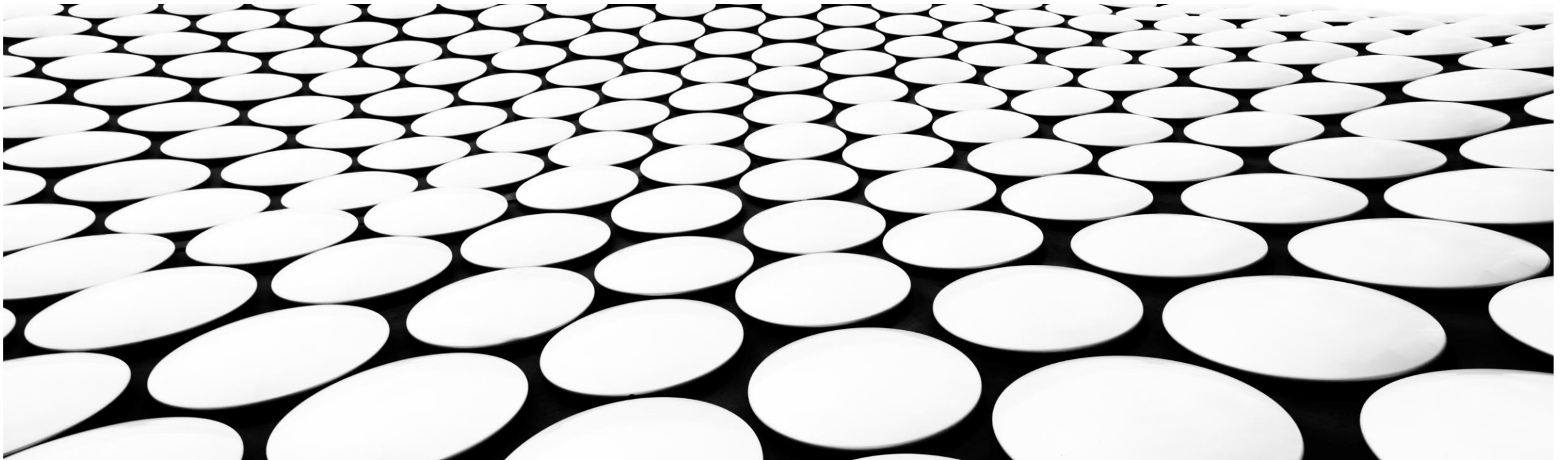


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# **RINGMER COMPUTER CLUB**

## **SO WHAT'S IN THE BOX**

EXPLANATION OF WHAT MAKES UP A PC



# COMPONENT PARTS OF A PC (based on INTEL/AMD device)

## ■ Desktops

### ■ The Case

#### ■ Cooling

- Fans/Liquid
- Water Coolers/chillers

#### ■ Power Supply

- Depends on peripherals, CPU power, Cooling, External Plug in ports (HDMI, USB), lights (?)

### ■ CPU(s)

- Can have multiple CPUs, less common recently as CPU are multi-core

### ■ Storage

#### ■ Hard Disk Drives (HDD)

- Physical spinning disks, magnetically coated, heads on arms that can move across the face to read/write to a track on the surface (platter)

