

Hippo (Eliza Knapp, Diana Yang, Alysa Zhao)
IntroCS pd6
L1 -- On Wednesdays We Wear Pink
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The Ultimate Flight Simulator Computer

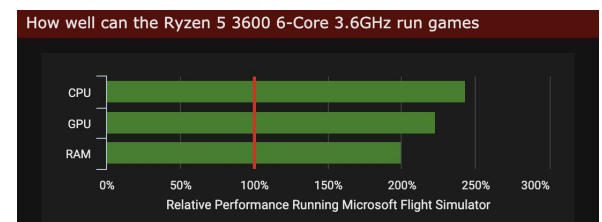
TOTAL: \$2,940.85

CPU: AMD Ryzen R5 3600 (\$174.99)



As the central processing unit of the computer, this device's purpose is to receive instructions from the RAM, decode what the instruction is, and then use its relevant parts to execute it. A CPU is built by placing billions of transistors onto a computer chip. The transistors alter the flow of electricity which allows programs to be run. The AMD Ryzen R5 3600 has six cores, or "brains." This is where the information from the RAM is processed and six cores means that this CPU is very fast.

Additionally, it is very good at multithreading (it has 12 threads!), or completing multiple functions within a core at the same time. This is beneficial because the 2020 Microsoft Flight Simulator requires high computer speeds. The AMD Ryzen also allows for some overclocking, which is increasing a CPU's speed by setting a higher clock rate in the computer's basic input/output system. This means that for a lower price, the Ryzen can do the work of very expensive CPUs. In terms of running flight simulator, the chart to the right shows that the AMD Ryzen is more than capable of running Microsoft flight simulator 2020.

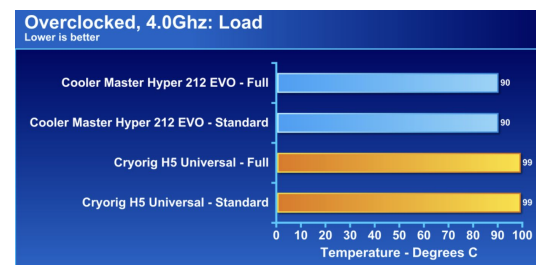


CPU Cooler: Cooler Master Hyper 212 (\$34.99)



This cooler has been around for a long time and was built very robustly so it works with newer CPUs. It has four direct contact heatpipes, which are copper and flattened, that it locks in place to provide heat dissipation from the CPU. The pipes are side by side which creates a smooth surface for heat transfer.

Especially when the CPU is overclocked, which makes it run the game faster, and in use, the Cooler Master Hyper 212 keeps the CPU at a reasonable temperature as compared to other coolers (see right).



Motherboard: Asus TUF GAMING X507-PLUS (WIFI) (\$189.99)

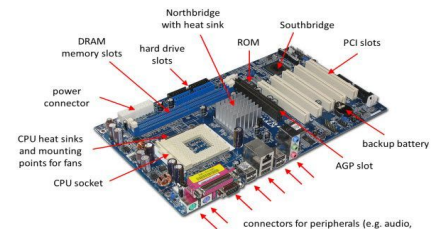


The Motherboard is arguably the most important because it acts like a brain for the computer, connecting the hardware components and allowing them to communicate with one another.

When selecting a motherboard, we wanted one that would be compatible with many PC gears, which this one is. This

motherboard has 2 PCI-E 16.0 slots, allowing it to connect to the graphics card and load images quickly (16 bits per cycle). It also

comes with wireless networking so the user doesn't have to purchase it separately. This motherboard is ideal for this gamer because it is affordable, yet offers a lot of the features that a high-end one would. It also has Digi+ VRM, which is an ASUS design giving users flexibility and durability in their motherboard.



RAM: Corsair Vengeance RGB Pro 16 GB (\$103.99)

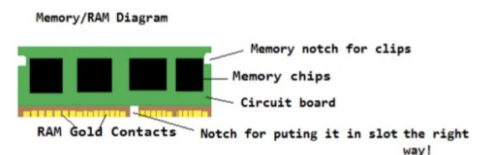


The RAM, or random access memory, stores information that is actively used in processing. It is temporary, but works extremely quickly to store all the information your

computer needs. To run the Microsoft Flight Simulator 2020 smoothly at 60 fps, the recommended amount

of RAM in a machine is 16 gigabytes. The Corsair

Vengeance RGB Pro is extremely good for gamers because it can go up to incredibly fast speeds. It also doesn't suffer from lag because of its low latency (high volume of data processed in a small amount of time).

