

MACHINIST B75 PRO U5

MACHINIST B75 Micro ATX Motherboard User Manual

Model: B75 PRO U5

1. PRODUCT OVERVIEW

The MACHINIST B75 Micro ATX Gaming PC Motherboard is designed to support Intel 2nd and 3rd generation Core i3, i5, i7, Xeon E3/V2 series, Celeron G series, and Pentium G series processors. This motherboard features a compact Micro-ATX form factor, making it suitable for various desktop PC builds, including gaming systems and workstations. It integrates essential components and expansion capabilities for a balanced performance.



Image: The MACHINIST B75 Micro ATX Motherboard alongside its product packaging, highlighting its compact design and readiness for integration into a PC system.

2. KEY FEATURES

- **Intel LGA 1155 Socket:** Supports Intel 2nd or 3rd gen Core i3/i5/i7, Xeon E3/V2 series, Celeron G series, and Pentium G series processors.
- **PCI/PCI-E 2.0 Expansion Slots:** Includes 2 PCI-E slots (1x PCIe 2.0 X16, 1x PCIe 2.0 X1) and 1 PCI slot for graphics cards, sound cards, and network cards.
- **SATA M.2 Interface:** Supports AHCI protocol with transfer rates up to 6Gbps, providing a fast storage solution.
- **Dual-channel DDR3 Memory Slots:** Two DDR3 Non ECC desktop memory slots supporting 1280/1333/1600/1866MHz frequencies, up to 16GB capacity.
- **High-Definition Video Output:** Compatible with VGA+HDMI dual output interface, supporting 4K video and audio output.
- **Robust Design:** 6-layer PCB motherboard with all solid capacitors for stable operation and durability.

PCI/PCIE Expansion Slot

Including 1*PCIE X16 slot, 1*PCIE X1 slot and 1*PCI expansion slot.
PCIe 2.0 protocol standard, each lane supports 500 MB/s rate, and the available bandwidth of X16 channel is 8GB/s. PCI expansion slots can be used to install independent sound cards and network cards, giving you more options.

