

## GAMING Z170X Motherboard



- GAMING COMMANDER
- Supports 6th Generation Intel® Core™ Processor, enables overclocking on Unlocked Intel Core Processors
- Intel Z170 single chip architecture
- Support 4-DIMM DDR4-3200(OC)/ 2133/ 1866 up to 64G maximum capacity
- BIOSTAR Hi-Fi 3D Technology inside
- Support USB 3.1 Type-C
- Support PCIe M.2(32Gb/s)
- Support SATA Express(16Gb/s)
- Support HDMI 2.0 true 4K resolution
- Support DisplayPort

## GAMING Z170X Specification

|                  |   |
|------------------|---|
| GAMING COMMANDER | External GAMING Commander Box / Audio Control Software Utility  |
| CPU SUPPORT      | 7th & 6th Gen Intel® Core™ i7 LGA 1151 Processor<br>7th & 6th Gen Intel® Core™ i5 LGA 1151 Processor<br>7th & 6th Gen Intel® Core™ i3 LGA 1151 Processor<br>7th & 6th Gen Intel® Pentium® LGA 1151 Processor<br>7th & 6th Gen Intel® Celeron® LGA 1151 Processor<br>Maximum CPU TDP (Thermal Design Power) : 95Watt |
| MEMORY           | Support Dual Channel DDR4 3200(OC)/ 2133/ 1866 MHz<br>4 x DDR4 DIMM Memory Slot<br>Max. Supports up to 64GB Memory  |

|                  |  |
|------------------|--|
| INTEGRATED VIDEO | By CPU model<br>Supports DX12<br>Supports HDCP   |
| STORAGE          | 3 x SATA Express 16Gb/s Connector<br>Support SATA RAID: 0,1,5,10<br>2 x M.2 (M Key) 32Gb/s Connector, support M.2 type 2242/ 2260/ 2280 SATA 6Gb/s & PCI-E Storage<br>Support PCI-E Storage RAID: 0,1,5  |
| LAN              | Intel i219V - Gigabit Ethernet PHY<br>Killer E2201 - 10/100/1000 Controller<br>*Dual GbE   |
| AUDIO CODEC      | Realtek ALC898 8 Channel Blu-ray Audio<br>Support Blu-ray Audio<br>Support HD Audio<br>Support Biostar Hi-Fi 3D  |
| USB              | 1 x USB 3.1 Type-C Port<br>6 x USB 3.0 Port<br>1 x USB 3.0 Header<br>2 x USB 2.0 Header  |
| EXPANSION SLOT   | 3 x PCI-E 3.0 x16 Slot(x16 or x8, x8 or x8, x4, x4)<br>3 x PCI-E 3.0 x1 Slot<br>1 x PCI-E M.2 Key A Slot(support Wi-Fi or WiGig)   |
| REAR I/O         | 1 x PS/2<br>1 x USB 3.1 Type-C Port<br>6 x USB 3.0 Port<br>1 x DisplayPort Connector, resolution up to 4096 x 2304 @60Hz<br>2 x HDMI Connector, resolution up to 4096 x 2160 @60Hz, compliant with HDMI 2.0<br>1 x DVI-D Connector, resolution up to 1920 x 1200 @60Hz<br>2 x LAN Port<br>5 x Audio Jacks<br>1 x S/PDIF Out Port                             |
| INTERNAL I/O     | 1 x USB 3.0 Header<br>2 x USB 2.0 Header<br>3 x SATA Express 16Gb/s Connector<br>2 x M.2 Key M 32Gb/s Connector, support M.2 type 2242/ 2260/ 2280 SATA 6Gb/s & PCI-E Storage<br>1 x Front Audio Header<br>1 x Front Panel Header<br>1 x S/PDIF-Out Header<br>2 x CPU Fan Connector<br>3 x System Fan Connector<br>1 x GAMING_Panel Header<br>1 x LN2 Switch |

|                 |   |
|-----------------|---|
| H/W MONITORING  | CPU / System Temperature Monitoring<br>CPU / System Fan Monitoring<br>Smart / Manual CPU / System Fan Control<br>System Voltage Monitoring        |
| DIMENSION       | ATX Form Factor Dimension: 30.5cm x 24.4cm ( W x L )  |
| OS SUPPORT      | Supports Windows 7 / 8.1(x64) / 10(x64)   |
| BUNDLE SOFTWARE | BullGuard<br>Smart Ear 3D<br>BIO-Remote2<br>Smart Speed LAN<br>Intel Rapid Storage Technology(include Intel Smart Response Technology)            |
| ACCESSORIES     | 4 x SATA Cable<br>1 x I/O Shield<br>1 x 4GB USB Flash Drive<br>1 x User Manual  |
| FEATURES        | Supports PURO Hi-Fi 3D<br>Touch OC<br>Supports 100% Solid capacitor<br>Rapid Debug3<br>Supports Charger Booster II<br>Supports BIOS Online Update |

## GAMING Z170X OVERVIEW

### CPU-Chipset



### Intel Z170 chipset

With the Intel® Z170 chipset and the 6th generation Intel® Core™ processors, you will immediately be at the forefront of the battlefield, fueled by mindblowing power and performance. From content creation to gaming, the Intel Z170 chipset provides you with the power and performance you need.

