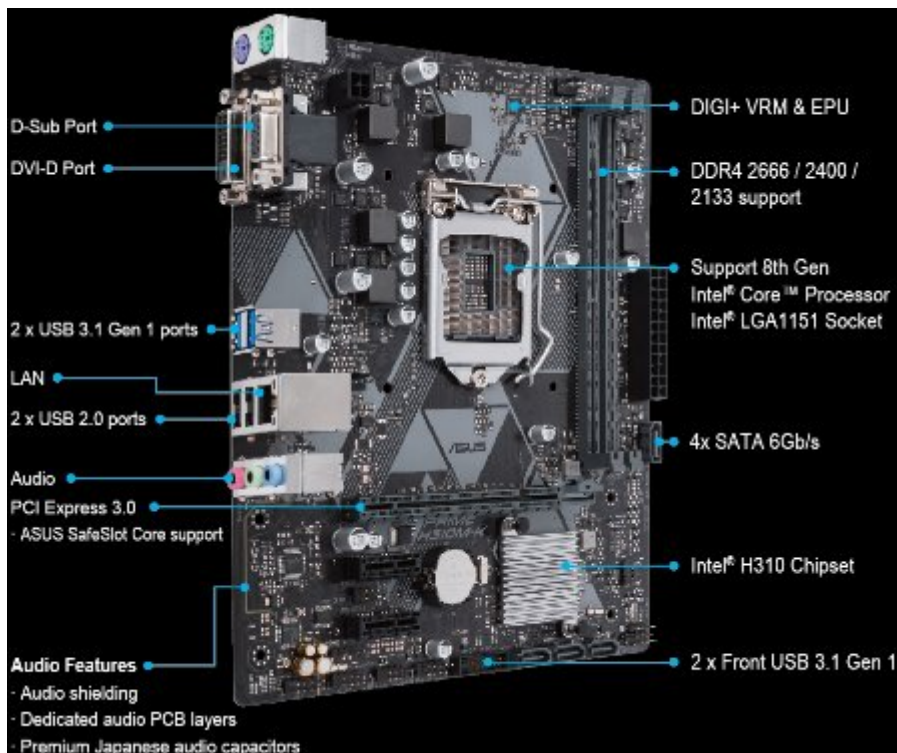


ASUS PRIME H310M-K MotherBoard

Intel LGA-1151 mATX motherboard, DDR4 2666MHz, SATA 6Gbps and USB 3.1 Gen 1



- ASUS OptiMem: Careful routing of traces and vias to preserve signal integrity for improved memory stability.
- Fan Xpert: Flexible controls for ultimate cooling and quietness, plus GPU-temperature sensing for cooler gaming.
- 5X Protection III: Multiple hardware safeguards for all-round protection.



PRIME

ASUS Prime 300 Series motherboards provide the solid foundation needed for your first build, plus flexibility to grow with your ambitions. We've melded all the good stuff that's packed into the latest 8th Generation Intel® Core™ processors with essential ASUS design and engineering, so you benefit from industry-leading technologies — including automated system tuning, comprehensive cooling controls, and immersive onboard audio. When you build with an ASUS Prime 300 Series motherboard, you build smart, easy and affordably.

Table of Content

ASUS PRIME H310M-K MotherBoard..... 1

Intel LGA-1151 mATX motherboard, DDR4 2666MHz, SATA 6Gbps
and USB 3.1 Gen 1..... 1