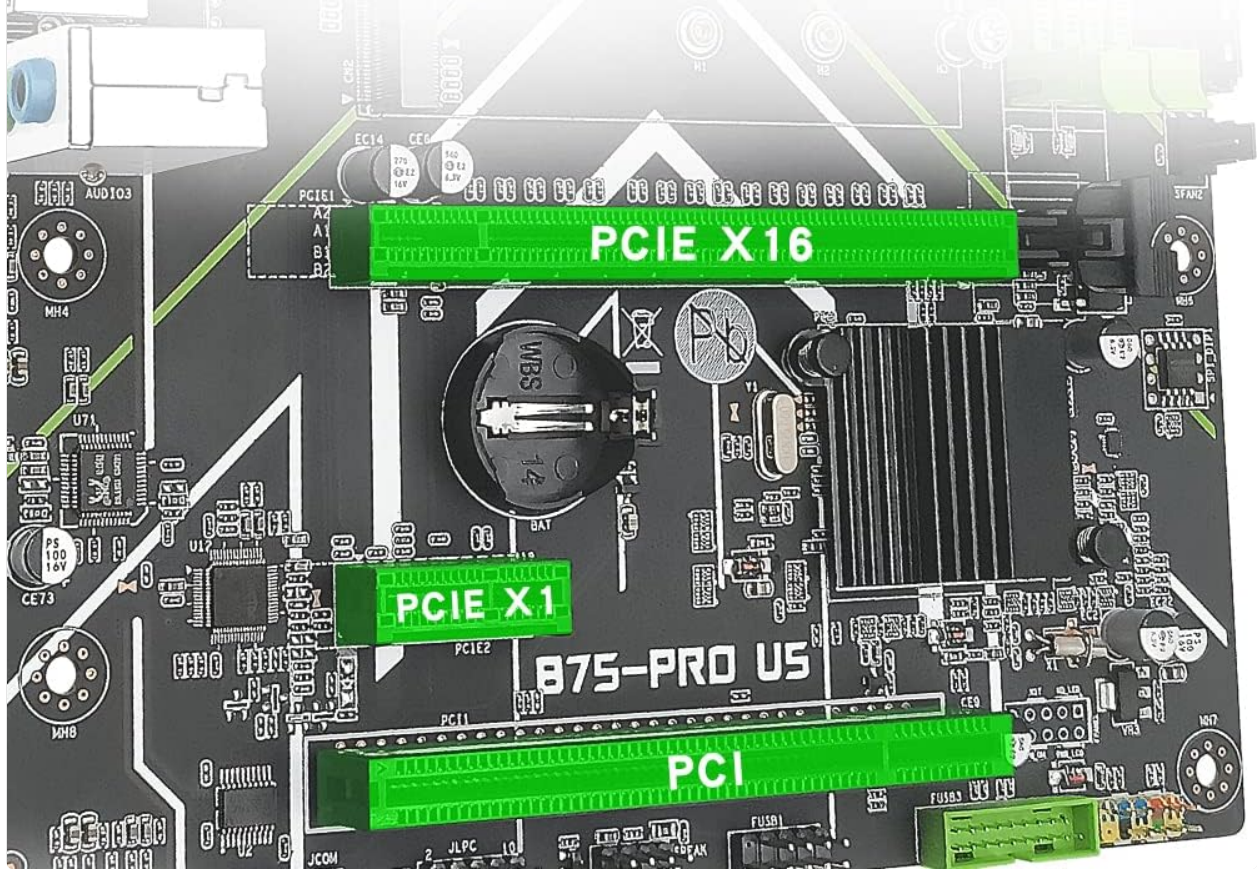


Image: Close-up view of the PCI-E X16, PCI-E X1, and PCI expansion slots on the motherboard, indicating their positions and types.

SATA M.2 Interface

SATA M.2 (NGFF M.2) supports AHCI protocol, the transfer rate is up to 6Gbps. Compared with traditional 3.5/2.5 hard drives, M.2 SATA hard drives are smaller, faster and have larger capacity.