### Audio+



## Hi-Fi 3D

Hi-Fi 3D Technology enables high definition multi-dimensional sound where it matters the most with height, width and depth in front of the listener. It's based on the physics of reproduced sound and the basic human perception of sound. The high resolution sound reproduction stands above existing sound enhancements or virtualization technologies.



## Blu-ray Audio

Upgrading your Audio performance in the easiest way is choosing BIOSTAR ultimate Motherboard. It does support Blu-ray audio DRM (compatible driver/software) and provide the higher audio output of 24 bit/ 192KHz than the 16 bit/ 48KHz from the normal MB. You will experience the high quality sound effect with pure Blu-Ray Audio.



## XLouder

XLouder button offers players a quicker way to enable the "XLouder" function, it increases the volume from "microphone", allowing players to have a quicker control over the microphone while enjoying the games.



## Super Hi-Fi Audio Connectors

30uF "Golden" plated audio connectors provide superb signal conductivity, less oxidation, and best possible studio-grade headgears.



## Hi-Fi AMP 3D

With the built-in new generation 3D amplifier, Biostar Hi-Fi 3D motherboard can drive major high-end headphones with over 100dB loads and up to 600ohm impedance. It allows you enjoy a fuller range of dynamic sound with crisper details and less distortion when you are using any headphones.



## Smart Ear 3D

Smart Ear 3D provides true reproduction of virtual 3D space using any headphones! It delivers the true 3D sounds for music, movies and also games. It's fantastically, especially if you've never experienced this kind of acoustic phenomenon before.



## Hi-Fi Pre AMP

Hi-Fi 3D Technology is built-in power amplifier to boost the speaker volume. It will increase double volume level with high-quality HD audio output. Hi-Fi 3D Technology not only improves on the headphone but also enhances your speakers' sound volume.

Hi-Fi preamp can boost the line level audio signals from analog and digital sources to levels that a power amplifier can detect and boost again to successfully power up the loadspeaker.



## 3D Sound Fields

The six types of 3D Sound Fields are including Hi-Fi Theater, Hi-Fi Hall, Hi-Fi Game spots, Hi-Fi Studio, Hi-Fi Conference and Hi-Fi Bistro for your different applications. Biostar Hi-Fi 3D technology involves the virtual placement of sound sources anywhere in 3 dimensional spaces, including behind, above or below.



## Hi-V Caps

Hi-V Caps is "Metalized Polypropylene Film Capacitor" for each audio channel circuit. The customized audio capacitors deliver low noise, low distortion and wide bandwidth to achieve the highest sound resolution and sound expansion.



## Hi-Fi Power

Audio power is an important factor in audio quality. Most AV equipment isolates the power supply for each analog and digital signal to gather high-quality sound reproduction. Equipped with BIOSTAR Hi-Fi Power technology, it will utilize audio components with independent power design for a significant reduction in electronic noise and superb sound quality.



## 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 110dB+

Embrace exceptional sound quality for the win with 110dB SNR and stylish and efficient EMI shield blocks electromagnetic interference to help provide cleaner audio. It has achieved a signal-to-noise ratio (SNR) of 110dB, yielding almost loss-less audio form rear audio connectors.

## Video+



## HDMI 2.0

HDMI 2.0 supports true 4K resolution-4096\*2160@60hz. A significant increase in bandwidth is up to 18mbps, and significant enhancements are added to support the continued increase consumer demands on video and audio experience.



## 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.



## DisplayPort

DisplayPort is a digital display interface developed by the Video Electronics Standards Association (VESA). The interface is primarily used to connect a video source to a display device such as a computer monitor, though it can also be used to carry audio.



## 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.

## Speed+



## Killer E2200 LAN

BIOSTAR Gaming series motherboard adopts Killer E2200 LAN, a dedicated LAN chip for gaming network; it is designed to provide the highest performance for online games. Killer E2200 with Advanced Stream Detect feature can automatically detect the game traffic flow and other network traffic to ensure it's quality of instant messaging, allowing players always in control of the network hardware and enjoy the thrill of games without delay.



## Dual GbE LAN

The primary advantage is the doubling of bandwidth which allows the network bandwidth of 1G to become that of 2G, and with two high-speed gigabit networks plus zero packet delay that provides super high data transmission efficiency. Another major advantage is "Load Balancing", it allows users to attach both network adapters to a single network. It will therefore support the aggregation "teaming" function by merging the two connections to support multiple aggregation modes. In addition, two Gigabit Ethernet lightning protection circuits reducing the probability of damage from lightning or other power surge. So if one connection is disabled the other connection will automatically kick in.



## SmartSpeedLAN

SmartSpeedLAN is a free software application which monitors and manages your PC's network behavior. With user-friendly GUI, it allows you to select and prioritize different types of network traffic, including gaming, media streaming, communications or web surfing. You can also set any specific applications, choosing to prioritize or block accordingly. SmartSpeedLAN can feature automatic management options that use adaptive networking intelligence to ensure that you are getting the best online experience possible.



