ASUS HBIM-k Motherboard

The ASUS H81M-K is a micro-ATX motherboard built on the Intel H81 chipset, designed to support Intel 4th-generation Core processors with the LGA 1150 socket. It features 2 DIMM slots supporting up to 16GB of DDR3 RAM, with speeds up to 1600 MHz for reliable memory performance. The motherboard includes a CMOS battery to retain BIOS settings and a stable power delivery system for dependable CPU operation. It offers a range of connectivity options, including PCIe slots (one PCIe x16 and two PCIe x1), 4 SATA ports for storage devices, and USB headers for additional connectivity. With its compact size and essential features, the H81M-K is an excellent choice for budget-friendly productivity or entry-level builds.

Motherboard Specification of ASUS H81M-K

ASUS H81M-K Motherboard Specifications

Processor Support

- Intel 4th Generation Core i3/i5/i7, Pentium, and Celeron processors
- Socket: LGA 1150

Memory Slots

- 2x DDR3 DIMM slots
- Capacity: Up to 16GB
- Supported Speeds: DDR3 1066/1333/1600 MHz

Expansion Slots

- 1x PCIe 2.0 x16
- 2x PCIe 2.0 x1

Onboard Devices

- **Storage Controllers**: 2x SATA 6Gb/s, 2x SATA 3Gb/s
- **Graphics**: Integrated Intel HD Graphics (dependent on processor)

Connectors

- **Internal Storage**: 4x SATA ports (2x 6Gb/s, 2x 3Gb/s)
- **Ports**: 2x USB 3.0, 8x USB 2.0 (4 rear, 4 via headers)
- **Display**: HDMI, VGA
- **Networking**: 1x RJ-45 (Gigabit Ethernet)

General

- **Chassis Compatibility**: MicroATX
- **Dimensions**: 22.6 x 17.5 cm

PC Health Monitoring

- System cooling fan connectors

- Diagnostic LED indicators

Storage Interfaces

- **Serial ATA (SATA)**: Supports SATA hard drives via onboard connectors

Other Features

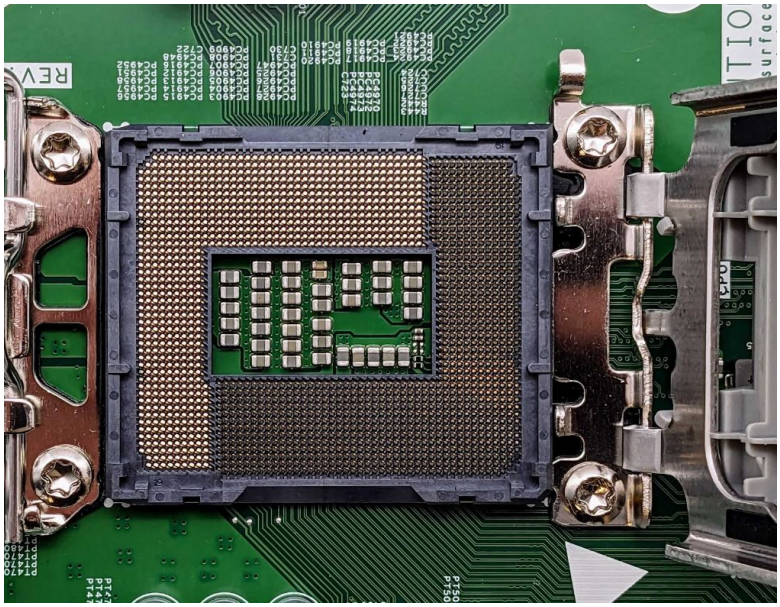
- **CMOS Battery**: CR2032 coin-cell battery for BIOS settings and real-time clock retention
- **Intel H81 Chipset**: Provides connectivity and functionality for I/O operations

Main Components of the asus h81m-k motherboard

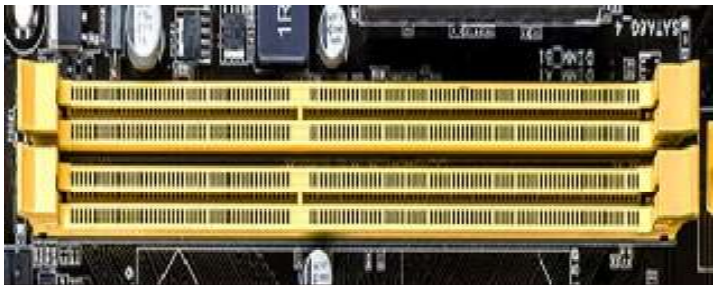
1. CPU Socket

Type: LGA 1150

Supports Intel 4th Generation Core i3, i5, i7, Pentium, and Celeron processors.



