

Report about building a virtu

Môn CEA201, SE2009_SE203727_Hoàng Tiè

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Abstract

In the era of strong information technology development as today, personal computers (PCs) play an essential role in most learning, working and data management activities. A

A. Summary:

1. Overview: In the era of strong information technology development as today, personal computers (PCs) play an essential role in most learning, working and data management activities. Especially in the office environment, a computer with the right configuration will help optimize work efficiency, save investment costs and ensure long-term stability. Understanding the configurations that make up a computer as well as the ability to install a system that suits specific needs is a necessary practical skill for students majoring in information technology and computer engineering.

2. Target:

+Choose a computer configuration suitable for developer checking task and main work is office tasks such as word processing, web browsing, using accounting software and online meetings.

+Build a detailed configuration table with reasons for choosing each component based on performance criteria, compatibility and reasonable cost for current office work.

B. Requirement:

Requires a PC with the potential to perform well in the basic working. The computer must be capable, highly efficient, and energy efficient.

1. Core component of PC: Control Processor Unit, Mainboard, RAM, ROM, Power System Unit.
2. Sub-core component: Coller PC, GPU, Screen, Keyboard, Webcam, Audio Speaker, Mouse, Printer.

+Core component:

CPU – Processor: Most important!

Is the center of all tasks.

Needs to be strong enough to handle multitasking, heavy Excel, accounting software, smooth online meetings.

Recommended: Intel Core i5 or i7 generation 12 or higher (i7-12700 is too good).

RAM – Internal memory

Determining factor for smoothness when opening multiple applications

Many office users often open many Chrome + Excel + Zoom tabs → weak RAM is laggy.

Recommended: 16GB DDR4 is the gold standard. Don't stop at 8GB anymore.

SSD – Data access speed

Very important for fast booting, instant file opening

Compared to HDD, SSD speeds up the machine significantly.

Recommended: 512GB NVMe SSD. If the budget is low, using 256GB is also fine but it fills up easily.

Mainboard – Motherboard

Compatibility and connectivity are important

Should choose the type that supports multiple USB ports, Wi-Fi is good.

Recommended: Main supports DDR4, socket compatible with CPU (eg: ASROCK B760M).

+Sub-core component: Can pay less for save money.

Case (computer case): Does not affect performance, choose a compact, easy-to-install type

Power supply (PSU): Does not need high capacity, just need 500–550W and a reputable brand

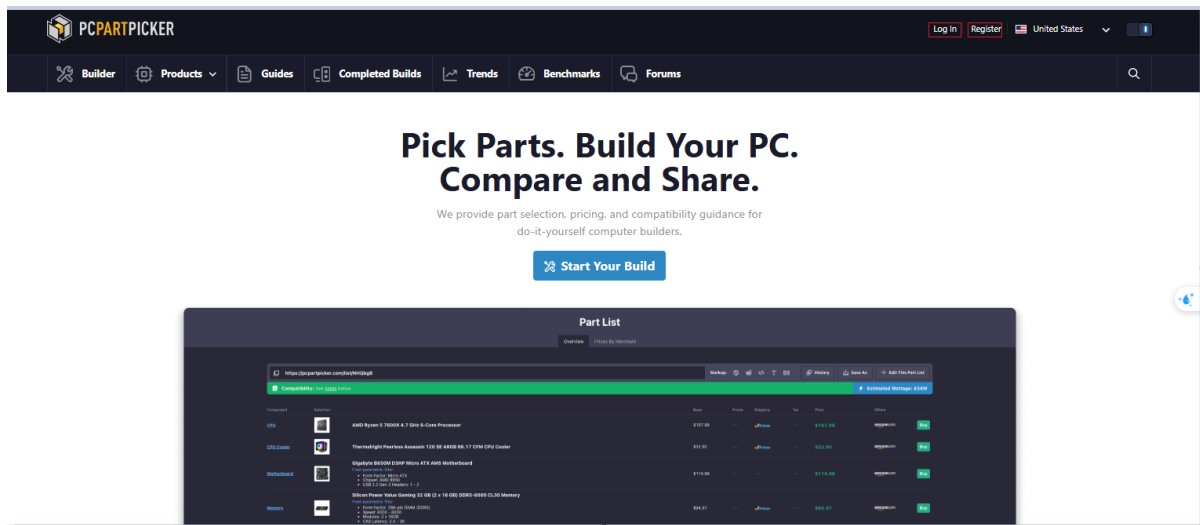
GPU (discrete graphics card): Not necessary because the i7 CPU has an integrated GPU that is enough for office use

Peripherals (mouse, keyboard): Use a popular, durable type – no gaming needed

Steps-to-Step for building a virtual PC on Internet.