#### ■ Solid State Drives (SSD)

- Electronic memory cards organised to act like a HDD when accessed

#### ■ WORM Drives Compact Disk, Digital Video Disk, Blu-Ray disk

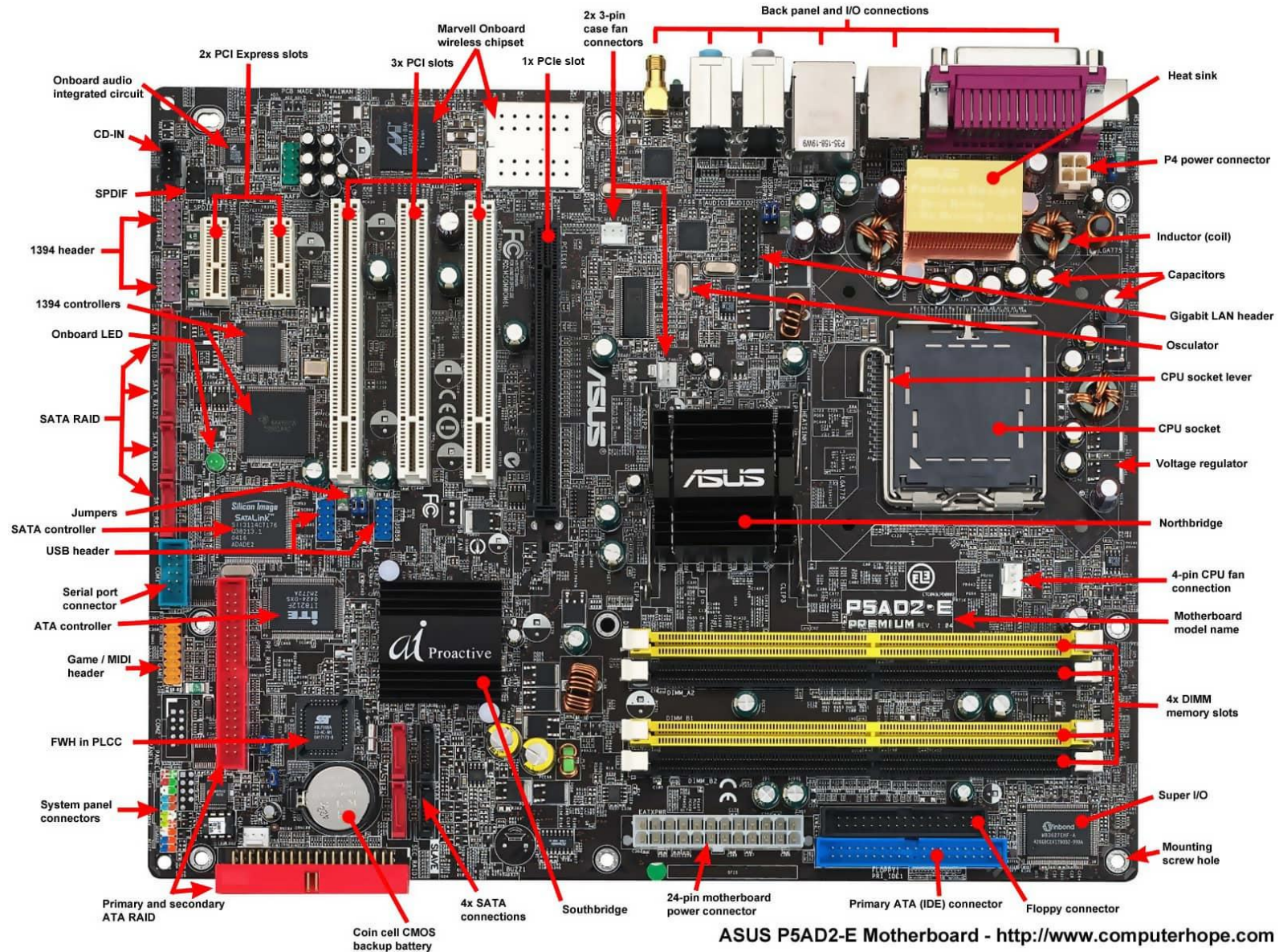
### ■ Motherboard

- The main thing that I'll cover

# COMPONENT PARTS OF A PC (based on INTEL/AMD device)

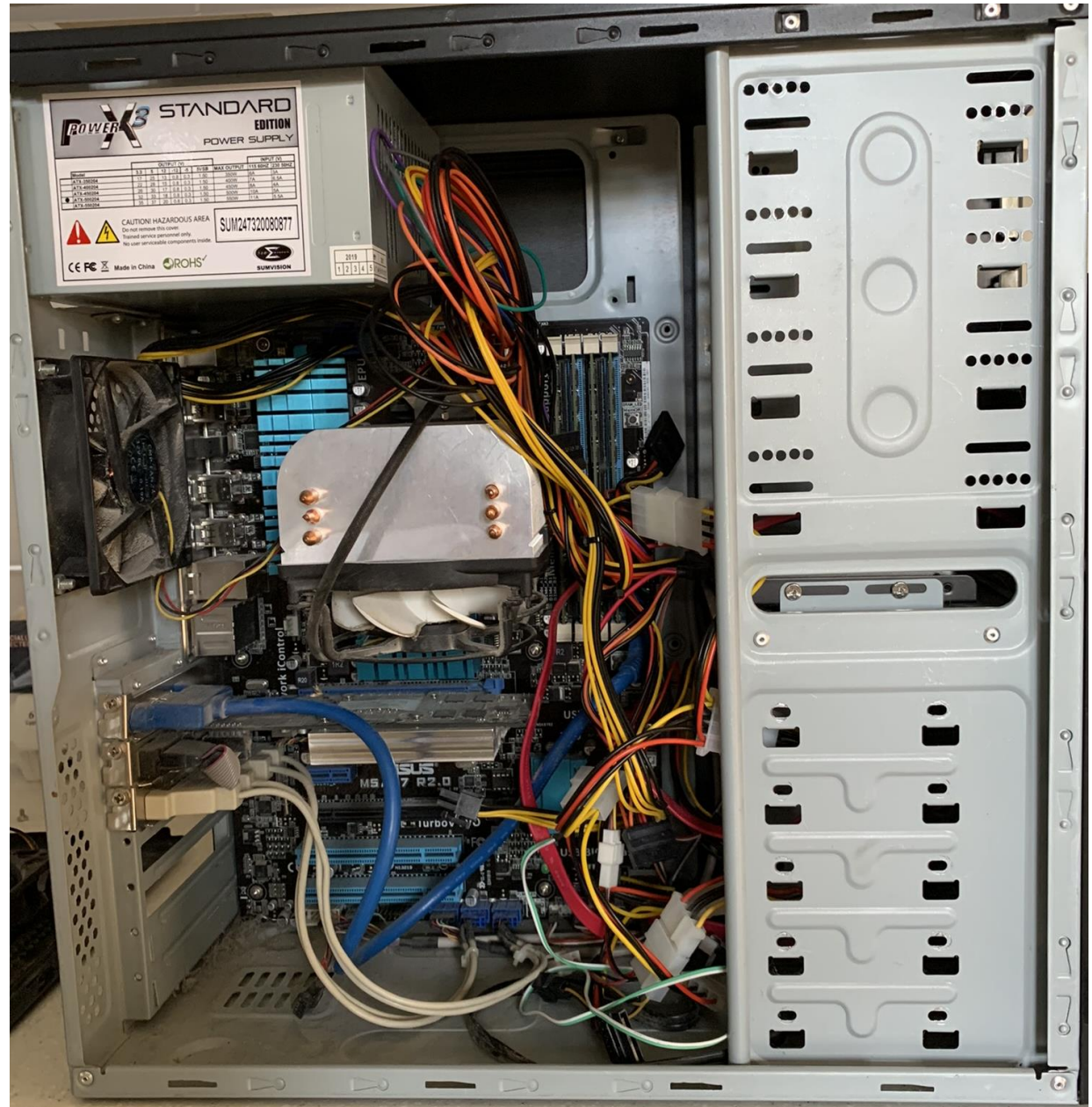
- Laptop (typical)
  - The Case
    - Cooling Fans to cool motherboard
    - Cooling on motherboard for CPU, GPU cards
    - Power Supply, Depends on Screen (size and type), peripherals, CPU power, Cooling, External Plug in ports (HDMI, USB), lights (?)
  - CPU(s)
    - Single CPU, multi-core but less cores as heat dissipation difficult
  - Storage
    - Hard Disk Drives (HDD) – Now unusual, Some can hold 2 disks
    - Solid State Drives (SSD) – The norm
    - WORM Drives now uncommon except for larger, work type laptops
  - Motherboard
    - Same Functionality as Desktop but reduced in size and components, minimal add on ability due to size and heat output
    - Built to fit size so non-standardised except Disk and Memory, more expensive to build (standardisation problems) and less powerful CPU capability due to heat dissipation problems

