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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This device is in conformity with the following EC/EMC directives:

- EN 55032** Electromagnetic compatibility of multimedia equipment - Emission requirements
- EN 61000-3-2** Electromagnetic Compatibility(EMC)
Part 3-2: Limits-Limits for harmonic current emissions (equipment input current $\leq 16A$ per phase)
- EN 61000-3-3** Electromagnetic Compatibility(EMC)
Part 3-3: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 16A$ per phase and not subject to conditional connection
- EN 55024** Information technology equipment-Immunity characteristics-Limits and methods of measurement
- EN 60950** Safety for information technology equipment including electrical business equipment
- CE marking**



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Brief Introduction

Specifications

CPU	<ul style="list-style-type: none">• LGA1151 socket for Intel® Coffee Lake processor• Supports CPU up to 65W <p><i>Note: Please go to our website for the latest CPU support list.</i></p>
Chipset	<ul style="list-style-type: none">• Intel® H310 Chipset
Memory	<ul style="list-style-type: none">• Dual channel memory architecture• 2 x DDR4 SO-DIMM sockets support up to 32 GB• Supports DDR4 2666/2400 MHz SDRAM <p><i>Note: Please go to our website for the latest Memory support list.</i></p>
Expansion Slots	<ul style="list-style-type: none">• 2 x M.2 slots- 1 x M.2 socket (Key E) type 2230 supports Wifi (PCIe Gen.2) / BT- 1 x M.2 socket (Key M) type 2260/2280 supports SSD (SATA/ PCIe Gen.2)
Storage	<ul style="list-style-type: none">• Supported by Intel® H310 Express Chipset- 2 x Serial ATA 6Gb/s devices
Audio	<ul style="list-style-type: none">• Realtek ALC662-VDO-GR- 6 Channel High Definition Audio Codec- Compliant with HD audio specification
LAN	<ul style="list-style-type: none">• Realtek RTL8111H Gigabit LAN- 10/100/1000 Fast Ethernet Controller- Wake-on-LAN and remote wake-up support
Rear Panel I/O	<ul style="list-style-type: none">• 1 x 19V DC_IN port• 1 x D-sub (VGA) port• 1 x HDMI port• 2 x USB 3.0 ports• 1 x RJ45 LAN connector• 2 x USB 2.0 ports• 2 x Audio ports (1 x line-out, 1 x Microphone)
Internal I/O Connectors & Headers	<ul style="list-style-type: none">• 1 x 4-pin CPU_FAN connector• 1 x 4-pin SYS_FAN connector• 1 x USB 3.0 header supports additional two USB 3.0 ports• 1 x 8-pin USB 2.0 header (black) supports card reader and camera or other USB2.0 device• 1 x 5-pin USB 2.0 header (yellow) supports touch panel or other 2.0 device• 2 x Serial ATA 6Gb/s connectors• 1 x Front Panel switch/LED header• 1 x Front Panel audio header• 1 x Clear CMOS jumper• 1 x COM header• 1 x Case open header• 1 x TPM header• 1 x Amplifier Speaker header• 1 x SATA power connector

	<ul style="list-style-type: none"> • 1 x Consumer infrared header (CIR) • 1 x Digital microphone header (For All-In-One Specification) • 1 x LVDS connector (For All-In-One Specification) • 1 x LVDS brightness switch header (For All-In-One Specification) • 1 x LCD panel select jumper (For All-In-One Specification)
System BIOS	<ul style="list-style-type: none"> • AMI BIOS with 64Mb SPI Flash ROM <ul style="list-style-type: none"> - Supports recovery - Supports Dual/Triple Display - Supports Plug and Play - Supports ACPI & DMI - Supports STR (S3) /STD (S4) - Supports Hardware monitor - Audio and LAN can be disabled in BIOS - F7 hot key for boot up devices option
Form Factor	<ul style="list-style-type: none"> • Thin Mini ITX Size, 170mm x 170mm

