prolonging the life of your motherboard.

QUALITY THAT EXCEEDS
INDUSTRY STANDARDS

Extensive testing for extreme reliability, compatibility and safety.

ASUS is the world's biggest motherboard brand, renowned for design-thinking and focus on users. ASUS engineers employ exacting standards to guarantee quality and choose the best components for real-world performance and reliability. Undergoing more a minimum of 7,000 hours of strict validation each, ASUS products are proven to be compatible with more than 1,000 components and devices, giving you assurance that they are built for all environments and applications.

Thermal Measurement

High temperatures increase the risk of failure, so every systems and motherboards is subjected to extensive heat tests to build a thermal profile applicable to a wide variety of situations, allowing you to effectively plan for your cooling requirements.

Temperature and Humidity Test

The combined effects of temperature and humidity are vital factors for calculating real-world reliability, so every ASUS products undergoes repeated heat and humidity endurance cycles to make sure they're ready for any situation.

Thermal Shock Test

We put our systems and motherboards through thermal-shock tests to prove their ability to cope with rapid temperature shifts, ensuring their performance in extreme environments.

Acoustic Test

ASUS systems and motherboards are subjected to acoustic performance tests to ensure they generate minimal noise, letting you enjoy a quieter and more comfortable working environment.

Drop Test

It's a fact of life that equipment is sometimes dropped during transport, so we test both our products and packaging to ensure they can withstand the rigors of moving.

Non-Operation Vibration Test

Transport vibrations literally shake up equipment, so we test ASUS products for this occurrence to ensure they are ready for any journey.

Non-Operation Shock Test

Physical handling is unavoidable, so it's good to know that ASUS products are designed to endure occasional knocks and bumps to everyday vibrations.

KEEPING ENVIRONMENT IN MIND

ASUS is fully committed to creating a sustainable future. We believe in adopting an eco-friendly approach towards every aspect of our business and being an active participant in environmental assessment programs for a greener tomorrow. Our GreenASUS philosophy guides both our internal practices and production processes, so we remain focused on safeguarding our planet.

Green Design

Good product design is not only about aesthetics, but also about how it is built and functions. Products should use modular components for simple repairs and prolonged lifespans, and be easily recyclable.

Green Manufacturing

Any product is only as green as its manufacturing processes. ASUS adheres to strict guidelines to ensure products are produced without hazardous substances like lead and halogens.

Green Services and Marketing

ASUS is part of environmental assessment programs and certifications such as EPEAT and TCO, ensuring the company meets or exceeds green technology standards.

Green Procurement

ASUS is not only committed to reducing its own environmental impact, but also to ensuring a greener supply chain from component sourcing to product shipping.

Internationally Certified

Enterprise-proven and with leading quality that exceeds industry standards, ASUS is certified by multiple international safety and environmental organizations, including UL and Blue Angel. ASUS provides safe, secure and sustainable solutions, making them the ideal choice for your business.

THE GLOBAL LEADER IN
BUSINESS SOLUTIONS

ASUS AIoT

ASUS products are used by millions of people around the world in many different ways. We listen closely to the requirements of our customers to provide products that deliver the most appropriate solutions and ensure a smarter digital life for everyone.

To bring even more convenience and intelligence to solutions for everyday life, ASUS has established a new AIoT business unit. Dedicated to artificial intelligence (AI) and the internet of things (IoT), this new division of ASUS is comprised of professionals dedicated to implementing innovative solutions with these technologies to simplify life and ultimately make the world a better place.

Whether you need small-medium business or enterprise-level business solutions or applications, ASUS AIoT has the following smart retail, smart office and smart healthcare products to help you achieve your goals.

- Edge Computers
- Industrial Motherboards
- Industrial Single Board Computers
- Tinker Series
- Mini PCs
- Intelligent Platform & AI Engines

ASUS Business Motherboards

ASUS is the world's most renowned and best-known motherboard brand.
Acclaimed for user-oriented design thinking, we understand the importance of security, stability and easy manageability for yourbusiness. Combined with our world-class after-sales service and guaranteed long-term availability to maximize your investment over the product lifecycle, ASUS Business Motherboards providea high-quality, TCO-optimized solution for your business.

- ASUS Business Motherboards
- ASUS Pro Workstation Motherboards

Service centers

ASUS has hundreds of local service centers around the world that provide efficient, timely service by enabling customers to drop office items in need of repair instead of shipping them to a remote location. These service centers are either owned or operated by ASUS or by authorized service providers trained and certified by ASUS to provide the best service and quality.

Americas
100+ Repair Locations

EMEA
150+ Repair Locations

China
500+ Repair Locations

APAC
450+ Repair Locations

(intel) IoT Solutions Alliance

ASUS is an associate member of the Intel® IoT Solutions Alliance, one of the world's most trusted associations for delivering first-in-market IoT solutions. The membership represents a close relationship between ASUS and Intel and and enables ASUS to provide clients with better strategies, support and continuous innovation.

EDGE COMPUTER

At the very frontier of AIoT and Cloud computing, edge computer is in charge of process, filter, analyze and act on data received in real-time, which not only reduces the traffic of data also provides lower latency and the cost of data transmission.

ASUS Edge computer is built for 24/7 stability and reliability, combined with our world-class after-sales service and guaranteed long-term availability - your investment for the duration of the product lifecycle is maximized.

EDGE COMPUTER
FEATURES

Wide Range Temperature

Rich Expansion and I/O Interface

World-Class After Sales Service and Long-Term Availability

Head-to-Toe Customization

Optimal Fanless Cooling

ASUS Edge Computer is designed for high performance and silent operation in harsh environment. It's capable of achieving full CPU utilization while being cooled by a fanless thermal solution.

Easy Adapting

ASUS Edge Computer offers enhanced features to ensure optimal performance and the flexibility to adapt to the surrounding environment, configure easily with a wide range of power inputs (12~24V), operating temperatures (-20°~60°), diversified I/O interface and expansion for multiple vertical markets.

EDGE
COMPUTER
PRODUCTS

PE200U / PE200S

Industrial Fanless PC for Edge Computing

- Optimal CPU performance with fanless solution
- IEEE 802.3af/at Gigabit PoE Gigabit PoE (Power Sourcing Equipment)
- Scalable performance from Intel Atom Apollo Lake X series processors up to 8th Gen. Intel Whiskey Lake Core U series processors
- Diversified I/O interface and expansion
- 12V~24V wide range power inputs
- Operating temperatures from -20°C ~ 60°C

PE100A

Industrial Fanless ARM-based Edge Computer

- Based on the NXP ARM Cortex-A53 i.MX8 M Mini quad-core 1.6 GHz processor
- Supports CAN bus, Diverse I/O and multiple control applications
- Wide 9V–36V power input range
- Operating temperatures from -20°C ~ 60°C

ASUS Intelligent Platform

ASUS Intelligent Platform is an exclusive software suite that provides services for a variety of ASUS hardware devices. It includes device management, remote monitoring and control, data visualization and rule engine – making it ideal for varied kinds of AI and machine-learning applications and environments.

- **Intuitive UI**
  Easy-to-use interface makes it easy to get started quickly
- **Plug and play**
  Supports USB & PoE IP cameras without a redundant setup processs
- **GDPR Compliance**
  Does not capture, store or process personal information

INDUSTRIAL MOTHERBOARD & SINGLE BOARD COMPUTER

ASUS's offers a wide range of long-lifecycle industrial motherboards and & single board computer in various form factors to serve different applications from customers.

ASUS industrial motherboards and & single board computer are manufactured with extremely durable, industrial-grade components to ensure 24/7 reliable operation in industrial settings and harsh environments like extreme temperatures, power fluctuations and high humidity.

Also, ASUS provides the longevity supply guarantee, optimized service and completed reference documents for our customers. We not only provides international industry standard form factor models, but also offers customized hardware and software solutions for specific applications.
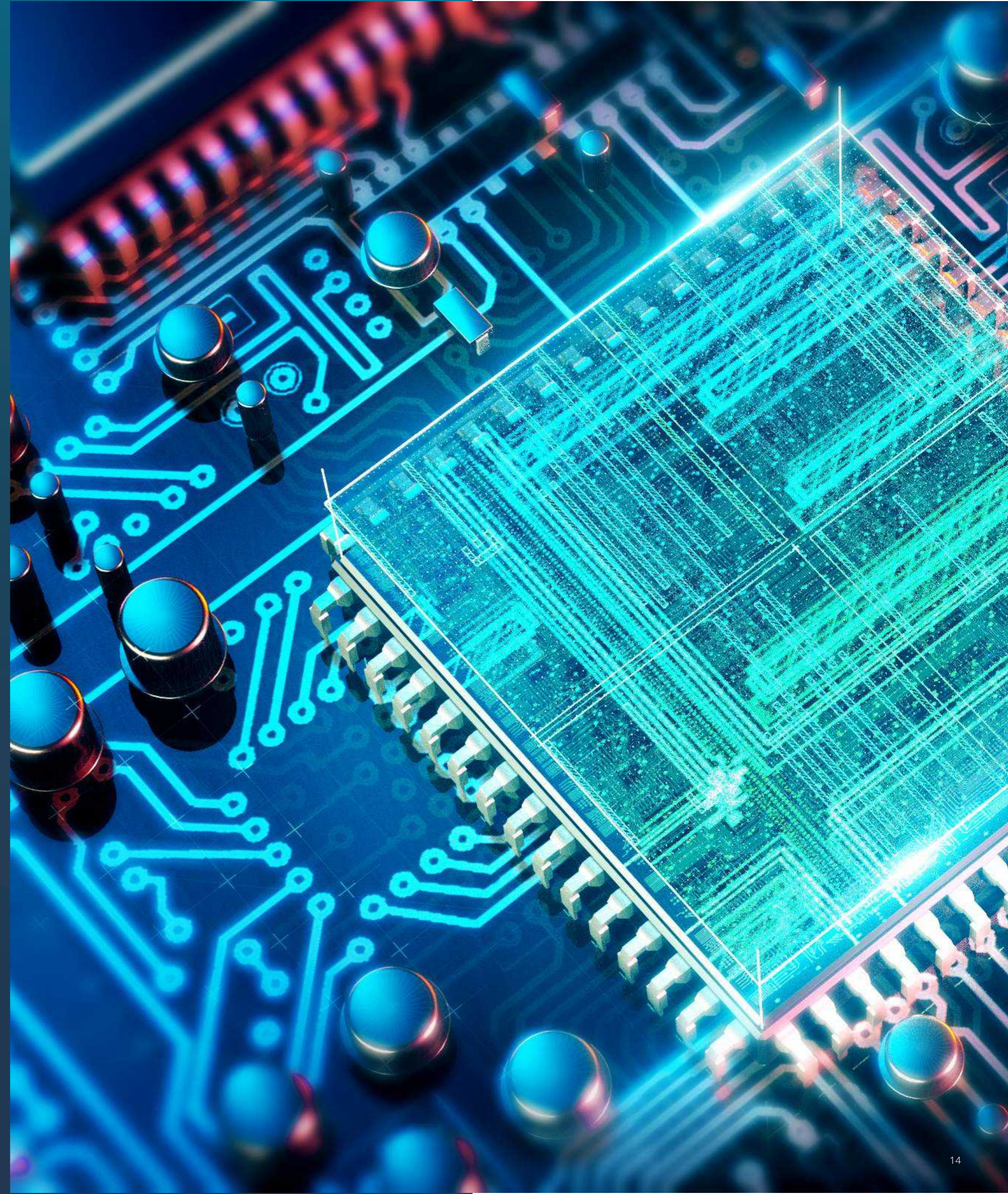
INDUSTRIAL MOTHERBOARD& SINGLE BOARD COMPUTER

FEATURES

Up to 12-year longevity supply

Considering the high transition cost of re-validation and re-certification, ASUS is committed to offering motherboards with a multi-year supply guarantee.

Wide Temperature-Range Endurance

An overheating motherboard & single board computer can cause malfunctions and shorten the life of a computer. ASUS industrial motherboards & single board computer are built with extended temperature endurance to prevent overheating, making them ideal for military, medical and outdoor applications.

BOM Fix, ECN Control and EOL Notice Service

ASUS issues an engineering-change notice (ECN) before product revisions, an end-of life (EOL) notice one year before product EOL, a last buy order six months prior to EOL, and a bill of material (BOM) fix service, giving your organization ample time to prepare for product transitions.

SUCCESS STORIES

Self-service and automation solutions

ASUS offer motherboards solutions for a vendor which with industry's most comprehensive solutions of self-service and automation solutions.

ASUS offers:

- Customized motherboard and extension card
- Bespoke BIOS tool
- Flexible test plans

Industry Automation: Rack Computer

ASUS built a non-standard size motherboard connected to a parallel extension card in order to build a rack computer for one of the Top 3 industry automation vendors worldwide.