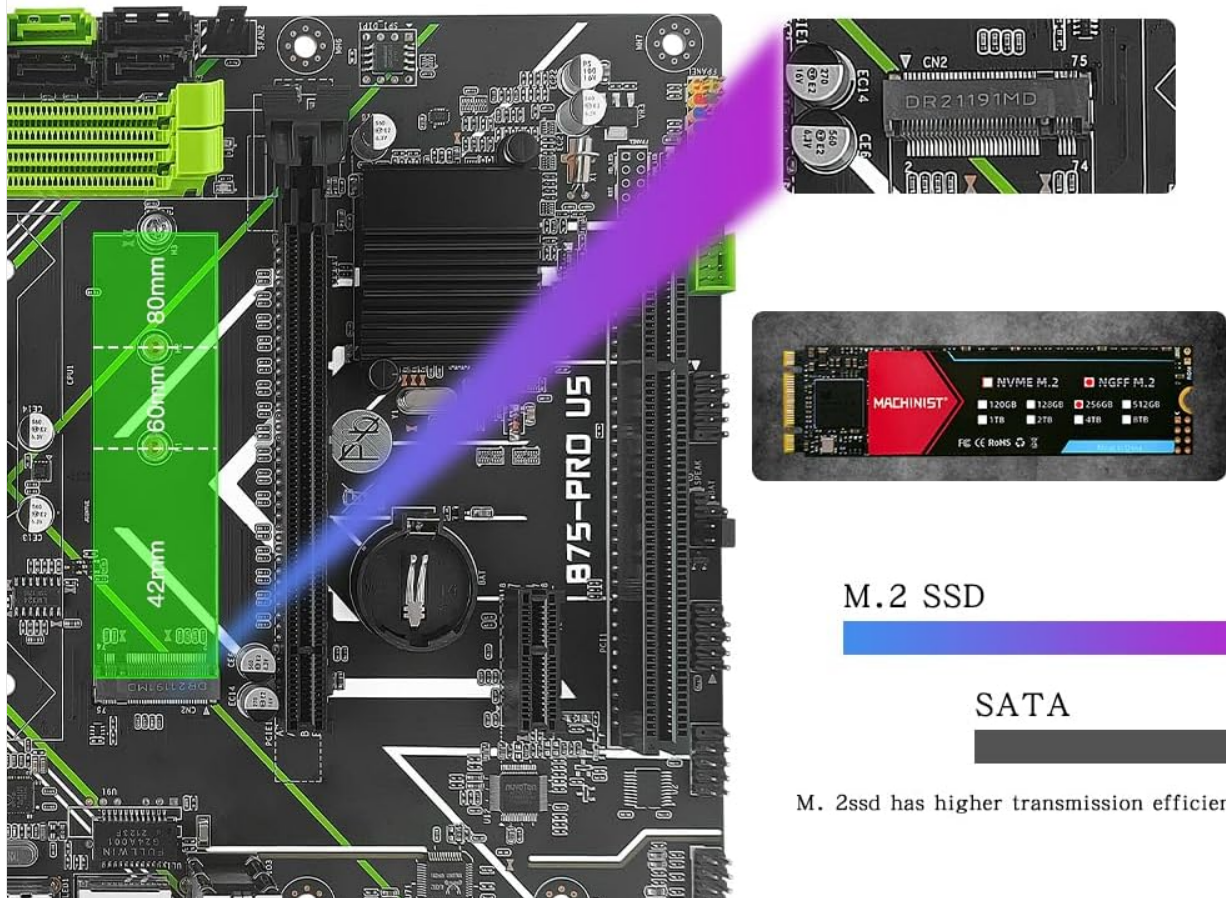


Image: Illustration of the SATA M.2 (NGFF M.2) interface, showing its location on the motherboard and highlighting its function for high-speed storage.

Support High Definition Dual Screen Display

Compatible with VGA+HDMI high-definition high-performance integrated display dual output interface, support 4K video, audio output. It can also complete PS, 3D modeling and other work without purchasing a graphics card.



Image: Diagram illustrating the VGA and HDMI output ports, emphasizing the motherboard's capability for high-definition dual screen display.

3. SETUP GUIDE

3.1 Package Contents

Before beginning installation, ensure all components are present:

- 1x MACHINIST B75 Motherboard
- 1x SATA Cable
- 1x I/O Baffle

What's in the Box



Image: A visual representation of the items included in the product package: the motherboard, a SATA cable, and an I/O baffle.

3.2 CPU Installation

Follow these steps carefully to install your CPU:

1. Press the wire buckle by hand and lift it up. **Do not remove the black cover before installing the CPU.**
2. The motherboard base has 3 bayonets, and the CPU itself has three bayonets. Align them one by one, and then place the CPU gently into the socket.
3. Lower the wire buckle that was lifted up, and the black cover on it will pop up automatically. Remember **not to remove the black cover before installing the CPU.**
4. **Caution:** Do not open the CPU top cover. Do not touch the CPU pins to contact the core. Do not touch the motherboard interface pins.

Installation teaching

- 01** Press the wire buckle by hand and lift it up, remember not to remove the black cover before installing the CPU.
- 02** The motherboard base has 3 bayonets, and the CPU itself has three bayonets (red circles in the figure). Please align them one by one, and then put them all down.
- 03** Lower the wire buckle that was lifted up, and the black cover on it will pop up automatically. Remember not to remove the black cover before installing the CPU.
- 04** Do not open the CPU top cover. Do not touch the CPU pins to contact the core. Do not touch the motherboard interface pins.

