ASUS PRIME H770-PLUS D4

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ASUS	

ASUS Prime series motherboards are expertly engineered to unleash the full potential of 13th Gen Intel® Core™ Processors. Boasting a robust power design, comprehensive cooling solutions and intelligent tuning options, PRIME H770-PLUS D4 provides users and PC DIY builders with a range of performance optimizations via intuitive software and firmware features.

FLEXIBILITY
Comprehensive controls form the foundation of the ASUS PRIME series. The PRIME H770-PLUS D4 motherboard packs flexible tools to tune every aspect of your system, enabling performance tweaks to perfectly match the way you work to maximize productivity.

Intelligent Control
ASUS Intelligent Control makes your PC smart. Along with taking care of complex tuning and dynamically optimizing essential aspects of your system, it offers intelligently simplified options for newcomers to PC DIY, as well as more comprehensive features for seasoned veterans.

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

Flexible Air- and Liquid-Cooling Controls
ASUS Fan Xpert 2+ software provides comprehensive control over fans and all-in-one (AIO) coolers. Whether cooling with air or water, an Auto-Tuning mode intelligently configures all parameters with a single click. There's also an Extreme Quiet mode that reduces chassis fan speeds to below the default minimum to keep your system whisper-quiet when performing light tasks. Fans and AIO coolers can also be controlled via the UEFI BIOS.

Precise Digital Power Control
The Digi+ voltage-regulator module (VRM) delivers real-time control over voltage droop, automatically switching frequency and power-efficiency settings. It also allows you to fine-tune your CPU for ultimate stability and performance.

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

Advanced Tuning for Serious Tweakers
An intuitive Advanced mode offered via the UEFI lets you take complete control. A built-in search feature makes it easy to find options, and various advanced functions let you intelligently make nuanced adjustments so you can dial in performance just the way you want.

Quick and Simple Setup

EZ mode displays vital settings and stats and also offers guided wizards, drag-and-drop functionality, and one-click application of important settings — all to help you get your rig up and running in no time.

Intuitive Graphical Fan Control
Fine-tune individual fan settings simply by dragging a curve with the mouse.

Aura On/Off Mode (Stealth)
Easily enable or disable Aura RGB lighting or every onboard LED, for a subdued aesthetic touch.

COOLING
PRIME H770-PLUS D4 motherboard is engineered with multiple onboard heatsinks and an array of hybrid fan headers to ensure your rig stays cool and stable under intense workloads.

Heatsinks

M.2 Heatsink
M.2 heatsink wards off throttling that can occur with M.2 storage during sustained transfers. The heatsink is held in place by captive screws, and these removable captive screws help reduce risk of drops or loss during heatsink removal.

VRM Heatsink and Thermal Pad
VRM heatsink and thermal pad improve heat transfer from the MOSFETs for better cooling performance.

Cooler by Design
PRIME H770-PLUS D4 features comprehensive cooling controls that are configurable via Fan Xpert 2+ software or via the UEFI BIOS.

Multiple Temperature Sources
Each header can dynamically reference three thermal sensors. Fan Xpert 2+ allows you to map the temperature of supported ASUS graphics cards to optimize cooling for GPU- and CPU-intensive tasks.

AIO Pump Header
A dedicated PWM/DC header for self-contained water-cooling setups.

Smart Protection
A dedicated integrated circuit protects each fan header from overheating and overcurrent.

4-Pin PWM/DC Fan
Each onboard header supports auto-detection of PWM or DC fans.

PERFORMANCE
The PRIME H770-PLUS D4 motherboard is built to handle the high core counts and bandwidth demands of 13th Gen Intel® Core™ Processors. ASUS H770 motherboard provides all the fundamentals to boost daily productivity, so your system will be ready for action with stable power, intuitive cooling and flexible data transfer options.

Robust Power Design
Stable power is essential to extract every last bit of performance out of Intel® processors. The PRIME H770-PLUS D4 is geared to cater to the demands of these high-core-count CPUs.

Memory

DDR4 Support
Improvements to trace routing design provide the latest Intel® processors with enhanced access to memory bandwidth. ASUS OptiMem technology carefully maps memory signal pathways across different PCB layers to reduce path distance, and it adds shielding zones that significantly reduce crosstalk.

