



PORTFOLIO #5

Presentation

By Chirstian Furl G. Tujan



CONTENT

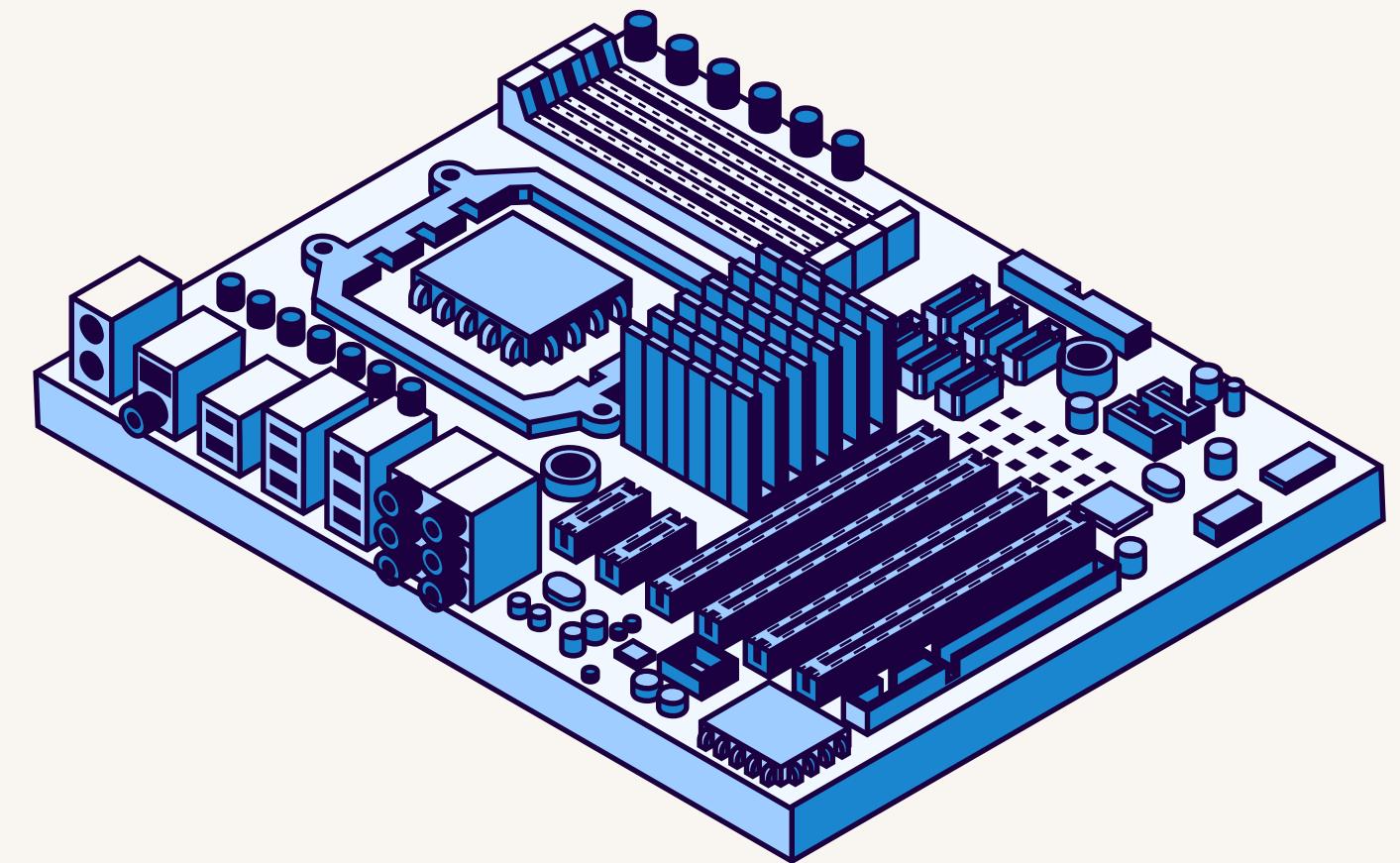
- **What is a Motherboard?**
- **History of the Motherboard**
- **What are the different types of Motherboards and their uses.**
- **Table of Motherbaords**



WHAT IS A MOTHERBOARD?