Tune It Your Way 5



Improved DDR4 Stability 5

Cooler by Design..... 7

Media Acclaimed UEFI BIOS 7

Q-Fan Control 7

Search Functions 8

EZ Mode..... 8

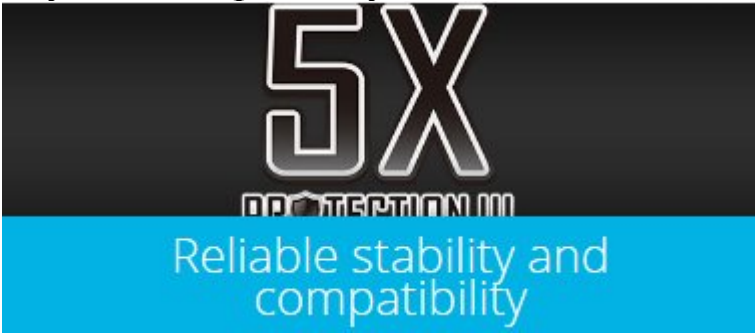
Advanced Mode 9

Ultrafast Connectivity 9



USB 3.1 Gen 1 from Panel Connector 9

Reliable Stability and Compatibility 10



Built to Last 10

| | |
|---|----|
| 5x Protection III | 10 |
| 520+ DDR4 Compatibility | 10 |
| 1000+ Compatible Devices and Components | 10 |
| 8000+ Validation Hours | 10 |
| Safe Slot Core | 11 |
| LANGuard | 12 |
| Overvoltage Protection | 12 |
| DIGI+ VRM | 12 |
| DRAM Overcurrent Protection | 13 |
| Stainless-Steel Back I/O Panel | 13 |
| ECD Guards | 13 |
| 1000+ | 13 |
| 8000+ | 13 |

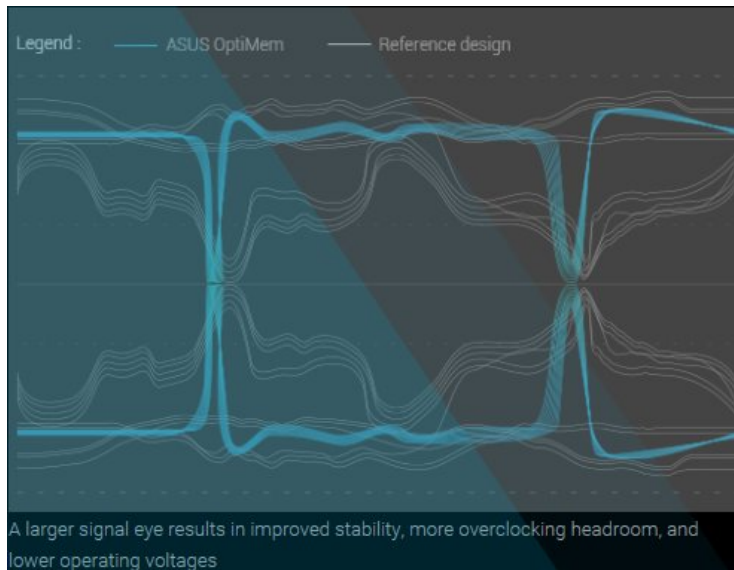


| | |
|---|----|
| Outstanding Audio | 15 |
| Combined Onboard Features Deliver Elevated Audio | 15 |
| Audio Shielding | 15 |
| Separate Layer for Left and Right Tracks | 15 |
| Premium Japanese Audio Capacitors | 16 |
| Intel H310 Chipset | 16 |
| Ready for Socket 1151 for 9th/8th Gen Intel® Core™, Pentium® Gold and Celeron® Processors | 16 |

Tune It Your Way

Improved DDR4 Stability

ASUS OptiMem preserves memory signal integrity by routing traces and vias to the optimal PCB layer, and our T-Topology trace layout ensures time-aligned signaling by balancing trace lengths between memory slots. These enhancements allow the Prime 300 Series to support a wide range of dual and quad-DIMM memory kits, while providing your rig with the stability it needs to deal with any type of workload - whether you're gaming or running intensive applications



ASUS OptiMem advantage:

ASUS OptiMem **53.12 V*ps**

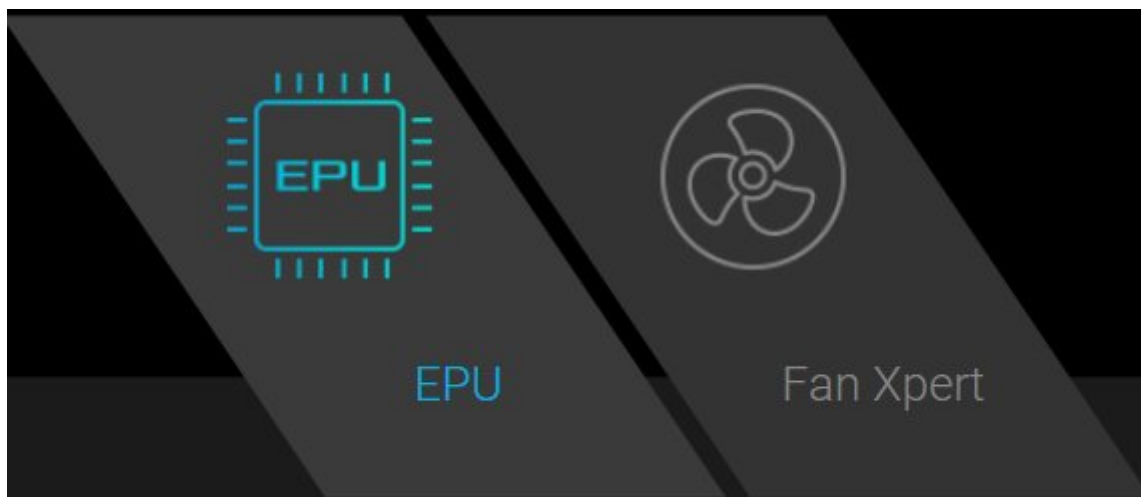
Reference design **72.51 V*ps**

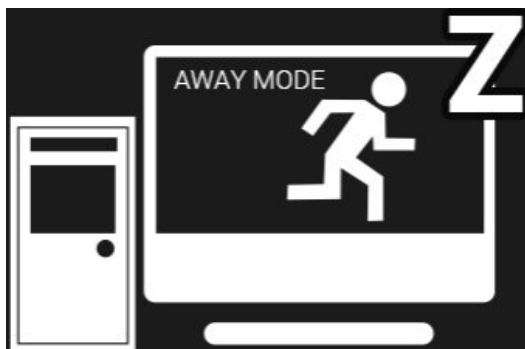
26%
Reduction
in crosstalk

ASUS OptiMem benefits:

- Improved memory stability and compatibility
- Allows lower memory latencies at equivalent voltages
- Improved memory frequency margin

Tested by using Synopsys HSPICE simulation software





With the Energy Processing Unit (EPU) you'll enjoy system-wide power savings. The EPU automatically optimizes power consumption and maximizes savings with Away mode — a smart setting that creates an extreme energy-saving scenario by shutting down unused I/O controllers.