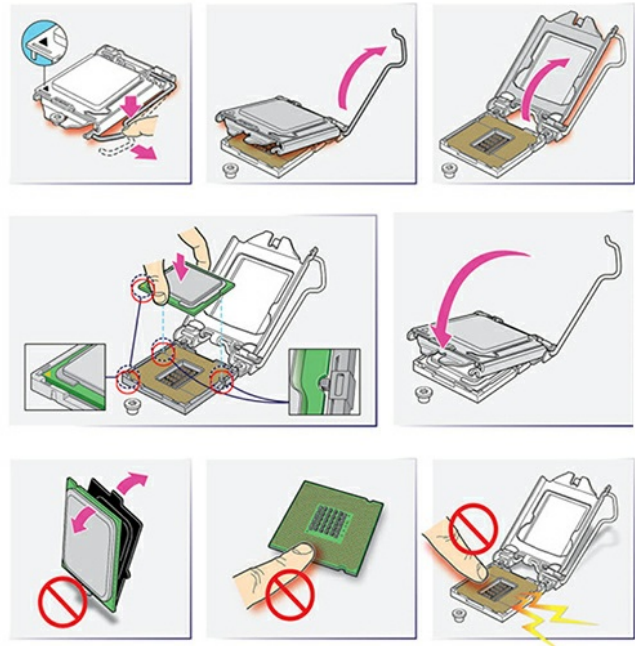
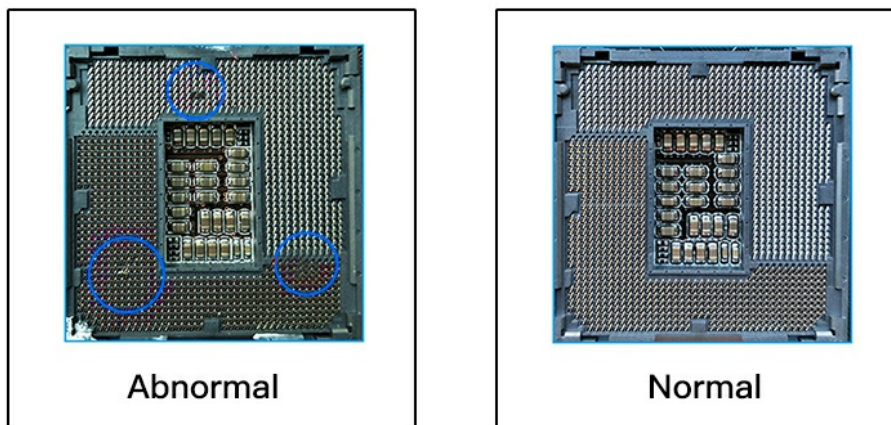


Image: Step-by-step visual guide for installing the CPU into the LGA 1155 socket, emphasizing proper alignment and handling.

Caution!

What should I do if the motherboard CPU pins are bent or broken?

As the picture shows:



If the motherboard is abnormal, please do not repair it without authorization. You should contact the staff in time and show the unpacking video before the product can be returned.

Image: A warning illustration showing the difference between abnormal (bent/broken) and normal CPU pins, advising against unauthorized repair.

3.3 Memory (RAM) Installation

The motherboard features two dual-channel DDR3 memory slots. To install RAM:

1. Open the clips on both ends of the memory slot.
2. Align the notch on the DDR3 memory module with the key in the memory slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.



Image: Close-up of the DDR3 memory slots on the motherboard, highlighting their design and support for DDR3 modules.

3.4 Storage Device Installation (SATA & M.2)

This motherboard supports both SATA and M.2 storage devices.

- **SATA Devices:** Connect your SATA SSDs or HDDs to the SATA 3.0 (6Gbps) or SATA 2.0 ports using SATA cables.
- **M.2 Devices:** Install your SATA M.2 (NGFF M.2) SSD into the dedicated M.2 slot. Ensure it is properly seated and secured with the provided screw. Note that using the M.2 slot may disable one SATA 3.0 port.

3.5 Power Connections

Connect the main 24-pin ATX power connector and the 4-pin CPU power connector from your power supply unit (PSU) to the corresponding ports on the motherboard.

3.6 Front Panel Connections

Connect the front panel headers (Power LED, HDD LED, Power Switch, Reset Switch, USB, Audio) to their respective pins on the motherboard. Refer to the motherboard layout diagram for pin assignments.

