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## Avoidance of electrostatic operation rules

Electrostatic discharge can seriously damage your device, Take special care when handling motherboards and other system devices, Avoid unnecessary contact with system parts on the motherboard, Keep working in an antistatic environment, Avoid electrostatic discharge that may damage the motherboard, When inserting or removing devices in your chassis. Make sure the power is off. The manufacturer is not responsible for any damage to the motherboard caused by failure to comply with this operating rule or failure to comply with safety regulations.



### Warning

Motherboards are easily damaged by electrostatic discharge.  
Please follow the operating rules.



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# Chapter 1: Introduction

## 1.1 Before You Start

Thank you for choosing our product. Before you start installing the motherboard, please make sure you follow the instructions below:

- Prepare a dry and stable working environment with sufficient lighting.
- Always disconnect the computer from power outlet before operation.
- Before you take the motherboard out from anti-static bag, ground yourself properly by touching any safely grounded appliance, or use grounded wrist strap to remove the static charge.
- Avoid touching the components on motherboard or the rear side of the board unless necessary. Hold the board on the edge, do not try to bend or flex the board.
- Do not leave any unfastened small parts inside the case after installation. Loose parts will cause short circuits which may damage the equipment.
- Keep the computer from dangerous area, such as heat source, humid air and water.
- The operating temperatures of the computer should be 0 to 45 degrees Celsius.
- To avoid injury, be careful of:
  - Sharp pins on headers and connectors
  - Rough edges and sharp corners on the chassis
  - Damage to wires that could cause a short circuit

## 1.2 Package Checklist

- Serial ATA Cable x4
- Rear I/O Panel for ATX Case x1
- User's Manual x1
- Fully Setup Driver DVD x1

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### Note

» *The package contents may be different due to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.*

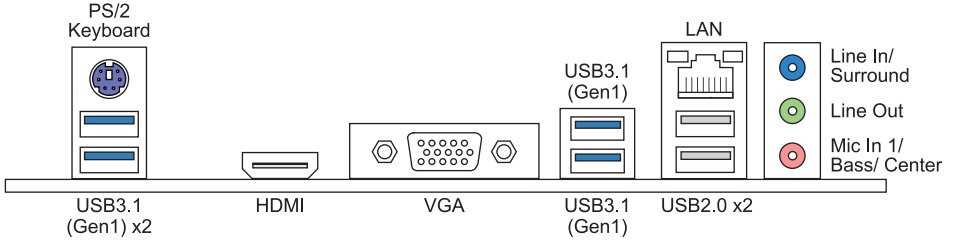
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## 1.3 Specifications

Specifications	
CPU Support	Socket AM4 supports AMD® Ryzen APU / Ryzen CPU * Please refer to <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> for CPU support list.
Chipset	AMD® X570
Memory	Supports Dual Channel DDR4 1866/ 2133/ 2400/ 2667 Supports Dual Channel DDR4 2933(OC)/ 3200(OC)/ 3600(OC)/ 4000+(OC) 4 x DDR4 DIMM Memory Slot, Max. Supports up to 128 GB Memory Each DIMM supports non-ECC and ECC Un-buffered 8/ 16/ 32 GB DDR4 module * DDR4 - 2667 only for Ryzen CPU. * Please refer to <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> for Memory support list.
Storage	6x SATA III Connector (6Gb/s): Supports AHCI & RAID 0, 1, 10 1x M.2 (Key M) Slot : Supports SATA III (6.0Gb/s) SSD Supports PCI-E 4.0 x4 (64Gb/s) speed, which depends only on Ryzen 3rd Gen Matisse.
LAN	RTL8111H 10/ 100/ 1000 Mb/s auto negotiation, Half / Full duplex capability
Audio Codec	ALC887 7.1 Channels, High Definition Audio
USB	8x USB 3.1 Gen1 (5Gb/s) port (4 on rear I/Os and 4 via internal headers) 6x USB 2.0 port (2 on rear I/Os and 4 via internal headers)
Expansion Slots	2x PCIe 3.0 x1 Slot 1x PCIe 3.0 x16 Slot: Supports x4 mode (PEX16_2) : Supports x4 lanes with AMD® Ryzen™ 2nd and 3rd Gen processors. 1x PCIe 4.0 x16 Slot (PEX16_1) * Note : Supports x16 (x16, x8) lanes with AMD® Ryzen™ 2nd and 3rd Gen processors. Supports x8 lanes with AMD® Ryzen™ with Radeon Vega Graphics processors. * According to different CPUs will have different speeds. * Note: PCIe 4.0 speed only for AMD® Ryzen™ 3rd Gen Matisse.
Rear I/Os	1x PS/2 Keyboard Port 1x HDMI Port 1x VGA Port 1x LAN port 4x USB 3.1 Gen1 (5Gb/s) Port 2x USB 2.0 Port 3x Audio Jack
Internal I/Os	6x SATA III (6.0Gb/s) Connector 2x USB 2.0 Header (each header supports 2 USB 2.0 ports) 2x USB 3.1 Gen1 (5Gb/s) Header (each header supports 2 USB 3.1 Gen1 ports) 1x 8-Pin Power Connector 1x 24-Pin Power Connector 1x CPU Fan Connector 1x System Fan Connector 1x System Fan Connector (Southbridge Heatsink Fan Header : This connector is only available for Southbridge Heatsink Fan.) 1x Front Panel Header 1x Front Audio Header 1x Clear CMOS Header 1x COM Port Header 2x LED Header (12V/ 5V)
Form Factor	ATX Form Factor, 305mm x 243mm
OS Support	Windows 10(64bit) Biostar reserves the right to add or remove support for any OS with or without notice.

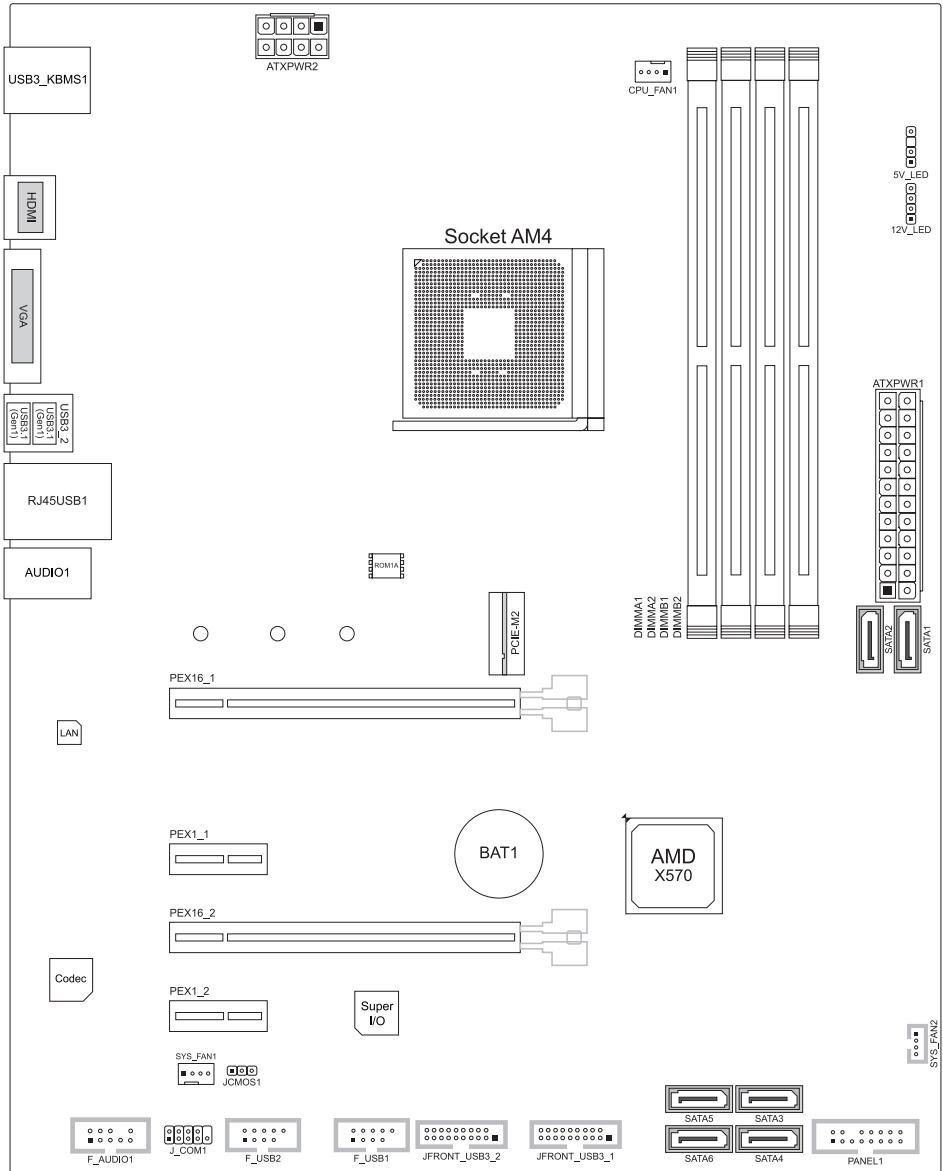
## 1.4 Rear Panel Connectors



### Note

- » HDMI / VGA output require an AMD family processor with integrated graphics.
- » Since the audio chip supports High Definition Audio Specification, the function of each audio jack can be defined by software. The input / output function of each audio jack listed above represents the default setting. However, when connecting external microphone to the audio port, please use the Line In and Mic In audio jack.
- » Maximum resolution
  - HDMI: 4096 x 2160 @24Hz, compliant with HDMI 1.4
  - VGA: 1920 x 1200 @60Hz
- » The speaker configuration option of Line In / Side: 5.1 channel for Line In / 7.1 channel for Side.
- » When using the front HD audio jack and plug in the headset / microphone, the rear sound will be automatically Disabled.

## 1.5 Motherboard Layout



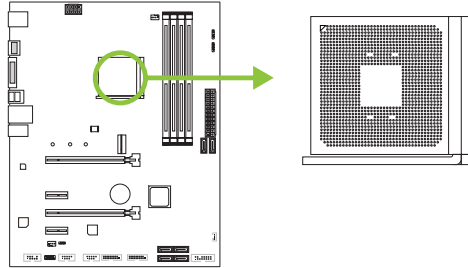
### Note

» ■ represents the 1st pin.

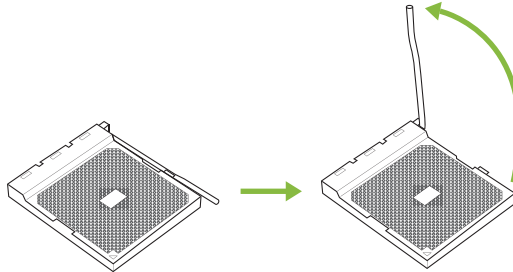
## Chapter 2: Hardware installation

### 2.1 Install Central Processing Unit (CPU)

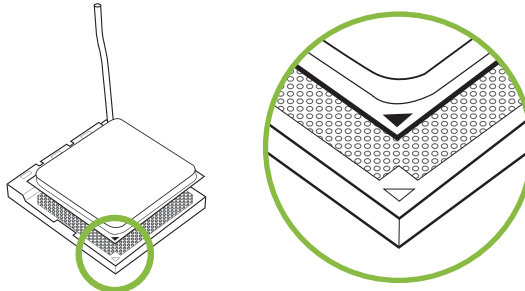
Step 1: Locate the CPU socket on the motherboard



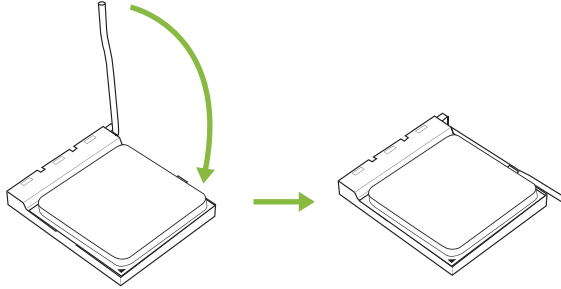
Step 2: Pull the socket locking out from the socket and then raise the lever up to a 90-degree angle.



Step 3: Look for the white triangle on socket, and the gold triangle on CPU should point towards this white triangle. The CPU will fit only in the correct orientation.



Step 4: Hold the CPU down firmly, and then close the lever to locked the position

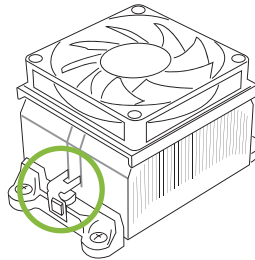
**Note**

» Please turn off the Power Supply before remove the CPU socket.

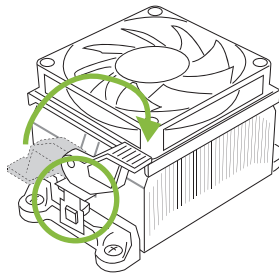
## 2.2 Install a Heatsink

### <TypeA>

Step 1: Place the heatsink and fan assembly onto the retention frame. Match the heatsink clip with the socket mounting-lug. Hook the spring clip to the mounting-lug.

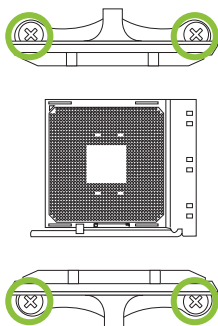


Step 2: On the other side, push the retention clip straight down to lock into the plastic lug on the retention frame, and then press down the locker until it stops.

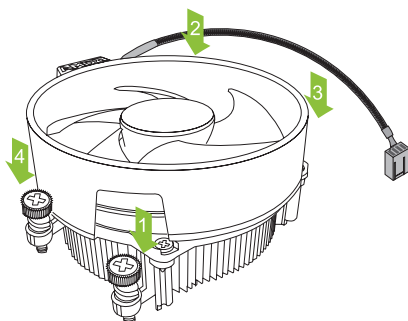


### <TypeB>

Step 1: Remove the heatsink and fan assembly bracket on the motherboard and keep the cooler backplane under the motherboard.



Step 2: Place the heatsink and fan assembly on top of the installed CPU and make sure that the fan cable is closest to the CPU fan connector. Please refer diagram to the following screw into the screw hole in the order shown.



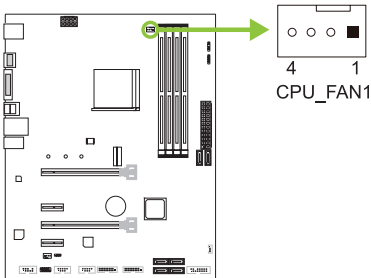
#### ► Note

- » Do not forget to connect the CPU fan connector.
- » For proper installation, please kindly refer to the installation manual of your CPU heatsink.

## 2.3 Connect Cooling Fans

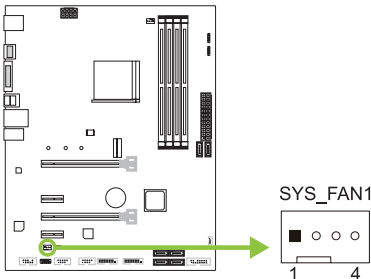
These fan headers support cooling-fans built in the computer. The fan cable and connector may be different according to the fan manufacturer.

### CPU\_FAN1: CPU Fan Header



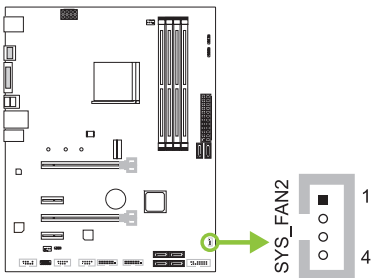
PWM Mode	
Pin	Assignment
1	Ground
2	+12V
3	Sense
4	Speed Control Signal

### SYS\_FAN1: System Fan Header



PWM Mode	
Pin	Assignment
1	Ground
2	+12V
3	Sense
4	Speed Control Signal

### SYS\_FAN2: System Fan Header (Southbridge Heatsink Fan Header)



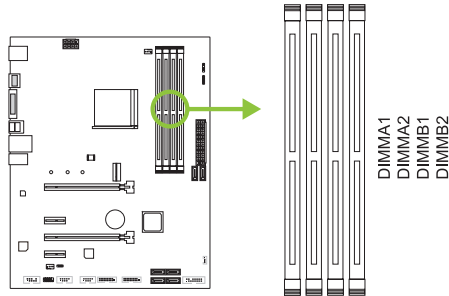
DC Mode	
Pin	Assignment
1	NC
2	Sense
3	Voltage Control
4	Ground

#### Note

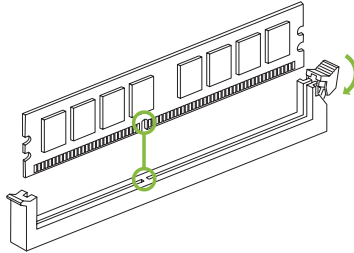
- » CPU\_FAN1, SYS\_FAN1 support 4-pin and 3-pin head connectors. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to pin#1(GND).
- » SYS\_FAN2 connector is only available for Southbridge Heatsink Fan.

## 2.4 Install System Memory

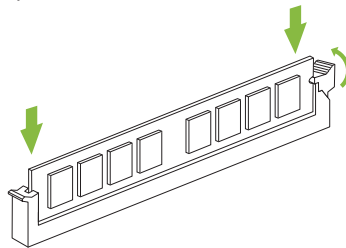
### DDR4 Modules



Step 1: Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



Step 2: Insert the DIMM vertically and firmly into the slot until the retaining clips snap back in place and the DIMM is properly seated.



#### Note

» If the DIMM does not go in smoothly, do not force it. Pull it all the way out and try again.