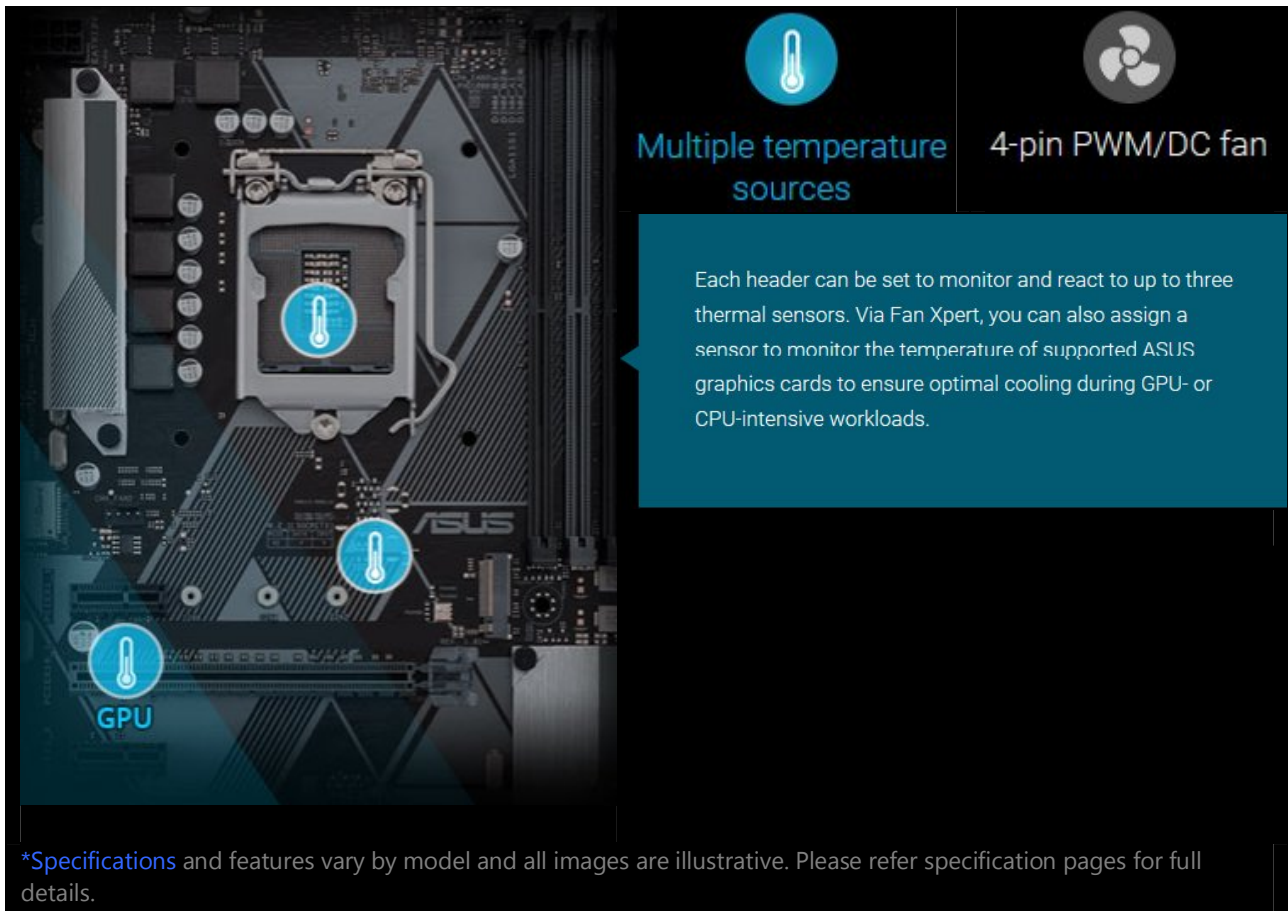
Flexible cooling controls

Prime 300 Series motherboards offer comprehensive control over system fans, via the included Fan Expert software. Auto-Tuning mode intelligently configures all parameters with a single click.



Cooler by Design

Prime 300 Series features the most comprehensive cooling controls ever, configurable via ASUS Fan Xpert software or the UEFI BIOS.

