

Version 1.0

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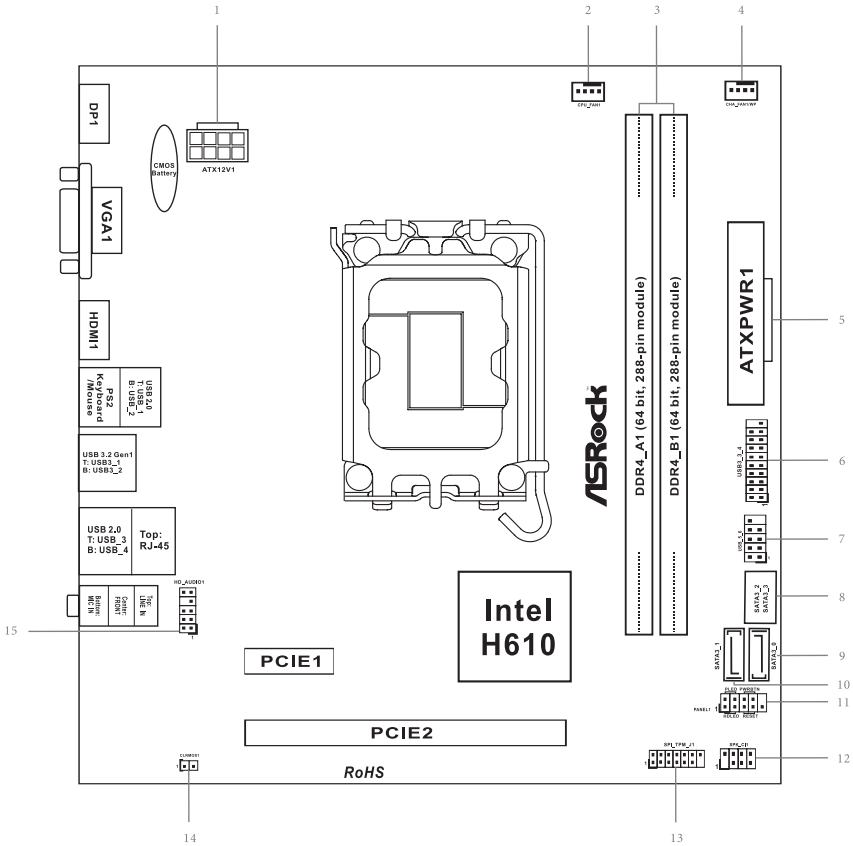
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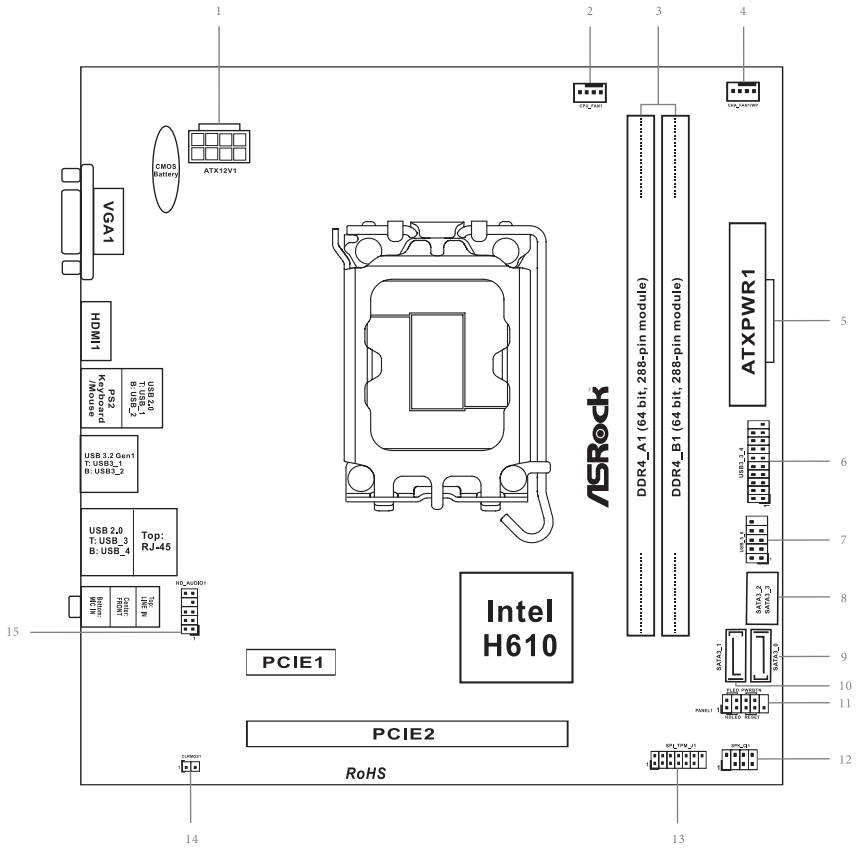


# Motherboard Layout

## H610M-HDV:



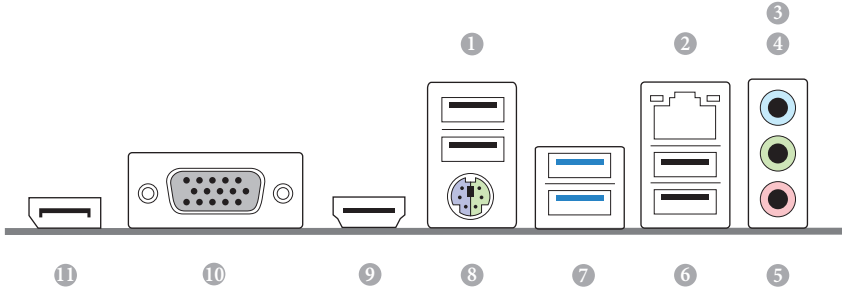
# H610M-HVS:



No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	CPU Fan Connector (CPU_FAN1)
3	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)
4	Chassis/Water Pump Fan Connector (CHA_FAN1/WP)
5	ATX Power Connector (ATXPWR1)
6	USB 3.2 Gen1 Header (USB3_3_4)
7	USB 2.0 Header (USB_5_6)
8	SATA3 Connector (SATA3_2) (Upper), SATA3 Connector (SATA3_3) (Lower)
9	SATA3 Connector (SATA3_0)
10	SATA3 Connector (SATA3_1)
11	System Panel Header (PANEL1)
12	Chassis Intrusion and Speaker Header (SPK_CI1)
13	SPI TPM Header (SPI_TPM_J1)
14	Clear CMOS Jumper (CLRMOS1)
15	Front Panel Audio Header (HD_AUDIO1)

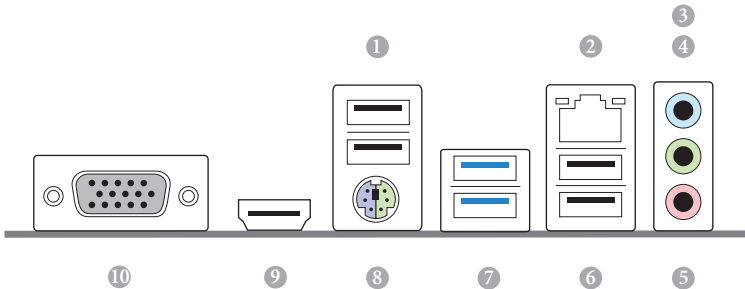
## I/O Panel

### H610M-HDV:



No.	Description	No.	Description
1	USB 2.0 Ports (USB_1_2)	7	USB 3.2 Gen1 Ports (USB3_1_2)
2	LAN RJ-45 Port*	8	PS/2 Mouse/Keyboard Port
3	Line In (Light Blue)**	9	HDMI Port
4	Front Speaker (Lime)**	10	D-Sub Port
5	Microphone (Pink)**	11	DisplayPort 1.4
6	USB 2.0 Ports (USB_3_4)		

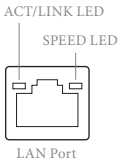
### H610M-HVS:



No.	Description	No.	Description
1	USB 2.0 Ports (USB_1_2)	6	USB 2.0 Ports (USB_3_4)
2	LAN RJ-45 Port*	7	USB 3.2 Gen1 Ports (USB3_1_2)
3	Line In (Light Blue)**	8	PS/2 Mouse/Keyboard Port
4	Front Speaker (Lime)**	9	HDMI Port
5	Microphone (Pink)**	10	D-Sub Port



\* There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.



Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

\*\* Function of the Audio Ports in 7.1-channel Configuration:

Port	Function
Light Blue (Rear panel)	Rear Speaker Out
Lime (Rear panel)	Front Speaker Out
Pink (Rear panel)	Central /Subwoofer Speaker Out
Lime (Front panel)	Side Speaker Out

# Chapter 1 Introduction

Thank you for purchasing ASRock H610M-HDV / H610M-HVS motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.



*Because the motherboard specifications and the BIOS software might be updated, the content of this documentation will be subject to change without notice. In case any modifications of this documentation occur, the updated version will be available on ASRock's website without further notice. If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. You may find the latest VGA cards and CPU support list on ASRock's website as well. ASRock website <http://www.asrock.com>.*

## 1.1 Package Contents

- ASRock H610M-HDV / H610M-HVS Motherboard (Micro ATX Form Factor)
- ASRock H610M-HDV / H610M-HVS Quick Installation Guide
- ASRock H610M-HDV / H610M-HVS Support CD
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 1 x I/O Panel Shield

## 1.2 Specifications

- Platform**
- Micro ATX Form Factor
  - Solid Capacitor design

- CPU**
- Supports 12<sup>th</sup> Gen Intel® Core™ Processors (LGA1700)
  - 5 Power Phase design
  - Supports Intel® Hybrid Technology
  - Supports Intel® Turbo Boost Max 3.0 Technology

- Chipset**
- Intel® H610

- Memory**
- Dual Channel DDR4 Memory Technology
  - 2 x DDR4 DIMM Slots
  - Supports DDR4 non-ECC, un-buffered memory up to 3200\*
  - \* Please refer to Memory Support List on ASRock's website for more information. (<http://www.asrock.com/>)
  - Supports ECC UDIMM memory modules (operate in non-ECC mode)
  - Max. capacity of system memory: 64GB
  - Supports Intel® Extreme Memory Profile (XMP) 2.0

- Expansion Slot**
- 1 x PCIe Gen4x16 Slot\*
  - \* Supports NVMe SSD as boot disks
  - 1 x PCIe Gen3x1 Slot

- Graphics**
- Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated.
  - Intel® X<sup>e</sup> Graphics Architecture (Gen 12)
- H610M-HDV:**
- Three graphics output options: D-Sub, HDMI and DisplayPort 1.4
  - Supports HDMI 2.1 TMDS Compatible with max. resolution up to 4K x 2K (4096x2160) @ 60Hz
  - Supports DisplayPort 1.4 with DSC (compressed) max. resolution up to 8K (7680x4320) @ 60Hz / 5K (5120x3200) @ 120Hz

- Supports D-Sub with max. resolution up to 1920x1200 @ 60Hz
- Supports HDCP 2.3 with HDMI 2.1 TMDS Compatible and DisplayPort 1.4 Ports

**H610M-HVS:**

- Dual graphics output: support HDMI and D-Sub ports by independent display controllers
- Supports HDMI 2.1 TMDS Compatible with max. resolution up to 4K x 2K (4096x2160) @ 60Hz
- Supports D-Sub with max. resolution up to 1920x1200 @ 60Hz
- Supports HDCP 2.3 with HDMI 2.1 TMDS Compatible Port

**Audio**

- 7.1 CH HD Audio (Realtek ALC897/887 Audio Codec)
- Supports Surge Protection

**LAN**

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Supports Wake-On-LAN
- Supports Lightning/ESD Protection
- Supports Energy Efficient Ethernet 802.3az
- Supports PXE

**Rear Panel I/O**

- 1 x PS/2 Mouse/Keyboard Port
- 2 x USB 3.2 Gen1 Ports (Supports ESD Protection)
- 4 x USB 2.0 Ports (Supports ESD Protection)
- 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED)
- HD Audio Jacks: Line in / Front Speaker / Microphone

**H610M-HDV:**

- 1 x D-Sub Port
- 1 x HDMI Port
- 1 x DisplayPort 1.4

**H610M-HVS:**

- 1 x D-Sub Port
- 1 x HDMI Port

**Storage**

- 4 x SATA3 6.0 Gb/s Connectors

**Connector**

- 1 x SPI TPM Header
- 1 x Chassis Intrusion and Speaker Header
- 1 x CPU Fan Connector (4-pin)
- \* The CPU Fan Connector supports the CPU fan of maximum 1A (12W) fan power.
- 1 x Chassis/Water Pump Fan Connector (4-pin) (Smart Fan Speed Control)
- \* The Chassis/Water Pump Fan supports the water cooler fan of maximum 2A (24W) fan power.
- \* CHA\_FAN1/WP can auto detect if 3-pin or 4-pin fan is in use.
- 1 x 24 pin ATX Power Connector
- 1 x 8 pin 12V Power Connector
- 1 x Front Panel Audio Connector
- 1 x USB 2.0 Header (Supports 2 USB 2.0 ports) (Supports ESD Protection)
- 1 x USB 3.2 Gen1 Header (Supports 2 USB 3.2 Gen1 ports) (Supports ESD Protection)