Memory Capacity

DIMM Socket Location	DDR4 Module	Total Memory Size
DIMMA1	8GB/16GB/32GB	Max is 128GB.
DIMMA2	8GB/16GB/32GB	
DIMMB1	8GB/16GB/32GB	
DIMMB2	8GB/16GB/32GB	

Dual Channel Memory Installation

Please refer to the following requirements to activate Dual Channel function:  
Install memory module of the same density in pairs, shown in the table.

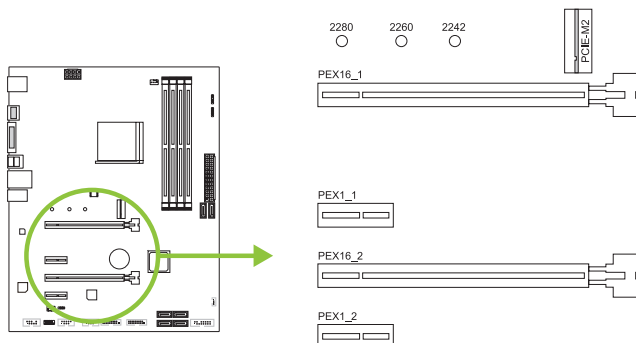
Dual Channel Status	DIMMA1	DIMMA2	DIMMB1	DIMMB2
Enabled	O	X	O	X
Enabled	X	O	X	O
Enabled	O	O	O	O

(O means memory installed, X means memory not installed.)

Note

- » When installing more than one memory module, we recommend to use the same brand and capacity memory on this motherboard.

## 2.5 Expansion Slots



### PEX16\_1: PCI-Express (Gen3/ Gen4) x16 Slot

- PCI-Express 3.0 compliant. Theoretical maximum bandwidth using two slots simultaneously is 16GB/s for each slot, a total of 32GB/s.
- PCI-Express 4.0 compliant. Theoretical maximum bandwidth using two slots simultaneously is 32GB/s for each slot, a total of 64GB/s. (Matisse Only)
- Supports x16 (x16, x8) lanes with AMD® Ryzen™ 2nd and 3rd Gen processors.
- Supports x8 lanes with AMD® Ryzen™ with Radeon Vega Graphics processors.

### PEX16\_2: PCI-Express Gen3 x16 Slot (x4 lanes)

- PCI-Express 3.0 compliant. Theoretical maximum bandwidth using two slots simultaneously is 4GB/s for each slot, a total of 8GB/s.

### PEX1\_1/ 1\_2: PCI-Express Gen3 x1 Slot

- PCI-Express 3.0 compliant.
- Data transfer bandwidth up to 1GB/s per direction; 2GB/s in total.

### PCIE-M2: M.2 (Key M) Slot

- The M.2 slot supports M.2 Type 2242/2260/2280 SSD module. When installing M.2 SSD module, please place the screw and hex pillar to correct position.
- Support M.2 SATA III (6.0 Gb/s) module and M.2 PCI Express module up to Gen4 x4 (64Gb/s), which depends only on Ryzen 3rd Gen Matisse.

#### Note

» PCIe 4.0 speeds only for AMD® Ryzen™ 3rd Gen Matisse.

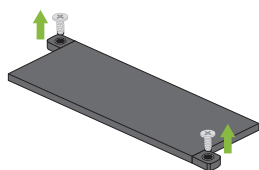
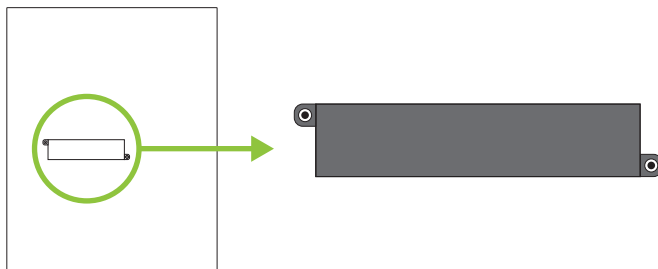
## Install an Expansion Card

You can install your expansion card by following steps:

- Read the related expansion card's instruction document before install the expansion card into the computer.
- Remove your computer's chassis cover, screws and slot bracket from the computer.
- Place a card in the expansion slot and press down on the card until it is completely seated in the slot.
- Secure the card's metal bracket to the chassis back panel with a screw.
- Replace your computer's chassis cover.
- Power on the computer, if necessary, change BIOS settings for the expansion card.
- Install related driver for the expansion card.

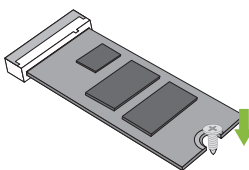
## Install M.2 COOLING Heatsink

Steps of Removing the M.2 COOLING Heatsink:



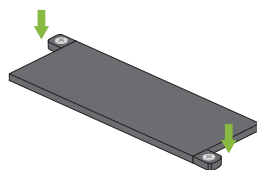
### Step 1:

There are two screws on the edge of heatsink and unscrew them before insert the M.2 SSD card.



### Step 2:

Insert M.2 SSD card onto the M.2 slot and screw it onto the motherboard.



### Step 3:

After installing the M.2 SSD card, place the M.2 COOLING Heatsink over the M.2 slot and fasten the screws to fix the heatsink onto the motherboard.

#### Note

» Please follow the installation instructions of M.2 COOLING Heatsink and remove the M.2 COOLING Heatsink to install the M.2 SSD card onto your motherboard.

## 2.6 Jumper & Switch Setting

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is “close”, if not, that means the jumper is “open”.

Pin opened



Pin closed

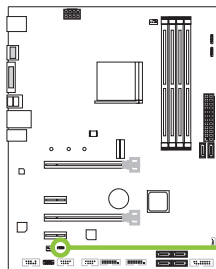


Pin 1-2 closed



### JCMOS1: Clear CMOS Jumper

The jumper allows users to restore the BIOS safe setting and the CMOS data. Please carefully follow the procedures to avoid damaging the motherboard.



Pin 1-2 Close:  
Normal Operation (default).



Pin 2-3 Close:  
Clear CMOS data.

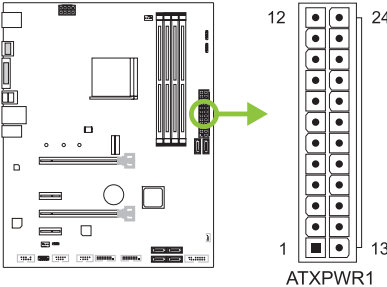
#### Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to “Pin 2-3 close”.
3. Wait for five seconds.
4. Set the jumper to “Pin 1-2 close”.
5. Power on the AC.
6. Load Optimal Defaults and save settings in CMOS.

2.7 Headers & Connectors

ATXPWR1: ATX Power Source Connector

For better compatibility, we recommend to use a standard ATX 24-pin power supply for this connector. Make sure to find the correct orientation before plugging the connector.

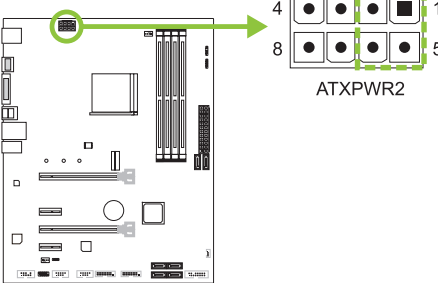


The diagram shows the ATXPWR1 connector on the motherboard and a detailed view of its 24-pin layout. The pins are numbered 1 to 24, with 12 on the left and 24 on the right. The layout is as follows:

Pin	Assignment	Pin	Assignment
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	Ground	3	Ground
16	PS_ON	4	+5V
17	Ground	5	Ground
18	Ground	6	+5V
19	Ground	7	Ground
20	NC	8	PW_OK
21	+5V	9	Standby Voltage+5V
22	+5V	10	+12V
23	+5V	11	+12V
24	Ground	12	+3.3V

ATXPWR2: ATX Power Source Connector

The connector provides +12V to the CPU power circuit. If the CPU power plug is 4-pin, please plug it into Pin 1-2-5-6 of ATXPWR2.



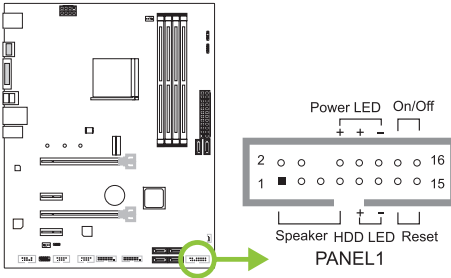
The diagram shows the ATXPWR2 connector on the motherboard and a detailed view of its 8-pin layout. The pins are numbered 1 to 8, with 4 on the left and 8 on the right. The layout is as follows:

Pin	Assignment
1	+12V
2	+12V
3	+12V
4	+12V
5	Ground
6	Ground
7	Ground
8	Ground

- Note
- » Before you power on the system, please make sure that both ATXPWR1/ ATXPWR2 connectors have been plugged-in.
  - » Insufficient power supplied to the system may result in instability or the peripherals not functioning properly. Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices.

## PANEL1: Front Panel Header

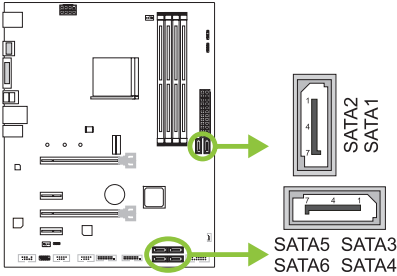
This 16-pin header includes Power-on, Reset, HDD LED, Power LED, and speaker connection.



Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker Connector	2	N/A	N/A
3	N/A		4	N/A	
5	N/A		6	N/A	
7	Speaker	Hard drive LED	8	Power LED (+)	Power LED
9	HDD LED (+)		10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	Ground		14	Power button	Power-on button
15	Reset control	Reset button	16	Ground	

## SATA1/ 2/ 3/ 4/ 5/ 6: Serial ATA 6.0 Gb/s Connectors

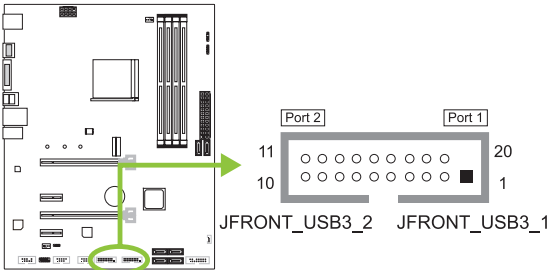
These connectors connect to SATA hard disk drives via SATA cables.



Pin	Assignment
1	Ground
2	TX+
3	TX-
4	Ground
5	RX-
6	RX+
7	Ground

## JFRONT\_USB3\_1/ 3\_2: Header for USB 3.1 Gen1 (5Gb/s) Ports at Front Panel

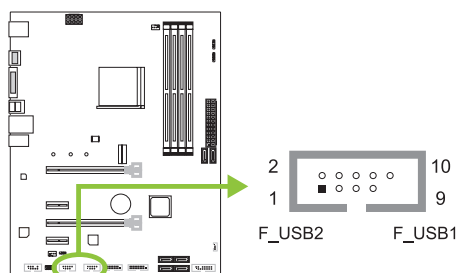
This header allows user to add additional USB ports on the PC front panel, and also can be connected with a wide range of external peripherals.



Pin	Assignment	Pin	Assignment
1	VBUS0	11	D2+
2	SSRX1-	12	D2-
3	SSRX1+	13	Ground
4	Ground	14	SSTX2+
5	SSTX1-	15	SSTX2-
6	SSTX1+	16	Ground
7	Ground	17	SSRX2+
8	D1-	18	SSRX2-
9	D1+	19	VBUS1
10	ID	20	Key

## F\_USB1/ 2: Header for USB 2.0 Ports at Front Panel

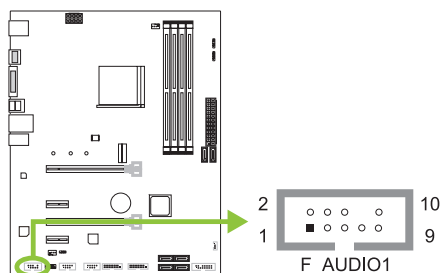
This header allows user to add additional USB ports on the PC front panel, and also can be connected with a wide range of external peripherals.



Pin	Assignment
1	+5V (fused)
2	+5V (fused)
3	USB-
4	USB-
5	USB+
6	USB+
7	Ground
8	Ground
9	Key
10	NC

## F\_AUDIO1: Front Panel Audio Header

This header allows user to connect the chassis-mount front panel audio I/O which supports HD and AC'97 audio standards.



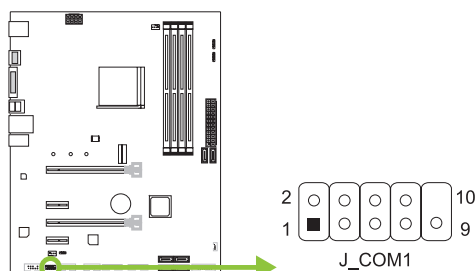
HD Audio		AC'97	
Pin	Assignment	Pin	Assignment
1	Mic Left in	1	Mic In
2	Ground	2	Ground
3	Mic Right in	3	Mic Power
4	GPIO	4	Audio Power
5	Right line in	5	RT Line Out
6	Jack Sense	6	RT Line Out
7	Front Sense	7	Reserved
8	Key	8	Key
9	Left line in	9	LFT Line Out
10	Jack Sense	10	LFT Line Out

### Note

- » It is recommended that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high definition audio capability.
- » Please try to disable the "Front Panel Jack Detection" if you want to use an AC'97 front audio output cable. The function can be found via O.S. Audio Utility.

## J\_COM1: Serial Port Connector

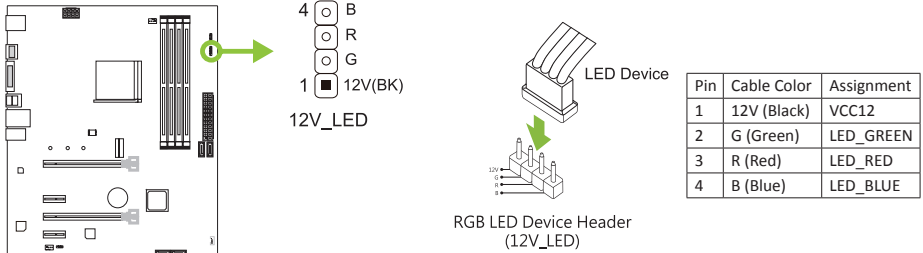
The motherboard has a serial port header for connecting RS-232 Port.



Pin	Assignment
1	Carrier detect
2	Received data
3	Transmitted data
4	Data terminal ready
5	Signal ground
6	Data set ready
7	Request to send
8	Clear to send
9	Ring indicator
10	Key

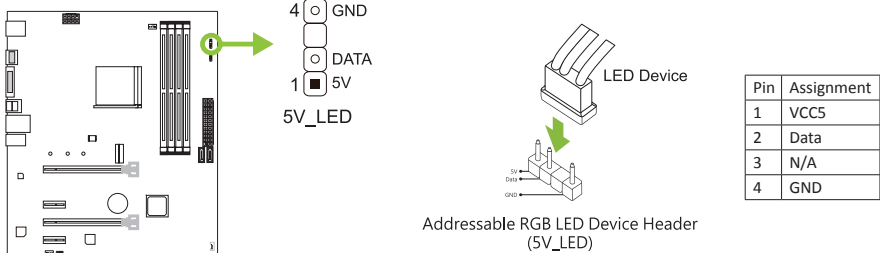
## 12V\_LED: RGB LED Device (5050 SMD) Header

This header provides 12V power and RGB control pins for RGB LED Device (5050 SMD).



## 5V\_LED: Addressable RGB LED Device (WS2818B) Header

This header provides 5V power and Data control pins for RGB LED Device (WS2818B).



### Note

- » Ensure proper pin connecting to your LED device, wrong connection may damage your LED device or motherboard.
- » The 12V\_LED connector supports to 5050 RGB LED strips with the maximum power rating of 3A (12V).
- » The 5V\_LED connector supports up to 300 LEDs WS2818B individually Addressable RGB LED strips with the maximum power rating of 3A (5V).
- » Please use the Vivid LED DJ software to control the LEDs. For detailed software setting information, refer to chapter 3.3 .



## 2.8 LEDs

### LEDs

Below LEDs are controlled by RACING GT EVO program. Please refer to Chapter 3.3 for more detail software setting.



RGB LED Device Header (5V/12V)

## Chapter 3: UEFI BIOS & Software

### 3.1 UEFI BIOS Setup

- The BIOS Setup program can be used to view and change the BIOS settings for the computer. The BIOS Setup program is accessed by pressing the <DEL> key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins.
- For further information of setting up the UEFI BIOS, please refer to the UEFI BIOS Manual on our website.

### 3.2 BIOS Update

The BIOS can be updated using either of the following utilities:

- **BIOSTAR BIO-Flasher:** Using this utility, the BIOS can be updated from a file on a hard disk, a USB drive (a flash drive or a USB hard drive), or a CD-ROM.
- **BIOSTAR BIOS Update Utility:** It enables automated updating while in the Windows environment. Using this utility, the BIOS can be updated from a file on a hard disk, a USB drive (a flash drive or a USB hard drive), or a CD-ROM, or from the file location on the Web.

#### **BIOSTAR BIO-Flasher**

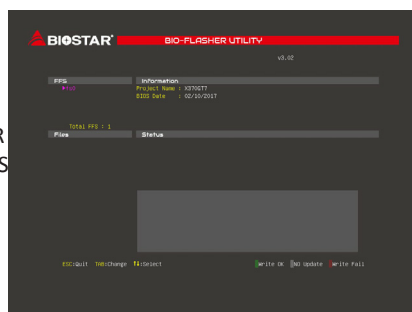
##### **Note**

- » This utility only allows storage device with FAT32/16 format and single partition.
- » Shutting down or resetting the system while updating the BIOS will lead to system boot failure.

