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› ASPIRING H110 Mini ITX Motherboard User Manual

**ASPIRING h110**

# ASPIRING H110 Mini ITX Motherboard User Manual

Model: **h110** | Brand: **ASPIRING**

## 1. PRODUCT OVERVIEW

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The ASPIRING H110 Mini ITX Motherboard is a compact and versatile solution designed for building gaming PCs and other personal computer systems. It supports Intel Core i3/i5/i7, Pentium, and Celeron CPUs from the 6th, 7th, 8th, and 9th generations, utilizing the LGA 1151 socket. This motherboard features DDR4 memory support, an M.2 NVMe interface for high-speed storage, and essential connectivity options for a robust computing experience.

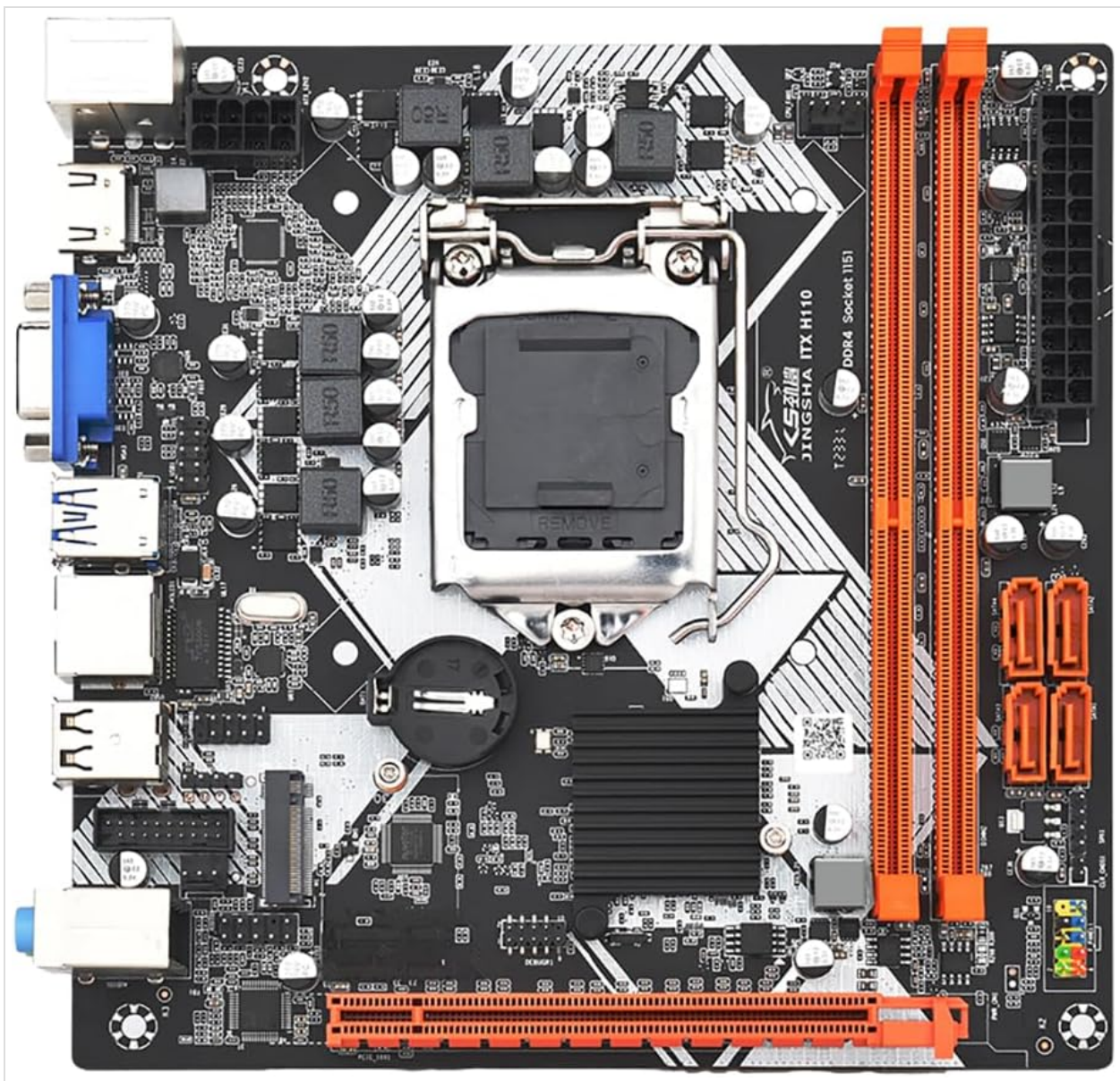


Figure 1.1: Top-down view of the ASPIRING H110 Mini ITX Motherboard, showcasing the CPU socket, RAM slots, and various connectors.

## Key Features:

- **SATA3.0 Interface:** Features strong compatibility and provides fast reading speed for storage devices.
- **DDR4 SO DIMM:** Dual channel DDR4 SO DIMM support, accommodating up to 32GB of RAM.
- **32GB/s Transmission:** Equipped with an M.2 hard disk interface supporting 32GB/s transmission speed for NVMe SSDs.
- **All Solid-state Capacitance:** Utilizes all solid-state capacitors for stable performance and extended motherboard service life.
- **Easy Expansion:** Designed with HD Multimedia Interface (HDMI) and VGA interface for display output, and M.2 interface supporting both NGFF and NVMe protocols.
- **Gigabit Ethernet:** Integrated Gigabit network for reliable and fast network connectivity.
- **USB 3.0 Interface:** Provides faster data transmission speeds compared to USB 2.0.

