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Ai sensi dell'art. 2 comma 3 del D.M. 275 del  
30/10/2002

Si dichiara che questo prodotto è conforme  
alle normative vigenti e soddisfa i requisiti  
essenziali richiesti dalle direttive  
2004/108/CE, 2006/95/CE e 1999/05/CE  
quando ad esso applicabili

Short Declaration of conformity  
We declare this product is complying with the  
laws in force and meeting all the essential  
requirements as specified by the directives  
2004/108/CE, 2006/95/CE and 1999/05/CE  
whenever these laws may be applied

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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 x2
- Rear I/O Panel for ATX Case x1
- Quick Installation Guide x1
- Fully Setup Driver DVD x1

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**Note**

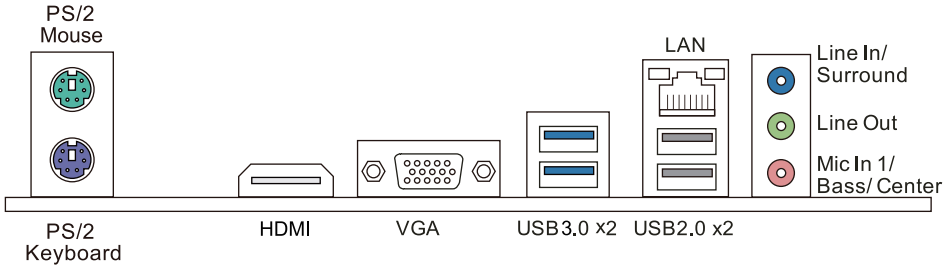
» *The package contents may be different due to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.*

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## 1.3 Specifications

| Specifications  |  |  |
|-----------------|--|--|
| CPU Support     | A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)   |  |
| Chipset         | AMD A70M FCH (A68N-5745 / A68N-5545)<br>AMD A68H (A68N-5600)   |  |
| Memory          | Supports Dual Channel DDR3 1333<br>2 x DDR3 DIMM Memory Slot, Max. Supports up to 32 GB Memory<br>Each DIMM supports non-ECC4/ 8/ 16 GB DDR3 module<br>* Please refer to <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> for Memory support list.   |  |
| Storage         | 4x SATA III Connector (6Gb/s) : Supports AHCI & RAID 0,1,10  |  |
| LAN             | Realtek RTL 8111H<br>10/ 100/ 1000 Mb/s auto negotiation, Half / Full duplex capability  |  |
| Audio Codec     | ALC887<br>7.1 Channels, High Definition Audio  |  |
| USB             | A68N-5745 / A68N-5545:<br>4x USB 3.0 port (2 on rear I/Os and 2 via internal headers)<br>6x USB 2.0 port (2 on rear I/Os and 4 via internal headers)<br>A68N-5600:<br>2x USB 3.0 port (2 on rear I/O)<br>6x USB 2.0 port (2 on rear I/Os and 4 via internal headers)   |  |
| Expansion Slots | 1x PCIe 2.0 x16 Slot (x8)  |  |
| Rear I/Os       | 1x PS/2 Mouse<br>1x PS/2 Keyboard<br>1x VGA Port<br>1x HDMI Port<br>1x LAN port<br>2x USB 3.0 Port<br>2x USB 2.0 Port<br>3x Audio Jack   |  |
| Internal I/Os   | A68N-5745 / A68N-5545:<br>4x SATA III 6.0Gb/s Connector<br>2x USB 2.0 Header (each header supports 2 USB 2.0 ports)<br>1x USB 3.0 Header (each header supports 2 USB 3.0 ports)<br>1x 4-Pin Power Connector<br>1x 24-Pin Power Connector<br>1x CPU Fan Connector<br>1x System Fan Connector<br>1x Front Panel Header<br>1x Front Audio Header<br>1x Clear CMOS Header<br>1x Serial Port Header | A68N-5600:<br>4x SATA III 6.0Gb/s Connector<br>2x USB 2.0 Header (each header supports 2 USB 2.0 ports)<br>1x 4-Pin Power Connector<br>1x 24-Pin Power Connector<br>1x CPU Fan Connector<br>1x System Fan Connector<br>1x Front Panel Header<br>1x Front Audio Header<br>1x Clear CMOS Header<br>1x Serial Port Header |
| Form Factor     | Mini-ITX Form Factor, 170 mm x 170 mm  |  |
| OS Support      | Windows 7/ 8/ 8.1/10<br>Biostar reserves the right to add or remove support for any OS with or without notice.   |  |

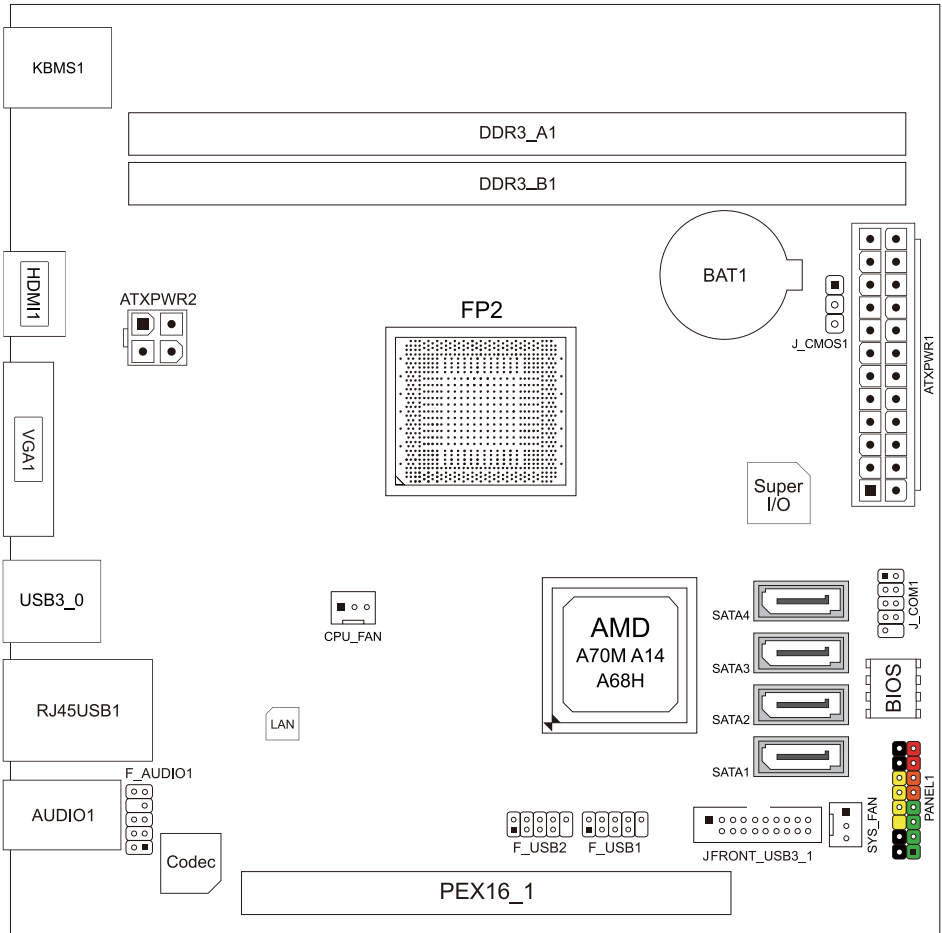
## 1.4 Rear Panel Connectors




### 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 (Blue) and Mic In (Pink) audio jack.
- » Maximum resolution  
HDMI: 1920 x 1080 @60Hz / 1920 x 1200 @60Hz, compliant with HDMI 1.4a  
VGA: 1920 x 1200 @60Hz
- » When using the front HD audio jack and plug in the headset, the rear sound will be automatically Disabled.

## 1.5 Motherboard Layout



### Note

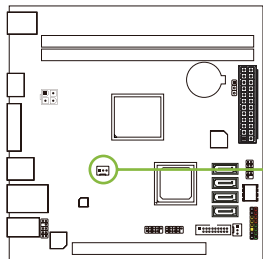
- »  represents the 1st pin.
- » JFRONT\_USB3\_1 header only for A68N-5745 / A68N-5545

## Chapter 2: Hardware installation

### 2.1 Connect Cooling Fans

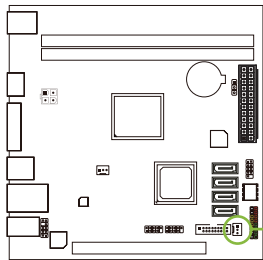
These fan headers support cooling-fans built in the computer. The fan cable and connector may be different according to the fan manufacturer.

#### CPU\_FAN: CPU Fan Header (Smart Fan)



| Pin | Assignment         |
|-----|--------------------|
| 1   | Ground             |
| 2   | +12V               |
| 3   | FAN RPM rate sense |

#### SYS\_FAN: System Fan Header



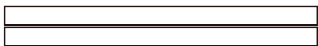
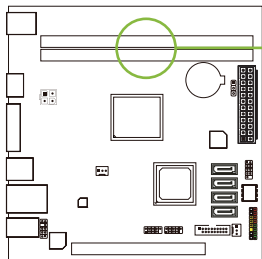
| Pin | Assignment         |
|-----|--------------------|
| 1   | Ground             |
| 2   | +12V               |
| 3   | FAN RPM rate sense |

#### Note

» CPU\_FAN, SYS\_FAN support 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).

