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Fall 2023 Computer Purchase

Fill in the chart for each component I plan to add to the computer. Required whether buying new or just adding parts to the machine. For enhancements, I need to fill in the component regardless.

Device Type	**MOTHERBOARD**
New, Used or will not include	**New**
Brand/Model	**Gigabyte / B450M DS3H WIFI**
Specifications (list all important for the build)	**The Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard is budget-friendly, yet feature-rich, offering built-in WiFi for wireless connectivity and an AM4 socket, compatible with a wide array of AMD Ryzen processors. It has a compact Micro ATX form factor suitable for various cases, and provides ample USB ports, including USB 3.1 Gen 1. It supports up to 64GB DDR4 RAM, offers decent audio with Realtek® ALC887 codec, and includes Realtek® GbE LAN for reliable wired networking. It comes with expansion slots and SATA ports for additional storage and expansion cards, with overclocking support available.**
Why am I choosing this part for the build	**Choosing the Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard can be beneficial for several reasons, especially for users looking to build a system with a moderate budget, without compromising significantly on features. This motherboard tends to be affordable and offers good value for its price, making it suitable for budget-friendly builds while still providing essential features and reliable performance. The inclusion of WiFi is a significant advantage for those who may not have easy access to a wired internet connection. The Micro ATX form factor is compact yet allows for adequate expandability, making it a versatile choice suitable for various case sizes. The AM4 socket is compatible with a wide range of AMD Ryzen processors, giving I flexibility in choosing a CPU that fits Ir budget and performance needs. It offers multiple expansion slots and SATA ports allowing for the addition of GPUs, additional storage, and other expansion cards as needed.With multiple USB 3.1 and USB 2.0 ports, it provides sufficient connectivity options for peripherals and external storage devices. It typically supports up to 64GB of DDR4 RAM,**

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	sufficient for most gaming and general productivity tasks. Equipped with Realtek® ALC887 codec and Realtek® GbE LAN chip, it can offer decent audio and network experiences for the users. This motherboard also supports overclocking for users who are interested in pushing their hardware for better performance.
Location where the device is coming from (include url link)	**https://www.bhphotovideo.com/c/product/1756390-REG/gigabyte_b450m_ds3h_wifi_amd.html**
Price	**$79.99 with free shipping**

☐ What is the form factor of the motherboard? **Micro ATX**

☐ What ports come on the motherboard?

- **1 x PS/2 keyboard/mouse port**
- **1 x DVI-D port**
- **1 x HDMI port**
- **4 x USB 3.1 Gen 1 ports**
- **4 x USB 2.0/1.1 ports**
- **1 x RJ-45 port (Ethernet)**
- **3 x audio jacks (Line In, Line Out, Mic In)**
- **2 x SMA antenna connectors (2T2R, for WiFi)**

☐ What chipset is used on the motherboard? **AMD B450**

Device Type	**CPU**
New, Used or will not include	**NEW**
Brand/Model	**AMD**
Specifications (list all important for the build)	**The AMD Ryzen 5 5600G is a versatile 6-core processor, running at 3.9 GHz base and 4.4 GHz max boost, suitable for mid-range gaming and productivity tasks. It's based on the Zen 3 architecture, offering enhanced performance and efficiency. The integrated Radeon graphics make it an excellent choice for budget-friendly builds without a dedicated GPU. It has a 19MB cache and supports DDR4-3200 RAM, optimizing data access speeds. The 65W TDP ensures manageable heat levels, making it compatible with a wide range of cooling solutions, ideal for users seeking balanced performance and value.**