## 2. TECHNICAL SPECIFICATIONS

Below are the detailed technical specifications for the ASPIRING H110 Mini ITX Motherboard.

# PRODUCT SPECIFICATIONS METER

<b>Part#</b>	ITX H110 (ITX H311) Motherboard
<b>Form factor</b>	ITX
<b>Dimension</b>	170MM x 170MM
<b>CPU Socket</b>	LGA1151
<b>of RAM Slots</b>	2* DDR4 32GB
<b>DisplayPort</b>	HDMI-Compatible , VGA
<b>Sound card</b>	Realtek ALC897 HD 5.1
<b>Network</b>	Gigabit Ethernet
<b>SATA Port</b>	4*SATA 3.0
<b>M.2 Slots</b>	M.2 Nvme ( PCI-E 2.0 X4 ) 2280
<b>Graphic Socket</b>	1* PCI-E 3.0 16X
<b>USB Interface</b>	4*USB3.0, 5*USB2.0 (Front 2*USB3.0, 3*USB2.0)
<b>PSU Connector</b>	24Pin ATX+8Pin ATX_12V
<b>Other</b>	F_PANEL、 F_AUDIO、 F_COM、 F_SPK、 4*PIN CPU_FAN、 3PIN SYS_FAN、 PS/2 Mouse、 PS/2 Keyboard

Figure 2.1: Visual representation of the H110 motherboard's key specifications.

Feature	Specification
Form Factor	ITX (170mm x 170mm)
CPU Socket	LGA 1151 (Supports 6th/7th/8th/9th Gen Intel CPUs)
RAM Slots	2 x DDR4 SO DIMM (Up to 32GB)
Display Ports	HDMI-Compatible, VGA
Network	Gigabit Ethernet
SATA Ports	4 x SATA 3.0
M.2 Slots	1 x M.2 NVMe (PCI-E 2.0 X4) 2280
Graphic Socket	1 x PCI-E 3.0 16X

Feature	Specification
USB Interface	4 x USB 3.0 (2 front), 5 x USB 2.0 (3 front)
PSU Connector	24Pin ATX + 8Pin ATX_12V
Sound Card	Realtek ALC897 HD 5.1
Product Dimensions	11.02 x 6.69 x 0.79 inches
Item Weight	2.2 pounds
Platform Support	Windows

### 3. MOTHERBOARD COMPONENTS AND LAYOUT

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Understanding the layout of your motherboard is crucial for proper installation and connectivity. This section details the various ports and components.