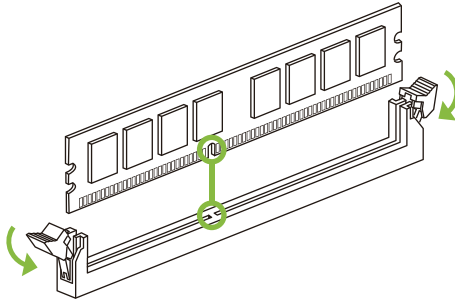
### 2.2 Install System Memory

#### DDR3 Modules

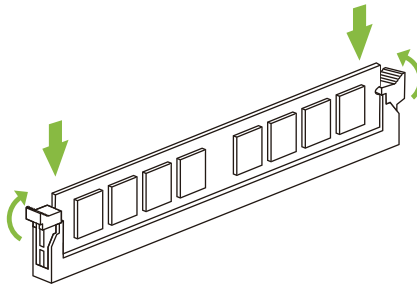


DDR3\_A1  
DDR3\_B1

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 | DDR3 Module  | Total Memory Size |
|----------------------|--------------|-------------------|
| DDR3_A1              | 4GB/8GB/16GB | Max is 32GB.      |
| DDR3_B1              | 4GB/8GB/16GB |                   |

## 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 | DDR3_A1 | DDR3_B1 |
|---------------------|---------|---------|
| Disabled            | O       | X       |
| Disabled            | X       | O       |
| Enabled             | O       | O       |

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

**Note**

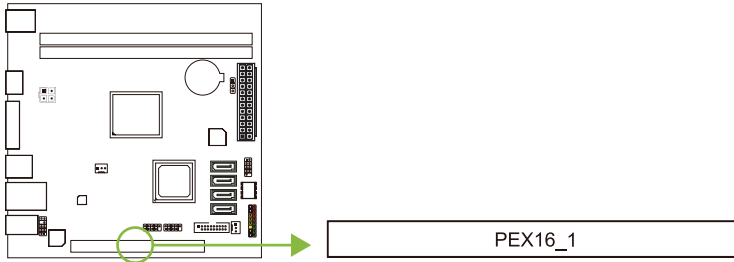
» When installing more than one memory module, we recommend to use the same brand and capacity memory on this motherboard.



## 2.3 Expansion Slots

### PEX16\_1: PCI-Express Gen2 x16 Slot

- PCI-Express 2.0 compliant.
- Theoretical maximum bandwidth using two slots simultaneously is 8GB/s for each slot, a total of 16GB/s.



### 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.

## 2.4 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

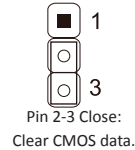
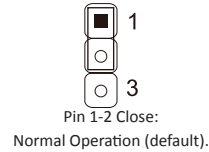
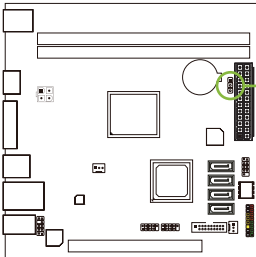


Pin 1-2 closed



### 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.



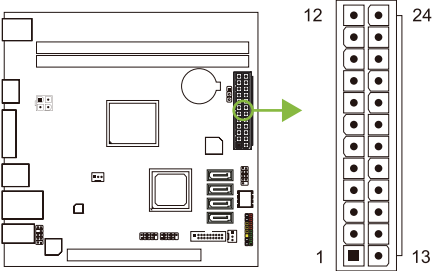
#### Clear CMOS Procedures:

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.

2.5 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.

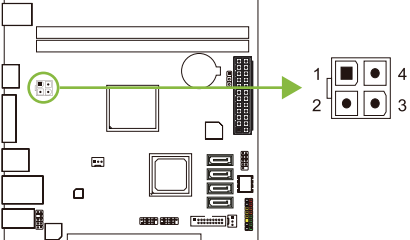


The diagram shows the ATXPWR1 connector on the motherboard and a detailed view of its 24-pin layout. The pins are numbered 1 to 24, with 13 at the bottom and 24 at the top. A green arrow points from the motherboard header to the detailed pin layout.

| 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

This connector will provide +12V to CPU power circuit.



The diagram shows the ATXPWR2 connector on the motherboard and a detailed view of its 4-pin layout. The pins are numbered 1 to 4, with 1 at the top left and 4 at the top right. A green arrow points from the motherboard header to the detailed pin layout.

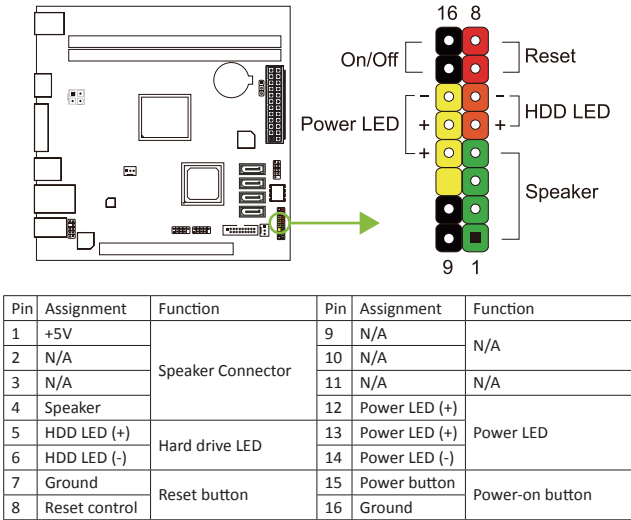
| Pin | Assignment |
|-----|------------|
| 1   | +12V       |
| 2   | +12V       |
| 3   | Ground     |
| 4   | Ground     |

► Note

- » Before you power on the system, please make sure that both ATXPWR1 and 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.

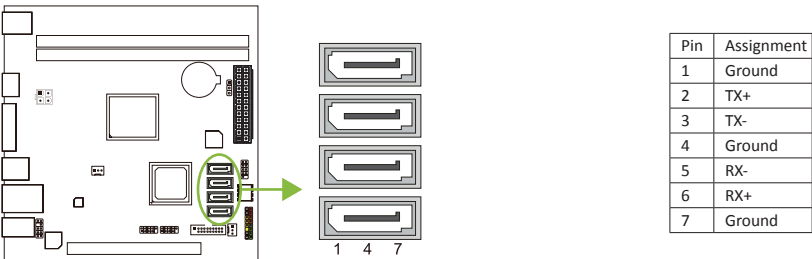
### PANEL1: Front Panel Header

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



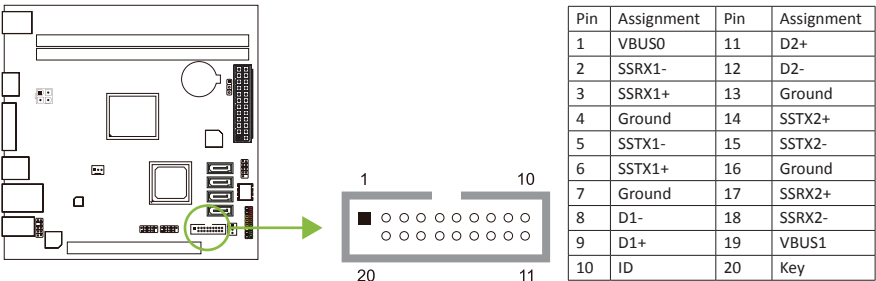
### SATA1~SATA4: Serial ATA 6.0 Gb/s Connectors

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



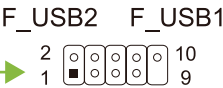
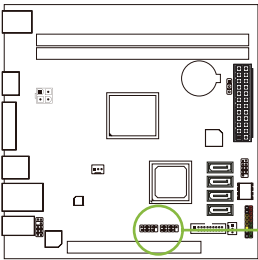
### JFRONT\_USB3\_1: Header for USB 3.0 Ports at Front Panel (only for A68N-5745 / A68N-5545)

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.



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

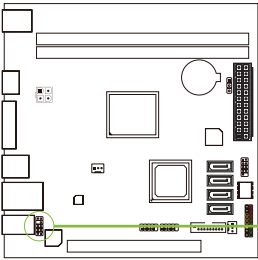
This header allows user to add additional USB ports on the PC front panel, and also can be connected with a wide range of external peripherals.



| 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.



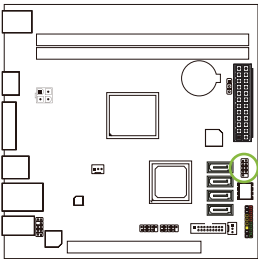
| HD Audio |               | AC'97 |              |
|----------|---------------|-------|--------------|
| Pin      | Assignment    | Pin   | Assignment   |
| 1        | Mic Left in   | 1     | Mic In       |
| 2        | Ground        | 2     | Ground       |
| 3        | Mic Right in  | 3     | Mic 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                 |

## 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:

- BIOSSTAR BIOS 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.
- BIOSSTAR 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.

#### BIOSSTAR BIOS 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 BIOSSTAR BIOS 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.

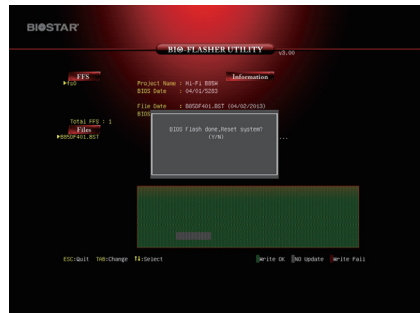
5. After entering the POST screen, the BIOS-FLASHER utility pops out. Choose <fs0> to search for the BIOS file.



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.

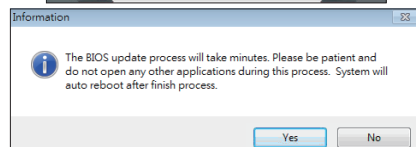
### **BIOS Update Utility (through the Internet)**

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

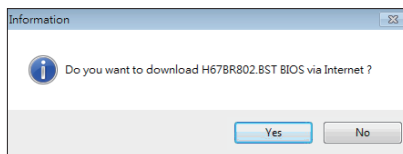
3. Launch BIOS Update Utility and click the “Online Update” button on the main screen.



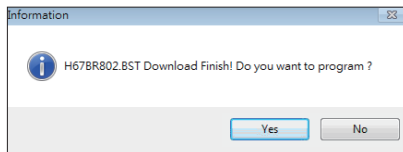
4. An open dialog will show up to request your agreement to start the BIOS update. Click “Yes” to start the online update procedure.