Step 1: Log in to this website: <https://pcpartpicker.com/>

If you have an account, click login, if you don't, click register



Create a new account

USERNAME:

test1234

E-MAIL:

test@gmail.com

E-MAIL (AGAIN):

test@gmail.com

Note: An account activation email will be sent to the email address you provide.

PASSWORD:

.....

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.
- Your password can't be entirely numeric.

PASSWORD (AGAIN):

.....

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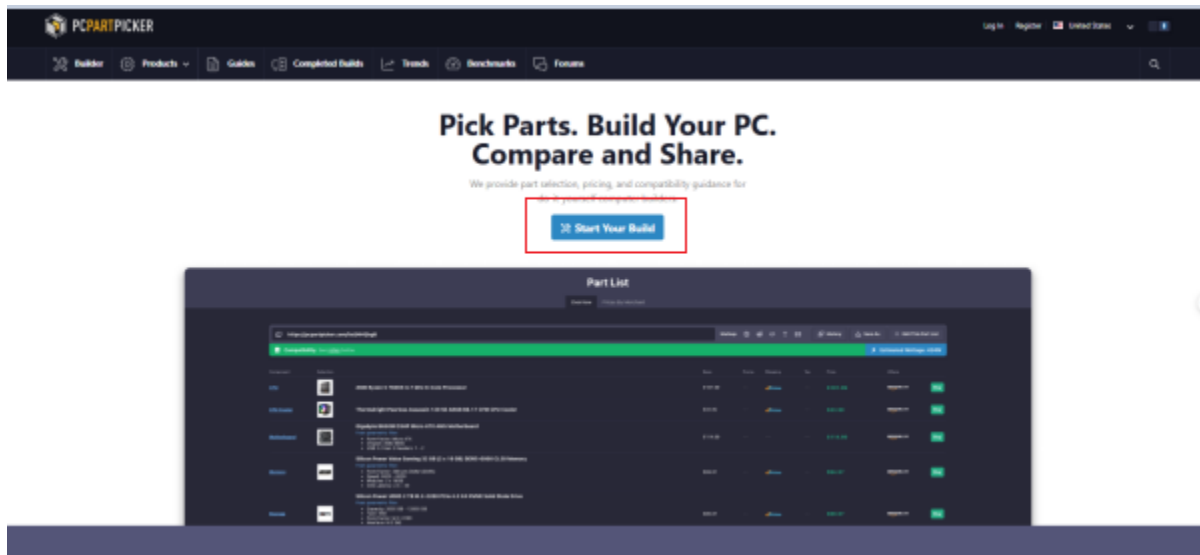
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By registering you consent to allow PCPartPicker to retain personal information consisting of your email address and IP addresses used to access the site. PCPartPicker does not sell your personal information. Details on what data we retain and how we use it can be found in our [privacy policy](#).

Register

Fill in the information in the form and click register

Step 2: Click start your build to begin:



- After clicking, an interface like this will appear to help choose the components of the PC
- Click choose a ... to choose the component

PCPARTPICKER Log In Register United States


Builder Products Guides Completed Builds Trends Benchmarks Forums

Choose Your Parts

https://pcpartpicker.com/list/sF8TwP Markup: History

Compatibility: No issues or incompatibilities found. Estimated Wattage: 0W

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU	+ Choose A CPU							
CPU Cooler	+ Choose A CPU Cooler							
Motherboard	+ Choose A Motherboard							
Memory	+ Choose Memory							
Storage	+ Choose Storage							
Video Card	+ Choose A Video Card							
Case	+ Choose A Case							
Power Supply	+ Choose A Power Supply							
Operating System	+ Choose An Operating System							
Monitor	+ Choose A Monitor							
Expansion Cards / Networking	Sound Cards, Wired Network Adapters, Wireless Network Adapters							
Peripherals	Headphones, Keyboards, Mice, Speakers, Webcams							
Accessories / Other	Case Accessories, Case Fans, Fan Controllers, Thermal Compound, External Storage, Optical Drives, UPS Systems							

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU	 AMD Ryzen 7 9800X3D 4.7 GHz 8-Core Processor	\$451.50		Prime		In stock	\$451.50	amazon.com Buy

Example:

Component (Indicates what this is): CPU

Selection (Indicates which type to choose): AMD Ryzen 7 9800X3D 4.7 GHz 8-core processor

Base (Price): \$451.50

Promo (Current promotions): none

Shipping (Shipping): Prime (free or fast from Amazon Prime)

Tax (Tax): unknown

Availability (Availability): in stock

Final price (Price): \$451.50

Where to buy (where): amazon dot com

Buy button: Buy

If you press buy bottom you can transfer to amazon.com to get components.