ASUS OptiMem
Revisions to the motherboard's trace routing provide the latest Intel® processors with unrestricted access to memory bandwidth. ASUS OptiMem technology carefully maps memory signal pathways across different PCB layers to reduce vias and adds shielding zones that significantly reduce crosstalk.

ASUS OptiMem benefits:
Improved memory stability and compatibility
Allows lower memory latencies at equivalent voltages
Improved memory frequency margin

Storage

Three M.2 Slots (up to 64 Gbps)
PRIME H770-PLUS D4 offers a total of three M.2 slots that support data-transfer speeds of up to 64 Gbps via PCIe 4.0, enabling quicker boot-up and app load times with OS or application drives.
*Actual transmission speeds will be lower than the theoretical maximum speed.

Connectivity

PCIe 5.0 Slot
PCIe 5.0 offers twice the data transfer speed of PCIe 4.0, making it robust enough to handle new data-heavy tasks. PCIe 5.0 also brings other benefits, such as electrical changes to improve signal integrity, backward-compatible CEM connectors for add-in cards, and compatibility with previous versions of PCI Express.

USB 3.2 Gen 2 Type-C®
A batch of USB ports support high-end rigs loaded with peripherals, including a rear USB Type-C® connector with ultrafast USB 3.2 Gen 2 for transmission speeds of up to 10Gbps.

Thunderbolt™ 4 (USB4® compliant)
PRIME H770-PLUS D4 motherboard features USB4® support via a Thunderbolt™ (USB4®) header. With an ASUS add-on card*, PRIME motherboards can enable bi-directional speeds of up to 40 Gbps on a single cable, while providing power to fast-charge device. Additionally, this card has a daisy-chain function for multi-screen connection and supports up to dual displays with 4K resolution.
*ASUS add-on card is sold separately.

Realtek 2.5 Gb Ethernet
Realtek 2.5 Gb Ethernet reduces CPU overhead and offers exceptionally high TCP and UDP throughput for faster, smoother data transfers.

LANGuard
ASUS LANGuard is a hardware-level network protection feature that integrates advanced signal-coupling technology and premium anti-EMI surface-mounted capacitors to improve throughput and ensure a more reliable connection.

Combined onboard features deliver elevated audio
Intelligent design and premium hardware create audio quality unlike anything you've ever experienced.

Audio Shielding
Audio shielding ensures precision analog/digital separation and greatly reduced multi-lateral interference.

Dedicated Audio PCB Layers
Separate layers for left and right tracks ensures both channels deliver consistent, equal quality.

Premium Audio Capacitors
Provides warm, natural, and immersive sound with exceptional clarity and fidelity.

Aura Sync
Outshine the Competition
A well-tuned enthusiast system deserves a matching aesthetic. ASUS Aura offers full RGB lighting control with a variety of functional presets for the built-in RGB LEDs as well as strips and devices connected to the onboard RGB headers — and it can all be synced with an ever-growing portfolio of Aura-capable hardware.

Addressable Gen 2 Headers
Three Addressable Gen 2 headers are capable of detecting the number of LEDs on second-gen addressable RGB devices, allowing the software to automatically tailor lighting effects to specific devices. The new headers also offer backward-compatibility with existing Aura RGB gear.

Armoury Crate
Within a single intuitive interface, Armoury Crate offers easily customized Aura Sync RGB settings for every compatible device in your arsenal , plus controls for an ever-growing family of ASUS products, including keyboard and mouse preferences. Armoury Crate also integrates product registration and a news feed so that you never miss updates of interest to the ASUS community.

Q-LED Core
The Q-LED Core display produces light patterns by power LED during the Power-On Self-Test (POST) that can help users troubleshoot potential issues.

SafeSlot Core+
PCIe 5.0 is 2x faster than PCIe 4.0, so we adapted our SMT manufacturing process for the faster SafeSlot Core+, to ensure the

highest data speeds. SafeSlot Core+ is a reinforced metal sheath added to a PCIe slot to keep a card firmly installed.

Overvoltage Protection
World-class circuit-protecting power design
An exclusive circuit design with built-in voltage regulators to protect your motherboard from damage caused by unexpected high-level voltages from unstable or inferior power supplies.

Stainless-Steel Back I/O
3X corrosion-resistance for greater durability
Corrosion-resistant stainless-steel back I/O panels bonded with chromium oxide have a lifespan that's three times longer than ordinary panels.