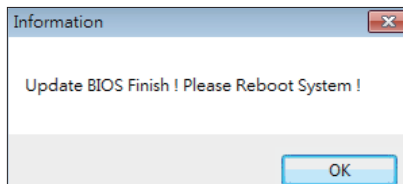
5. If there is a new BIOS version, the utility will ask you to download it. Click “Yes” to proceed.



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)**

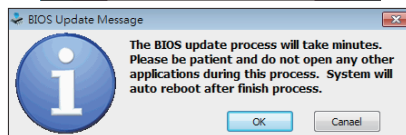
1. Installing BIOS Update Utility from the DVD Driver.

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

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

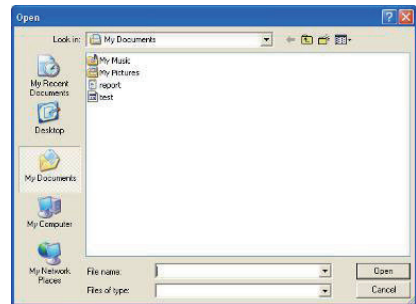


4. A warning message will show up to request your agreement to start the BIOS update. Click “OK” to start the update procedure.

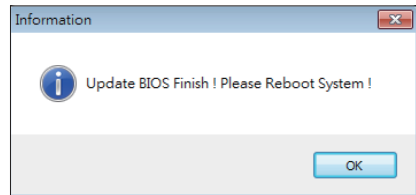




5. Choose the location for your BIOS file in the system. Please select the proper BIOS file, and then click on "Open". It will take several minutes, please be patient.



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

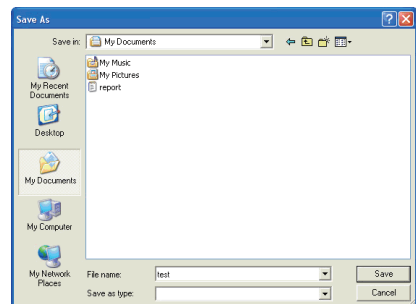


7. While the system boots up and the full screen logo shows up, press <DEL> key to enter BIOS setup.

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

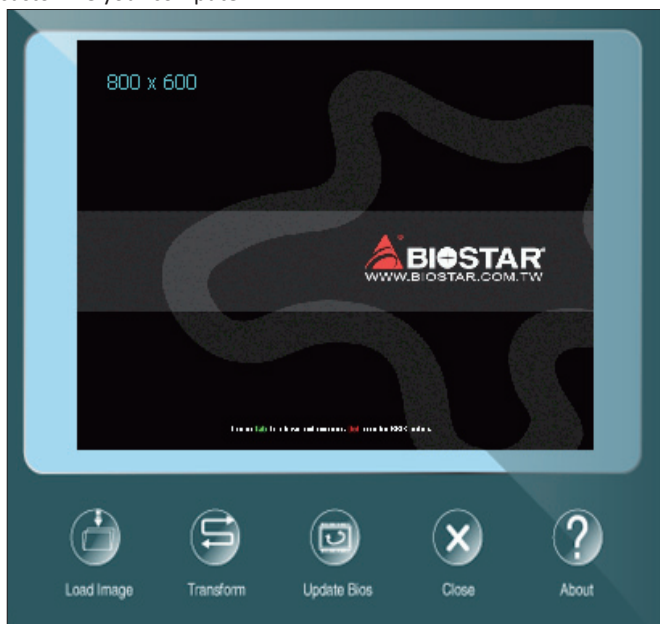
After the installation process is completed, you will see the software icon showing on the desktop. Double-click the icon to launch it.

#### 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.

**eHot-Line**

eHot-Line is a convenient utility that helps you to contact with our Tech-Support system. This utility will collect the system information which is useful for analyzing the problem you may have encountered, and then send these information to our tech-support department to help you fix the problem.

\*represents important information that you must provide. Without this information, you may not be able to send out the mail.

This block will show the information which would be collected in the mail.

\*Describe condition of your system.

The screenshot shows the eHot-Line utility window. On the left, a text box displays system information: Base board information: Caption: Base Board, CreationClassName: Win32\_Base, Description: Base Board, HostingBoard: TRUE, HotSwappable: FALSE, Manufacturer: BIOSTAR Group, Name: Base Board, PoweredOn: TRUE, Product: TA780G IM2+, Removable: FALSE, Replaceable: TRUE, RequiresDaughterBoard: FALSE, SerialNumber: None, Status: OK, Tag: Base Board, Version: 6.0. The main area has a 'Symptom Description:' label and a large text input field. Below this are fields for 'Region:', 'CC E-mail:', 'Memory Module Manufacturer:', and 'Power Supply Manufacturer/model:'. At the bottom are 'Send', 'Save As...', and 'Exit' buttons. Annotations with red lines point to various parts: the system information list, the symptom description field, the CC E-mail field, the memory module manufacturer field, the power supply manufacturer field, the Send button, the Save As... button, and the Exit button.

Select your area or the area close to you.

Provide the e-mail address that you would like to send the copy to.

\*Provide the name of the memory module manufacturer.

Provide the name of the power supply manufacturer and the model no.

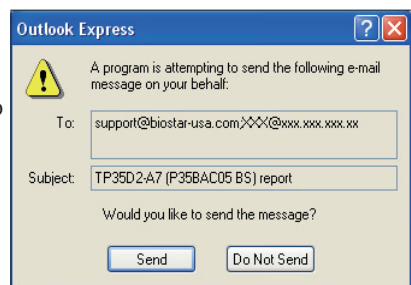
Send the mail out.

Exit this dialog.

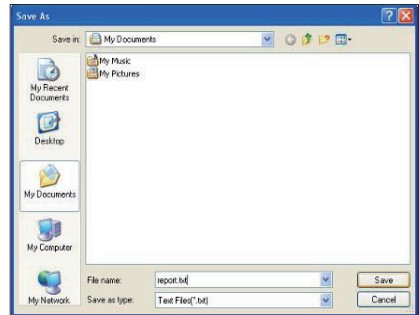
Save these information to a .txt file

After filling up this information, click “Send” to send the mail out. A warning dialog would appear asking for your confirmation; click “Send” to confirm or “Do Not Send” to cancel.

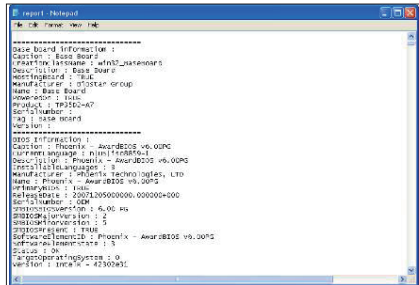
If you want to save this information to a .txt file, click “Save As...” and then you will see a saving dialog appears asking you to enter file name.



Enter the file name and then click “Save”. Your system information will be saved to a .txt file.



Open the saved .txt file, you will see your system information including motherboard/BIOS/CPU/video/device/OS information. This information is also concluded in the sent mail.



► **Note**

- » Before you use this utility, please set Outlook Express as your default e-mail client application program.
- » We will not share customer's data with any other third parties, so please feel free to provide your system information while using eHot-Line service.
- » If you are not using Outlook Express as your default e-mail client application, you may need to save the system information to a .txt file and send the file to our tech support with other e-mail application. Go to the following website <http://www.biostar.com.tw/app/en/about/contact.php> for getting our contact 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 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.<br>2. Indicator light on keyboard does not shine. | 1. Make sure power cable is securely plugged in.<br>2. Replace cable.<br>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.<br>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.<br>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.<br>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:

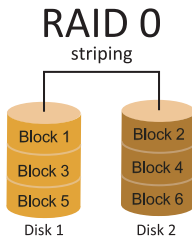
1. The CPU cooler surface is placed evenly with the CPU surface.
2. CPU fan is rotated normally.
3. CPU fan speed is fulfilling with the CPU speed.

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.

**4.4 RAID Functions****RAID Definitions**

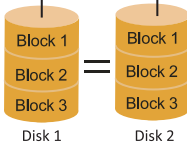
In a RAID 0 system data are split up in blocks that get written across all the drives in the array. By using multiple disks (at least 2) at the same time, this offers superior I/O performance. This performance can be enhanced further by using multiple controllers, ideally one controller per disk.

**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)

## RAID 1

mirroring

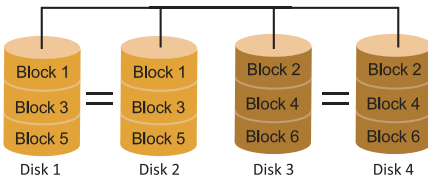


Data are stored twice by writing them to both the data disk (or set of data disks) and a mirror disk (or set of disks). If a disk fails, the controller uses either the data drive or the mirror drive for data recovery and continues operation. You need at least 2 disks for a RAID 1 array.

### 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.



## 4.5 AMD DUAL Graphics Technology

### AMD Dual Graphics Technology Introduction

When user adds a PCIE display adapter, it can be integrated with IGD to show better performance. To make the two video devices work simultaneously and normally, please refer to the following setting.