**BIOS  
Feature**

- AMI UEFI Legal BIOS with multilingual GUI support
- ACPI 6.0 Compliant wake up events
- SMBIOS 2.7 Support
- CPU Core/Cache, CPU Core/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0.82V PCH, +1.05V PCH, VCCIN AUX, +1.8V PROC, +1.05V PROC Voltage Multi-adjustment

**Hardware  
Monitor**

- Fan Tachometer: CPU, Chassis/Water Pump Fans
- Quiet Fan (Auto adjust chassis fan speed by CPU temperature): CPU, Chassis/Water Pump Fans
- Fan Multi-Speed Control: CPU, Chassis/Water Pump Fans
- CASE OPEN detection
- Voltage monitoring: CPU Vcore, DRAM, +0.82V PCH, +1.05V PCH, VCCIN AUX, VCCSA, +1.05V PROC, +12V, +5V, +3.3V

**OS**

- Microsoft® Windows® 10 64-bit / 11 64-bit

**Certifica-  
tions**

- FCC, CE
- ErP/EuP ready (ErP/EuP ready power supply is required)

\* For detailed product information, please visit our website: <http://www.asrock.com>



*Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using third-party overclocking tools. Overclocking may affect your system's stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.*

## Chapter 2 Installation

This is a Micro ATX form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

### Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

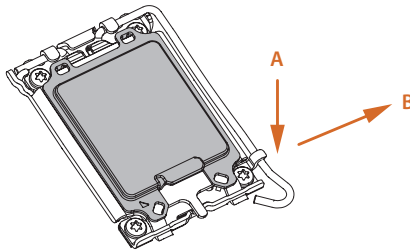
- Make sure to unplug the power cord before installing or removing the motherboard components. Failure to do so may cause physical injuries and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly on a carpet. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
- Hold components by the edges and do not touch the ICs.
- Whenever you uninstall any components, place them on a grounded anti-static pad or in the bag that comes with the components.
- When placing screws to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

## 2.1 Installing the CPU

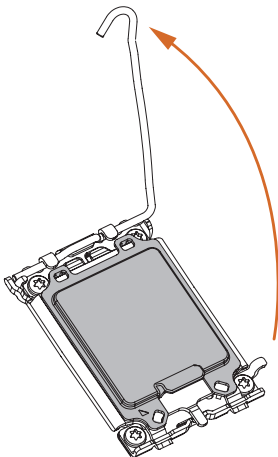


1. Before you insert the 1700-Pin CPU into the socket, please check if the **PnP cap** is on the socket, if the CPU surface is unclean, or if there are any **bent pins** in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all power cables before installing the CPU.

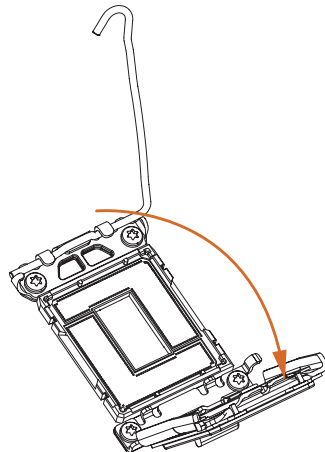
1

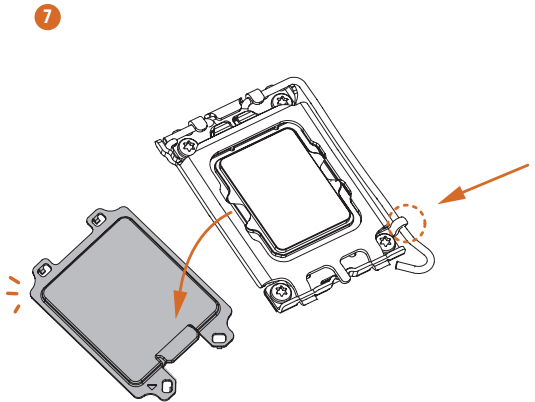
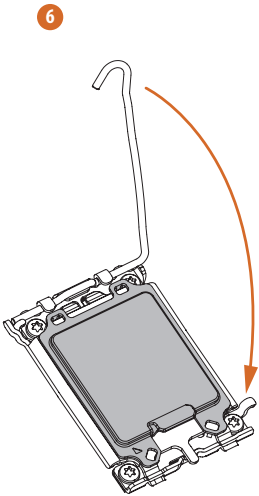
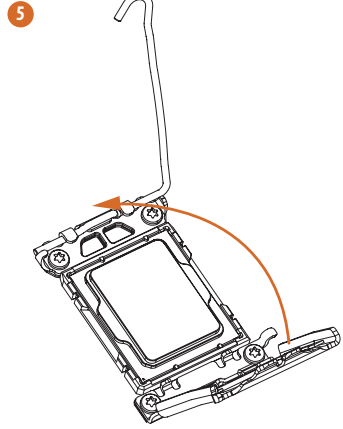
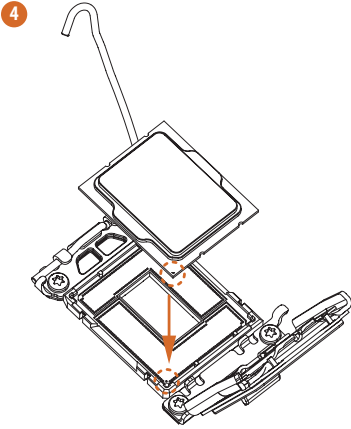


2



3

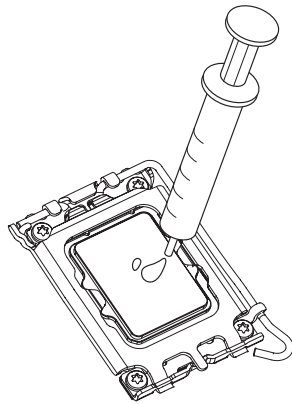




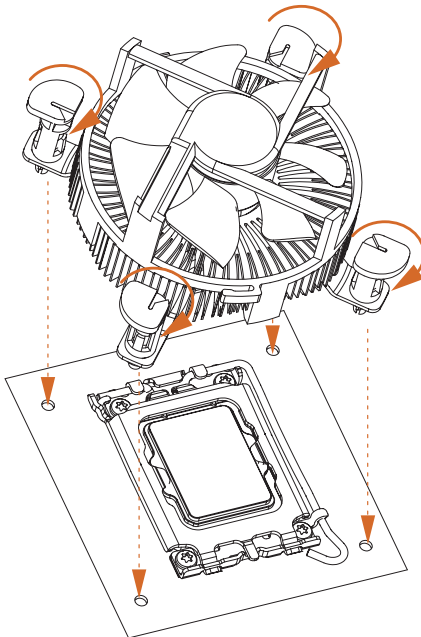
Please save and replace the cover if the processor is removed. The cover must be placed if you wish to return the motherboard for after service.



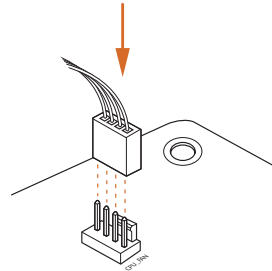
## 2.2 Installing the CPU Fan and Heatsink



1



2



## 2.3 Installing Memory Modules (DIMM)

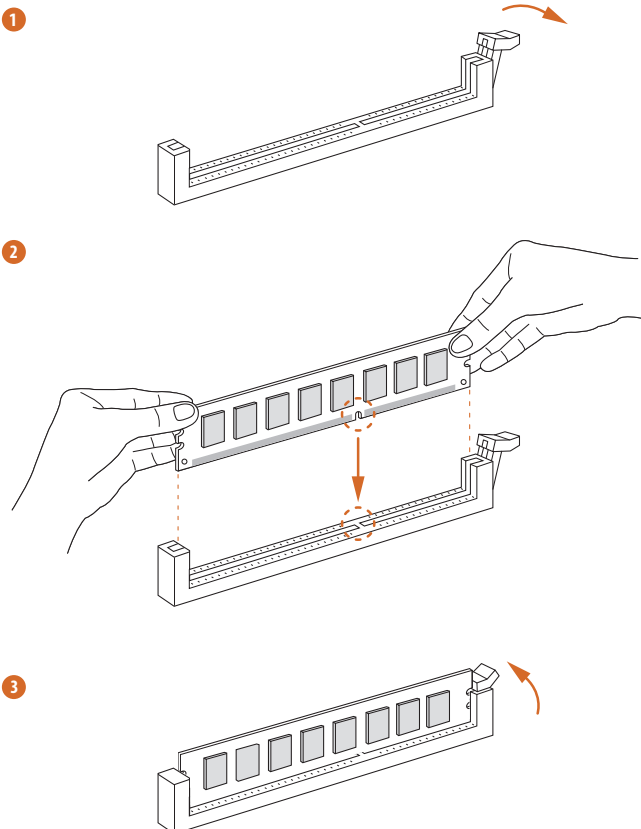
This motherboard provides two 288-pin DDR4 (Double Data Rate 4) DIMM slots, and supports Dual Channel Memory Technology.



1. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.
2. It is unable to activate Dual Channel Memory Technology with only one memory module installed.
3. It is not allowed to install a DDR, DDR2 or DDR3 memory module into a DDR4 slot; otherwise, this motherboard and DIMM may be damaged.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.



## 2.4 Expansion Slots (PCIe Slots)

There are 2 PCIe slots on the motherboard.



*Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.*

### **PCIe slots:**

PCI E1 (PCIe 3.0 x1 slot) is used for PCIe x1 lane width cards.

PCI E2 (PCIe 4.0 x16 slot) is used for PCIe x16 lane width graphics cards.

## 2.5 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”.



Short



Open

---

Clear CMOS Jumper  
(CLRMOS1)  
(see p.1, 2, No. 14)



2-pin Jumper

---

CLRMOS1 allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short the pins on CLRMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, and user default profile will be cleared only if the CMOS battery is removed. Please remember to remove the jumper cap after clearing the CMOS.



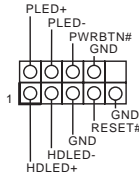
*If you clear the CMOS, the case open may be detected. Please adjust the BIOS option “Clear Status” to clear the record of previous chassis intrusion status.*

## 2.6 Onboard Headers and Connectors



Onboard headers and connectors are **NOT** jumpers. Do **NOT** place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

**System Panel Header**  
(9-pin PANEL1)  
(see p.1, 2, No. 11)



Connect the power button, reset button and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.



**PWRBTN (Power Button):**

Connect to the power button on the chassis front panel. You may configure the way to turn off your system using the power button.

**RESET (Reset Button):**

Connect to the reset button on the chassis front panel. Press the reset button to restart the computer if the computer freezes and fails to perform a normal restart.

**PLED (System Power LED):**

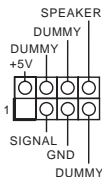
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).

**HDLED (Hard Drive Activity LED):**

Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

The front panel design may differ by chassis. A front panel module mainly consists of power button, reset button, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

**Chassis Intrusion and Speaker Header**  
(7-pin SPK\_CI1)  
(see p.1, 2, No. 12)



Please connect the chassis intrusion and the chassis speaker to this header.

### Serial ATA3 Connectors

#### Right Angle:

(SATA3\_2:

see p.1, 2, No. 8) (Upper)

(SATA3\_3:

see p.1, 2, No. 8) (Lower)

#### Vertical:

(SATA3\_0:

see p.1, 2, No. 9)

(SATA3\_1:

see p.1, 2, No. 10)



These four SATA3

connectors support SATA

data cables for internal

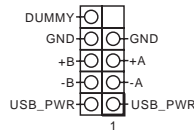
storage devices with up to 6.0

Gb/s data transfer rate.

### USB 2.0 Header

(9-pin USB\_5\_6)

(see p.1, 2, No. 7)



There is one header on this

motherboard. This USB

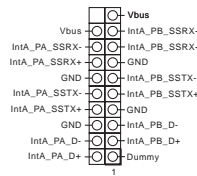
2.0 header can support two

ports.

### USB 3.2 Gen1 Header

(19-pin USB3\_3\_4)

(see p.1, 2, No. 6)



There is one header on this

motherboard. This USB 3.2

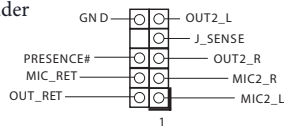
Gen1 header can support

two ports.

### Front Panel Audio Header

(9-pin HD\_AUDIO1)

(see p.1, 2, No. 15)



This header is for connecting

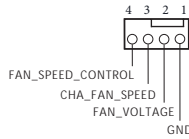
audio devices to the front

audio panel.



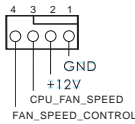
1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.
2. If you use an AC'97 audio panel, please install it to the front panel audio header by the steps below:
  - A. Connect Mic\_IN (MIC) to MIC2\_L.
  - B. Connect Audio\_R (RIN) to OUT2\_R and Audio\_L (LIN) to OUT2\_L.
  - C. Connect Ground (GND) to Ground (GND).
  - D. MIC\_RET and OUT\_RET are for the HD audio panel only. You don't need to connect them for the AC'97 audio panel.
  - E. To activate the front mic, go to the "FrontMic" Tab in the Realtek Control panel and adjust "Recording Volume".