QR Code for the complete manual download on ECS website: <http://www.ecs.com.tw>



Motherboard Components

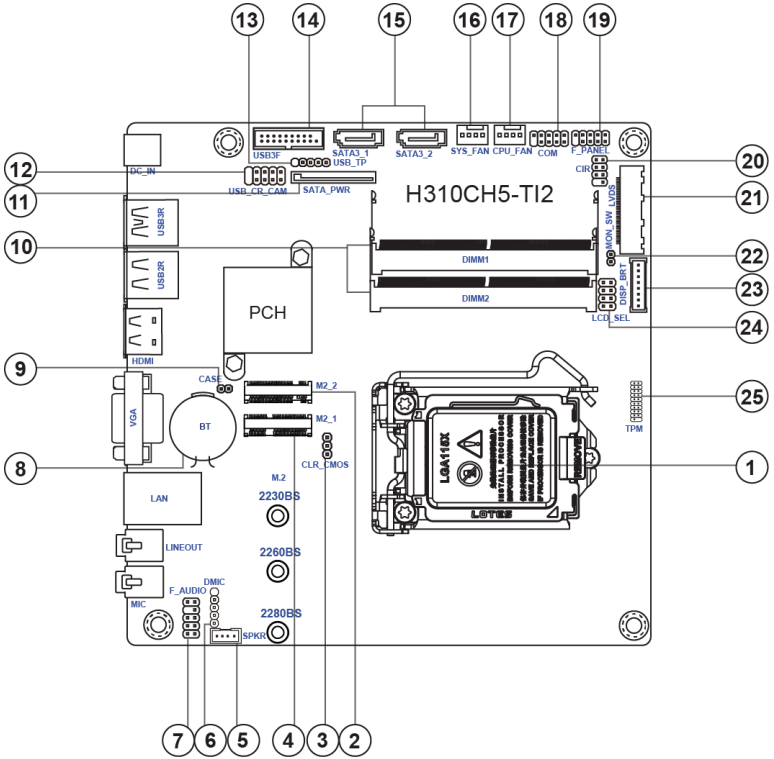
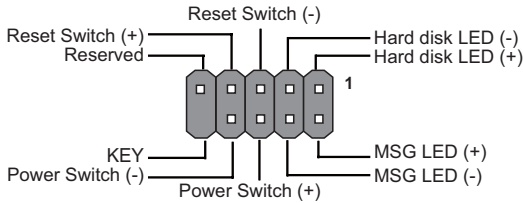


Table of Motherboard Components

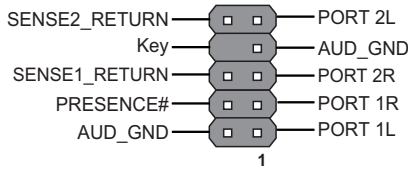
LABEL	COMPONENTS
1. CPU Socket	LGA1151 socket for Intel® Coffee Lake Processor
2. M2_2	(Key-M) type 2260/2280 supports SSD (SATA/PCIe Gen.2)
3. CLR_CMOS	Clear CMOS jumper
4. M2_1	(Key-E) type 2230 supports Wifi (PCIe Gen.2) / BT
5. SPKR	2 Channels audio speaker header (For All-In-One Specification)
6. DMIC	Digital microphone header (For All-In-One Specification)
7. F_AUDIO	Front panel audio header
8. BT	Battery
9. CASE	Case open header
10. DIMM1~2	DDR4 SO-DIMM socket
11. SATA_PWR	SATA power connector
12. USB_CR_CAM	USB 2.0 header (black) supports card reader and camera or other USB 2.0 device
13. USB_TP	USB 2.0 header (yellow) supports touch panel or other USB 2.0 device
14. USB3F	Front panel USB 3.0 header
15. SATA3_1~2	Serial ATA 6Gb/s connectors
16. SYS_FAN	4-pin system cooling fan connector with smart fan function
17. CPU_FAN	4-pin CPU cooling fan connector with smart fan function
18. COM	Onboard serial port header
19. F_PANEL	Front panel switch/LED header
20. CIR	Consumer infrared header
21. LVDS	LVDS connector (For All-In-One Specification)
22. MON_SW	LVDS brightness switch header (For All-In-One Specification)
23. DISP_BRT	LVDS brightness control header (For All-In-One Specification)
24. LCD_SEL	LCD panel select jumper (For All-In-One Specification)
25. TPM	Trusted platform module header