### AMD Dual Graphics Requirement

- Dual Graphics only supports with dual channel memory configuration
- Operating System: Windows 7 / Windows 8 / Windows 8.1
- Supported Dual Graphics Combinations:

| Kaveri APUs               |                          |                         |                         |
|---------------------------|--------------------------|-------------------------|-------------------------|
| AMD Radeon™ Graphics Card | A10-Series<br>Radeon™ R7 | A8-Series<br>Radeon™ R7 | A6-Series<br>Radeon™ R5 |
| “Oland” XT, R7 250        | ●(Note2)                 | ●(Note2)                | Under Investigation     |
| “Oland” Pro 6CU, R7 240   | ●(Note2)                 | ●(Note2)                |                         |
| “Oland” Pro 5CU, R7 240   | ●(Note2)                 | ●(Note2)                |                         |
| “Oland” Pro 64b, R7 240   | --                       | --                      |                         |
| Richland APUs             |                          |                         |                         |
| AMD Radeon™ Graphics Card | A10-Series<br>HD 8670D   | A8-Series<br>HD8570D    | A6-Series<br>HD 8470D   |
| “Oland” XT, HD 8870       | ●                        | ●                       | ●(Note2)                |
| “Oland” Pro, HD 8850      | ●                        | ●                       | ●                       |
| “Turks” XT, HD 6670       | ●                        | ●                       | ●                       |
| “Turks” Pro, HD 6570      | ●                        | ●                       | ●                       |
| “Caicos” Pro, HD 6450     | ●                        | ●                       | ●                       |
| Trinity APUs              |                          |                         |                         |
| AMD Radeon™ Graphics Card | A10-Series<br>HD 7660D   | A8-Series<br>HD7560D    | A6-Series<br>HD 7540D   |
| “Turks” XT, HD 6670       | ●                        | ●                       | --                      |
| “Turks” Pro, HD 6570      | ●                        | ●                       | ●                       |
| “Caicos” Pro, HD 6450     | --                       | --                      | ●                       |

» ● Recommended graphics cards for AMD dual-graphics

#### Note

- » A4-Series CPUs do not support Dual Graphics.
- » Only available for DDR3 graphics memory
- » The information described above in this manual is for your reference only and the actual information and settings on board may be different from this manual. For further AMD Dual Graphics information, please visit the following website: <http://www.amd.com>

## APPENDIX I: Specifications in Other Languages

### Arabic

| المواصفات   |                                 |  |
|---|---------------------------------|--|
| A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)  | قاعدة وحدة<br>المعالجة المركزية |  |
| (A68N-5745 / A68N-5545) AMD A70M FCH<br>(A68N-5600) AMD A68H  | مجموعة لشرائح                   |  |
| تدعم قناة مزدوجة دي. دي. ار. 1333 DDR3<br>x2 دي. دي. ار. DDR3 فتحات الذاكرة المزدوجة DIMM، تتحمل كحد أقصى 32 جيجابايت ذاكرة<br>كل فتحة مزدوجة DIMM تتحمل دون 16/8/4 جيجابايت دي. دي. ار DDR3<br>* يرجى الرجوع إلى الموقع <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> لقائمة دعم الذاكرة.   | الذاكرة                         |  |
| وصلة 4x ساتا SATA III (6Gb/s): تدعم 10/ 1/ 0RAID & AHCI   | التخزين                         |  |
| ريالتيك رت ل RTL 8111H, REALTEK   | شبكة محلية LAN                  |  |
| ALC887  | الترميز الصوتي                  |  |
| 7.1 قنوات عالية الدقة   |                                 |  |
| A68N-5745 / A68N-5545:<br>منافذ 4 x ناقل متسلسل عام USB 3.0 ( 2 في المداخل والمخارج الخلفية و 2 من خلال الموزع الداخلي )<br>منافذ 6 x ناقل متسلسل عام USB 2.0 ( 2 في المداخل والمخارج الخلفية و 4 من خلال الموزع الداخلي )<br>A68N-5600:<br>منافذ 2 x ناقل متسلسل عام USB 3.0 ( 2 في المداخل والمخارج الخلفية )<br>منافذ 6 x ناقل متسلسل عام USB 2.0 ( 2 في المداخل والمخارج الخلفية و 4 من خلال الموزع الداخلي )   | ناقل متسلسل عام<br>USB          |  |
| 1 x فتحة منفذ الملحقات الإضافية (8x) 16 x2.0 PCIe   | فتحات التوسع                    |  |
| 1 x PS/2 الفأرة<br>1 x PS/2 لوحة المفاتيح للكمبيوتر<br>فتحة توصيل عدد 1 x واجهة مرئية رقمية VGA<br>فتحة توصيل عدد 1 x منظومة العرض المرئي HDMI<br>فتحة لتوصيل عدد 1 x الشبكة المحلية LAN<br>فتحة توصيل عدد 2 x ناقل متسلسل عام USB 3.0<br>فتحة توصيل عدد 2 x ناقل متسلسل عام USB 2.0<br>فتحة توصيل عدد 3 x جاك للصوت  | المداخل والمخارج<br>الخلفية     |  |
| A68N-5600:<br>وصلة 4 SATA III 6 x جيجابايت / الثانية<br>موزع x2 ناقل متسلسل عام USB 2.0 ( كل موزع يتحمل فتحتين ناقل متسلسل عام USB 2.0 )<br>موصلة للطاقة 1 x 4 دبابيس<br>وصلة للطاقة 24 x1 دبوس<br>وصلة 1 x مروحة تبريد وحدة المعالجة المركزية<br>وصلة 1 x مراوح تبريد المنظومة<br>موزع 1 x اللوحة الأمامية<br>موزع 1 x الصوت الأمامي<br>موزع 1 x سيموس مباشر<br>موزع 1 x فتحة تسلسلية  | المداخل والمخارج<br>الداخلية    |  |
| A68N-5745 / A68N-5545:<br>وصلة 4 SATA III 6 x جيجابايت / الثانية<br>موزع x2 ناقل متسلسل عام USB 2.0 ( كل موزع يتحمل فتحتين ناقل متسلسل عام USB 2.0 )<br>موزع x1 ناقل متسلسل عام USB 3.0 (كل موزع يتحمل فتحتين ناقل متسلسل عام USB 3.0 )<br>موصلة للطاقة 1 x 4 دبابيس<br>وصلة للطاقة 24 x1 دبوس<br>وصلة 1 x مروحة تبريد وحدة المعالجة المركزية<br>وصلة 1 x مراوح تبريد المنظومة<br>موزع 1 x اللوحة الأمامية<br>موزع 1 x الصوت الأمامي<br>موزع 1 x سيموس مباشر<br>موزع 1 x فتحة تسلسلية |                                 |  |
| عامل شكل مدد التكنولوجيا المتقدمة Mini-ITX ، 170 مم x 170 مم  |                                 |  |
| ويندوز 7 / ويندوز 8 / ويندوز 8.1 / ويندوز 10<br>بيوستر BIOSTAR تحتفظ بحق إضافة أو إزالة الدعم لأي نظام تشغيل مع أو بدون أنظار.  |                                 |  |
| أنظمة التشغيل<br>المدعومة   |                                 |  |

## German

| Spezifikationen        |   |   |
|------------------------|---|---|
| CPU-Unterstützung      | A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)  |   |
| Chipset                | AMD A70M FCH (A68N-5745 / A68N-5545)<br>AMD A68H (A68N-5600)  |   |
| Festplattenspeicher    | Unterstützt zweikanaliges DDR3 1333<br>2 x DDR3 DIMM-SpeicherSlot, Max. Unterstützung bis zu 32 GB-Speicher<br>Jedes DIMM unterstützt nicht-ECC 4/ 8/ 16 GB DDR3-Module<br>* Bitte konsultieren Sie <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> für Speicherunterstützung Liste.   |   |
| Arbeitsspeicher        | 4x SATA III 6Gb-Verbindung : Unterstützt AHCI & RAID 0,1,10   |   |
| LAN                    | Realtek RTL 8111H<br>10/ 100/ 1000 Mb Auto-Negotiation, Halb- / Voll-Duplex-fähig   |   |
| Audio-Codec            | ALC887<br>7.1 Kanäle, HD-Audio  |   |
| USB                    | A68N-5745 / A68N-5545:<br>4x USB 3.0-Port (2 hintere I/Os und 2 via interne Header)<br>6x USB 2.0-Port (2 hintere I/Os und 4 via interne Header)<br>A68N-5600:<br>2x USB 3.0-Port (2 hintere I/O)<br>6x USB 2.0-Port (2 hintere I/Os und 4 via interne Header)  |   |
| Erweiterungsanschlüsse | 1x PCIe 2.0 x16-Slot (x8)   |   |
| Hintere I/Os           | 1x PS/2-Maus<br>1x PS/2-Keyboard<br>1x VGA-Port<br>1x HDMI-Port<br>1x LAN-Port<br>2x USB 3.0-Port<br>2x USB 2.0-Port<br>3x Audio Jack   |   |
| Interne I/Os           | A68N-5745 / A68N-5545:<br>4x SATA III 6.0Gb/s-Verbindung<br>2x USB 2.0-Header (jeder Header unterstützt 2 USB 2.0-Ports)<br>1x USB 3.0-Header (jeder Header unterstützt 2 USB 3.0-Ports)<br>1x 4-Pin-Stromverbindung<br>1x 24-Pin-Stromverbindung<br>1x CPU-Ventilatorverbindung<br>1x System-Ventilatorverbindung<br>1x Header für Frontpanel<br>1x Header für Frontaudio<br>1x Header für klares CMOS<br>1x Serieller Port-Header | A68N-5600:<br>4x SATA III 6.0Gb/s-Verbindung<br>2x USB 2.0-Header (jeder Header unterstützt 2 USB 2.0-Ports)<br>1x 4-Pin-Stromverbindung<br>1x 24-Pin-Stromverbindung<br>1x CPU-Ventilatorverbindung<br>1x System-Ventilatorverbindung<br>1x Header für Frontpanel<br>1x Header für Frontaudio<br>1x Header für klares CMOS<br>1x Serieller Port-Header |
| Formfaktor             | Mini-ITX Formfaktor, 170 mm x 170 mm  |   |
| OS-Unterstützung       | Windows 7/ 8/ 8.1/10<br>Biostar reserves the right to add or remove support for any OS with or without notice   |   |