# Flagship Level Layout, Easy to Build

Multiple interfaces, strong extensibility

ITX H110 Board Layout

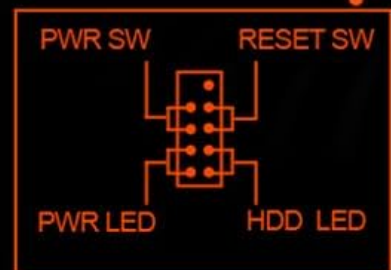
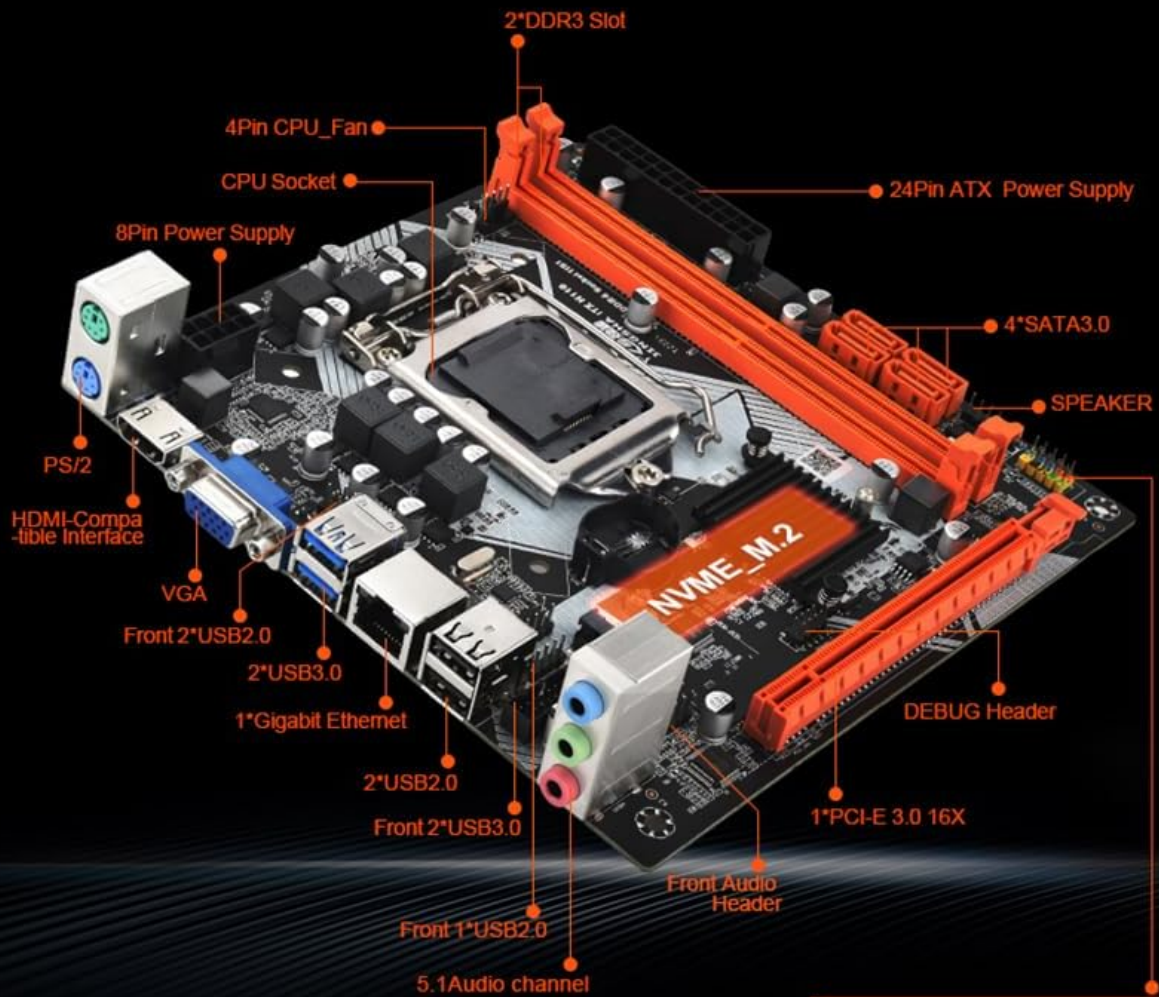


Figure 3.1: Detailed layout of the ITX H110 motherboard, indicating the location of key components and connectors.