Updating BIOS with BIOSTAR BIO-Flasher

1. Go to the website to download the latest BIOS file for the motherboard.
2. Then, copy and save the BIOS file into a USB flash (pen) drive. (Only supported FAT/FAT32 format)
3. Insert the USB pen drive that contains the BIOS file to the USB port.
4. Power on or reset the computer and then press <F12> during the POST process.

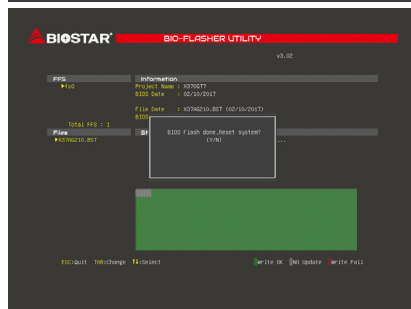
5. After entering the POST screen, the BIO-FLASHER utility pops out. Choose <fs0> to search for the BIOS file.



6. Select the proper BIOS file, and a message asking if you are sure to flash the BIOS file. Click “Yes” to start updating BIOS.



7. A dialog pops out after BIOS flash is completed, asking you to restart the system. Press the <Y> key to restart system.



8. While the system boots up and the full screen logo shows up, press <DEL> key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes and Reset> to restart the computer. Then the BIOS Update is completed.

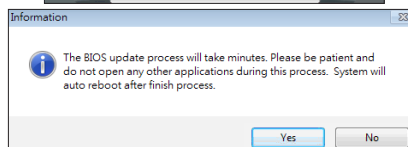
### **BIOS Update Utility (through the Internet)**

1. Installing BIOS Update Utility from the DVD Driver.
2. Please make sure the system is connected to the internet before using this function.

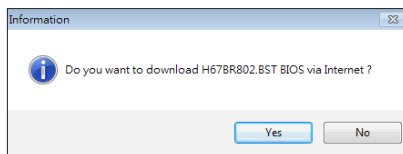
3. Launch BIOS Update Utility and click the “Online Update” button on the main screen.



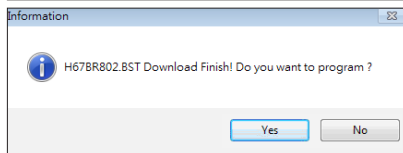
4. An open dialog will show up to request your agreement to start the BIOS update. Click “Yes” to start the online update procedure.



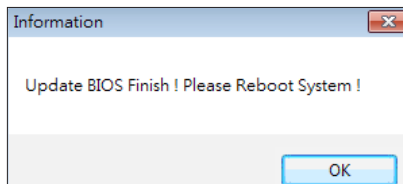
5. If there is a new BIOS version, the utility will ask you to download it. Click “Yes” to proceed.



6. After the download is completed, you will be asked to program (update) the BIOS or not. Click “Yes” to proceed.



7. After the updating process is finished, you will be asked you to reboot the system. Click “OK” to reboot.



8. While the system boots up and the full screen logo shows up, press <DEL> key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes> and <Reset> to restart the computer. Then, the BIOS Update is completed.

### **BIOS Update Utility (through a BIOS file)**

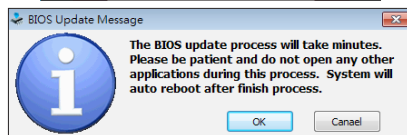
1. Installing BIOS Update Utility from the DVD Driver.

2. Download the proper BIOS from <http://www.biosstar.com.tw/>

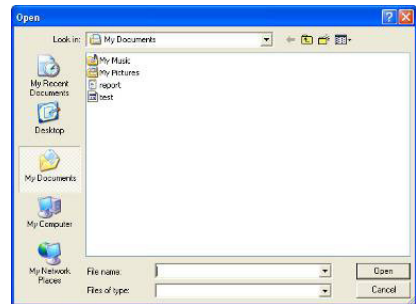
3. Launch BIOS Update Utility and click the “Update BIOS” button on the main screen.



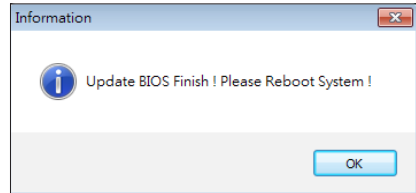
4. A warning message will show up to request your agreement to start the BIOS update. Click “OK” to start the update procedure.



5. Choose the location for your BIOS file in the system. Please select the proper BIOS file, and then click on “Open”. It will take several minutes, please be patient.



6. After the BIOS Update process is finished, click on “OK” to reboot the system.

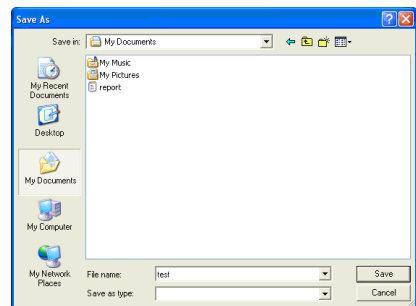


7. While the system boots up and the full screen logo shows up, press <DEL> key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes and Reset> to restart the computer. Then, the BIOS Update is completed.

### **Backup BIOS**

Click the Backup BIOS button on the main screen for the backup of BIOS, and select a proper location for your backup BIOS file in the system, and click “Save”.



### 3.3 Software

#### Installing Software

1. Insert the Setup DVD to the optical drive. The driver installation program would appear if the Auto-run function has been enabled.
2. Select Software Installation, and then click on the respective software title.
3. Follow the on-screen instructions to complete the installation.

#### Launching Software

After the installation process is completed, you will see the software icon showing on the desktop. Double-click the icon to launch it.

##### Note

- » All the information and content about following software are subject to be changed without notice. For better performance, the software is being continuously updated.
- » The information and pictures described below are for your reference only. The actual information and settings on board may be slightly different from this manual.

#### BIOScreen Utility

This utility allows you to personalize your boot logo easily. You can choose BMP as your boot logo so as to customize your computer.



Please follow the step-by-step instructions below to update boot logo:

- Load Image: Choose the picture as the boot logo.
- Transform: Transform the picture for BIOS and preview the result.
- Update Bios: Write the picture to BIOS Memory to complete the update.

## RACING GT EVO

RACING GT EVO is an easy-to-use program that integrates several BIOS/STAR utilities and allows users to configure these utilities simultaneously and seamlessly.

### Note

» Menu contents of RACING GT EVO will be different slightly, depending on different motherboard of users' computers.

## System Information

This System Information tab provides you an overview of the basic system information.



1. **Clocks:** Shows core speed, multiplier and bus speed.
2. **Motherboard:** Shows motherboard information.
3. **Processor:** Shows CPU information.
4. **Memory:** Shows memory information.

## SmartEAR

Smart EAR allows you to control system volume and adjust impedance setting (Low/High Gain) to optimize your headphone performance. You can easily enjoy high-quality and awesome sound.

Requirements:

1. A chassis with front audio output jacks
2. An earphone or a headphone
3. Windows 7 (32/64bit)/ 8.1(64bit)/ 10(64bit) operation system

Installation Guide:

1. Make sure the front audio cable of the chassis connected to the front audio header of the motherboard properly.
2. Install the RACING GT EVO program from the driver DVD.
3. Connect the earphone or headphone to the front audio jack of the chassis or audio lineout port of rear I/Os.

» If you want to use an AC'97 front audio output cable, please disable the "Front Panel Jack Detection" setting. This setting can be found via O.S. Audio Utility.



- 1. Volume Control Knob:** The volume can be finely adjusted by turning the knob either clockwise or anti-clockwise to increase or decrease system volume accordingly.
- 2. Mute:** To disable system sound.
- 3. High/Low Gain Switch:** Keep the gain switch to low for low impedance headphone and set to high for high impedance headphone.



## GT Touch

GT Touch allows you to adjust Normal, ECO and Sport mode when running RACING GT EVO program in Windows environment.



1. **Normal Mode:** It balances energy consumption and system performance.
2. **ECO Mode:** It saves energy by slightly reducing system performance.
3. **Sport Mode:** It provides the highest level of system performance.

## Vivid LED DJ

Vivid LED DJ can adjust your color scheme of Racing ARMOR , RGB LED Device.



**1. LED COMMANDER:** Allows you to select the LED mode.

- **Default :** Default LED illuminations. (Blue light)

- **RAZER :** Allows you to connect to the RAZER app to sync the motherboard lights.

» When using RAZER mode, turn off RACING GT Software and LED illumination will return to the default state.

» RAZER mode is to achieve LED illumination synchronization through the connection with RAZER software.

» RAZER software must be installed to use RAZER Mode. RAZER related information please go to RAZER official website download.

» When using RAZER mode, it must be used with RAZER related devices and peripheral devices.

- **RGB Sync :** Allows you to synchronize the LED Type item settings.

**2. LED Type:** Select the LED lighting blocks.

- **System :** System LED illuminations. (Racing ARMOR)

- **12V LED :** The 12V LED illumination. (12V\_LED Device)

- **5V LED :** The 5V LED illumination. (5V\_LED Device)

- **Memory Sync :** The RGB Audio LED illumination. (Memory LED)

**3. ON/OFF:** To enable or disable VIVID LED function.

**4. ON/OFF:** Allows you to enable or disable LED of a single item.

**5. Color Palette:** Allows to you choose specific color of the LEDs.

**6. LED Brightness Bar:** Allows you to adjust the LED brightness.

**7. Auto:** LEDs will Automatically change the Color Palette and LED Brightness.

» If you select Auto mode, the Color Palette and LED Brightness Bar will disabled.

**8. LED SPARKLE:** Allows to you choose sparkle of the LEDs.

- **Permanent:** LEDs are constantly lit.
- **Shine:** LEDs flash at a specific frequency.
- **Breath:** LEDs gradually flash on and off.
- **Shine & Music:** LEDs will flash according the music played on your system.

» *Please make sure your speaker or earphone is properly connected to audio jack before using RACING GT EVO program.*

- **Meteor:** LEDs slide at a specific frequency.
- **Wave:** LEDs are presented in a water wave rhythm.
- **Starry sky:** LEDs flicker at a specific rhythm.
- **Lightning:** LEDs flash and slide at a specific frequency.
- **Rainbow:** LEDs lights to dazzling colorful rhythm.
- **Aurora:** LEDs shows soft light and flickers lightly.

**9. High/Low Speed Switch:** Allows you to control the flicker speed.

---

► **Note**

» *With VIVID LED DJ users can control the four LED light zones independently with different flashing modes (LED SPARKLE).*

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## A.I Fan

A.I Fan utility smartly allows PC users to have more customizability of fan operating modes and automatically detects different temperatures to make fan operating at defined speed for optimal cooling performance.



**1. Temperature:** Shows the current CPU and system temperature.

**2. CPU1/2 RPM & SYSTEM1/2/3/4 RPM:** Click button to set the status value of CPU and system fan.

**3. Default:** Restore defaults your changes value of a single item.

**4. PWM/Temperature Panel:** According to the fan PWM value corresponding to CPU and system temperature to adjust the fan speed.

» Allows you to adjust according to your preferences.

**5. User Selection:** Sets the fan property controls the actual selection operation.

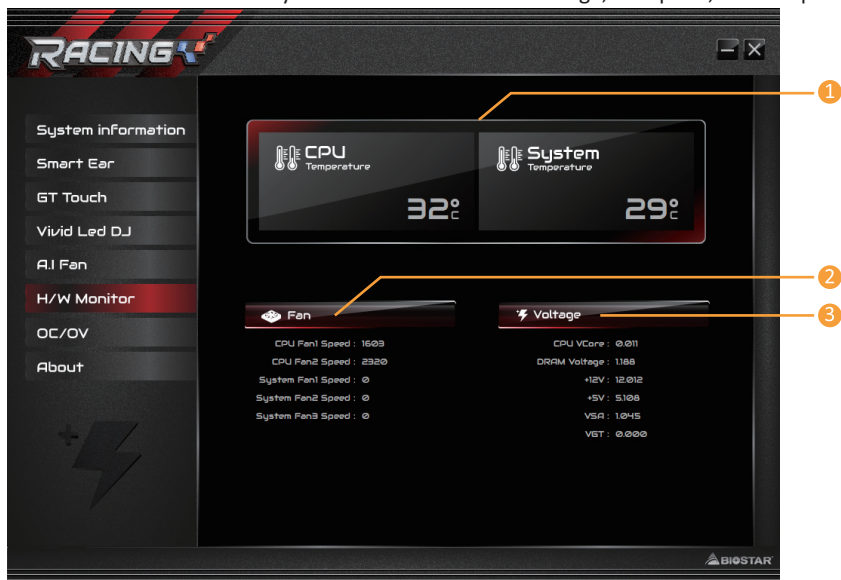
- **Auto:** Allows you to adjust the Automatic detection Mode.
- **DC:** Allows you to adjust the Direct Current (DC) Mode.
- **PWM:** Allows you to adjust the Pulse Width Modulation (PWM) Mode.

**6. Control Mode:** Allows you to control mode of the fans.

- **Aggressive:** Enable Aggressive mode.
- **Quiet:** Enable Quiet mode.
- **Manual:** Enable Manual mode.
- **Full on:** Enable Full On mode.

## H/W Monitor

The HW Monitor tab allows you to monitor hardware voltage, fan speed, and temperature.



- 1. CPU Temperature/System Temperature:** Shows the current CPU and system temperature.
- 2. Fan:** Shows the current fans' speed.
- 3. Voltage:** Shows the current voltages of CPU and memory.

## OC/OV

The OC/OV tab allows you to save or load the OC/OV setting profiles, change system frequency and voltage settings.



**1. OC:** Allows you to adjust overclocking profile values.

**2. OV:** Allows you to adjust voltage profile values.

**3. Default:** Restore defaults your changes.

**4. Apply:** Apply your changes.

**5. Load:** Load the profile values from the file.

**6. Save:** Store the profile values for future use.

### Note

- » Not all types of CPU perform above overclock setting ideally; the difference will be based on the selected CPU model.
- » Overclock is an optional process, but not a “must-do” process; it is not recommended for inexperienced users. Therefore, we will not be responsible for any hardware damage which may be caused by overclocking. We also would not guarantee any overclocking performance.

## About

The About menu to display the Racing GT EVO Utility version information.

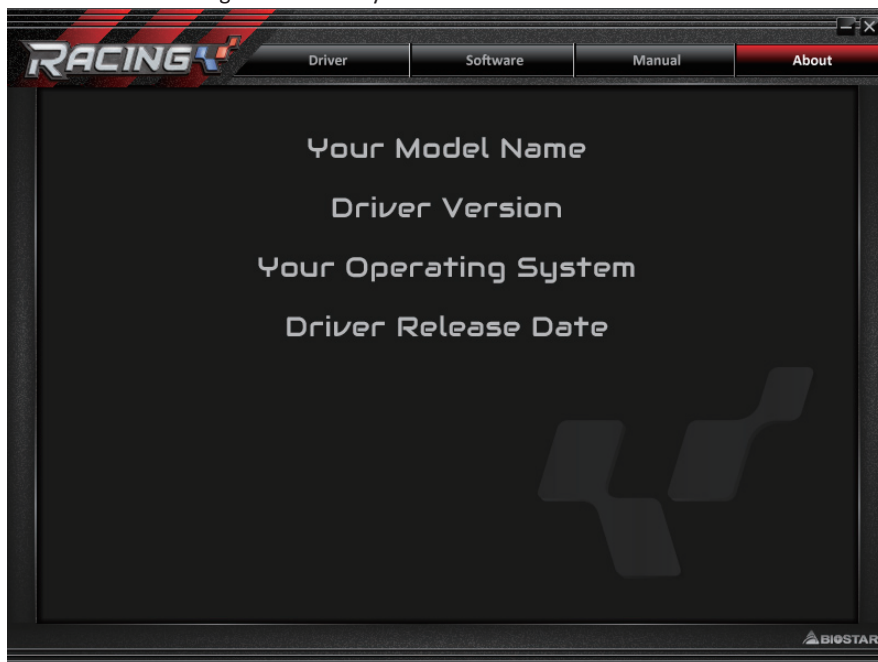


## Chapter 4: Useful help

### 4.1 Driver Installation

After you installed your operating system, please insert the Fully Setup Driver DVD into your optical drive and install the driver for better system performance.

You will see the following window after you insert the DVD



The setup guide will auto detect your motherboard and operating system.

#### **A. Driver Installation**

To install the driver, please click on the Driver icon. The setup guide will list the compatible driver for your motherboard and operating system. Click on each device driver to launch the installation program.

#### **B. Software Installation**

To install the software, please click on the Software icon. The setup guide will list the software available for your system, click on each software title to launch the installation program.

#### **C. Manual**

Aside from the paperback manual, we also provide manual in the Driver DVD. Click on the Manual icon to browse for available manual.