## Russian

| Спецификации                      |   |   |
|-----------------------------------|---|---|
| Поддержка центрального процессора | A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)  |   |
| Набор микросхем                   | AMD A70M FCH (A68N-5745 / A68N-5545)<br>AMD A68H (A68N-5600)  |   |
| Память                            | Поддерживает двухканальный DDR3 1333<br>2 гнезда платы памяти DDR3 DIMM, максимальная память до 32 Гб<br>Каждый модуль DIMM поддерживает модуль не-ECC 4/ 8/ 16 Гб DDR3<br>* Перечень поддержки памяти смотрите на <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> .   |   |
| Накопитель                        | Соединитель 4x SATA III 6 Гб/с : Поддерживает AHCI & RAID 0,1,10  |   |
| Локальная сеть                    | Realtek RTL 8111H<br>Автосогласование 10/ 100/ 1000 Мб/с, работает в полно/полудуплексном режиме  |   |
| Аудиокодек                        | ALC887<br>Каналы 7.1, высококачественное аудио  |   |
| USB                               | A68N-5745 / A68N-5545:<br>4 портов USB 3.0 (2 сзади ввода-вывода и 2 через внутренние контакты)<br>6 портов USB 2.0 (2 сзади ввода-вывода и 4 через внутренние контакты)<br>A68N-5600:<br>2 портов USB 3.0 (2 сзади ввода-вывода)<br>6 портов USB 2.0 (2 сзади ввода-вывода и 4 через внутренние контакты)  |   |
| Гнезда расшир.                    | 1x PCIe 2.0 x16 гнездо (x8)   |   |
| Задняя плата ввода-вывода         | 1 мышь PS/2<br>1 клавиатура PS/2<br>1 порт VGA<br>1 порт HDMI<br>1 порт локальной сети<br>2 порта USB 3.0<br>2 порта USB 2.0<br>3 гнезд для подключения наушников   |   |
| Внутр. Плата ввода-вывода         | A68N-5745 / A68N-5545:<br>Соединитель 4x SATA III 6Гб/с<br>2 контакта USB 2.0 (каждый контакт поддерживает 2 порта USB 2.0)<br>1 контакта USB 3.0 (каждый контакт поддерживает 2 порта USB 3.0)<br>1 4-выводный разъем питания<br>1 24-выводный разъем питания<br>1 разъем вентилятора ЦП<br>1 разъема вентилятора системы<br>1 контакт передней панели<br>1 контакт передней аудиопанели<br>1 контакт микросхемы Clear CMOS<br>1 контакт последовательного порта | A68N-5600:<br>Соединитель 4x SATA III 6Гб/с<br>2 контакта USB 2.0 (каждый контакт поддерживает 2 порта USB 2.0)<br>1 4-выводный разъем питания<br>1 24-выводный разъем питания<br>1 разъем вентилятора ЦП<br>1 разъема вентилятора системы<br>1 контакт передней панели<br>1 контакт передней аудиопанели<br>1 контакт микросхемы Clear CMOS<br>1 контакт последовательного порта |
| Конструктив                       | Форм-фактор Mini-ITX, 170 мм x 170 мм   |   |
| Поддержка ОС                      | Windows 7/ 8/ 8.1/10<br>Biostar оставляет за собой право добавлять или удалять поддержку любой ОС, с уведомлением или без.  |   |

Spanish

| Especificaciones                 |  |   |
|----------------------------------|--|---|
| Compatibilidad con el procesador | A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)   |   |
| Tipo de Placa                    | AMD A70M FCH (A68N-5745 / A68N-5545)<br>AMD A68H (A68N-5600)   |   |
| Memoria                          | Soporta DDR3 1333 Doble Canal<br>2x DDR3 DIMM Ranura de memoria Soporta hasta 32 GB Memoria<br>Cada DIMM soporta un modulo non-ECC 4/ 8/ 16 GB DDR3<br>*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 4x SATA III (6Gb/s) : Soporta AHCI & RAID 0,1,10  |   |
| LAN                              | Realtek RTL 8111H<br>10/ 100/ 1000 Mb/s auto negociación, capacidad dúplex Mitad/Completo  |   |
| Códec Audio                      | ALC887<br>Canales Audio de Alta Definición 7.1   |   |
| USB                              | A68N-5745 / A68N-5545:<br>Ranura 4x USB 3.0 (2 en las entradas/salidas posteriores y 2 por los distribuidores internos)<br>Ranura 6x USB 2.0 (2 en las entradas/salidas posteriores y 4 por los distribuidores internos)<br>A68N-5600:<br>Ranura 2x USB 3.0 (2 en las entradas/salidas posteriores)<br>Ranura 6x USB 2.0 (2 en las entradas/salidas posteriores y 4 por los distribuidores internos)   |   |
| Ranuras de Extinción             | Ranura 1x PCIe 2.0 x16 (x8)  |   |
| Panel trasero de E/S             | Ratón 1x PS/2<br>Teclado 1x PS/2<br>Ranura 1x VGA<br>Ranura 1x HDMI<br>Ranura 1x LAN<br>Ranura 2x USB 3.0<br>Ranura 2x USB 2.0<br>Socket audio 3x  |   |
| Conectores en placa              | A68N-5745 / A68N-5545:<br>Conector 4x SATA III 6Gb's<br>Distribuidor 2x USB 2.0 (cada distribuidor soporta 2 ranuras USB 2.0)<br>Distribuidor 1x USB 3.0 (cada distribuidor soporta 2 ranuras USB 3.0)<br>Conector con 4 patillas x1<br>Conector con 24 patillas x1<br>Conector Ventilador procesador x1<br>Conector Ventilador Sistema x1<br>Distribuidor Panel Frontal x1<br>Distribuidor Audio Frontal x1<br>Distribuidor CMOS Directo x1<br>Distribuidor Ranura Serie x1 | A68N-5600:<br>Conector 4x SATA III 6Gb's<br>Distribuidor 2x USB 2.0 (cada distribuidor soporta 2 ranuras USB 2.0)<br>Conector con 4 patillas x1<br>Conector con 24 patillas x1<br>Conector Ventilador procesador x1<br>Conector Ventilador Sistema x1<br>Distribuidor Panel Frontal x1<br>Distribuidor Audio Frontal x1<br>Distribuidor CMOS Directo x1<br>Distribuidor Ranura Serie x1 |
|                                  |  |   |
| Factor de Forma                  | Factor de Forma Mini-ITX, 170 mm x 170 mm  |   |
| Soporte OS                       | Windows 7/ 8/ 8.1/10<br>Biostar reserva su derecho de añadir o retirar el soporte para cada OS con o sin notificación.   |   |

## Thai

| คุณสมบัติ          |  |  |
|--------------------|--|--|
| ซีพียู             | A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)   |  |
| ชิปเซ็ต            | AMD A70M FCH (A68N-5745 / A68N-5545)<br>AMD A68H (A68N-5600)   |  |
| หน่วยความจำ        | สนับสนุน Dual Channel DDR3 1333<br>รองรับหน่วยความจำ 2 สล็อต DDR3 DIMM สูงสุดถึง 32 GB<br>ทุก DIMM สนับสนุนโมดูล non-ECC 4/ 8/ 16 GB DDR3<br>* เข้าชมได้ที่ <a href="http://www.biostar.com.tw">www.biostar.com.tw</a> สำหรับรายการหน่วยความจำที่สนับสนุน  |  |
| สต่อเร็ว           | 4x SATA III พอร์ตเชื่อมต่อ (6Gb/s) : สนับสนุน AHCI & RAID 0,1,10   |  |
| แลน                | Realtek RTL 8111H<br>10/ 100/ 1000 Mb/s การเจรจาอัตโนมัติ, ความสามารถในการเพ็ล็กซ์ Half / Full   |  |
| ออดิโอ โคเดก       | ALC887<br>7.1 Channels, High Definition Audio  |  |
| ยูเอสบี            | A68N-5745 / A68N-5545:<br>4x USB 3.0 พอร์ต (2 พอร์ตด้านหลัง I/O และ 2 พอร์ต ผ่านพอร์ตเชื่อมต่อด้านใน)<br>6x USB 2.0 พอร์ต (2 พอร์ตด้านหลัง I/O และ 4 พอร์ต ผ่านพอร์ตเชื่อมต่อภายใน)<br>A68N-5600:<br>2x USB 3.0 พอร์ต (2 พอร์ตด้านหลัง I/O)<br>6x USB 2.0 พอร์ต (2 พอร์ตด้านหลัง I/O และ 4 พอร์ต ผ่านพอร์ตเชื่อมต่อภายใน)  |  |
| สล็อตขยายเพิ่มเติม | 1x PCIe 2.0 x16 สล็อต (x8)   |  |
| พอร์ต I/O ด้านหลัง | 1x PS/2 เมาส์<br>1x PS/2 คีย์บอร์ด<br>1x VGA พอร์ต<br>1x HDMI พอร์ต<br>1x LAN พอร์ต<br>2x USB 3.0 พอร์ต<br>2x USB 2.0 พอร์ต<br>3x Audio Jack   |  |
| พอร์ต I/O ด้านใน   | A68N-5745 / A68N-5545:<br>4x SATA III 6Gb/s พอร์ตเชื่อมต่อ<br>2x USB 2.0 พอร์ตเชื่อมต่อ (หัวเชื่อมต่อทุกตัวรองรับ 2 พอร์ต USB 2.0)<br>1x USB 3.0 พอร์ตเชื่อมต่อ (หัวเชื่อมต่อทุกตัวรองรับ 2 พอร์ต USB 3.0)<br>1x 4-Pin Power พอร์ตเชื่อมต่อ<br>1x 24-Pin Power พอร์ตเชื่อมต่อ<br>1x พอร์ตเชื่อมต่อ CPU Fan<br>1x พอร์ตเชื่อมต่อระบบ Fan<br>1x พอร์ตเชื่อมต่อแผงด้านหน้า<br>1x พอร์ตเชื่อมต่อออดิโอด้านหน้า<br>1x พอร์ต Clear CMOS<br>1x พอร์ตเชื่อมต่อ Serial Port | A68N-5600:<br>4x SATA III 6Gb/s พอร์ตเชื่อมต่อ<br>2x USB 2.0 พอร์ตเชื่อมต่อ (หัวเชื่อมต่อทุกตัวรองรับ 2 พอร์ต USB 2.0)<br>1x 4-Pin Power พอร์ตเชื่อมต่อ<br>1x 24-Pin Power พอร์ตเชื่อมต่อ<br>1x พอร์ตเชื่อมต่อ CPU Fan<br>1x พอร์ตเชื่อมต่อระบบ Fan<br>1x พอร์ตเชื่อมต่อแผงด้านหน้า<br>1x พอร์ตเชื่อมต่อออดิโอด้านหน้า<br>1x พอร์ต Clear CMOS<br>1x พอร์ตเชื่อมต่อ Serial Port |
| รูปแบบจากโรงงาน    | ขนาด Mini-ITX จากโรงงาน, 170 มม. x 170 มม.   |  |
| สนับสนุน OS        | Windows 7/ 8/ 8.1/10<br>Biostar ขอสงวนสิทธิ์ในการเพิ่มหรือถอดการสนับสนุนสำหรับระบบปฏิบัติการ 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。