1. **RAM Slots**
    - **Type**: 2x DDR3 DIMM slots.
    - Supports up to 16GB of DDR3 RAM with speeds of 1066, 1333, and 1600 MHz.



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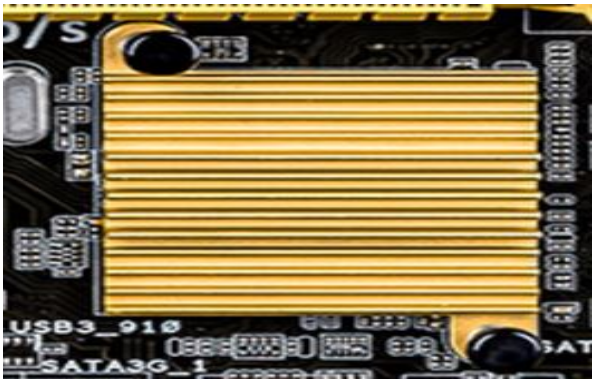
2. **Chipset**
    - **Type**: Intel H81 chipset.
3. Provides essential features like USB 3.0 support,



4. **PCI Slot**
    - **Type**: 1x PCI slot.
    - Used for legacy expansion cards like sound cards, network cards, or other older peripherals.

5. **PCI Express Slots**
    - **Type**:
        - 1x PCIe 2.0 x16 slot: Primarily used for adding a graphics card.
        - 2x PCIe 2.0 x1 slots: Used for smaller expansion cards like Wi-Fi adapters or sound cards.
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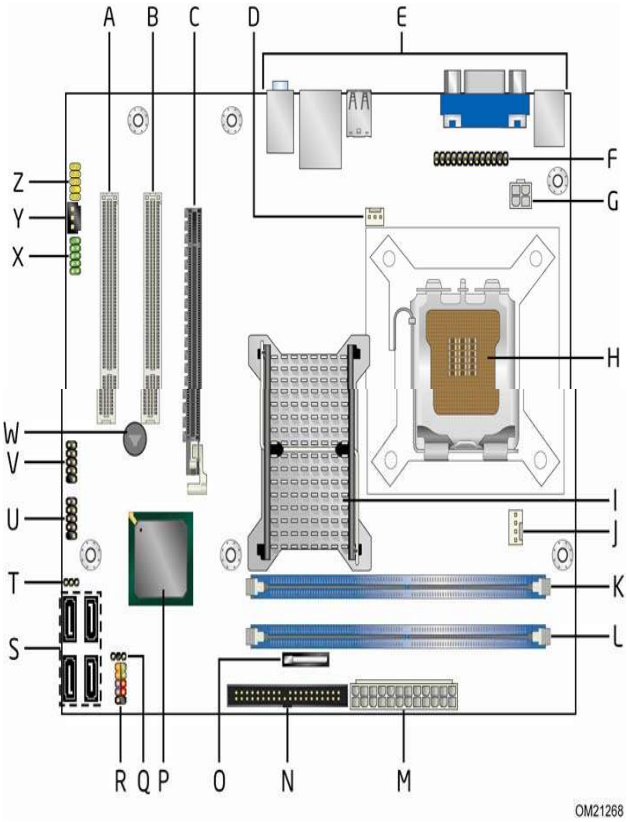
6. **Back Panel Connectors**
    - **Video Outputs**: 1x HDMI, 1x VGA.
    - **USB Ports**: 2x USB 3.0 and 4x USB 2.0 ports.
    - **Audio**: 3 audio jacks for mic, headphone, and line-in.
    - **Networking**: 1x RJ-45 Gigabit Ethernet port.
    - **Legacy Ports**: 1x PS/2 keyboard port, 1x PS/2 mouse port.

7. **CMOS Battery**
    - **Type**: CR2032 coin-cell battery.
    - Retains BIOS settings, system time, and date when the motherboard is powered off.
    - Allows resetting or clearing BIOS settings when necessary.