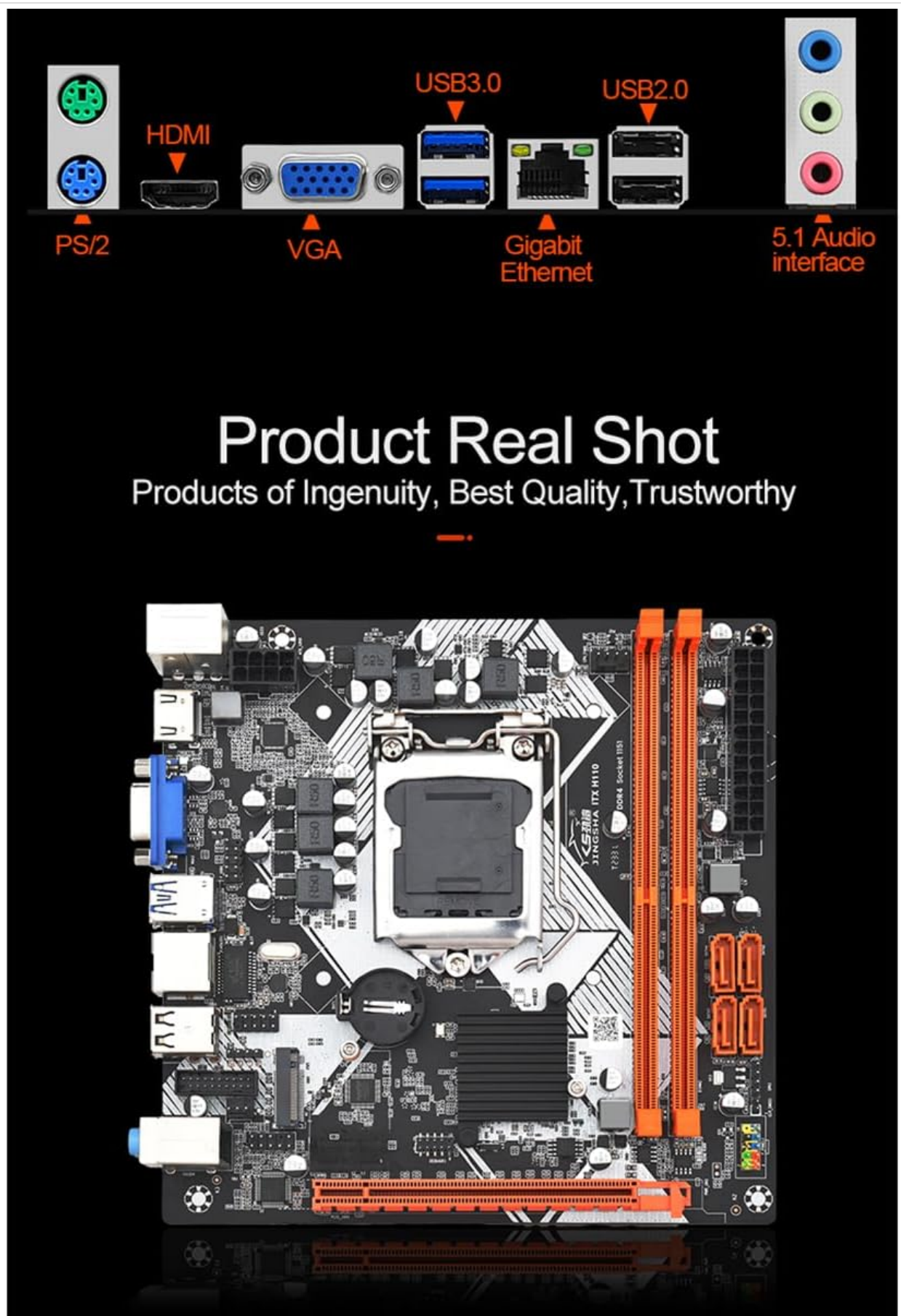


Figure 3.2: Rear I/O panel of the H110 motherboard, displaying the PS/2 ports, HDMI, VGA, USB 3.0, Gigabit Ethernet, USB 2.0, and 5.1 audio interface.