## USB 3.1 Type-C

USB 3.1 doubles the data transfer rate from 5Gbps to 10Gbps compared with USB3.0, and also is backward compatible with all existing USB3.0 & USB2.0 devices. The Type-C connector is fully reversible which makes it convenient, and it also can save your charging time on portable devices up to 50% compared with Type-A connector.



## USB 3.0

Experience Fastest data transfers at 5 Gbps with USB 3.0--the new latest connectivity standard. Built to connect easily with next-generation components and peripherals, USB 3.0 transfers data 10X faster and backward compatible with previous USB 2.0 components.



## PCI-e M.2 32Gb/s

PCI-e M.2 32Gb/s is the latest storage interface, it delivers the highest bandwidth and lower latency. It's 3 times faster compared with PCI-e M.2 10Gb/s.



## Charger Booster II

Charger booster 2, with maximum voltage up to 2A which provides a quicker charging time on various portable devices.



## SATA Express 16Gb/s

New generation SATA Express standard with speed up to 16Gb/s and meets SATA specifications.





## XMP

Press XMP key to automatically adjust XMP MEMORY to the best performance and enjoying the extreme pleasure of the stability and speed.



## PCIe Gen 3.0

PCIe 3.0 is the next evolution of 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.



## Intel Smart Connect

Smart Connect will periodically wake the computer is in sleep state, the things to check for updates and information.



## Dual DDR4

The primary advantages of DDR4 over DDR3, include higher module density, lower voltage requirements, coupled with higher data transfer rate.

## Durable+



## Super Durable Ferrite Choke

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



## Super Durable Solid Caps

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



## Moistureproof PCB

## Moistureproof of PCB

The popularity of PC usage and working environment is getting deteriorating and moist (rural, coastal, etc.). The PCB will be oxidizing easily by damp or absorbed moisture, and ionic migration or CAF (Conductive Anodic Filament) will be generated. Moisture-proof PCB meets high density and high reliability requirements for moisture proof.



## Low RdsOn P-Pak MOS

## Low RdsOn P-Pak MOS

Low resistance design can significantly reduce the current out of energy loss. Low temperature, small size, excellent thermal conductivity.



## Super Conductive Heatsink

## Super Conductive Heatsink Design

Massive heatsink design provides super fast heat dissipation, high stability and reliability for extreme performance.



## 100% Solid Caps

## 100% Solid Caps

With armor-plated Biostar Technology, all capacitors are placed with 100% solid capacitors that have a lasting life cycle, durability and stability for crucial components.

## Protection+



## Super Anti-Surge

## Super Anti-Surge Protection

BIOSTAR exclusive Anti-Surge design provides the best protection of board and extends the product life. Having the latest model of "Transient Voltage Suppressor" on-board can effectively protect the board circuit, reducing the shocks caused by ESD as well as other damages arising from overvoltage transients to enhance system durability.



## 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.



## USB Polyswitch

On board dedicated power fuse to help prevent USB port failure. It prevents USB Port overcurrent and safe guard your system and device lifespan.



## OC / OV / OH Protection

OC / OV / OH Protection design detects overvoltage conditions and prevents voltage surges from spreading in real time. It also actively cuts off the overvoltage supply to protect your system.



## High Quality ESD

BIOSTAR Hi-Fi series motherboards provide high quality ESD (Electro-Static Discharge) solution for its front I/O panel. This function prevents static electricity and reduces the damage to the motherboards when you are plugging or unplugging your headphone.



## GAMING COMMANDER

External GAMING COMMANDER BOX features an independent USB DAC, dedicated MIC\_IN and Line-out jacks, Buttons for volume adjustments, Diagnose LED for CPU/ DDR/ VGA temperature indicator, and exclusive XLouder button for quick MIC boost. GAMING COMMANDER software is a user friendly interface with equalizer function which allows users to make his own voice effects while enjoying the games.



## Touch OC

Touch panel design exclusively developed by Biostar, you can easily use a finger touch to operate various functions, including power on/off and CPU/memory overclocking.



## 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.



## Header Zone

Users can easily assemble their own computer, a simple-swap data discs and other accessories.



## BIO-Remote 2

BIO-Remote2 Technology is featuring users a better Home Theater environment. Users who own either Android mobile or Apple goods are able to access and control your PC remotely; At this moment, you're smart device became a intelligent and functional remote controller; more than that, BIO-Remote2 also includes both function of mouse pad and power point presentation mode.



## Super Rapid Debug 3

Super Rapid Debug 3 posts critical POST code information on a vivid digital LED display.



## Super Durable Box Header

Super Durable Box Header provides solid, secure and durable connections between motherboard and peripheral cables.



## LN2 Switch

With LN2 mode activated the BIOSTAR motherboard is optimization to remedy the cold boot bug during POST at an extremely low temperature and help the system boot successfully.

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

BIOSTAR