Header Pin Definition and Jumper Settings

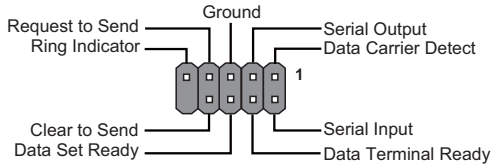
F_PANEL



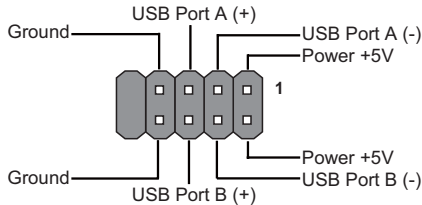
F_AUDIO



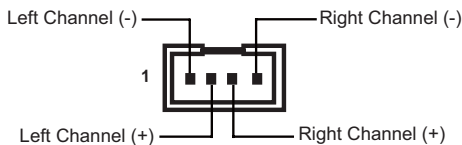
COM



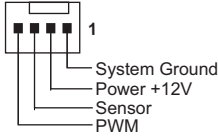
USB_CR_CAM



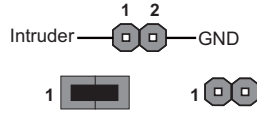
SPKR



SYS_FAN / CPU_FAN



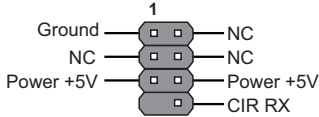
CASE



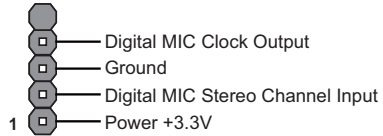
Chassis cover is removed

Chassis cover is closed

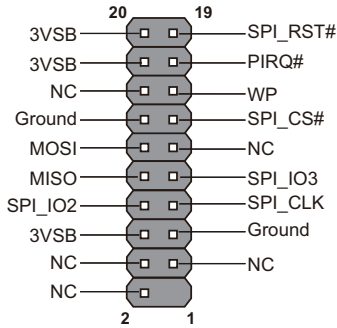
CIR



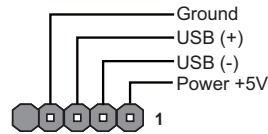
DMIC



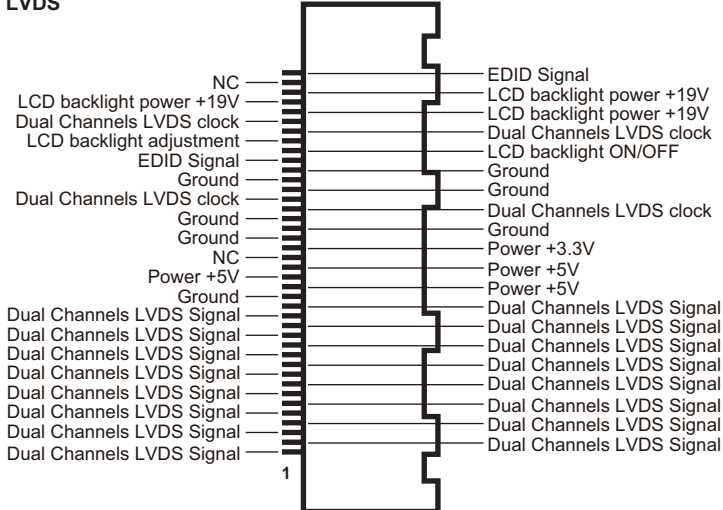
TPM



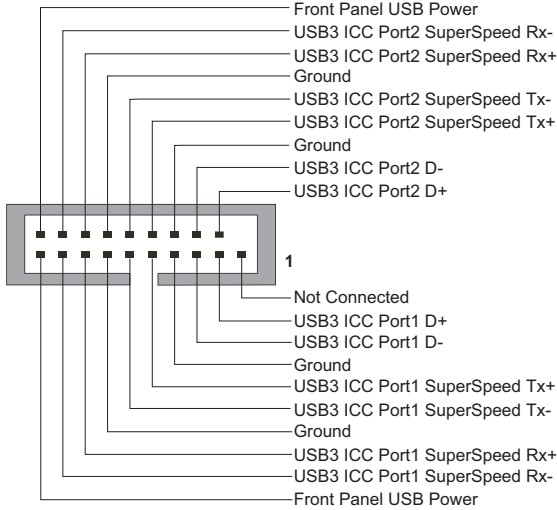
USB_TP



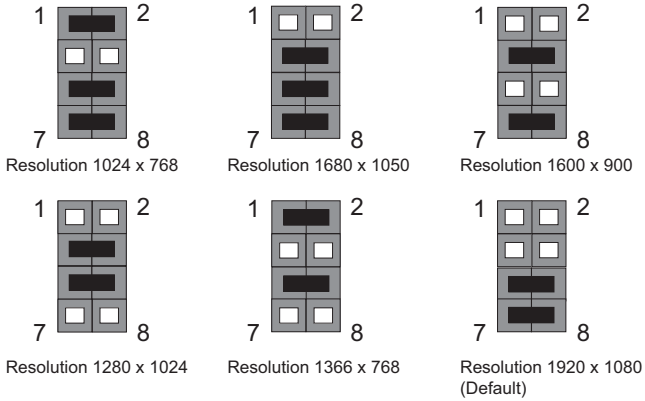
LVDS



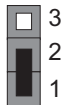
USB3F



LCD_SEL



CLR_CMOS Jumper

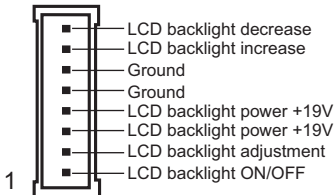


1-2: NORMAL

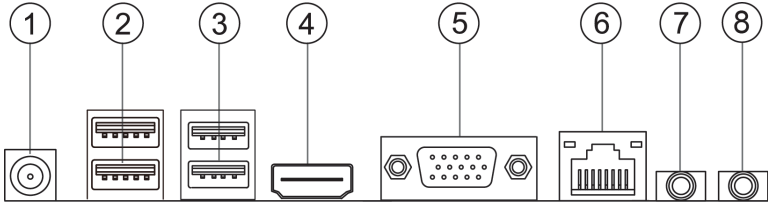
2-3: CLEAR CMOS

Before clearing the CMOS, make sure to turn off the system.

DISP_BRT



I/O Ports



1. DC_IN Port

Connect the DC_IN port to the power adapter.

2. USB 3.0 Ports

Use the USB 3.0 port to connect USB 3.0 device.

3. USB 2.0 Ports

Use the USB 2.0 ports to connect USB 2.0 devices.

4. HDMI Port

You can connect the display device to the HDMI port.

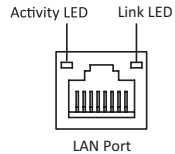
5. VGA Port

Connect your monitor to the VGA port.

6. LAN Port

Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