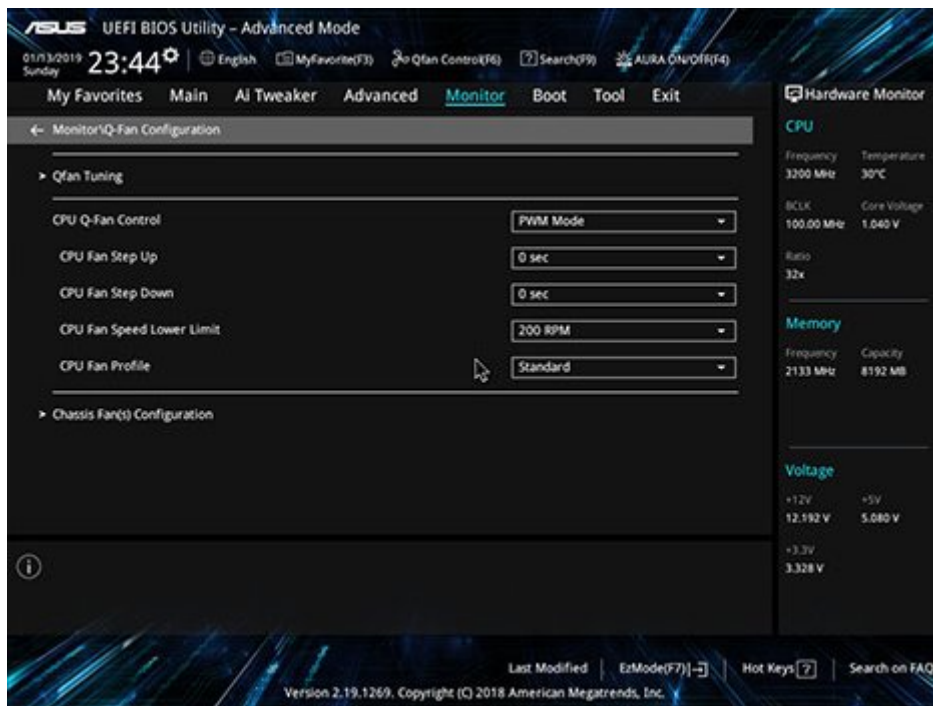


Media Acclaimed UEFI BIOS

The UEFI BIOS is an early waypoint on any PC-building journey, and Prime 300 Series has one of the best in the business.

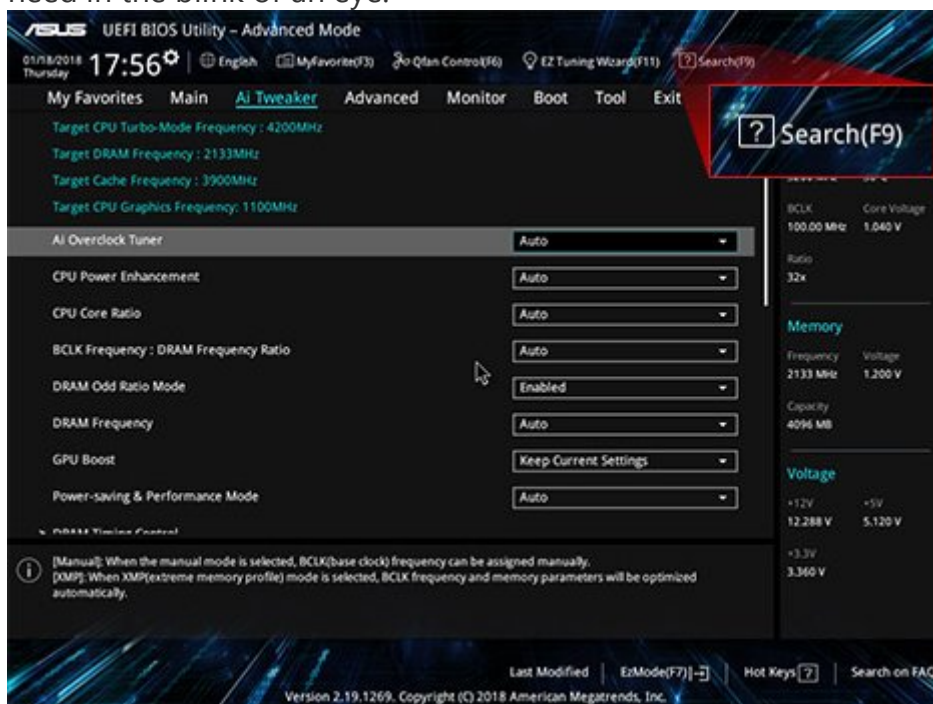
Q-Fan Control

Can configure the fan's operating speed manually, or use the easy pre-configured fan profiles to select Standard, Silent, Turbo or Full Speed modes, plus automatic switch to full speed if the temperature hits 75°C.



Search Functions

When you're ready for a deeper dive, Advanced mode enables full control over every aspect of the motherboard — with a built-in Search function to find the setting you need in the blink of an eye.



EZ Mode

Intuitive graphical fan control Fine-tune individual fans simply by dragging a curve with the mouse.

SATA Information: Display SATA port details that help you easily recognize drives.

Fast Clock Adjustment: Use mouse controls to change the time and date.