#### **Note**

- » If this window didn't show up after you insert the Driver DVD, please use file browser to locate and execute the file *SETUP.EXE* under your optical drive.
- » You will need Acrobat Reader to open the manual file. Please download the latest version of Acrobat Reader software from <http://get.adobe.com/reader/>



## 4.2 AMI BIOS Beep Code

### Boot Block Beep Codes

Number of Beeps	Description
Continuing	Memory sizing error or Memory module not found

### POST BIOS Beep Codes

Number of Beeps	Description
1	Success booting.
8	Display memory error (system video adapter)

## 4.3 AMI BIOS post code

Code	Description
10	PEI Core is started
11	Pre-memory CPU initialization is started
15	Pre-memory North Bridge initialization is started
19	Pre-memory South Bridge initialization is started
2B	Memory initialization. Serial Presence Detect (SPD) data reading
2C	Memory initialization. Memory presence detection
2D	Memory initialization. Programming memory timing information
2E	Memory initialization. Configuring memory
2F	Memory initialization (other).
31	Memory Installed
32	CPU post-memory initialization is started
33	CPU post-memory initialization. Cache initialization
34	CPU post-memory initialization. Application Processor(s) (AP) initialization
35	CPU post-memory initialization. Boot Strap Processor (BSP) selection
36	CPU post-memory initialization. System Management Mode (SMM) initialization
37	Post-Memory North Bridge initialization is started
3B	Post-Memory North Bridge initialization (North Bridge module specific)
4F	DXE IPL is started
60	DXE Core is started
F0	Recovery condition triggered by firmware (Auto recovery)
F1	Recovery condition triggered by user (Forced recovery)
F2	Recovery process started
F3	Recovery firmware image is found
F4	Recovery firmware image is loaded
E0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)
E1	S3 Boot Script execution
E2	Video repost
E3	OS S3 wake vector call
60	DXE Core is started
61	NVRAM initialization
62	Installation of the South Bridge Runtime Services
63	CPU DXE initialization is started
68	PCI host bridge initialization
69	North Bridge DXE initialization is started
6A	North Bridge DXE SMM initialization is started

Code	Description
70	South Bridge DXE initialization is started
71	South Bridge DXE SMM initialization is started
72	South Bridge devices initialization
78	South Bridge DXE Initialization (South Bridge module specific)
79	ACPI module initialization
90	Boot Device Selection (BDS) phase is started
91	Driver connecting is started
92	PCI Bus initialization is started
93	PCI Bus Hot Plug Controller Initialization
94	PCI Bus Enumeration
95	PCI Bus Request Resources
96	PCI Bus Assign Resources
97	Console Output devices connect
98	Console input devices connect
99	Super IO Initialization
9A	USB initialization is started
9B	USB Reset
9C	USB Detect
9D	USB Enable
A0	IDE initialization is started
A1	IDE Reset
A2	IDE Detect
A3	IDE Enable
A4	SCSI initialization is started
A5	SCSI Reset
A6	SCSI Detect
A7	SCSI Enable
A8	Setup Verifying Password
A9	Start of Setup
AB	Setup Input Wait
AD	Ready To Boot event
AE	Legacy Boot event
AF	Exit Boot Services event
B0	Runtime Set Virtual Address MAP Begin
B1	Runtime Set Virtual Address MAP End
B2	Legacy Option ROM Initialization
B3	System Reset
B4	USB hot plug
B5	PCI bus hot plug
B6	Clean-up of NVRAM
B7	Configuration Reset (reset of NVRAM settings)

## 4.4 Troubleshooting

Probable	Solution
1. There is no power in the system. Power LED does not shine; the fan of the power supply does not work. 2. Indicator light on keyboard does not shine.	1. Make sure power cable is securely plugged in. 2. Replace cable. 3. Contact technical support.
System is inoperative. Keyboard lights are on, power indicator lights are lit, and hard drives are running.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.
System does not boot from a hard disk drive, but can be booted from optical drive.	1. Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup. 2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.
System only boots from an optical drive. Hard disks can be read, applications can be used, but system fails to boot from a hard disk.	1. Back up data and applications files. 2. Reformat the hard drive. Re-install applications and data using backup disks.
Screen message shows "Invalid Configuration" or "CMOS Failure."	Review system's equipment. Make sure correct information is in setup.
System cannot boot after user installs a second hard drive.	1. Set master/slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.

### **CPU Overheated**

If the system shutdown automatically after power on system for seconds, that means the CPU protection function has been activated.

When the CPU is over heated, the motherboard will shutdown automatically to avoid a damage of the CPU, and the system may not power on again.

In this case, please double check:

1. The CPU cooler surface is placed evenly with the CPU surface.
2. CPU fan is rotated normally.
3. CPU fan speed is fulfilling with the CPU speed.

After confirmed, please follow steps below to relief the CPU protection function.

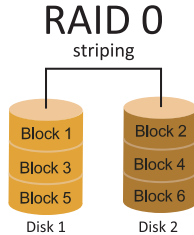
1. Remove the power cord from power supply for seconds.
2. Wait for seconds.
3. Plug in the power cord and boot up the system.

Or you can:

1. Clear the CMOS data. (See "Close CMOS Header: JCMOS1" section)
2. Wait for seconds.
3. Power on the system again.

## 4.5 RAID Functions

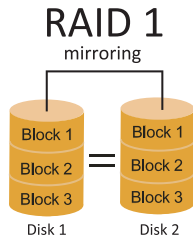
### RAID Definitions



In a RAID 0 system data are split up in blocks that get written across all the drives in the array. By using multiple disks (at least 2) at the same time, this offers superior I/O performance. This performance can be enhanced further by using multiple controllers, ideally one controller per disk.

#### Features and Benefits

- Drives: Minimum 2, and maximum is up to 6 or 8. Depending on the platform.
- Uses: Intended for non-critical data requiring high data throughput, or any environment that does not require fault tolerance.
- Benefits: provides increased data throughput, especially for large files. No capacity loss penalty for parity.
- Drawbacks: Does not deliver any fault tolerance. If any drive in the array fails, all data is lost.
- Fault Tolerance: No.
- Total Capacity: (Minimal. HDD Capacity) x (Connected HDDs Amount)

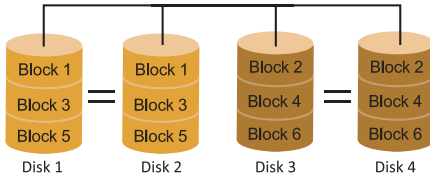


Data are stored twice by writing them to both the data disk (or set of data disks) and a mirror disk (or set of disks) . If a disk fails, the controller uses either the data drive or the mirror drive for data recovery and continues operation. You need at least 2 disks for a RAID 1 array.

#### Features and Benefits

- Drives: Minimum 2, and maximum is 2.
- Uses: RAID 1 is ideal for small databases or any other application that requires fault tolerance and minimal capacity.
- Benefits: Provides 100% data redundancy. Should one drive fail, the controller switches to the other drive.
- Drawbacks: Requires 2 drives for the storage space of one drive. Performance is impaired during drive rebuilds.
- Fault Tolerance: Yes.

## RAID 10 (1+0)



RAID 10 combines the advantages (and disadvantages) of RAID 0 and RAID 1 in one single system. It provides security by mirroring all data on a secondary set of disks (disk 3 and 4 in the drawing below) while using striping across each set of disks to speed up data transfers.

### Features and Benefits

- Drives: Minimum 4, and maximum is 6 or 8, depending on the platform.
- Benefits: Optimizes for both fault tolerance and performance, allowing for automatic redundancy. May be simultaneously used with other RAID levels in an array, and allows for spare disks.
- Drawbacks: Requires twice the available disk space for data redundancy, the same as RAID level 1.
- Fault Tolerance: Yes.

## APPENDIX: Specifications in Other Languages

### Arabic

المواصفات	
قاعدة وحدة المعالجة المركزية	المأخذ AM4 دعم CPU Ryzen / APU Ryzen AMD® * يرجى الرجوع إلى الموقع <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> لقائمة دعم المعالج CPU.
مجموعة الشرائح	AMD® X570
الذاكرة	تدعم قناة مزدوجة دي. دي. ار. DDR4 2667/2400/2133/1866 تدعم قناة مزدوجة دي. دي. ار. DDR4 4000+(OC)/3600(OC)/2933(OC) 4x دي. دي. ار. DDR4 فتحات الذاكرة المزدوجة DIMM، تتحمل كحد أقصى 128 جيجابايت ذاكرة كل فتحة مزدوجة DIMM تتحمل دون ECC و ECC Un-buffered 32/16/8 جيجابايت دي. دي. ار. DDR4 * 2667 - DDR4 * Ryzen وحدة المعالجة المركزية. * يرجى الرجوع إلى الموقع <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> لقائمة دعم الذاكرة.
التخزين	وصلة 6x SATAIII (6Gb/s) : تدعم RAID 10 / 1 / 0 AHCI 1 x فتحة (Key M) M.2 : تدعم SSD SATAIII (6Gb/s) تدعم 4 x 4.0 PCI-E (64 Gb/s) ، الذي يعتمد فقط على Ryzen 3rd Gen Matisse.
شبكة محلية LAN	RTL8111H 1000 / 100 / 10 ميجابايت / الثانية ، تحديد تلقائي ، النصف / القدرة القصوى المزدوجة
الترميز الصوتي	ALC887 7.1 قنوات عالية الدقة
ناقل متسلسل عام USB	منافذ 8 x ناقل متسلسل عام USB3.1 Gen1 (5Gb/s) 4 في الداخل والمخارج الخلفية و 4 من خلال الموزع الداخلي ) منافذ 6 x ناقل متسلسل عام USB 2.0 (2 في الداخل والمخارج الخلفية و 4 من خلال الموزع الداخلي )
فتحات التوسع	2 x فتحة منفذ الملحقات الإضافية PCIe 3.0 x 1 1 x فتحة منفذ الملحقات الإضافية PCIe 3.0 x 16 : يدعم وضع 2x (PEX16_2) : الدعم X4 الممرات مع معالجات AMD® Ryzen™ الثانية والثالثة 1 x فتحة منفذ الملحقات الإضافية PCIe 4.0 x 16 (PEX16_1) * ملحوظة : الدعم x16 (x16, x8) الممرات مع معالجات AMD® Ryzen™ الثانية والثالثة يدعم x8 حارات مع AMD® Ryzen™ مع معالجات Graphics Vega Radeon * وفقا لوحدات المعالجة المركزية المختلفة لها سرعات مختلفة * ملحوظة: سرعة PCIe 4.0 فقط لنظام AMD® Ryzen™ 3rd Gen Matisse.
الداخل والمخارج الخلفية	1 x PS/2 لوحة المفاتيح للكمبيوتر فتحة توصيل عدد 1 x واجهة مرئية رقمية HDMI فتحة توصيل عدد 1 x واجهة مرئية رقمية VGA فتحة لتوصيل عدد 1 x الشبكة المحلية LAN فتحة توصيل عدد 4 x ناقل متسلسل عام USB 3.1 Gen1 (5Gb/s) فتحة توصيل عدد 2 x ناقل متسلسل عام USB 2.0 فتحة توصيل عدد 3 x جاك للصوت
الداخل والمخارج الداخلية	وصلة 6 x SATA III (6.0Gb/s) موزع 2 x ناقل متسلسل عام USB 2.0 ( كل موزع يتحمل فتحتين ناقل متسلسل عام USB 2.0) موزع 2 x ناقل متسلسل عام USB3.1 Gen1 (5Gb/s) ( كل موزع يتحمل فتحتين ناقل متسلسل عام USB3.1 Gen1) وصلة للطاقة 1 x 8 دبائيس وصلة للطاقة 1 x 24 دبوس وصلة 1 x مروحة تبريد وحدة المعالجة المركزية وصلة 1 x مراوح تبريد المنظومة (سائيريدج الحرارة بالوعة : يتوفر هذا الموصل فقط لمروحة سائيريدج الحرارة بالوعة). موزع 1 x اللوحة الأممية موزع 1 x الصوت الأممي موزع 1 x سيموس مباشر موزع 1 x فتحة تسلسلية موزع 2 x LED (5V/12V)
عامل الشكل	عامل شكل مدد التكنولوجيا المتقدمة ATX ، 305 x 243 مم
أنظمة التشغيل المدعومة	ويندوز 10(64bit) بيوستار BIOSSTAR تحفظ بحق إضافة أو إزالة الدعم لأي نظام تشغيل مع أو بدون أنظار.

## German

Spezifikationen	
CPU-Unterstützung	Anschluss-AM4 für AMD® Ryzen APU/ Ryzen CPU * Bitte konsultieren Sie <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> für CPU-Unterstützungsliste
Chipset	AMD® X570
Festplattenspeicher	Unterstützt zweikanaliges DDR4 1866/2133/2400/2667 Unterstützt zweikanaliges DDR4 2933(OC)/3200(OC)/3600(OC)/4000+(OC) 4 x DDR4 DIMM-SpeicherSlot, Max. Unterstützung bis zu 128 GB-Speicher Jedes DIMM unterstützt nicht-ECC und ECC Un-gepuffert 8/16/32 GB DDR4-Module * DDR4 - 2667 nur für Ryzen CPU. * Bitte konsultieren Sie <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> für Speicherunterstützung Liste.
Arbeitsspeicher	6x SATA III 6Gb-Verbindung : Unterstützt AHCI & RAID 0,1,10 1x M.2-Slot (Key M) : Unterstützt SATA III (6,0 Gb/s) SSD Unterstützt PCI-E 4.0 x4 (64 Gb/s), Das hängt nur von Ryzen 3. Generation Matisse.
LAN	RTL8111H 10/ 100/ 1000 Mb Auto-Negotiation, Halb- / Voll-Duplex-fähig
Audio-Codec	ALC887 7.1 Kanäle, HD-Audio
USB	8x USB 3.1 Gen1 (5Gb/s)-Port (4 hintere I/Os und 4 via interne Header) 6x USB 2.0-Port (2 hintere I/Os und 4 via interne Header)
Erweiterungsanschlüsse	2x PCIe 3.0 x1-Slot 1x PCIe 3.0 x16-Slot: Unterstützt den x4-Modus (PEX16_2) : Unterstützt x4-Bahnen mit AMD® Ryzen™ Prozessoren der 2. und 3. Generation. 1x PCIe 4.0 x16-Slot (PEX16_1) * Hinweis : Unterstützt x16 (x16, x8)-Bahnen mit AMD® Ryzen™ Prozessoren der 2. und 3. Generation. Unterstützt x8-Bahnen mit AMD® Ryzen™ mit Radeon Vega-Grafikprozessoren. * Je nach CPU gibt es unterschiedliche Geschwindigkeiten. * Hinweis: PCIe 4.0-Geschwindigkeit nur für AMD® Ryzen™ 3rd Gen Matisse.
Hintere I/Os	1x PS/2-Keyboard-Port 1x HDMI-Port 1x VGA-Port 1x LAN-Port 4x USB 3.1 Gen1 (5Gb/s)-Port 2x USB 2.0-Port 3x Audio Jack
Interne I/Os	6x SATA III 6.0Gb/s-Verbindung 2x USB 2.0-Header (jeder Header unterstützt 2 USB 2.0-Ports) 2x USB 3.1 Gen1 (5Gb/s)-Header (jeder Header unterstützt 2 USB 3.1 Gen1-Ports) 1x 8-Pin-Stromverbindung 1x 24-Pin-Stromverbindung 1x CPU-Ventilatorverbindung 1x System-Ventilatorverbindung 1x System-Ventilatorverbindung (Southbridge-Kühlkörper-Ventilatorverbindung : Dieser Anschluss ist nur für Southbridge-Kühlkörperlüfter verfügbar.) 1x Header für Frontpanel 1x Header für Frontaudio 1x Header für klares CMOS 1x Serieller Port-Header 2x Header LED (12V/5V)
Formfaktor	ATX Formfaktor, 305 mm x 243 mm
OS-Unterstützung	Windows 10(64bit) Biostar reserves the right to add or remove support for any OS with or without notice

## Russian

Спецификации	
Поддержка центрального процессора	Сокет AM4 для процессоров AMD® Ryzen APU/ Ryzen CPU * Перечень поддержки центрального процессора смотрите на <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> .
Набор микросхем	AMD® X570
Память	Поддерживает двухканальный DDR4 1866/2133/2400/2667 Поддерживает двухканальный DDR4 2933(OC)/3200(OC)/3600(OC)/4000+(OC) 4 гнезда платы памяти DDR4 DIMM, максимальная память до 128 Гб Каждый модуль DIMM поддерживает модуль не-ECC и ECC Un-buffered 8/16/32 Гб DDR4 * DDR4 - 2667 только для Ryzen CPU. * Перечень поддержки памяти смотрите на <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> .
Накопитель	Соединитель 6x SATA III 6 Гб/с : Поддерживает AHCI & RAID 0,1,10 1x гнезда M.2 (Key M) : Поддерживает SATA III (6.0 Гбит/с) SSD Поддерживает PCI-E 4.0 x4 (64 Гбит/с), который зависит только от Ryzen 3-го поколения Matisse.
Локальная сеть	RTL8111H Автосогласование 10/ 100/ 1000 Мб/с, работает в полно/полудуплексном режиме
Аудиокодек	ALC887 Каналы 7.1, высококачественное аудио
USB	8 портов USB 3.1 Gen1 (5Gb/s) - (4 сзади ввода-вывода и 4 через внутренние контакты) 6 портов USB 2.0 (2 сзади ввода-вывода и 4 через внутренние контакты)
Гнезда расшир.	2x гнезда PCIe 3.0 x1 1x PCIe 3.0 x16 гнездо: Поддерживает режим x4 (PEX16_2) : Поддерживает линии x4 с процессорами AMD® Ryzen™ 2-го и 3-го поколения. 1x гнезда PCIe 4.0 x16 гнездо (PEX16_1) * Заметка : Поддерживает линии x16 (x16, x8) с процессорами AMD® Ryzen™ 2-го и 3-го поколения. Поддерживает линий x8 с AMD® Ryzen™ с графическими процессорами Radeon Vega. * По разным процессорам будут иметь разные скорости. * Заметка: Скорость PCIe 4.0 только для AMD® Ryzen™ 3-го поколения Matisse.
Задняя плата ввода-вывода	1 клавиатура PS/2 1 порт HDMI 1 порт VGA 1 порт локальной сети 4 порта USB 3.1 Gen1 (5Gb/s) 2 порта USB 2.0 3 гнезд для подключения наушников
Внутр. Плата ввода-вывода	Соединитель 6x SATA III 6Гб/с 2 контакта USB 2.0 (каждый контакт поддерживает 2 порта USB 2.0) 2 контакта USB 3.1 Gen1 (5Gb/s) - (каждый контакт поддерживает 2 порта USB 3.1 Gen1) 1 8-выводный разъем питания 1 24-выводный разъем питания 1 разъем вентилятора ЦП 1 разъема вентилятора системы 1 разъема вентилятора системы (Разъем вентилятора радиатора южного моста : Este conector solo está disponible para el ventilador de disipador de calor Southbridge.) 1 контакт передней панели 1 контакт передней аудиопанели 1 контакт микросхемы Clear CMOS 1 контакт последовательного порта 2 контакт LED (12V/5V)
Конструктив	Форм-фактор ATX, 305 мм x 243 мм
Поддержка ОС	Windows 10(64bit) Biostar оставляет за собой право добавлять или удалять поддержку любой ОС, с уведомлением или без.



