B450NH Motherboard

- Supports AMD Ryzen CPU / APU
- AMD B450 single chip architecture
- Supports 2-DIMM DDR4-1866/2133/2400/2667/2933(OC)/3200(OC)/3600(OC)/4000(OC) up to 64G maximum capacity
- Realtek Gigabit LAN
- Supports USB 3.2 Gen1
- Supports PCIe M.2
- Supports HDMI 4K resolution

Specifcation	
CPU SUPPORT	Supports AMD AM4 Socket for 3rd, 2nd and 1st Gen Ryzen/2nd and 1st Gen Ryzen with Radeon Vega Graphics/Athlon with Radeon Vega Graphics Processors
MEMORY	Supports Dual Channel DDR4 1866/ 2133/ 2400/ 2667 Supports Dual Channel DDR4 2933(OC)/ 3200(OC)/ 3600(OC)/ 4000(OC) 2 x DDR4 DIMM Memory Slot, Max. Supports up to 64 GB Memory Each DIMM supports non-ECC 8/ 16/ 32 GB DDR4 module * DDR4 - 2667 only for Ryzen CPU. * Please refer to www.biostar.com.tw for Memory support list.
INTEGRATED VIDEO	By CPU model Supports DX12 Supports HDCP
STORAGE	4 x SATA III Connector (6Gb/s) : Supports AHCI & RAID 0, 1, 10 1 x M.2 (M Key) Socket: Supports M.2 Type 2260/ 2280 SSD module Supports PCIe 3.0 x 4 (32Gb/s) - NVMe/ AHCI SSD Supports SATA III (6.0Gb/s) SSD * M.2 (M Key) Socket : The Birstol Ridge and Raven Ridge 2 CPU is only support SATA SSD.
LAN	Realtek RTL8111H 10/ 100/ 1000 Mb/s auto negotiation, Half / Full duplex capability
AUDIO CODEC	ALC887 7.1 Channels, High Definition Audio
USB	6 x USB 3.2 (Gen1) ports (4 on rear I/Os and 2 via internal header) 4 x USB 2.0 ports (2 on rear I/Os and 2 via internal header)
EXPANSION SLOT	1x PCIe 3.0 x 16 Slot: Supports PCIe 3.0 x 16 mode with AMD Ryzen™ processors. Supports PCIe 3.0 x 8 mode with AMD Ryzen™ with Radeon Vega Graphics processors. * According to different CPUs will have different speeds.

REAR I/O	1 x PS/2 Mouse/ Keyboard Port 1 x HDMI Port 1 x VGA Port 1 x LAN port 4 x USB 3.2 (Gen1) Ports 2 x USB 2.0 Ports 3 x Audio Jack
INTERNAL I/O	4 x SATA III 6.0Gb/s Connectors 1 x USB 2.0 Header (each header supports 2 USB 2.0 ports) 1 x USB 3.2 (Gen1) Header (each header supports 2 USB 3.2 (Gen1) ports) 1 x 4-Pin Power Connector 1 x 24-Pin Power Connector 1 x CPU Fan Connector 1 x System Fan Connector 1 x Front Panel Header 1 x Front Audio Header 1 x Clear CMOS Header 1 x Internal Stereo Speaker Header 1 x COM Port Header 1 x S/PDIF out Connector
H/W MONITORING	CPU / System Temperature Monitoring CPU / System Fan Monitoring Smart / Manual CPU Fan Control CPU/DDR Voltage Monitoring
DIMENSION	Mini ITX Form Factor Dimension: 17cm x 17cm (W x L)
OS SUPPORT	Supports Windows 7(64it)/ 10(64bit) / 11(64bit) ※Biostar reserves the right to add or remove support for any OS with or without notice.
BUNDLE SOFTWARE	BullGuard
ACCESSORIES	2 x SATA Cable 1 x I/O Shield 1 x DVD Driver 1 x Quick Guide
FEATURES	BIO-FLASHER PCIe M.2 32Gb/s

OVERVIEW

AMD SOCKET AM4 B450	**AMD B450 chipset** AMD B450 is the high-end chipset for overclockers and tweakers who need robust platforms. This chip provides the ultimate low-level control to its users and delivers ultimate graphics card bandwidth.
HD AUDIO	**HD Audio** Provides high quality sound with minimal loss of audio fidelity.
Hi-Fi GROUND	**Hi-Fi Ground** BIOSTAR Hi-Fi Ground (Golden Line) is noise-blocking multi-layer PCB design to isolates analog audio signals from digital sources. Unique PCB layout is ideal for exceptional clarity and high fidelity sound.