# Motherboard Major Components



## Motherboard major parts

- Connections within board via two Buses
- CPU Socket – Fan sits on top
- Memory Dual Inline Memory Modules, Memory and connectors each side allows multiple access
- NorthBridge High Speed connecting processor to connect CPU to Memory and AGP (now usually PCIe) Also controls Bus Speed
- Power Connectors
- SouthBridge, lower speed bus manager for PCI Bus, IDE Bus (old disk connections), Mouse, Keyboard, SATA. Connects to Northbridge
- SATA (Serial Advanced Technology Attachment) connectors (I/O newer disks)
- CMOS Battery keeps CMOS (Complementary Metal Oxide Semiconductor) running. CMOS used to store things needed for PC to start, System Clock, Date, Time, Bios Config, Boot Sequences etc. CMOS is low tech and slow speed so reliable, low power requirement, battery lasts 2 – 10 years.
- PCI slots, component attachments. Small and Large type connectors and PCIe, high speed.
  - Slots different sizes for connectivity, different speeds (PCIe for speed, e/g/video. PCI Parallel Interface, PCIe faster but serial interface)
- **Newer Motherboards/CPUs**
  - Northbridge functions is being moved into the CPU and Southbridge (name changing to Chipset) to provide faster processing speeds



**POWER X3 STANDARD EDITION**  
POWER SUPPLY

Model	Input Voltage	Input Current	Max Output	Max Power
ATX-3000W	115V	10.0A	3000W	3000W
ATX-4000W	115V	13.6A	4000W	4000W
ATX-5000W	115V	17.0A	5000W	5000W
ATX-6000W	115V	20.0A	6000W	6000W
ATX-8000W	115V	27.3A	8000W	8000W

CAUTION HAZARDOUS AREA  
Do not remove this cover.  
Hazardous service personnel only.  
No user serviceable components inside.