Flagship Level Layout Strong Extensibility

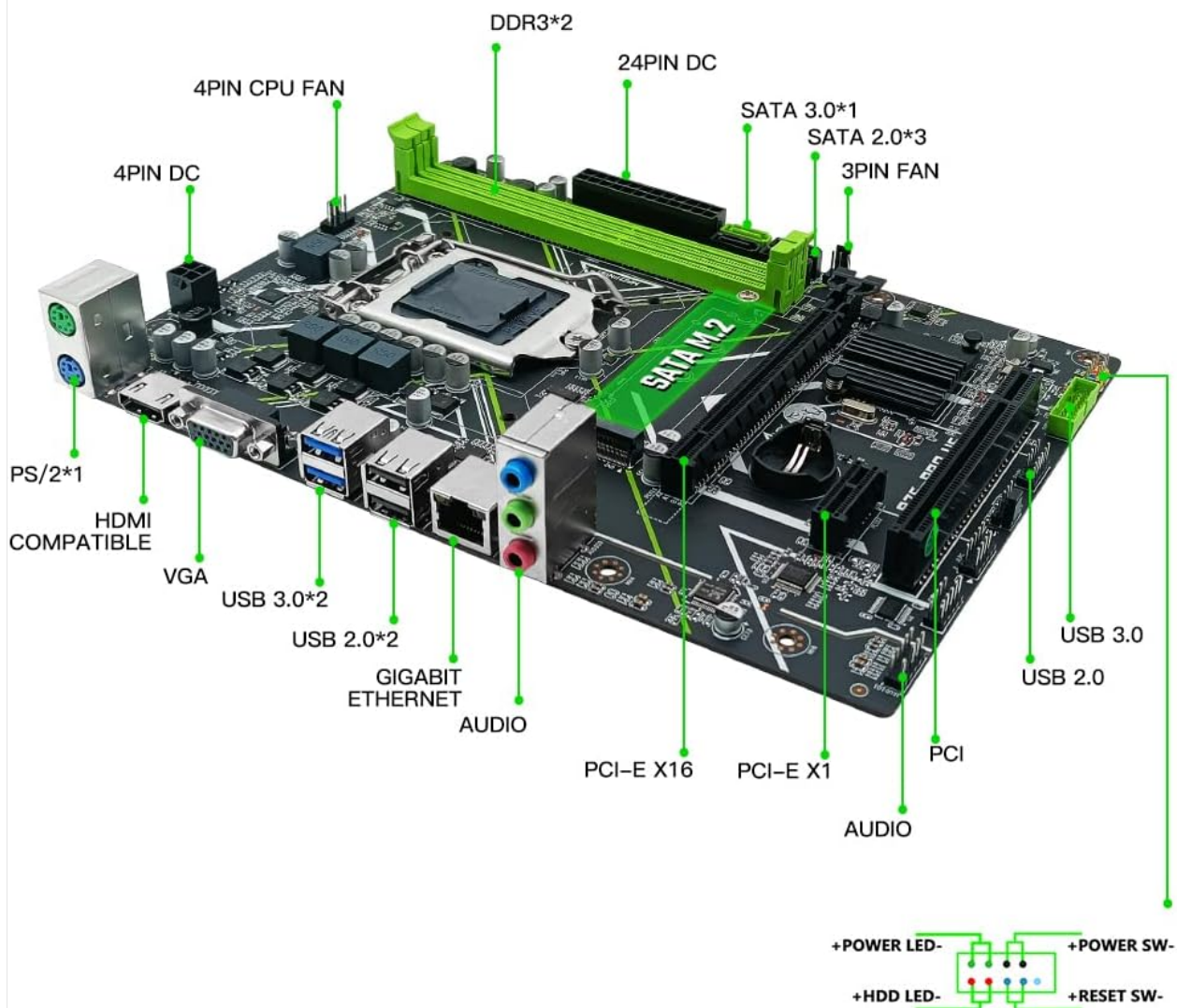


Image: Detailed layout of the motherboard, showing the location of various ports and connectors including USB, audio, Ethernet, and front panel headers.

4. OPERATING INSTRUCTIONS

4.1 Initial Boot-up and BIOS Access

After assembling your PC, connect a monitor, keyboard, and mouse. Power on the system. To enter the BIOS/UEFI setup utility, repeatedly press the **"Del"** key immediately after pressing the power button. Do not wait for the startup logo to appear, as it may be too late.

