**ComX Computers**
Product Specification Sheet

# PRIME B450M-A

Asus Prime B450M-A AMD B450 Chipset AMD Ryzen AM4 Socket Motherboard

## Product Overview

Asus Prime B450M-A, AM4 RYZEN 2ND GEN, B450, 4XDDR4, PCIE (1X16, 2X1), HDMI/DVI/VGA, 1XM.2, 4XSATA, M-ATX




## Specifications

**Features:**

**Prime**
ASUS Prime B450 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 AMD Ryzen™ 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 B450 Series motherboard, you build smart, easy and affordably.

**Cooler by design**
Prime B450 Series features the most comprehensive cooling controls ever, configurable via ASUS Fan Xpert software or the UEFI BIOS.

**Multiple temperature sources**
Each header can be set to monitor and react to up to three thermal sensors. Via Fan Xpert, you can also assign a sensor to monitor the temperature of supported ASUS graphics cards to ensure optimal cooling during GPU- or CPU-intensive workloads.

**4-pin PWM/DC fan**
Each onboard CHA FAN header supports PWM and DC mode.

**Make your memory faster**
Featuring an array of trace layout tweaks that improve memory stability, PRIME B450 Series provides a potent foundation for your build. With comprehensive support for the full gamut of Ryzen memory configurations - from entry-level to performance-oriented - PRIME B450 Series is a versatile all-rounder that can work or play.

**Media-acclaimed UEFI BIOS**
The UEFI BIOS is an early waypoint on any PC-building journey, and Prime B450 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 degreesC.

**Search Function**
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**

- EZ Tuning Wizard - Quickly apply a CPU overclock to improve system performance, or configure a RAID array for faster data retrieval and backups
- 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.

**Ultimate-speed 10Gbps with USB 3.1 Gen 2 onboard**
With backward-compatible USB 3.1 Gen 2 Type-A™, you'll experience ultimate connection flexibility and blazing data-transfer speeds of up to 10Gbps - twice as fast as standard USB 3.1 Gen 1.

**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.

**Speed up with onboard M.2**
With x4 PCI Express® 3.0/2.0 bandwidth, M.2 supports up to 32Gbps data-transfer speeds. It's the perfect choice for an operating system or application drive, providing fast access to data.

**Affordable acceleration for any hard drive**
AMD StoreMI technology is a software utility that accelerates any drive for better system responsiveness with reduced startup and software load times. It combines SSD performance with the affordability and capacity of an HDD by automatically moving frequently accessed data to dedicated SSD storage.

**Native M.2/NVMe PCIe RAID Support for Lightning Fast Storage Speed!**
Not satisfied with single-storage device read/write speeds? Then join the fast lane and build a RAID 0 array using two PCIe storage drives to enjoy data transfers at lightning speeds.

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

**8000+ validation hours**
Extensive testing with latest components for enhanced reliability, compatibility and safety.

**5X Protection III**
Prime B450 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.

**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.

**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 throughput.

**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.

**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.

**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.

**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.

**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.

**Compatible devices and components**
The superior compatibility of Prime B450 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.

**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.

**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.

**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-made audio capacitors**
Premium parts provide an immersive sound signature, with exceptional fidelity.

**Outshine the competition**
A well-tuned enthusiast system deserves a matching aesthetic. ASUS Aura Sync offers full lighting connected via the motherboard's RGB header, with a variety of functional presets for external LED strips.* And it can all be synced with an ever-growing portfolio of Aura-capable ASUS hardware.

**LED-illuminated control for PCIe slot and trace paths**
Built-in LED lighting options illuminate your build in a variety of eye-catching styles.

**Complete your immersion**
Prime B450 series isn't just VR ready - it goes way beyond. The ASUS Beyond VR Ready marque means that Prime B450 series has been tested with loads of class-leading components to ensure that your productivity, gaming and entertainment needs are tuned for maximum performance. ASUS Beyond VR Ready opens up a new way to configure and build your dream system with total confidence.

