H610MHD D5 Motherboard

- Supports 12th/ 13th/14th Generation Intel Core™ Processor
- Intel H610 single chip architecture
- Supports 2-DIMM DDR5 up to 128 GB Memory
- Supports PCIe 4.0
- Supports PCIe 3.0 M.2 (32Gb/s)
- Supports HDMI® 4K2K
- Supports USB 3.2 Gen1

Specifcation	
CPU SUPPORT	Support for 12th/13th/14th Generation Intel Core™ i9/ i7/ i5/ i3 processors and Intel Pentium processors/ Intel Celeron processors in the LGA1700 package * Please refer to www.biostar.com.tw for CPU support list.
MEMORY	12th Gen Intel Core CPU Supports Dual Channel DDR5 - 4800 MT/s, Non-ECC, Un-buffered ,Clocked Unbuffered DIMM (CUDIMM) Memory 14th/13th Gen Intel Core CPU Supports Dual Channel DDR5 - 5600 MT/s**, Non-ECC, Un-buffered ,Clocked Unbuffered DIMM (CUDIMM) Memory 2 x DDR5 DIMM Memory Slot, Max. Supports up to 128 GB Memory Support Intel® Extreme Memory Profile (XMP) memory modules * Please refer to www.biostar.com.tw for Memory support list. ** The actual frequency is may depend on CPU.
INTEGRATED VIDEO	By CPU model Supports DX12 Supports HDCP
STORAGE	Total supports 1 x M.2 socket and 4 x SATA III (6Gb/s) ports Intel H610 Chipset 1 x M.2 (M Key) Socket (M2_PCIEG3_32G_SATA): Supports M.2 Type 2240 /2260 /2280 SSD module Supports PCIe 3.0 x 4 (32Gb/s) - NVMe/ AHCI SSD & SATA SSD 4 x SATA III Connector (6Gb/s)
LAN	Intel I219V 10/ 100/ 1000 Mb/s auto negotiation, Half / Full duplex capability
AUDIO CODEC	Realtek ALC897 7.1 Channels, High Definition Audio
USB	4 x USB 3.2 (Gen1) ports (2 on rear I/Os and 2 via internal headers) 8 x USB 2.0 ports (4 on rear I/Os and 4 via internal headers)

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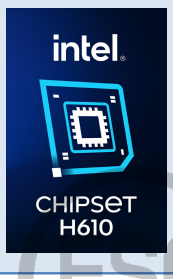
EXPANSION SLOT	Intel 12th/13th/14th Processors 1 x PCIe 4.0 x16 Slot Intel H610 Chipset 1 x PCIe 3.0 x1 Slot
REAR I/O	1 x PS/2 Keyboard/ Mouse Port 1 x HDMI® Port 1 x DVI Port 2 x USB 3.2 (Gen1) ports 4 x USB 2.0 ports 1 x LAN port 3 x Audio Jack
INTERNAL I/O	4 x SATA III Connectors (6Gb/s) 2 x USB 2.0 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 8-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 Speaker Header 1 x Clear CMOS Header 1 x COM Port Header 1 x TPM Header
H/W MONITORING	CPU / System Temperature Monitoring CPU / System Fan Monitoring Smart / Manual CPU Fan Control CPU/DDR Voltage Monitoring
DIMENSION	Micro ATX Form Factor Dimension: 20.8cm x 23.6cm (W x L)
OS SUPPORT	Supports Windows 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 1 x M.2 Anchor

OVERVIEW



Intel H610 chipset

With the Intel® H610 chipset and the 12th generation Intel® Core™ i9/ i7/ i5/ i3 processors and Intel® Pentium® processors, you will immediately be at the forefront of the battlefield, fueled by mind-blowing power and performance. From content creation to gaming, the Intel H610 chipset provides you with the power and performance you need.

HD Audio

Provides high quality sound with minimal loss of audio fidelity.

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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.

Hi-Fi AMP

The built-in amplifier can drive major high-end headphones with over 100dB loads and offer wide band-width, low noise, high slew rate and low distortion audio source from front panel I/O. Gaming enthusiasts can enjoy a fuller range of dynamic sound with crisper details and less distortion.

Smart Ear

Smart EAR is a windows-based audio utility which allows you to easily adjust system volume. With its user-friendly GUI, you can also increase or decrease impedance setting (Low/High Gain) to optimize your headphone performance. You can easily enjoy high-quality and awesome 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.

DVI

DVI is better than VGA for LCD displays since it is digital while VGA is analog. For LCD displays, the picture is digitized pixel per pixel. Through DVI, the panel gets data for each pixel, so the picture generated in the Graphics device matches the pixels on the panel itself.

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.

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.

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DDR5

DDR5 provides 50% higher bandwidth than DDR4, the frequency can be up to 6000+(OC)MHz, and can boasts the largest memory capacity available. It also supports dual channels and has lower power consumption, which can provide better performance and experience for overclockers.

PCIe 4.0

PCIe 4.0 is the ubiquitous and general-purpose PCI Express I/O standard. At 16GT/s bit rate, the interconnect performance bandwidth is doubled over PCIe 3.0, while preserving compatibility with software and mechanical interfaces.

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.

S-Hyper PWM

The S-Hyper PWM has DCR current sensing architecture and lossless characteristic, offering excellent precision in delivering stable power with 100% fixed voltage to ensure that critical components of the motherboard are under protected with the maximum performance and reliability.

Super Durable Solid Caps

The best quality solid state capacitors with ultra low ESR design, the Super Durable Solid Caps doubles the lifespan.

Super Durable Inductor

Super Durable Inductor brings the benefits of higher current capacity, lower energy loss and better power stability.

Moistureproof PCB

The PCB will be oxidizing easily by damp or absorbed moisture, and ionic migration or CAF (Conductive Anodic Filament) will be generated. Moistureproof PCB meets high density and high reliability requirements for moisture proof.

Super LAN Surge Protection

Super LAN Surge Protection, providing LAN port with more advanced antistatic protection capabilities by adding an integrated chip to strengthen electrical stability and prevent damage from lightning strikes and electrical surges. SLSP (Super LAN Surge Protection) series motherboard upgrades the existing system protection standards with maximum 4X protection comparing to other board makers.

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.

ASROCK
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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.

Debug LED

Debug LED helps you identify any issues going with your board or hardware. When error occurs, the corresponding LED lights will inform you on the status of your board or hardware to shorten the test time effectively.

A.I TP Control

A.I TP Control is designed for overclockers. It provides a user-friendly BIOS environment that overclockers can adjust the temperature setting to keep your PC safe and enjoy extreme overclocking performance.

Smart Update

Biostar Smart Update is a utility that can help users run online update. It can download the drivers for your motherboard from Biostar official website and install them automatically.

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!

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