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Why am I choosing this part for the build	**The AMD Ryzen 5 5600G, with its 6 cores and 12 threads, offers a balanced blend of performance and value, making it a compelling choice for a range of applications. The 3.9 GHz base and 4.4 GHz boost clocks ensure speedy processing for gaming, content creation, and multitasking. It stands out with its integrated Radeon graphics, enabling decent gaming and multimedia capabilities without a dedicated GPU, crucial for budget-conscious users or during GPU market shortages. Based on the advanced Zen 3 architecture, it delivers improved efficiency and performance per watt compared to its predecessors.** **This processor supports DDR4-3200 RAM, optimizing data access speed, and has a 19MB cache, enhancing task execution. The 65W TDP is indicative of its energy efficiency, allowing compatibility with a wide array of cooling solutions and reducing overall system heat output. Whether I are building a mid-range gaming rig, a workstation for productivity tasks, or a system for everyday use, the AMD Ryzen 5 5600G provides a harmonious blend of power, graphical capability, and affordability, positioning it as a versatile option in the CPU market.**
Location where the device is coming from (include url link)	**https://www.amazon.com/dp/B092L9GF5N?tag=pcpapi-20&linkCode=ogi&th=1**
Price	**$116.58**
Device Type	**Cooler**
New, Used or will not include	**New**
Brand/Model	**AMD**
Specifications (list all important for the build)	**The AMD Ryzen 5 5600G is typically bundled with the Wraith Stealth cooler. This cooler is compact and provides adequate cooling for the CPU under standard operating conditions. It features an aluminum heatsink and a pre-applied thermal paste for efficient heat transfer. The cooler is equipped with a low-noise fan to maintain a quiet operation environment. While sufficient for stock speeds and light loads, users intending to overclock or run high-load tasks may consider an aftermarket cooling solution for optimal thermal performance. It's a**

	reliable solution for those not needing extensive cooling requirements.
Why am I choosing this part for the build	**Choosing the AMD Ryzen 5 5600G's included Wraith Stealth cooler offers several benefits, especially for standard and budget-conscious builds. It's a cost-effective solution, coming included with the processor, eliminating the need for an additional purchase of an aftermarket cooler, thus reducing the overall build cost. For users with no plans to overclock or undertake sustained high-load computing tasks, the Wraith Stealth is usually adequate, maintaining optimal temperatures under typical usage scenarios.** **The compact design of this cooler is advantageous for smaller builds or cases with limited space, ensuring compatibility and ease of installation. The pre-applied thermal paste simplifies the installation process and guarantees proper thermal conductivity right from the start, reducing the margin for installation errors. Furthermore, the cooler operates with low noise levels, maintaining a quieter working or gaming environment. Lastly, utilizing the stock cooler ensures a balance between performance and thermal management, specifically designed for the Ryzen 5 5600G, safeguarding the processor's longevity and reliability without the need for additional cooling investments.**
Location where the device is coming from (include url link)	**(included with CPU)**
Price	-

☐Does this CPU fit the motherboard?

Yes, the AMD Ryzen 5 5600G will fit in the Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard as they both use the AM4 socket. However, the B450M DS3H may require a BIOS update to support Ryzen 5000 series processors like the Ryzen 5 5600G.Before purchasing, it is crucial to ensure that the motherboard has the required BIOS version to support the CPU. If I already have the motherboard, I might need an older compatible AM4 processor to perform the BIOS update before installing the Ryzen 5 5600G.

☐ What power pins are needed on mobo for the CPU?

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1. **24-pin ATX Power Connector: This is the main power connector that supplies power to the motherboard. It is a standard connector and is required for the motherboard to function properly.**
2. **8-pin CPU Power Connector (EPS12V): This connector is specifically for supplying power to the CPU. Some motherboards may have a 4-pin connector instead, but modern motherboards typically use an 8-pin connector for better power delivery to accommodate high-performance CPUs.**

These connectors are standard and should be available on any modern power supply unit (PSU). The Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard, like most motherboards, should feature these connectors to accommodate the Ryzen 5 5600G and ensure proper power delivery to the CPU and other components. While the motherboard and CPU power connectors are standard, please ensure that the PSU I are using has the necessary cables and connectors and that it can supply sufficient power for all the components in Ir system.

☐ Is the CPU new enough to handle virtualization?