Advanced Mode

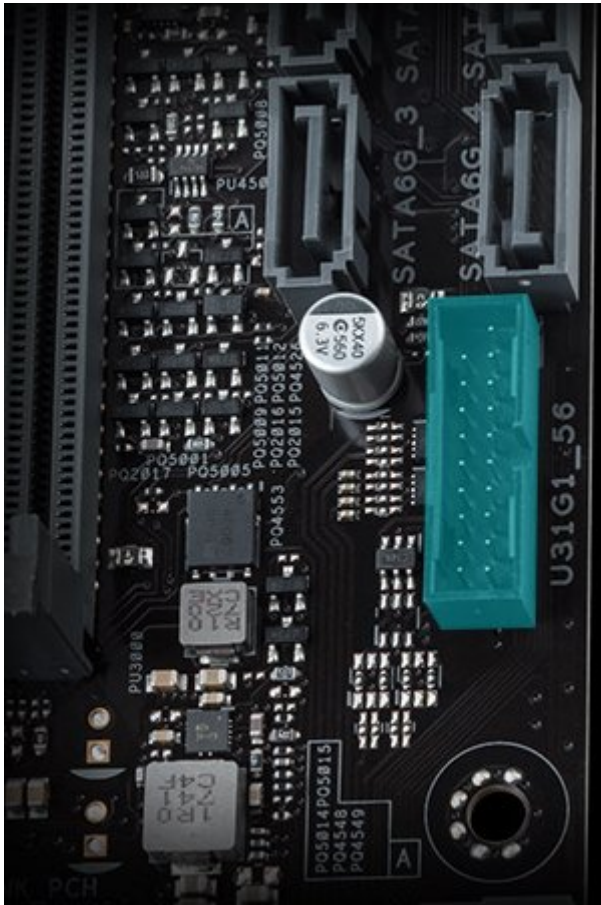
My Favorites Quickly find tuning options and add preferred tools to the list.

User Profile Save BIOS settings for migration to new BIOS version or system.

SATA Port Renaming: Rename SATA ports for easy identification.

Ultrafast Connectivity

USB 3.1 Gen 1 from Panel Connector



Future-proof connectivity

USB 3.1 Gen 1 is right where you need it, with two super-speed headers for the front panel. Experience data-transfer speeds up to 10X faster than USB 2.0 with instant plug-and-play connectivity, and avoid back-breaking contortions in the hunt for hard-to-reach rear ports.

* Specifications and features vary by model, and all images are illustrative. Please refer specification pages for full details.

Reliable Stability and Compatibility

Built to Last

ASUS is the world's leading motherboard brand. Our motherboards are extensively tested for compatibility with more than 1,000 components and devices, and each new model undergoes a minimum of 8,000 hours of strict validation — offering the peace of mind of knowing that your ASUS motherboard is fit for all environments and applications. Choosing ASUS is an assurance of trouble-free DIY experiences.

5x Protection III

Hardware safeguards to ensure long-term durability.



520+ DDR4 Compatibility

Industry-leading DDR4 memory compatibility for best flexibility and reassurance.



1000+ Compatible Devices and Components

Compatibility with a range of CPUs, memory modules, graphics cards and more.



The superior compatibility of Prime 300 Series is evidenced by our extensive list of supported devices — which includes thousands of compatible components — and our Qualified Vendor List (QVL) that identifies memory compatibility. It all adds up to more choices for worry-free PC-building experiences.

8000+ Validation Hours

Extensive testing with latest components for enhanced reliability, compatibility and safety.