WHAT IS A MOTHERBOARD?

- A motherboard or also called mainboard, main circuit board, MB, base board and system board is the main printed circuit board (PCB) in a computer. It delivers electricity and permits communication with the central processing unit (CPU), random access memory (RAM), and other computer hardware components. There is a wide variety of motherboards, each designed to be compatible with a given model and size of computer.





HISTORY OF THE MOTHERBOARD

HISTORY OF THE MOTHERBOARD

- The motherboard was first introduced to the world by IBM in 1981 and was called the “planar.” It was designed by IBM engineer Patty McHugh.
- The earliest motherboards for personal computers contained fewer real components. The first IBM PC motherboard contained only a CPU and a few card ports.

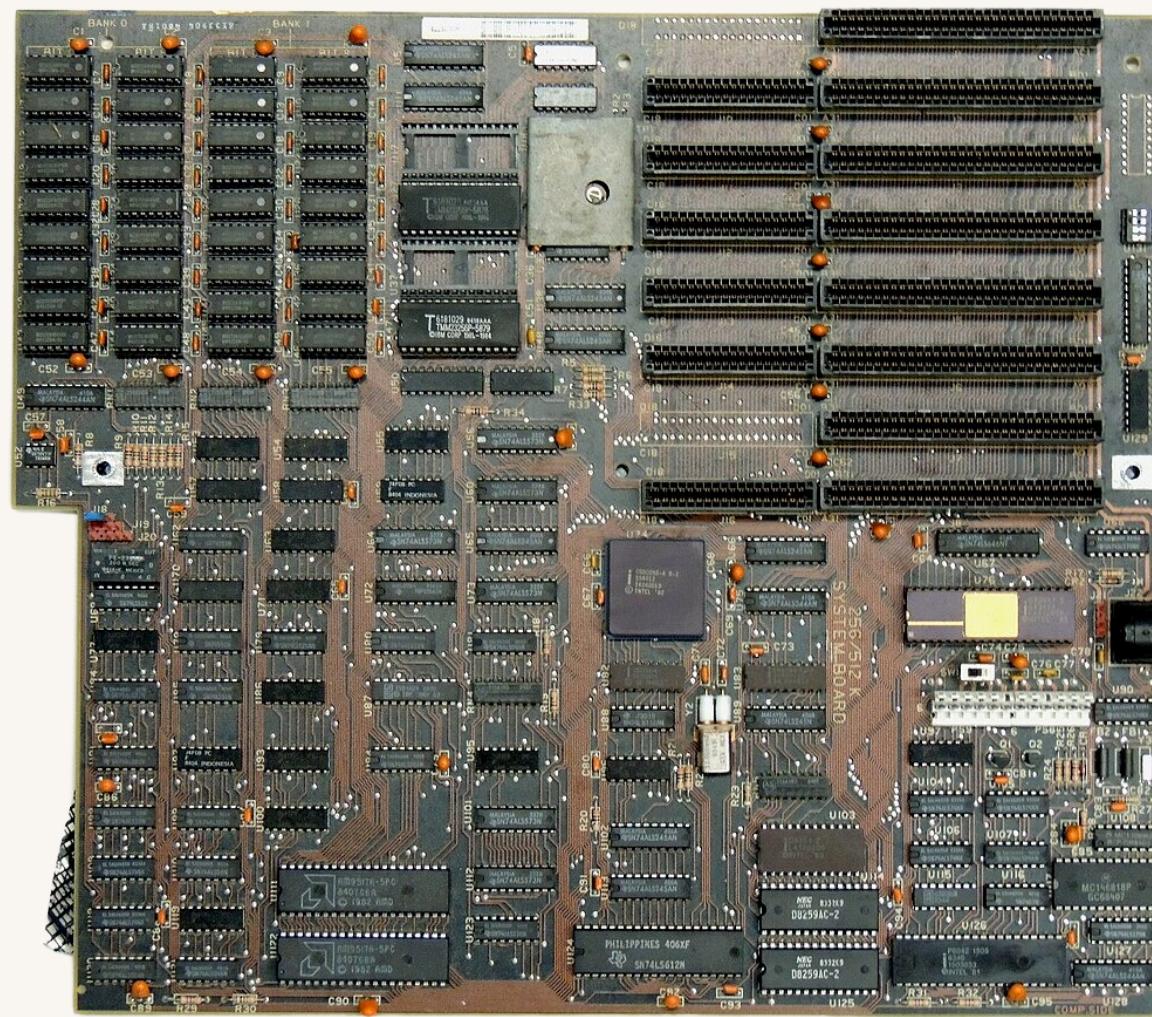




TYPES OF MOTHERBOARD

ADVANCED TECHNOLOGY (AT) MOTHERBOARD

- These motherboards do not work properly with computers that fall into the category of smaller desktops due to their larger physical dimensions.
- These motherboards use six-pronged sockets and plugs for power connections, which can be tricky to identify, causing user difficulties. These types of motherboards were highly popular in the 1980s and remained in production well into the 2000s.



TYPES OF MOTHERBAORD

STANDARD ATX MOTHERBOARD

- The ATX motherboard is an enhanced version of the AT motherboard that Intel created in the 1990s. ATX means “Advanced technology extended”. Unlike AT, it is much more compact and enables the associated components to be interchanged.



MICRO ATX MOTHERBOARD

- This motherboard has fewer ports and slots than the Standard ATX board. It is also more compact than a Standard ATX motherboard.
- This type of motherboard is ideal for users who want a smaller system and who prefer simplicity and don't plan on making frequent upgrades, such as adding more RAM, an extra GPU, or other PCI cards.