Chassis/Water Pump Fan  
Connector  
(4-pin CHA\_FAN1/WP)  
(see p.1, 2, No. 4)



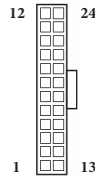
This motherboard provides a 4-Pin water cooling chassis fan connector. If you plan to connect a 3-Pin chassis water cooler fan, please connect it to Pin 1-3.

CPU Fan Connector  
(4-pin CPU\_FAN1)  
(see p.1, 2, No. 2)



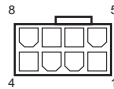
This motherboard provides a 4-Pin CPU fan (Quiet Fan) connector. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

ATX Power Connector  
(24-pin ATXPWR1)  
(see p.1, 2, No. 5)



This motherboard provides a 24-pin ATX power connector. To use a 20-pin ATX power supply, please plug it along Pin 1 and Pin 13.

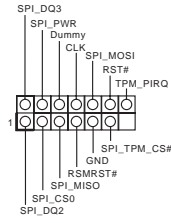
ATX 12V Power  
Connector  
(8-pin ATX12V1)  
(see p.1, 2, No. 1)



This motherboard provides a 8-pin ATX 12V power connector. To use a 4-pin ATX power supply, please plug it along Pin 1 and Pin 5.

**\*Warning: Please make sure that the power cable connected is for the CPU and not the graphics card. Do not plug the PCIe power cable to this connector.**

SPI TPM Header  
(13-pin SPI\_TPM\_J1)  
(see p.1, 2, No. 13)



This connector supports SPI Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.



## Technische Daten

- Plattform**
- Micro-ATX-Formfaktor
  - Feststoffkondensator-Design

- Prozessor**
- Unterstützt Intel® Core™-Prozessoren der 12. Gen. (LGA1700)
  - 5-Leistungsphasendesign
  - Unterstützt Intel® Hybrid-Technologie
  - Unterstützt Intel® Turbo Boost Max Technology 3.0

- Chipsatz**
- Intel® H610

- Speicher**
- Dualkanal-DDR4-Speichertechnologie
  - 2 x DDR4-DIMM-Steckplätze
  - Unterstützt ungepufferten DDR4-Non-ECC-Speicher bis 3200\*
- \* Weitere Informationen finden Sie in der Speicherkompatibilitätsliste auf der ASRock-Webseite. (<http://www.asrock.com/>)
- Unterstützt ECC-UDIMM-Speichermodule (Betrieb im non-ECC-Modus)
  - Systemspeicher, max. Kapazität: 64GB
  - Unterstützt Intel® Extreme Memory Profile (XMP) 2.0

- Erweiterungssteckplatz**
- 1 x PCIe-Gen4x16-Steckplätze\*
- \* Unterstützt NVMe-SSD als Bootplatte
- 1 x PCIe-Gen3x1-Steckplätze

- Grafikkarte**
- Integrierte Intel® UHD Graphics-Visualisierung und VGA-Ausgänge können nur mit Prozessoren unterstützt werden, die GPU-integriert sind.
  - Intel® Xe-Grafikarchitektur (12. Gen.)
- H610M-HDV:**
- Drei Grafikkarten-Ausgangsoptionen: D-Sub, HDMI und DisplayPort 1.4
  - Unterstützt HDMI 2.1 TMDS (komprimiert) mit max. Auflösung bis 4K x 2K (4096x2160) bei 60 Hz
  - Unterstützt DisplayPort 1.4 mit DSC (komprimiert) max. Auflösung bis 8K (7680x4320) bei 60 Hz / 5K (5120x3200) bei 120 Hz

- Unterstützt D-Sub mit maximaler Auflösung von 1920x1200 bei 60 Hz
- Unterstützt HDCP 2.3 mit TMDS-kompatiblen HDMI-2.1- und DisplayPort-1.4-Ports

#### **H610M-HVS:**

- Dualer Grafikkartenausgang: Unterstützt HDMI- und D-Sub-Ports durch unabhängige Monitor-Controller
- Unterstützt HDMI 2.1 TMDS (komprimiert) mit max. Auflösung bis 4K x 2K (4096x2160) bei 60 Hz
- Unterstützt D-Sub mit maximaler Auflösung von 1920x1200 bei 60 Hz
- Unterstützt HDCP 2.3 mit TMDS-kompatiblen HDMI-2.1-Port

#### **Audio**

- 7.1-Kanal-HD-Audio (Realtek ALC897/887-Audiocodec)
- Unterstützt Überspannungsschutz

#### **LAN**

- PCIE-x1-Gigabit-LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Unterstützt Wake-On-LAN
- Unterstützt Schutz gegen Blitzschlag/elektrostatische Entladung
- Unterstützt energieeffizientes Ethernet 802.3az
- Unterstützt PXE

#### **Rückblende, E/A**

- 1 x PS/2-Maus-/Tastaturanschluss
- 2 x USB-3.2-Gen1-Ports (unterstützt Schutz gegen elektrostatische Entladung)
- 4 x USB-2.0-Ports (unterstützt Schutz gegen elektrostatische Entladung)
- 1 x RJ-45-LAN-Port mit LED (Aktivität/Verbindung-LED und Geschwindigkeit-LED)
- HD-Audioanschlüsse: Line-in / Vorderer Lautsprecher / Mikrofon

#### **H610M-HDV:**

- 1 x D-Sub-Port
- 1 x HDMI-Port
- 1 x DisplayPort 1.4

#### **H610M-HVS:**

- 1 x D-Sub-Port
- 1 x HDMI-Port

#### **Speicher**

- 4 x SATA-III-6,0-Gb/s-Anschlüsse

## Anschluss

- 1 x SPI-TPM-Stiftleiste
- 1 x Gehäuseeingriff- und Lautsprecher-Stiftleiste
- 1 x CPU-Lüfteranschluss (4-polig)
- \* Der CPU-Lüfteranschluss unterstützt einen CPU-Lüfter mit einer maximalen Lüfterleistung von 1 A (12 W).
  - 1 x Anschluss Gehäuse/Wasserpumpenlüfter (4-polig) (intelligente Lüftergeschwindigkeitssteuerung)
- \* Der Gehäuse-/Wasserpumpenlüfter unterstützt einen Wasserkühlerlüfter mit einer maximalen Lüfterleistung von 2 A (24 W).
- \* CHA\_FAN1/WP können automatisch erkennen, ob ein 3- oder 4-poliger Lüfter verwendet wird.
  - 1 x 24-poliger ATX-Netzanschluss
  - 1 x 8-poliger 12-V-Netzanschluss
  - 1 x Audioanschluss an Frontblende
  - 1 x USB 2.0-Stiftleiste (unterstützt zwei USB 2.0-Ports) (unterstützt Schutz gegen elektrostatische Entladung)
  - 1 x USB 3.2 Gen1-Stiftleiste (unterstützt zwei USB 3.2 Gen1-Ports) (unterstützt Schutz gegen elektrostatische Entladung)

## BIOS-Funktion

- AMI-UEFI-Legal-BIOS mit Unterstützung mehrsprachiger grafischer Benutzerschnittstellen
- ACPI 6.0-konforme Aufweckereignisse
- SMBIOS 2.7-Unterstützung
- CPU-Kern/Cache, CPU-Kern/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC Mehrfachspannungsanpassung

## Hardwareüberwachung

- Lüfertachometer: CPU-, Gehäuse-/Wasserpumpen-Lüfter
- Lautloser Lüfter (automatische Anpassung der Gehäuselüftergeschwindigkeit durch CPU-Temperatur): CPU-, Gehäuse-/Wasserpumpen-Lüfter
- Mehrfachgeschwindigkeitssteuerung: CPU-, Gehäuse-/Wasserpumpen-Lüfter
- Gehäuse-offen-Erkennung
- Spannungsüberwachung: CPU Vcore, DRAM, +0,82 V PCH, +1,05 V PROC, VCCIN AUX, VCCSA, +1,05 V PROC, +12 V, +5 V, +3,3 V

## Betriebssystem

- Microsoft® Windows® 10 64 Bit / 11 64 Bit

## Zertifizierungen

- FCC, CE
- ErP/EuP ready (ErP/EuP ready-Netzteil erforderlich)

## Spécifications

- Plateforme**
- Facteur de forme Micro ATX
  - Conception à condensateurs solides

- Processeur**
- Prend en charge les processeurs 12<sup>ème</sup> génération Intel® Core™ (LGA1700)
  - Alimentation à 5 phases
  - Prend en charge Intel® Hybrid Technology
  - Prend en charge la technologie Intel® Turbo Boost Max 3.0

- Chipset**
- Intel® H610

- Mémoire**
- Technologie mémoire double canal DDR4
  - 2 x fentes DIMM DDR4
  - Prend en charge les mémoires sans tampon non ECC DDR4 jusqu'à 3200\*
- \* Veuillez consulter la liste de prise en charge des mémoires sur le site Web d'ASRock pour de plus amples informations.  
(<http://www.asrock.com/>)
- Prend en charge les modules mémoire UDIMM ECC (fonctionne en mode non-ECC)
  - Capacité max. de la mémoire système : 64GB
  - Prend en charge Intel® Extreme Memory Profile (XMP) 2.0

- Fente d'expansion**
- 1 x fente PCIe Gen4x16\*
  - \* Prend en charge les SSD NVMe comme disques de démarrage
  - 1 x fente PCIe Gen3x1

- Graphiques**
- La technologie Intel® UHD Graphics Built-in Visuals et les sorties VGA sont uniquement prises en charge par les processeurs intégrant un contrôleur graphique.
  - Architecture graphique Intel® X<sup>c</sup> (Gen 12)

### H610M-HDV :

- Trois options de sortie graphique : D-Sub, HDMI et DisplayPort 1.4
- Prend en charge la technologie HDMI 2.1 TMDS Compatible avec résolution maximale de 4K x 2K (4096x2160) @ 60Hz
- Prend en charge DisplayPort 1.4 avec résolution max. DSC (compressée) jusqu'à 8K (7680x4320) @ 60 Hz / 5K (5120x3200) @ 120 Hz

- Prend en charge le mode D-Sub avec une résolution maximale de 1920x1200 @ 60Hz
- Prend en charge HDCP 2.3 avec ports HDMI 2.1 compatibles TMDS et DisplayPort 1.4

**H610M-HVS:**

- Double sortie graphique : Prend en charge les ports D-Sub et HDMI via contrôleurs d'affichage indépendants
- Prend en charge la technologie HDMI 2.1 TMDS Compatible avec résolution maximale de 4K x 2K (4096x2160) @ 60Hz
- Prend en charge le mode D-Sub avec une résolution maximale de 1920x1200 @ 60Hz
- Prend en charge HDCP 2.3 via port HDMI 2.1 TMDS Compatible

**Audio**

- Audio 7.1 CH HD (Codec audio Realtek ALC897/887)
- Prend en charge la protection contre les surtensions

**Réseau**

- PCIE x1 Gigabit LAN 10/100/1000 Mo/s
- 1 x Realtek RTL8111H
- Prend en charge la fonction Wake-On-LAN
- Prend en charge la protection contre la foudre/les décharges électrostatiques
- Prend en charge la fonction d'économie d'énergie Ethernet 802.3az
- Prend en charge PXE

**Connectique  
du panneau  
arrière**

- 1 x port souris/clavier PS/2
- 2 x ports USB 3.2 Gen1 (Protection contre les décharges électrostatiques)
- 4 x ports USB 2.0 (Protection contre les décharges électrostatiques)
- 1 x port RJ-45 LAN avec LED (LED ACT/LIEN et LED VITESSE)
- Connecteurs jack audio HD : Entrée ligne / haut-parleur avant / microphone