**AM4 socket for AMD Ryzen™ 2nd Generation / Ryzen™ with Radeon™ VEGA Graphics / Ryzen™ 1st Generation Processors**
The AMD Ryzen™ processor is based on the innovative Zen core architecture and features up to eight cores and Radeon™ Vega integrated graphics. Together with dual-channel DDR4 memory, native 5Gbps USB 3.1 Gen 1 and 16 PCI Express® 3.0/2.0 lanes, these AMD AM4-socket processors deliver superb computing performance.

**AMD B450 chipset**
The AMD B450 chipset delivers high performance and flexibility with the latest AMD® AM4-socket Ryzen™ processors. It also offers AMD StoreMI storage acceleration technology and provides two 10Gbps USB 3.1 Gen2 ports, two USB 3.1 Gen1 ports, and four 6Gbps SATA ports for faster data retrieval.

**Specifications:**

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| Specifications | |
|---|---|
| **Product Code** | PRIME B450M-A |
| **CPU** | AMD AM4 Socket AMD Ryzen 2nd Generation/Ryzen with Radeon Vega Graphics/Ryzen 1st Generation Processors |
| **Chipset** | AMD B450 |
| **Memory** | AMD Ryzen 2nd Generation/ Ryzen with Radeon Vega Graphics/ Ryzen 1st Generation Processors |
| | 4 x DIMM, Max. 64GB, DDR4 3200(O.C.) / 3000(O.C.) / 2800(O.C.) / 2666 / 2400 / 2133 MHz Un-buffered Memory |
| | Dual Channel Memory Architecture |
| | ECC Memory (ECC mode) support varies by CPU. |
| **Graphic** | Integrated in the AMD Ryzen with Radeon Vega Graphics Processors |
| | Multi-VGA output support : HDMI/DVI-D/D-Sub ports |
| | - Supports HDMI 2.0b with maximum resolution of 4096 x 2160 @ 60 Hz |
| | - Supports DVI-D with max. resolution 1920 x 1200 @ 60 Hz |
| | - Supports D-sub with max. resolution 1920 x 1200 @ 60 Hz |

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| **Expansion Slots** | AMD Ryzen 2nd Generation/ Ryzen 1st Generation Processors |
| | 1 x PCIe 3.0/2.0 x16 (x16 mode) |
| | AMD Ryzen with Radeon Vega Graphics Processor |
| | 1 x PCIe 3.0/2.0 x16 (x8 mode) |
| | AMD B450 chipset |
| | 2 x PCIe 2.0 x1 |
| **Storage** | AMD B450 chipset : |
| | 4 x SATA 6Gb/s port(s) |
| | Support Raid 0, 1, 10 |
| | AMD Ryzen 2nd Generation/ Ryzen with Radeon Vega Graphics/ Ryzen 1st Generation Processors : |
| | 2 x SATA 6Gb/s port(s) |
| | Support Raid 0, 1, 10 |
| | AMD Ryzen 2nd Generation/ Ryzen with Radeon Vega Graphics/ Ryzen 1st Generation Processors : |
| | 1 x M.2 Socket 3, with M key, type 2242/2260/2280/22110 storage devices support (SATA & PCIE 3.0 x 4 mode) |
| **LAN** | Realtek RTL8111H, 1 x Gigabit LAN Controller(s) |
| | ASUS LAN Guard |
| **Audio** | Realtek ALC887 8-Channel High Definition Audio CODEC |
| | Audio Feature : |
| | - LED-illuminated design - Brighten up your build with the gorgeous illuminated audio trace path. |
| | - Audio Shielding: Ensures precision analog/digital separation and greatly reduced multi-lateral interference |
| | - Dedicated audio PCB layers: Separate layers for left and right channels to guard the quality of the sensitive audio signals |
| | - Premium Japanese audio capacitors: Provide warm, natural and immersive sound with exceptional clarity and fidelity |
| | * Choose the chassis with HD audio module in front panel to support 8-channel audio output. |
| **USB Ports** | AMD Ryzen 2nd Generation/ Ryzen with Radeon Vega Graphics/ Ryzen 1st Generation : |
| | 4 x USB 3.1 Gen 1 port(s) (4 at back panel, blue) |
| | AMD B450 chipset : |
| | 2 x USB 3.1 Gen 2 port(s) (2 at back panel, ) |
| | AMD B450 chipset : |
| | 2 x USB 3.1 Gen 1 port(s) (2 at mid-board) |
| | AMD B450 chipset : |
| | 4 x USB 2.0/1.1 port(s) (4 at mid-board) |

