

ASUS TUF GAMING B650-PLUS AMD B650 Socket AM5 ATX

Model: 90MB1BY0-M0EAY0

Manufacturer: ASUS

EAN: 4711081912767

Product Code: 1613259

R4,747

ASUS TUF GAMING B650-PLUS takes all the essential elements of the latest AMD Ryzen 7000-series processors and combines them with game-ready features and proven durability. Engineered with military-grade components, an upgraded power solution and a comprehensive cooling system, this motherboard goes beyond expectations with rock-solid and stable performance for marathon gaming. TUF GAMING motherboards also undergo rigorous endurance testing to ensure that they can handle conditions where others may fail. Aesthetically, this model incorporates rugged off-black and geometric design elements to reflect the dependability and stability that defines the TUF GAMING series.

INTELLIGENT CONTROL

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Comprehensive controls form the foundation of the ASUS TUF GAMING series. The TUF GAMING B650 motherboard packs flexible tools to tune every aspect of your system, enabling performance tweaks to perfectly match the way you work to maximize productivity.

CPU Performance Boost

AMD Precision Boost Overdrive(PBO) pushes the CPU current and voltage budget to opportunistically increase performance. By aggressively tuning the PBO parameters, AMD‘s algorithm can leverage the motherboard’s robust power solution to ramp up performance even higher.

All-Around Energy Efficiency

The Power Saving function contains several settings can easily optimize power consumption and maximize energy savings. You can enable a CPU power limit, darken Aura lighting, and set the fan profile to a power saving mode. You can also toggle the Power Saver plan that is built into Microsoft Windows.

UEFI BIOS

The renowned ASUS UEFI BIOS provides everything you need to configure, tweak and tune your system. It offers intelligently simplified options for PC DIY beginners and comprehensive features for seasoned veterans.

Armoury Crate

The ASUS-exclusive Armoury Crate centralizes easy control of supported gaming products. A single intuitive interface lets you customize RGB lighting for all compatible devices and link them to Aura Sync for unified illumination. It also offers information and control for a select and growing hardware ecosystem, with input device settings, Fan Xpert 4 and Two-Way AI Noise Cancelation. Armoury Crate even features product registration, and a news section to stay in touch with the gaming community.

ROCK-SOLID PERFORMANCE

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With upgraded power delivery and comprehensive cooling options to fuel AMD's latest CPUs, plus support for faster memory and storage, TUF GAMING B650 motherboards are the perfect foundation for your next high-core-count AMD battle rig.

Teamed Power Stages

12+2 power stages are each rated to handle 60 amperes, combining high-side and low-side MOSFETS and drivers into a single package to deliver power, efficiency and stable performance for all compatible AMD processors.

8+4 PIN ProCool Power Connectors

Compared to traditional power inputs, ASUS ProCool connectors are built to tight specifications to ensure full contact with PSU power cables. The resulting lower impedance helps prevent hotspots and connector failure.

TUF Components

TUF Chokes

Certified military-grade TUF chokes deliver rock-solid power to the CPU, improving system stability.

TUF Capacitors

The TUF 5K black metallic capacitors provide 52% wider temperature tolerance and a 2.5X-longer lifespan than standard motherboard capacitors.

Digi+ VRM

The integrated Digi+ voltage-regulator module (VRM) is one of the finest in the industry, optimized for ultra-smooth and ultra-clean power delivery to the CPU at all times.

DRAM Overclocking Performance

DDR5 OC 6400

Comprehensive memory tuning options are the cornerstone of TUF GAMING motherboards. With TUF

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GAMING B650 motherboards, you can extract all of the potential out of your DDR5 modules, whether they're from an extreme-speed kit or an entry-level set that would otherwise be locked.

PCIe 5.0 Support

TUF GAMING B650 motherboards also feature one PCIe 5.0 M.2 slot to enjoy the fastest data transfers of up to 128 Gbps*, and all M.2 slots support for NVMe RAID configurations to take advantage of the latest available speeds.

Cooler By Design

1. Enlarged VRM Heatsink

The extensive surface area of this heatsink covers the VRMs and chokes to improve heat dissipation.

2. Optimized M.2 Heatsink Design

All M.2 slots have dedicated heatsinks, keeping M.2 SSDs at optimal operating temperatures to ensure consistent performance and reliability.

Comprehensive Fan Controls

TUF GAMING B650 motherboards feature comprehensive fan controls that can be configured via Fan Xpert 4 utility in Armoury Crate or the award-winning ASUS UEFI BIOS.

Connectivity

TUF-GAMING B650 motherboards reach new heights of performance potential with the latest version of PCI Express, while an arsenal of USB ports includes three Type-C® connections, and Thunderbolt™ (USB4®) expands compatibility and bandwidth even further.