8. **SATA Connectors**
    - **Type**:
        - 2x SATA 6Gb/s connectors for high-speed SSDs or HDDs.
        - 2x SATA 3Gb/s connectors for additional storage devices.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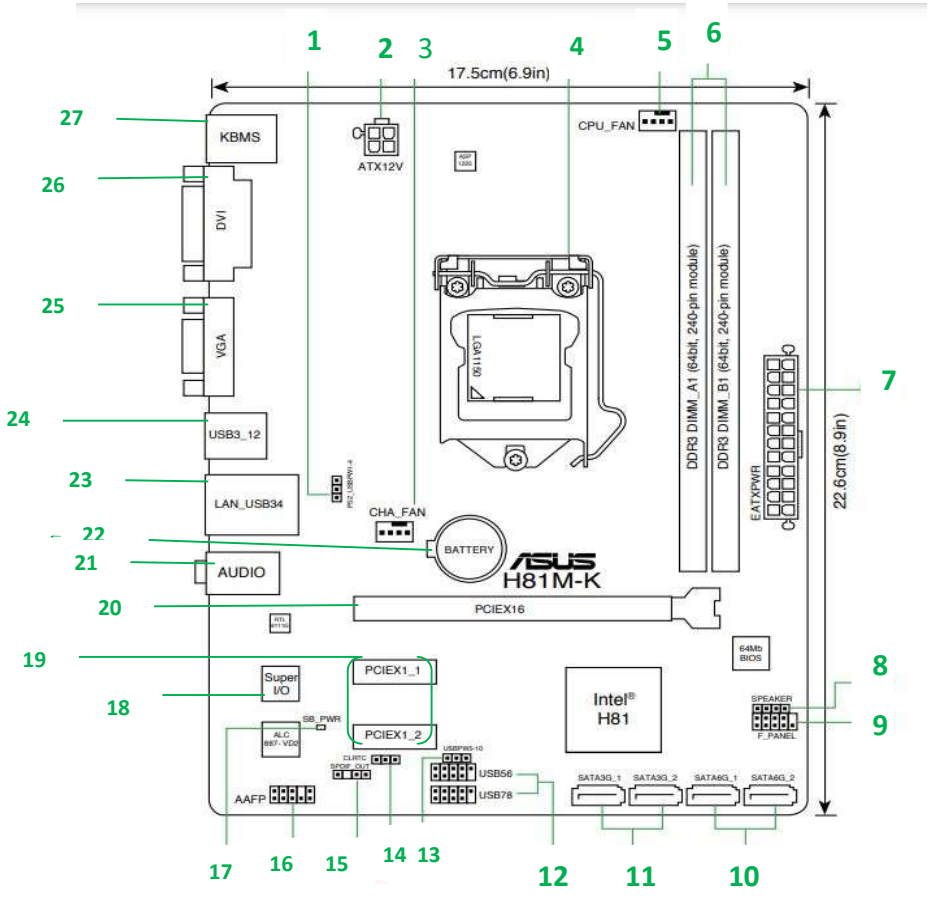
Motherboard Layout:



1. **Motherboard Dimensions**: The motherboard measures **17.5 cm (6.9 in)** in width and **22.6 cm (8.9 in)** in height.
2. **Keyboard/Mouse Port (KBMS)**: A PS/2 port for connecting older keyboards or mice.
3. **ATX12V Power Connector**: 4-pin connector for the CPU power supply.

4. **CPU Fan Header**: A 4-pin header to connect the CPU cooling fan.
5. **DIMM Slots**: Two DDR3 DIMM slots supporting up to 16GB of RAM.
    - DIMM_A1: Slot for the first RAM module.
    - DIMM_B1: Slot for the second RAM module.
6. **24-Pin ATX Power Connector**: Main power supply connector for the motherboard.
7. **Socket (LGA 1150)**: Supports Intel processors compatible with the H81 chipset.
8. **SATA Ports (SATA 1-4)**: Connectors for storage devices such as SSDs or hard drives.
    - SATA_6Gb/s (Gray): Two ports supporting higher speeds.
    - SATA_3Gb/s (Black): Two ports for standard-speed connections.
9. **Front Panel Connectors**: Pins for power buttons, reset buttons, and LEDs on the PC case.
10. **Speaker Connector**: Pins for connecting a system speaker to hear beep codes.
11. **USB Headers (USB910, USB1112)**: Internal USB 2.0 headers for front-panel USB ports.