### Key Components:

- **CPU Socket (LGA 1151):** Located centrally, this is where your Intel 6th/7th/8th/9th Gen CPU is

installed.

- **DDR4 SO DIMM Slots:** Two slots for installing DDR4 laptop-style memory modules.
- **PCI-E 3.0 16X Slot:** For installing a dedicated graphics card.
- **M.2 NVMe Slot:** Supports high-speed M.2 2280 NVMe SSDs.
- **SATA 3.0 Ports:** Four ports for connecting SATA storage devices like HDDs and SSDs.
- **24-pin ATX Power Connector:** Main power input from the power supply unit (PSU).
- **8-pin ATX\_12V Power Connector:** Provides additional power to the CPU.
- **USB Headers:** Internal headers for connecting front panel USB 3.0 and USB 2.0 ports.
- **Front Audio Header:** For connecting your case's front panel audio jacks.
- **Front Panel Headers:** For connecting power button, reset button, power LED, and HDD LED from your case.
- **Rear I/O Panel:** Includes PS/2 ports for keyboard/mouse, HDMI, VGA, USB 3.0, USB 2.0, Gigabit Ethernet, and 5.1 audio jacks.

## 4. INSTALLATION AND SETUP

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Follow these steps carefully to install your motherboard and its components.

### 4.1 Before You Begin

- Ensure you have a clean, static-free workspace.
- Gather all necessary components: CPU, RAM, M.2 SSD (if applicable), SATA devices, power supply, and PC case.
- Unplug your power supply from the wall outlet before handling any components.
- Ground yourself to discharge static electricity (e.g., by touching a metal part of your PC case).

### 4.2 Component Installation

#### 4.2.1 CPU Installation (LGA 1151)

1. Locate the LGA 1151 socket on the motherboard.
2. Gently push down the load lever and pull it to the side to open the CPU socket retention frame.
3. Carefully align the triangular mark on your CPU with the corresponding mark on the socket. Ensure the notches on the CPU align with the socket.
4. Place the CPU gently into the socket. Do not force it. It should sit flat without pressure.
5. Close the retention frame and push the load lever back into place until it clicks.

#### 4.2.2 RAM Installation (DDR4 SO-DIMM)

1. Locate the two DDR4 SO DIMM slots.
2. Open the clips at both ends of the memory slot.
3. Align the notch on the DDR4 memory module with the key in the slot.
4. Insert the module firmly into the slot until the clips snap into place, securing the memory.

#### 4.2.3 M.2 NVMe SSD Installation

1. Locate the M.2 slot on the motherboard.
2. Remove the M.2 standoff screw.
3. Align the M.2 SSD with the slot and gently insert it at an angle.
4. Push the SSD down and secure it with the M.2 screw.

#### 4.2.4 SATA Device Connection

1. Connect one end of the SATA data cable to a SATA 3.0 port on the motherboard.
2. Connect the other end of the SATA data cable to your HDD or SSD.
3. Connect a SATA power cable from your PSU to the HDD/SSD.

#### 4.2.5 Power Supply Connection

1. Connect the 24-pin ATX power cable from your PSU to the 24-pin connector on the motherboard. Ensure it clicks into place.
2. Connect the 8-pin ATX\_12V power cable from your PSU to the 8-pin connector near the CPU socket.

#### 4.2.6 Front Panel Connections

Refer to the motherboard layout diagram (Figure 3.1) for the exact location of these headers.