Zusammenfassung

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3X corrosion-resistance for greater durability
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ASUS PRIME H770-PLUS D4, Intel, LGA 1700, Intel® Celeron®, Intel® Core™ i3, Intel® Core™ i5, Intel® Core™ i7, Intel® Core™ i9,..., LGA 1700, DDR4-SDRAM, 128 GB

ASUS PRIME H770-PLUS D4. Processor manufacturer: Intel, Processor socket: LGA 1700, Compatible processor series: Intel® Celeron®, Intel® Core™ i3, Intel® Core™ i5, Intel® Core™ i7, Intel® Core™ i9,.... Supported memory types: DDR4-SDRAM, Maximum internal memory: 128 GB, Memory slots type: DIMM. Supported storage drive interfaces: M.2, SATA III, Supported storage drive types: HDD & SSD, RAID levels: 0, 1, 5, 10. Ethernet interface type: 2.5 Gigabit Ethernet. Component for: PC, Motherboard form factor: ATX, Motherboard chipset family: Intel

Merkmale

Graphics

Parallel processing technology support	Not supported

Other features

Number of M.2 (E) slots	1

BIOS

BIOS type	UEFI AMI
BIOS memory size	192 Mbit

Packaging content

Cables included	SATA
User guide	Yes

Weight & dimensions

Width	305 mm
Depth	244 mm

Network

Ethernet LAN	Yes
Ethernet interface type	2.5 Gigabit Ethernet
Wi-Fi	No

Expansion slots

PCI Express x1 (Gen 3.x) slots	2
PCI Express x16 (Gen 4.x) slots	2
PCI Express x16 (Gen 5.x) slots	1
Number of M.2 (M) slots	3

Packaging data

Package width	328 mm
Package depth	53 mm
Package height	266 mm
Package weight	1.13 kg

Processor

Processor manufacturer	Intel
Processor socket	LGA 1700
Compatible processor series	Intel® Celeron®, Intel® Core™ i3, Intel® Core™ i5, Intel® Core™ i7, Intel® Core™ i9, Intel® Pentium® Gold
Maximum number of SMP processors	1
Supported processor sockets	LGA 1700

Storage controllers

Supported storage drive types	HDD & SSD
Supported storage drive interfaces	M.2, SATA III
Number of HDDs supported	4
Number of storage drives supported	7
RAID support	Yes
RAID levels	0, 1, 5, 10

Features

Motherboard chipset	Intel H770
Audio output channels	7.1 channels
Component for	PC
Motherboard form factor	ATX
Motherboard chipset family	Intel
Cooling type	Passive
Power source type	ATX
Windows operating systems supported	Windows 10, Windows 11

Memory

Supported memory types	DDR4-SDRAM
Number of memory slots	4
Memory slots type	DIMM
Memory channels	Dual-channel
ECC ?ompatibility	Non-ECC
Supported memory clock speeds	5066,5000,4800,4600,4400,4266

	,4000,3733,3600,3466,3400,3333,3200,3000,2933,2800,2666,2400,2133 MHz
Supported memory clock speed (max)	5066 MHz
Maximum internal memory	128 GB
Unbuffered memory	Yes

Rear panel I/O ports

USB 2.0 ports quantity	2
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity	3
USB 3.2 Gen 1 (3.1 Gen 1) Type-C ports quantity	1
USB 3.2 Gen 2 (3.1 Gen 2) Type-A ports quantity	2
Ethernet LAN (RJ-45) ports	1
HDMI ports quantity	1
HDMI version	2.1
DisplayPorts quantity	1
DisplayPort version	1.4
Headphone outputs	1
Line-in	Yes
Microphone in	Yes

Internal I/O

USB 2.0 connectors	2
USB 3.2 Gen 1 (3.1 Gen 1) connectors	2
Number of SATA III connectors	4
S/PDIF out connector	Yes
Front panel audio connector	Yes
Front panel connector	Yes
ATX Power connector (24-pin)	Yes
CPU fan connector	Yes
Number of chassis fan connectors	3
Chassis intrusion connector	Yes
EPS power connector (8-pin)	Yes
Number of COM connectors	1
TPM connector	Yes
Thunderbolt headers	1
12V power connector	Yes
RGB LED pin header	Yes