12. **Chassis Intrusion Header (CHASSIS)**: A connection for a chassis intrusion switch.
13. **TPM Header**: For Trusted Platform Module (TPM), used for hardware-based security.
14. **COM Header**: A serial port header for connecting legacy devices.
15. **Front Panel Audio Header (AAFP)**: Used to connect front-panel audio ports on the case.
16. **PCI Express x1 Slots**: Two smaller slots for low-bandwidth expansion cards like sound cards or network adapters.
17. **Super I/O Chip**: Handles legacy input/output functions like keyboard/mouse and monitoring.
18. **PCI Express x16 Slot**: For connecting a graphics card or other high-bandwidth expansion cards.
19. **H81 Chipset**: The motherboard's chipset, which manages communication between the CPU, RAM, and peripherals.
20. **Audio Codec Chip**: Provides integrated audio functionality.
21. **Battery (CMOS)**: The battery powers the BIOS to retain settings when the PC is powered off.
22. **Chassis Fan Header (CHA_FAN)**: A 3-pin header for connecting a chassis (case) fan.
23. **LAN Port (RJ-45)**: Ethernet port for network connectivity.
24. **USB 3.0 Ports (USB34)**: Two USB 3.0 ports for high-speed data transfer.
25. **VGA Port**: An analog video output for older monitors.
26. **DVI Port**: A digital video output for modern monitors.
27. **Rear Audio Jacks**: Ports for connecting audio devices such as speakers or headphones.

B450M Bazooka Plus (MS-7B90) Motherboard


BAZOOKA
PLUS
CORE BOOST
DDR4 BOOST
msi
B450M BAZOOKA PLUS
msi
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USB

The B450M Bazooka Plus (MS-7B90) is a micro-ATX motherboard built on the AMD B450 chipset, designed to support AMD Ryzen processors with the AM4 socket. It features 4 DIMM slots supporting up to 64GB of DDR4 RAM, with speeds up to 3466+ MHz (OC) for high-performance memory configurations. The motherboard includes a CMOS battery to maintain BIOS settings and a reliable power delivery system optimized for stable CPU performance. It offers ample connectivity options, including PCIe slots, SATA ports, and an M.2 slot for NVMe SSDs, ensuring excellent versatility for gaming or productivity builds.

Motherboard Specifications

Processor Support

- AMD Ryzen™ Processors (Socket AM4)

Memory Slots

- 2x DDR4 DIMM
- Maximum Capacity: 32GB
- Memory Support: DDR4 1866/2133/2400/2667/2933+(OC) MHz

Expansion Slots

- 1x PCIe 3.0 x16 (for graphics cards)
- 1x PCIe 2.0 x1

Onboard Devices

- Storage Controller: SATA 6Gb/s, NVMe M.2 slot
- Graphics: Integrated with CPU (if supported)

Connectors

- **Internal Storage**: 4x SATA 6Gb/s, 1x M.2 slot
- **Ports**:
  - USB: 6x USB 3.1 Gen1, 6x USB 2.0
  - Audio: 3x Audio Jack (Realtek ALC892/ALC897 codec)
  - Display: HDMI, DVI-D
  - Network: 1x RJ-45 (Realtek® 8111H Gigabit LAN)

General

- **Chassis Compatibility**: MicroATX
- **Dimensions**: 24.4 x 24.4 cm

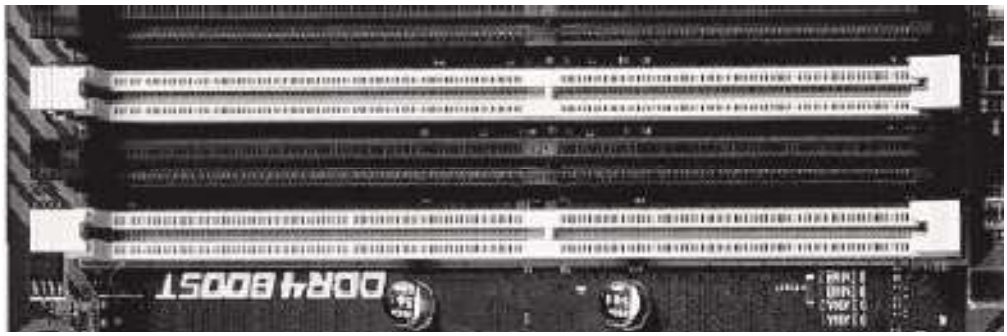
PC Health Monitoring

- Cooling System: Multiple fan headers
- LED Connectors: RGB LED strip heade

Main Components of the Mother board

CPU Socket- AM4 Ryzen processors

Ram Slots: 4 x DDR4 DIMM slots with support for dual-channel DDR4 memory.Supports DDR4 up to 3466+ (OC) MH.