LAN LED	Status	Description
Activity LED	OFF	No data
	Orange blinking	Active
Link LED	OFF	No link
	Green	Link (10/100 port)
	Orange	Link (Giga port)



7. Line-out (green)

It is used to connect to speakers or headphones.

8. Microphone (pink)

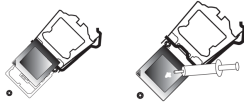
It is used to connect to a microphone.

Hardware Installation Guide

Installation Steps

Step 1. Installation of the CPU and CPU Cooler:

1-1. Pull up the lever away from the socket. Align the CPU cut edge with the indented edge of the CPU socket. Gently place the CPU into correct position. Apply an even layer of thermal grease on the surface of CPU.



1-2. Rotate and press down the fastener of CPU fan to the motherboard through holes to install CPU fan into place.



Step 2. Installation of Memory Modules:

1-1. Align the cutouts on the DIMM module edge connector to the notches in the DIMM slot.



1-2. Insert the memory module to the slot and press it down until it seats correctly. Make sure the slot latches cling to the edge of the DIMM module.

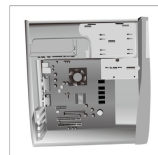


Step 3. Installation of Motherboard:

3-1. Replace the back I/O plate of the case with the I/O shield provided in motherboard's package.

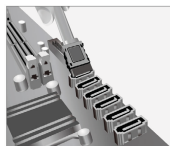


3-2. Place the motherboard within the case by positioning it into the I/O plate. Secure the motherboard to the case with screws.