## Spanish

Especificaciones	
Compatibilidad con el procesador	Ranura AM4 Soporta AMD® Ryzen APU/ Ryzen CPU *Por favor consultar con <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> para la lista de compatibilidad con el procesador.
Tipo de Placa	AMD® X570
Memoria	Soporta DDR4 1866/2133/2400/2667 Doble Canal Soporta DDR4 2933(OC)/3200(OC)/3600(OC)/4000+(OC) Doble Canal 4x DDR4 DIMM Ranura de memoria Soporta hasta 128 GB Memoria Cada DIMM soporta un modulo non-ECC y ECC sin tampones 8/16/32 GB DDR4 * DDR4 - 2667 sólo para CPU Ryzen. *Por favor consultar con <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> para la lista de compatibilidad con el memoria.
Almacenamiento de información	Conector 6x SATA III (6Gb/s): Soporta AHCI & RAID 0,1,10 1x M.2 (Key M): Soporta SATA III (6.0Gb/s) SSD Soporta PCI-E 4.0 x4 (64Gb/s), que depende solo de Ryzen 3ra Gen Matisse.
LAN	RTL8111H 10/ 100/ 1000 Mb/s auto negociación, capacidad dúplex Mitad/Completo
Códec Audio	ALC887 Canales Audio de Alta Definición 7.1
USB	Ranura 8x USB 3.1 Gen1 (5Gb/s) - (4 en las entradas/salidas posteriores y 4 por los distribuidores internos) Ranura 6x USB 2.0 (2 en las entradas/salidas posteriores y 4 por los distribuidores internos)
Ranuras de Extinción	Ranura 2x PCIe 3.0 x1 Ranura 1x PCIe 3.0 x16: Soporta el modo x4 (PEX16_2) : Soporta carriles x4 con procesadores AMD® Ryzen™ de 2ª y 3ª generación. Ranura 1x PCIe 4.0 x16 (PEX16_1) * Nota : Soporta carriles x16 (x16, x8) con procesadores AMD® Ryzen™ de 2ª y 3ª generación. Soporta carriles x8 con AMD® Ryzen™ con procesadores Radeon Vega Graphics. * Según diferentes CPUs tendremos diferentes velocidades. * Nota: Velocidad PCIe 4.0 solo para AMD® Ryzen™ 3rd Gen Matisse.
Panel trasero de E/S	Teclado 1x PS/2 Ranura 1x HDMI Ranura 1x VGA Ranura 1x LAN Ranura 4x USB 3.1 Gen1 (5Gb/s) Ranura 2x USB 2.0 Socket audio 3x
Conectores en placa	Conector 6x SATA III 6Gb/s Distribuidor 2x USB 2.0 (cada distribuidor soporta 2 ranuras USB 2.0) Distribuidor 2x USB 3.1 Gen1 (5Gb/s) -(cada distribuidor soporta 2 ranuras USB 3.1 Gen1) Conector con 8 patillas x1 Conector con 24 patillas x1 Conector Ventilador procesador x1 Conector Ventilador Sistema x1 Conector Ventilador Sistema x1 (Conector Ventilador Disipador de calor Southbridge : Este conector solo está disponible para el ventilador de disipador de calor Southbridge.) Distribuidor Panel Frontal x1 Distribuidor Audio Frontal x1 Distribuidor CMOS Directo x1 Distribuidor Ranura Serie x1 Distribuidor LED (12V/5V) x2
Factor de Forma	Factor de Forma ATX, 305 mm x 243 mm
Soporte OS	Windows 10(64bit) Biostar reserva su derecho de añadir o retirar el soporte para cada OS con o sin notificación.

## Thai

คุณสมบัติ	
ซีพียู	ซีเอกซ์ AM4 สนับสนุน AMD® Ryzen APU/ Ryzen CPU * เข้าชมได้ที่ <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> สำหรับรายการซีพียูที่สนับสนุน
ชิพเซ็ต	AMD® X570
หน่วยความจำ	สนับสนุน Dual Channel DDR4 1866/2133/2400/2667 สนับสนุน Dual Channel DDR4 2933(OC)/3200(OC)/3600(OC)/4000+(OC) รองรับหน่วยความจำ 4 สล็อต DDR4 DIMM สูงสุดถึง 128 GB ทุก DIMM สนับสนุนโมดูล non-ECC และ ECC Un-buffered 8/16/32 GB DDR4 *DDR4 - 2667 เฉพาะสำหรับ Ryzen CPU * เข้าชมได้ที่ <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> สำหรับรายการหน่วยความจำที่สนับสนุน
สล็อตเรจ	6x SATA III พอร์ตเชื่อมต่อ (6Gb/s) : สนับสนุน AHCI & RAID 0,1,10 1x M.2 (Key M) สล็อต: สนับสนุน SATA III (6.0Gb/s) SSD สนับสนุน PCI-E 4.0 x4 (64Gb/s) ความเร็วซึ่งขึ้นอยู่กับ Ryzen 3rd Gen Matisse เท่านั้น.
แลน	RTL8111H 10/ 100/ 1000 Mb/s การเจรจาอัตโนมัติ, ความสามารถในการเพล็กซ์ Half / Full
ออดิโอ โคเดก	ALC887 7.1 Channels, High Definition Audio
ยูเอสบี	8x USB 3.1 Gen1 (5Gb/s) พอร์ต (4 พอร์ตด้านหลัง I/O และ 4 พอร์ต ผ่านพอร์ตเชื่อมต่อด้านใน) 6x USB 2.0 พอร์ต (2 พอร์ตด้านหลัง I/O และ 4 พอร์ต ผ่านพอร์ตเชื่อมต่อด้านใน)
สล็อตขยายเพิ่มเติม	2x PCIe 3.0 x1 สล็อต 1x PCIe 3.0 x16 สล็อต: รองรับโมดูล x4 (PEX16_2) : สนับสนุน x4 เลนด้วย AMD® Ryzen™ โปรเซสเซอร์ 2 และ 3 Gen. 1x PCIe 4.0 x16 สล็อต (PEX16_1) * ทั้งสองสล็อต : สนับสนุน x16 (x16, x8) เลนด้วย AMD® Ryzen™ โปรเซสเซอร์ 2 และ 3 Gen. สนับสนุน x8 เลนด้วย AMD® Ryzen™ พร้อมตัวประมวลผลกราฟิก Radeon Vega. * ตามซีพียูที่แตกต่างกันจะมีความเร็วแตกต่างกัน. * ทั้งสองสล็อต: PCIe 4.0 speed เฉพาะสำหรับAMD® Ryzen™ 3rd Gen Matisse.
พอร์ต I/O ด้านหลัง	1x PS/2 คีย์บอร์ด พอร์ต 1x HDMI พอร์ต 1x VGA พอร์ต 1x LAN พอร์ต 4x USB 3.1 Gen1 (5Gb/s) พอร์ต 2x USB 2.0 พอร์ต 3x Audio Jack
พอร์ต I/O ด้านใน	6x SATA III (6Gb/s) พอร์ตเชื่อมต่อ 2x USB 2.0 พอร์ตเชื่อมต่อ (หัวเชื่อมต่อทุกตัวรองรับ 2 พอร์ต USB 2.0) 2x USB 3.1 Gen1 (5Gb/s) พอร์ตเชื่อมต่อ (หัวเชื่อมต่อทุกตัวรองรับ 2 พอร์ต USB 3.1 Gen1) 1x 8-Pin Power พอร์ตเชื่อมต่อ 1x 24-Pin Power พอร์ตเชื่อมต่อ 1x พอร์ตเชื่อมต่อ CPU Fan 1x พอร์ตเชื่อมต่อระบบ Fan 1x พอร์ตเชื่อมต่อระบบ Fan (คอนเนคเตอร์พัดลม Southbridge Heatsink : คอนเนคเตอร์นี้ใช้ได้สำหรับพัดลม Southbridge Heatsink เท่านั้น) 1x พอร์ตเชื่อมต่อแผ่นด้านหน้า 1x พอร์ตเชื่อมต่อออดิโอด้านหน้า 1x พอร์ต Clear CMOS 1x พอร์ตเชื่อมต่อ Serial Port 2x พอร์ต LED (12V/5V)
รูปแบบจากโรงงาน	ขนาด ATX จากโรงงาน, 243 มม. x 305 มม.
สนับสนุน OS	Windows 10(64bit) Biostar ขอสงวนสิทธิ์ในการเพิ่มหรือลดการสนับสนุนสำหรับระบบปฏิบัติการ OS ต่างๆ โดยไม่ต้องแจ้งให้ทราบล่วงหน้า



## FCC 条款

依照 FCC 条款第 15 部分的规定，本装置已经通过测试并且符合 Class B 级数字装置的限制。此条款限制了在安装过程中可能造成的有害射频干扰并提供了合理的防范措施。本装置在使用时会产生无线射频辐射，如果没有依照本手册的指示安装和使用，可能会与无线通讯装置产生干扰。然而，并不保证在特定的安装下不会发生任何干扰。

如果关闭和重新开启本设备后，仍确定本装置造成接收广播或电视的干扰，用户可以使用以下列表中的一种或多种方法来减少干扰：

- 重新安装或调整接收天线。
- 增加本设备与接收设备之间的距离。
- 连接设备连接到不同的插座以便于两个设备使用不同的回路。
- 咨询经销商或富有经验的无线电工程师，以获得更多资讯。

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### CE 符合性简短声明

我们声明此产品符合现行标准，并满足 2004/108/CE，2006/95/CE 和 1999/05/CE 指令规定的所有基本要求。




HDMI、HDMI高画质多媒体介面及HDMI 标志为HDMI Licensing Administrator, Inc. 在美国及其他国家的商标或注册商标。




防静电操作规则

静电可能严重损坏您的设备，在处理主板以及其它的系统设备的时候要特别注意，避免和主板上的系统组件的不必要接触，保证在抗静电的环境下工作，避免静电放电可能对主板造成损坏，当在您的机箱中插入或者移除设备时，请保证电源处于断开状态，厂商对于不遵照本操作规则或者不遵守安全规范而对主板造成的损坏不负责。



**警告**

主板易受静电损坏  
请遵守操作规则



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# 第一章：主板介绍

## 1.1 前言

感谢您选购我们的产品，在开始安装主板前，请仔细阅读以下安全指导说明：

- 选择清洁稳定的工作环境。
- 操作前请确保计算机断开电源。
- 从防静电袋取出主板之前，先轻触安全触地器或使用触地手腕带去除静电以确保安全。
- 避免触摸主板上的零件。手持电路板的边缘，不要折弯或按压电路板。
- 安装之后，确认没有任何小零件置于机箱中，一些小的零件可能引起电流短路并可能损坏设备。
- 确保计算机远离危险区域，如：高温、潮湿、靠近水源的地方。
- 计算机的工作温度应保持在0-45℃之间
- 为避免受伤，请注意以下幾點：  
主板或连接器上尖銳的針腳  
机箱上的粗糙边缘和尖角  
破损的线缆可能引起短路

## 1.2 包装清单

- Serial ATA数据线 x4
- ATX机箱后置I/O面板 x1
- 安装指南 x1
- 驱动光盘 x1 (包括安装驱动)

---

### 注意

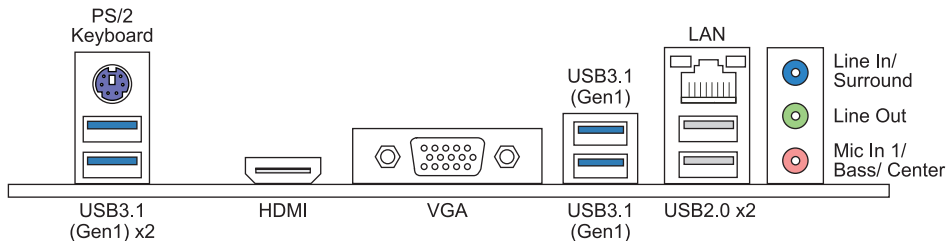
» 此清单可能因销售区域或主板型号不同而异，相关标配详情请咨询当地经销商。

---

## 1.3 主板特性

规格	
CPU支援	Socket AM4 支持 AMD Ryzen APU / Ryzen CPU 请访问 <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> 获取CPU的支持列表。
芯片组	AMD® X570
内存	支持双通道DDR4 1866/2133/2400/2667 支持双通道DDR4 2933(OC)/3200(OC)/3600(OC)/4000+(OC) 4个DDR4 DIMM插槽，最大内存容量为128GB 每个DIMM支持非ECC 和 ECC Un-buffered 8/ 16/ 32 GB DDR4内存模组 * DDR4 - 2667仅限于Ryzen CPU。 * 请访问 <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> 获取内存的支持列表。
存储器	6个SATA III接口 (6Gb/s)：支持 AHCI & RAID 0, 1, 10 1个M.2 (Key M)插槽： 支持 SATA III (6.0Gb/s) SSD 支持PCI-E 4.0 x4 (64Gb/s)速度，仅取决于Ryzen第三代 Matisse。
网络	RTL8111H 10/ 100/ 1000 Mb/s自适应传输模式，半双工/全双工工作模式
音效	ALC887 8声道音频输出，支持高清音频
USB	8个USB 3.1 Gen1 (5Gb/s) 端口(背板4个端口，板载接头支持4个端口) 6个USB 2.0端口(背板2个端口，板载接头支持4个端口)
扩展槽	2个PCIe 3.0 x1插槽 1个PCIe 3.0 x16插槽：支持x4模式(PEX16_2) * 备注： 支持使用AMD® Ryzen™ 第2/ 3代处理器x4通道。 1个PCIe 4.0 x16插槽(PEX16_1) * 备注： 支持使用AMD® Ryzen™ 第2/ 3代处理器x16(x16, x8)通道。 支持使用AMD® Ryzen™ 和带有Radeon Vega Graphics处理器x8通道。 * 根据不同的CPU则会呈现不同的速度。 * 备注：PCIe 4.0仅适用于AMD® Ryzen™ 3rd Gen Matisse。
背板接口	1个PS/2键盘接口 1个HDMI端口 1个VGA端口 1个LAN端口 4个USB 3.1 Gen1 (5Gb/s)端口 2个USB 2.0端口 3个音频插孔
板载接口	6个SATA III接口 (6Gb/s) 2个USB2.0接头(每个接头支持2个USB2.0端口) 1个USB 3.1 Gen1 (5Gb/s)接头(每个接头支持2个USB3.1 Gen1端口) 1个电源接口(8针) 1个电源接口(24针) 1个CPU风扇接头 1个系统风扇接头 1个系统风扇接头 (南桥散热器风扇接头：此连接器仅适用于南桥散热器风扇) 1个前置面板接头 1个前置音频接头 1个清空CMOS数据接头 1个串行端口接头 2个LED接头(12V/5V)
主板尺寸	ATX Form Factor · 305 mm x 243 mm
操作系统支持	Windows 10(64bit) * 如有增加或减少任何OS支持，Biostar保留不预先通知的权利。

## 1.4 后置面板接口

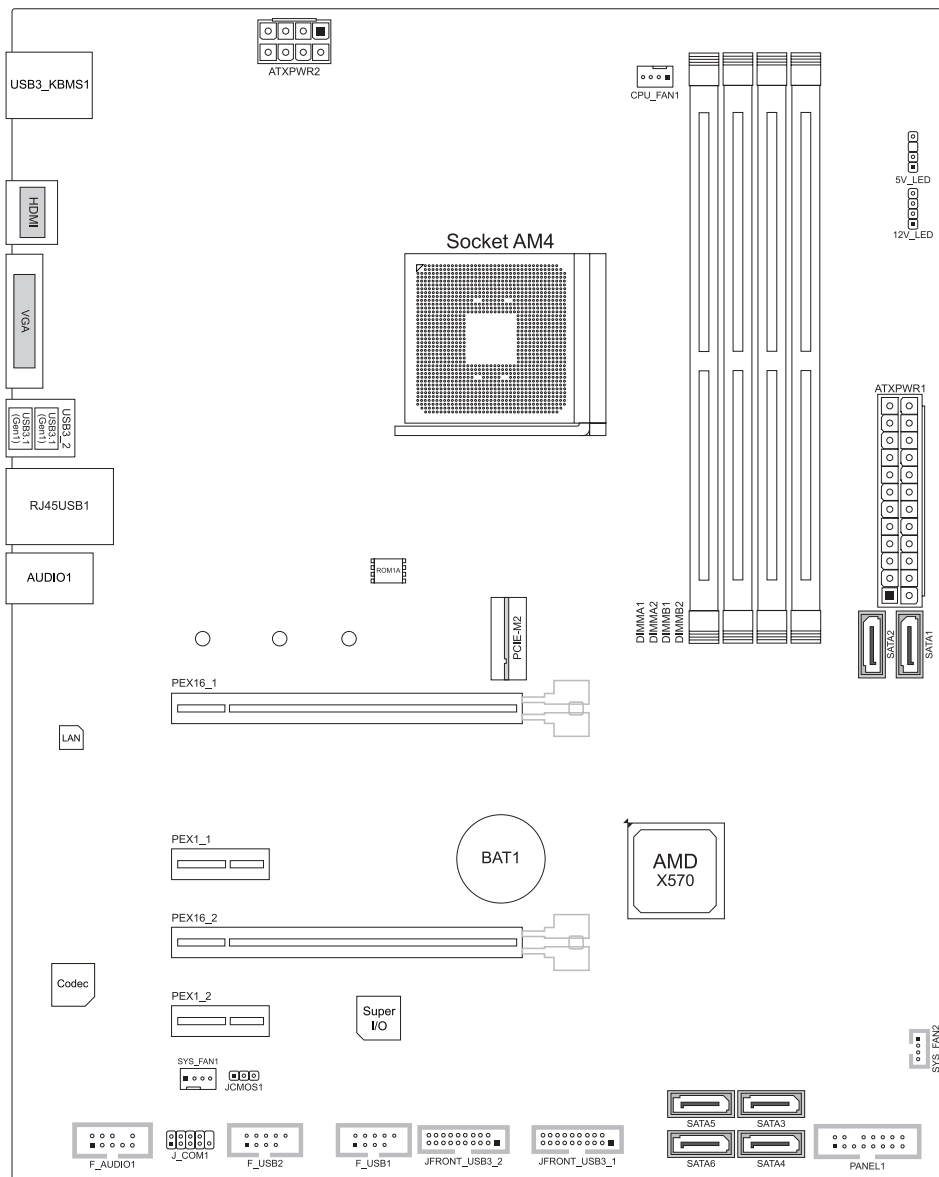


### 注意

- » 带集成显卡的AMD系列处理器才支持HDMI / VGA输出端口。
- » 由于音频芯片支持高保真音频规格，各音频插座的功能由软件定义，上面所列出的各音频插孔的输入/输出功能表示其默认设置。当连接外部麦克风到音频接口时，请使用Line In 和Mic In 插孔。
- » 最高分辨率：  
HDMI: 4096 x 2160 @24Hz，符合HDMI 1.4规范  
VGA: 1920 x 1200 @60Hz
- » Line In / Side的扬声器配置选项：Line In仅限于5.1声道 / Side仅限于7.1声道。
- » 当使用前置HD音频插孔并插入耳机/麦克风时，后置声音将自动禁用。