**H610M-HDV:**

- 1 x port D-Sub
- 1 x port HDMI
- 1 x DisplayPort 1.4

**H610M-HVS:**

- 1 x port D-Sub
- 1 x port HDMI

**Stockage**

- 4 x connecteur SATA3 6,0 Go/s

<b>Connecteur</b>	<ul style="list-style-type: none"> <li>• 1 x embase SPI TPM</li> <li>• 1 x prise LED d'alimentation et emplacement sur châssis</li> <li>• 1 x connecteur pour ventilateur de CPU (4 broches)</li> </ul> <p>* Le connecteur pour ventilateur de CPU prend en charge un ventilateur de CPU d'une puissance maximale de 1 A (12 W).</p> <ul style="list-style-type: none"> <li>• 1 x connecteur pour ventilateur de châssis /pompe à eau (4 broches) (contrôle de vitesse de ventilateur intelligent)</li> </ul> <p>* Le ventilateur de châssis /pompe à eau prend en charge un ventilateur de refroidisseur d'eau d'une puissance maximale de 2 A (24 W).</p> <p>* CHA_FAN1/WP peuvent détecter automatiquement si un ventilateur 3 broches ou 4 broches est utilisé.</p> <ul style="list-style-type: none"> <li>• 1 x connecteur d'alimentation ATX 24 broches</li> <li>• 1 x connecteur d'alimentation 12V 8 broches</li> <li>• 1 x connecteur audio panneau frontal</li> <li>• 1 x embase USB 2.0 (2 ports USB 2.0 pris en charge) (Protection contre les décharges électrostatiques)</li> <li>• 1 x embase USB 3.2 Gen1 (2 ports USB 3.2 Gen1 pris en charge) (Protection contre les décharges électrostatiques)</li> </ul>
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<b>Caractéristiques du BIOS</b>	<ul style="list-style-type: none"> <li>• BIOS UEFI AMI avec prise en charge d'interface graphique multilingue</li> <li>• Compatible ACPI 6.0 Wake Up Events</li> <li>• Compatible SMBIOS 2.7</li> <li>• Réglage de la tension CPU Core/Cache, CPU Core/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC</li> </ul>
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<b>Surveillance du matériel</b>	<ul style="list-style-type: none"> <li>• Tachymètre de ventilateur : Ventilateurs de CPU / châssis / pompe à eau</li> <li>• Ventilateur silencieux (réglage automatique de la vitesse du ventilateur du châssis d'après la température du CPU) : Ventilateurs de CPU / châssis / pompe à eau</li> <li>• Contrôle simultané des vitesses du ventilateur : Ventilateurs de CPU / châssis / pompe à eau</li> <li>• Détection CHÂSSIS OUVERT</li> <li>• Surveillance de la tension d'alimentation : CPU Vcore, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, VCCSA, +1,05V PROC, +12V, +5V, +3,3V</li> </ul>
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<b>Système d'exploitation</b>	<ul style="list-style-type: none"> <li>• Microsoft® Windows® 10 64-bits / 11 64-bits</li> </ul>
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<b>Certifications</b>	<ul style="list-style-type: none"> <li>• FCC, CE</li> <li>• ErP/EuP Ready (alimentation ErP/EuP ready requise)</li> </ul>
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## Specifiche

- Piattaforma**
- Fattore di forma Micro ATX
  - Design condensatore solido

- CPU**
- Supporta processori 12<sup>th</sup> Generation Intel® Core™ (LGA1700)
  - Potenza a 5 fasi
  - Supporta la tecnologia Intel® Hybrid
  - Supporta la tecnologia Intel® Turbo Boost Max 3.0

- Chipset**
- Intel® H610

- Memoria**
- Tecnologia memoria DDR4 Dual Channel
  - 2 x alloggi DIMM DDR4
  - Supporta DDR4 non ECC, memoria senza buffer fino a 3200\*
- \* Per maggiori informazioni fare riferimento all'elenco dei supporti di memoria sul sito di ASRock. (<http://www.asrock.com/>)
- Supporta moduli di memoria ECC UDIMM (funziona in modalità non ECC)
  - Capacità max. della memoria di sistema: 64GB
  - Supporto di XMP (Extreme Memory Profile) Intel® 2.0

- Alloggio d'espansione**
- 1 alloggi PCIe Gen4x16\*
- \* Supporto di SSD NVMe come disco d'avvio
- 1 alloggi PCIe Gen3x1

- Grafica**
- La videografica integrata della scheda video UHD Intel® e le uscite VGA possono essere supportate soltanto con processori con GPU integrata.
  - Architettura grafica Intel® X<sup>e</sup> (Gen 12)

**H610M-HDV:**

- Tre opzioni di output grafico: D-Sub, HDMI e DisplayPort 1.4
- Supporta HDMI 2.1 compatibile TMDS con risoluzione massima fino a 4K x 2K (4096 x 2160) a 60Hz
- Supporta DisplayPort 1.4 con DSC (compresso) risoluzione max. fino a 8K (7680 x 4320) a 60 Hz / 5K (5120 x 3200) a 120 Hz

- Supporta D-Sub con una risoluzione max. fino a 1920 x 1200 a 60 Hz
- Supporta HDCP 2.3 con HDMI 2.1 compatibile TMDS e porte DisplayPort 1.4

#### **H610M-HVS:**

- Doppia uscita grafica: Supporto di porte HDMI e D-Sub tramite controller display indipendenti
- Supporta HDMI 2.1 compatibile TMDS con risoluzione massima fino a 4K x 2K (4096 x 2160) a 60 Hz
- Supporta D-Sub con una risoluzione max. fino a 1920 x 1200 a 60 Hz
- Supporta HDCP 2.3 con HDMI 2.1 compatibile TMDS porte

#### **Audio**

- Audio HD 7.1 CH (codec audio Realtek ALC897/887)
- Supporta protezione da sovratensione

#### **LAN**

- 1 x PCIE LAN Gigabit 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Supporto WOL (Wake-On-LAN)
- Supporta protezione da fulmini/scariche elettrostatiche
- Supporto Energy Efficient Ethernet 802.3az
- Supporto PXE

#### **I/O pannello posteriore**

- 1 x porta mouse/tastiera PS/2
- 2 x porte USB 3.2 Gen1 (supporto protezione da scariche elettrostatiche)
- 4 x porte USB 2.0 (supporto protezione da scariche elettrostatiche)
- 1 x porta LAN RJ-45 con LED (ACT/LINK LED e SPEED LED)
- Connettori audio HD: Ingresso linea / altoparlante frontale / microfono

#### **H610M-HDV:**

- 1 x porta D-Sub
- 1 x porta HDMI
- 1 x DisplayPort 1.4

#### **H610M-HVS:**

- 1 x porta D-Sub
- 1 x porta HDMI

#### **Archiviazione**

- 4 x Connettori SATA3 6,0 Gb/s



### Connettore

- 1 x connettore SPI TPM
  - 1 x collegamento altoparlante e intrusione telaio
  - 1 x connettore ventola CPU (4-pin)
- \* Il connettore ventola CPU supporta ventole CPU con potenza massima di 1 A (12 W).
- 1 x connettore ventola chassis/ventola pompa dell'acqua (4 pin)  
(Controllo intelligente della velocità della ventola)
- \* La ventola Chassis/ventola pompa dell'acqua supporta ventole di sistemi di raffreddamento ad acqua di potenza massima di 2 A (24 W).
- \* CHA\_FAN1WP sono in grado di rilevare se è in uso una ventola a 3 pin o 4 a pin.
- 1 x connettore alimentazione ATX 24-pin
  - 1 x connettore alimentazione 12 V 8-pin
  - 1 x connettore audio pannello frontale
  - 1 x connettore USB 2.0 (supporto di 2 porte USB 2.0) (supporto protezione da scariche elettrostatiche)
  - 1 x connettore USB 3.2 Gen1 (supporto di 2 porte USB 3.2 Gen1) (supporto protezione da scariche elettrostatiche)

### Funzionalità BIOS

- AMI UEFI Legal BIOS con interfaccia di supporto multilingue
- Eventi di riattivazione conformi a ACPI 6.0
- Supporto di SMBIOS 2.7
- Regolazione multipla tension CPU Core/Cache, CPU Core/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC

### Hardware Monitor

- Tachimetro ventola: Ventole CPU, chassis, pompa dell'acqua
- Ventola silenziosa (regolazione automatica velocità in base alla temperatura della CPU): Ventole CPU, chassis, pompa dell'acqua
- Controllo velocità ventola: Ventole CPU, chassis, pompa dell'acqua
- Rilevamento CASE OPEN
- Monitoraggio tensione: CPU Vcore, DRAM, + 0,82 V PCH, +1,05 V PCH, VCCIN AUX, VCCSA, +1,05 V PROC, +12 V, + 5 V, + 3,3 V

### SO

- Microsoft® Windows® 10 64 bit / 11 64 bit

### Certificazioni

- FCC, CE
- ErP/EuP Ready (è necessaria alimentazione ErP/EuP ready)

## Especificaciones

- Plataforma**
- Factor de forma Micro ATX
  - Diseño de condensador sólido

- CPU**
- Compatible con la 12<sup>a</sup> generación de procesadores Intel® Core™ (LGA1700)
  - Diseño de 5 fases de alimentación
  - Compatible con la Tecnología Híbrido de Intel®
  - Admite Intel® Turbo Boost Technology 3.0

- Conjunto de chips**
- Intel® H610

- Memoria**
- Tecnología de memoria DDR4 de doble canal
  - 2 x ranuras DIMM DDR4
  - Admite memoria DDR4 no ECC, sin búfer de hasta 3200\*
- \* Para obtener más información, consulte la lista de memorias compatibles en el sitio web de ASRock. (<http://www.asrock.com/>)
- Admite módulos de memoria UDIMM ECC (funcionamiento en modo no ECC)
  - Capacidad máxima de memoria del sistema: 64GB
  - Admite Perfil de memoria extremo de Intel® (XMP) 2.0

- Ranura de expansión**
- 1 x ranura PCIe Gen4x16\*
- \* Admite unidad de estado sólido de NVMe como disco de arranque
- 1 x ranura PCIe Gen3x1

- Gráficos**
- Intel® UHD Graphics Built-in Visuals y las salidas de VGA son compatibles únicamente con procesadores con GPU integrado.
  - Arquitectura de gráficos Intel® X<sup>e</sup> (Generación 12)

### **H610M-HDV:**

- Tres opciones de salida de gráficos: D-Sub, HDMI y DisplayPort 1.4
- Compatible con HDMI 2.1 TMDS con una resolución máxima de 4K x 2K (4096x2160) a 60Hz
- Admite DisplayPort 1.4 con DSC (comprimido), resolución máxima hasta 8K (7680x4320) a 60 Hz o 5K (5120x3200) a 120 Hz

- Admite D-Sub con una resolución máxima de 1920x1200 a 60 Hz
- Admite HDCP 2.3 con HDMI 2.1 compatible con TMDS y puertos DisplayPort 1.4

**H610M-HVS:**

- Salida gráfica dual: Compatible con puertos HDMI y D-Sub mediante controladores de pantalla independientes
- Compatible con HDMI 2.1 TMDS con una resolución máxima de 4K x 2K (4096x2160) a 60Hz
- Admite D-Sub con una resolución máxima de 1920x1200 a 60 Hz
- Admite HDCP 2.3 con HDMI 2.1 compatible con TMDS y puertos

**Audio**

- 7.1 Audio CH HD (Código de audio Realtek ALC897/887)
- Admite protección contra sobretensiones

**LAN**

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Admite la función Reactivación de LAN
- Admite protección contra rayos y descargas electrostáticas (ESD)
- Admite Ethernet 802.3az de eficiencia energética
- Admite PXE

**E/S en panel posterior**

- 1 x puerto de ratón/teclado PS/2
- 2 x Puertos USB 3.2 Gen1 (admite protección contra descargas electrostáticas)
- 4 x Puertos USB 2.0 (admite protección contra descargas electrostáticas)
- 1 x Puerto LAN RJ-45 con LED (LED DE ACTIVIDAD/ENLACE y LED DE VELOCIDAD)
- Conector de audio HD: Entrada de línea / Altavoz frontal / Micrófono

**H610M-HDV:**

- 1 x Puerto D-Sub
- 1 x puerto HDMI
- 1 x DisplayPort 1.4

**H610M-HVS:**

- 1 x Puerto D-Sub
- 1 x puerto HDMI

**Almacenamiento**

- 4 x conectores SATA3 de 6,0 Gb/s

**Conector**

- 1 x Conector SPI TPM
- 1 x cabezal de intrusión de chasis y de altavoces
- 1 x Conector para ventilador de la CPU (4 contactos)
- \* El conector para ventilador de la CPU admite ventilador de la CPU con una potencia de ventilador de 1 A (12 W) máxima.
- 1 x Conector (4 contactos) para el ventilador de la bomba de agua/chasis (control de velocidad de ventilador inteligente)
- \* El ventilador de la bomba de agua/Chasis admite ventilador del disipador por agua con una potencia de ventilador máxima de 2 A (24 W).
- \* CHA\_FAN1/WP se pueden detectar automáticamente si se usa el ventilador de 3 o 4 contactos.
- 1 x Conector de alimentación ATX de 24 contactos
- 1 x Conector de alimentación de 12V de 8 contactos
- 1 x Conector de audio en el panel frontal
- 1 x Base de conexiones USB 2.0 (Admite 2 puertos USB 2.0) (Admite protección contra descargas electrostáticas)
- 1 x Base de conexiones USB 3.2 Gen1 (Admite 2 puertos USB 3.2 Gen1) (Admite protección contra descargas electrostáticas)

**Función de la BIOS**

- BIOS legal UEFI AMI compatible con interfaz gráfica de usuario multilingüe
- Eventos de reactivación compatibles con ACPI 6.0
- Admite SMBIOS 2.7
- Varios ajustes de voltaje de núcleo y caché de CPU, núcleo y caché de CPU Load-Line, GT de CPU, GT de CPU Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC

**Monitor de hardware**

- Tacómetro del ventilador: Ventiladores de la bomba de agua/chasis/CPU
- Ventilador silencioso (ajuste automático de la velocidad del ventilador del chasis por temperatura de la CPU): Ventiladores de la bomba de agua/chasis/CPU
- Control de varias velocidades del ventilador: Ventiladores de la bomba de agua/chasis/CPU
- Detección de CARCASA ABIERTA
- Supervisión del voltaje: CPU Vcore, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, VCCSA, +1,05V PROC, +12V, +5V, +3,3V

**SO**

- Microsoft® Windows® 10 64 bits/11 64 bits

**Certificaciones**

- FCC y CE
- Preparado para ErP/EuP (se necesita una fuente de alimentación preparada para ErP/EuP)