EASY PC DIY

The TUF GAMING line offers easy setup for all builders. The TUF GAMING Alliance ecosystem grants compatibility, while Armoury Crate has Fan Xpert 4, hardware info, Two-Way AI Noise Cancelation, RGB options and peripheral settings. This platform has intuitive tools to build and optimize dream rigs.

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Build With Confidence

TUF GAMING Alliance is a collaboration between ASUS and trusted PC component brands to ensure compatibility across a wide range of parts, such as PC cases, power supplies, CPU coolers, memory kits and more. With new partnerships and components being added regularly, the TUF GAMING Alliance will continue to grow even stronger.

Safeslot Core+ & SafeDIMM

SafeSlot Core+ is a reinforced metal sheath added to a PCIe slot to keep a card firmly installed. Meanwhile, strong ASUS SafeDIMM sheathes support and protect memory modules on select ASUS motherboards, empowering you to insert your modules with speed, accuracy and confidence.

ESD Guards

ESD Guards prolong the life of components while preventing damage from electrostatic discharge, providing protection for up to +/- 10 kV of air discharge and +/- 6 kV of contact discharge — greatly surpassing the respective industry standards of +/- 6 kV and +/- 4 kV. Surface-mounted TVS diodes in a dual in-line package help protect your PC from voltage spikes.

TUF LANGuard

TUF LANGuard is a military-grade innovation that integrates advanced signal-coupling technology and premium surface-mounted capacitors to improve throughput, protecting the motherboard from lightning strikes and static electricity.

Stainless Steel Back I/O Panel

TUF GAMING motherboards have a corrosion-resistant stainless steel back I/O panel bonded with chromium oxide to provide a lifespan that’s three times longer than traditional panels. With this protective feature, TUF GAMING motherboards passed 72-hour salt fog testing, while other brands only passed 24-hour testing.

M.2 Q-Latch

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The innovative Q-Latch makes it easy to install or remove an M.2 SSD without the need for specific tools. The design employs a simple locking mechanism to secure the M.2 SSD, neatly eliminating the need for screws.

Removable Captive Screws

Specialized M.2 slot screws reduce the risk of dropping or losing a screw somewhere in your case during M.2 heatsink removal.

Q-LED

The on-board Q-LED troubleshooting lights give PC builders a quick indicator to confirm that key components — CPU, RAM, graphics card, storage devices — are functioning normally during startup.

IMMERSIVE GAMING

TUF GAMING B650 motherboards provide a feature-packed high-performance gaming package, with ultrafast networking for smoother online gameplay, pristine audio with positional cues for FPS Gaming, and onboard RGB lighting that syncs with attached gear to personalize your gaming atmosphere.

2.5 Gb Ethernet

2.5 Gb on-board Ethernet kicks your LAN connection up a notch with a bandwidth improvement of up to 2.5X. Using your existing LAN cable, you can take advantage this networking upgrade to experience smoother, lag-free gaming, immediately stream high-resolution videos and enjoy faster file transfers.

Two-Way AI Noise Cancelation

This powerful ASUS-exclusive utility leverages a massive deep-learning database to reduce background noise from the microphone* and incoming audio while preserving voices. Distracting keyboard clatter, mouse clicks and other ambient noises are removed so you can hear and be heard with perfect clarity while gaming or during calls.

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*An audio splitter (3.5 mm audio jack Y-cable) is necessary when using a 3.5 mm headset.

Realtek 7.1 Surround Sound

The unique audio codec designed in close collaboration with Realtek for TUF GAMING B650 motherboards features an unprecedented 108 dB signal-to-noise ratio for the stereo line out and a 103dB SNR for the line in, providing pristine audio quality.

DTS Audio Processing

DTS® Audio Processing enhances gaming headset and speaker audio experiences by reducing distortion and by providing deeper bass, so games, movies and music sound better. It also allows you to customize audio settings.

Addressable Gen 2 RGB Header

Three addressable Gen 2 RGB headers will support up to 500 LEDs on Gen 2 RGB devices, empowering Aura Sync to automatically tailor lighting effects across your whole system. The new headers also offer full backward compatibility with existing Aura Sync gear.

THIS CHANGES EVERYTHING

FROM THIS NEW PLATFORM,
YOU CAN SEE THE FUTURE
Build your next rig with an AMD Ryzen™ 7000 Series processor and ASUS TUF GAMING motherboards to experience advanced performance. With up to 16 “Zen 4” cores and 32 threads, boost clocks of up to 5.7GHz, and 80MB cache, the AMD Ryzen™ 7000 Series keeps you ahead of the game.1
You’ll also gain access to new features for gamers with AMD Socket AM5, from the speed of DDR5 memory to the increased bandwidth of PCIe® 5.0. AMD Ryzen™ 7000 Series processors and AMD socket AM5 motherboards are unlocked for overclocking to personalize your experience. Gain even more performance when you overclock your DDR5 memory with AMD EXPO™ technology.2

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