ASUS offers:

- Customized motherboard and extension card design
- BIOS tool development
- Customized test plan
- Guaranteed supply for up to 5 years

Industry Automation: Panel PC

ASUS customized a scaler board for the connection between industrial panel and PC. The scaler board which connects panel and PC supporting not only video convertor but also power and touch function connection with the best durable design

ASUS offers:

- A totally customized scaler board
- A switch to support four different panels on a single scaler board
- Scaler firmware adjustment
- Customized test plans
- Guaranteed supply for up to 5 years

INDUSTRIAL MOTHERBOARD &SINGLE BOARD COMPUTER

PRODUCTS
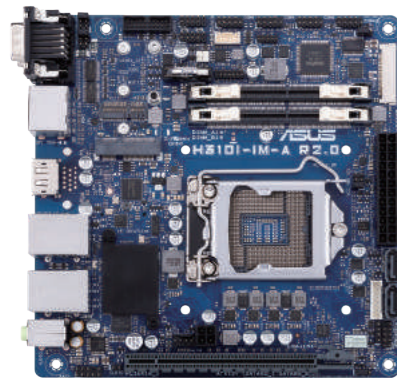
H310I-IM-A R2.0

Mini-ITX motherboard with H310 chipset, two SO-DIMM slots, dual DisplayPort, HDMI, LVDS, two M.2 slots, PCIe x16 and Mini-PCIe

- Supports Intel® 8/9th Gen Core™ processors (LGA1151) with the Intel H310 chipset
- Two 260-pin SO-DIMM slots support up to 32GB DDR4 2400/2133 MHz SDRAM
- Supports dual display configurations with multiple interfaces, including dual DisplayPort, HDMI and LVDS
- Advanced I/O and connectivity features
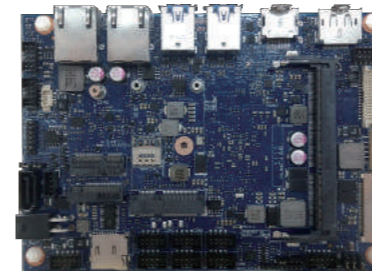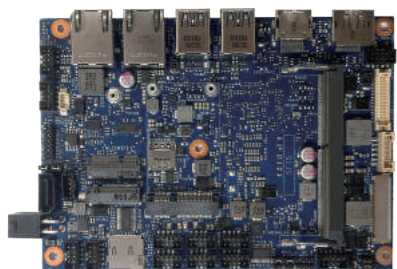- Seven years of longevity with extended product life cycles
- Wide temperature range endurance: 0–60°C

C582S-IM-AA

3.5" Single board Computer with 8th Gen Intel® Core U-series processor

- 8th Gen. Intel Whiskey Lake Core U series processors (i7-8565U/i5-8265U/i3-8145U)
- HDMI/Display Port/LVDS
- SO-DIMM DDR4 memory
- 1 x SATA 6Gb/s, 1 x M.2 M Key, 1 x mSATA
- 1 x M.2 E Key, 1 x Mini PCIe (shared with mSATA)
- 2 x RJ-45 Gigabit LAN ports
- 2 x RS232/422/485 ports, 4 x RS232 headers
- Supports 8-bit GPIO and watchdog timer
- 12V–24V DC in

E395S-IM-AA

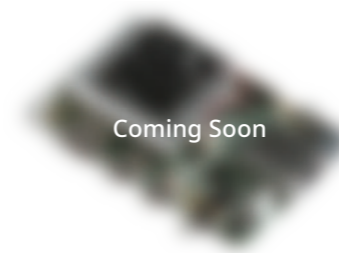3.5" Single board Computer with Intel Atom® processor

- Intel Atom Apollo Lake X series processors (x7-E3950/x5-E3940/x5-E3930)
- HDMI/Display Port/LVDS
- SO-DIMM DDR3L-1866 memory (up to 8GB)
- 1 x SATA 6Gb/s, 1 x M.2 M Key
- 1 x M.2 E Key, 1 x Mini PCIe
- 2 x RJ-45 Gigabit LAN ports
- 2 x RS232/422/485 ports, 4 x RS232 headers
- Supports 8-bit GPIO and watchdog timer
- 12V–24V DC in

IMX8P-IM-A

Coming Soon

Pico-ITX Single Board Computer with NXP ARM® application processor

- i.MX 8M Mini application processor - ARM® Cortex®-A53, Cortex-M4
- Supports 2GB LPDDR4 on-board memory
- Supports HDMI for display output
- 2 x USB 2.0, 1 x micro USB 2.0, 2 x configurable COM ports and 8-bit DIO
- 1 x M.2 B Key for 4G-LTE Module,1 x M.2 E Key for BT/WiFi module
- Linux Yocto will be available
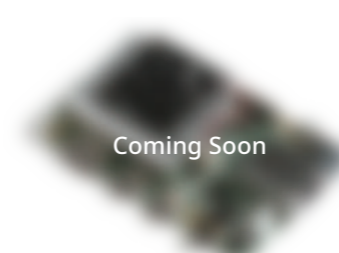
CR1P-CM-A

Coming Soon

Embedded Single Board Computer with NXP i.MX 8M SoC featuring the Edge TPU

- SBC for on-device ML application
- Optimized for TensorFlow
- Supports Dual HDMI display output
- Supports Power-over-Ethernet devices (PSE)
- Offers multiple General Purpose I/Os and Digital I/Os

With Coral intelligence

TINKER SERIES

Tinker series is a Single Board Computer (SBC) in a small form factor that offers class-leading performance, greater durability, better stability and overall improved user experience for DIY enthusiasts and makers everywhere.

For those in search of tailor-made solutions, ASUS offers custom design services such as changing your existing hardware, or creating a completely new solution according to your specific requirements. With the right skills to design, manufacture, test and support, ASUS provides a one-stop service to help you manage your business in an effective, cost-saving manner.

TINKER SERIES
FEATURES

Powerful IoT Edge Device

Tinker series series features a multi-core ARM® Cortex® processor, 4K-ready GPU and multimedia processor, and robust extensibility with GbE Ethernet, Wi-Fi, Bluetooth and GPIO pins, all in a compact size, making it an ideal IoT edge device.

Ready for AI

The Tinker Edge series is designed with embedded neural network (NN) accelerator processors to speed up processing efficiency, lower power demands and make it easier to build connected devices and intelligent applications.

Extensive OS Support

Tinker series supports several operating systems, with fully prepared document and source codes for Debian, as well as Android, allowing your business to decrease product development time.

Fully Embedded Design

All the Tinker series are ideal for your business requirements, featuring a fully-embedded design, with CPU, GPU, memory, storage onboard and more.

Energy-Efficient Platform

With power-efficient RISC architecture, Tinker series provides excellent performance with lower power consumption, in comparison to the x86 platform.

TINKER EDGE PRODUCTS

With Coral intelligence

Private
Keep user data local and under your control

Fast
Accelerate AI locally, inference times down to 2 ms

Efficient
Low power demand to allow embedded applications

Offline
Deploy in the field where connectivity is limited

- **ARM SoC & Edge TPU**
  Adopts NXP i.MX 8M SoC and Edge TPU, advantages of high performance, low power consumption and optimal for AI inference.
- **Rich I/O Interface**
  Many expansion interfaces in the smallest board size, including: HDMI, MIPI-DSI, Dual MIPI-CSI, USB 3, Type-C and 40-pin GPIOs.
- **Maker Friendly Support**
  Fully open-source Kernel all and support multiple APIs, including: OpenGL, Vulkan, OpenCL, OpenVX, TensorFlow Lite, Android NN, Caffe.
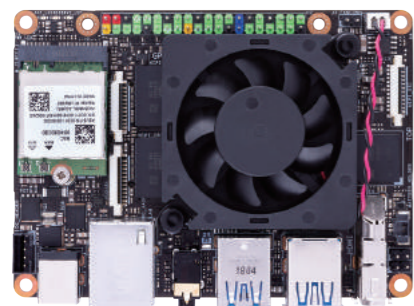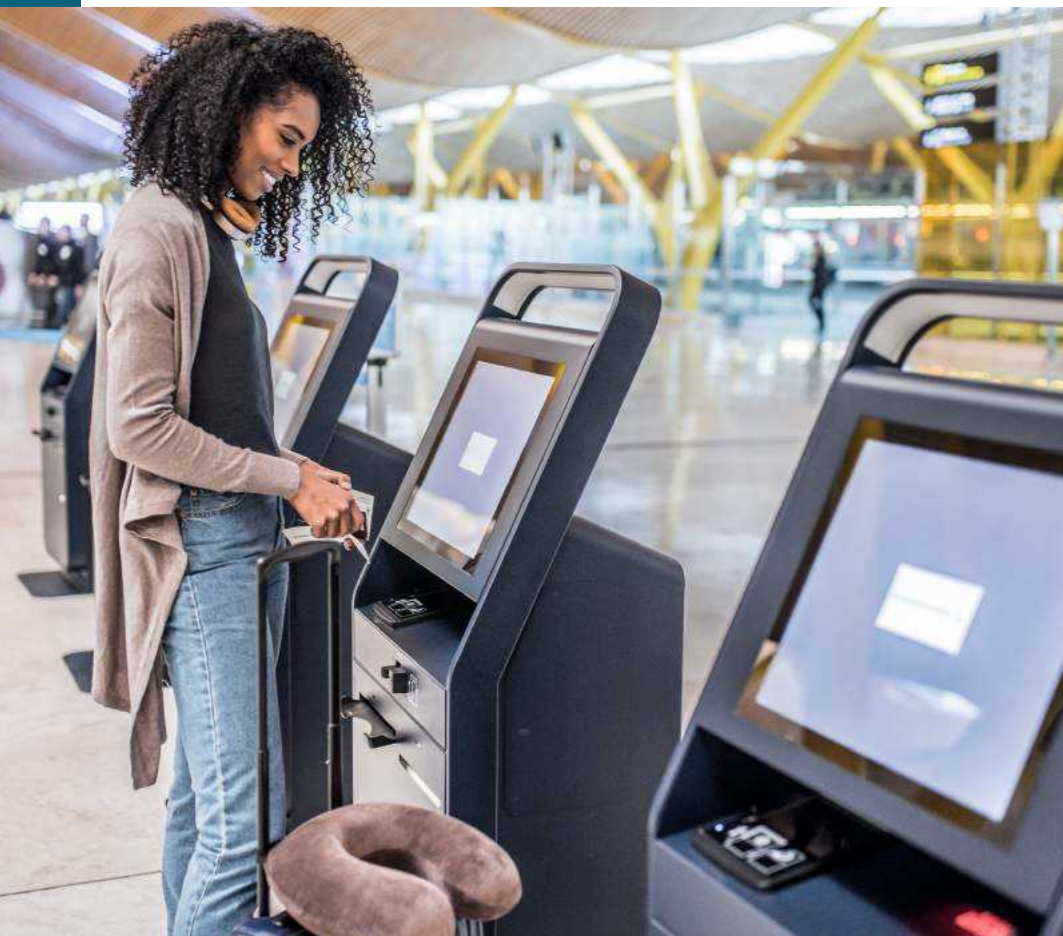
Coming Soon

Tinker Edge T

Embedded Single Board Computer with Edge TPU

- NXP i.MX 8M SoC featuring Edge TPU
- 1GB LPDDR4 / 8GB eMMC
- HDMI / MIPI-DSI / 2 x MIPI-CSI-2
- RJ-45 Gb LAN / 802.11ac + BT 4.1
- 2 x USB3.0 Type-A + 1 x USB3.0 Type-C
- 40-pin GPIO

Tinker Edge R

Embedded Pico-ITX single board computer with RK3399Pro SoC

- Dual-core ARM Cortex-A72 up to 1.8GHz + Quad-core ARM Cortex-A53 up to 1.4GHz
- NPU up to 3.0 TOPs
- ARM Mali-T860 MP4 GPU up to 800MHz
- 4GB Dual-CH LPDDR4 memory for SYSTEM
- 2GB LPDDR3 memory for NPU
- HDMI / DisplayPort (Type-C) / MIPI DSI / MIPI CSI-2
- 16GB eMMC / Micro SD card slot
- GbE LAN / 802.11ac Wi-Fi + Bluetooth 4.2 2T2R
- mPCIe slot for 4G/LTE extended
- 3 x USB 3.1 Gen1 + 1 x USB 3.1 Gen1 Type-C OTG
- 40-pin GPIO
- 12V–19V DC in

High SoC & NN Performance

- Adopts big.LITTLE CPU, GPU and NPU offering high performance, low power-consumption and easy development
- Neural network processing unit (NPU) solution for AI inference can reach 3.0 TOPs performance

Extensive I/O

Many expansion interfaces in the smallest board size, including HDMI, DisplayPort, MIPI DSI, MIPI CSI-2, USB 3, Type-C, M.2, mPCIe, I2C, SPI, UART, PWM, I2S and GPIOs

Maker-Friendly Support

Fully open-source Kernel and support for multiple APIs, including OpenGL, Vulkan, OpenCL, OpenVX, TensorFlow Lite, Android NN and Caffe

TINKER BOARD APPLICATIONS

Self-Service Kiosk

ASUS Tinker Board is designed with a 40-pin GPIO header that supports several signals, including UART, which allows you to connect an extension module to support serial ports for legacy embedded systems such as barcode scanners, printers, modems, and other devices – making it ideal for ATM, POS or vending machine kiosks.

Visual Solutions

ASUS Tinker Board can also be used in visual applications, with a powerful CPU and GPU capable of handling complex computer vision processing tasks. Such as an automatic optical inspection device. And Tinker Board also with a wider bandwidth for USB ports, so multiple camera modules can be connected for a stereo image solution too.

Industrial Control Systems

ASUS Tinker Board have greater durability, better stability and easy expansion I/O. Such as 40-pin header offer GPIO, I2C, SPI, UART, which allows connect most of popular sensors, components and motors. And USB, Wi-Fi, Bluetooth, allows to connection with devices or cloud servers.

