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| **COMP-1295 Information Systems**  **Hardware Competency**  **/ 30 (10 points per answer)** | Student Name | Yifan Li |
| Section | Module2 Hardware |
| Date: | 2022-09-23 |

Visit the following link <https://ca.pcpartpicker.com/guide/>

1. You will build a PC according to the following specs (provide price for each item and total):

* Motherboard form factor must be Micro ATX
* CPU must be 2 cores (3.4 GHz)
* Cooler should for CPU socket AM2 – AM4, 16G DDR4-3200 (2 x 8GB),
* Storage will be SSD type 500 GB,
* Video card 8GB memory (1580 MHz),
* Case Micro ATX mini tower (black),
* Power supply 550W ATX,
* Monitor 27” resolution 2560x1440.

Some of these parts may not be available but look for a close as possible part. Note: look for lowest price, compatibility, and descent video resolution. Include a screenshot of your partpicker wepage.

Answer:

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| --- | --- | --- | --- |
| **Components** | **Type S pecification** | **Price** | **Notes** |
| Motherboard | Gigabyte B450 AORUS M Micro ATX AM4 Motherboard | $149.98 | This Motherboard supports the AMD Athlon 220GE 3.4 GHz Dual-Core Processor with BIOS version F30.;Upgrading the BIOS will be necessary to support the CPU |
| CPU | AMD Athlon 220GE 3.4GHz Dual-Core Processer | $341.19 |  |
| Cooler | Vetroo V5 52 CFM CPU Cooler | $49.99 | Even though the CPU includes cooler, I think it's better to add another on |
| Memory | Corsair Vengeance LPX 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory | $74.98 |  |
| Storage | Crucial P2 500 GB M.2-2280 NVME Solid State Drive | $51.75 |  |
| Video Card | MSI Radeon RX 6600 8 GB MECH 2X Video Card | $369 | XFX Radeon RX590 8GB FATBOY OC+ Video Card is out of stock (1580HZ), So I replaced the closest one |
| Case | Cougar MG120 G MicroATX Mini Tower Case | $63.53 |  |
| Power Supply | Corsair CX550F 550 W 80+ Bronze Certified Fully Modular ATX Power Supply | $49.99 |  |
| Monitor | Acer V277U 27.0" 2560x1440 75 Hz Monitor | $276.32 |  |
|  | TOTAL PRICE | $1426.73 |  |

The PC Builder Screen Capture below:

Graphical user interface, text, application, email

Description automatically generated

1. Why the following parts are not compatibles?

CPU (AMD Ryzen 9 3900X 3.8 Ghz 12-core), Cooler Master Hyper 212 RGB Black Edition 57.3 CFM and Motherboard (MSI A320M PRO-VH Plus Micro ATX AM4) and 2 Crucial Ballistix 16 GB (2 x 8 GB) DDR4 RAM.

Answer:

In the past, the CPU (AMD Ryzen 9 3900X 3.8Ghz 12-core) has issues with the motherboard(MSI A320M PRO-VH PLUS Micro ATX AM4 Motherboard) which is using an older BIOS version, it is not incompatible.

But the motherboard (MSI A320M PRO-VH PLUS Micro ATX AM4 Motherboard) supports the CPU (AMD Ryzen 9 3900X 3.8Ghz 12-core) with BIOS version 7B07v3G. If you want to solve this problem, upgrading the BIOS will be necessary to support the CPU.

3)Is the following monitor compatible with the following video card? Is the combination recommended? (Your answer should include the following criteria: low price, compatibility, and descent video resolution). Video Card (XFX Radeon RX 590 8GB OC+) and Monitor (Asus ROG Swift PG65UQ 64.5” 3840x2160 144Hz).

Answer:

I think this Monitor and video card are incompatible, and I would not recommend this combination from the following three aspects to analyze.

**1.Compatibility**

The Monitor XFX Asus ROG Swift PG65UQ has a 65-inch 4K (3840 x 2160) display with an overclockable 144 Hz refresh rate for super-smooth gaming visuals, plus quantum-dot technology and DCI-P3 95% color gamut. It displays 1000 certification and full-array local dimming (backlight to deliver 384 independent LED zones and 1000 nits' peak brightness.

Graphical user interface, application

Description automatically generated with medium confidence

Then, looking at the video card XFX Radeon RX 590, as we can see from the official website( <https://www.amd.com/en/products/graphics/radeon-rx-590> ).

It also has strong performance with HDMI 4K60 Support, Free Sync, which means that it is compatible with the Monitor, which has a maximum of 4K 60hz and cannot support the Monitor 4K 144hz better.

On this hand, XFX Radeon RX 590 is not compatible with XFX Asus ROG Swift PG65UQ.

**2. Low Price**

The average price of the video card XFX Radeon RX 590 8GB OC+ is about $300; however, the monitor XFX Asus ROG Swift PG65UQ is listed at $4999. This is a mismatch. I don't recommend the combination from the point of view of cost-effectiveness.

3. Descent video resolution

As I said, the Monitor XFX Asus ROG Swift PG65UQ has a 65-inch 4K (3840 x 2160) display with an overclockable 144 Hz refresh rate. This video card XFX Radeon RX 590 supports a 4K display, Peak Pixel Fill-Rate Up to 49.54 GP/s, Peak Texture Fill-Rate Up to 222.48 GT/s, Max Performance Up to 7.1 TFLOP sand, the show will be very clear. However, because it supports a maximum refresh rate of 4K 60hz, the performance of the Monitor cannot be fully utilized.