Yes, the AMD Ryzen 5 5600G is certainly new enough and well-equipped to handle virtualization. It belongs to AMD's Ryzen 5000 series, which is based on the Zen 3 architecture, and was released in 2021. The processor supports AMD-V (AMD Virtualization Technology), which enhances the processor's ability to run multiple operating systems and applications in separate partitions or "virtual machines" on a single physical machine.

☐ Does this CPU have onboard graphics?

Yes, the AMD Ryzen 5 5600G does feature onboard graphics. It has an integrated Radeon Graphics processor, which allows for video output and graphical processing without the need for a dedicated graphics card. This is particularly useful for those who are on a budget, facing graphics card availability issues, or do not require the high graphical performance provided by a discrete graphics card, such as for everyday computing tasks, light gaming, and productivity applications. Keep in mind, to utilize the integrated graphics, I'll need to connect Ir display to the appropriate video output on Ir motherboard.

Silverstone FARA H1M MicroATX Mini Tower Case

Device Type	**CASE**
New, Used or will not include	**New**
Brand/Model	**SilverStone Technology**
Specifications (list all important for the build)	**The Silverstone FARA H1M MicroATX Mini is significant due to the following reasons: It supports MicroATX and Mini-ITX motherboards, making it versatile for smaller build form factors which are suitable for limited spaces.Designed with optimal airflow in mind, it helps in maintaining the temperature of the internal components, improving the longevity and performance of the system. Silverstone is known for its robust and quality build, ensuring the**

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	durability of the case. Its aesthetic design appeals to users who prefer a sleek and modern look for their PC builds. Despite its compact size, it offers adequate expansion slots and drive bays for additional components and storage devices.
Why am I choosing this part for the build	**Choosing the Silverstone FARA H1M MicroATX Mini can be beneficial for the following reasons: If I are constrained by space or prefer a more compact setup, this case is an ideal choice due to its smaller footprint. Generally, MicroATX builds tend to be more budget-friendly compared to their full-sized counterparts. Its compatibility with MicroATX and Mini-ITX motherboards offers versatility in choosing the motherboard that fits Ir needs and preferences. The design allows for effective cooling solutions, essential for optimal performance of the components, especially in smaller builds where overheating can be a concern.If aesthetic appeal is important to I, this model's modern and sleek design can complement Ir workspace or gaming setup well.**
Location where the device is coming from (include url link)	**https://www.amazon.com/dp/B08ZMR3V5Z?tag=pcpapi-20&linkCode=ogi&th=1&psc=1**
Price	**$59.99**

☐ Is this case the correct form factor for my motherboard?

Yes, the Silverstone FARA H1M MicroATX Mini is indeed a suitable choice for Ir Gigabyte B450M DS3H WIFI AM4 motherboard, as this case is designed to accommodate MicroATX form factor motherboards, and Ir motherboard is a MicroATX form factor. They should be compatible, allowing I to mount the motherboard securely within the case without any issues.

☐ Is the case large enough to handle the cooler selected?

The AMD Ryzen 5 5600G usually comes with the AMD Wraith Stealth cooler, which has a height of approximately 54mm. The Silverstone FARA H1M MicroATX Mini Tower should generally be able to accommodate this cooler as it is designed to fit standard coolers that come with CPUs like the Ryzen series. However, for utmost certainty, I should refer to the case's specifications related to CPU cooler clearance, usually mentioned in the product's manual or the manufacturer's website. If the cooler height is within the maximum CPU cooler height supported by the Silverstone FARA H1M case, it will fit without any issues.

☐ Does the case come with all the features I need for USB and other items?

The Silverstone FARA H1M MicroATX Mini does come with several built-in features including USB ports, but for a detailed and accurate assessment, I should refer to the product's specification sheet or manual to ensure it meets all Ir specific requirements.