Networking Solutions

ASUS Tinker Board offers rich connectivity and extension capability, with GbE Ethernet and a swappable antenna Wi-Fi and Bluetooth solution for a wide range of networking or monitoring environments.

Elevator Control System

ASUS Tinker Board's 40-pin header offers GPIO, I2C, SPI, UART, which enables connectivity with most popular sensors, components and motors. It has been used to make elevators smarter with vision detection, smart card authorization and data sync with central systems.

TINKER BOARD **PRODUCTS**
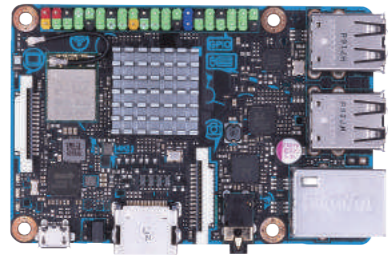
Tinker Board S

The new and improved Tinker Board S is a fully embedded solution, offering a business-grade single board computer in a compact size with rugged design, high flexibility and easy expansion capabilities.

- Name card sized
- Quad-core ARM Cortex-A17 up to 1.8GHz
- ARM Mali-T760 MP4 GPU up to 600MHz
- 2GB Dual-CH LPDDR4
- HDMI (CEC) / MIPI DSI / MIPI CSI-2
- 16GB eMMC / Micro SD card slot
- GbE LAN / 802.11n Wi-Fi & Bluetooth 4.0 + EDR
- 4 x USB 2.0
- 40-pin GPIO
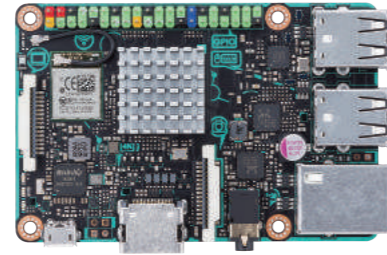
Tinker Board

The Tinker Board offers a reliable and extremely capable platform for building and tinkering customers' ideas into reality.

- Name card sized
- Quad-core ARM Cortex-A17 up to 1.8GHz
- ARM Mali-T760 MP4 GPU up to 600MHz
- 2GB Dual-CH LPDDR4
- HDMI / MIPI DSI / MIPI CSI-2
- Micro SD card slot
- GbE LAN / 802.11n Wi-Fi & Bluetooth 4.0 + EDR
- 4 x USB 2.0
- 40-pin GPIO

tinker board

Official Accessories

Aluminum Fanless Case

The Tinker Fanless Aluminum Case is designed using anodized aluminum with a gun-gray brushed surface finish, and features reserved space for peripheral expansions* and VESA mounting*. The metallic case also enhances heat dissipation, keeping your system cool at all times. In addition, a specially designed rotating assembly mechanism lets you assemble your Tinker Board with ease using only a thumbscrew, making your tinkering experience easy and enjoyable.

*Items purchased separately

Open-Case Test Bench

The Tinker Open-Case DIY Kit lets your Tinker Board keep cool in an open air environment. It also serves as a great test bench, giving makers the freedom to add peripheral extensions with no obstructions. The backplate prevents short circuiting and protects your Tinker Board from bending. Simply add the active thermal solution to help cool down your system, and you're ready for optimal performance from your Tinker Board.

Power Supply

Tinker Power Supply is specially designed with a 5V/3A power output, featuring short circuit protection, over voltage protection, over current protection and over temperature protection, ensuring the power supply works safely. In addition, it has received safety validations from LPS and UL94 to further prove its quality, and is ideal for the Tinker Board series.

MINI PC

Ultra-compact Mini PCs provide flexible, comprehensive solutions for a wide range of office, retail, digital signage, education and hospital applications.

MINI PC PB SERIES

reddot design award
winner 2018

COMPUTEX
d&i awards 2018
by iF

GOOD DESIGN
AWARD 2018

Loaded with connectivity

ASUS Mini PC PB series provides fast and convenient connectivity with USB 3.1 Gen2 and USB 3.1 Gen1 ports including one Type-C on the front panel, plus one USB 3.1 Gen2 and two USB 2.0 ports on the rear panel. Additionally, a configurable port* lets you add VGA, COM or DisplayPort functionality to fit your needs.

*Configurable port options may vary by model or region.

A perfect fit for all

PB40 & PB60 - Reliable performance for daily computing and multitasking in the office.
- PB60G - Connect up to seven displays for visually intensive applications, such as media and entertainment, manufacturing, engineering and architectural.
- PB60V - Support for Intel® vPro™ technology enables IT departments to be more proactive and manage more PCs per technician than ever before.

Stackable, modular design for added functionality

With optional stackable modules, you can add the ideal functionality you need to Mini PC PB series without sacrificing its compact size. A DVD optical drive module is currently available. PB60G and PB60V can also connect to a graphics module equipped with NVIDIA® Quadro® GPUs.

24/7
24/7 Reliability

ASUS CORPORATE STABLE

intel CORE i3 8th Gen
intel CORE i5 8th Gen
intel CORE i7 8th Gen

MINI PC APPLICATIONS

Digital Signage

ASUS Mini PCs pack all the power and functionality you need into a package so small, These miniature marvels are powered by a selection of the latest up to Intel® Core™ processors and give you up to 4K UHD graphics, extensive connectivity, and support for multiple displays. Their space-saving, low-profile design makes them perfect for a wide range of business applications, from digital signage and information kiosks to office desktops.

Conference and Meeting Rooms — Enhanced Communication

Tools that ensure a smooth and uninterrupted flow of information among staff, partners' customers and the market are essential to building trust and understanding, reaching consensus quickly, and meeting business goals. ASUS Hangouts Meet hardware kit is a full video conferencing solution, featuring an ASUS Chromebox, a 4K UHD camera, an echo-cancellation speaker mic and a touchscreen control panel. It's perfect for use in small meeting areas or large conference rooms, where users can daisy-chain up to 5 speaker mics for clearer conferencing quality.

Retail Stores and Restaurants —Ensure Efficiency During Service

ASUS has a comprehensive product range and can provide competitive tailored solutions for any retail environment, helping you make the most of your budget. ASUS Mini PC PB Series and PN Series are ideal for those with limited space and a modest budget. These mini PCs are suited for retail and commercial use and are compatible with a wide range of point of sale (POS) peripherals. ASUS Control Center (ACC) management software makes routine PC maintenance easy by supporting simple BIOS updates and automatic syncing across multiple devices.

Classroom — Use Progressive Teaching and Learning Methods

ASUS Mini PCs can help educators modernize the classroom to make learning more effective and fun. ASUS Mini PB Series and PN Series are ideal for use with digital whiteboards, and their compact designs means they are unobtrusive and can be kept easily out of sight. ASUS Chromebox 3 provides new and enriching experiences in and out of the classroom.

MINI PC PN SERIES

High-speed connectivity and legacy support

ASUS Mini PC PN series provides comprehensive connectivity with multiple ports, including a front-mounted USB Type-C port and a configurable port* to support legacy devices, additional displays or multiple network connections.

* Configurable port options may vary by model or region

reddot design award
winner 2018

GOOD DESIGN
AWARD 2018

* Photos above are PN60

Dual storage design

ASUS Mini PC PN series fits one Intel® Optane™ Memory, M.2 SSD or eMMC* drive, and a 2.5-inch HDD, letting you create your own custom storage solution with the balance of speed and capacity to fit your needs.

* Configuration may vary by model or region

24/7
24/7 Reliability

intel CORE i3 8th Gen
intel CORE i5 8th Gen
intel CORE i7 8th Gen

Upgrade-friendly

A convenient sliding chassis design lets you add or upgrade an M.2 SSD, 2.5-inch HDD or SSD, or memory in two easy steps using just a screwdriver. A bare-bones* option is also available, giving you maximum flexibility to customize your system.

* Bare-bones option availability may vary by model or region
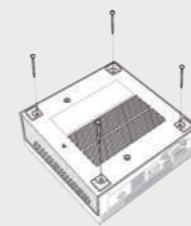
1 Remove screws
Secure with screws for extra protection
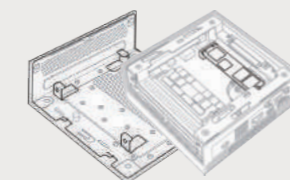
2 Slide and Open!
Sliding case design for easily pull out

ASUS HANGOUTS MEET HARDWARE KIT

Smart, one-touch HD video-conferencing with anyone, anywhere

ASUS Hangouts Meet hardware kit is the smart video-conferencing solution in stunning HD resolution. The package includes the compact ASUS Chromebox 3 computer powered by an up to Intel® Core™ i7 processor, and a 4K UHD camera with a wide 120° field of view — with auto-zoom technology to keep the images focused on the meeting participants.

Real-time collaboration

Meetings with anyone, anywhere

ASUS Hangouts Meet hardware kit lets you meet with anyone on any device, and from anywhere — all through Google Hangouts Meet. Whether you're joining from a computer, phone, or conference room, with a lightweight interface and smart participant management, multi-person video calls are a breeze.

Up to 50 online meeting participants supported

Meetings support up to 50 participants, providing collaboration with teammates, customers and clients around the world, just like you're all in the same room.

Simple, reliable access to meetings

Easy one-click URL access

Each meeting has a unique, easily shareable URL – no dedicated accounts or plugins required. Invited parties can also join via a single tap on a Google Calendar entry.

Unique dial-in number and PIN security for every meeting

To make it easy for offline users to take part in the discussion, ASUS Hangouts Meet hardware kit creates a unique dial-in telephone number and PIN for each meeting.

Designed for enterprise

Hassle-free and user-friendly collaboration

It takes just one click to join a video conference, or start one spontaneously via the touchscreen control panel. It's easy to schedule or join a meeting directly from Google Calendar, and participants are able to share screens remotely.

Automatic updates and security

It is easy to set up and updates automatically, so the Hangouts Meet hardware kit always has the latest security fixes to keep itself safe from viruses and other malware. Real-time authorization and central management of meeting participants also ensures conferences are secure.

BUSINESS MOTHERBOARD

ASUS Business Series Motherboard features comprehensive system protection, 24/7 stability, and an easily customizable, improved management suite to give business customers safe, reliable and simplified IT operations.

CORPORATE
STABLE MODEL

Up to 36-month Stable Supply

/ISUS

CORPORATE STABLE

About this program

The ASUS Corporate Stable Model (CSM) program is designed to provide stable motherboards and mini PCs to businesses everywhere. In the 16 years that the motherboard CSM program has been operating in the United States and Canada, thousands of customers and solution providers have become part of the ASUS CSM partner network — making it the most established commercial-motherboard program currently available, with CSM boards deployed across many vertical markets. Now, we're building on that success and offering the CSM program to businesses around the world!

Each purchase of a Corporate Stable Model product includes the ASUS Control Center IT-management software suite*
*Program offerings may vary by region. Please consult your local sales representative for more information.
*Check the CSM model list with local sales contact.

EOL Notice and ECN Control

ASUS issues an Engineering Change Notice (ECN) before product revisions, an end-of-life (EOL) notice six months before a product's EOL, and a Last Buy Order (LBO) notice three months prior to EOL — allowing lead time for your organization to ready itself for product transition.

Stable Supply

Supply Flexibility
As the world's No. 1 motherboard brand, ASUS has great material-supply flexibility, and is able to respond rapidly to forecast changes. Working with ASUS removes the worry about material-supply gaps.

Extended Supply
Please contact your ASUS representative for information about projects requiring a supply guarantee of up to 36 months. A supply guarantee may be available with a confirmed purchase order (PO) and minimum order quantity (MOQ).

ASUS Control Center

ASUS Control Center is a centralized IT-management suite that enhances enterprise productivity with comprehensive control through a very friendly user interface. ASUS Control Center provides high visibility and the best IT-management experiences across ASUS enterprise and commercial products. Each purchase of a Corporate Stable Model entitles the customer to a copy of the ASUS Control Center IT-management software suite.

Most of ASUS latest Pro series workstation motherboards are equipped with a RTL8117 GbE LAN controller, which works in conjunction with ASUS Control Center to provide an affordable and comprehensive solution for out-of-band management. Enjoy all the benefits of remote management, and BIOS or OS updates on specific client systems when these systems are shutdown or in BIOS mode.
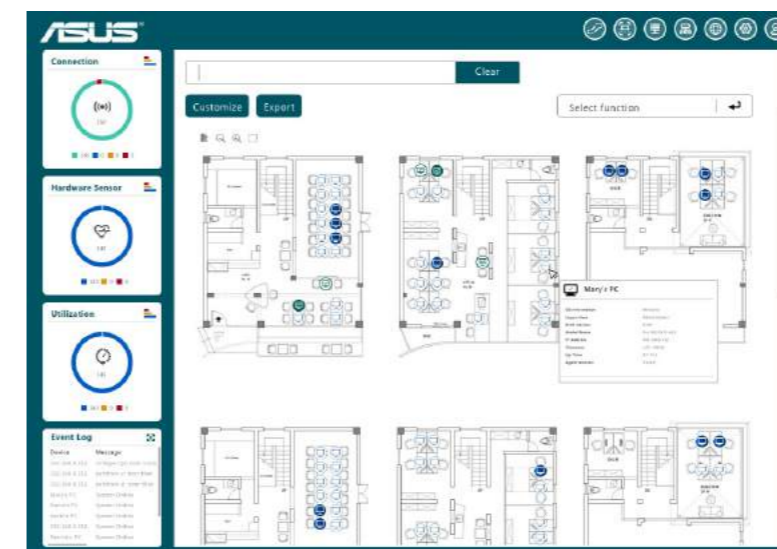
Hardware & Software Monitoring

In-Band and Out-of-Band Management

Asset Management

Mobile Control

Security

Software Deployment

BUSINESS MOTHERBOARD
FEATURES

Event Log

A built-in event log enables easier troubleshooting by capturing useful system information, including:

- BIOS updates
- AC power loss
- RTC reset
- Chassis intrusion
- Hardware changes*
- Hardware status

*Record of when the CPU temperature rises above 75°C
Record of when the CPU Voltage drops below 0 mV or
rises above 1550mV

ASUS Self-recovering BIOS

| BIOS UPDATE CRASH | → | Reboot system and automatically restore BIOS update |

Benefits:
- Ensures safe BIOS updates
- Reduces maintenance frequency and costs
- Requires no extra software
- Provides automatic update failure detection and recovery

ASUS Commercial BIOS Kit

Experience the brand-new Commercial BIOS Kit for a partial BIOS update solution!