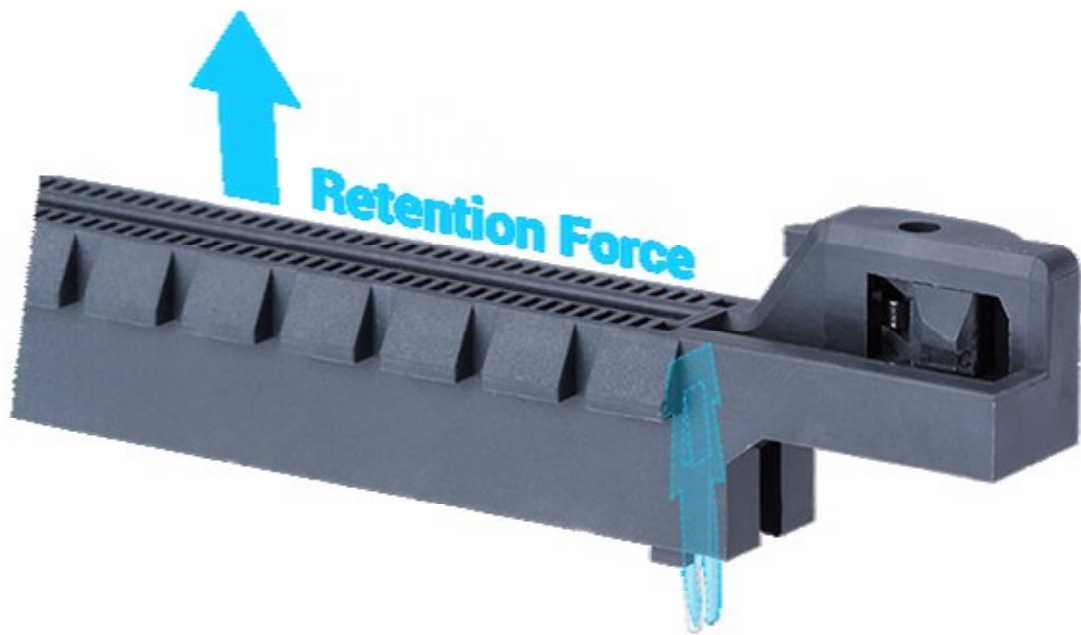
5X PROTECTION III

Prime 300 Series motherboards are engineered with industry-leading 5X Protection III, employing the finest components, excellent circuit design and exacting standards to guarantee the quality and long-term durability of your investment. That means exceptional protection and stability for your build — thanks to decades of engineering experience from the world's leading motherboard brand.

Safe Slot Core

Fortified PCIe Slot Prevents Damage

SafeSlot Core is the ASUS-exclusive PCIe[®] slot. Featuring a fortified design that's anchored to the motherboard by a special hook, SafeSlot Core provides 1.6X-stronger retention and 1.3X-greater shearing resistance than standard expansion slots.



Our Prime 300 Series motherboards also have strengthened solder points around both the PCIe and DIMM pins.



LANGuard

Pumped-up throughput, 2.5X-higher surge tolerance

ASUS LANGuard is hardware-level networking protection that employs signal-coupling technology and premium anti-EMI surface-mounted capacitors to ensure a more reliable connection and better



Overvoltage Protection

World-class circuit-protecting power design

An exclusive circuit design with built-in voltage regulators protects your motherboard from damage caused by unexpected high-level voltages from unstable or inferior power supplies.



DIGI+ VRM

Precision control for stable power

ASUS-exclusive DIGI+ VRM intelligently delivers power to the processor based on real-time demands, reducing energy waste and improving system stability.

throughput.



DRAM Overcurrent Protection

Short-circuit damage prevention

Onboard resettable fuses prevent overcurrent and short-circuit damage. This extends beyond I/O ports to DRAM — so it provides a safeguard to protect the lifespan of your system and connected devices.



Stainless-Steel Back I/O Panel

3X corrosion-resistance for greater durability

Corrosion-resistant stainless-steel back I/O panels bonded with chromium oxide assure a lifespan that's 3X longer than ordinary panels.



ECD Guards

Electrostatic discharge protection

ASUS ESD Guards prolong the life of components while preventing damage from electrostatic discharge, providing protection for up to +/- 10kV of air discharge and +/- 6kV of contact discharge.

1000+

Compatible devices and components

The superior compatibility of Prime 300 Series is evidenced by our extensive list of supported devices — which includes thousands of compatible components — and our Qualified Vendor List (QVL) that identifies memory compatibility. It all adds up to more choices for worry-free PC-building experiences.