Step 4. Connecting Cables and Power Connectors:

a. Connect the SATA hard drive to its SATA cable



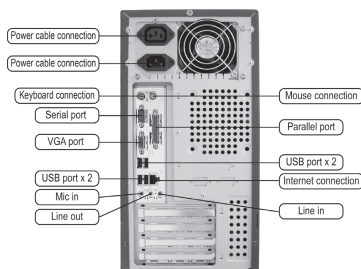
b. Connect SATA power connector to the SATA device



c. Connect the power cable to the DC-in 19V jack on the rear panel I/O

Step 5: Connecting ports on the case:

Once the steps above have been completed, please connect the peripherals such as the keyboard, mouse, monitor, etc. Then, connect the power and turn on the system. Please install all the required software.



Using BIOS

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you options to set system parameters. When you power on the system, BIOS enters the Power-On Self Test (POST) routines, please **press or F2 to enter setup**. When powering on for the first time, the POST screen may show a **"CMOS Settings Wrong"** message. Please **enter BIOS and choose "Load Default Settings"** to reset the default CMOS values. (Changes to system hardware such as different CPU, memories, etc. may also trigger this message.)



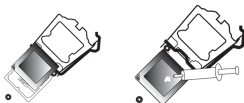
The sequence of installation may differ depending on the type of case and devices used.

硬件安装指南

安装步骤

1. 安装CPU和CPU风扇:

1-1. 松开CPU插槽旁的固定杆，向上拉固定杆，并掀开插槽上的保护盖。将CPU边缘的缺口对准CPU插槽标示边缘，小心地将CPU置入插槽。然后在CPU表层涂抹一层平滑的散热膏。



1-2. 将CPU风扇扣具对齐主板上的对应孔位，向下按压并且旋转扣具，固定CPU风扇。



2. 安装记忆体模组:

1-1. 将DIMM模块边缘连接器上的切口与DIMM插槽中的凹槽对齐。



1-2. 将内存模块插入插槽和向下按直至其正确就位。确保插槽锁扣紧贴DIMM模块的边缘。



3. 安装主板:

3-1. 取下机箱后面的I/O挡板，换上主板附带的I/O弹片。

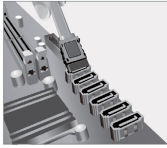


3-2. 将主板的后I/O对准机箱上的I/O挡板孔位，放入机箱并以螺丝固定。



4. 连接电源线与电源接头:

a. 将SATA电缆连接至SATA硬盘



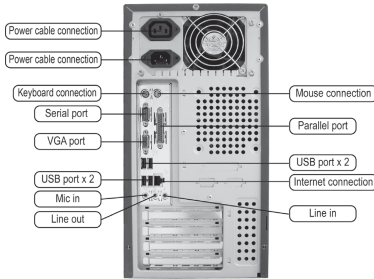
b. 将SATA电源接头连接至SATA设备



c. 连接电源线与后面板I/O 19V DC-in电源接头。

5. 连接机箱端口:

当上述安装步骤完成后, 请开始安装键盘, 鼠标, 显示器等外围设备, 然后连接电源并启动系统。请安装好所需的软件。



BIOS使用设定

BIOS程序画面会显示系统配置, 同时提供操作选项让您设定系统参数。当开机时, BIOS会进行开机自我测试 (POST), 请点击 **** 或 **F2** 进入BIOS程序设定。第一次开机时, POST画面可能会显示“CMOS Settings Wrong”信息, 请进入BIOS选单并选择 **“Load Default Settings”** 将BIOS重新设定为默认值 (更换CPU或内存等硬件变更也可能会出现此信息)。



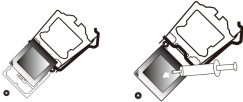
此说明内容中提供图片或安装方式仅供参考。

하드웨어 설치 가이드

단계별 설치 방법

1단계. CPU와 CPU 쿨러 설치하기:

1-1. 소켓에서 레버를 뽑아 냅니다. CPU 끝 부분을 CPU 소켓의 들어간 끝 부분에 맞춥니다. CPU를 정확한 위치에 살며시 위치시킵니다. CPU의 표면에 써멀 그리스를 고르게 도포합니다.



1-2. 패스너를 돌려 CPU 팬을 마더보드의 스루-홀에 눌러 넣어 CPU 팬을 제 위치에 설치합니다.

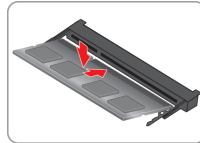


2단계. 메모리 모듈 설치하기:

1-1. DIMM 모듈 에지 커넥터의 컷아웃을 DIMM 슬롯의 노치에 맞춥니다.