- Connect the power switch, reset switch, power LED, and HDD LED cables from your PC case to the corresponding front panel headers. Pay attention to polarity for LEDs.
- Connect the front panel USB 3.0 and USB 2.0 cables to their respective headers.
- Connect the front panel audio cable to the F\_AUDIO header.

#### 4.2.7 Graphics Card Installation (PCI-E 3.0 16X)

1. Open the retention clip on the PCI-E 3.0 16X slot.
2. Align your graphics card with the slot and press it down firmly until it seats correctly and the retention clip snaps into place.
3. Secure the graphics card to your PC case with screws.
4. If your graphics card requires additional power, connect the appropriate PCI-E power cables from your PSU.

## 5. OPERATING INSTRUCTIONS

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Once all components are installed, you can proceed with the initial boot-up and system setup.

### 5.1 Initial Boot-up

1. Connect your monitor to the motherboard's HDMI or VGA port, or to your dedicated graphics card.
2. Connect your keyboard and mouse.
3. Plug in the power supply to the wall outlet and turn on the PSU switch.
4. Press the power button on your PC case.
5. The system should power on and display the BIOS/UEFI screen or begin the operating system installation process.
6. To enter the BIOS/UEFI setup, repeatedly press the designated key (usually DEL or F2) during boot-up.

### 5.2 Driver Installation

After installing your operating system (e.g., Windows), it is essential to install the necessary drivers for your motherboard's components to ensure optimal performance and stability. These include chipset drivers, network drivers, audio drivers, and any other specific drivers for integrated peripherals. Drivers are typically provided on a CD/DVD with the motherboard or can be downloaded from the manufacturer's website.

### 5.3 System Compatibility

This motherboard is designed to be compatible with Intel Core i3/i5/i7, Pentium, and Celeron CPUs from the 6th, 7th, 8th, and 9th generations that use the LGA 1151 socket. It supports Windows operating systems.

## 6. MAINTENANCE AND CARE

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Proper maintenance can extend the lifespan of your motherboard and ensure stable operation.

- **Dust Removal:** Regularly clean dust from inside your PC case, especially from fans and heatsinks, using compressed air. Dust buildup can lead to overheating.
- **Ventilation:** Ensure your PC case has adequate airflow. Do not block ventilation openings.
- **Component Handling:** Always handle the motherboard and other components by their edges to avoid touching sensitive circuits. Use anti-static precautions.
- **Software Updates:** Keep your operating system and drivers updated to benefit from performance improvements and security patches.

## 7. TROUBLESHOOTING COMMON ISSUES

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This section provides solutions to common problems you might encounter.

- **No Power:**
  - Check if the PSU is plugged in and switched on.
  - Ensure the 24-pin and 8-pin power connectors are securely seated on the motherboard.
  - Verify that the front panel power switch cable is correctly connected to the motherboard header.
- **No Display:**
  - Ensure the monitor cable is securely connected to the correct display output (motherboard or graphics card).
  - Reseat the RAM modules. Incorrectly seated RAM is a common cause of no display.
  - If using a dedicated graphics card, ensure it is properly seated in the PCI-E slot and any required power cables are connected.
  - Try booting with only one RAM stick.
- **System Instability/Crashes:**
  - Check CPU and GPU temperatures. Overheating can cause instability.
  - Ensure all power connections are secure.
  - Run memory diagnostic tools to check for RAM errors.
  - Update motherboard drivers and BIOS/UEFI firmware.
- **Component Not Detected (e.g., SSD, HDD):**
  - Verify that data and power cables are securely connected to the component and motherboard/PSU.
  - Check BIOS/UEFI settings to ensure the component is enabled and detected.
  - Ensure the M.2 SSD is properly seated and secured.

If you continue to experience issues, consult the manufacturer's support resources or a qualified technician.

## 8. WARRANTY INFORMATION AND SUPPORT

ASPIRING products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the documentation included with your purchase or visit the official ASPIRING website. Warranty coverage typically includes defects in materials and workmanship under normal use.

For technical support, troubleshooting assistance, or warranty claims, please contact ASPIRING customer service through their official channels. You may also find additional resources and FAQs on the [ASPIRING Store on Amazon](#).