## 1.5 主板布局图



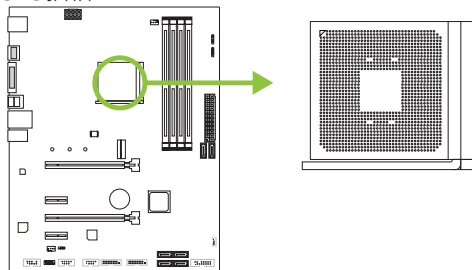
## 注意

» ■ 标示为针脚1

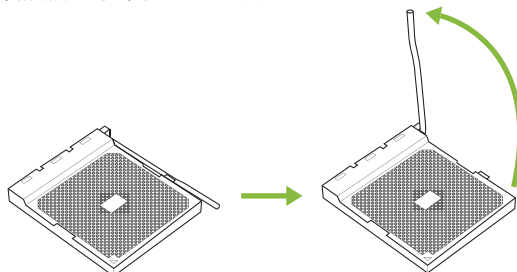
## 第二章：硬件安装

### 2.1 中央处理器(CPU)

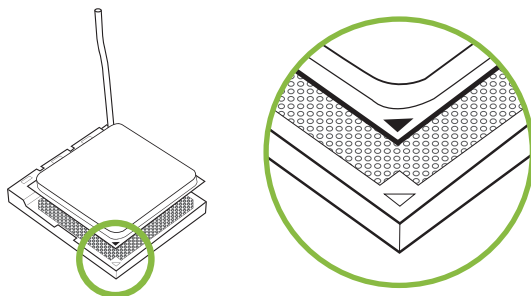
步骤1: 找到主板上的CPU插槽。



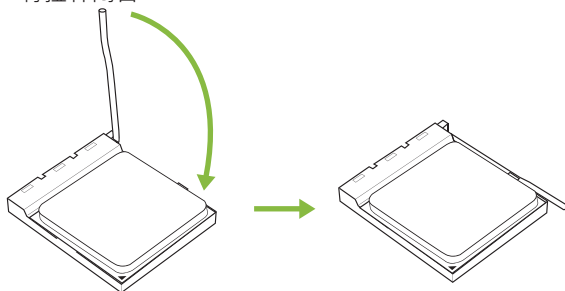
步骤2: 将固定拉杆从插槽处水平拉起至90度。



步骤3: 找到插槽上的白色三角，CPU上的金点应指向此白色三角，CPU必须按正确的方向放入。



步骤4: 固定CPU，将拉杆闭合。



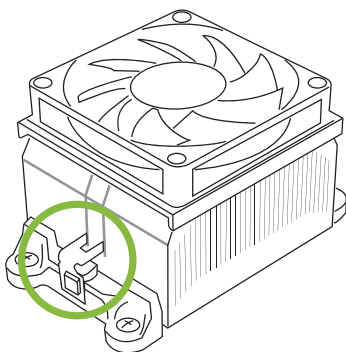
**注意**

» 请于拔除CPU插槽之前，关闭电源。

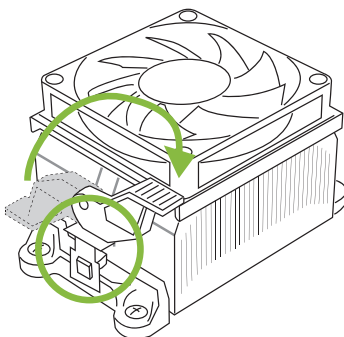
## 2.2 散热片

### <类型A>

步骤 1: 将散热片和风扇组件放置在支架上。散热片夹对准插座固定凸耳，再将弹簧夹扣到固定凸耳上。

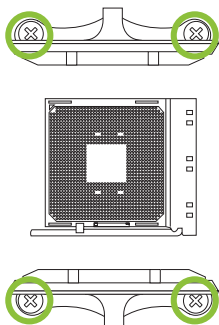


步骤2: 将另一边的固定夹向下压，扣住支架上的塑胶凸耳。然后固定，使风扇和散热片扣住支架底座。

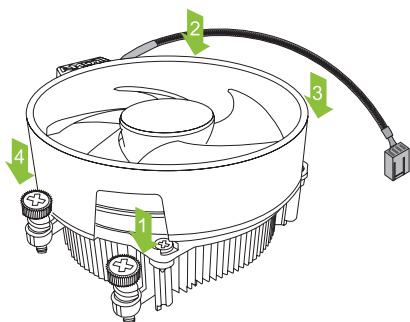


## <类型B>

步骤 1: 取下主板上的散热片和风扇组件支架, 并保留散热风扇的铁背板于主板下方。



步骤2: 将散热片和风扇组件放置于CPU上方, 调整方向使风扇电缆最靠近CPU风扇连接器, 参照示意图之顺序将螺丝锁入, 完成散热片风扇的安装。



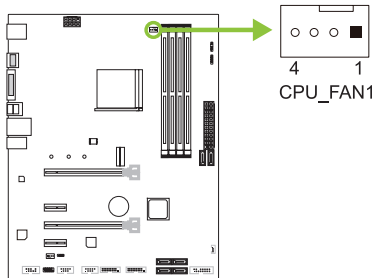
### 注意

- » 请务必连接CPU风扇接口。
- » 请参照CPU散热片的安装手册获取正确的安装信息。

## 2.3 风扇接头

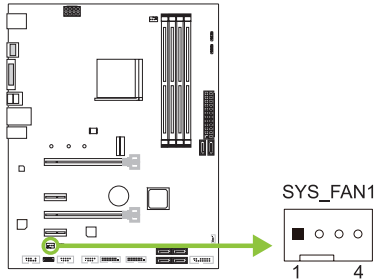
此风扇接头支持电脑内置的冷却风扇，风扇引线和插头可能因制造商而异。

### CPU\_FAN1: CPU 风扇接头



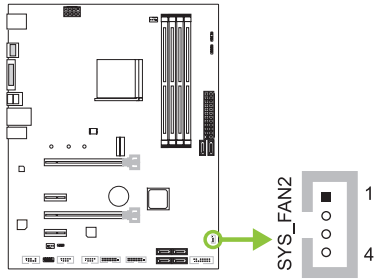
PWM 模式	
针	定义
1	接地
2	+12V
3	Sense
4	Speed Control Signal

### SYS\_FAN1: 系统风扇接头



PWM 模式	
针	定义
1	接地
2	+12V
3	Sense
4	Speed Control Signal

### SYS\_FAN2: 系统风扇接头(南桥散热器风扇接头)



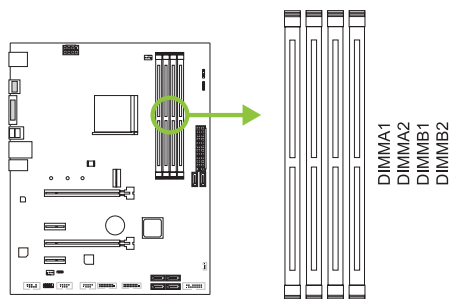
DC 模式	
针	定义
1	NC
2	Sense
3	Voltage Control
4	接地

#### 注意

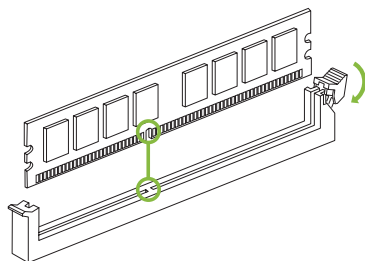
- » CPU\_FAN1·SYS\_FAN1支持4针脚和3针脚接口；接线时请注意红线是正极需接到第二个针脚，黑线接地需接到GND针脚。
- » SYS\_FAN2连接器仅适用于南桥散热器风扇。

## 2.4 系统内存

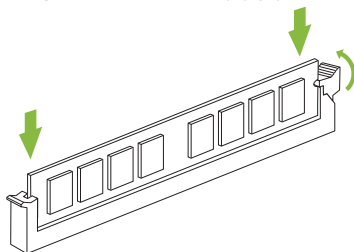
### DDR4内存模组



步骤1: 向外推开固定夹，打开DIMM插槽。将DIMM按顺序放在插槽上，DIMM上的切口须与插槽凹口匹配。



步骤2: 垂直插入DIMM并固定好，直到固定夹跳回原位，DIMM就位。



#### 注意

» 如果DIMM未顺利插入，请勿强行按压。将DIMM拔出，再重插一次。

内存容量

DIMM插槽位置	模组	总内存
DIMMA1	8GB/16GB/32GB	最大为 128GB.
DIMMA2	8GB/16GB/32GB	
DIMMB1	8GB/16GB/32GB	
DIMMB2	8GB/16GB/32GB	

双通道内存安装

为激活主板双通道功能，使用内存模组必须符合以下要求：成对安装相同密度的内存模组。如下表所示

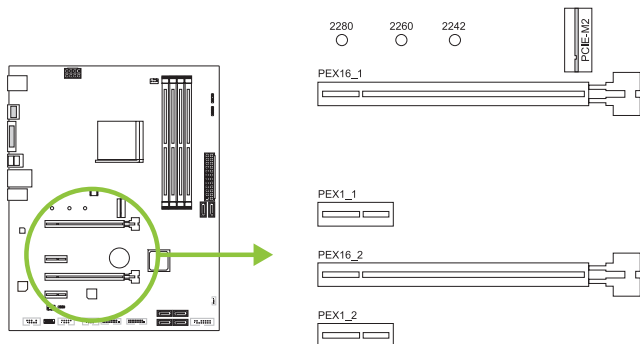
双通道状态	DIMMA1	DIMMA2	DIMMB1	DIMMB2
Enabled	O	X	O	X
Enabled	X	O	X	O
Enabled	O	O	O	O

(“O”表示内存已安装，“X”表示内存未安装。)

注意

» 当安装多个内存模块时，我们建议使用相同品牌和容量的内存於主板上。

## 2.5 扩展槽



### PEX16\_1: PCI-Express (Gen3/ Gen4) x16 插槽

- 符合PCI-Express 3.0规范，同步单向最大理论带宽为16GB/s，总带宽为32GB/s。
- 符合PCI-Express 4.0规范，同步单向最大理论带宽为32GB/s，总带宽为64GB/s。(仅限Matisse)
- 支持使用AMD® Ryzen™ 第2/ 3代处理器x16(x16, x8)通道。
- 支持使用AMD® Ryzen™ 和带有Radeon Vega Graphics处理器x8通道。

### PEX16\_2: PCI-Express Gen3 x16 插槽 (x4 通道)

- 符合PCI-Express 3.0规范，同步单向最大理论带宽为4GB/s，总带宽为8GB/s。

### PEX1\_1/1\_2: PCI-Express Gen3 x1 插槽

- 符合PCI-Express 3.0规范。
- 同步单向最大理论带宽为1GB/s，总带宽为2GB/s。

### PCI-E-M2: M.2 (Key M) 插槽

- M.2插槽支持M.2 Type 2242/2260/2280 SSD模块。安装M.2模块前请将六角柱放到正确的位置。
- 支持M.2 SATA III (6.0 Gb/s) 模块与M.2 PCI Express Gen4 x4模块(64 Gb/s)，仅取决于Ryzen 3rd Gen Matisse。

#### 注意

» PCIe 4.0仅适用于AMD® Ryzen™ 第3代Matisse。

## 安装扩展卡

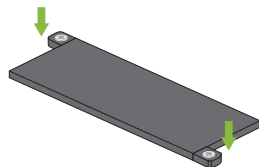
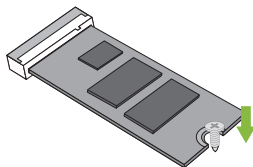
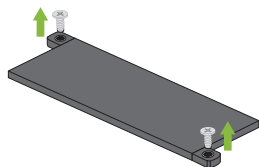
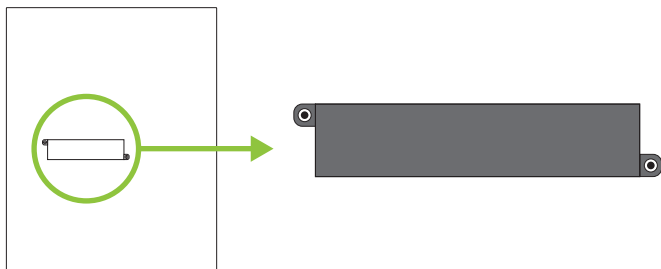
请参照以下步骤安装扩展卡：

- 安装扩展卡前请阅读扩展卡的相关指示说明。
- 打开电脑机箱后盖，移除螺丝和插槽支架。
- 将扩展卡按照正确的方向插入插槽，直到扩展卡完全就位。
- 用螺丝将扩展卡的金属支架固定到机箱后置面板。
- 还原电脑机箱后盖。
- 开机。如有必要，可为扩展卡更改BIOS设置。
- 安装扩展卡的驱动。



## 安装M.2 COOLING 散热片

移除M.2 COOLING 散热片步骤：



### 步骤 1：

在M.2 COOLING散热片的边缘有两个螺丝，并在插入M.2 SSD卡之前拧开它们。

### 步骤 2：

将M.2 SSD卡插入M.2插槽，并将其拧到主板上。

### 步骤 3：

安装M.2 SSD卡后，将M.2 COOLING散热片放在M.2插槽上，并拧紧螺钉将散热器固定到主板上。

### 注意

» 请遵循M.2 COOLING 散热片安装步骤，移除M.2 COOLING 散热片后，即可安装M.2 SSD卡。

## 2.6 跳线设置

下图展示如何设置跳线。当跳帽放置在针脚上时，跳线为闭合(close)状态。否则跳线为断开(open)状态。

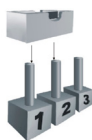
Pin 打开



Pin 闭合

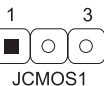
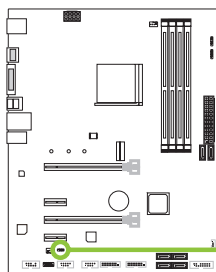


Pin 1-2 闭合



### JCMOS1: 清空CMOS 跳线

用户可清空CMOS数据并恢复BIOS安全设置，请按照以下步骤操作以免损坏主板。



Pin 1-2 闭合: 正常操作(默认)



Pin 2-3 闭合: 清空CMOS数据

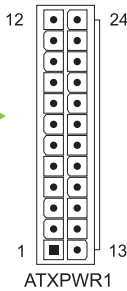
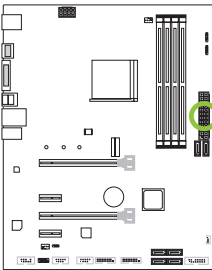
#### 清空CMOS数据过程:

1. 断开AC电源。
2. 将跳线设置成2-3接脚闭合。
3. 等待5秒钟。
4. 将跳线设置成1-2接脚闭合。
5. 接通AC电源。
6. 开机然后按下<Del>键进入BIOS设置。

2.7 接口和插槽

ATXPWR1: ATX电源接口

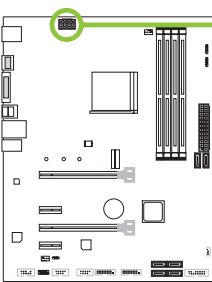
为了更好的兼容性，我们建议使用标准的ATX24-pin电源供应此接口的电源。



针	定义	针	定义
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	接地	3	接地
16	PS_ON	4	+5V
17	接地	5	接地
18	接地	6	+5V
19	接地	7	接地
20	NC	8	PW_OK
21	+5V	9	唤醒电压+5V
22	+5V	10	+12V
23	+5V	11	+12V
24	接地	12	+3.3V