	HDMI 4K2K The new 4K2K resolution enables high-definition image display with four times the resolution of full HD, 4K2K display is faithfully express bright, highly detailed content that fills the entire screen with lifelike images. Connectivity with PCs via a single HDMI cable for displaying 4K2K data.
	DX12 DirectX 12 introduces the next version of Direct3D, the graphics API at the heart of DirectX. Direct3D is one of the most critical pieces of a game or game engine, and we've redesigned it to be faster and more efficient than ever before. Direct3D 12 enables richer scenes, more objects, and full utilization of modern GPU hardware.
	Integrated HDMI with HDCP Onboard HDMI connector allows full video & audio support. It has industry-leading high definition video quality.
	PCIe M.2 PCIe M.2 32Gb/s delivers the highest bandwidth and lower latency. It is 3 times faster compared with PCIe M.2 10Gb/s.
	PCIe 3.0 PCIe 3.0 is the ubiquitous and general-purpose PCI Express I/O standard. At 8GT/s bit rate, the interconnect performance bandwidth is doubled over PCIe 2.0, while preserving compatibility with software and mechanical interfaces.
	SATAIII 6Gbps SATAIII 6Gbps provides a higher bandwidth to retrieve and transfer HD media. With this super speed data transfer, SATAIII allows an incredible data boost which is 2x faster than the SATA II.
	Dual DDR4 The primary advantages of DDR4 over DDR3, include higher module density, lower voltage requirements, coupled with higher data transfer rate.
	USB 3.2 Gen1 Type-A USB 3.2 Gen1 delivers a compelling performance boosts and can be used to connect multiple devices without worrying about compatibility. It is capable of data transfer speeds up to 5Gbps and backwards compatible with all existing USB products.
	ESD Protection ESD (Electrostatic Discharge) is the major factor to destroy the PC by electrical overstress (EOS) condition. ESD occurred by PC users when touch any devices connect to a PC, which may result in damage to the motherboard or parts. ESD protection is designed to protect the motherboard and equipment from damage by EOS.

	OC / OV / OH Protection OC / OV / OH Protection design detects overvoltage conditions and prevents voltage surges from spreading in real time. It also actively cuts off the overvoltage supply to protect your system.
	BullGuard Internet Security (90 days FREE trial) BullGuard Internet Security comes with the broadest line-up of internet security features on the market, including: a cutting-edge dual Antivirus engine, Online Backup for your precious files, PC Tune Up to speed up your system, a Game Mode for a seamless gaming experience, Parental Control, Firewall, Safe Browsing and many more. Make the most of your digital life with Bullguard!
	UEFI BIOS Unified Extensible Firmware Interface (UEFI) is a brand new framework that provides a revolutionary interface. It is a modern clear and easy-to-use graphical user interface. The UEFI comes with a colorful easy-understand icons leads users into the setup layer directly.
	BIO-Flasher BIO-Flasher is a convenient BIOS update tool. Just launch this tool and put the BIOS on USB pen driver before entering the OS. You can update your BIOS with only a few clicks without preparing an additional floppy disk or other complicated flash utility.
	A.I FAN With A.I FAN users can ensure that their gaming PC can maintain its performance while staying cool. According to different cooling needs and usage scenarios, users can control speed modes. Allows users to have more customizability of fan modes and automatically detects different temperatures to make fan operate at defined speed for optimal cooling performance. Furthermore, A.I FAN support both PWM and DC voltage fans for more cooling options.
	HDMI The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

*The specification and pictures are subject to change without notice and the package contents may differ by area or your motherboard version!