- BIOS Value Edit Tool
- BIOS Boot Logo Tool
- OEM Activation (OA) Tools
- Desktop Management Interface (DMI)
- Intel® Management Engine (Intel® ME) Driver

ASUS Trouble Shooting Solution

ASUS Debug header is a 10-1 pin low pin count (LPC) header for connecting to debug cards for faster, more efficient motherboard troubleshooting. When connected to an ASUS Debug Card, administrators can view error and debugging codes on the integrated LCD display, and get better idea of initialization and recovery processes. ASUS business motherboards provide a complete troubleshooting solution, making mass production faster and more cost effective.

ESD Guards
Electrostatic discharge protection

ASUS ESD Guards prevent damage from electrostatic discharge, up to +/- 10kV for air discharge and +/- 6kV for contact discharge, arranged in an active-protective-circuit design that prolongs the life of components.

- **LAN port**
  ESD TVS diode protection on the LAN circuit.

- **USB connectors**
  TVS diodes for surface-mount and dual-inline packages.
  And for green motherboard models, air discharge upgrade to +/- 15kV for protection enhancement.

- **VGA connectors**
  Additional on-circuit ESD TVS diodes to protect Display port functionality.

- **Keyboard and mouse connectors**
  Additional on-circuit ESD transient-voltage-suppression.

BUSINESS MOTHERBOARD
PRODUCTS

Coming Soon

EX-B365M-V5

Intel B365 LGA 1151 mATX motherboard with luminous anti-moisture coating, M.2, USBGuard, DDR4 2666MHz, HDMI, SATA 6Gbps, USB 3.1 Gen 1, and 8-pin power connector.

- FormFactor : Micro-ATX
- USB: Back : 4 x U3.1 Gen1; 2 x U2
      Front : 2 x U3.1 Gen1; 4 x U2
- Internal I/O : COM debug header
- Operating Temperature : 0°C~50°C
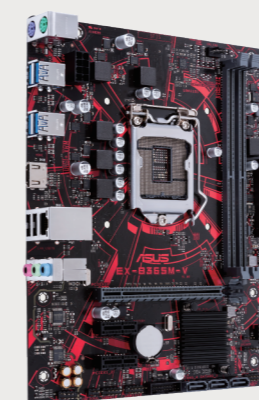
EX-B365M-V

Intel B365 LGA 1151 mATX motherboard with luminous anti-moisture coating, USBGuard, DDR4 2666MHz, HDMI, SATA 6Gbps, USB 3.1 Gen 1, and 8-pin power connector.

- FormFactor : Micro-ATX
- USB : Back: 4 x U3.1 Gen1; 2 x U2
       Front : 2 x U3.1 Gen1; 4 x U2
- Internal I/O : COM debug header
- Operating Temperature : 0°C~50°C
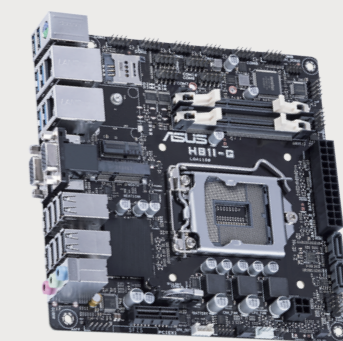
H81I-G

Intel H81 LGA 1150 Mini-ITX motherboard with multiple COM headers, DDR3 1600MHz, HDMI, SATA 6Gbps, USB 3.1 Gen 1, and 8-pin power connector.

- FormFactor : Mini-ITX
- USB : Back : 6 x U3.1 Gen1; 8 x U2
- Internal I/O : 12 x COM, SIM,
                LPC debug header
- Operating Temperature : 0°C~50°C

PRIME H310T2 R2.0 D3

Intel H310 LGA 1151 Thin-ITX motherboard with luminous anti-moisture coating, USBGuard, DDR4 2666MHz, HDMI, SATA 6Gbps, USB 3.1 Gen 1, and 8-pin power connector.

- FormFactor : Thin Mini-ITX
- USB : Back : 4 x U3.1 Gen1; 2 x U2
  Front : 2 x U3.1 Gen1; 4 x U2
- Internal I/O :TPM header, LVDS, HDMI
- Operating Temperature : 0°C~50°C

H310T-A R2.0

ASUS Business Motherboard H310T-A R2.0 is a thin mini-ITX motherboard featuring the intel H310 chipset for DIY all -in -one PCs or Mini chassis, with 5X Protection III for dependable stability, DDR4 support and EZ Flash 3 quick BIOS updates.

- FormFactor : Thin Mini-ITX
- USB: Back : 2 x U3.1 Gen1; 2 x U2
  Front : 2 x U3.1 Gen1; 4 x U2
- Internal I/O : HDMI, LVDS, D-Sub, TPM header
- Operating Temperature : 0°C~50°C

PRIME A320I-K

ASUS Bunisess Motherboard PRIME A320I-K is a mini-ITX motherboard featuring the AMD A320 chipset for DIY all-in-one PCs or Mini chassis, with 5X Protection III for dependable stability, DDR4 support and ASUS AURA Sync for brighting up your build.

- FormFactor : Mini-ITX
- USB: Back : 4 x U3.1 Gen1; 2 x U2
  Front : 2 x U3.1 Gen1; 2 x U2
- Internal I/O : RGB header, TPM header
- Operating Temperature : 0°C~50°C

PRIME H310I-PLUS R2.0

ASUS Business Motherboard PRIME H310I-PLUS R2.0 is a mini-ITX motherboard featuring the intel H310 chipset for DIY all-in-one PCs or Mini chassis, with 5X Protection III for dependable stability, DDR4 support and EZ Flash 3 quick BIOS updates.

- FormFactor : Mini-ITX
- USB : Back : 2 x U3.1 Gen 1 ; 2 x U2
  Front : 2 x U3.1 Gen 1 ; 2 x U2
- Internal I/O : COM, TPM header
- Operating Temperature : 0°C~50°C

PRIME H310M-C R2.0

ASUS PRIME H310M-C R2.0 Business Motherboard with enhanced security, reliability and manageability. Feature with ASUS Self-recovering BIOS, ASUS event log, ASUS commercial BIOS kit, easy assembly design and anti-moisture coating.

- FormFactor : Micro-ATX
- USB: Back : 2 x U3.1 Gen1; 4 x U2
  Front : 2 x U3.1 Gen1; 2 x U2
- Internal I/O : 2 x COM, PCI, LPT, TPM header, LPC Debug header
- Operating Temperature : 0°C~50°C

PRIME B365M-C

ASUS Business Motherboard PRIME B365M-C is a mATX Motherboard featuring the Intel B365 chipset with anti-moisture coating, M.2, DDR4 2666MHz, 2*DP, HDMI, SATA 6Gb/s, USB 3.1 Gen 1, and 8-pin power connector.
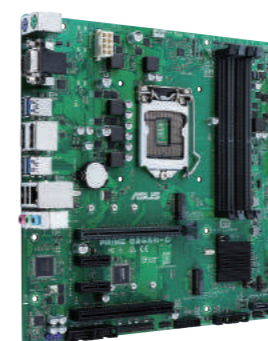
- FormFactor : Micro-ATX
- USB: Back : 4 x U3.1 Gen 1 ; 2 x U2
  Front : 4 x U3.1 Gen 1 ; 4 x U2,
- Internal I/O : 2 x COM, LPT, TPM header, LPC debug header
- Operating Temperature : 0°C~50°C
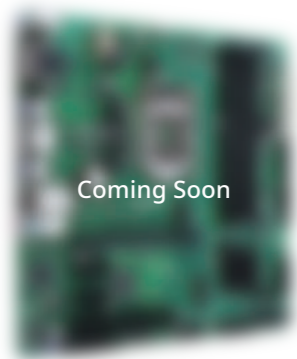
PRIME H310M2 R2.0/FPT II

ASUS Business Motherboard PRIME H310M2 R2.0/FPT II is a mATX motherboard with customized PCB logo, COM connector, customized specs and 4 VGA outputs DP/HDMI/DVI-D/D-Sub.

- FormFactor : Micro-ATX
- USB : Back : 2 x U3.1 Gen 1(1 Type-C) ; 2 x U2
       Front : 2 x U3.1 Gen 1; 6 x U2
- Internal I/O : 2 x COM, LPT, TPM IC on board
- Operating Temperature : 0°C~50°C

Pro H310M-R R2.0 Wi-Fi

ASUS Pro H310M-R R2.0 Wi-Fi is a Intel mATX H310 Business Motherboard with USB 3.1 Gen 2 type C and Wi-Fi Module, plus enhanced security, reliability and manageability for TCO reduction.

- FormFactor : Micro-ATX
- USB : Back : 2 x U3.1 Gen 1 ; 2 x U2
       Front : 1 x U3.1 Gen 2 (Type C) ; 2 x U3.1 Gen1 ;
       2 x U2
- Internal I/O : COM, SPI TPM header, LPC debug header
- Operating Temperature:0°C~50°C

Pro A320M-R Wi-Fi

ASUS Pro A320M-R Wi-Fi is an AMD mATX A320 Business Motherboard with USB 3.1 Gen 2 type C and Wi-Fi Module, plus enhanced security, reliability and manageability for TCO reduction.

- FormFactor : Micro-ATX
- USB : Back : 4 x U3.1 Gen 1
       Front : 1 x U3.1 Gen 2 (Type C) ;
       2 x U3.1 Gen 1; 4 x U2
- Internal I/O : COM, SPI TPM header,
                LPC debug header
- Operating Temperature : 0°C~50°C

SUCCESS STORIES

Government Tender

Since the verification and application of certifications are usually complicated and very time consuming, without a stable supply, products may already reach its end of life (EOL) before the verification is complete. At the same time, a lack of a stable supply may force customers to risk sourcing other suppliers.

ASUS offers:

- Guaranteed stable supply of up to 36-months through the ASUS CSM program.
- 6-month prior EOL notice and 3-month prior Last Buy Order notice to provide system integrators sufficient time to prepare for transitions.

Small and medium-sized enterprises

Since SMEs may not be on the scale to afford a dedicated MIS team to solve IT problems, it is difficult to have unified management and supervision on all the devices. Large scale system or software updates are also hectic and require a lot of time from SMEs to moderate the procedures.

ASUS offers:

- Commercial BIOS Kits with the freedom to customize the displayed logo.
- ASUS Control Center (ACC) to easily control deployed devices remotely, such as hardware monitoring, event log collecting, etc.

Working with confidential data

The leak of confidential information is the worst nightmare for enterprises, especially for those under restrictions of NDA contracts. Once data has been leaked, companies not only lose invaluable intellectual assets, but often also have to pay a substantial NDA compensation.

ASUS offers:

- ASUS Control Center (ACC) to disable USB ports and restrict access of USB storage devices.
- ASUS Control Center (ACC) to supervise and control all data transfers to protect your devices against crashes

American Air-Force government tender

In order to meet the strict requests on security and safety in aviation, the Trusted Platform Module (TPM) is a necessary hardware-based security solution for this tender. In addition, since the US government recently raised the tariff to imports from China from 10% to 25%, which drastically increased the manufacture cost, we offer alternate transit solutions to bring competitive prices.

ASUS offers:

- Products bundled with TPM module for guaranteed platform safety.
- Transit from China to Vietnam to avoid 25% US tariff.

Pro WORKSTATION MOTHERBOARD

A brand new series of workstation motherboards that offer great expandability, manageability, and stability. Suitable for researchers, IT pros, and content creators.

Pro WORKSTATION MOTHERBOARD
FEATURES

Optimized for deep learning

Pro series workstation motherboards are designed to allow multi-GPU operation, which is especially favorable for DL (Deep Learning). DL is a training process for the development of AI, it works by approximating a solution to a problem using neural networks that consists of multiplying enormous matrices, and this kind of intensive task is the right fit for GPUs, making them a popular tool amongst DL researchers. To speed up the DL training process, it is recommended to have the GPU run in a PCIe X16 or X8 slot to get the most performance out of it, and using more GPUs will also make the training process faster. DL's training is generally up to 2.8X faster with 3 GPUs, and 1.9X faster with 2 GPUs when running in PCIe X8 slots or above. All Pro series workstation motherboards are equipped with at least 2 PCIe X8 slots.