## 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。
- 从抗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，不要弯曲或按压电路板。
- 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°C之间
- 为避免受伤，请注意以下幾點：
  - 主板或連接器上尖銳的針腳
  - 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 x2
- 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

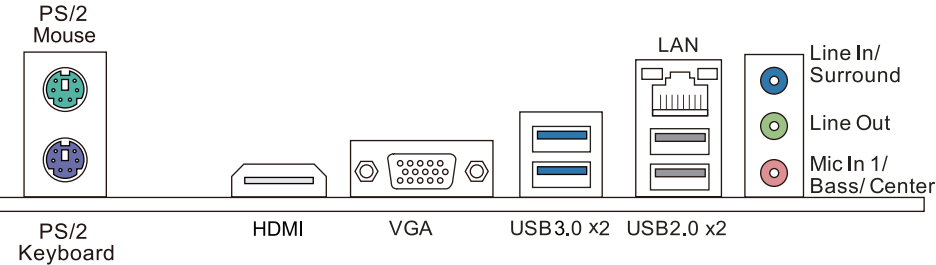
» 此清单可能因销售区域或主板型号不同而异，相关标配详情请咨询当地经销商。

---

## 1.3 主板特性

| 规格     |  |  |
|--------|--|--|
| CPU支援  | A68N-5545: A8-5545M (Quad core 1.7GHz up to 2.7GHz, 19W)<br>A68N-5600: A10-4655M (Quad core 2.0GHz up to 2.8GHz, 25W)<br>A68N-5745: A10-5745M (Quad core 2.1GHz up to 2.9GHz, 25W)                                       |  |
| 芯片组    | AMD A70M FCH (A68N-5745 / A68N-5545)<br>AMD A68H (A68N-5600)   |  |
| 内存     | 支持双通道DDR3 1333<br>2个DDR3 DIMM插槽，最大内存容量为32GB<br>每个DIMM支持非ECC 4/ 8/ 16 GB DDR3内存模组<br>* 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    | 4个SATA III接口 (6Gb/s)：支持AHCI & RAID 0 · 1 · 10  |  |
| 网络     | Realtek RTL 8111H<br>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<br>8声道音频输出 · 支持高清音频   |  |
| USB    | A68N-5745 / A68N-5545:<br>4个USB 3.0端口(背板2个端口 · 板载接头支持2个端口)<br>6个USB 2.0端口(背板2个端口 · 板载接头支持4个端口)<br>A68N-5600:<br>2个USB 3.0端口(背板2个端口)<br>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    | 1个PCIe 2.0 x16插槽 (x8)  |  |
| 背板接口   | 1个PS/2鼠标接口<br>1个PS/2键盘接口<br>1个VGA端口<br>1个HDMI端口<br>1个LAN端口<br>2个USB3.0端口<br>2个USB2.0端口<br>3个音频插孔   |  |
| 板载接口   | A68N-5745 / A68N-5545:<br>4个SATA III接口 (6Gb/s)<br>2个USB2.0接头(每个接头支持2个USB2.0端口)<br>1个USB3.0接头(每个接头支持2个USB3.0端口)<br>1个电源接口(4针)<br>1个电源接口(24针)<br>1个CPU风扇接头<br>1个系统风扇接头<br>1个前置面板接头<br>1个前置音频接头<br>1个清空CMOS数据接头<br>1个串行端口接头 | A68N-5600:<br>4个SATA III接口 (6Gb/s)<br>2个USB2.0接头(每个接头支持2个USB2.0端口)<br>1个电源接口(4针)<br>1个电源接口(24针)<br>1个CPU风扇接头<br>1个系统风扇接头<br>1个前置面板接头<br>1个前置音频接头<br>1个清空CMOS数据接头<br>1个串行端口接头 |
| 主板尺寸   | Mini-ITX Form Factor · 170 mm x 170 mm   |  |
| 操作系统支持 | Windows 7/ 8/ 8.1/10<br>* 如有增加或减少任何OS支持 · Biostar保留不预先通知的权利。   |  |

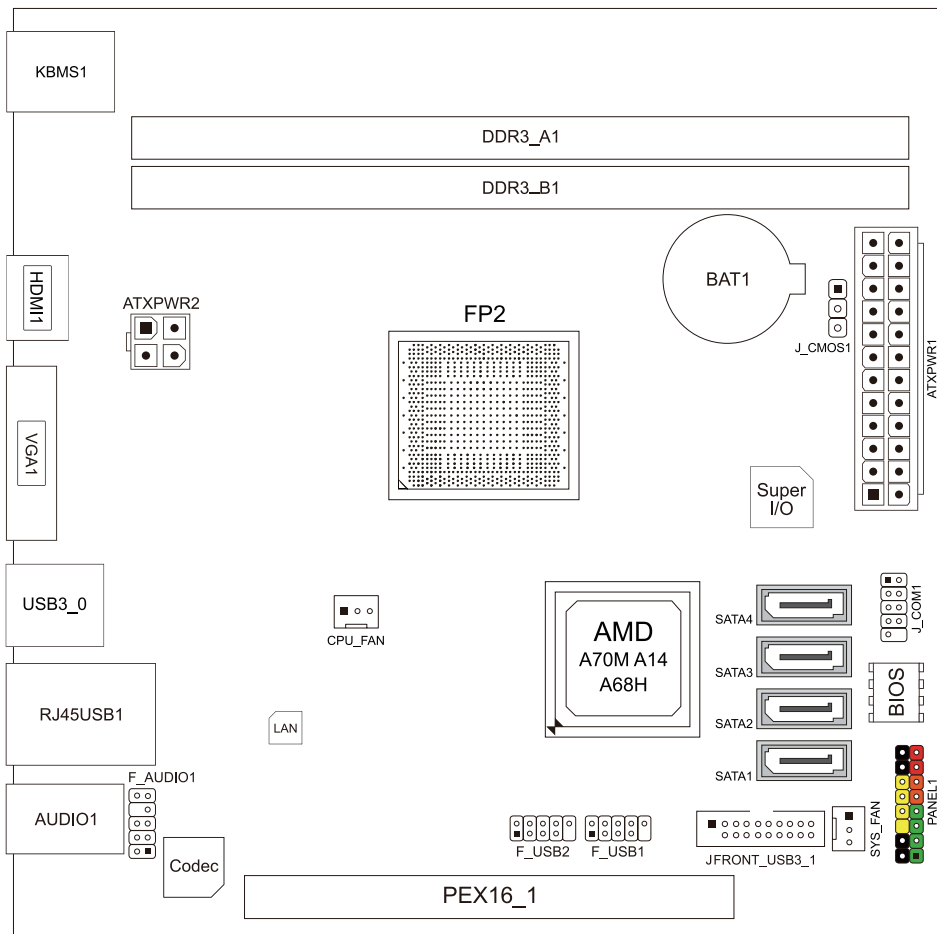
## 1.4 后置面板接口



### 注意

- » 仅AMD集成显卡处理器支持HDMI和VGA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（蓝色）和Mic In（粉红色）插孔。
- » 最高分辨率：  
HDMI: 1920 x 1080 @60Hz / 1920 x 1200 @60Hz，符合HDMI 1.4规范  
VGA: 1920 x 1200 @60Hz
- » 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

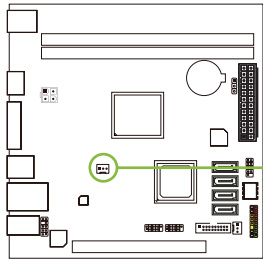
- » ■ 标示为针脚1
- » 前置面板USB 3.0接头仅A68N-5745 / A68N-5545支持

## 第二章: 硬件安装

### 2.1 风扇接头

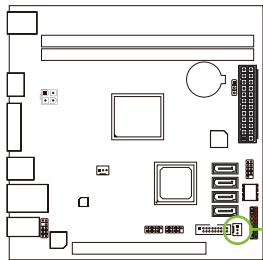
此风扇接头支持电脑内置的冷却风扇，风扇引线和插头可能因制造商而异。

#### CPU\_FAN: CPU 风扇接头 (智能CPU 风扇转速控制)



| 针 | 定义                 |
|---|--------------------|
| 1 | 接地                 |
| 2 | +12V               |
| 3 | FAN RPM rate sense |

#### SYS\_FAN: 系统风扇接头



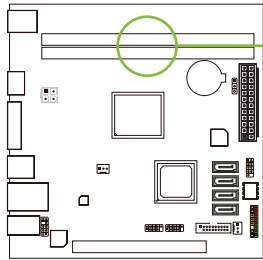
| 针 | 定义                 |
|---|--------------------|
| 1 | 接地                 |
| 2 | +12V               |
| 3 | FAN RPM rate sense |