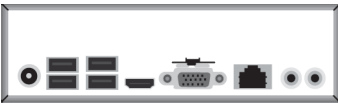


1-2. 메모리 모듈을 슬롯에 삽입하고 올바르게 장착 될 때까지 아래로 누르십시오. 슬롯 래치가 DIMM 모듈의 모서리에 달라 붙지 않도록하십시오.



3단계. 마더보드 설치하기:

3-1. 케이스의 후면 I/O 플레이트를 마더보드의 패키지에 제공된 I/O 실드로 교체합니다.



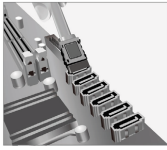
3-2. 마더보드를 I/O 플레이트에 위치시켜 케이스 내에, 스크류로 마더보드를 케이스에 고정시킵니다.



4단계. 케이블 및 전원 커넥터 연결하기:

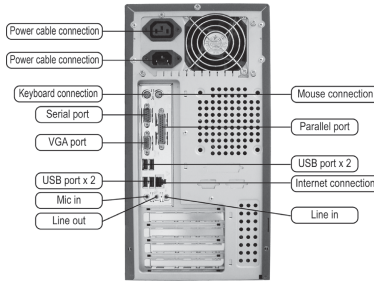
a. SATA 하드 드라이브를 SATA 케이블에 연결합니다

b. SATA 전원 커넥터를 SATA 장치에 연결합니다



5단계. 케이스의 포트 연결하기:

일단 위의 단계들이 완료되면, 키보드, 마우스, 모니터 등과 같은 주변기기들을 연결합니다. 그런 후에, 전원을 연결하고 시스템을 켭니다. 모든 필수 소프트웨어를 설치합니다.



BIOS 사용하기

BIOS 셋업 유틸리티(Setup Utility)는 시스템의 환경설정 상태를 표시하며 시스템 매개변수를 설정하기 위한 옵션을 제공합니다. 시스템의 전원을 켜면, BIOS는 Power-On Self Test (POST) 루틴을 실행합니다, 또는 F2를 눌러 셋업으로 들어가십시오. 오처음으로 전원을 켜면 POST 화면에 “CMOS Settings Wrong” 메시지가 나타날 수 있습니다. BIOS로 들어가 “Load Default Settings”을 선택하여 기본 CMOS 설정값을 재설정합니다. (CPU, 메모리 등과 같은 시스템 변경할 때에도 본 메뉴가 나타날 수 있습니다.)



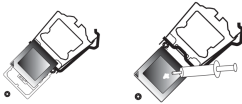
설치절차는 사용된 케이스 및 장치의 유형에 따라 다를 수 있습니다.

Panduan Pemasangan Perangkat Keras

Langkah-Langkah Pemasangan

Langkah 1. Pemasangan CPU dan Pendingin CPU:

1-1. Tarik tuas dari soket. Luruskan tepi pemisah CPU dengan tepi bertakik dari soket CPU. Pasang CPU secara perlahan pada posisi yang tepat. Oleskan lapisan gemuk termal secara merata pada permukaan CPU.



1-2. Putar dan tekan penahan kipas CPU ke lubang tembus motherboard untuk memasang kipas CPU pada tempatnya.

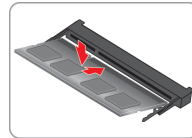


Langkah 2. Pemasangan Modul Memori:

1-1. Sejajarkan guntingan pada modul DIMM konektor tepi ke takik di slot DIMM.

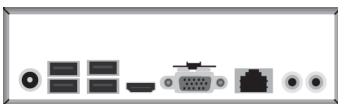


1-2. Masukkan modul memori ke slot dan tekan ke bawah sampai itu kursi dengan benar. Pastikan kait slot yang melekat pada tepi modul DIMM.



Langkah 3. Pemasangan Motherboard:

3-1. Pasang kembali pelat I/O casing dengan pelindung I/O yang disediakan dalam paket motherboard.



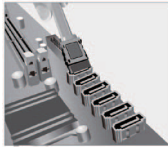
3-2. Tempatkan motherboard pada casing dengan memosisikannya ke dalam pelat I/O. Kencangkan motherboard pada casing dengan sekrup.