## Технические характеристики

<b>Платформа</b>	<ul style="list-style-type: none"><li>• Форм-фактор Micro ATX</li><li>• Схема на основе твердотельных конденсаторов</li></ul>
<b>ЦП</b>	<ul style="list-style-type: none"><li>• Поддержка процессоров 12-го поколения Intel® Core™ (LGA 1700)</li><li>• Система питания 5</li><li>• Поддержка технологии Intel® Hybrid</li><li>• Поддерживается технология Intel® Turbo Boost Max 3.0</li></ul>
<b>Чипсет</b>	<ul style="list-style-type: none"><li>• Intel® H610</li></ul>
<b>Память</b>	<ul style="list-style-type: none"><li>• Двухканальная память DDR4</li><li>• 2 x гнезда DDR4 DIMM</li><li>• Поддержка небуферизованной памяти DDR4 не-ECC до 3200*</li></ul> <p>* Дополнительная информация представлена в Списке совместимой памяти (Memory Support List) на веб-сайте ASRock. (<a href="http://www.asrock.com/">http://www.asrock.com/</a>)</p> <ul style="list-style-type: none"><li>• Поддержка модулей памяти ECC UDIMM (работа в режиме, отличном от ECC)</li><li>• Максимальный объем ОЗУ: 64 Гб</li><li>• Поддерживается Intel® Extreme Memory Profile (XMP) 2.0</li></ul>
<b>Слоты расширения</b>	<ul style="list-style-type: none"><li>• 1 x PCIe Gen4x16 гнезд*</li></ul> <p>* Поддерживаются в качестве загрузочных SSD-диски типа NVMe</p> <ul style="list-style-type: none"><li>• 1 x PCIe Gen3x1 гнезд</li></ul>
<b>Графическая подсистема</b>	<ul style="list-style-type: none"><li>• Встроенный видеоадаптер Intel® UHD Graphics и выходы VGA поддерживаются только при использовании ЦП со встроенными графическими процессорами.</li><li>• Графическая архитектура Intel® X<sup>e</sup> (12 поколение)</li></ul> <p><b>H610M-HDV:</b></p> <ul style="list-style-type: none"><li>• Три видеовыхода: D-Sub, HDMI и DisplayPort 1.4</li><li>• Поддержка HDMI 2.1 TMDS совместим с максимальным разрешением до 4K × 2K (4096x2160) при 60 Гц</li><li>• Поддержка DisplayPort 1.4 с DSC (в сжатом формате), с макс. разрешением до 8K (7680x4320), 60 Гц/ 5K (5120x3200), 120 Гц</li></ul>

- Поддерживается D-Sub с максимальным разрешением до 1920x1200 при 60 Гц
- Поддержка HDCP 2.3 с разъемами, совместимыми с HDMI 2.1 TMDS, и DisplayPort 1.4

#### **H610M-HVS:**

- Два графических выхода: Поддержка портов HDMI и D-Sub независимыми контроллерами дисплея
- Поддержка HDMI 2.1 TMDS совместим с максимальным разрешением до 4K × 2K (4096x2160) при 60 Гц
- Поддерживается D-Sub с максимальным разрешением до 1920x1200 при 60 Гц
- Поддержка HDCP 2.3 с разъемами, совместимыми с HDMI 2.1 TMDS

#### **Звук**

- 7.1-канальный звук высокой четкости (аудиокодек Realtek ALC897/887)
- Защита от перепадов напряжения в электрической сети

#### **LAN**

- PCIe x1 Gigabit LAN 10/100/1000 Мбит/с
- 1 x Realtek RTL8111H
- Поддерживается пробуждение по ЛВС
- Молниезащита и защита от электростатических разрядов
- Поддерживается Energy Efficient Ethernet 802.3az
- Поддерживается PXE

#### **Тыловые порты ввода-вывода**

- 1 x порт PS/2 для мыши/клавиатуры
- 2 x портов USB 3.2 Gen1 (с защитой от электростатических разрядов)
- 4 x порта USB 2.0 (с защитой от электростатических разрядов)
- 1 x порт ЛВС RJ-45 с индикаторами (Активность/Соединение и Скорость)
- Разъемы HD Audio: линейный вход / фронтальные AC / микрофон

#### **H610M-HDV:**

- 1 порт D-Sub
- 1 x порт HDMI
- 1 порт DisplayPort 1.4

#### **H610M-HVS:**

- 1 порт D-Sub
- 1 x порт HDMI

#### **Запоминающие устройства**

- 4 порта SATA3 6,0 Гбит/с

**Разъемы**

- 1 х колодка SPI TPM
- 1 х колодка с разъемами датчика вскрытия корпуса и динамика
- 1 х разъем для вентилятора охлаждения ЦП (4-контактный)
- \* Разъем процессорного вентилятора поддерживает вентилятор с потребляемым током не более 1 А (12 Вт).
- 1 разъем для корпусного вентилятора или водяной помпы (4-контактный) (смарт-регулятор скорости вентилятора)
- \* Разъем для корпуса корпусного вентилятора или водяной помпы поддерживает вентилятор с потребляемым током не более 2 А (24 Вт).
- \* Для разъемов CHA\_FAN1/WP автоматически определяется тип подключенного вентилятора: 3- или 4-контактный.
- 1 разъем питания ATX, 24-контактный
- 1 разъем питания 12 В, 8-контактный
- 1 аудиоразъем для передней панели
- 1 колодка USB 2.0 (2 порта USB 2.0 с защитой от электростатических разрядов)
- 1 колодка USB 3.2 Gen1 (2 порта USB 3.2 Gen1) (с защитой от электростатических разрядов)

**Параметры BIOS**

- AMI UEFI Legal BIOS с поддержкой многоязычного графического интерфейса
- Поддержка функций пробуждения по стандарту ACPI 6.0
- Поддержка SMBIOS 2.7
- Регулировка напряжений ядра/кэш ЦП, ядра/кэш ЦП, GT, GT цепей питания ЦП, DRAM, +0,82 В PCH, +1,05 В PCH, VCCIN AUX, +1,8 В PROC, +1,05 В PROC

**Контроль оборудования**

- Тахометр: вентилятор ЦП; корпусной вентилятор или помпа водяного охлаждения корпуса
- Бесшумная работа (с автоматической регулировкой скорости вращения в зависимости от температуры ЦП): вентилятор ЦП; корпусной вентилятор или помпа водяного охлаждения корпуса
- Регулировка скорости вращения: вентилятор ЦП; корпусной вентилятор или помпа водяного охлаждения корпуса
- Датчик вскрытия корпуса
- Контроль напряжений: напряжение ядра ЦП, DRAM, +0,82 В PCH, +1,05 В PCH, VCCIN AUX, VCCSA, +1,05 В PROC, +12 В, +5 В, +3,3 В

**Операционные системы**

- Microsoft® Windows® 10 (64-разрядная) / 11 (64-разрядная)

**Сертификация**

- FCC, CE
- Совместимость с ErP/EuP (необходим блок питания, соответствующий стандарту ErP/EuP)

## Especificações

- Plataforma**
- Micro ATX Form Factor
  - Design de condensador sólido

- CPU**
- Suporta Processadores 12<sup>th</sup> Gen Intel® Core™ (LGA1700)
  - Design com 5 fases de alimentação
  - Suporta Tecnologia Híbrida Intel®
  - Suporta Tecnologia Intel® Turbo Boost Max 3.0

- Chipset**
- Intel® H610

- Memória**
- Tecnologia de memória DDR4 de dois canais
  - 2 x Slots DIMM DDR4
  - Suporta DDR4 não-ECC, memória sem buffer até 3200\*
- \* Por favor, consulte a Lista de Suporte de Memória no site da ASRock para obter mais informação. (<http://www.asrock.com/>)
- Suporta módulos de memória ECC UDIMM (opera em modo não-ECC)
  - Capacidade máxima da memória do sistema: 64GB
  - Suporta Extreme Memory Profile (XMP) 2.0 da Intel®

- Slot de expansão**
- 1 x Slot PCIe Gen4x16\*
- \* Suporta NVMe SSD nos discos de inicialização
- 1 x Slot PCIe Gen3x1

- Gráficos**
- Os gráficos incorporados Intel® UHD e as saídas VGA só podem ser suportados com processadores com GPU integrada.
  - Arquitetura Gráfica Intel® X<sup>e</sup> (Gen 12)
- H610M-HDV:**
- Três opções de saída de gráficos: D-Sub, HDMI e DisplayPort 1.4
  - Suporta HDMI 2.1 TMDS Compatível com resolução máx. até 4K x 2K (4096x2160) @ 60Hz
  - Obsługa DisplayPort 1.4 z DSC (skompresowany) maks. rozdzielczość do 8K (7680x4320) przy 60Hz / 5K (5120x3200) przy 120Hz



- Suporta D-Sub com resolução máxima de até 1920x1200 @ 60Hz
- Obsługa HDCP 2.3 przy zgodności z HDMI 2.1 TMDS i porty DisplayPort 1.4

**H610M-HVS:**

- Saída gráfica dupla: Suporta portas HDMI e D-Sub por controladores de vídeo independentes
- Suporta HDMI 2.1 TMDS Compatível com resolução máx. até 4K x 2K (4096x2160) @ 60Hz
- Suporta D-Sub com resolução máxima de até 1920x1200 @ 60Hz
- Suporta HDCP 2.3 com Porta HDMI 2.1 TMDS Compatível

**Áudio**

- Áudio 7.1 CH HD com proteção de conteúdo (Codec de áudio Realtek ALC897/887)
- Suporta Proteção de Sobretenção

**LAN**

- LAN Gigabit 10/100/1000 Mb/s PCIE x1
- 1 x Realtek RTL8111H
- Suporta Wake-On-LAN
- Oferece Suporte à Proteção de Relâmpago/ESD
- Suporta Energy Efficient Ethernet 802.3az
- Suporta PXE

**E/S do painel posterior**

- 1 x Porta PS/2 para mouse/teclado
- 2 x Portas USB 3.2 Gen1 (Suporta Proteção ESD)
- 4 x Portas USB 2.0 (Suporta Proteção ESD)
- 1 x Porta LAN RJ-45 com LED (LED ACT/LINK e LED DE VELOCIDADE)
- Fichas de áudio HD: Entrada de Linha / Autofalante Frontal / Microfone

**H610M-HDV:**

- 1 x Porta D-Sub
- 1 x Porta HDMI
- 1 x DisplayPort 1.4

**H610M-HVS:**

- 1 x Porta D-Sub
- 1 x Porta HDMI

**Armazenamento**

- 4 x Conectores SATA3 6,0 Gb/s

**Conector**

- 1 x Suporte SPI TPM
  - 1 x Intrusão do Chassi e Cabeçote de Autofalante
  - 1 x Conector da ventoinha da CPU (4 pinos)
- \* O Conector do Ventilador de CPU suporta o ventilador de CPU de alimentação máxima 1A do ventilador (12W).
- 1 x Conector do ventilador do chassi/Ventilador da Bomba de Água (4 pinos) (Controle de Velocidade de Ventoinha Inteligente)
- \* O Ventilador de Chassi/Ventilador da Bomba de Água suporta o ventilador de refrigerador a água de 2A máximo (24W) potência do ventilador.
- \* CHA\_FAN1/WP podem detectar automaticamente se ventoinha de 3 pinos ou 4 pinos está em uso.
- 1 x Conector alimentação ATX 24-pinos
  - 1 x Conector de energia 8-pinos 12V
  - 1 x Conector de áudio do painel frontal
  - 1 x Plataforma USB 2.0 (Suporta 2 portas USB 2.0) (Suporta Proteção ESD)
  - 1 x Plataforma USB 3.2 Gen1 (Suporta 2 portas USB 3.2 Gen1) (Suporta Proteção ESD)

**Funções da BIOS**

- AMI Legal UEFI BIOS com suporte multilíngue GUI
- ACPI 6.0 compatível com eventos de despertar
- Suporte SMBIOS 2.7
- Multi-ajuste de tensão de CPU Core/Cache, CPU Core/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC

**Monitor de hardware**

- Tacômetro da ventoinha: Ventilador da CPU, Chassis/Bomba de Água
- Ventoinha Silenciosa (Auto ajusta velocidade da ventoinha do chassi pela temperatura da CPU): Ventilador da CPU, Chassis/Bomba de Água
- Controle multi-velocidade da ventoinha: Ventilador da CPU, Chassis/Bomba de Água
- Detecção de ABERTURA da CAIXA
- Monitoramento da tensão: CPU Vcore, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, VCCSA, +1,05V PROC, +12V, +5V, +3,3V

**SO**

- Microsoft® Windows® 10 64-bit / 11 64-bit

**Certificações**

- FCC, CE
- Preparada para ErP/EuP (é necessária uma fonte de alimentação preparada para ErP/EuP)

## Specyfikacje

- Platforma**
- Współczynnik kształtu Micro ATX
  - Konstrukcja kondensatorami stałymi

- CPU**
- Obsługa 12<sup>tej</sup> generacji procesorów Intel® Core™ (LGA1700)
  - Sekcja zasilania 5 Power Phase Design
  - Obsługa technologii Intel® Hybrid
  - Obsługa technologii Intel® Turbo Boost Max 3.0