➔ If amazon or some e-commerce site do not have it, you can buy it on Google.

#Selecting Components:

Selecting components for an office computer should be based on three main criteria: suitable performance, reasonable cost, and future upgradeability. Based on those criteria, I selected the following components:


Control Processer Unit

amazon Deliver to Vietnam All Search Amazon

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All Today's Deals Registry Prime Video Gift Cards Customer Service Sell

Electronics > Computers & Accessories > Computer Components > Internal Components > CPU Processors



Intel Core i7 (12th Gen) i7-12700 Dodeca-core (12 Core) 2.10 GHz Processor - Retail Pack

Visit the Intel Store
4.6 ★★★★★ 134 ratings

-17% \$289⁹⁷
List Price: \$349.99

\$74.11 Shipping & Import Charges to Vietnam [Details](#)
Available at a lower price from [other sellers](#) that may not offer free Prime shipping.

Brand	Intel
CPU Manufacturer	Intel
CPU Model	Core i7
CPU Speed	2
CPU Socket	LGA 1700

About this item

- Intel® Core® i7 Dodeca-core (12 Core) 2.10 GHz processor offers more cache space and the hyper-threading architecture delivers high performance for demanding applications with better onboard graphics and faster turbo boost.
- The processor features Socket LGA-1700 socket for installation on the PCB
- 25 MB of L3 cache offers supreme performance for computation intensive apps
- Built-in Intel UHD Graphics 770 controller for improved graphics and visual quality. Supports up to 4 monitors.

\$289⁹⁷

\$74.11 Shipping & Import Charges to Vietnam [Details](#)
Delivery Monday, August 25.
Order within 20 hrs 35 mins
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In Stock

Quantity: 1

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Support Product support included
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● Reasons to choose: Intel Core i7-12700 CPU has strong performance with 12 cores (8 performance cores + 4 power-saving cores) and a clock speed of up to 4.9GHz, very suitable for handling modern office tasks such as multitasking, online meetings, processing large spreadsheets or heavy accounting software.


● Using Intel Core i7-12700 CPU includes an integrated GPU → no need to buy a separate GPU → Save costs

● In addition, this CPU also supports new technologies such as Intel Thread Director, which helps optimize processing threads when multitasking.

Mainboard – ASROCK B760M PRO RS Wifi DDR4

amazon Deliver to Vietnam All ASRock B760M PRO RS WiFi DDR4

Electronics > Computers & Accessories > Computer Components > Internal Components > Motherboards



MB ASRock Intel 1700 B760 PRO RS/D4 WiFi
 Visit the ASRock Store
 4.4 ★★★★★ 153 ratings
 100+ bought in past month

\$129⁹⁹
 \$59.42 Shipping & Import Charges to Vietnam Details
 Style: **B760 Pro RS/D4 WiFi**

Pro RS/D4 2 options from \$154.05	Pro RS/D4 WiFi White 1 option from \$159.99	B760 Pro RS/D4 WiFi \$129.99
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Brand ASRock
CPU Socket LGA 1700
Compatible Devices Personal Computer
RAM Memory Technology DDR
Compatible Processors Intel Core i3, Intel Core i5, Intel Core i7, Intel Core i9, Intel Pentium, Intel Celeron
[See more](#)

\$129⁹⁹
 \$59.42 Shipping & Import Charges to Vietnam Details
 Delivery **Thursday, August 28**
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 Sold by ASRock USA
 Returns 30-day refund/replacement
 Support Product support included
[See more](#)

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● Reasons to choose: This motherboard is fully compatible with 12th generation Intel CPUs, supports DDR4 RAM to save costs compared to DDR5.

● Built-in Wi-Fi makes it easy to connect to the network without having to buy an additional network card, and has many expansion ports (USB 3.2, M.2 NVMe, HDMI, etc.), making it flexible to use.