Chipset

- Chipset: AMD B450.

- Features: Includes support for StoreMI technology, precision boost, and overclocking capability.

PCI Express x16 Slot

-Slot Type: PCI Express 3.0 x16.

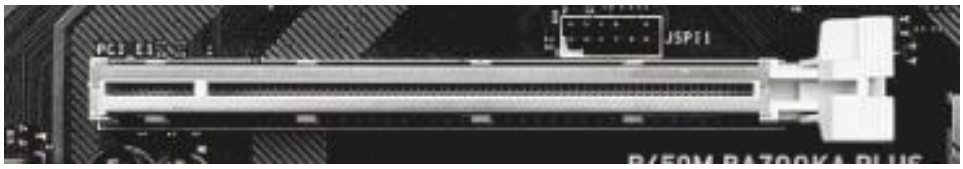
- Configuration: Full-speed x16 for discrete GPU support.

- Supports AMD CrossFire for multi-GPU configurations.

PCI Conventional Bus

- The B450M BAZOOKA PLUS does not feature traditional PCI slots but includes:

  - 1 x PCIe 2.0 x1 slots for add-on cards.



Back Panel Connectors

Ports Available:

- 1 x PS/2 keyboard/mouse port.

- 1 x DVI-D port.

- 1 x HDMI 2.0 port (supports up to 4K resolution).

- 4 x USB 3.1 Gen1 ports.

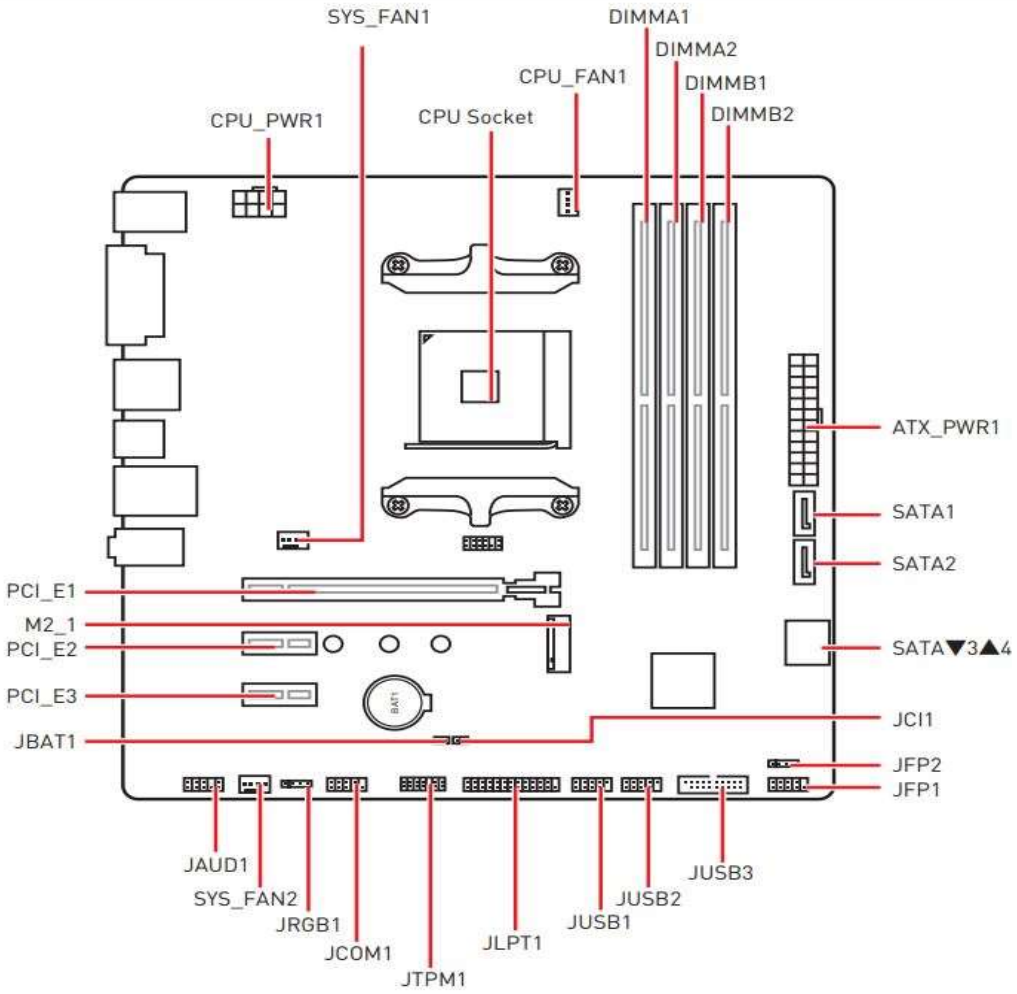
- 2 x USB 2.0 ports.