Within the BIOS, you can configure boot order, system time, and other hardware settings. Save changes before exiting.

4.2 Driver Installation

For optimal performance, install the necessary drivers for your motherboard components (chipset, audio, LAN, etc.).

- If you are using Windows 10, the operating system can often automatically detect and install most drivers.
- For specific drivers or if automatic installation fails, visit the MACHINIST official website or refer to the product page for driver downloads.

4.3 Integrated Graphics Usage

The motherboard supports integrated graphics output via VGA and HDMI. Note that some Intel Xeon E3 V1 and V2 series CPUs do not have integrated graphics. Generally, only CPU models with the suffix "5" (e.g., E3-1245) or Intel Core i3, i5, i7 series (unless they have an "F" suffix) support integrated display.

5. MAINTENANCE

Proper maintenance ensures the longevity and stable operation of your motherboard:

- **Dust Removal:** Regularly clean dust from the motherboard and other PC components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Temperature Monitoring:** Ensure adequate airflow within your PC case to prevent overheating. Monitor CPU and chipset temperatures using system monitoring software.
- **BIOS Battery:** The motherboard requires a CR2032 CMOS battery (not included in package). Replace it if you experience issues with BIOS settings resetting or incorrect system time.
- **Cable Management:** Organize internal cables to improve airflow and prevent interference.

6. TROUBLESHOOTING

If you encounter issues after installing the motherboard, consider the following troubleshooting steps:

- **No Display/No Boot/No Picture:**
 - Ensure all power cables (24-pin ATX, 4-pin CPU) are securely connected.
 - Reseat the RAM modules. Try booting with only one RAM stick if you have multiple.
 - Reseat the CPU. Check for any bent pins on the CPU socket (refer to the "Caution!" image in Setup Guide).
 - If using a dedicated graphics card, ensure it is properly seated in the PCIe slot and has adequate power. Try booting without the graphics card if your CPU has integrated graphics.
 - Reset CMOS: Locate the CMOS clear jumper or remove the CMOS battery for a few minutes, then reinsert it.
- **No Network Card/No Sound Card:**
 - Ensure drivers are correctly installed. For Windows 10, try updating drivers via Device Manager.
 - Check BIOS settings to ensure integrated LAN/Audio are enabled.
- **System Instability/Crashes:**
 - Verify RAM compatibility and ensure it is running at supported frequencies.

- Check CPU and chipset temperatures.
- Ensure all components are properly seated and connections are secure.

If the motherboard is abnormal (e.g., bent CPU pins), do not attempt to repair it without authorization. Contact support and provide an unboxing video if possible before returning the product.

7. SPECIFICATIONS

| Feature | Detail |
|-----------------------|---|
| Product Dimensions | 9.45 x 6.69 x 1.5 inches |
| Item Weight | 1.43 pounds |
| Manufacturer | MACHINIST |
| Item Model Number | B75 PRO U5 |
| CPU Socket | LGA 1155 |
| Compatible Devices | Personal Computer |
| RAM Memory Technology | DDR3 |
| Compatible Processors | Intel 2nd/3rd Gen Core i3/i5/i7, Xeon E3/V2 series, Celeron G series, Pentium G series (e.g., E3-1220, i7-3770, i5-3570, i3-3250) |
| Chipset Type | Intel B75 Express |
| Memory Clock Speed | 1600 MHz (supports 1280/1333/1600/1866MHz) |
| Platform | Windows 10 |
| Max RAM Capacity | 16GB |
| PCI-E Slots | 1x PCI-E 3.0 X16, 1x PCI-E X1 |
| PCI Slots | 1x PCI |
| SATA Interface | 1x SATA3.0, 3x SATA2.0, 1x SATA M.2 (NGFF M.2) |
| USB Interface | 2x USB 3.0, 3x USB 2.0 |
| Network Card | Gigabit Ethernet |

Your browser does not support the video tag.

Video: An official display video showcasing the key features and components of the MACHINIST B75 Motherboard.

© 2023 MACHINIST. All rights reserved.