SUNM247320080877

CE FC Made in China ROHS SURVEILLANCE

MS7 R2.0

ASUS MS7 R2.0

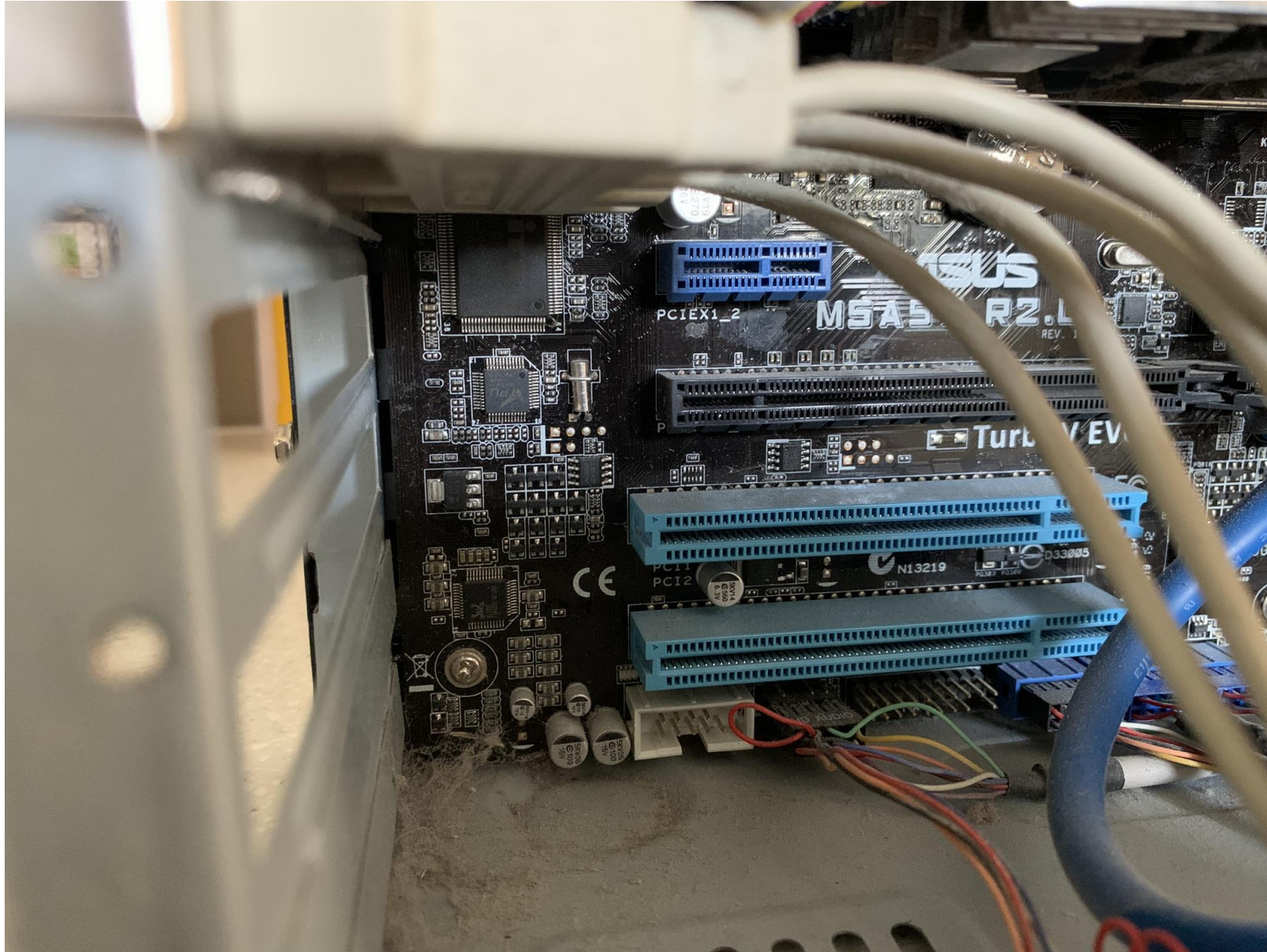
turbo

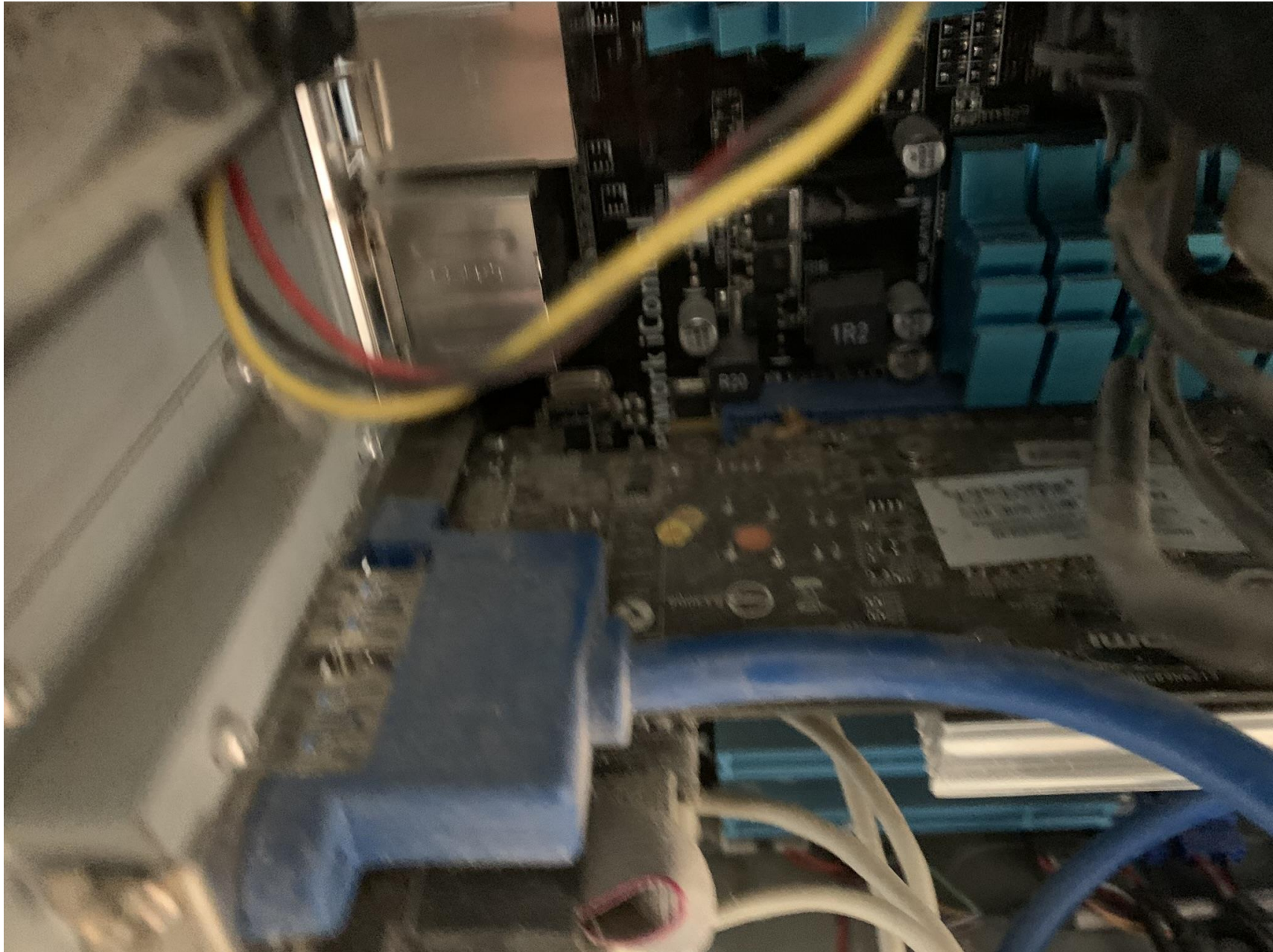
# PC ON DISPLAY - SPECIFICATION

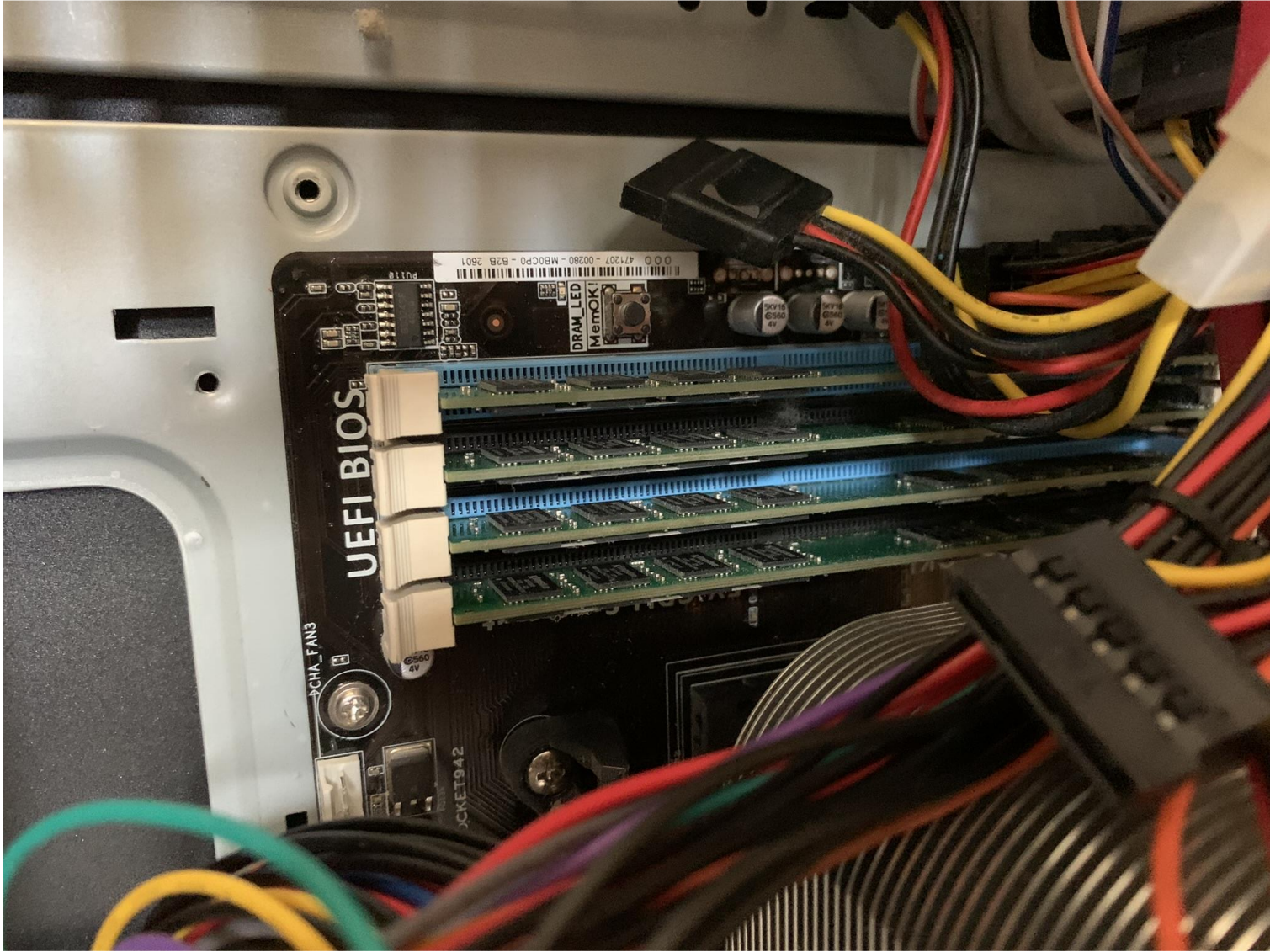
- CPU - AMD Phenom 6 core 3.7 GHz No increase in threads
- Memory – 16 GB (4 \* 4 GB DIMM)
- “Gigabit” Graphics Off Motherboard Card
- On Motherboard Sound processor
- Gigabit LAN processor
- 2 USB 2 front of Case – Riser on motherboard
- 2 USB 3 Rear – Riser on motherboard
- 6 USB 2 Rear – Riser on motherboard
- Front Mike Input
- DVD R/W Worm Drive (removed to new PC)
- BluRay R/W Worm Drive (removed to new PC)
- 240 GB SSD set as primary disk holding Windows and Programs for faster running
- 4 \* 3 TB HDD set as two Raid 1 mirrored logical drives on PCIe card (removed to new PC)
- Digital and analogue screen supported