A comprehensive solution for mainstream data center

The newly developed ASUS Control Center is a brand new solution to server management. It is a centralized management software that allows you to control and monitor the client servers through user-friendly deployment from the host's side. This software is suitable for small to medium-sized companies, educational institutes, data centers, and others looking for a straight-forward, comprehensive, and affordable solution to IT management. Furthermore, not only does ASUS Control Center offer software solutions, it also works with RTL8117 – a GbE LAN controller as well as a management controller – to make out-of-band management possible, which allows the host to remotely control and manipulate the clients even in some of the most critical situations (such as system crashes or unexpected shutdowns).

Unlimited productivity

Owing to the quick advance and diversification of social media and online applications, the number of content creators and associated software/hardware are on the rise! Pro series workstation motherboards are built to meet the demands of content creators from casual to professional alike; moreover, this is a motherboard that will click with the most productive and demanding content creators who value not only the digital contents that they create, but also a life style full of beauty and harmony. From architecture to landscaping, from 3D rendering to motion pictures, from live streaming to sound track recording, the Pro series workstation motherboards will take care of all your needs with their great expandability, endurance, and a touch of aesthetics that blends perfectly in a stylish and creative working environment.

ASUS motherboard segmentation

Pro WORKSTATION MOTHERBOARD
PRODUCTS

Pro WS X570-ACE

AMD X570 AM4 ATX motherboard with MOS heatsinks and heat-pipe, M.2 heatsink, DDR4 2666Hz, LAN guard, dual-LAN controller, out-of-band server management solution, HDMI, DP, SATA 6Gbps, U.2, and USB 3.2 Gen 2.
- FormFactor: ATX
- USB: Back: 5 x U3.2 Gen 2 (4A1C), 2 x U3.2 Gen 1
  Front: 4 x U3.2 Gen 1, 4 x U2.0
- Internal I/O: T Sensor, CPU/chassis fan headers, AIO pump header, COM, NODE
- Operating Temperature: 0°C~50°C
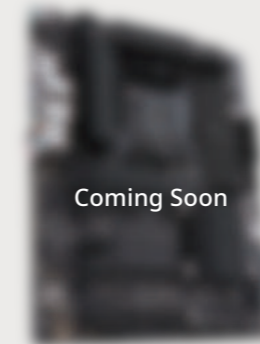
Pro WS C422-ACE

Coming Soon

Intel C422 LGA 2066 ATX motherboard with MOS heatsinks and heat-pipe, M.2 heatsinks, DDR4 2666Hz, LAN guard, dual-LAN controller, out-of-band server management solution, SATA 6Gbps, U.2, and USB 3.2 Gen 2
- FormFactor: ATX
  USB: Back: 4 x U3.2 Gen 2 (3A1C), 4 x U3.2 Gen 1, 2 x U2.0
  Front: 4 x U3.2 Gen 1, 4 x U2.0
- Internal I/O: T Sensor, CPU/chassis fan headers, AIO pump header, COM,NODE, VROC
- Operating Temperature: 0°C~50°C
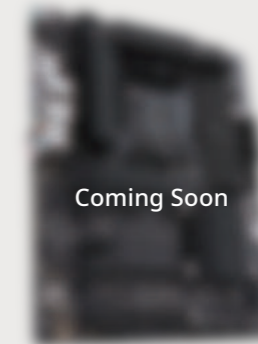
Pro WS C246-ACE

Coming Soon

Intel C246 LGA 1151 ATX motherboard with MOS heatsinks, DDR4 2666Hz, LAN guard, dual-LAN controller, server management solution, HDMI, DP, SATA 6Gbps, U.2, and USB 3.2 Gen 2
- FormFactor: ATX
- USB: Back: 4 x U3.2 Gen 2 (3A1C), 4 x U3.2 Gen 1
  Front: 2 x U3.2 Gen 1, 4 x U2.0
- Internal I/O: T Sensor, CPU/chassis fan headers, AIO pump header, COM, NODE
- Operating Temperature: 0°C~50°C

Coming Soon Coming Soon

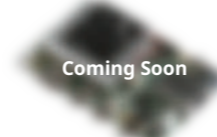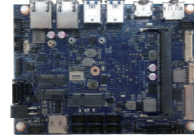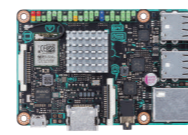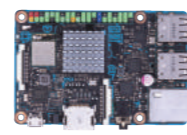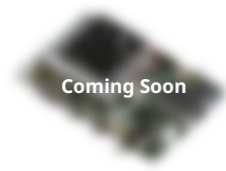| Product Line Up		Industrial Motherboard	Single Board Computer			
Model		**H310M-I-IM-A R2.0**	**C582S-IM-AA**	**E395S-IM-AA**	**IMX8P-IM-A**	**CR1P-CM-A**
Processor System	CPU	N/A	i5-8265U (i7-8565U/ i3-8145U optional)	x7-E3950 (X5-E3940/ X5-E3930 optional)	IMX8P-IM-A	NXP i.MX 8M
	Max. Speed	N/A	N/A	N/A	1.6GHz	1.5 GHz
	System Chipset	H310	Integrated	Integrated	Integrated	Integrated
Memory	Memory Technology	DDR4	DDR4	DDR3L	LPDDR4	LPDDR4
	Max. Capacity	32GB	16GB	8GB	2GB	1GB
Graphics		2 x DP/HDMI/LVDS	DP/HDMI/LVDS	DP/HDMI/LVDS	HDMI	HDMI
Ethernet		1 x Intel® I219V 1 x Intel® I211AT	1 x Intel® I219V 1 x Intel® I211AT	2 x Intel® I210IT	1 x Realtek® RTL8111H with POE	1 x GbE LAN with PSE 802.3 af/at
Fieldbus		N/A	N/A	N/A	1 x CANBus Controller	N/A
ASUS Features	Rs232 / Rs422 / Rs485	2 x COM connectors (2 x RS232/422/485) 4 x COM headers (4 x RS232)	6 x COM headers (2 x RS-232/422/485, 4 x RS-232)	6 x COM headers (2 x RS-232/422/485, 4 x RS-232)	2 x COM headers (1 x RS-232/422/485, 1 x RS232/CANBus)	2 x USB3.1 Gen1 Type-A ports
	USB	2 x USB2.0 headers, 1 x USB3.1 gen1 header, 4 x USB3.1 gen1 ports	4 x USB3.1 Gen2 Type-A ports 2 x USB2.0 headers support additional 4 x USB2.0 connectors	4 x USB3.1 Gen1 Type-A ports 1 x USB2.0 header support additional 2 x USB2.0 connectors	2 x USB2.0 1 x Micro USB 2.0 without OTG (Device only)	N/A
	Audio	2 x Audio jacks	2 x Audio jacks	2 x Audio jacks	2 x Audio jacks	1 x Audio jack
	Digital I/O	1 x 8bit GPIO header	1 x 8bit GPIO header	1 x 8bit GPIO header	2 x 4bit GPIO headers	2 x Digital Input, 2 x Digital Output 1 x 8bit GPIO header
	Watchdog Timer	Yes	Yes	Yes	Yes	Yes
Expansions	Mini PCIe / PCIe	1x PCIe x16 slot 1x Mini PCIe, Full/Half mini-PCIe with SATA 1x M.2 (Key E, 2230) with PCIe x1 and USB2.0 for Wireless 1x M.2 (Key M, 2242/2260/2280 PCIe & SATA mode for SSD	1 x M.2 Socket 1 with E key, Type 2230 for WIFI/BT device 1 x Full-Length Mini PCIe slot with an on-board Nano-SIM socket	1 x M.2 Socket 1 with E key, Type 2230 for WIFI/BT device 1 x Full-Length Mini PCIe slot with an on-board Nano-SIM socket	1 x M.2 2230 M Key for BT/WiFi module 1 x M.2 3042 B Key for 4G-LTE Module	1 x M.2 B Key (USB)
	Storage	2 x SATA 6.0 Gb/s ports 1x M.2 (Key M, 2242/2260/2280) PCIe & SATA mode for SSD	1 x SATA 6Gb/s connecter 1 x mSATA slot (shared with Mini PCIe) 1 x Micro SD card slot (on-board) 1 x M.2 Socket 3 with M key, Type 2242 (PCIe x2 mode & SATA mode)	1 x SATA 6Gb/s connecter 1 x M.2 Socket 3 with M key, Type 2242 (SATA mode) 1 x Micro SD card slot (on-board)	1 x 16GB eMMC 1 x Micro SD Card slot	8GB eMMC 1 x Micro SD Card slot
Software Support		Windows® 10 (64-bit)	Windows® 10 IoT Enterprise Linux	Windows® 10 IoT Enterprise Linux	Linux Yocto	Debian 9
Power	Input Voltage	AT/ATX	12-24V DC	12-24V DC	9-36V DC	12-19V DC
Mechanical	Form Factor	Mini-ITX, 170 x 170 mm	3.5", 146 x 105 mm	3.5", 146 x 105 mm	Pico-ITX, 100 x 72mm	TBD
Environment	Cooling	CPU & Chassis fan	Fanless	Fanless	Fanless	CPU Fan
	Storage Temperature	-40~85C	-40~85C	-40~85C	-40~85C	-45~85C
	Operating Temperature	0~60C	-20~60C	-20~60C	-20~70C	0~50C
	Relative Humidity	0%~85%	0%~85%	0%~85%	10% ~ 95%	0% ~ 85%
Approvals	Safety Certifications	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC

Product Line Up		Edge Computer		
Model		**PE200U**	**PE200S**	**PE100A**
OS		Support Win10/Linux/ Windows® 10 IoT Enterprise	Support Win10/Linux/ Windows® 10 IoT Enterprise	Support Linux Yocto
CPU		8th Generation Intel® Core™ i7/i5/i3 Processor	Intel® Atom™ X-series Processor	NXP i.MX 8M mini
Chipset		Integrated	Integrated	Integrated
Graphics		Intel® UHD Graphics 620	Intel® HD Graphics 505/500	GCNanoUltra for 3D acceleration GC320 for 2D acceleration
Memory		1 x DDR4-2400 SO-DIMM, up to 16GB	1 x DDR3L-1866 SO-DIMM, up to 8GB	1 x LPDDR4 2GB on board memory
Storage		1 x SATA 6Gb/s 1 x M.2 2242 M key 1 x mSATA slot (shared with Mini PCIe slot) 1 x Micro SD socketS	1 x SATA 6Gb/s 1 x M.2 2242 M key (SATA) 1 x Micro SD socket	1 x 16GB eMMC 1 x Micro SD Card slot
Wireless Network		1 x M.2 2230 E key for Wi-Fi Module 1 x Mini PCIe with Nano-SIM socket	1 x M.2 2230 E key for Wi-Fi Module 1 x Mini PCIe with Nano-SIM socket	1 x M.2 2230 M Key for BT/WiFi module 1 x M.2 3042 B Key for 4G-LTE Module
LAN		2 x Intel Gigabit LAN	2 x Intel Gigabit LAN	1 x Realtek® RTL8211 with POE
Weight		2.5 kg	2.5 kg	Coming Soon
TPM		TPM 2.0 (firmware)	TPM 2.0 (firmware)	N/A
Interface	Front I/O	1 x HDMI 1 x DisplayPort 4 x USB 3.1 Gen 2 Type A 2 x RJ45 2 x RS232/422/485 ports 1 x GPIO 2 x Antenna ports	1 x HDMI 1 x DisplayPort 4 x USB 3.1 Gen2 Type A 2 x RJ45 2 x RS232/422/485 ports 1 x GPIO 2 x Antenna ports	1 x HDMI 1 x Micro USB 2.0 without OTG 2 x USB 2.0 1 x RJ45 1 x Power button 1 x Reset button
	Side I/O	N/A	N/A	N/A
	Rear I/O	4 x USB3.1 Gen2 4 x USB2.0 (optional) 2 x RS232/422/485 ports 4 x RS232 ports (optional) 1 x 8-bit GPIO port 2 x RJ45 1 x headphone 1 x Mic-in 1 x DC in	4 x USB3.1 Gen1 2 x USB2.0 (optional) 2 x RS232/422/485 ports 4 x RS232 ports (optional) 1 x 8-bit GPIO port 2 x RJ45 1 x headphone 1 x Mic-in 1 x DC in	1 x 4-bit GPI terminal 1 x 4-bit GPO terminal 1 x DC in
Card Reader		N/A	N/A	N/A
Power Supply		12-24V DC in	12-24V DC in	9-36V DC in
Dimension		254 x 147 x 57 mm	254 x 147 x 57 mm	Coming Soon
Environment	Storage Temperature	-40~85C	-40~85C	-40~85C
	Operating Temperature	-20~60C	-20~60C	-40~85C
	Relative Humidity	0%~85%	0%~85%	10%~ 95%