RAM – KingSpec 16GB DDR4 3200MHz

amazon Deliver to Vietnam All KingSpec 16GB DDR4 3200MHz

Electronics > Computers & Accessories > Computer Components > Internal Components > Memory



KingSpec 32GB (2x16GB) DDR4 RAM 3200MHz for Desktop - Plug-and-Play, Home & Office Use, Standard Version, 288-Pin DIMM CL18 1.35V Computer Memory Compatible with Most Intel/AMD PCs
 Visit the KingSpec Store
 4.6 ★★★★★ 77 ratings
 50+ bought in past month

\$49⁹⁷
 FREE International Returns
 \$35.02 Shipping & Import Charges to Vietnam Details
 Size: **32GB Kit (2x16GB)**
 Color: **3200MHz**

Brand KingSpec
Computer Memory Size 32 GB
RAM Memory Technology DDR4
Memory Speed 3200 MHz
Compatible Devices Desktop

About this item

- Workhorse Performance: 16GB DDR4 3200MHz keeps your office PCs running smoothly and it's

\$49⁹⁷
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 Delivery **August 6 - 28**
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Quantity: 1

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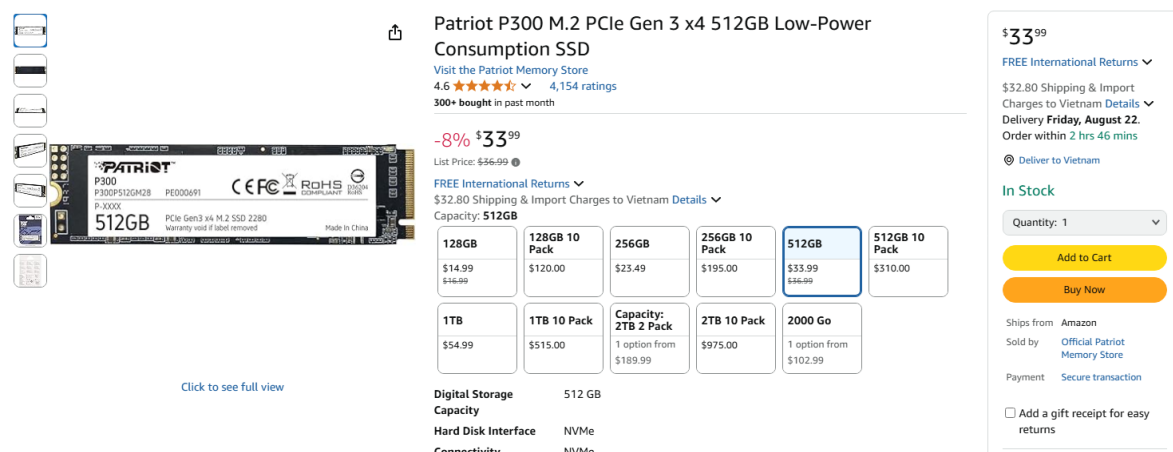
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- Reason for choosing: 16GB capacity is the current optimal standard for office machines, allowing multiple applications to be opened simultaneously without delay.

- DDR4 3200MHz RAM helps increase data retrieval speed, compatible with the selected mainboard and CPU.

Stronge – SSD Patriot P300 512GB M.2 NVMe



Patriot P300 M.2 PCIe Gen 3 x4 512GB Low-Power Consumption SSD

Visit the Patriot Memory Store

4.6 ★★★★★ 4,154 ratings

300+ bought in past month

-8% \$33.99

List Price: \$56.99

FREE International Returns

\$32.80 Shipping & Import Charges to Vietnam

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In Stock

Quantity: 1

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Sold by Official Patriot Memory Store

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Capacity	Price
128GB	\$14.99
128GB 10 Pack	\$120.00
256GB	\$23.49
256GB 10 Pack	\$195.00
512GB	\$33.99
512GB 10 Pack	\$310.00
1TB	\$54.99
1TB 10 Pack	\$515.00
Capacity: 2TB 2 Pack	1 option from \$189.99
2TB 10 Pack	\$975.00
2000 Go	1 option from \$102.99