- Chipset**
- Intel® H610

- Pamięć**
- Technologia pamięci Dual Channel DDR4
  - 2 x gniazda DDR4 DIMM
  - Obsługa niebuforowanej pamięci DDR4 non-ECC, do 3200\*
- \* Sprawdź listę obsługiwanej pamięci na stronie internetowej ASRock w celu uzyskania dalszych informacji. (<http://www.asrock.com/>)
- Obsługa modułów pamięci ECC UDIMM (działanie w trybie non-ECC)
  - Maks. wielkość pamięci systemowej: 64GB
  - Obsługa Intel® Extreme Memory Profile (XMP) 2.0

- Gniazdo rozszerzenia**
- 1 x gniazda PCIe Gen4x16\*
- \* Obsługa SSD NVMe, jako dysków rozruchowych
- 1 x gniazda PCIe Gen3x1

- Grafika**
- Wbudowana grafika Intel® UHD i wyjścia VGA są obsługiwane wyłącznie z procesorami, które mają zintegrowane GPU.
  - Architektura grafiki Intel® X<sup>c</sup> (Generacja 12)

### H610M-HDV:

- Opcje trzech wyjść graficznych: D-Sub, HDMI i DisplayPort 1.4
- Obsługa HDMI 2.1 TMDS zgodności z maks. rozdzielczością do 4K x 2K (4096x2160) przy 60Hz
- Obsługa DisplayPort 1.4 z DSC (skompresowany) maks. rozdzielczość do 8K (7680x4320) przy 60Hz / 5K (5120x3200) przy 120Hz

- Obsługa D-Sub z maks. rozdzielczością do 1920x1200 przy 60Hz
- Obsługa HDCP 2.3 przy zgodności z HDMI 2.1 TMDS i porty DisplayPort 1.4

#### **H610M-HVS:**

- Podwójne wyjście graficzne: obsługa HDMI i D-Sub przez niezależne sterowniki graficzne
- Obsługa HDMI 2.1 TMDS zgodności z maks. rozdzielczością do 4K x 2K (4096x2160) przy 60Hz
- Obsługa D-Sub z maks. rozdzielczością do 1920x1200 przy 60Hz
- Obsługa HDCP 2.3 przy zgodności z HDMI 2.1 TMDS porty

#### **Audio**

- Dźwięk HD 7.1 CH (kodek audio Realtek ALC897/887)
- Obsługa zabezpieczenia przed przepięciami

#### **LAN**

- 1 x PCIE Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Obsługa Wake-On-LAN
- Obsługa zabezpieczenia przed wyładowaniami atmosferycznymi/ESD
- Obsługa Energy Efficient Ethernet 802.3az
- Obsługa PXE

#### **Tylny panel**

#### **Wejścia/ Wyjścia**

- 1 x port myszy/klawiatury PS/2
- 2 x porty USB 3.2 Gen1 (Obsługa zabezpieczenia ESD)
- 4 x porty USB 2.0 (Obsługa zabezpieczenia ESD)
- 1 x port LAN RJ-45 z LED (LED ACT/LINK i LED SPEED)
- Gniazda audio HD: Wejście liniowe / Głośnik przedni / Mikrofon

#### **H610M-HDV:**

- 1 x port D-Sub
- 1 x port HDMI
- 1 x DisplayPort 1.4

#### **H610M-HVS:**

- 1 x port D-Sub
- 1 x port HDMI

#### **Przechowy- wanie**

- 4 x złącza SATA3 6,0 Gb/s

**Złącze**

- 1 x złącze główkowe SPI TPM
- 1 x złącze główkowe naruszenia obudowy i głośnika
- 1 x złącze wentylatora CPU (4-pinowe)
- \* Złącze wentylatora CPU obsługuje wentylator CPU maksymalnym prądem zasilania wentylatora 1A (12W).
  - 1 x złącza wentylatora obudowy/pompy wodnej (4-pinowe) (Inteligentne sterowanie prędkością obrotową wentylatora)
- \* Złącze wentylatora obudowy/pompy wodnej obsługuje wentylator układu chłodzenia maksymalnym prądem zasilania wentylatora 2A (24W).
- \* CHA\_FAN1/WP może automatycznie wykrywać, jeśli używany jest wentylator 3-pinowy lub 4-pinowy.
  - 1 x 24 pinowe złącze zasilania ATX
  - 1 x 8 pinowe złącze zasilania 12 V
  - 1 x złącze audio na panelu przednim
  - 1 x złącza główkowe USB 2.0 (obsługuje 2 porty USB 2.0) (Obsługa zabezpieczenia ESD)
  - 1 x porty główkowe USB 3.2 Gen1 (obsługa 2 portów USB 3.2 Gen1) (obsługa zabezpieczenia ESD)

**Funkcja BIOS**

- Obsługa starszych wersji BIOS AMI UEFI z wielojęzycznym GUI
- Zgodność zdarzeń wybudzania z ACPI 6.0
- Obsługa SMBIOS 2.7
- Wiele regulacji napięcia CPU Core/Cache, CPU Core/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC

**Monitor sprzętu**

- Obrotomierz wentylatora: CPU, wentylatory obudowy/pompy wodnej
- Cichy wentylator (Automatyczna regulacja prędkości obrotowej wentylatora obudowy przez temperaturę CPU): CPU, wentylatory obudowy/pompy wodnej
- Kontrola wielu prędkości obrotowych wentylatora: CPU, wentylatory obudowy/pompy wodnej
- Wykrywanie OTWARCIA OBUDOWY
- Monitorowanie napięcia: CPU Vcore, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, VCCSA, +1,05V PROC, +12V, +5V, +3,3V

**System operacyjny**

- Microsoft® Windows® 10 64-bitowy / 11 64-bitowy

**Certyfikaty**

- FCC, CE
- Gotowość do obsługi ErP/EuP (Wymagane zasilanie z gotowością obsługi ErP/EuP)

## 규격

플랫폼	<ul style="list-style-type: none"> <li>• Micro ATX 폼 팩터</li> <li>• 솔리드 콘덴서 구조</li> </ul>
CPU	<ul style="list-style-type: none"> <li>• 12 세대 Intel® Core™ 프로세서 지원 (LGA1700)</li> <li>• 5 개 전원 위상 구조</li> <li>• Intel® Hybrid 기술 지원</li> <li>• Intel® Turbo Boost Max Technology 3.0 지원</li> </ul>
칩세트	<ul style="list-style-type: none"> <li>• Intel® H610</li> </ul>
메모리	<ul style="list-style-type: none"> <li>• 듀얼 채널 DDR4 메모리 기술</li> <li>• DDR4 DIMM 슬롯 2 개</li> <li>• DDR4 비 ECC, 비버퍼링 메모리 최대 3200 지원 *</li> <li>* 추가 정보를 원하시면 ASRock 웹사이트에 있는 메모리 지원 목록을 참조하십시오 . (<a href="http://www.asrock.com/">http://www.asrock.com/</a>)</li> <li>• ECC UDIMM 메모리 모듈 ( 비 -ECC 모드에서 작동함 ) 지원</li> <li>• 시스템 메모리 최대 용량 : 64GB</li> <li>• Intel® Extreme Memory Profile (XMP) 2.0 지원</li> </ul>
확장 슬롯	<ul style="list-style-type: none"> <li>• PCIe Gen4x16 슬롯 1 개 *</li> <li>* NVMe SSD 를 부팅 디스크로 사용 가능하도록 지원</li> <li>• PCIe Gen3x1 슬롯 1 개</li> </ul>
그래픽	<ul style="list-style-type: none"> <li>• Intel® UHD 그래픽스 빌트 - 인 비주얼과 VGA 출력은 GPU 통합 프로세서로만 지원할 수 있습니다 .</li> <li>• Intel® Xe 그래픽 아키텍처 (Gen 12)</li> </ul> <p>H610M-HDV:</p> <ul style="list-style-type: none"> <li>• 그래픽 출력 옵션 세 개 : D-Sub, HDMI 및 DisplayPort 1.4</li> <li>• HDMI 2.1 TMDS 지원 ( 최대 해상도 4K x 2K (4096x2160) @ 60Hz)</li> <li>• 최대 해상도가 8K (7680x4320) @ 60Hz / 5K (5120x3200) @ 120Hz 인 DSC( 압축 ) 의 DisplayPort 1.4 를 지원합니다 .</li> </ul>

- D-Sub 지원 ( 최대 해상도 1920x1200 @ 60Hz)
  - HDMI 2.1 TMDS 호환 HDCP 2.3 및 DisplayPort 1.4 포트 지원
- H610M-HVS:
- 이중 그래픽 출력 : 독립적 디스플레이 컨트롤러로 HDMI 및 D-Sub 포트 지원
  - HDMI 2.1 TMDS 지원 ( 최대 해상도 4K x 2K (4096x2160) @ 60Hz)
  - D-Sub 지원 ( 최대 해상도 1920x1200 @ 60Hz)
  - HDMI 2.1 TMDS 호환 HDCP 2.3 포트 지원

오디오

- 7.1 CH HD 오디오 (Realtek ALC897/887 오디오 코덱 )
- 서비 보호 지원

LAN

- PCIE 1 개 , Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Wake-On-LAN 지원
- 번개 /ESD 보호 지원
- 절전형 이더넷 802.3az 지원
- PXE 지원

후면 패널 I/O

- PS/2 마우스 / 키보드 포트 1 개
- USB 3.2 Gen1 포트 2 개 (ESD 보호 지원 )
- USB 4 포트 2 개 (ESD 보호 지원 )
- LED 장착 RJ-45 LAN 포트 1 개 (ACT/LINK LED 및 SPEED LED)
- HD 오디오 잭 : 라인 입력 / 전면 스피커 / 마이크

H610M-HDV:

- D-Sub 포트 1 개
- HDMI 포트 1 개
- DisplayPort 1.4 1 개

H610M-HVS:

- D-Sub 포트 1 개
- HDMI 포트 1 개

저장 장치

- SATA3 6.0 Gb/s 커넥터 4 개

<p>커넥터</p>	<ul style="list-style-type: none"> <li>• SPI TPM 헤더 1 개</li> <li>• 새시 침입 및 스피커 헤더 1 개</li> <li>• CPU 팬 커넥터 (4 핀) 1 개</li> <li>* CPU 팬 커넥터는 팬 전력이 최대 1A(12W) 인 CPU 팬을 지원합니다 .</li> <li>• 새시 / 워터 펌프 팬 커넥터 (4 핀) 1 개 (스마트 팬 속도 제어)</li> <li>* 새시 / 워터 펌프 팬은 팬 전력이 최대 2A(24W) 인 수냉식 쿨러 팬을 지원합니다 .</li> <li>* 3핀 또는 4핀 팬이 사용 중인 경우 , CHA_FAN1/WP가 자동으로 감지할 수 있습니다 .</li> <li>• 24 핀 ATX 전원 커넥터 1 개</li> <li>• 8 핀 12V 전원 커넥터 1 개</li> <li>• 전면 패널 오디오 커넥터 1 개</li> <li>• USB 2.0 헤더 1 개 (USB 2.0 포트 2개 지원) (ESD 보호 지원)</li> <li>• USB 3.2 Gen1 헤더 1 개 (USB 3.2 Gen1 포트 2개 지원) (ESD 보호 지원)</li> </ul>
<p>BIOS 기능</p>	<ul style="list-style-type: none"> <li>• 다국어 GUI 지원을 제공하는 AMI UEFI 적합형 BIOS</li> <li>• ACPI 6.0 준수 웨이크 업 이벤트</li> <li>• SMBIOS 2.7 지원</li> <li>• CPU 코어 / 캐시 , CPU 코어 / 캐시 로드 라인 , CPU GT , CPU GT 로드 라인 , DRAM , +0.82V PCH , +1.05V PCH , VCCIN AUX , +1.8V PROC , +1.05V PROC 전압 다중 조정</li> </ul>
<p>하드웨어 모니터</p>	<ul style="list-style-type: none"> <li>• 팬 타코미터 : CPU , 새시 / 워터 펌프 팬</li> <li>• 저소음 팬 (CPU 온도에 의한 새시 팬 속도 자동 조절) : CPU , 새시 / 워터 펌프 팬</li> <li>• 팬 다중 속도 제어 : CPU , 새시 / 워터 펌프 팬</li> <li>• 케이스 열림 감지</li> <li>• 전압 모니터링 : CPU Vcore , DRAM , +0.82V PCH , +1.05V PCH , VCCIN AUX , VCCSA , +1.05V PROC , +12V , +5V , +3.3V</li> </ul>
<p>OS</p>	<ul style="list-style-type: none"> <li>• Microsoft® Windows® 10 64 비트 / 11 64 비트</li> </ul>
<p>인증</p>	<ul style="list-style-type: none"> <li>• FCC , CE</li> <li>• ErP/EuP 사용 가능 (ErP/EuP 사용 가능 전원공급장치 필요)</li> </ul>



## 仕様

- プラットフォーム
- ・ マイクロ ATX フォームファクター
  - ・ 固体コンデンサ設計

- CPU
- ・ 第 12 世代 Intel® Core™ プロセッサ (LGA1700) に対応
  - ・ 5 電源フェーズ設計
  - ・ Intel® Hybrid テクノロジーに対応
  - ・ Intel® ターボブースト Max テクノロジー 3.0 に対応