ATXPWR2: ATX电源接口

此接口给CPU电路提供+12V电压。若CPU电源插头为4针脚，请将其插入ATXPWR2的1-2-5-6针脚。



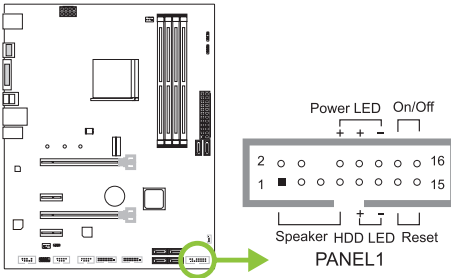
针	定义
1	+12V
2	+12V
3	+12V
4	+12V
5	接地
6	接地
7	接地
8	接地

注意

- » 开机前，请确保ATXPWR1、ATXPWR2接口都已插上电源。
- » 电压不足可能导致系统不稳或者外围设备不能正常运行。当配置使用大功率设备的系统时，建议您使用带有大功率输出的电源。

## PANEL1: 前置面板接头

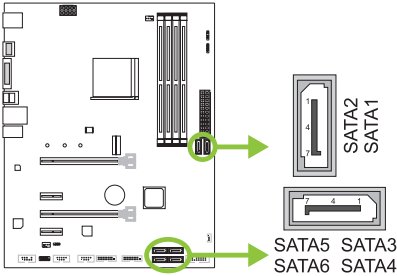
此16针脚接口包含开机，重启，硬盘指示灯，电源指示灯和扬声器接口。



针	定义	功能	针	定义	功能
1	+5V	扬声器接口	2	N/A	N/A
3	N/A		4	N/A	N/A
5	N/A		6	N/A	N/A
7	扬声器	硬盘指示灯	8	Power LED (+)	电源指示灯
9	HDD LED (+)		10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	接地	重启按钮	14	电源按钮	开机按钮
15	Reset control		16	接地	

## SATA1/2/3/4/5/6: 串行ATA 6.0 Gb/s 接口

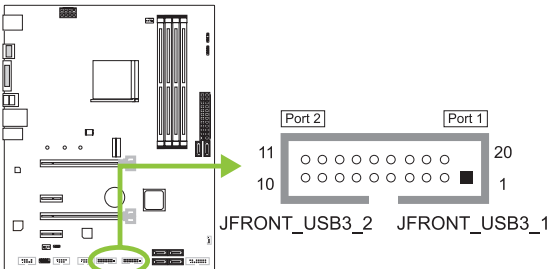
此接口通过SATA数据线连接SATA硬盘。



针	定义
1	接地
2	TX+
3	TX-
4	接地
5	RX-
6	RX+
7	接地

## JFRONT\_USB3\_1/3\_2: 前置面板USB 3.1 Gen1 (5Gb/s)接头

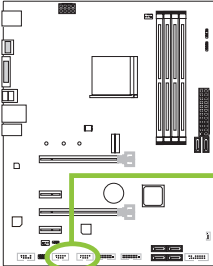
PC前置面板支持附加的USB数据线，也可连接即插即用外围设备。



针	定义	针	定义
1	VBUS0	11	D2+
2	SSRX1-	12	D2-
3	SSRX1+	13	接地
4	接地	14	SSTX2+
5	SSTX1-	15	SSTX2-
6	SSTX1+	16	接地
7	接地	17	SSRX2+
8	D1-	18	SSRX2-
9	D1+	19	VBUS1
10	ID	20	Key

F\_USB1/2: 前置面板USB 2.0接头

PC前置面板支持附加的USB数据线，也可连接即插即用外围设备。



2 10

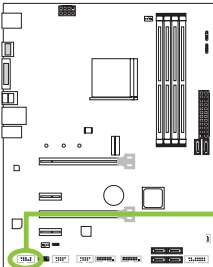
1 9

F\_USB2 F\_USB1

针	定义
1	+5V (fused)
2	+5V (fused)
3	USB-
4	USB-
5	USB+
6	USB+
7	接地
8	接地
9	Key
10	NC

F\_AUDIO1: 前置面板音频接头

此接头可连接音频输出数据线，支持HD(高清)音频和AC' 97。



2 10

1 9

F\_AUDIO1

HD Audio		AC' 97	
针	定义	针	定义
1	Mic Left in	1	Mic In
2	接地	2	接地
3	Mic Right in	3	Mic Power
4	GPIO	4	Audio Power
5	Right line in	5	RT Line Out
6	Jack Sense	6	RT Line Out
7	Front Sense	7	Reserved
8	Key	8	Key
9	Left line in	9	LFT Line Out
10	Jack Sense	10	LFT Line Out

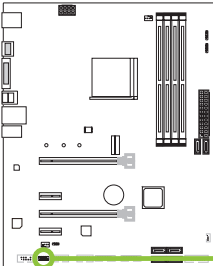
注意

» 建议您连接前置高清音频插孔，享用主板高清音频功能。

» 如果要连接AC' 97前置音频输出数据线，请关闭“前置面板插孔检测功能”。此功能在系统音频工具中可见。

J\_COM1: 串行端口

此主板有一个串行端口可接出RS-232接头。



2 10

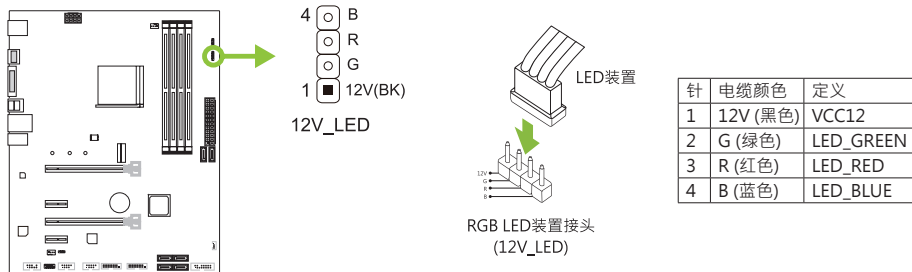
1 9

J\_COM1

针	定义
1	Carrier detect
2	Received data
3	Transmitted data
4	Data terminal ready
5	Signal ground
6	Data set ready
7	Request to send
8	Clear to send
9	Ring indicator
10	Key

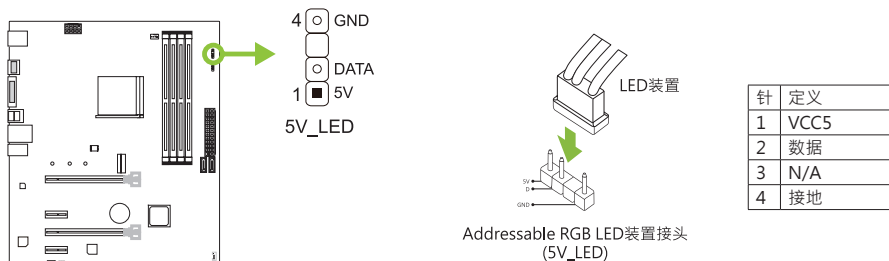
## 12V\_LED: RGB LED装置 (5050 SMD) 接头

此接头提供12V电源与RGB控制讯号，可连接RGB LED装置 (5050 SMD)。



## 5V\_LED: Addressable RGB LED装置 (WS2818B) 接头

此接头提供5V电源与数据控制讯号，可连接RGB LED装置 (WS2818B)。



### 注意

- » 确保正确将针脚连接到LED装置，错误的连接可能会损坏您的LED装置或主板。
- » 12V\_LED接头支持5050 RGB LED灯条，最大输出功率为3A (12V)。
- » 5V\_LED接头最多可支持300个LED WS2818B Addressable RGB LED灯条，最大输出功率为3A (5V)。
- » 请使用Vivid LED DJ软件控制LED。有关详细的软件设置信息，请参阅第3.3章。

## 2.8 LED灯

### LED灯

下面的LED灯由RACING GT EVO软件控制。请参考3.3章节的软件设置。



RGB LED 装置接头 (5V/12V)

## 第三章：UEFI BIOS和软件

### 3.1 UEFI BIOS设置

- BIOS设置程序可用于查看和更改计算机的BIOS设置。开机自检时，按<DEL>键可进入BIOS设置程序。
- 更多相关UEFI BIOS设置信息，请参考网站上的UEFI BIOS手册。

### 3.2 刷新BIOS

以下任意一种工具都可以刷新BIOS:

- BIOSTAR BIO-Flasher: 使用此工具，BIOS可通过硬盘上的文件刷新，USB驱动刷新，或者CD-ROM 刷新。
- BIOSTAR BIOS刷新工具: 能够在Windows 环境下自动刷新。使用此工具，BIOS可通过硬盘上的文件刷新，USB驱动刷新，CD-ROM 刷新或者从网站上的文件地址刷新。

#### BIOSTAR BIO-Flasher

##### 注意

- » 此工具仅允许可使用FAT32/16格式化或单个分区的存储设备。
- » 刷新BIOS时如关机或重启系统将导致系统引导失败。

使用BIOSTAR BIO-Flasher刷新BIOS

1. 进入网站下载与主板相匹配的最新BIOS文件。
2. 然后保存BIOS文件到U-盘。(仅支持FAT/FAT32格式)
3. 插入包含BIOS文件的U-盘到USB接口
4. 开机或重启后，在自检过程中按<F12>键。

5. 进入自检后，屏幕会弹出BIO-FLASHER工具。选择<fs0>搜索BIOS文件。

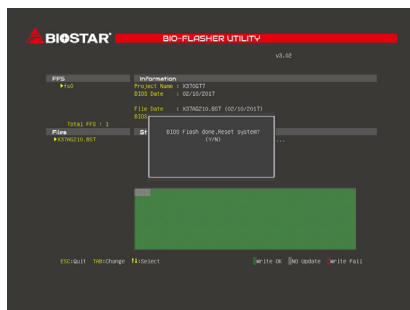


6. 选择合适的BIOS文件，并按“ Yes” 执行BIOS刷新程序。





7. BIOS刷新后会弹出是否重启系统的对话框。按<Y>重启系统



8. 系统引导并出现相关标识信息时，按<DEL>键进入BIOS设置。选择<Save & Exit>，使用<Restore Defaults>功能加载系统默认值，然后选择<Save Changes and Reset>来重启系统，完成BIOS刷新。

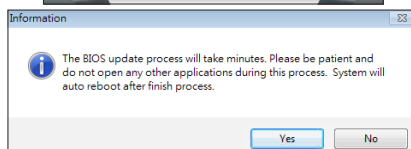
### BIOS刷新工具（通过网络）

1. 用DVD驱动安装BIOS Update Utility。
2. 使用此功能时，请确保电脑联网。

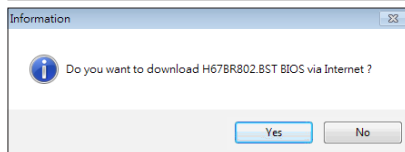


3. 打开BIOS刷新工具，然后点击“ Online Update”按钮。

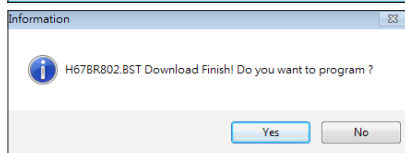
4. 屏幕弹出是否执行刷新BIOS程序的对话框，点击“ Yes”开始刷新BIOS。



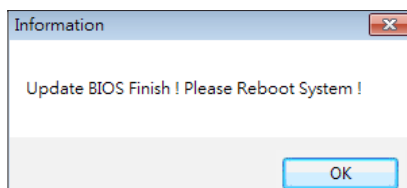
5. 如果BIOS有新版本，屏幕会弹出提示您下载最新版本的对话框。点击“ Yes”下载。



6. 完成下载后，屏幕弹出提示您刷新BIOS的对话框，点击“ Yes”开始刷新。



7. 刷新程序结束后，屏幕弹出提示您重启系统的对话框。点击“OK”重启系统。



8. 系统引导并出现相关标识信息时，按<DEL>键进入BIOS设置。选择<Save & Exit>，使用<Restore Defaults>功能加载系统默认值，然后选择<Save Changes and Reset>来重启系统，完成BIOS刷新。

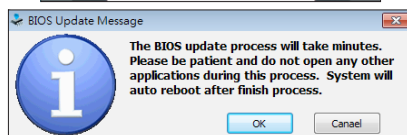
### BIOS刷新工具（通过BIOS文件）

1. 用DVD驱动安装BIOS刷新工具。
2. 从我们的网站[www.biostar.com.tw](http://www.biostar.com.tw)下载合适的BIOS。

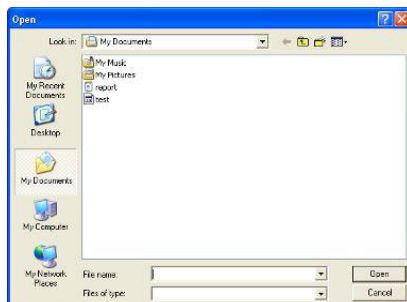
3. 在主页面打开BIOS Updat Utility，然后点击“Update BIOS”按钮。



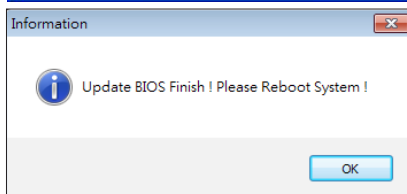
4. 屏幕弹出是否执行刷新BIOS程序的对话框，点击“OK”开始刷新BIOS。



5. 选择BIOS文件的存放目录。然后选择合适的BIOS文件，点击“Open”。刷新BIOS要花几分钟时间，请耐心等待。



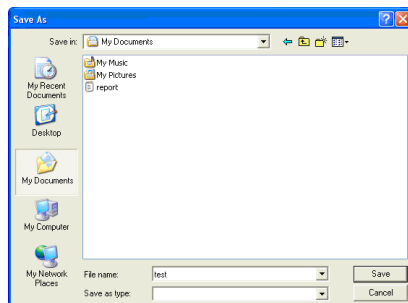
6. BIOS刷新过程结束后，点击“OK”重启系统。



7. 系统引导并出现相关标识信息时，按<DEL>键进入BIOS设置。  
选择<Save & Exit>，使用<Restore Defaults>功能加载系统默认值，然后选择<Save Changes and Reset>来重启系统，完成BIOS刷新。

### BIOS备份

点击BIOS备份按钮，选择存储备份文件的合适目录，然后点击“ Save”。



### 3.3 软件

#### 安装软件

1. 将光盘放入光驱，若Autorun功能已激活，驱动安装程序将会出现。
2. 选择Software Installation，然后点击各软件图标。
3. 根据屏幕上的指令完成安装。

#### 启动软件

安装程序完成后，桌面上将出现软件图标。请双击图标启动软件工具。

#### 注意

- » 所有软件的相关信息和内容若有变更，恕不另行通知。为使系统性能更佳，软件会不断升级。
- » 下面的图片和信息仅供参考，此主板的实际信息和设置可能与手册稍有差异。

#### BIOScreen 工具

此实用工具可以将开机画面个性化。您可以选择BMP格式来自定义计算机开机画面。



请参照以下步骤来更新开机画面：

- 加载画面(Load Image): 选择图片作为开机画面。
- 转换(Transform): 转换图片并预览。
- 更新BIOS(Update Bios): 将图片写入BIOS内存，然后完成更新。

## RACING GT EVO Utility

RACING GT EVO 软件集成几个映泰的实用程序並十分易于使用，允许用户同时无缝地配置这些实用程序。

### 注意

» RACING GT EVO 软件之选单内容将略有不同，具体项目配置取决于用户所使用的主板。

## 系统信息

提供您的基本系统信息的概述。



1. 时钟频率：显示核心频率，倍频和总线速度。
2. 主板：显示主板信息。
3. 处理器：显示处理器信息。
4. 内存：显示内存信息。

## 耳放调控

耳放调控允许您控制系统音量，调整阻抗设置（低/高增益），以优化您的耳机性能。讓您可以轻松享受高品质的声音。

设置需求：

1. 带有前置音频输出插孔的机箱。
2. 耳机或头戴式耳机。
3. Windows 7 (32/64bit)/ 8.1(64bit) / 10(64bit)操作系统。

安装指南：

1. 确保机箱前置音频线正确连接至主板上的前置音频接头。
  2. 从驱动DVD上安装RACING GT EVO软件。
  3. 将耳机或头戴式耳机连接至机箱前置或后部的音频输出接口，並启用RACING软件。
- » 如果您想使用AC' 97前置音频输出线，请禁用“前置面板插孔检测功能”。此功能在系统音频工具中可见。



1. 音量：可调节音量大小。
2. 静音：可切换到静音状态。
3. 增益开关：使用低阻抗耳机时调至低（LO），使用高阻抗耳机时调至高（HI）。

## 能效控制

GT Touch允许您在Windows环境中运行RACING GT EVO程序时调整正常、ECO和运动模式。



1. 常规模式：自动平衡系统性能与电源消耗。
2. 节能模式：稍微地降低系统性能以节省能源。
3. 高性能模式：以最大限度地提高系统性能。

## 炫彩灯控

炫彩LED可供调整Racing 盔甲LED灯、RGB LED装置的灯光模式。



1. LED灯效指挥官：允许您选择LED模式。

- 默认：所有设置都恢复为默认。(蓝光)
- RAZER：允许您连接到RAZER应用程序以同步主板灯。
  - » 使用RAZER模式时，关闭RACING GT软件，LED照明将返回默认状态。
  - » RAZER模式是通过与RAZER软件的连接实现LED照明同步。
  - » 必须安装RAZER软件才能使用RAZER模式。RAZER相关信息请到RAZER官方网站下载。
  - » 使用RAZER模式时，必须与RAZER相关设备和外围设备一起使用。

• RGB灯效同步：允许您同步LED类型项目设置。

2. LED类型：选择LED开启区块。

- 系统：显示系统LED灯。(Racing ARMOR灯)
- 12V LED：显示12V LED接头区块LED灯。(12V\_LED 装置)
- 5V LED：显示5V LED接头区块LED灯。(5V\_LED 装置)
- 内存灯效同步：显示内存灯效区块LED灯。(内存装置)