8000+

VALIDATION HOURS

ASUS motherboards offer superb endurance. We verify this by subjecting every board to more than 8,000 hours of stringent tests. A barrage of burn-in, environmental, compatibility, software and safety tests confirm that our motherboards are exceptionally robust. It also shows that ASUS reliability surpasses industry standards, ensuring that every component is designed to function flawlessly in any environment.



Temperature and humidity tests

Ensures components withstand extreme conditions.



Thermal measurement tests

Ensures that the system remains cool and stable under the heaviest loads.



Insertion tests

Every port and connector is put through repeated installation cycles.



Aging tests

Up to 48-hour aging test ensures reliability.



Power-consumption tests

Delivers world-class energy efficiency.



Temperature and DC margin tests

Ensures that the motherboard is capable of coping with voltages fluctuations caused by varying temperatures.

**-40°C
/85°C**

Thermal-shock tests

Ensures ability to survive temperature changes during transportation.



Non-operation shock tests

Built to withstand jolts that may occur during shipping.



Burn-in tests

Every component is checked to ensure flawless operation.



Installation tests

Connector placement is double-checked to ensure hassle-free installation.



Drop tests

Drop tests from various heights ensure durability.



Salt and spray tests

Tested for I/O reliability, prolonged lifespan and rust-resistance.

Outstanding Audio

Combined Onboard Features Deliver Elevated Audio

Intelligent design and premium hardware create audio quality unlike anything you've ever experienced!

Audio Shielding

Separates analog/digital signal domains, significantly reducing multi-lateral interference.

Separate Layer for Left and Right Tracks

Ensures minimal crosstalk between audio paths.

Premium Japanese Audio Capacitors

Premium parts provide an immersive sound signature, with exceptional fidelity.

* Specifications and features vary by model, and all images are illustrative. Please refer specification pages for full details.

Intel H310 Chipset



Intel H310 chipset

The Intel® H310 is a single-chipset design that supports 8th Generation Intel® Core™ LGA1151 processors. It provides improved performance by utilizing serial point-to-point links, allowing increased bandwidth and stability. Additionally, the H310 chipset provides a maximum of four USB 3.1 Gen 1 ports, four SATA 6Gbps ports, and 10Gbps M.2 and PCIe 2.0 lane-speed support, for faster data retrieval. Intel H310 also supports integrated-graphics, so you'll enjoy the very latest in graphics performance.

Ready for Socket 1151 for 9th/8th Gen Intel® Core™, Pentium® Gold and Celeron® Processors



Ready for Socket 1151 for 9th / 8th Gen Intel® Core™, Pentium® Gold and Celeron® processors

This motherboard supports Socket 1151 for 9th Gen and 8th Gen Intel® Core™, Pentium® Gold and Celeron® processors, with integrated graphics, memory and PCI Express controllers to support onboard graphics output with dedicated chipsets, dual-channel (4-DIMM) DDR4 memory and 16 PCI Express 3.0/2.0 lanes for great performance.

- Products certified by the Federal Communications Commission and Industry Canada will be distributed in the United States and Canada. Please visit the ASUS USA and ASUS Canada websites for information about locally available products.
- All specifications are subject to change without notice. Please check with your supplier for exact offers. Products may not be available in all markets.
- Specifications and features vary by model, and all images are illustrative. Please refer to specification pages for full details.
- PCB color and bundled software versions are subject to change without notice.
- Brand and product names mentioned are trademarks of their respective companies.
- Specifications and features vary by model, and all images are illustrative. Please refer specification pages for full details.
- *Precise specifications and features vary by model . Please refer to the specification page
- The product (electrical , electronic equipment, Mercury-containing button cell battery) should not be placed in municipal waste. Check local regulations for disposal of electronic products.
- The use of trademark symbol (TM, ®) appears on this website means that the word text, trademarks, logos or slogans, is being used as trademark under common laws protection and/or registered as Trademark in U.S. and/or other country/region.