Typically, a case like the Silverstone FARA H1M would feature:

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- Front panel USB ports (usually including both USB 3.0 and 2.0)
- Audio in/out ports
- Power and reset buttons
- Possibly some form of LED indicator or lighting

EVGA 500 BQ 500 W 80+ Bronze Certified Semi-modular ATX Power Supply

Device Type	**POWER SUPPLY**
New, Used or will not include	**New**
Brand/Model	**EVGA 500 BQ**
Specifications (list all important for the build)	**The EVGA 500 Bq is a 500W power supply with an 80+ Bronze certification, ensuring at least 80% efficiency, reducing energy waste and operating costs. Being semi-modular, it allows for better cable management, improving airflow and system aesthetics by enabling users to use only the necessary cables. It provides reliable and consistent power suitable for mid-range systems, making it versatile for various computing needs. EVGA is a reputable brand known for quality and durability, and this model includes protection features against over-voltage, under-voltage, over-current, and short-circuit, ensuring the safety of Ir components.**
Why am I choosing this part for the build	**Choosing the EVGA 500 Bq, 80+ Bronze 500W, Semi Modular for Ir computer build can offer several advantages:** **1. Efficiency and Reliability:** **- The 80+ Bronze certification ensures at least 80% efficiency, reducing energy consumption and minimizing heat production, thereby potentially lowering electricity costs and extending component lifespan.** **2. Semi-Modularity:** **- The semi-modular design allows for better cable management, enabling I to connect only the cables I need, improving internal airflow and reducing clutter within the case, which can also contribute to better aesthetics.** **3. Brand Reputation:** **- EVGA is a well-known and respected brand in the power supply market, known for producing**

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	reliable and durable products, giving I peace of mind regarding the quality of the power supply. **4. Protection Features:** **- It comes with multiple protection features like over-voltage, under-voltage, over-current, and short-circuit protection, safeguarding Ir valuable components from power anomalies and electrical issues.** **5. Versatility:** **- With 500W of power, it can efficiently support mid-range computer builds, making it a versatile choice suitable for a variety of applications, from gaming to productivity.** **6. Value for Money:** **- Given its features and reliability, the EVGA 500 Bq offers a good balance between performance and price, especially for those on a budget but unwilling to compromise too much on quality.**
Location where the device is coming from (include url link)	**https://www.amazon.com/dp/B01N3OAFHD?tag=pcpapi-20&linkCode=ogi&th=1&psc=1**
Price	**$108.99**

☐ Do the power supply have plenty of wattage?

Yes

☐ Does the PSU have all the rails needed for the devices I am adding to the machine?

Yes, the EVGA 500 Bq, 80+ Bronze 500W, Semi Modular, is equipped with all the necessary rails and connectors to support Ir specific configuration including the Gigabyte B450M DS3H WIFI AM4 MicroATX Motherboard and AMD Ryzen 5 5600G 3.9 GHz 6-core Processor. This power supply provides the required ATX connector for motherboard power, and a CPU power connector to supply the needed power to the Ir Ryzen processor. It also provides sufficient SATA and peripheral connectors to accommodate storage devices, RGB lighting in Silicon Power XPOWER Turbine RGB 16 GB memory modules, and other peripherals housed within the Silverstone FARA H1M MicroATX Mini Tower Case. The semi-modular design further ensures ease of installation and cable management, promoting better airflow within the compact MicroATX case, contributing to optimal operational conditions and longevity for all components. Its 500W capacity is adequate to handle the power draw of the specified components, providing a balanced and reliable power solution for Ir computer build.

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Silicon Power XPOWER Turbine RGB 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory