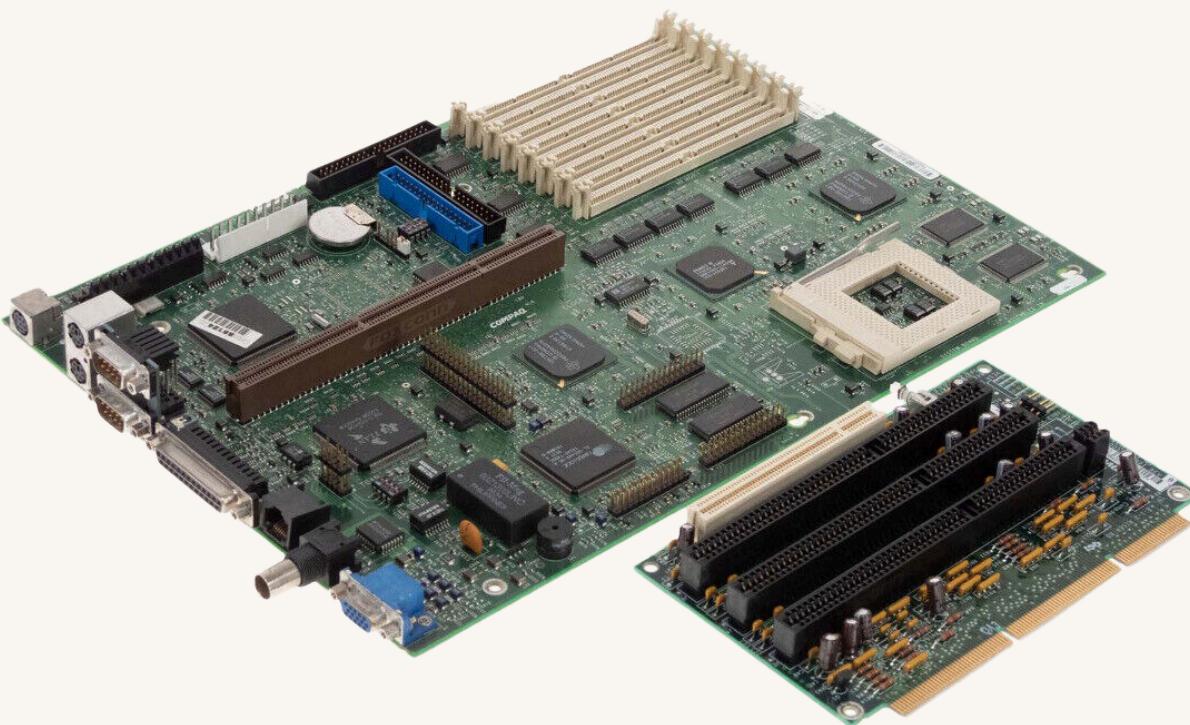
EXTENDED ATX MOTHERBOARD

- This motherboard is bigger than the others. This motherboard supports a single or a twin CPU configuration, has up to eight RAM slots, and it has more slots for adding extra cards (PCIe and PCI) for things like graphics, sound, or networking
- This motherboard is ideal for servers, workstations, and desktop computers as it has plenty of space for air to flow and for adding different parts.