Langkah 4. Menyambungkan Kabel dan Konektor Daya:

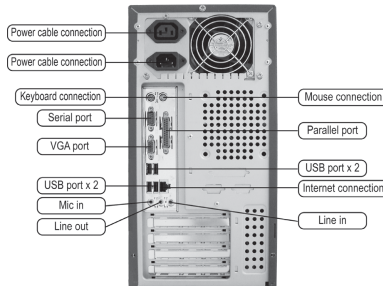
a. Sambungkan hard drive SATA ke kabel SATA

b. Sambungkan konektor daya SATA ke perangkat SATA



Langkah 5. Menyambungkan port pada casing:

Setelah langkah-langkah di atas selesai, harap sambungkan peripheral seperti keyboard, mouse, monitor, dll. Lalu sambungkan daya dan nyalakan sistem. Harap pasang semua perangkat lunak yang dibutuhkan.



Menggunakan BIOS

Utilitas Pengaturan BIOS (Basic Input and Output System) menampilkan status konfigurasi sistem dan memberi Anda opsi untuk mengatur parameter sistem. Saat Anda menyalakan daya pada sistem, BIOS masuk ke rutinitas Power-On Self Test (POST), harap **tekan atau F2 untuk masuk ke pengaturan**. Saat menyalakan untuk pertama kalinya, layar POST mungkin akan menunjukkan pesan "CMOS Settings Wrong" (Kesalahan Pengaturan CMOS). Harap **masukkan BIOS dan tentukan "Load Default Settings" (Pengaturan Standar Beban)** untuk menyetel kembali nilai CMOS standar. (Perubahan pada perangkat keras sistem seperti CPU, memori yang berbeda, dll. juga dapat memicu pesan ini.)



Urutan pemasangan mungkin berbeda bergantung pada jenis casing dan perangkat yang digunakan.

ハードウェアインストールガイド

インストール手順

手順1 CPUとCPUクーラーのインストール:

1-1. ソケットからレバーを上引きます。CPUの端をCPUソケットの凹んだ端に合わせます。CPUを適切な位置にそっと配置します。CPUの表面に熱伝導グリスを均一に塗布します。



1-2. CPUファンの留め具を回転させてマザーボードのスルーホールに押し入れ、CPUファンを適切な位置に設置します。CPUクーラーの電源コネクタをCPU_FANコネクタに接続します。



手順2 メモリモジュールのインストール:

1-1. DIMMモジュールのエッジコネクタの切り欠きをDIMMスロットのノッチに合わせます。

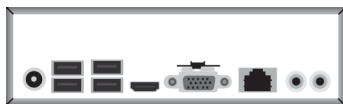


2-2. メモリモジュールをスロットに挿入し、それが正しく座るまで押し下げます。スロットのラッチがDIMMモジュールの端にしっかりとハマっていることを確認します。

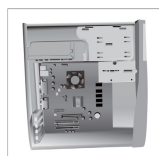


手順3 マザーボードのインストール:

3-1. ケースの背面I/Oプレートをマザーボードに付属のI/Oシールドと交換します。

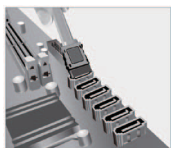


3-2. I/Oプレートをマザーボードを位置決めし、ケース内に配置します。ネジでマザーボードをケースに固定します。



手順4 ケーブルと電源コネクタの接続 :

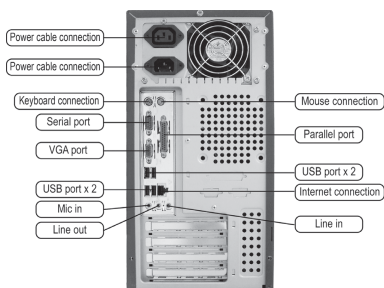
- a. IDEハードドライブにIDEケーブルを接続します
- b. SATAハードドライブにSATAケーブルを接続します



手順5 ケース上のポートに接続 :

背面パネルは図と異なる場合があります。マザーボードによって異なります。

上記の手順を完了した後、キーボードやマウスなどの周辺機器を接続してください。その後電源を接続し、システムを起動します。必要なソフトウェアをすべてインストールしてください。周辺機器をすべてインストールしてください。