Device Type	**RAM**
New, Used or will not include	**New**
Brand/Model	**Silicon Power XPOWER Turbine RGB 16 GB**
Specifications (list all important for the build)	**Silicon Power XPOWER Turbine RGB 16GB DDR4-3200 CL16 Memory is pivotal due to its high-speed performance, improving computer responsiveness, especially in demanding applications and games. It has RGB lighting, enhancing aesthetic appeal for gaming setups. Its 3200MHz speed optimizes data processing, reducing lag. The dual-channel configuration (2x8GB) enhances overall system performance. CL16 latency ensures efficient data access. It's compatible with a wide range of motherboards, allowing versatility in system builds. It's beneficial for gamers, content creators, and professionals requiring high-speed data processing. It significantly impacts multitasking, offering seamless user experience with compatible systems.**
Why am I choosing this part for the build	**Choosing Silicon Power XPOWER Turbine RGB 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory for Ir computer build would be strategic due to its advanced specifications and features that can significantly boost the performance and aesthetics of Ir system. The 3200MHz speed is optimal for reducing system lag and ensuring smooth operation in both general computing tasks and more demanding applications such as gaming or content creation, making it suitable for a versatile range of users, from gamers to professionals.This memory kit utilizes a dual-channel configuration, enhancing data throughput and improving the overall responsiveness and efficiency of the system, critical for multitasking environments. The CL16 latency level ensures that the memory can communicate with the CPU efficiently, providing quick data access, which is crucial for optimal system performance.**
Location where the device is coming from (include url link)	**https://www.amazon.com/dp/B07R51H1F8?tag=pcpapi-20&linkCode=ogi&th=1&psc=1**
Price	**$40.99**

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☐Is this RAM compatible with the mobo?

Yes, the Silicon Power XPOWER Turbine RGB 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory should be compatible with the Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard, as the motherboard supports DDR4 memory modules. However, it's always a good practice to check the motherboard's QVL (Qualified Vendor List) to ensure full compatibility and optimal performance, as some motherboards may require a BIOS update to support higher speed memory modules. Also, bear in mind that, due to the motherboard's B450 chipset, I may need to configure the memory settings in the BIOS to run the RAM at its rated speed of 3200MHz, as the default may be lower.

☐ What is the maximum RAM the Mobo can handle?

The Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard typically has a maximum RAM capacity of 64GB. It usually has 4 DIMM slots, allowing I to install four 16GB RAM sticks to reach the maximum capacity. When considering upgrading or installing RAM, ensure to check the motherboard's manual or the manufacturer's website for the most accurate and up-to-date information on supported memory sizes, types, and configurations, as well as any potential BIOS updates that may be needed to support larger capacities or higher speeds. Keep in mind that utilizing dual-channel memory configurations, i.e., installing RAM in pairs, will typically yield the best performance.

☐ What is the speed of the RAM?

The speed of the Silicon Power XPOWER Turbine RGB 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory is 3200MHz. This speed denotes the data transfer rate of the memory module. In this case, "3200" represents 3200 million transfers per second.

PNY XLR8 CS3030 250 GB M.2-2280 PCIe 3.0 X4 NVME Solid State Drive

Device Type	**HDD**
New, Used or will not include	**New**
Brand/Model	**PNY XLR8 CS3030 250GB**
Specifications (list all important for the build)	**The PNY XLR8 CS3030 250 GB M.2-2280 NVMe SSD is crucial due to its superior speed and performance compared to traditional HDDs and SATA SSDs. It utilizes PCIe 3.0 x4 interface, offering rapid data transfer rates, reducing load and boot times significantly. This is especially important for applications demanding high-speed data access, like gaming and professional content creation. Its compact M.2-2280 form factor is essential for saving space, allowing for sleeker and more efficient PC builds. This SSD provides reliability and enhanced user experience, making system operations more responsive and efficient, crucial for multitasking environments.**
Why am I choosing this part for the build	**Choosing the PNY XLR8 CS3030 250 GB M.2-2280 PCIe 3.0 x4 NVMe Solid State Drive is wise for**

	high-speed, efficient builds. It leverages NVMe technology and PCIe 3.0 x4 interface, ensuring swift data transfers and reduced load times, ideal for performance-intensive tasks and applications like gaming and content creation. The compact M.2 form factor is space-efficient, making it perfect for sleek builds, while also providing robust reliability and durability. Its speed and responsiveness enhance overall user experience and system multitasking capability, making it a suitable choice for those who seek seamless and optimal computing performance.
Location where the device is coming from (include url link)	**https://www.amazon.com/dp/B07MW9M2CQ?tag=pcpapi-20&linkCode=ogi&th=1**
Price	**$49.99**

☐ What type of HDD do I want to use?