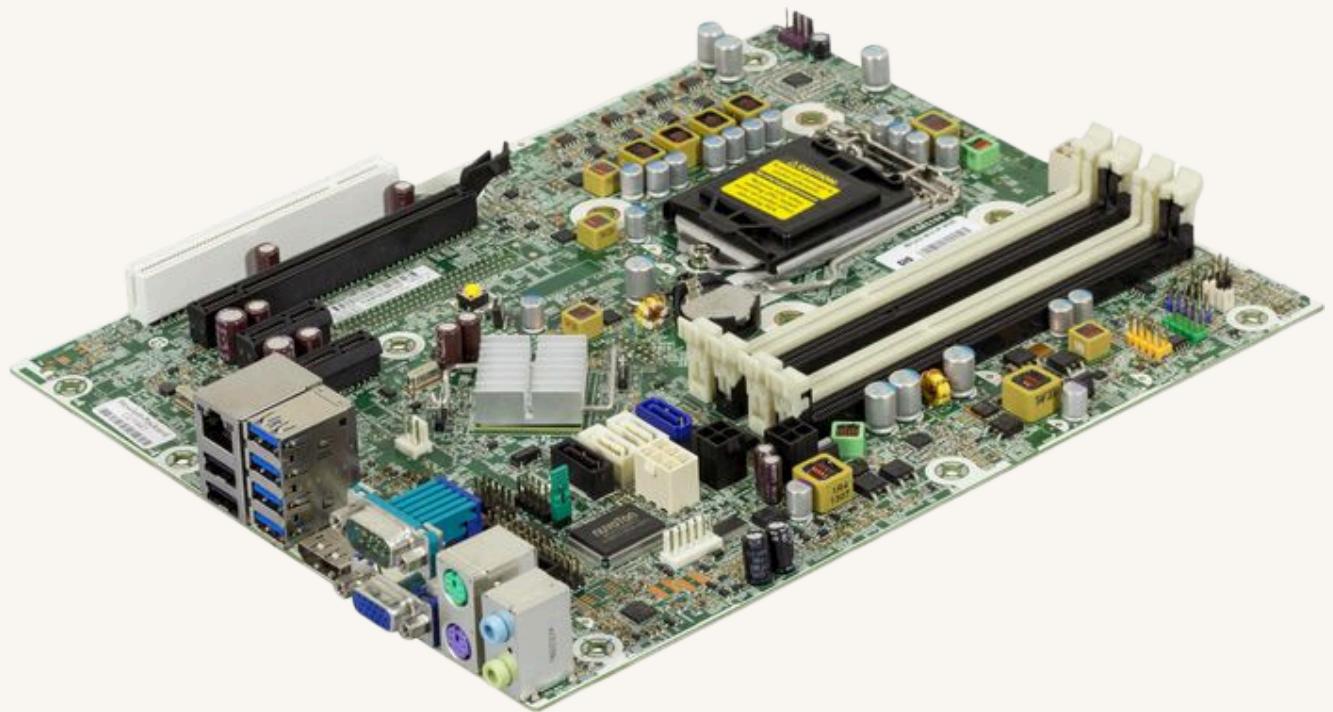
LOW-PROFILE EXTENDED (LPX) MOTHERBOARD

- The LPX motherboard is a compact, enhanced version in comparison to previous iterations, making it ideal for smaller computers. It features rear I/O ports and a riser card for additional slots, offering more connectivity. However, LPX does not have Accelerated Graphic Port (AGP) slots. This is the reason why LPX is not so common.



