

## **PORTFOLIO #5**

Computers used to have a lot of proprietary components, and different from company to company with varying standards only meeting the standards of the company like IBM introducing "Planar" in 1981 which only housed the necessary CPU, and RAM, but later on it was clear that there is a need to make a standard for motherboards which started as AT the predecessor of ATX which were agreed upon multiple organizations like the ISO, IEC, ANSI, for developing and nurturing this standard for easier implementation to different systems, it later modernized by intel creating the ATX standard to fit their new CPUs, and alike which the standard is still used to this day.

ATX is an standard that housed multiple dimensions, sizes of the motherboard from the minimalist ITX which only has 2 DIMM slots, and a single PCIe expansion slot, down to the largest EATX that houses a total of 8 DIMM slots and maximum of 4 PCIe 16x slots, varies depending on your specification means a lot of variety to choose from, do you need it as daily drive like writing, watching videos, and playing games you can buy yourself itx, matx, atx motherboard, or do you want to make your own server grade system unit you can buy the EATX for that, with varying types of dimensions, the amount of DIMM slots you can slot in, or any auxiliary cards like the Discrete Graphics card, sound card, stream deck card how will you find the right measurement for the right job? Well fear no more! In this discussion we will list most of the common boards that we use on jobs, industry, or custom builds.

Form Factor	CPU Slots	Memory Slots	Chipset	BIOS	PCI Slots	SATA	Builtin Features
AT motherboard	1 Intel 386/486	2-4 SDRAM /EDO	Intel 386, 486 chipset family (e.g., Intel 82350) Older chipsets (legacy)	Legacy BIOS	N/A	N/A	Basic I/O connectors No integrated audio/video Legacy interfaces (serial, parallel ports)
BTX motherboard	1 Intel/AMD	4 DDR2/ DDR3/ DDR4	Intel 945, 955X, 965 chipset Intel X38	Legacy BIOS/ UEFI			Improved airflow layout Low-profile designs Optimized power and cooling for compact cases
Extended-ATX motherboard	1-2 Intel/AMD	8 DDR4/ DDR5	Intel 915, 945 chipset	UEFI	2-4 PCIe x16 2-4 PCIe x1	6-12 SATA III	Advanced cooling solutions Multiple GPUs Workstation or enthusiast boards

LPX motherboard	1 Intel 486/early pentium	2-3 SDRAM /EDO	Intel 430FX, 430VX VIA VP3 chipset	Legacy BIOS	1-2 PCI slots ISA slots for legacy devices	2-4 SATA	Integrated video (common) Audio in some models Daughterboard for expansion in some designs
Micro-ATX motherboard	1 Intel/AMD	2-4 DDR4/ DDR5	Intel B460, B365, H370 AMD B450, A320	UEFI	1-2 PCIe x16 1-2 PCIe x1	4-6 SATA III	Similar to ATX but fewer PCI slots Smaller size for compact cases
Mini-ATX motherboard	1 Intel/AMD	2-4 DDR4/ DDR5	Intel Q270, H270 AMD B350, A320	UEFI	1 PCIe x16 1-2 PCIe x1	2-4 SATA III	Less common; similar to mATX Focus on essential features
Pico-BTX motherboard	1 Intel/AMD	2 DDR2/ DDR3	Intel 915, 945 chipset	Legacy BIOS/ UEFI	1 PCIe slot	2-3 SATA III	Ultra-compact form factor Designed for small desktops Limited expandability
ATX motherboard	1	4		UEFI		4-8	Integrated

	Intel/AMD	DDR4/ DDR5	Intel Z590, Z490, B460, H410 AMD B550, X570, A520, B450		1-3 PCI e x16 2-4 PCIe or legac PCI	SATA III	audio Ethernet (1-2.5 Gbps) USB 3.2, USB-C 1-3 NVMe M.2 slots RGB headers
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#### References:

<https://www.3dfindit.com/en/engiclopedia/whoinvented-the-norms>

<https://www.totalphase.com/blog/2022/06/what-is-a-motherboard-what-does-it-do/#:~:text=The%20motherboard%20was%20first%20introduced,%2C%20mouse%2C%20and%20cassette%20tapes.>

<https://en.wikipedia.org/wiki/ATX>

[https://www.oempcworld.com/support/what\\_is\\_edo\\_memory.html#:~:text=Extended%20Data-Out%20\(EDO\),this%20performance%20increase%20EDO%20offers.](https://www.oempcworld.com/support/what_is_edo_memory.html#:~:text=Extended%20Data-Out%20(EDO),this%20performance%20increase%20EDO%20offers.)

<https://www.lenovo.com/us/en/glossary/what-is-lpx/>

<https://www.scribd.com/doc/209731434/List-of-Intel-Chipset>

[https://handwiki.org/wiki/Engineering:List\\_of\\_AMD\\_chipsets](https://handwiki.org/wiki/Engineering:List_of_AMD_chipsets)