- チップセット
- ・ Intel® H610

- メモリ
- ・ デュアルチャンネル DDR4 メモリ機能
  - ・ 2 x DDR4 DIMM スロット
  - ・ 最大 3200 の DDR4 ノン ECC、アンバッファードメモリに対応\*
- \* 詳細については、ASRock ウェブサイトのメモリーサポート一覧を参照してください。 (<http://www.asrock.com/>)
- ・ ECC UDIMM メモリモジュールに対応 (non-ECC モードで動作)
  - ・ システムメモリの最大容量 : 64GB
  - ・ Intel® エクストリームメモリプロファイル (XMP) 2.0 に対応

- 拡張スロット
- ・ 1 x PCIe Gen4x16 スロット\*
- \* 起動ディスクとして NVMe SSD に対応
- ・ 1 x PCIe Gen3x1 スロット

- グラフィックス
- ・ Intel® UHD グラフィックス内蔵ビジュアルおよびVGA出力は、GPU に統合されたプロセッサのみでサポートされます。
  - ・ Intel® X<sup>e</sup> グラフィックスアーキテクチャ (Gen 12)
- H610M-HDV:
- ・ 3 つのグラフィックス出力オプション: D-Sub、HDMI、および、DisplayPort 1.4
  - ・ HDMI 2.1 TMDS 互換に対応、最大解像度 4K x 2K (4096x2160) @ 60Hz
  - ・ DSC (圧縮) 最大解像度 8K (7680x4320) @ 60Hz/5K (5120x3200) @ 120Hz で DisplayPort 1.4 をサポートします

- D-Sub に対応、最大解像度 1920x1200 @60Hz
- HDMI 2.1 TMDS 互換および DisplayPort 1.4 ポートで HDCP 2.3 をサポートします

H610M-HVS:

- デュアルグラフィックス出力:独立したディスプレイコントローラーで HDMI ポートと D-Sub ポートに対応
- HDMI 2.1 TMDS 互換に対応、最大解像度 4K x 2K (4096x2160) @ 60Hz
- D-Sub に対応、最大解像度 1920x1200 @60Hz
- HDMI 2.1 TMDS 互換ポートで HDCP 2.3 をサポートします

オーディオ

- 7.1 CH HD オーディオ (Realtek ALC897/887 Audio Codec)
- サージ保護に対応

LAN

- PCIE x1 ギガビット LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Wake-On-LAN (ウェイク オン ラン) に対応
- 雷 / 静電気放電 (ESD) 保護に対応
- エネルギー効率のよいイーサネット 802.3az をサポート
- PXE をサポート

リアパネル I/O

- 1 x PS/2 マウス / キーボードポート
- 2 x USB 3.2 Gen1 ポート (静電気放電 (ESD) 保護に対応)
- 4 x USB 2.0 ポート (静電気放電 (ESD) 保護に対応)
- LED 付き 1 x RJ-45 LAN ポート (ACT/LINK LED と SPEED LED)
- HD オーディオジャック:ラインイン/フロントスピーカー/マイク

H610M-HDV:

- 1 x D-Sub ポート
- 1 x HDMI ポート
- 1 x DisplayPort 1.4

H610M-HVS:

- 1 x D-Sub ポート
- 1 x HDMI ポート

ストレージ

- 4 x SATA3 6.0 Gb/s コネクタ

## コネクタ

- ・ 1 x SPI TPM ヘッダー
- ・ 1 x シャーシイントルージョンとスピーカーヘッダー
- ・ 1 x CPU ファンコネクタ (4 ピン)
- \* CPU ファンコネクタは最大 1A (12W) の電力の CPU ファンに対応します。
- ・ 1 x シャーシ/ウォーターポンプファンコネクタ (4 ピン) (スマートファン速度制御)
- \* シャーシ/ウォーターポンプファンは最大 2A (24W) の出力のウォータークーラーに対応します。
- \* CHA\_FAN1/WP は 3 ピンまたは 4 ピンファンが使用されているかどうかを自動検出できます。
- ・ 1 x 24 ピン ATX 電源コネクタ
- ・ 1 x 8 ピン 12V 電源コネクタ
- ・ 1 x 前面パネルオーディオコネクタ
- ・ 1 x USB 2.0 ヘッダー (2 つの USB 2.0 ポートに対応) (静電気放電 (ESD) 保護に対応)
- ・ 1 x USB 3.2 Gen1 ヘッダー (2 つの USB 3.2 Gen1 ポートに対応) (静電気放電 (ESD) 保護に対応)

## BIOS 機能

- ・ AMI UEFI Legal BIOS、多言語 GUI サポート付き
- ・ ACPI 6.0 準拠ウェイクアップイベント
- ・ SMBIOS 2.7 サポート
- ・ CPU コア/キャッシュ、CPU コア/キャッシュ ロードライン、CPU GT、CPU GT ロードライン、DRAM、+0.82V PCH、+1.05V PCH、VCCIN AUX、+1.8V PROC、+1.05V PROC 複数電圧設定

## ハードウェア モニター

- ・ ファンタコメータ: CPU、シャーシ/ウォーターポンプファン
- ・ 静音ファン (CPU 温度に従ってシャーシファン速度を自動調整): CPU、シャーシ/ウォーターポンプファン
- ・ ファンマルチ速度制御: CPU、シャーシ/ウォーターポンプファン
- ・ ケース開閉検知
- ・ 電圧監視: CPU Vcore、DRAM、+0.82V PCH、+1.05V PCH、VCCIN AUX、VCCSA、+1.05V PROC、+12V、+5V、+3.3V

## OS

- ・ Microsoft® Windows® 10 64 ビット / 11 64 ビット

## 認証

- ・ FCC、CE
- ・ ErP/EuP Ready (ErP/EuP 対応電源供給装置が必要です)

## 规格

- 平台
- Micro ATX 规格尺寸
  - 稳固的电容器设计

- CPU
- 支持第 12 代 Intel® Core™ 处理器 (LGA1700)
  - 5 电源相设计
  - 支持 Intel® Hybrid Technology
  - 支持 Intel® Turbo Boost Max Technology 3.0

- 芯片集
- Intel® H610

- 内存
- 双通道 DDR4 内存技术
  - 2 x DDR4 DIMM 槽
  - 支持 DDR4 非 ECC, 非缓冲内存, 最高支持 3200\*
  - \* 请参阅华擎网站上的 Memory Support List (内存支持列表) 了解详情。(http://www.asrock.com/)
  - 支持 ECC UDIMM 内存模块 (非 ECC 模式操作)
  - 支持系统内存最大容量: 64GB
  - 支持 Intel® Extreme Memory Profile (XMP) 2.0

- 扩充槽
- 1 x PCIe Gen4x16 槽 \*
  - \* 支持 NVMe SSD 用作启动盘
  - 1 x PCIe Gen3x1 槽

- 图形
- 只有 GPU 集成的处理器才支持 Intel® UHD Graphics 内置视效和 VGA 输出。
  - Intel® X<sup>e</sup> 图形架构 (Gen 12)
- H610M-HDV:
- 3 个图形输出选项: D-Sub、HDMI 和 DisplayPort 1.4
  - 支持兼容 TMDS 的 HDMI 2.1, 60Hz 时最大分辨率达 4K x 2K (4096x2160)
  - 支持 DisplayPort 1.4, DSC (压缩) 最大分辨率可达 8K (7680x4320) @ 60Hz / 5K (5120x3200) @ 120Hz

- 支持 D-Sub, 60Hz 时最大分辨率达 1920x1200
- 支持 HDCP 2.3 及兼容 TMDS 的 HDMI 2.1 以及 DisplayPort 1.4 端口

H610M-HVS:

- 双图形输出: 通过独立显示控制器支持 HDMI 和 D-Sub 端口
- 支持兼容 TMDS 的 HDMI 2.1, 60Hz 时最大分辨率达 4K x 2K (4096x2160)
- 支持 D-Sub, 60Hz 时最大分辨率达 1920x1200
- 支持 HDCP 2.3 兼容 TMDS 的 HDMI 2.1 端口

音频

- 7.1 CH 高清音频 (Realtek ALC897/887 音频编解码器)
- 支持电涌保护

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- 支持 Wake-On-LAN (网上唤醒)
- 支持雷电 /ESD 保护
- 支持高效以太网 802.3az
- 支持 PXE

后面板 I/O

- 1 x PS/2 鼠标 / 键盘端口
- 2 x USB 3.2 Gen1 端口 (支持 ESD 保护)
- 4 x USB 2.0 端口 (支持 ESD 保护)
- 1 x RJ-45 LAN 端口, 带 LED (ACT/LINK LED 和 SPEED LED)
- 高清音频插孔: 线路输入 / 前扬声器 / 麦克风

H610M-HDV:

- 1 x D-Sub 端口
- 1 x HDMI 端口
- 1 x DisplayPort 1.4

H610M-HVS:

- 1 x D-Sub 端口
- 1 x HDMI 端口

存储

- 4 x SATA3 6.0 Gb/s 接口

- 接口
- 1 x SPI TPM 接脚
  - 1 x 机箱侵入和扬声器接脚
  - 1 x CPU 风扇接口（4 针）
- \* CPU 风扇接口支持最高 1A（12W）功率的 CPU 风扇。
- 1 x 机箱 / 水泵风扇接口（4 针）（智能风扇速度控制）
- \* 机箱 / 水泵风扇支持最高 2A（24W）功率的水冷风扇。
- \* CHA\_FAN1/WP 可以自动检测 3 针脚或 4 针脚风扇是否在使用。
- 1 x 24 针 ATX 电源接口
  - 1 x 8 针 12V 电源接口
  - 1 x 前面板音频接口
  - 1 x USB 2.0 接脚（支持 2 个 USB 2.0 端口，支持 ESD 保护）
  - 1 x USB 3.2 Gen1 接脚（支持 2 个 USB 3.2 Gen1 端口，支持 ESD 保护）

- BIOS 功能特点
- AMI UEFI Legal BIOS，支持多语言 GUI
  - ACPI 6.0 兼容唤醒事件
  - 支持 SMBIOS 2.7
  - CPU 内核 / 缓存、CPU 内核 / 缓存负载线路、CPU GT、CPU GT 负载线路、DRAM、+0.82V PCH、+1.05V PCH、VCCIN AUX、+1.8V PROC、+1.05V PROC 电压多次调整

- 硬件监控
- 风扇转速计：CPU、机箱 / 水泵风扇
  - 静音风扇（根据 CPU 温度自动调整机箱风扇速度）：  
CPU、机箱 / 水泵风扇
  - 风扇多种速度控制：CPU、机箱 / 水泵风扇
  - CASE OPEN（机箱打开）检测
  - 电压监控：CPU Vcore、DRAM、+0.82V PCH、+1.05V PCH、VCCIN AUX、VCCSA、+1.05V PROC、+12V、+5V、+3.3V

- 操作系统
- Microsoft® Windows® 10 64 位 / 11 64 位

- 认证
- FCC、CE
  - ErP/EuP 支持（需要支持 ErP/EuP 的电源）

## 电子信息产品污染控制标示

依据中国发布的「电子信息产品污染控制管理办法」及 SJ/T 11364-2006「电子信息产品污染控制标示要求」，电子信息产品应进行标示，藉以向消费者揭露产品中含有的有毒有害物质或元素不致发生外泄或突变从而对环境造成污染或对人身、财产造成严重损害的期限。依上述规定，您可于本产品之印刷电路板上看见图一之标示。图一中之数字为产品之环保使用期限。由此可知此主板之环保使用期限为 10 年。



图一

## 有毒有害物质或元素的名称及含量说明

若您欲了解此产品的有毒有害物质或元素的名称及含量说明，请参照以下表格及说明。

部件名称	有害物质或元素					
	铅 (Pb)	镉 (Cd)	汞 (Hg)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及电子组件	X	0	0	0	0	0
外部信号连接头及线材	X	0	0	0	0	0

0：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求，然该部件仍符合欧盟指令 2002/95/EC 的规范。

备注：此产品所标示之环保使用年限，系指在一般正常使用状况下。

## 規格

- 平台
- Micro ATX 尺寸
  - 固態電容設計

- CPU
- 支援第 12 代 Intel® Core™ 處理器 (LGA1700)
  - 5 電源相位設計
  - 支援 Intel® 混合技術
  - 支援 Intel® Turbo Boost Max 技術 3.0

- 晶片組
- Intel® H610

- 記憶體
- 雙通道 DDR4 記憶體技術
  - 2 x DDR4 DIMM 插槽
  - 支援 DDR4 非 ECC、無緩衝記憶體，最高可達 3200\*
  - \* 如需更多資訊，請參閱華擎網站上的記憶體支援表。  
(<http://www.asrock.com/>)
  - 支援 ECC UDIMM 記憶體模組（於非 ECC 模式下運作）
  - 最大系統記憶體容量：64GB
  - 支援 Intel® Extreme Memory Profile (XMP) 2.0