- 1 x LAN port (Realtek RTL8111H Gigabit LAN).

- 3 x audio jacks (Realtek ALC892/ALC897 7.1-channel HD audio).

CMOS

Battery Type: CR2032 coin-cell battery for real-time clock and CMOS memory retention.



MotherBoard layout :

1. **CPU Socket**: The central component where the processor (CPU) is installed.
2. **CPU_PWR1**: Power connector for the CPU, providing power to the processor.
3. **CPU_FAN1**: Connection for the CPU cooling fan to keep the processor cool.
4. **DIMMA1, DIMMA2, DIMMB1, DIMMB2**: Slots for installing RAM (memory). DIMM stands for Dual Inline Memory Module. These are used to install DDR memory sticks.
5. **SYS_FAN1, SYS_FAN2**: System fan headers to connect cooling fans for the overall system.
6. **PCI_E1, PCI_E2, PCI_E3**: PCI Express slots for adding expansion cards like graphics cards, network cards, or other peripherals.
7. **M2_1**: M.2 slot for high-speed storage devices like SSDs.
8. **SATA1, SATA2, SATA3, SATA4**: Serial ATA connectors for connecting storage devices like hard drives or SSDs.

9. **ATX_PWR1**: The main power connector from the power supply unit (PSU) to the motherboard.
10. **JCI1**: A header for connecting chassis intrusion detection, indicating whether the case has been opened.
11. **JFP1, JFP2**: Front panel connectors, which connect the motherboard to buttons and indicators on the case, such as the power button, reset button, and LED lights.
12. **JAUD1**: Audio header for connecting the front panel audio jack, such as a headphone or microphone port.
13. **JRGB1**: RGB header for connecting RGB lighting modules.
14. **JCOM1**: A header for serial communication devices, used for connecting serial ports.
15. **JLPT1**: Parallel port header for legacy connections.
16. **JTPM1**: Trusted Platform Module (TPM) header, a security component that stores cryptographic keys and helps with data encryption.
17. **JUSB1, JUSB2, JUSB3**: USB headers for connecting external USB ports to the front panel of the case or other devices.
18. **JBAT1**: CMOS battery reset jumper, used to reset the motherboard's BIOS settings.

Category	B450M Bazooka Plus	Dell 05WXFV
Processor	Supports AMD Ryzen processors (1st, 2nd, 3rd Gen)	Likely supports Intel Core processors (LGA1151 or similar, depending on generation).
Memory	Supports DDR4 memory, up to 64GB	Limited DDR3 or DDR4 memory (exact details depend on system generation).
Chipset	AMD B450 Chipset	Likely an Intel Chipset (specific to Dell system models).
Graphics Support	*Integrated GPU support for Ryzen with Vega graphics or discrete GPUs via PCIe.	Depends on Intel onboard graphics or discrete GPU slot availability.
Audio	High-quality onboard audio chipset with 7.1 surround support.	Basic audio support, likely 2.1 or 5.1 channels.
Peripheral Interfaces	• USB 3.2 Gen1 & Gen2 ports • HDMI/DVI/DP • PS/2, Audio jacks	• Limited USB ports • Possibly older display and peripheral connections.
LAN Support	Realtek Gigabit LAN	Likely limited BIOS features with locked configurations.
BIOS	• Full UEFI BIOS with support for overclocking	• Likely smaller (specific size depends on model, typically 32

	• supports overclocking for CPU,GPU, and RAM. • Easily updatable via USB (MSI Flash BIOS)	Mb or 64 Mb) • Also supports DMI v2.0, but with fewer customization options. • Likely SM BIOS v2.6 or v2.7, sufficient for basic hardware info
Ports	USB 3.1 Gen1, multiple USB ports, HDMI, etc.	Basic USB 2.0/3.0, fewer options.

B450M Bazooka Plus is suited for gaming and productivity systems. Dell 05WXFV, Primarily designed for specific Intel CPUs; limited memory and feature set due to Dell's proprietary designs and system focus. **B450M Bazooka Plus** for its versatility, features, and support for modern hardware. So, **B450M Bazooka Plus** is the better motherboard than the Dell 05WXFV.