BIOSの使用

BIOS (基本入出力システム) セットアップユーティリティはシステムの構成状態を表示し、システムパラメータ設定のオプションを提供します。システムを起動すると、BIOSがPOSTという診断テストのルーチンを実行します。セットアップを開始するにはまたはF2を押してください。初めて電源を投入したとき、POST画面に「CMOS Settings Wrong」(CMOSの設定が正しくありません)というメッセージが表示されることがあります。BIOSに入って「Load Default Settings」(デフォルトの設定を読み込み)を選択し、デフォルトのCMOS値をリセットしてください。(別のCPU、メモリなどのシステムハードウェアへの変更でもこのメッセージが表示されることがあります。)



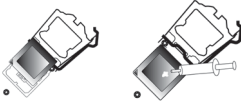
詳細な製品仕様については仕様説明書を参照するか、ECSウェブサイトの製品マニュアルで詳細な内容をダウンロードしてください。

Hướng Dẫn Lắp Đặt Phần Cứng

Các Bước Lắp Đặt

Bước 1. Lắp CPU và Bộ Tản Nhiệt CPU:

1-1. Kéo cần ra khỏi khe cắm. Căn thẳng cạnh cắt CPU với cạnh mong muốn của khe CPU. Nhẹ nhàng đặt CPU vào vị trí chính xác. Bôi đều một lớp mỡ chống nhiệt lên bề mặt của CPU.



1-2. Xoay và ấn chốt cài của quạt CPU vào bảng mạch chủ thông qua những cái lỗ để lắp quạt CPU vào vị trí.



Bước 2. Lắp Các Mô-đun Bộ Nhớ:

1-1. Căn xỏ trên các kết nối cạnh mô-đun DIMM để các bậc trong các khe cắm DIMM.



1-2. Chèn module bộ nhớ với khe cắm và bấm nó xuống cho đến khi nó ghế một cách chính xác. Hãy chắc chắn rằng các chốt khe bám vào cạnh của module DIMM.



Bước 3. Lắp Bảng Mạch Chủ:

3-1. Thay tấm I/O phía sau của thùng máy bằng tấm I/O được bán kèm trong bao bì của bảng mạch chủ.

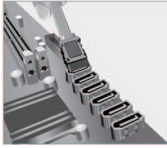


3-2. Đặt bảng mạch chủ trong thùng máy bằng cách đặt nó vào tấm I/O. Cố định bảng mạch chủ vào thùng máy bằng ốc vít.



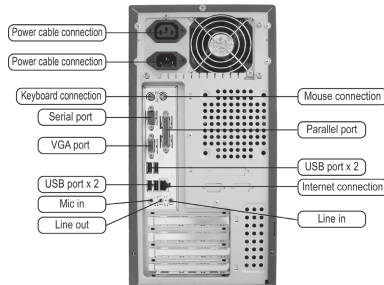
Bước 4. Nối Dây Cáp và Đầu Nối Điện:

- a. Nối ổ cứng SATA với dây cáp SATA b. Nối đầu nối điện SATA với thiết bị của nó.



Bước 5: Nối các cổng trên thùng máy:

Một khi đã hoàn tất các bước bên trên, vui lòng kết nối các thiết bị ngoại vi như bàn phím, chuột, màn hình, v.v. Sau đó, kết nối nguồn và bật hệ thống. Vui lòng cài đặt tất cả phần mềm bắt buộc.



Sử dụng BIOS

Tiện Ích Cài Đặt (Setup Utility) BIOS (Basic Input and Output System) hiển thị trạng thái cấu hình của hệ thống và cung cấp cho bạn các tùy chọn để cài đặt các tham số của hệ thống. Khi bạn bật hệ thống, BIOS tiến hành các bước kiểm tra Power-On Self Test (POST), **vui lòng nhấn hoặc F2 để vào cài đặt.** Khi bật nguồn lần đầu, màn hình POST có thể hiển thị thông báo **“CMOS Settings Wrong”**. **Vui lòng vào BIOS và chọn “Load Default Settings”** để cài đặt lại các giá trị CMOS mặc định. (Những thay đổi đối với phần cứng hệ thống chẳng hạn như CPU, bộ nhớ khác, v.v. cũng có thể kích hoạt thông báo này.)



Trình tự cài đặt có thể khác nhau tùy vào loại thùng máy và các thiết bị được sử dụng.