- 擴充插槽
- 1 x PCIe Gen4x16 插槽 \*
  - \* 支援 NVMe SSD 作為開機磁碟
  - 1 x PCIe Gen3x1 插槽

- 顯示卡
- 僅限整合 GPU 的處理器才可支援 Intel® UHD Graphics Built-in Visuals 及 VGA 輸出。
  - Intel® X<sup>e</sup> 顯示卡架構（第 12 代）
- H610M-HDV:
- 三個圖形輸出選項：D-Sub、HDMI 及 DisplayPort 1.4
  - 最高支援 4K x 2K (4096x2160) @ 60Hz 解析度的 HDMI 2.1 TMDs 相容性
  - 支援 DisplayPort 1.4, DSC (壓縮) 最大解析度高達 8K (7680x4320) @ 60Hz / 5K (5120x3200) @ 120Hz



- 最高支援 1920x1200 @ 60Hz 解析度的 D-Sub
- 支援 HDCP 2.3, 具 HDMI 2.1 TMDS 相容性和 DisplayPort 1.4 連接埠

H610M-HVS:

- 雙圖形輸出: 透過獨立顯示控制器支援 HDMI 及 D-Sub 連接埠
- 最高支援 4K x 2K (4096x2160) @ 60Hz 解析度的 HDMI 2.1 TMDS 相容性
- 最高支援 1920x1200 @ 60Hz 解析度的 D-Sub
- 支援含 HDMI 2.1 TMDS 相容性連接埠的 HDCP 2.3

音訊

- 7.1 CH HD 音訊 (Realtek ALC897/887 音訊轉碼器)
- 支援突波保護

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- 支援網路喚醒
- 支援雷擊 / 靜電保護
- 支援 802.3az EEE 節能乙太網路
- 支援 PXE

後面板 I/O

- 1 x PS/2 滑鼠 / 鍵盤連接埠
- 2 x USB 3.2 Gen1 連接埠 (支援靜電保護)
- 4 x USB 2.0 連接埠 (支援靜電保護)
- 1 x RJ-45 LAN 連接埠, 含 LED (ACT/LINK LED 及 SPEED LED)
- HD 音訊插孔: 線路輸入 / 前置喇叭 / 麥克風

H610M-HDV:

- 1 x D-Sub 連接埠
- 1 x HDMI 連接埠
- 1 x DisplayPort 1.4

H610M-HVS:

- 1 x D-Sub 連接埠
- 1 x HDMI 連接埠

儲存裝置

- 4 x SATA3 6.0 Gb/s 接頭

## 接頭

- 1 x SPI TPM 排針
- 1 x 機殼防護及喇叭排針
- 1 x CPU 風扇接頭 (4-pin)
- \* CPU 風扇接頭支援最高 1A (12W) 風扇功率的 CPU 風扇。
- 1 x 機殼 / 水冷幫浦風扇接頭 (4-pin) (智慧型風扇速度控制)
- \* 機殼 / 水冷幫浦風扇接頭支援最高 2A (24W) 風扇功率的水冷風扇。
- \* 如果 3-pin 或 4-pin 風扇使用中, 可自動偵測 CHA\_FAN1/WP。
- 1 x 24 pin ATX 電源接頭
- 1 x 8 pin 12V 電源接頭
- 1 x 前面板音訊接頭
- 1 x USB 2.0 排針 (支援 2 個 USB 2.0 連接埠)(支援靜電保護)
- 1 x USB 3.2 Gen1 排針 (支援 2 個 USB 3.2 Gen1 連接埠) (支援靜電保護)

## BIOS 功能

- AMI UEFI Legal BIOS 含多語 GUI 支援
- ACPI 6.0 符合喚醒自動開機
- 支援 SMBIOS 2.7
- CPU 核心 / 快取、CPU 核心 / 快取防掉壓, CPU GT、CPU GT 防掉壓、DRAM、+0.82V PCH、+1.05V PCH、VCCIN AUX、+1.8V PROC、+1.05V PROC 電壓多重調整

## 硬體顯示器

- 風扇轉速計: CPU、機殼 / 水冷幫浦風扇
- 靜音風扇 (依 CPU 溫度自動調整機殼風扇速度): CPU、機殼 / 水冷幫浦風扇
- 風扇多重速度控制: CPU、機殼 / 水冷幫浦風扇
- 機殼開啟偵測
- 電壓監控: CPU Vcore、DRAM、+0.82V PCH、+1.05V PCH、VCCIN AUX、VCCSA、+1.05V PROC、+12V、+5V、+3.3V

## 作業系統

- Microsoft® Windows® 10 64 位元 / 11 64 位元

## 認證

- FCC、CE
- ErP/EuP ready (須具備 ErP/EuP ready 電源供應器)

## Spesifikasi

- Platform**
- Bentuk dan Ukuran Micro ATX
  - Desain Kapasitor Solid

- CPU**
- Mendukung Prosesor Intel® Core™ Gen ke-12 (LGA1700)
  - Desain 5 Fase Daya
  - Mendukung Teknologi Intel® Hybrid
  - Mendukung Teknologi Intel® Turbo Boost Max 3.0

- Chipset**
- Intel® H610

- Memori**
- Teknologi Memori DDR4 Dua Saluran
  - 2 x Slot DIMM DDR4
  - Mendukung memori DDR4 non-ECC, tanpa buffer hingga 3200\*
- \* Lihat Daftar Dukungan Memori pada situs web ASRock untuk informasi selengkapnya. (<http://www.asrock.com/>)
- Mendukung modul memori ECC UDIMM (berjalan dalam mode non-ECC)
  - Kapasitas maksimum memori sistem: 64GB
  - Mendukung Intel® Extreme Memory Profile (XMP) 2.0

- Slot Ekspansi**
- 1 slot PCIe Gen4x16\*
- \* Mendukung SSD NVMe sebagai disk boot
- 1 slot PCIe Gen3x1

- Grafis**
- Intel® UHD Graphics Built-in Visuals dan output VGA hanya didukung dengan prosesor yang terintegrasi GPU.
  - Arsitektur Grafis Intel® X<sup>e</sup> (Gen 12)

**H610M-HDV:**

- Tiga pilihan output grafis: D-Sub, HDMI, dan DisplayPort 1.4
- Mendukung HDMI 2.1 TMDS Kompatibel dengan maks. resolusi hingga 4K x 2K (4096x2160) @ 60Hz
- Mendukung DisplayPort 1.4 dengan resolusi maks, DSC (terkompresi) hingga 8K (7680x4320) @ 60Hz / 5K (5120x3200) @ 120Hz

- Mendukung D-Sub dengan resolusi maksimum hingga 1920x1200 @ 60Hz
- Mendukung HDCP 2.3 dengan Port HDMI 2.1 yang Kompatibel dengan TMDS dan DisplayPort 1.4

**H610M-HVS:**

- Output grafis ganda: Mendukung port HDMI dan D-Sub dengan kontrol layar independen
- Mendukung HDMI 2.1 TMDS Kompatibel dengan maks. resolusi hingga 4K x 2K (4096x2160) @ 60Hz
- Mendukung D-Sub dengan resolusi maksimum hingga 1920x1200 @ 60Hz
- Mendukung HDCP 2.3 dengan Port HDMI 2.1 yang Kompatibel dengan TMDS

**Audio**

- Audio HD 7.1 CH (Realtek ALC897/887 Audio Codec)
- Mendukung Perlindungan dari Lonjakan Arus

**LAN**

- 1 x PCIE Gigabit LAN 10/100/1000 Mb/s
- 1 x Realtek RTL8111H
- Mendukung Wake-On-LAN
- Mendukung Perlindungan dari Petir/ESD
- Mendukung Ethernet 802.3az Hemat Energi
- Mendukung PXE

**I/O Panel Belakang**

- 1 x Port Mouse/Keyboard PS/2
- 2 x Port USB 3.2 Gen1 (Mendukung Perlindungan dari ESD)
- 4 x Port USB 2.0 (Mendukung Perlindungan dari ESD)
- 1 x Port LAN RJ-45 dengan LED (LED ACT/LINK dan LED SPEED)
- Soket Audio HD: Saluran Masuk/Speaker Depan/Mikrofon

**H610M-HDV:**

- 1 x Port D-Sub
- 1 x Port HDMI
- 1 x DisplayPort 1.4

**H610M-HVS:**

- 1 x Port D-Sub
- 1 x Port HDMI

**Penyimpanan**

- 4 x Konektor SATA3 6,0 Gb/s

### Konektor

- 1 x Header SPI TPM
- 1 x Intrusi Sasis dan Header Speaker
- 1 x Konektor Kipas CPU (4-pin)
- \* Konektor Kipas CPU mendukung kipas CPU dengan daya kipas maksimum 1A (12W).
  - 1 x Konektor Kipas Chassis/Pompa Air (4-pin) (Kontrol Kecepatan Kipas Pintar)
- \* Chassis/Kipas Pompa Air mendukung kipas berpendingin air dengan daya kipas maksimum 2A (24W).
- \* CHA\_FAN1/WP dapat mendeteksi otomatis jika kipas 3-pin atau 4-pin sedang digunakan.
  - 1 x Konektor Daya ATX 24 pin
  - 1 x Konektor Daya 8 pin 12V
  - 1 x Konektor Audio Panel Depan
  - 1 x Header USB 2.0 (Mendukung 2 port USB 2.0) (Mendukung Perlindungan dari ESD)
  - 1 x Header USB 3.2 Gen1 (Mendukung 2 port USB 3.2 Gen1) (Mendukung Perlindungan dari ESD)

### Fitur BIOS

- AMI UEFI Legal BIOS dengan dukungan GUI multibahasa
- ACPI 6.0 Kompatibel dengan aktivitas pengaktifan
- Dukungan SMBIOS 2.7
- Multipengatur Tegangan CPU Core/Cache, CPU Core/Cache Load-Line, CPU GT, CPU GT Load-Line, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, +1,8V PROC, +1,05V PROC

### Monitor Perangkat Keras

- Takometer Kipas: Kipas CPU, Sasis, Pompa Air
- Kipas Hening (Penyesuaian otomatis kecepatan kipas sasis berdasarkan suhu CPU): Kipas CPU, Sasis, Pompa Air
- Kontrol Multikecepatan Kipas: Kipas CPU, Sasis, Pompa Air
- Deteksi CASE OPEN
- Pemantauan tegangan: CPU Vcore, DRAM, +0,82V PCH, +1,05V PCH, VCCIN AUX, VCCSA, +1,05V PROC, +12V, +5V, +3,3V

### OS

- Microsoft® Windows® 10 64-bit / 11 64-bit

### Sertifikasi

- FCC, CE
- Mendukung ErP/EuP (memerlukan catu daya untuk ErP/EuP)

## Contact Information

If you need to contact ASRock or want to know more about ASRock, you're welcome to visit ASRock's website at <http://www.asrock.com>; or you may contact your dealer for further information. For technical questions, please submit a support request form at <http://www.asrock.com/support/tsd.asp>

### **ASRock Incorporation**

2F., No.37, Sec. 2, Jhongyang S. Rd., Beitou District,  
Taipei City 112, Taiwan (R.O.C.)

### **ASRock EUROPE B.V.**

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The Netherlands

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Fax: +31-24-345-44-38

### **ASRock America, Inc.**

13848 Magnolia Ave, Chino, CA91710

U.S.A.

Phone: +1-909-590-8308

Fax: +1-909-590-1026

# DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



**Responsible Party Name:** ASRock Incorporation

**Address:** 13848 Magnolia Ave, Chino, CA91710

**Phone/Fax No:** +1-909-590-8308/+1-909-590-1026

hereby declares that the product

**Product Name :** Motherboard

**Model Number :** H610M-HDV / H610M-HVS

Conforms to the following specifications:

FCC Part 15, Subpart B, Unintentional Radiators

## **Supplementary Information:**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name: James

Signature:

A handwritten signature in black ink, appearing to read 'James', written over a horizontal line.

Date : May 12, 2017

# EU Declaration of Conformity



For the following equipment:

## Motherboard

(Product Name)

## H610M-HDV / H610M-HVS / ASRock

(Model Designation / Trade Name)

## ASRock Incorporation

(Manufacturer Name)

## 2F, No.37, Sec. 2, Zhongyang S. Rd., Beitou District, Taipei City 112, Taiwan (R.O.C.)

(Manufacturer Address)

### EMC Directive - 2014/30/EU

EN 55032:2015/A11:2020

EN 61000-3-2:2014

EN 61000-3-3:2013

EN 55024:2010/A1:2015

EN 55035:2017/A11:2020

EN 61000-4-2:2009

EN 61000-4-3:2006/A1:2008/A2:2010

EN 61000-4-4:2012

EN 61000-4-5:2014/A1:2017

EN 61000-4-6:2014/AC:2015

EN 61000-4-8:2010

EN 61000-4-11:2004/A1:2017

### Low Voltage Directive - 2014/35/EU

EN 62368-1:2014

EN 62368-1:2014/A11:2017

### RoHS Directive - 2011/65/EU

(EU) 2015/863

EN 50581:2012

### CE marking



(EU conformity marking)

## ASRock EUROPE B.V.

(Company Name)

## Bijsterhuizen 1111 6546 AR Nijmegen The Netherlands

(Company Address)

Person responsible for making this declaration:

(Name, Surname)

## A.V.P

(Position / Title)

**December 24, 2021**

(Date)

P/N: 15G062339000AK V1.0