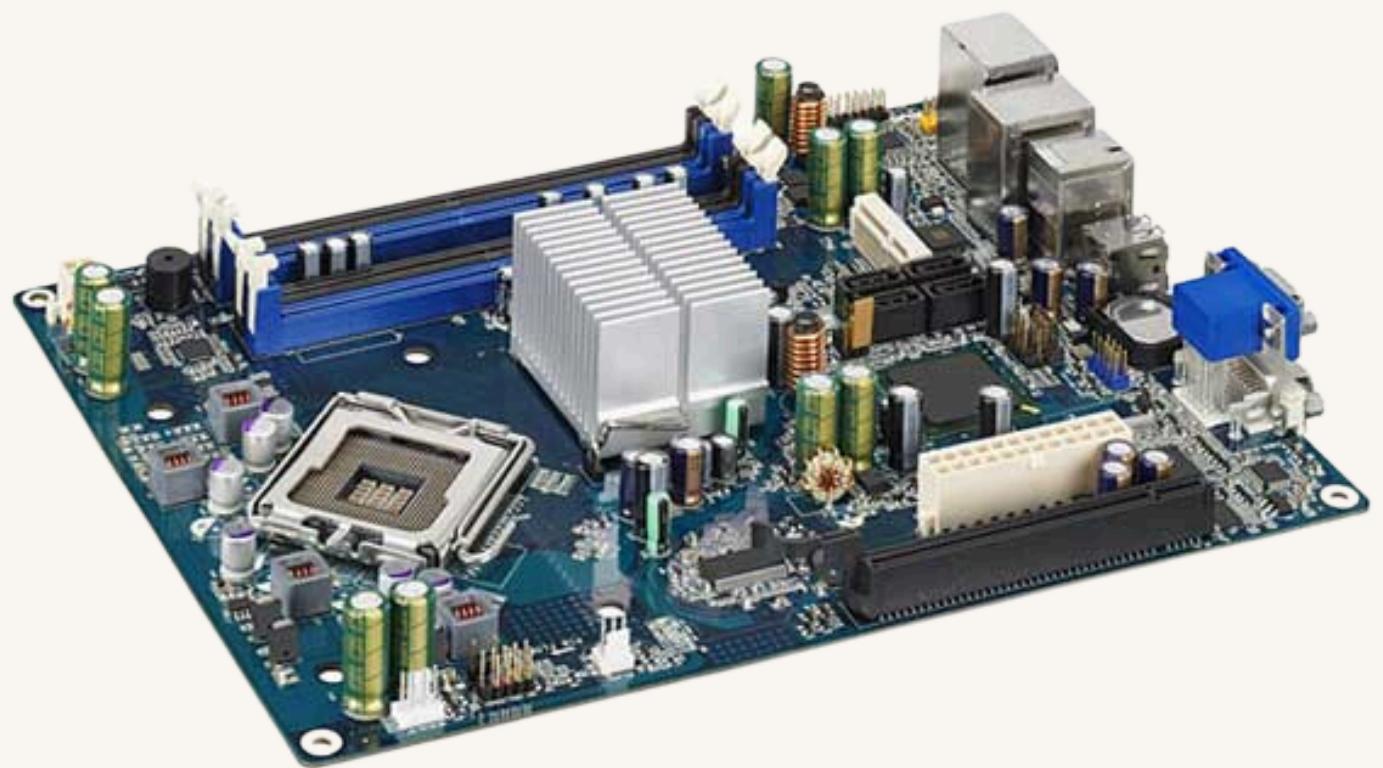
BTX MOTHERBOARD

- BTX, or Balanced Technology Extended, is a motherboard that was developed to support emerging technologies, requiring higher power, which led to increased heat generation. Due to these heat issues, Intel discontinued BTX motherboard production in the mid-2000s to focus on developing low-power CPUs.



PICO BTX MOTHERBOARD

- Pico BTX motherboards are compact and space-efficient versions of the BTX form factor which is ideal for space-saving builds, such as Hackintosh (desktop Mac) computers. While sharing the upper half of the BTX design, they feature two expansion slots and riser cards to support digital applications, making them a great choice when space is a priority.



MINI ITX MOTHERBOARD

- The ITX motherboard is a compact option designed for small form factor computers and home theater systems, offering low power consumption and efficient cooling. The size of the motherboard is as small as a credit card. Its small size and quiet operation make it ideal for building compact PCs, but it doesn't support SLI or Crossfire, limiting its use for gaming.



MINI STX MOTHERBOARD

- The motherboard initially called "Intel 5×5" is now known as Mini-STX, which stands for mini socket technology extended. Introduced in 2015, its dimensions are 5.8 inches by 5.5 inches, making the "5×5" name somewhat misleading. The Mini-STX board is 0.3 inches longer front to back, giving it a slightly rectangular shape, unlike other small form factor boards like the Next Unit of Computing (NUC) or mini-ITX, which are square.