3. 打开/关闭：启用或禁用LED类型的所有项目。

4. 打开/关闭：允许您启用或禁用单个项目的LED装置。

5. 调色板：允许您自订LED灯的颜色。

6. LED明暗度：您可以调节LED的亮度。

7. 自动：LED将自动更改调色板和明暗度。

- » 使用自动模式时，调色板和LED明暗度将被禁用。



## 8. LED灯控模式：允许您选择LED灯的闪烁模式。

- **常亮**：LED灯持续点亮。
- **闪烁**：LED灯会以一个特定的频率闪烁。
- **动态**：LED灯慢慢地点亮和熄灭。
- **音乐闪烁**：LED灯会跟随你播放的音乐做闪烁。

» 使用RACING GT EVO程序之前，请确保您的扬声器或耳机正确连接到音频插孔。

**流星**：LED灯以特定频率滑动。

- **浪花**：LED灯以水波纹节奏呈现。
- **星空**：LED灯以特定的节奏闪烁。
- **闪电**：LED灯闪烁并以特定频率滑动。
- **彩虹**：LED灯以炫丽多彩的节奏律动。
- **极光**：LED灯显示柔和的光线并轻微闪烁。

## 9. 速度慢/快：允许您控制闪烁速度。

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### 注意

» 使用VIVID LED DJ，可独立控制四种LED类型区块，不同的LED类型将配置不同的闪烁模式。

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## 智能风扇

A.I.FAN实用程序允许使用者具有更多调整风扇操作模式的智能性，并自动检测不同的温度，使风扇以规定的速度运行，以获得最佳的冷却性能。



1. 温度：显示当前CPU和系统温度。
2. CPU1/2 RPM & SYSTEM1/2/3/4 RPM :  
单击按钮提供您设置CPU风扇和系统风扇的状态值。
3. Default：恢复默认您单个项目的更改值。
4. PWM/Temperature Panel :  
根据风扇PWM值对应CPU和系统温度来调节风扇转速。  
» 此项目允许您根据自己的喜好进行调整。
5. 用户选择：设置风扇属性的选择操作。
  - 自动：允许您调整自动检测模式。
  - DC：允许您调整直流（直流）模式。
  - PWM：允许您调整脉宽调制（PWM）模式。
6. 控制模式：允许您控制风扇的转动模式。
  - 积极：启用进取模式。
  - 安静：启用安静模式。
  - 手动：启用手动模式。
  - 全开：启用全开模式。

## 硬件监测

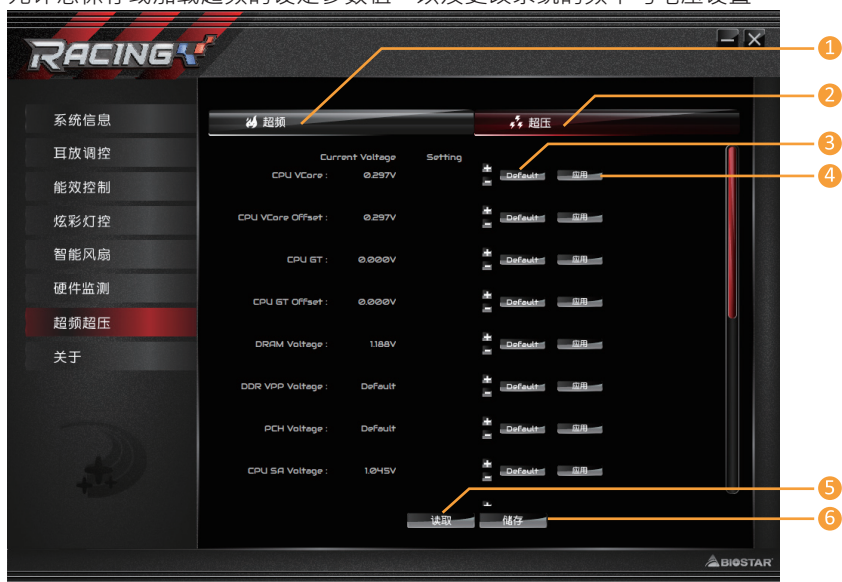
允许您监控硬件电压，风扇转速和温度。



1. 处理器温度/系统温度：显示当前CPU和系统温度。
2. 风扇转速：显示当前风扇速度。
3. 电压：显示CPU和内存的当前电压。

## 超频超压

允许您保存或加载超频的设置参数值，以及更改系统的频率与电压设置。



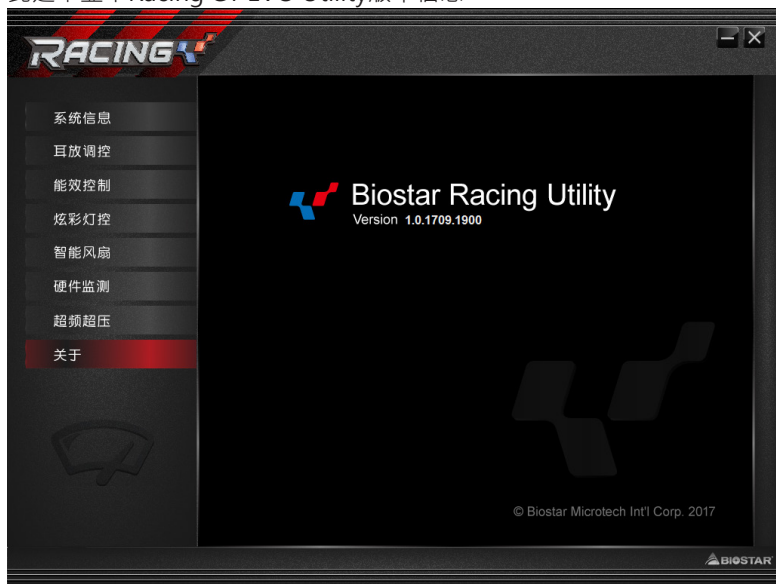
1. **超频**：您可以调节超频参数值。
2. **超压**：您可以调节电压参数值。
3. **Default**：所有设置都恢复为默认。
4. **应用**：应用当前的参数值。
5. **读取**：从文件载入参数值。
6. **储存**：存储参数值以供将来使用。

### 注意

- » 并非所有类型的CPU性能都能超出理想的超频设置，因CPU类型而异。
- » 超频是一个可选程序，而并非必须的；不建议无经验用户使用。因此，由于超频导致的任何硬件损坏我们不予负责。对超频性能我们也不做任何担保。

关于

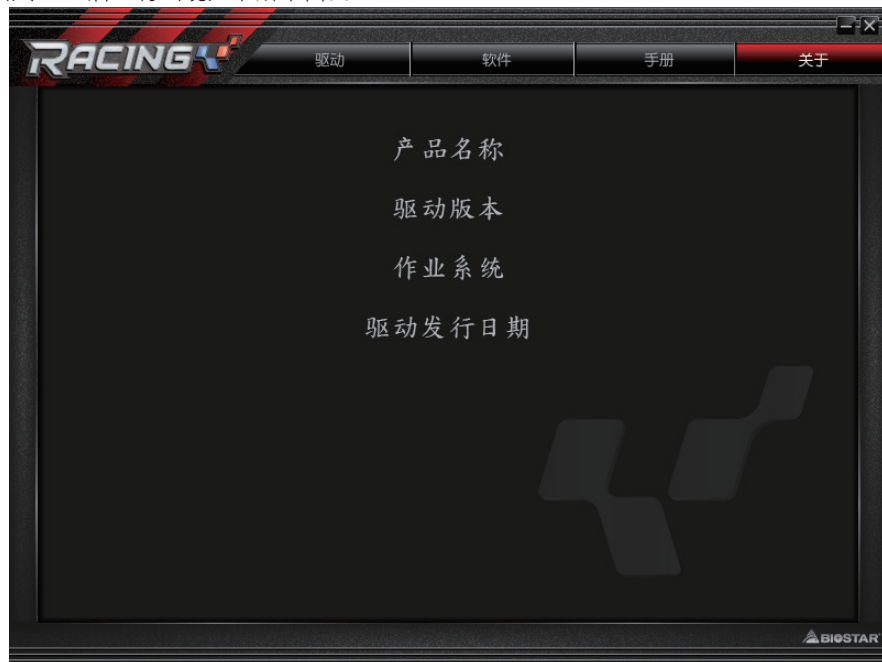
此选单显示Racing GT EVO Utility版本信息。



## 第四章：帮助信息

### 4.1 驱动程序安装注意事项

为获得更好的系统性能，在操作系统安装完成后，请插入您的系统驱动到光驱并安装。插入DVD后，将出现如下所示窗口。



此设置向导将自动检测您的主板和操作系统。

#### A. 驱动程序安装

安装驱动程序，请点击驱动器图标。设置向导将列出主板兼容驱动和操作系统。点击各设备驱动程序，以开始安装进程。

#### B. 软件安装

安装软件，请点击软件图标。设置向导将列出系统可用软件，点击各软件名称，以开始安装进程。

#### C. 使用手册

除了书本形式的手册，我们也提供光盘形式的使用指南。点击Manual图标，浏览可用相关使用指南。

#### 注意

- » 在插入驱动之后，如此窗口未出现，请用文件浏览器查找并执行SETUP.EXE文件。
- » 若需要Acrobat Reader打开manual文件，请从网站<http://get.adobe.com/reader/>下载最新版本的Acrobat Reader软件。

4.2 AMI BIOS 哔声代码

引导模块哔声代码

哔声次数	含义
持续哔声	持续哔声

BIOS 开机自检哔声代码

哔声次数	含义
1	系统引导成功
8	显存错误(系统视频适配器)

4.3 AMI BIOS 开机自检代码

代码	含义
10	PEI核心启动
11	CPU Pre-memory初始化启动
15	北桥Pre-memory初始化启动
19	南桥Pre-memory初始化启动
2B	内存初始化，读取SPD数据
2C	内存初始化，检测Memory presence
2D	内存初始化，编程内存时序信息
2E	内存初始化，配置内存
2F	内存初始化（其他）
31	内存安装完成
32	CPU post-memory初始化启动
33	CPU post-memory初始化，Cache初始化
34	CPU post-memory初始化，应用处理器初始化
35	CPU post-memory初始化，选择BSP
36	CPU post-memory初始化，系统管理模式初始化
37	北桥Post-Memory初始化启动
3B	北桥Post-Memory初始化
4F	DXE IPL启动
60	DXE核心启动
F0	固件引起的恢复条件(自动恢复)
F1	用户引起的恢复条件(强制恢复)
F2	恢复进程启动
F3	找到固件恢复图象
F4	加载固件恢复图象
E0	S3唤醒启动
E1	执行S3启动脚本
E2	重新发送影像
E3	系统S3待机导向
60	DXE内核启动
61	NVRAM初始化
62	安装南桥运行期
63	CPU DXE初始化启动
68	PCI HB初始化
69	北桥DXE初始化
6A	北桥DXE SMM初始化启动

代码	含义
70	南桥DXE初始化启动
71	南桥DXE SMM初始化启动
72	南桥设备初始化
78	南桥DXE初始化
79	ACPI模组初始化
90	引导设备选择阶段启动
91	驱动连接启动
92	PCI总线初始化启动
93	PCI总线热拔插控制器初始化
94	PCI总线列举
95	PCI总线请求资源
96	PCI总线分配资源
97	控制台输出设备连接
98	控制台输入设备连接
99	高级IO初始化
9A	USB初始化启动
9B	USB复位
9C	USB检测
9D	USB启用
A0	IDE初始化启动
A1	IDE复位
A2	IDE检测
A3	IDE启用
A4	SCSI初始化启动
A5	SCSI复位
A6	SCSI检测
A7	SCSI启用
A8	设置校对密码
A9	设置开始
AB	设置输入等待
AD	准备启动环境
AE	传统启动环境
AF	退出启动环境
B0	虚拟地址图开始
B1	虚拟地址图结束
B2	传统可选ROM初始化
B3	系统复位
B4	USB热拔插
B5	PCI总线热拔插
B6	清理NVRAM
B7	配置复位(NVRAM设置复位)

#### 注意

» 如此窗若出现表格未列出的代码，请联系我们的技术支持。



4.4 问题解答

问题	解决方法
1. 系统没有电，电源指示灯不亮，电源风扇不转动。 2. 键盘上的指示灯不亮。	1. 确定电源线是否接好。 2. 更换线材。 3. 联系技术支持。
系统不起作用。键盘指示灯亮，电源指示灯亮，硬盘正常运作。	用力按压内存两端，确保内存安置于插槽中。
系统不能从硬盘启动，能从光盘启动。	1. 检查硬盘与主板的连线，确定各连线是否确实接好，检查标准CMOS设置中的驱动类型。 2. 硬盘随时都有可能坏掉，所以备份硬盘数据是很重要的。
系统只能从光盘启动。硬盘能被读，应用程序能被使用，但是不能从硬盘启动。	1. 备份数据和应用程序。 2. 重新格式化硬盘。用后备盘重新安装应用程序和数据。
屏幕提示 “Invalid Configuration” 或 “CMOS Failure” 。 再次检查系统设备，确定设定是否正确安装了第二个硬盘	再次检查系统设备，确定设定是否正确
安装了第二个硬盘后，系统不能启动。	1. 正确设置主/从硬盘跳线。 2. 运行安装程序，选择正确的驱动类型。与驱动器厂商联系，寻求驱动兼容性的技术支持。

CPU过热保护系统

在开启系统数秒后如有自动关机的现象，这说明CPU保护功能已被激活。CPU过热时，防止损坏CPU，主机将自动关机，系统则无法重启。  
此种情况下，请仔细检查。

- 1. CPU 散热器平放在CPU表面。
- 2. CPU风扇能正常旋转。
- 3. CPU风扇旋转速度与CPU运行速度相符。

确认后，请按以下步骤缓解CPU保护功能。

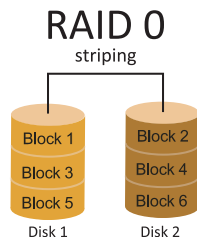
- 1. 切断电源数秒。
- 2. 等待几秒钟。
- 3. 插上电源开启系统。

或是:

- 1. 清除CMOS数据。(查看 “Close CMOS Header: JCMOS1” 部分)
- 2. 等待几秒钟。
- 3. 重启系统。

## 4.5 RAID 功能

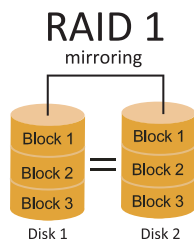
### RAID 定义



创建带区集，在同一时间内向多块磁盘写入数据，通过把数据分成多个数据块（Block）并行写入/读出多个磁盘以提高访问磁盘的速度分散到所有的硬盘中同时进行读写，在整个磁盘阵列建立过程中，以系统环境为基础，指数的大小决定了每块磁盘的容量。此技术可减少整个磁盘的存取时间和提供高速带宽。

#### 性能及优点

- 驱动器: 最少2块硬盘，最多达6块或8块，取决于平台。
- Uses: 使用RAID 0来提高磁盘的性能和吞吐量，但没有冗余或错误修复能力。
- 优点: 增加磁盘的容量。
- 缺点: 整个系统是非常不可靠的，如果出现故障，无法进行任何补救。整个数据都会丢失。
- 容错: 否。

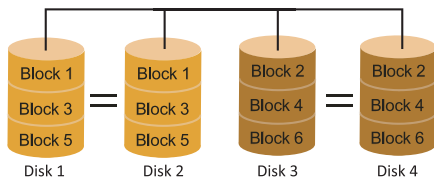


每次读写实际上是在磁盘阵列系统中(RAID 1)，通过2个磁盘驱动器并行完成的。RAID 1或镜像模式能够自动对数据进行备份，通过将一块硬盘中的数据完整复制到另外一块硬盘实现数据的冗余。假如由于硬盘的损坏，导致驱动失败，或是容量过大，RAID1可以提供一份数据备份。RAID 技术可以应用于高效方案，或者可以作为自动备份形式，代替冗长的，高价的且不稳定的备份形式。

#### 性能及优点

- 驱动器: 最少2块硬盘，最多2块。
- 使用: RAID 1是理想的小型数据库储备器或应用在有容错能力和小容量方面。
- 优点: 提供100%的数据冗余。即使一个磁盘控制器出现问题，系统仍然可以使用另外一个磁盘控制器继续工作。
- 缺点: 2个驱动器替代一个驱动器储存的空间，在驱动重建期间系统的性能有所下降。
- 容错: 是。

## RAID 10 (1+0)



RAID 10模式是对RAID 0/ RAID 1两种不同模式的结合，可以同时支持带区集和镜像，这样既可以提升速度又可以加强数据的安全性。

### 性能及优点

- 驱动器: 最少4块硬盘，最多6或8块。
- 优点: 容量和性能的优化允许冗余的自动化。在一个阵列，可以同时使用其它的RAID，并允许剩余的磁盘。
- 缺点: 数据冗余需要两倍可用磁盘空间，与RAID1相同。
- 容错: 是。

## 附录：产品中有毒有害物质或元素的名称及含量

部件名称	有毒有害物质或元素					
	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr(VI)）	多溴联苯（PBB）	多溴二苯醚（PBDE）
PCB板	○	○	○	○	○	○
结构件	○	○	○	○	○	○
芯片及其它主动零件	X	○	○	○	○	○
连接器	X	○	○	○	○	○
被动电子元器件	X	○	○	○	○	○
焊接金属	○	○	○	○	○	○
线材	○	○	○	○	○	○
助焊剂、散热膏、标签及其它耗材	○	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量在SJ/T11363-2006标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。

备注：在芯片及其它主动零件、连接器、被动电子元器件Pb栏位中有打X，表示Pb在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求，但均符合欧盟ROHS指令豁免条款。