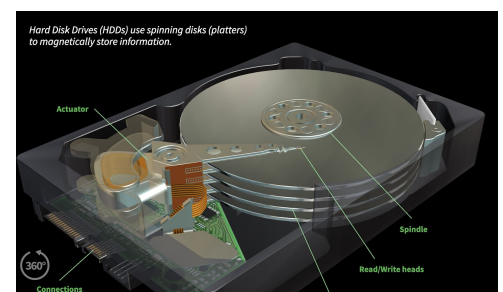


HDD: Samsung 970 Evo 1TB (\$179.99)



The purpose of a hard drive disk (HDD) is to be a permanent data storage device. It is attached directly to the disk controller of the computer motherboard and has 1 or more disc platters inside an air sealed casing. Each platter has data written on to it using a magnetic head

creating a long term memory device. The Samsung 970 Evo 1TB



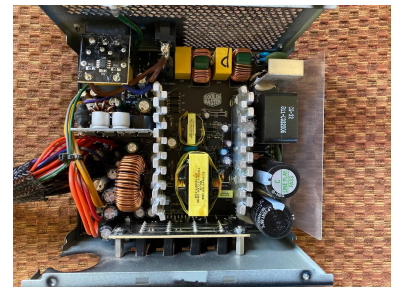
has extremely fast reading speeds, around 3,400 MB/sec, allowing the computer to find the correct file as quickly as possible. Although this does not speed up the game itself, it does allow many extensions to be saved and more overall storage on the computer. The recommended amount of free hard drive space for Microsoft Flight Simulator 2020 is 50GB and this HDD has 1TB which is equal to 1000GB which leaves more than enough room.

PSU: EVGA SuperNOVA (\$116.97)



A PSU converts the alternating current from home lines into the direct current used by the computer. Without a PSU, the computer will be unable to run. The evga supernova available from 550W to 1K W but because our machine only requires approximately 419W to run, we bought the 550W one. If the computer isn't doing strenuous activity, the PSU can also switch to semi-passiveness so the heat can

dissipate. It also comes with a fan to further help cooling.

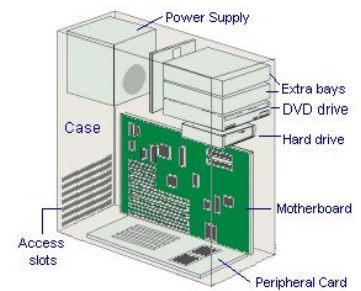


Case: ASUS TUF Gaming GT501 ATX Mid Tower Case (\$ 164.98)



Cases help keep the hardware components of a computer mounted in a neat little package. It comes with three fans to prevent the machinery from overheating. It has a slot for the graphics card we chose but has seven additional slots for video, sound, advanced graphics, Ethernet, or memory. It also has a strong protective coating, and carry handles,

making it durable and long-lasting. (ps it also features a 4mm tempered glass side panel so one can see the components inside, which is pretty cool.)



OS: Microsoft Windows 10 Home OEM 64-Bit (\$106.99)



An Operating System manages the memory, processors, disk drives, and printers. It also provides a user interface that can readily adapt to new software. The Windows 10 operating system is the most recent one from Microsoft. Unlike its previous iteration, Windows 8, it is far less likely to crash. It also can use DirectX 12, so the user can improve visuals and graphics on Microsoft games over time. Besides being used to play Microsoft Flight Simulator, Windows 10 is also compatible with over 20,000 other video games- the widest variety of any OS. We chose a 64-bit processor so our 16 GB RAM can be

used to the best of its ability. A 64-bit processor can use up to 6.4 GB of memory space, whereas the 32-bit can only handle half as much. Because games are constantly updating, it is worth investing in a more capable processor. We also decided on Windows 10 Home rather than Pro because although the latter is more secure, it isn't necessary for gaming. It is also thirty dollars more expensive.

Graphics: NVIDIA GeForce GTX 2080 Super (\$699.99)



Graphics Cards are necessary to produce images on the monitor. The GTX 2080 graphics card is ideal for virtual reality games because of its impressive frame rates. It is also easily overclocked, meaning that the user can increase the speed at which images load. The card produces very clear images, approaching 4k 60 fps. This is important because the monitor we chose is large and we do not want the images to appear blurry on screen.

Keyboard: Corsair K95 RGB PLATINUM (\$129.99)



This is a full-size keyboard that has all the features for gaming and otherwise: dedicated media controls, a USB pass-through, a metal volume wheel, RGB lighting and an extra set of textured keycaps for the WASD keys (for gaming). Also, the keys have little dimples which make it satisfying to rest your hands on.

Mouse: Razer DeathAdder Elite (\$39.99)



This mouse has a nice design, a very advanced optical sensor (which uses a light source to detect movement relative to a surface), and is very good for gaming. It also has seven programmable buttons which makes it a good flight simulator because buttons can be configured similarly to that of the actual airplane. It also has an extremely high DPI which measures how sensitive the mouse is, making the experience more similar to flying an airplane. Overall, this mouse is also not too expensive compared to other high level gaming mice so the Razer DeathAdder is a good buy.

Speaker: Bose Companion (\$99.00)



A speaker is meant to produce audio output that can be heard by the listening. They do this by converting electromagnetic waves into sound waves. This specific Bose Companion speaker has a great sound quality and is good for music, movies and gaming. This

means that while playing Flight Simulator, the user will be able to hear all the sounds around her and it will better mimic actual flying.

Monitor: Samsung CJ89 43" (LC43J890DKNXZA) (\$899.99)



A monitor's job is to provide a visual interface for computer users. It allows them to interact with computer programs through displayed text and graphics. This particular monitor spans a length of 43 inches and has a 32:10 aspect ratio. It is ideal for the flight simulator because it allows the player to feel fully immersed in the game and it is much more practical than putting multiple monitors together to achieve the desired effect. Because we've invested on an expensive graphics card, it makes sense to have a good monitor to display the images. The monitor also has a 120Hz refresh rate so it can smoothly transition through scenes.