Model	Tinker Edge T	Tinker Edge R	Tinker Board S	Tinker Board
Processor	NXP i.MX 8M 4x ARM Cortex-A53 @ 1.5GHz	Rockchip RK3399Pro 2x ARM Cortex-A72 @ 1.8 GHz 4x ARM Cortex-A53 @ 1.4 GHz	Rockchip RK3288 4x ARM Cortex-A17 @ 1.8GHz	Rockchip RK3288 4x ARM Cortex-A17 @ 1.8GHz
GPU	GC7000 Lite @ 1GHz	ARM Mali-T860 MP4 @ 800 MHz	ARM Mali-T760 MP4 @ 600 MHz	ARM Mali-T760 MP4 @ 600 MHz
Neural Processor	Google Edge TPU	Rockchip NPU	N/A	N/A
Display	1 x HDMI 1 x MIPI DSI (4 lane)	1 x HDMI 1 x DP 1.2 (Type-C) 1x MIPI DSI (4 lane)	1 x HDMI with CEC support 1 x MIPI DSI (2 lane)	1 x HDMI 1 x MIPI DSI (2 lane)
Memory Size	1GB	4GB (SYSTEM) + 2GB (NPU)	2GB	2GB
Storage	8GB eMMC	16GB eMMC Micro SD(TF) card slot	16GB eMMC Micro SD(TF) card slot	Micro SD(TF) card slot
Connectivity	GbE LAN 802.11ac & BT 4.1	RTL8211F GbE LAN 802.11ac & BT 4.2 (2T2R)	RTL8821E GbE LAN 802.11n & BT 4.0 + EDR	RTL8821E GbE LAN 802.11n & BT 4.0 + EDR
Audio	1x 3.5mm Audio Jack	1x 3.5mm Audio Jack 1x S/PDIF TX pin 1x PCM/I2S pins	RTL ALC4040 Codec with 1 x 3.5mm audio jack Supports audio jack plug-in detection	RTL ALC4040 Codec with 1 x 3.5mm audio jack
USB	2 x USB3.1 Gen1	3 x USB3.1 Gen1 1 x USB3.1 Gen1 Type-C OTG	4 x USB2.0	4 x USB2.0
Camera Interface	2 x MIPI CSI-2 (4 lane)	1 x MIPI CSI-2 (4 lane) 1 x MIPI CSI-2/DSI (4 lane)	1x MIPI CSI-2 (2 lane)	1 x MIPI CSI-2 (2 lane)
Expansions		1 x Mini PCIe slot (Full-Length, nano-SIM socket, for 4G/LTE)		
I/O header/port	1 x 40-pin headers includes: - GPIO pins - SPI bus - I2C bus - UART - PWM - PCM/I2S - 5V power pins - 3.3V power pins - Ground pins 1 x Extension headers 1 x Power-on header 1 x Reset header 1 x Type-C OTG port	1 x 40-pin headers includes: - up to 28 x GPIO pins - up to 2 x SPI bus - up to 2 x I2C bus - up to 2 x UART - up to 3 x PWM - up to 1 x PCM/I2S - up to 1 x S/PDIF TX - 2 x 5V power pins - 2 x 3.3V power pins - 8 x ground pins 1 x 2-pin recovery header 1 x 2-pin power-on header 1 x 2-pin reset header 1 x 2-pin DC fan header 1 x 2-pin RTC battery header	1 x 40-pin headers includes: - up to 28 x GPIO pins - up to 2 x SPI bus - up to 2 x I2C bus - up to 4 x UART - up to 2 x PWM - up to 1 x PCM/I2S - 2 x 5V power pins - 2 x 3.3V power pins - 8 x ground pins 1 x 2-pin recovery header 1 x 2-pin power-on header 1 x 2-pin contact points includes: - 1 x PWM signal - 1 x S/PDIF signal	1 x 40-pin headers includes: - up to 28 x GPIO pins - up to 2 x SPI bus - up to 2 x I2C bus - up to 4 x UART - up to 2 x PWM - up to 1 x PCM/I2S - 2 x 5V power pins - 2 x 3.3V power pins - 8 x ground pins 1 x 2-pin contact points includes: - 1 x PWM signal - 1 x S/PDIF signal
Power Connector	DC power input	1 x 12-19V DC power input 1 x 12-19V 4-pin DC power header	5V/2~3A Micro USB power input	5V/2~3A Micro USB power input
OS Support	Debian 9	Debian 9 / Android 8.1	Debian 9 / Android 6 & 7	Debian 9 / Android 6 & 7
Dimension	85 x 56mm	Pico-ITX, 100 x 72mm	85 x 56mm	85 x 56mm

Series	Mini PC VC Series		
Model	VC65-C1	VC65-C	VC66-C
OS	Windows®10 Pro, Windows®10 Home, Windows®10 S, or W/O OS	Windows®10 Pro, Windows®10 Home, Windows®10 S, or W/O OS	Windows®10 Pro, Windows®10 Home, Windows®10 S, or W/O OS
CPU	Intel® Core™ i7-8700T/ i5-8400T/i3-8100T Processors Intel® Pentium® G5400T Processor Intel® Celeron® G4900T Processor	Intel® Core™ i7-8700T/ i5-8400T/i3-8100T Processors Intel® Pentium® G5400T Processor Intel® Celeron® G4900T Processor	Intel® Core™ i7-8700/i5-8400/i3-8100 Processors Intel® Pentium® G5400 Processor Intel® Celeron® G4900 Processor
Chipset	Intel® B360	Intel® H310	Intel® H310
Graphics	Integrated - Intel® UHD Graphics 630 (vary by CPU sku)	Integrated - Intel® UHD Graphics 630 (vary by CPU sku)	Integrated - Intel® UHD Graphics 630 (vary by CPU sku)
Memory	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)
Storage	1 x M.2 connector Support Optane memory, 4 x SATA 6Gb/s connector (Support 2.5" HDD or SSD) *ODD sku supports up to 2 SATA	1 x M.2 connector, 4 x SATA 6Gb/s connector (Support 2.5" HDD or SSD) *ODD sku supports up to 2 SATA	1 x M.2 connector, 2 x SATA 6Gb/s connector (Support 2.5" HDD or SSD) *ODD sku supports up to 1 SATA
Wireless Network	Intel Dual Band 802.11ac + BT V4.2	Intel Dual Band 802.11ac + BT V4.2	Intel Dual Band 802.11ac + BT V4.2
LAN *Only Intel branding been	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps
Optical Drive	8X Super Multi DVD Drive (optional) UHD BD Writer (optional)	8X Super Multi DVD Drive (optional) UHD BD Writer (optional)	8X Super Multi DVD Drive (optional) UHD BD Writer (optional)
Integrated Speaker	Optional	Optional	N/A
Card Reader	YES	YES	YES
TPM	fTPM or TPM chip (optional)	fTPM or TPM chip (optional)	fTPM or TPM chip (optional)
Interface — Front I/O	1 x USB3.1 Gen2 (with fast charging) 1 x USB3.1 Gen1	2 x USB3.1 Gen1 (1 with fast charging)	1 x USB 3.1 Gen1 Type-C 1 x USB 3.1 Gen1 2 x USB 2.0 1 x Audio(Line out/Mic in/Headphone out)
Interface — Side I/O	1 x 4-in-1 Card Reader	1 x 4-in-1 Card Reader	N/A
Interface — Rear I/O	3 x USB3.1 Gen1 1 x USB3.1 Gen1 Type C 1 x HDMI 1 x DisplayPort 1 x D-Sub 1 x LAN (RJ45) Port 2 x Audio Jacks (1x Mic in/Line out, 1 x Line out) 1 x Kensington Lock 1 x DC-in	1 x USB3.1 Gen1 1 x USB3.1 Gen1 Type C 2 x USB2.0 1 x HDMI 1 x DisplayPort 1 x D-Sub 1 x COM port 1 x LAN (RJ45) Port 2 x Audio Jacks (1x Mic in/Line out, 1 x Line out) 1 x Kensington Lock 1 x DC-in	2 x USB 3.1 Gen1 1 x HDMI 1 x DisplayPort++ 1.2 (Support Ultra HD 4K) 1 x DVI-I 1 x COM port 1 x LAN (RJ45) Port 1 x Kensington Lock 1 x DC-in
Dimension	197.5 x 196.3 x 49.3 mm (with 2 storages) 197.5 x 196.3 x 61.9 mm (with ODD or 4 storages)	197.5 x 196.3 x 49.3 mm (with 2 storages) 197.5 x 196.3 x 61.9 mm (with ODD or 4 storages)	177.4 x 153 x 74.1 mm
Weight	2.17 kg (Including ODD or 4 storages)	2.17 kg (Including ODD or 4 storages)	1.5 kg (Including 2 storages)

Mini PC ProArt / Chromebox Series

Series	Chromebox		Chromebox	Mini PC ProArt PA Series
Model	ASUS Chromebox 3		ASUS Hangouts Meet hardware kit	PA90
OS	ChromeOS		ChromeOS	Windows®10 Pro, Windows®10 Home, or W/O OS
CPU	Intel® Celeron 3867U Processor Intel® Celeron 3865U Processor	Intel® Core™ i7-8550U Processor Intel® Core™ i5-8250U Processor Intel® Core™ i3-8130U Processor Intel® Core™ i3-7100U Processor	Intel® Core™ i7-8550U Processor	Intel® Core™ i9-9900K/ i7-9700K/i5-9400 Processors
Chipset	Integrated		Integrated	Intel® Z390 chipset
Graphics	Integrated - Intel® HD Graphics 610	Integrated - Intel® HD Graphics 620	Integrated - Intel® HD Graphics 620	NVIDIA® Quadro® P4000/P2000 NVIDIA® GeForce RTX™ 2060 Graphics
Memory	2 x SO-DIMM, DDR4 2133/2400MHz memory (4GB to 16GB)		2 x SO-DIMM, DDR4 2400MHz memory 4GB	4 x SO-DIMM DDR4 2666/2400MHz (up to 128GB)
Storage	M.2 SSD (32GB to 256GB)		M.2 SSD 32GB	2 x M.2 2242/2280 (SATA/PCIE G3X4) 1 x SATA 6Gb/s (2.5" 7200RPM 500GB/1TB HDD) *Intel® Optane® Technology support
Wireless Network	Intel Dual Band 802.11ac, Bluetooth V4.2		Intel Dual Band 802.11ac, Bluetooth V4.2	Intel Dual Band 802.11ac + BT V5.0
LAN *Only Intel branding been	Intel® LAN, 10/100/1000 Mbps		Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps
Optical Drive	N/A		N/A	N/A
Integrated Speaker	N/A		N/A	N/A
Card Reader	Micro SD/SDHC/SDXC		Micro SD/SDHC/SDXC	N/A
TPM	N/A		N/A	fTPM or TPM chip optional
Interface — Front I/O	2 x USB 3.1 Gen1(support BC1.2) 1 x Audio Jack (Combo Mic/Headphone Jack) 1 x Micro SD card		2 x USB 3.1 Gen1 (support BC1.2) 1 x Audio Jack (Combo Mic/Headphone Jack) 1 x Micro SD card	2 x USB 3.1 Gen2 Type-A 1 x Mic in jack 1 x Audio Jack
Interface — Side I/O	1 x Kensington Lock		1 x Kensington Lock	
Interface — Rear I/O	2 x USB 2.0 1 x USB 3.1 Gen1 1 x USB 3.1 type-C (USB3.0/PowerDelivery/DisplayPort) 1 x HDMI 1 x LAN (RJ45) Port 1 x DC-in	3 x USB 3.1 Gen1 1 x USB 3.1 type-C (USB3.0/PowerDelivery/DisplayPort) 1 x HDMI 1 x LAN (RJ45) Port 1 x DC-in	3 x USB 3.1 Gen1 1 x USB 3.1 type-C (USB3.0/PowerDelivery/DisplayPort) 1 x HDMI 1 x LAN (RJ45) Port 1 x DC-in	2 x USB 3.1 Gen2 Type-A 4 x DisplayPort 1.4 2 x Thunderbolt® 3 1 x RJ45 LAN 1 x Line-out 2 x DC-in *Video outputs depend on graphics cards
Dimension	148.5 x 148.5 x 40 mm		148.5 x 148.5 x 40 mm (Chromebox)	176 x 176 x 365 mm
Weight	1 Kg		1 Kg (Chromebox)	5.2 KG