#### 注意

» CPU\_FAN、SYS\_FAN支持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。

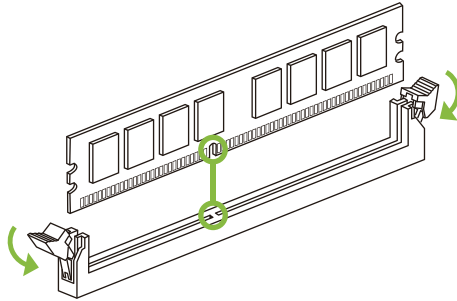
### 2.2 系统内存

#### DDR3内存模组

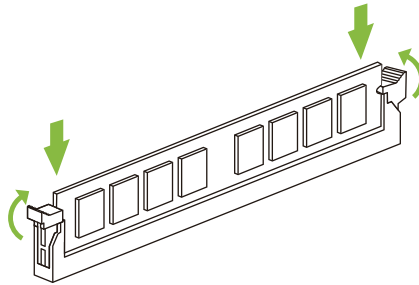


DDR3\_A1  
DDR3\_B1

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       |
|----------|--------------|-----------|
| DDR3_A1  | 4GB/8GB/16GB | 最大为 32GB. |
| DDR3_B1  | 4GB/8GB/16GB |           |

## 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    | DDR3_A1 | DDR3_B1 |
|----------|---------|---------|
| Disabled | O       | X       |
| Disabled | X       | O       |
| Enabled  | O       | O       |

(“O”表示内存已安装，“X”表示内存未安装。)

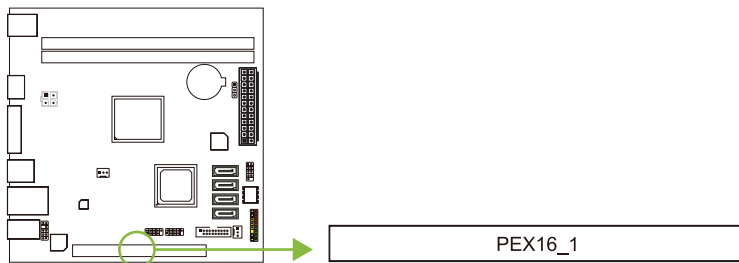
#### 注意

» 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安装于主板上。

## 2.3 扩展槽

### PEX16\_1: PCI-Express Gen2 x16 插槽

- 符合PCI-Express 2.0规范。
- 同步单向最大理论带宽为8GB/s·总带宽为16GB/s。



### 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。

## 2.4 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。

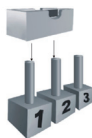
Pin 打开



Pin 闭合

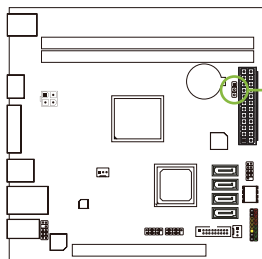


Pin 1-2 闭合



### 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:

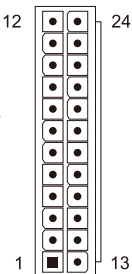
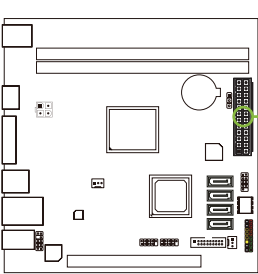
1. 断开AC电源。
2. 将跳线设置成2-3接脚闭合。
3. 等待5秒钟。
4. 将跳线设置成1-2接脚闭合。
5. 接通AC电源。
6. 开机然后按下<Del>键进入BIOS设置。



## 2.5 接口和插槽

### ATXPWR1: ATX电源接口

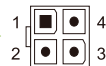
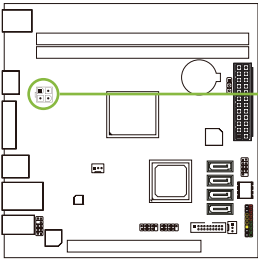
为了更好的兼容性，我们建议使用标准的ATX24-pin电源供应此接口的电源。



| 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。



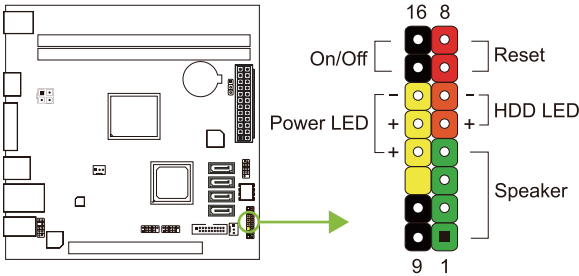
| 针 | 定义   |
|---|------|
| 1 | +12V |
| 2 | +12V |
| 3 | 接地   |
| 4 | 接地   |

#### 注意

- » 开机前，请确保ATXPWR1和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

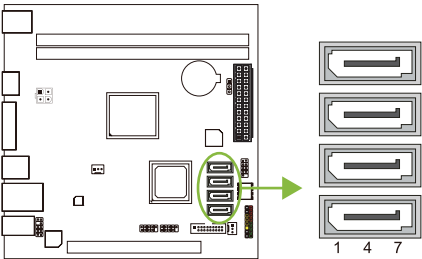
此16针脚接口包含开机，重启，硬盘指示灯，电源指示灯和扬声器接口。



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

SATA1~4: 串行ATA 6.0 Gb/s 接口

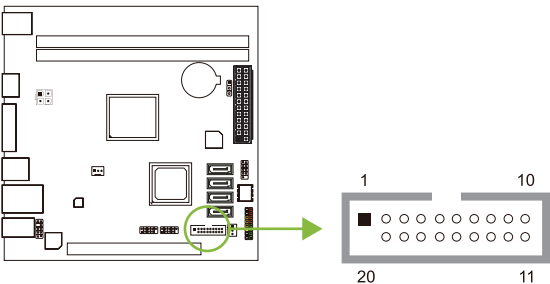
此接口通过SATA数据线连接SATA硬盘。



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

JFRONT\_USB3\_1: 前置面板USB 3.0接头(仅A68N-5745 / A68N-5545支持)

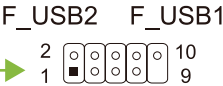
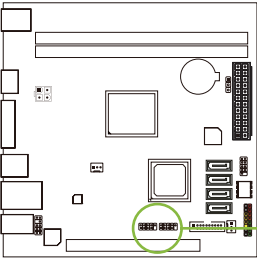
PC前置面板支持附加的USB数据线，也可连接即插即用外围设备。



| 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

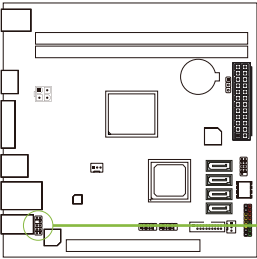
PC前置面板支持附加的USB数据线，也可连接即插即用外围设备。



| 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。



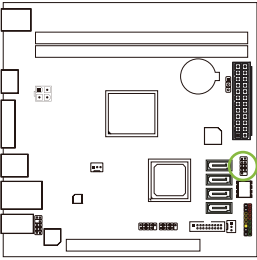
| HD Audio |               | AC' 97 |              |
|----------|---------------|--------|--------------|
| 针        | 定义            | 针      | 定义           |
| 1        | Mic Left in   | 1      | Mic In       |
| 2        | 接地            | 2      | 接地           |
| 3        | Mic Right in  | 3      | 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。



| 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                 |

## 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:

- BIOSSTAR BIOS 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。
- BIOSSTAR 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。

#### BIOSSTAR BIOS Flasher

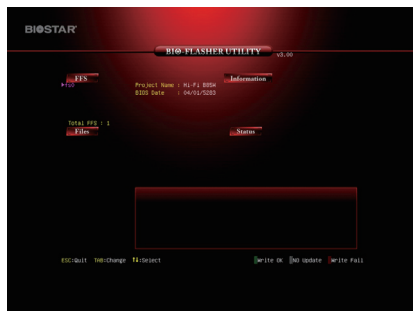
##### 注意

- » 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BIOSSTAR BIOS 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。

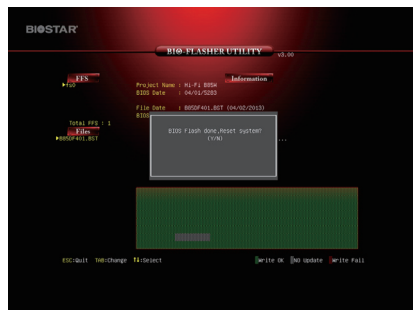
5. 进入自检后，屏幕会弹出BIOS-FLASHER工具。选择<fs0>搜索BIOS文件。



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。

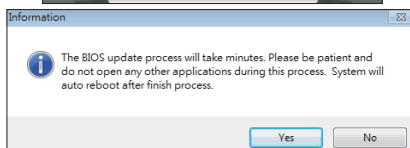
### BIOS刷新工具（通过网络）

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

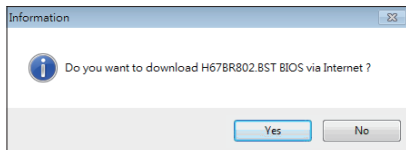
3. 打开BIOS刷新工具，然后点击“Online Update”按钮。



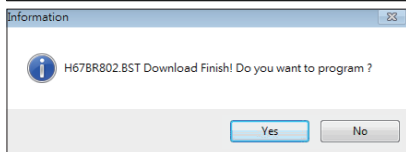
4. 屏幕弹出是否执行刷新BIOS程序的对话框，点击“ Yes” 开始刷新BIOS。