Digital Storage Capacity 512 GB

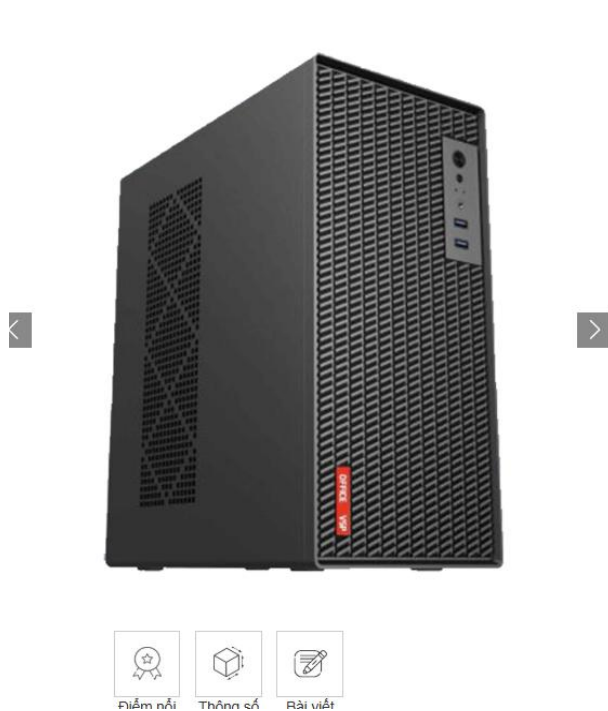
Hard Disk Interface NVMe

Connectivity NVMe

- Reasons to choose: M.2 NVMe SSD standard has superior read/write speed compared to HDD, helping the computer boot up quickly, opening applications in just a few seconds.

- 512GB capacity is enough for the operating system, office software and personal data storage without needing an additional hard drive.

PSU– Antec META V550 (550W)



Thùng máy văn phòng VSP V600 | Kèm sẵn 1 fan 90mm, thép 0.8mm

Mã sản phẩm: Ca.VSP.V600.Black

☆☆☆☆☆ 0 đánh giá

359,000đ

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Số lượng:

- 1 +



MUA NGAY

TRẢ GÓP

- Reason for choosing: The case has a compact design, suitable for office space. 0.8mm thick steel material creates sturdiness and aesthetics.

Sub-components - estimated total

In addition to the main components inside the case, for the computer to operate fully in an office environment, it is necessary to equip some additional peripherals:

ViewSonic VA2432-H 24 inch IPS Full HD monitor Displays images, supports clear work with IPS panel ~2,300,000



ViewSonic VA2456A-MHD 24 Inch IPS 1080p Monitor with 120Hz, Eye Care, HDMI, DisplayPort, and VGA Inputs for Home and Office

Visit the ViewSonic Store
4.5 ★★★★★ 373 ratings

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Style: 24-Inch

22-Inch	22-Inch Dual Pack	24-Inch	24-Inch Dual Pack	27-Inch	27-Inch 4K
19 options from \$119.99	2 options from \$234.99	2 options from \$118.79	Currently unavailable.	2 options from \$134.99	4 options from \$279.99

Brand	ViewSonic
Screen Size	24 Inches
Resolution	FHD 1080p
Aspect Ratio	16:9
Screen Surface Description	Matte

About this item

No featured offers available
[Learn more](#)

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Logitech K120 USB keyboard Data entry, durable design, reasonable price ~250,000



Logitech K120 Wired Keyboard for Windows, Plug and Play, Full-Size, Spill-Resistant, Curved Space Bar, Compatible with PC, Laptop - Black

Visit the Logitech Store
4.6 ★★★★★ 8,595 ratings

Overall Pick

1 sustainability feature

6K+ bought in past month

-7% \$11.99

Typical price: \$12.95

FREE International Returns

\$36.99 Shipping & Import Charges to Vietnam Details

Style: Keyboard

Protective Keyboard...	Keyboard
Currently unavailable.	\$11.99 \$12.95

Brand	Logitech
Compatible Devices	Laptop
Connectivity Technology	wired

\$11.99

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\$31.13 delivery

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Packaging Ships in product packaging

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Logitech M100r USB mouse Flexible mouse movement and control ~180,000



Logitech M100 Corded Mouse – Wired USB Mouse for Computers and Laptops, for Right or Left Hand Use, Black

Visit the Logitech Store
4.5 ★★★★★ 6,388 ratings

1 sustainability feature

400+ bought in past month

-11% \$9.78

List Price: \$10.99

FREE International Returns

\$30.99 Shipping & Import Charges to Vietnam Details

Brand	Logitech
Color	Black
Connectivity Technology	USB
Special Feature	Lightweight
Movement Detection Technology	Optical

About this item

- FULL-SIZE COMFORT** - A comfortable, ambidextrous shape feels good in either hand, so you feel more comfortable as you work - even at the end of the day
- CONVENIENT CONTROLS** - Side-to-side scrolling plus zoom lets you instantly zoom in or out and scroll horizontally and vertically. Perfect for working with spreadsheets and presentations.

\$9.78

FREE International Returns

\$30.99 Shipping & Import Charges to Vietnam Details

Delivery Friday, August 22.