Mini PC PB Series

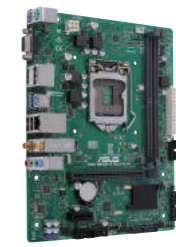| Series	Mini PC PB Series				
Model	PB40	PB50	PB60	PB60G	PB60V
OS	Windows®10 Pro, Windows®10 Home, or W/O OS	Windows®10 Pro, Windows®10 Home, or W/O OS	Windows®10 Pro, Windows®10 Home, or W/O OS	Windows®10 Pro, Windows®10 Home, Windows®10 S, or W/O OS	Windows®10 Pro, Windows®10 Home, Windows®10 S, or W/O OS
CPU	Intel® Celeron® N4000 Processor	AMD Ryzen ™ 7-3550H Processor AMD Ryzen ™ 5-3550H Processor	Intel® Core™ i7-8700T/i5-8400T/i3-8100T Series Processors Intel® Pentium® Gold G5400T Processors	Intel® Core™ i7-8700T/ i5-8500T/ i5-8400T/ i3-8100T Processors Intel® Pentium® Gold G5400T Processors Intel® Celeron® G4900T Processor	Intel® Core™ i7-8700T/i5-8500TProcessors
Chipset	Integrated	Integrated	Intel® B360	Intel® B360	Intel® Q370 chipset
Graphics	Integrated - Intel® UHD Graphics 600	Integrated - AMD Radeon™ RX Vega 10 Graphics (3750H) Integrated - AMD Radeon™ Vega 8 Graphics (3550H)	Integrated - Intel® UHD Graphics 630	Graphics module-NVIDIA® Quadro P620/P1000	Integrated-Intel® UHD Graphics
Memory	2 x SO-DIMM DDR4 2400MHz (up to 8GB)	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)	2 x SO-DIMM DDR4-2400MHz memory (up to 32GB)
Storage	32G/64G eMMC 1 x SATA 6Gb/s; 2.5" 500G/1TB HDD	1 x M.2 2280; 128G/256G SATA/PCIE G3X4 1 x SATA 6Gb/s; 2.5" 7200RPM 500GB/1TB HDD	1 x M.2 2280; 128G/256G SATA/PCIE G3X4 1 x SATA 6Gb/s; 2.5" 7200RPM 500GB/1TB HDD	1 x M.2 2280; 128G/256G SATA/PCIE G3X4 1 x SATA 6Gb/s; 2.5" 7200RPM 500GB/1TB HDD	1 x M.2 2280; 128G/256G SATA/PCIE G3X4 1 x SATA 6Gb/s; 2.5" 7200RPM 500GB/1TB HDD
Wireless Network	Intel Single Band 802.11ac + BT V5.0, Intel Dual Band 802.11ac + BT V5.0	Dual Band 802.11ac + BT V4.2	Intel Single Band 802.11ac + BT V5.0, Intel Dual Band 802.11ac + BT V5.0	Intel Single Band 802.11ac + BT V5.0, Intel Dual Band 802.11ac + BT V5.0	Intel Single Band 802.11ac + BT V5.0, Intel Dual Band 802.11ac + BT V5.0
LAN *Only Intel branding been	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps
Optical Drive	N/A	8X Super Multi DVD Drive (optional)	8X Super Multi DVD Drive (optional)	8X Super Multi DVD Drive (optional)	8X Super Multi DVD Drive (optional)
Integrated Speaker	Optional	Optional	Optional	Optional	Optional
Card Reader	N/A	N/A	N/A	N/A	N/A
TPM	fTPM or TPM chip optional	fTPM or TPM chip optional	fTPM or TPM chip optional	fTPM or TPM chip optional	fTPM or TPM chip optional
Interface — Front I/O	1 x USB 3.1 Gen1 Type-C 4 x USB 3.1 Gen1 (1 w/ quick charge) 1 x Mic in Jack 1 x Audio Jack	4 x USB3.1 Gen1 (1 w/ fast charging) 1 x USB3.1 Gen2 Type-C 1 x Audio jack 1 x Microphone jack	1 x USB 3.1 Gen1 Type C 2 x USB 3.1 Gen2 2 x USB 3.1 Gen1 (1 w/ quick charge) 1 x Mic in Jack 1 x Audio Jack	1 x USB 3.1 Gen1 Type C 2 x USB 3.1 Gen2 2 x USB 3.1 Gen1 (1 w/ quick charge) 1 x Mic in Jack 1 x Audio Jack	1 x USB 3.1 Gen1 Type C 4 x USB 3.1 Gen2 (1 w/ quick charge) 1 x Mic in jack 1 x Audio Jack
Interface — Side I/O	N/A	N/A	N/A	N/A	N/A
Interface — Rear I/O	1 x USB 3.1 Gen1 1 x USB 2.0 1 x DisplayPort 1.2 (Support Ultra HD 4K) 1 x COM 1 x Configurable Port (option: VGA/COM/DP 1.2/HDMI 2.0) 1 x LAN (RJ45) Port 1 x DC-in 1 x Kensington lock slot 1 x External Wi-Fi antenna jack	2 x USB3.1 Gen2 1 x HDMI 2.0 1 x Display Port 1.4 1 x Configurable Port(options: Display Port 1.4/COM/VGA) 1 x RJ45 LAN 1 x Kensington Lock 1 x DC-in	1 x DisplayPort 1.2 1 x HDMI 2.0 1 x Configurable Port (option: VGA/COM/DP 1.2/HDMI 2.0) 1 x USB 3.1 Gen2 2 x USB 2.0 1 x RJ45 LAN 1 x Kensington Lock 1 x DC-in 1 x External Wi-Fi antenna jack	1 x DisplayPort 1.2 1 x HDMI 2.0 1 x Configurable Port (option: VGA/COM/DP) 1 x USB 3.1 Gen2 2 x USB 2.0 1 x RJ45 LAN 1 x Kensington Lock 1 x DC-in 4 x mini DP (on Graphics module)	1 x DisplayPort 1.2 1 x HDMI 2.0 1 x Configurable Port (option: VGA/COM/DP) 1 x USB 3.1 Gen2 2 x USB 2.0 1 x RJ45 LAN 1 x Kensington Lock 1 x DC-in
Dimension	175 x 175 x 34.2 mm	175 x 175 x 34.2 mm	175 x 175 x 34.2 mm	175 x 175 x 70.2 mm	175 x 175 x 34.2 mm
Weight	1.02KG	1.19 KG	1.19 KG	1.59 KG	1.19 KG

Series	Mini PC PN Series		
Model	PN30	PN40	PN60
OS	Windows®10 Pro, Windows®10 Home, Windows®10 S, or W/O OS	Windows®10 Pro, Windows®10 Home, or W/O OS	Windows®10 Pro, Windows®10 Home, or W/O OS
CPU	AMD Carrizo-L E2-7015	Intel® Celeron® N4000 Processor, Intel® Celeron® N4100 Processor, Intel® Celeron® J4005 Processor, Intel® Pentium® Silver N5000 Processor, Intel® Pentium® Silver J5005 Processor,	Intel® Core™ i7-8550U Processor, Intel® Core™ i5-8250U Processor, Intel® Core™ i3-8130U Processor, Intel® Pentium® 4417U Processor, Intel® Celeron® 3867U Processor,
Chipset	Integrated	Integrated	Integrated
Graphics	Integrated-Radeon™ R2 Graphics	Integrated-Intel® UHD Graphics	Integrated - Intel® HD Graphics
Memory	2 x SO-DIMM , DDR3-1333/1600 MHz memory (2GB to 8GB)	2 x SO-DIMM , DDR4-2400MHz memory (2GB to 8GB)	2 x SO-DIMM DDR4 2400 MHz (up to 32GB - 16G *2)
Storage	eMMC onboard (up to 64GB) 1 x M.2 2280 connector, SATA & PCIe 2x4 SSD; 128GB/256/512GB* 1 x SATA 6Gb/s;2.5" 500GB/1TB HDD *M.2 connector support may vary from model	eMMC onboard (32GB / 64GB) 1 x M.2 2280 connector, SATA & PCIe SSD; 128GB/ 256GB* 1 x SATA 6Gb/s;2.5" 500GB/1TB HDD *M.2 connector support may vary from model	1 x SATA 6Gb/s for 2.5" 500G/1TB HDD 1 x M.2 2242/2280, SATA & PCIe SSD; 128G/256G SSD; 2280 16G Intel® Optane™ memory *Support NVMe
Wireless Network	Intel Single Band 802.11ac + BT V4.2, Intel Dual Band 802.11ac + BT V4.2	Intel® Single Band 802.11ac + BT V5, or Intel® Dual Band 802.11ac + BT V5	Intel® Dual Band 802.11ac+BT4.2
LAN *Only Intel branding been	Intel® LAN, 10/100/1000 Mbps	10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps
Optical Drive	N/A	N/A	N/A
Integrated Speaker	N/A	N/A	N/A
Card Reader	N/A	N/A	N/A
TPM	fTPM 2.0 or TPM 2.0 chip (Optional)	fTPM 2.0 or TPM 2.0 chip (Optional)	fTPM 2.0 or TPM 2.0 chip (Optional)
Interface — Front I/O	1 x USB 3.1 Gen1 Type C 1 x USB 3.1 Gen1 Type-A (quick charge) 1 x USB 2.0 1 x Audio Jack(1 Combo)	1 x USB 3.1 Gen1 Type C 1 x USB 3.1 Gen1 1 x USB 2.0 (Quick charge) 1 x Audio Jack(1 Combo)	1 x USB3.1 Gen1 Type-C (Quick charge) 1 x USB 3.1 Gen1 1 x USB 2.0 1 x Audio(Combo)
Interface — Side I/O	1 x Kensington Lock	1 x Kensington Lock	1 x Kensington Lock
Interface — Rear I/O	1 x USB 3.1 Gen1 Type-C(Support Display Port 1.2) 2 x USB 3.1 Gen1 1 x HDMI 1 x VGA (COM / DP / Lan) port optional * 1 x RJ45 LAN 1 x DC-in (optional ports are confirmed SKU before configuring)	2 x USB 3.1 Gen1 1 x HDMI 1 x Mini-DisplayPort ++ 1.2 1 x Configurable port (options: COM, VGA,)* 1 x RJ45 LAN 1 x DC-in *Optional ports are confirmed SKU before configuring	1 x USB3.1 Gen1 Type-C (Support Display Port 1.2) 2 x USB 3.1 Gen1 1 x HDMI 1 x HDMI 2.0 1 x Configurable port (options: COM, VGA, HDMI 2.0, DisplayPort 1.2, Intel LAN)* 1 x RJ45 LAN Port 1 x DC-in *Optional ports are confirmed SKU before configuring
Dimension	115 x 115 x 49 mm	115 x 115 x 49 mm	115 x 115 x 49 mm
Weight	0.7 KG	0.7 KG	0.7 KG

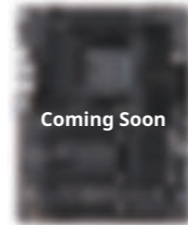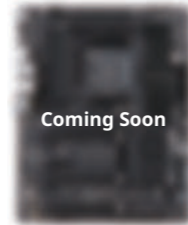| Series	Mini PC PN Series		
Model	PN61	PN61V	PN62
OS	Windows®10 Pro, Windows®10 Home, or W/O OS	Windows®10 Pro, Windows®10 Home, or W/O OS	Windows®10 Pro, Windows®10 Home, or W/O OS
CPU	Intel® Core™ i7-8565U Processor, Intel® Core™ i5-8265U Processor, Intel® Core™ i3-8145U Processor, Intel® Celeron® 4305U Processor,	Intel® Core™ i7-8665U Processor, Intel® Core™ i5-8665U Processor, Intel® vPro™ Support	Intel® Core™ Processor,
Chipset	Integrated	Integrated	Integrated
Graphics	Integrated - Intel® UHD Graphics	Integrated - Intel® UHD Graphics	Integrated - Intel® HD Graphics
Memory	2 x SO-DIMM DDR4 2400 MHz (up to 32GB - 16G *2)	2 x SO-DIMM DDR4 2400 MHz (up to 32GB - 16G *2)	2 x SO-DIMM DDR4 2400 MHz (up to 32GB - 16G *2)
Storage	1 x SATA 6Gb/s for 2.5" 500G/1TB HDD 1 x M.2 2242/2280, SATA & PCIe SSD; 128G/256G SSD; 2280 16G Intel® Optane™ memory *Support NVMe	1 x SATA 6Gb/s for 2.5" 500G/1TB HDD 1 x M.2 2242/2280, SATA & PCIe SSD; 128G/256G SSD; 2280 16G Intel® Optane™ memory *Support NVMe	1 x SATA 6Gb/s for 2.5" 500G/1TB HDD 1 x M.2 2242/2280, SATA & PCIe SSD; 128G/256G SSD; 2280 16G Intel® Optane™ memory *Support NVMe
Wireless Network	Intel® Dual Band 802.11ac + BT V5	Intel® Dual Band 802.11ac + BT V5	Intel® Dual Band 802.11ax + BT
LAN *Only Intel branding been	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps	Intel® LAN, 10/100/1000 Mbps
Optical Drive	N/A	N/A	N/A
Integrated Speaker	N/A	N/A	N/A
Card Reader	N/A	N/A	N/A
TPM	fTPM 2.0	TPM 2.0 chip	fTPM 2.0
Interface — Front I/O	1 x USB3.1 Gen2 Type-C (Qick charge) 1 x USB 3.1 Gen1 1 x Audio(Combo)	1 x USB3.1 Gen2 Type-C (Qick charge) 1 x USB 3.1 Gen1 1 x Audio(Combo)	1 x USB3.1 Gen2 Type-C (Qick charge) 1 x USB 3.1 Gen1 1 x Audio(Combo) 2 x Microphone Array 1 x IR receiver 1 x 4 in 1 Card reader
Interface — Side I/O	1 x Kensington Lock	1 x Kensington Lock	1 x Kensington Lock
Interface — Rear I/O	1 x USB3.1 Gen1 Type-C (Support Display Port 1.2) 2 x USB 3.1 Gen1 1 x HDMI 1 x HDMI 2.0 1 x Configurable Port (options: Thunderbolt 3/ Display Port 1.2/COM/ VGA/ Intel LAN)* 1 x RJ45 LAN Port 1 x DC-in *Optional ports are confirmed SKU before configuring	1 x USB3.1 Gen1 Type-C (Support Display Port 1.2) 2 x USB 3.1 Gen1 1 x HDMI 1 x HDMI 2.0 1 x Configurable Port (options: Thunderbolt 3/ Display Port 1.2/COM/ VGA/ Intel LAN)* 1 x RJ45 LAN Port 1 x DC-in *Optional ports are confirmed SKU before configuring	1 x USB3.1 Gen1 Type-C (Support Display Port) 2 x USB 3.1 Gen1 1 x HDMI 1 x Configurable Port (options: Thunderbolt 3/ Display Port 1.2/COM/ VGA/ Intel LAN)* 1 x RJ45 LAN Port 1 x DC-in *Optional ports are confirmed SKU before configuring
Dimension	115 x 115 x 49 mm	115 x 115 x 49 mm	115 x 115 x 49 mm
Weight	0.7 KG	0.7 KG	0.7 KG