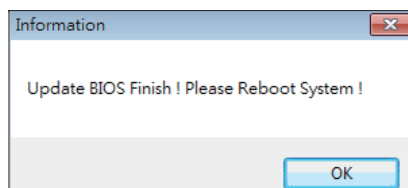
5. 如果BIOS有新版本，屏幕会弹出提示您下载最新版本的对话框。点击“ Yes” 下载。



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。

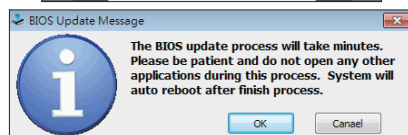
### BIOS刷新工具（通过BIOS文件）

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。



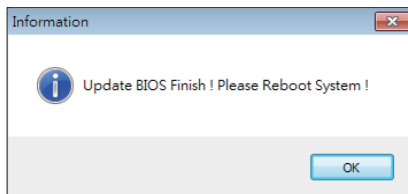
4. 屏幕弹出是否执行刷新BIOS程序的对话框，点击“OK”开始刷新BIOS。



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。



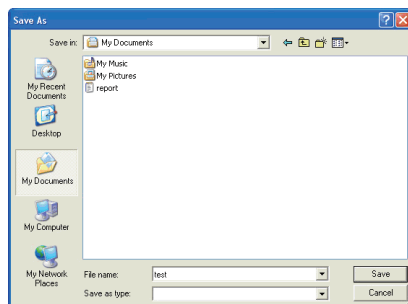
6. BIOS刷新过程结束后，点击“OK”重启系统。



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。



## eHot-Line

eHot-Line是有助于您联系技术支持系统的便捷工具。此工具将收集系统信息，当您遇到问题时，可提供有利分析，并发送这些信息至我们的技术支持部门，从而帮助解决问题。

\* represents important information that you must provide. Without this information, you may not be able to send out the mail.

This block will show the information which would be collected in the mail.

\* Describe condition of your system.

The screenshot shows the eHot-Line utility window. On the left, a text box displays system information: Base board information: Caption: Base Board, CreationClassName: Win32\_BaseBoard, Description: Base Board, HostingBoard: TRUE, HotSwappable: FALSE, Manufacturer: BIOSTAR Group, Name: Base Board, PoweredOn: TRUE, Product: TA780G M2+, Removable: FALSE, Replaceable: TRUE, RequiresDaughterBoard: FALSE, SerialNumber: None, Status: OK, Tag: Base Board, Version: 6.0. On the right, there is a 'Symptom Description' text area. Below this are input fields for 'Region', 'CC E-mail', 'Memory Module: Manufacture', and 'Power Supply Manufacture/model'. At the bottom are 'Send', 'Save As...', and 'Exit' buttons. Annotations with red lines point to various parts: a red asterisk points to the system information list; a red line points to the 'Symptom Description' area; a red asterisk points to the 'CC E-mail' field; a red asterisk points to the 'Memory Module: Manufacture' field; a red asterisk points to the 'Power Supply Manufacture/model' field; a red line points to the 'Send' button; a red line points to the 'Exit' button; and a red line points to the 'Save As...' button.

Select your area or the area close to you.

Provide the e-mail address that you would like to send the copy to.

\* Provide the name of the memory module manufacturer.

Provide the name of the power supply manufacturer and the model no.

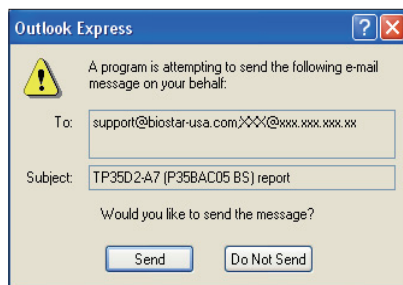
Send the mail out.

Exit this dialog.

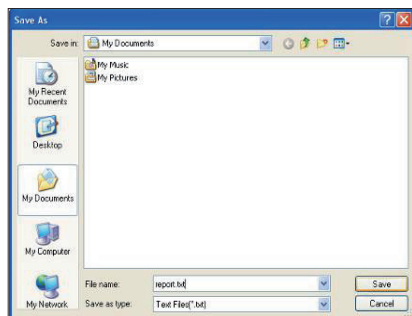
Save these information to a .txt file

填好表格信息后，点击“Send”发送邮件。将出现一个确认信息对话框；点击“Send”确认发送，点击“Do Not Send”则取消操作。

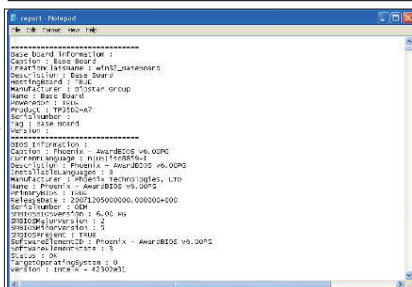
如您想保存此信息到文本文件里，点击“Save As...” ，出现一个保存对话框，输入文件名即可。



输入文件名，点击“Save”，系统信息将被保存至文本文件里。



打开已保存的文本文件，显示相关系统信息（包括主板/BIOS/CPU/视频设备/OS）。这些信息当然也在已发送的邮件里。



#### 注意

- » 在使用此工具前，请将Outlook Express设置为您的默认电子邮件连接程序。
- » 我们将为用户资料保密，所以使用eHot-Line服务时，请放心提供您的系统信息。
- » 若您未将Outlook Express设置为默认电子邮件连接程序，也可保存您的系统信息到文件里，然后用其它电子邮件工具发送此文件到我们的技术支持。  
请访问网站<http://www.biostar.com.tw/app/en/about/contact.php>获取我们的联系信息。

## 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 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。<br>2. 键盘上的指示灯不亮。                                   | 1. 确定电源线是否接好。<br>2. 更换线材。<br>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。<br>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。<br>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” 。<br>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。<br>2. 运行安装程序，选择正确的驱动类型。<br>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。

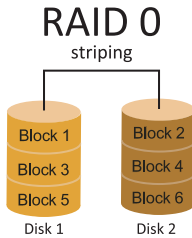
1. 切断电源数秒。
2. 等待几秒钟。
3. 插上电源开启系统。

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。

## 4.4 RAID 功能

### RAID 定义



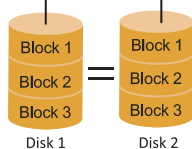
创建带区集，在同一时间内向多块磁盘写入数据，通过把数据分成多个数据块 (Block) 并行写入/读出多个磁盘以提高访问磁盘的速度分散到所有的硬盘中同时进行读写，在整个磁盘阵列建立过程中，以系统环境为基础，指数的大小决定了每块磁盘的容量。此技术可减少整个磁盘的存取时间和提供高速带宽。

### 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。

## RAID 1

mirroring

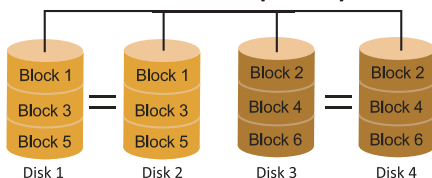


每次读写实际上是在磁盘阵列系统中(RAID 1)·通过2个磁盘驱动器并行完成的。RAID 1或镜像模式能够自动对数据进行备份·通过将一块硬盘中的数据完整复制制到另外一块硬盘实现数据的冗余。假如由于硬盘的损坏·导致驱动失败·或是容量过大·RAID1可以提供一个数据备份。RAID 技术可以应用于高效方案·或者可以作为自动备份形式·代替冗长的·高价的且不稳定的备份形式。

### 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。

4.5 AMD双显卡技术

AMD双显卡技术介绍

当用户添加一块PCIE显卡时,便可以 and 内置的显卡整合在一起,达到更好的效果。为了使两个显卡设备同时正常运行,请参照下面的设置。

AMD双显卡要求

- 双显卡只能支持与双通道内存配置
- 操作系统: Windows 7 / Windows 8 / Windows 8.1
- 支持的双显卡组合:

| Kaveri APUs               |                          |                         |                         |
|---------------------------|--------------------------|-------------------------|-------------------------|
| AMD Radeon™ Graphics Card | A10-Series<br>Radeon™ R7 | A8-Series<br>Radeon™ R7 | A6-Series<br>Radeon™ R5 |
| "Oland" XT, R7 250        | ●(Note2)                 | ●(Note2)                | Under Investigation     |
| "Oland" Pro 6CU, R7 240   | ●(Note2)                 | ●(Note2)                |                         |
| "Oland" Pro 5CU, R7 240   | ●(Note2)                 | ●(Note2)                |                         |
| "Oland" Pro 64b, R7 240   | --                       | --                      |                         |
| Richland APUs             |                          |                         |                         |
| AMD Radeon™ Graphics Card | A10-Series<br>HD 8670D   | A8-Series<br>HD8570D    | A6-Series<br>HD 8470D   |
| "Oland" XT, HD 8870       | ●                        | ●                       | ●(Note2)                |
| "Oland" Pro, HD 8850      | ●                        | ●                       | ●                       |
| "Turks" XT, HD 6670       | ●                        | ●                       | ●                       |
| "Turks" Pro, HD 6570      | ●                        | ●                       | ●                       |
| "Caicos" Pro, HD 6450     | ●                        | ●                       | ●                       |
| Trinity APUs              |                          |                         |                         |
| AMD Radeon™ Graphics Card | A10-Series<br>HD 7660D   | A8-Series<br>HD7560D    | A6-Series<br>HD 7540D   |
| "Turks" XT, HD 6670       | ●                        | ●                       | --                      |
| "Turks" Pro, HD 6570      | ●                        | ●                       | ●                       |
| "Caicos" Pro, HD 6450     | --                       | --                      | ●                       |

» •此标志为AMD双显卡所推荐的显卡

注意

- » A4系列产品不支持双显卡。
- » 仅供DDR3显卡内存。
- » 本手册上面描述的信息仅供参考·实际主板信息和设置可能与手册略有差异。若要获知详细的AMD双显卡信息·请访问网站：<http://www.amd.com>

## » 附录I：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。