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| **Special Features** | ASUS 5X Protection III : |
| | - ASUS SafeSlot Core: Fortified PCIe Slot prevents damage |
| | - ASUS LANGuard: Protects against LAN surges, lightning strikes and static-electricity discharges! |
| | - ASUS Overvoltage Protection: World-class circuit-protecting power design |
| | - ASUS Stainless-Steel Back I/O: 3X corrosion-resistance for greater durability! |
| | - ASUS DIGI+ VRM: 6 Phase digital power design |
| | ASUS Exclusive Features : |
| | - AI Suite 3 |
| | - Ai Charger |
| | ASUS Quiet Thermal Solution : |
| | - Stylish Fanless Design Heat-sink solution |
| | - ASUS Fan Xpert 2+ |
| | ASUS EZ DIY : |
| | - ASUS CrashFree BIOS 3 |
| | - ASUS EZ Flash 3 |
| | - ASUS UEFI BIOS EZ Mode |
| | - Multi-language BIOS |
| | ASUS Q-Design : |
| | - ASUS Q-Slot |
| | - ASUS Q-DIMM |
| **Back I/O Ports** | 1 x PS/2 keyboard (purple) |
| | 1 x PS/2 mouse (green) |
| | 1 x DVI-D |
| | 1 x D-Sub |
| | 1 x HDMI |
| | 1 x LAN (RJ45) port(s) |
| | 2 x USB 3.1 Gen 2 |
| | 4 x USB 3.1 Gen 1 |
| | 3 x Audio jack(s) |

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| **Internal I/O Ports** | 1 x Aura RGB Strip Header |
| | 1 x USB 3.1 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.1 Gen 1 port(s) (19-pin) |
| | 2 x USB 2.0 connector(s) support(s) additional 4 USB 2.0 port(s) |
| | 1 x M.2 Socket 3 with M key, type 2242/2260/2280/22110 storage devices support (SATA & PCIE 3.0 x 4 mode) |
| | 1 x TPM header |
| | 1 x COM port(s) connector(s) |
| | 6 x SATA 6Gb/s connector(s) |
| | 1 x CPU Fan connector(s) (1 x 4 -pin) |
| | 2 x Chassis Fan connector(s) (2 x 4 -pin) |
| | 1 x S/PDIF out header(s) |
| | 1 x 24-pin EATX Power connector(s) |
| | 1 x 8-pin ATX 12V Power connector(s) |
| | 1 x Front panel audio connector(s) (AAFP) |
| | 1 x System panel(s) |
| | 1 x Clear CMOS jumper(s) |
| | 1 x Speaker connector |
| **Accessories** | User's manual |
| | I/O Shield |
| | 2 x SATA 6Gb/s cable(s) |
| | 1 x M.2 Screw Package |
| | 1 x Supporting DVD |
| **BIOS** | 128 Mb Flash ROM, UEFI AMI BIOS, PnP, SM BIOS 3.1, ACPI 6.1, Multi-language BIOS, ASUS EZ Flash 3, ASUS CrashFree BIOS 3, F3 My Favorite, Last Modified log, F12 PrintScreen, ASUS DRAM SPD (Serial Presence Detect) memory information, F6 Qfan Control |
| **Operating System** | Windows 10 64-bit |
| **Form Factor** | mATX Form Factor |
| | 9.6 inch x 9.5 inch ( 24.4 cm x 24 cm ) |
| **Note** | 1*Support NVMe PCIe RAID. |
| | 2*The M.2 Socket shares bandwidth with the SATA_5/6 ports, and therefore the SATA_5/6 ports cannot be used when an M.2 device is installed. |

## Product Information Online

For the latest product information, availability and purchasing details, please visit the product page:

**Product page:**
**https://www.comx-computers.co.za/PRIME-B450M-A-Asus-Prime-B450M-A-AMD-B450-Chipset-AMD-Ryzen-AM4-Socket-Motherboard-p-205451.php**

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