*Actual product specification may vary

Model		EX-B365M-V5	EX-B365M-V	H81I-G	PRIME H310T2 R2.0 D3	H310T-A R2.0	PRIME A320I-K
CPU		LGA 1151	LGA 1151	LGA 1150	LGA 1151	LGA 1151	AM4
Chipset		B365	B365	H81	H310	H310	A320
Memory	Memory Slots / Maximum	2 x DIMM, DDR4, max.32GB	2 x DIMM, DDR4, max.32GB	2 x SO-DIMM, DDR3, max.16GB	2 x DIMM, DDR3, max.32GB	2 x SO-DIMM, DDR4, max.32GB	2 x DIMM, DDR4, max 32GB
	Memory Frequency (MHz)	2666/2400/2133	2666/2400/2133	1600/1333/1066	2666/2400/2133	2666/2400/2133	3600/3466/3400
Graphics		HDMI / D-Sub	HDMI	2 x D-Sub	HDMI / D-Sub	HDMI / LVDS / D-Sub	HDMI / DisplayPort
Expansion slots	PCIe 3.0 x16	1	1	N/A	N/A	N/A	1
	PCIe x1	2	2	N/A	N/A	N/A	N/A
	PCI	N/A	N/A	N/A	N/A	N/A	N/A
Storage & Connectivity	SATA 6Gb/s ports	4	4	2	2	2	4
	M.2	1 x M Key up to 2280 (SATA & PCIe mode)	N/A	N/A	1 x M Key up to 2280 (SATA & PCIe mode), 1 x E key up to 2230	1 x M Key up to 2280, 1 x M key up to 2230	1 x M Key up to 2280 (SATA & PCIe mode)
	USB 3.1GEN 2	N/A	N/A	N/A	N/A	N/A	N/A
	USB 3.0GEN 1	6 (2@F, 4@B)	6 (2@F, 4@B)	6@B	4@B	4 (2@F, 2@B)	6 (2@F, 4@B)
	USB 2.0	6 (4@F, 2@B)	6 (4@F, 2@B)	8@B	3@F	6 (4@F, 2@B)	6 (4@F, 2@B)
LAN		Realtek® 8111H	Realtek® 8111H	2 x Realtek® 8111H	Realtek® 8111H	Realtek® 8111H	Realtek® 8111H
Audio Codec		Realtek® ALC887	Realtek® ALC887	Realtek ALC887	Realtek® ALC887	Realtek® ALC887	Realtek® ALC887
DC in Power		N/A	N/A	N/A	19V	12V/19V	N/A
DC in Power Connector Dimension		N/A	N/A	N/A	10/9.6mm	7.4/5.1mm	N/A
COM		N/A	N/A	12 headers	1 port	N/A	N/A
TPM		N/A	N/A	N/A	1 header	1 header	1 header
LPT		N/A	N/A	N/A	N/A	N/A	N/A
RGB Header		N/A	N/A	N/A	N/A	N/A	2 RGB headers
Form Factor		Micro-ATX 22.6cm x 17.8cm	Micro-ATX 22.6cm x 17.8cm	Mini-ITX 17 cm x 17 cm	Thin Mini-ITX 17 cm x 17 cm	Thin Mini-ITX 17.0cm x 17.0cm	Mini-ITX 17 cm x 17 cm
ASUS Unique Features		Luminous anti-moisture coating; USBGuard	Luminous anti-moisture coating; USBGuard	UEFI BIOS	UEFI BIOS	UEFI BIOS	ASUS AURA Sync ASUS SafeSlot Core ASUS 5X protection III UEFI BIOS
Environment	Operating Temperature	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C
	Operating Humidity	0%-85%	0%-85%	0%-85%	0%-85%	0%-85%	0%-85%

Model		PRIME H310I-PLUS R2.0	PRIME H310M-C R2.0	PRIME B365M-C	PRIME H310M2 R2.0/FPT II	Pro H310M-R R2.0 Wi-Fi	Pro A320M-R Wi-Fi
CPU		LGA 1151	LGA1151	LGA 1151	LGA 1151	LGA 1151	AM4
Chipset		H310	H310	B365	H310	H310	A320
Memory	Memory Slots / Maximum	2 x DIMM, DDR4, max 32GB	2 x DIMM, Max. 32GB	4 x DIMM, DDR4, Max. 64GB	4 x DIMM, DDR4, Max. 64GB	4 x DIMM, DDR4, Max. 32GB	2 x DIMM, DDR4, Max. 32GB
	Memory Frequency (MHz)	2666/2400/2133	2666/2400/2133	2666/2400/2133	2666/2400/2133	2666/2400/2133	2666/2400/2133
Graphics		HDMI / DVI-D / D-Sub	DVI-D / D-Sub	2*DP / HDMI / D-Sub	DP / HDMI / DVI-D / D-Sub	DP / HDMI / D-Sub	DP / HDMI / D-Sub
Expansion slots	PCIe 3.0 x16	1	1	1	3(PCIe x16_2,3 max @ x1)	1	1
	PCIe x1	N/A	2	2	N/A	1	1
	PCI	N/A	1	1	1	N/A	N/A
Storage & Connectivity	SATA 6Gb/s ports	4	4	6	4	4	4
	M.2	1 x M Key up to 2280, 1 x E Key up to 2230	1 x M Key up to 2280	2 x M Key up to 2280	1 x M Key up to 2280	N/A	N/A
	USB 3.1GEN 2	N/A	N/A	N/A	N/A	1 (Type C)	1 (Type C)
	USB 3.0GEN 1	4 (2@F, 2@B)	4 (2@F, 2@B)	8 (4@B, 4@F)	4 (2@F, 1A1C@B)	4 (2@F, 2@B)	6 (2@F, 4@B)
	USB 2.0	4 (2@F, 2@B)	6 (2@F, 4@B)	6 (2@B, 4@F)	8 (6@F, 2@B)	4 (2@F, 2@B)	4 (2@F, 2@B)
LAN		Realtek® RTL8111H	Realtek® RTL8111H	Intel® I219-V	Realtek® RTL8111H	Realtek® RTL8111H	Realtek® RTL8111H
Audio Codec		Realtek® ALC887	Realtek® ALC887	Realtek® ALC887	Realtek® ALC887	Realtek® ALC887	Realtek® ALC887
DC in Power		N/A	N/A	N/A	N/A	N/A	N/A
DC in Power Connector Dimension		N/A	N/A	N/A	N/A	N/A	N/A
COM		1 header	1*port 1* header	2 headers	1*port 1* header	1 header	1 header
TPM		1 header	1 header	1 header	TPM 2.0 IC on board	1 SPI header	1 SPI header
LPT		N/A	1 header	1 header	1 header	N/A	N/A
RGB Header		N/A	N/A	N/A	N/A	N/A	N/A
Form Factor		Mini-ITX 17.0cm x 17.0cm	Micro-ATX 24.4 cm x 19.3 cm	Micro-ATX 24.4 cm x 24.4 cm	Micro-ATX 24.4 cm x 22.6 cm	Micro-ATX 22.6 cm x 18.03 cm	Micro-ATX 22.9 cm x 20.3 cm
ASUS Unique Features		Self-recovering BIOS	Self Recovering BIOS Event Log LPC Debug header	ASUS Self-Recovering BIOS	UEFI BIOS	Self Recovering BIOS Event Log LPC Debug header	Self Recovering BIOS Event Log LPC Debug header
Environment	Operating Temperature	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C
	Operating Humidity	0%-85%	0%-85%	0%-85%	0%-85%	0%-85%	0%-85%

Coming Soon

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ASUS AIoT Product Longevity Supply Table

Brand		Pro Workstation Motherboard		
Model		Pro WS X570-ACE	Pro WS C422-ACE	Pro WS C246-ACE
CPU		AMD AM4 Socket for 3rd and 2nd Gen AMD Ryzen™/ 2nd and 1st Gen AMD Ryzen™ with Radeon™ Vega Graphics Processors	Intel® Xeon™ W-Series Processors Family (4-core above) on LGA 2066 Socket	Socket 1151 for Intel® Xeon® processor E-2100 family, Intel® Pentium™ processors, Intel® Celeron™ processors, Intel® Core™ i7/i5/i3 processors
Chipset		X570	C422	C246
Memory	Memory Slots / Maximum	4 x DIMM, DDR4 Max. 64GB	8 x DIMM, DDR4 Max. 512GB	4 x DIMM, DDR4 Max. 64GB
	Memory Frequency (MHz)	2666 / 2400 / 2133	2666 / 2400 / 2133	2666 / 2400 / 2133
Graphics		HDMI / DisplayPort	N/A	HDMI / DisplayPort
Expansion slots	PCIe 4.0 x16	2 from CPU(3rd Gen AMD Ryzen™) 1 from PCH	N/A	N/A
	PCIe 3.0 x16	1 from PCH	3	4
	PCIe x1	N/A	N/A	2
Storage & Connectivity	SATA 6Gb/s ports	4	6	4
	M.2	1 x M Key up to 22110(SATA & PCIe x4 mode) 2 x M Key up to 2280(PCIe x4 mode)	1 x M Key up to 22110(SATA & PCIe x4 mode) 2 x M Key up to 22110(PCIe x4 mode)	1 x M Key up to 22110(SATA & PCIe x2 mode) 1 x M Key up to 22110(PCIe x4 mode)
	U.2	1	2	1
	USB 3.1 GEN 2	5@Back (4A1C)	4@Back (3A1C)	4@Back (3A1C)
	USB 3.0 GEN 1	6 (4F,2B)	8 (4F,4B)	6 (2F,4B)
	USB 2.0	4@Front	6 (4F,2B)	4@Front
LAN		Realtek® 8117 Intel® I211-AT	Realtek® 8117 Intel® I219-LM	Intel® I210-AT Intel® I219-LM
Audio Code		Realtek® S1220A	Realtek® S1220A	Realtek® S1220A
COM		1	N/A	1
TPM		N/A	N/A	N/A
Node		1	1	1
Form Factor		ATX 30.5cm x 24.4cm	ATX 30.5cm x 24.4cm	ATX 30.5cm x 24.4cm
ASUS Unique Features		ASUS Control Center; ASUS SaftSlot Core; ASUS 5X Protection III, ASUS Fan Xpert 4, Out-of-band Management, UEFI BIOS	ASUS Control Center; ASUS SaftSlot; ASUS 5X Protection III, ASUS Fan Xpert 4, Out-of-band Management, UEFI BIOS	ASUS Control Center; ASUS SaftSlot Core; ASUS 5X Protection III, ASUS Fan Xpert 4, UEFI BIOS
Environment	Operating Temperature	0°C~50°C	0°C~50°C	0°C~50°C
	Operating Humidity	0%-85%	0%-85%	0%-85%

Type	Model Name	Chipset/CPU	First Shipment	Estimated EOL Schedule	Extended EOL Schedule*
Industrial MB	H310I-IM-A R2.0	Coffee Lake (H310)	2019/Q2	2026/Q2	2029/Q2
Intelligent Edge Computer	PE200U	Whisky Lake (i7-8565U/i5-8265U/i3-8145U)	sample available from 2019/3	2026/Q3	2029/Q3
	PE200S	Apollo Lake-I (X7-E3950/X5-E3940/X5-E3930)	sample available from 2019/5	2026/Q4	2029/Q4
	PE100A	NXP ARM Cortex-A53 i.MX 8	sample available from 2019/7	2026/Q4	2029/Q4
Embedded Single Board Computer	C785S-IM-AA	Whisky Lake (i7-8565U)	sample available from 2019/3	2026/Q3	2029/Q3
	C582S-IM-AA	Whisky Lake (i5-8265U)	sample available from 2019/3	2026/Q3	2029/Q3
	C381S-IM-AA	Whisky Lake (i3-8145U)	sample available from 2019/3	2026/Q3	2029/Q3
	E395S-IM-AA	Apollo Lake-I (X7-E3950)	sample available from 2019/5	2026/Q4	2029/Q4
	E394S-IM-AA	Apollo Lake-I (X5-E3940)	sample available from 2019/5	2026/Q4	2029/Q4
	E393S-IM-AA	Apollo Lake-I (X5-E3930)	sample available from 2019/5	2026/Q4	2029/Q4
	IMX8P-IM-A	NXP ARM Cortex-A53 i.MX 8	sample available from 2019/7	2026/Q4	2029/Q4
ARM-based Solution	Tinker Board S	Rockchip RK3288	2018/Q1	2025/Q1	2028/Q1
	Tinker Board/2GB	Rockchip RK3288	2017/Q1	2024/Q1	2027/Q1

Edge Computer

Industrial
Motherboard & SBC

Tinker Series

Mini PC

Business
Motherboard

Pro Workstation
Motherboard