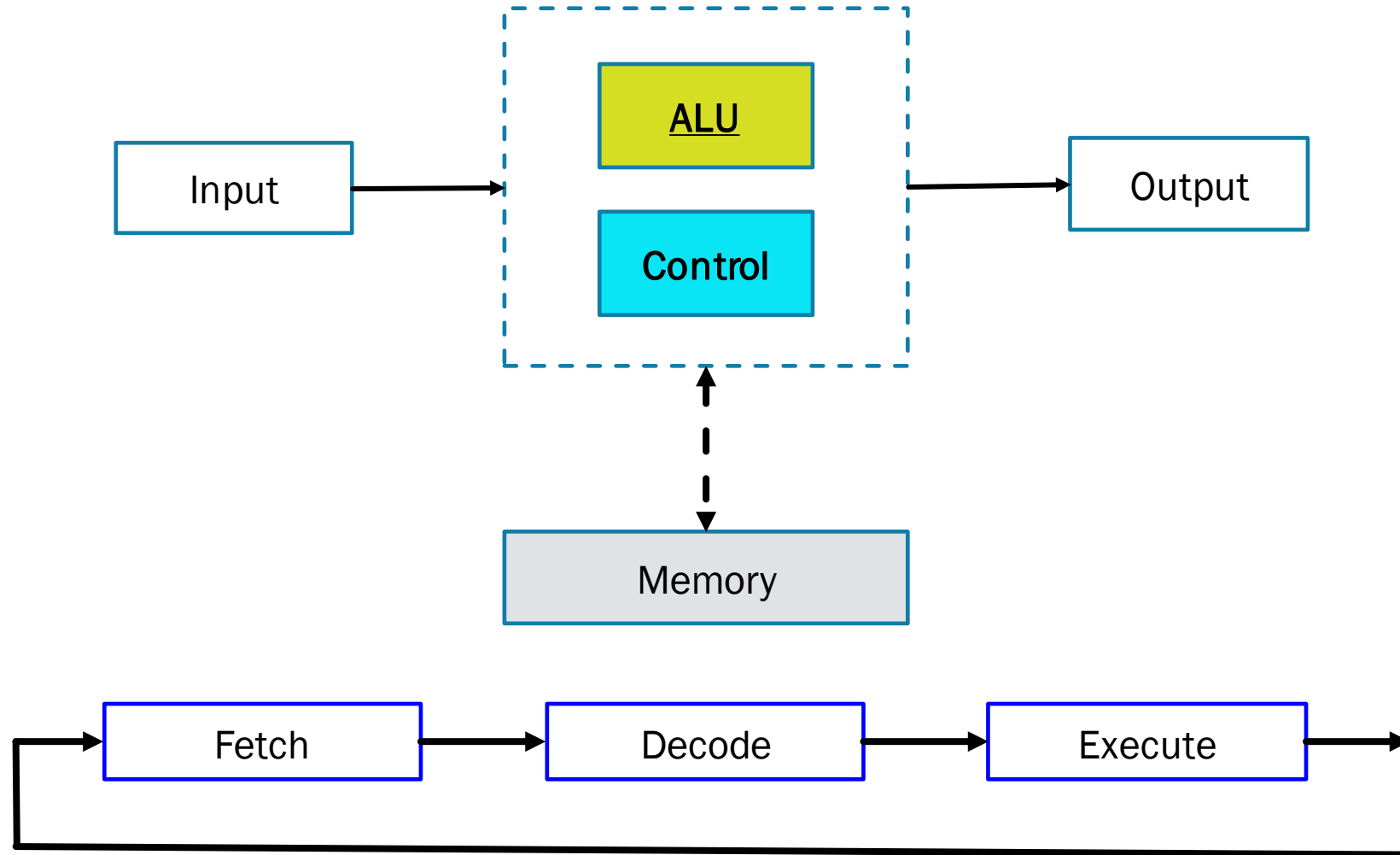






CPU Useable Memory, DIMM

# CPU CORE PROCESSES – MULTI THREADING



Each CPU fetches instruction, control unit decodes, executes it in ALU, set's next address to read, cycles. Whilst it waits, (e.g. I/O) then other thread runs

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## References

- **Parts of Motherboard and its Function Explained**
  - [https://ourtechroom.com/tech/parts-of-motherboard/#mctoc\\_1f8guqdj05u](https://ourtechroom.com/tech/parts-of-motherboard/#mctoc_1f8guqdj05u)
- **What Is A Motherboard? What Are The Different Components Of A Motherboard**
  - <https://fossbytes.com/what-is-a-motherboard-what-are-the-components-of-a-motherboard/>
- **How Does a CPU Work?**
  - <https://www.techwalla.com/articles/how-does-a-cpu-work>