The PNY XLR8 CS3030 I am referring to is a M.2-2280 NVMe Solid State Drive that utilizes a PCIe 3.0 x4 interface. In terms of "type," this refers to its form factor and interface. The M.2-2280 denotes that it is a compact M.2 form factor with dimensions of 22mm by 80mm. The NVMe and PCIe 3.0 x4 denote that it is designed for high-speed data transfers over the PCIe bus, offering significantly faster read/write speeds compared to SATA-based SSDs. This type of SSD is suitable for users who require high-performance storage solutions, such as gamers or content creators.

☐ Will more than one HDD be used?

Yes, I can certainly use more than one HDD alongside the PNY XLR8 CS3030 250 GB M.2-2280 PCIe 3.0 x4 NVMe Solid State Drive in a computer build, as long as Ir motherboard has sufficient SATA ports to accommodate the additional HDDs and Ir power supply can handle the extra load. Typically, users employ an SSD like the PNY XLR8 for the operating system and frequently used applications due to its high speed, while using HDDs for additional storage needs, such as storing large files, games, and other data, given their cost-effectiveness per GB of storage.

☐ Do I have the correct ports for connection?

To determine whether the PNY XLR8 CS3030 250 GB M.2-2280 PCIe 3.0 x4 NVMe Solid State Drive is compatible with Ir system, I confirm if the Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard has an available M.2 slot that supports NVMe drives and PCIe 3.0 x4 interface.

Device Type	**Graphics**
New, Used or will not include	
Brand/Model	
Specifications (list all important for the build)	
Why am I choosing this part for the build	

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Location where the device is coming from (include url link)	
Price	

☐ Does this mobo have onboard graphics?

The Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard does not have onboard graphics itself, but it does have video output ports, allowing for the utilization of the integrated graphics on AMD's APUs (Accelerated Processing Units). Since I have an AMD Ryzen 5 5600G processor, which does feature integrated graphics (Radeon Graphics), I would be able to utilize the onboard video output ports on the Gigabyte B450M DS3H WIFI motherboard to display graphics without the need for a separate, discrete graphics card. In this scenario, the graphics are integrated into the CPU, not the motherboard.

☐ Do I have ports to add graphics cards?

Yes, the Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard does have PCIe slots, allowing it to add a discrete graphics card to Ir system. Typically, such motherboards have at least one PCIe x16 slot which is the standard slot type used for modern graphics cards.

☐ Which graphics card can my motherboard handle?

The Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard should technically be able to handle any modern graphics card as long as it utilizes a PCIe interface, which is standard for current graphics cards.

☐Will it handle dual monitors?

Yes, the Gigabyte B450M DS3H WIFI Micro ATX AM4 Motherboard can support dual monitors, provided that the processor I am using has integrated graphics support, like the AMD Ryzen 5 5600G I mentioned earlier. I will need to use the video output ports available on the motherboard's I/O panel, which typically include HDMI and VGA or DVI ports. If the motherboard's video outputs do not match the input ports of Ir monitors, or if there are not enough of the required type of ports, I might need to use adapters or converter cables. Alternatively, if I decide to use a discrete graphics card, dual monitor support will depend on the output options available on the graphics card. Most modern graphics cards offer multiple output ports and can easily support dual monitors or more. Keep in mind the type and number of ports available on the graphics card and ensure they align with the inputs on Ir monitors.

OTHER ITEMS

Device Type	
New, Used or will not include	
Brand/Model	
Specifications (list all important for the build)	
Why am I choosing this part for the build	
Location where the device is coming from (include url link)	
Price	

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Device Type	
New, Used or will not include	
Brand/Model	
Specifications (list all important for the build)	
Why am I choosing this part for the build	
Location where the device is coming from (include url link)	
Price	

Check list

☐ I have validated that each of these parts are compatible with the motherboard and one another.

☐The wattage calculator claims this machine build will use **149** watts.

☐I have included any special adapters and special cables in the order.

☐This order does not exceed $500. If it does, then I will write a check to the CS department for _____