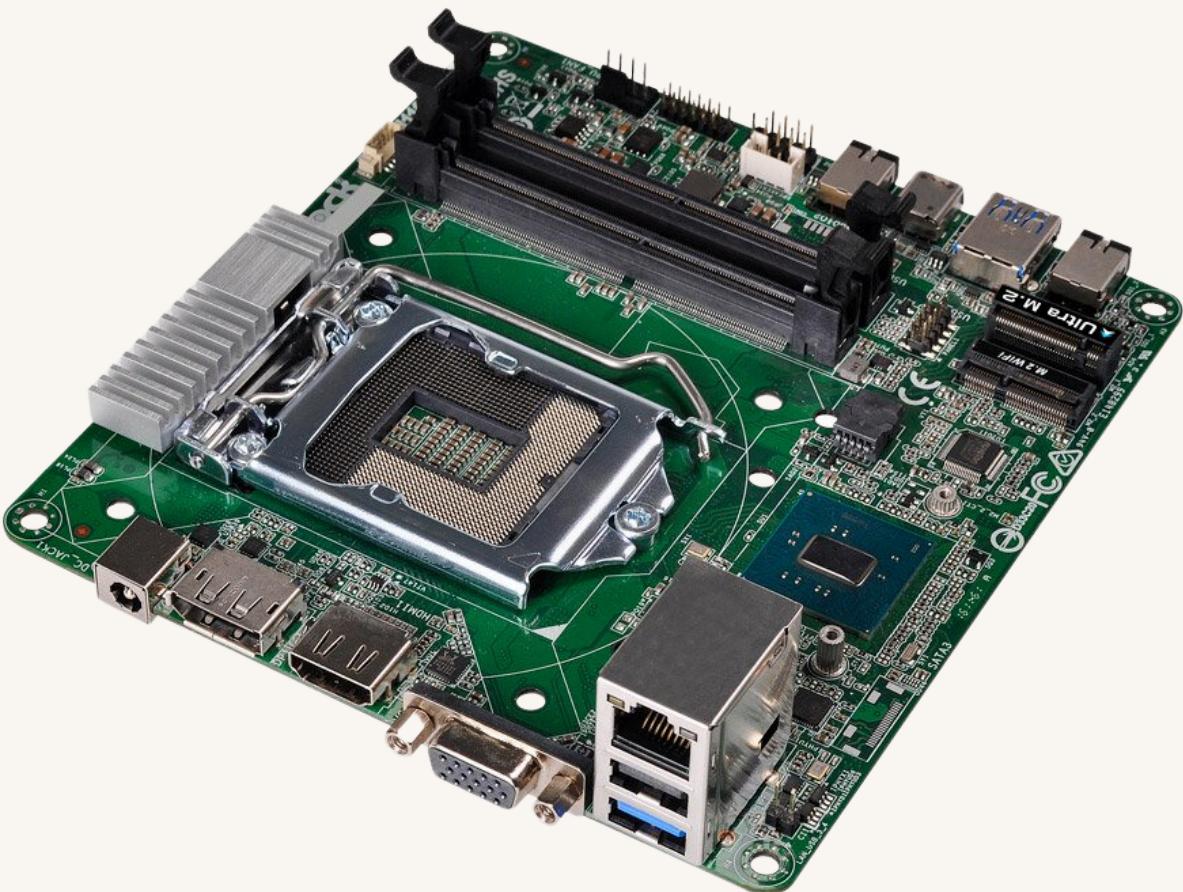




TABLE OF MOTHERBAORDS

TABLE OF MOTHERBOARDS

Form Factor	Build	CPU Slots	Memory Slots	Chipsets	BIOS	PCI Slots	SATA	Built-in Features
AT Motherboard	Full-sized	1	2-8	Older chipsets	Legacy BIOS	ISA, VLB, PCI	2-4	Serial, parallel ports, PS/2 ports
Standard ATX Motherboard	Full-sized	1-2	2-8	Modern chipsets	Legacy or UEFI BIOS	PCI, PCI-Express	4-8	Serial, parallel ports, PS/2 ports, USB, audio, network
Micro ATX Motherboard	Smaller than ATX	2-4	2-4	Modern chipsets	Legacy or UEFI BIOS	PCI, PCI-Express	4-6	Similar to ATX, but fewer expansion slots
Extended-ATX Motherboard	Low-profile, smaller than ATX	1	4-8	Modern high-end chipsets	UEFI BIOS	Multiple PCI-Express slots	6-10	High-end features like multiple GPUs, RAID controllers
LPX Motherboard	Smaller than ATX, different orientation	1	2-4	Modern chipsets	Legacy or UEFI BIOS	Fewer PCI slots	2-4	Compact design for smaller cases
BTX motherboard	Smaller than ATX, different orientation	1	2-4	Modern chipsets	Legacy or UEFI BIOS	Fewer PCI slots	2-4	Improved airflow and cooling
Pico BTX Motherboard	Smaller than BTX	1	1-2	Embedded chipsets	UEFI BIOS	Minimal expansion	1-2	Ultra-compact for small form factor PCs
Mini ITX Motherboard	Very small	1	1-2	Modern chipsets	UEFI BIOS	Limited expansion	2-4	Ideal for HTPCs and small PCs
Mini STX motherboard	Even smaller than Mini-ITX	1	1-2	Modern chipsets	UEFI BIOS	Very limited expansion	1-2	Ultra-compact for tiny PCs



REFERENCES

<https://www.spiceworks.com/tech/hardware/articles/what-is-motherboard/>

<https://hasonss.com/blogs/types-of-motherboard/?srsltid=AfmBOopmoQejjfmUla4k0pEwPlpYauNrc8QWddAdAz54yCUUAGoC-j54>

<https://beebom.com/motherboards-sizes-types-compared/>

<https://www.geeksforgeeks.org/types-of-motherboards/>

<https://www.digitalclassworld.com/blog/types-of-computer-motherboard/>