Order within 1 hr 37 mins

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Quantity: 1

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Headphones (if needed for meetings) DareU EH469 or equivalent Online meetings, ensuring clear sound and quality microphone ~300,000

Tai nghe chụp tai Gaming DareU EH469

★ 4.5 (2 đánh giá)

[Yêu thích](#) | [Hỏi đáp](#) | [Thông số](#) | [So sánh](#)



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Hồng

390.000đ



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Thông tin vận chuyển



Chọn địa chỉ giao hàng để nhận ưu đãi

Mới

Màu **Hồng** đang tạm hết hàng tại Bình Dương.
từ tỉnh còn hàng để tiếp tục mua hàng online.

Đặt giao từ tỉnh cò

Power splitter + power cord 4-5 socket type, with safety switch Safe power connection for the entire device ~150,000



3 Core 1 To 2 3 4 5 Socket Power Cord Split Indoor Outdoor Cable with Socket Power Extension Cable for Computer LED Stage Lights

2 sold

\$14.51 - \$24.46 41% off ~~\$24.93 - \$41.72~~

Color:



Webcam (if needed) Hikvision DS-U02 Online meeting, clear image ~400,000

Webcam HIKVISION DS-U02 1920 x 1080

Mã SP: WCHI0009 | Đánh giá: ★★★★★ (4) | Bình luận: 10 | Lượt x



Thông số sản phẩm

- CMOS 2 MP
- Hình ảnh chất lượng cao với độ phân giải 1920 x 1080
- Tối thiểu, chiếu sáng: 0,1 Lux @ (F1.2, AGC ON)
- AGC cho độ sáng tự thích ứng
- Micro tích hợp với âm thanh rõ ràng

Xem thêm

Giá khuyến mãi:

449.000 đ ~~599.000 đ~~ Tiết kiệm **150.000 đ**

Giá đã bao gồm VAT

Bảo hành: 24 Tháng

➤ Total estimated cost for peripheral components: ~3,580,000 VND

➤ Total cost of the entire system (components in the case + peripherals):

→ PC: ~11,700,000 VND + Peripherals: ~3,580,000 VND = Total: ~15,280,000 VND

Suggested Component Upgrades to Boost Performance

Depending on specific work requirements and the user's budget, some components can be replaced or upgraded to increase processing speed, improve multitasking, storage, or graphics performance. Below are some upgrade suggestions with flexible price ranges:

Component	Upgrade Option	Advantages	Estimated Price (VND)
CPU	Intel Core i7-13700 / i9-13900	More cores and threads → faster processing for heavy tasks, better multitasking	~9,000,000 – 14,000,000
RAM	32GB (2x16GB DDR4 3200MHz)	Excellent for multitasking, running multiple applications simultaneously without lag	~1,300,000 – 1,800,000
SSD	1TB M.2 NVMe (Samsung 980 / WD Black)	Increases access speed, stores more data, allows installation of more software	~1,500,000 – 2,800,000
Power Supply (PSU)	650W – 750W (80 Plus Bronze/Gold)	Provides good headroom for future upgrades of the graphics card and storage drives	~1,200,000 – 2,000,000

Component	Upgrade Option	Advantages	Estimated Price (VND)
Graphics Card (GPU)	NVIDIA GTX 1650 / RTX 3050 / RTX 4060	Supports graphic design, video editing, gaming, or basic AI tasks	~3,000,000 – 9,000,000
Mainboard	B760 or Z690 supporting DDR5 RAM	Increases future upgrade potential (new RAM standard, more expansion slots)	

Note: Upgrades require checking for component compatibility, especially between the CPU, mainboard, RAM, and PSU. Additionally, when upgrading to a more powerful GPU or CPU, ensure the cooling system and power supply are adequate.

C. Conclusion:

+ Building an office computer requires not only a solid understanding of hardware components but also the ability to evaluate performance, cost, and suitability for real-world needs. By selecting components like an **Intel Core i7-12700 CPU**, an **ASROCK B760M motherboard**, **16GB of RAM**, a **512GB NVMe SSD**, and an appropriate power supply and case, the team has created a PC configuration that balances performance with cost-effectiveness.

+ This system fully meets the demands of a modern office, from processing documents quickly and smooth online meetings to handling accounting software and large datasets, while still allowing for future upgrades. Additionally, peripherals such as an **IPS monitor**, **Logitech keyboard and mouse**, and a headset for conferences provide a convenient and professional work experience.

+ Through this project, I have not only honed my practical skills but also gained a deeper understanding of how to optimize costs and build an efficient computer system for a practical work environment.

