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## **CHAPTER 1: INTRODUCTION**

### **1.1 MAINBOARD FEATURES**

#### **A. Hardware**

##### **CPU**

- Supports Socket 754.
- Supports AMD Athlon 64 / Sempron processor.

##### **Chipset**

- NVIDIA nForce3 250.
  - HyperTransport link to the AMD Athlon 64 CPU.
  - Supports AGP 3.0 8x interface.
  - Supports system and power management.
  - Supports PIO Mode 5, Bridge Mode and Ultra DMA 33/66/100/133 Bus Master Mode.
  - Supports USB 2.0, 8 ports.
  - Compliant with PCI Version 2.3 specification.
  - Compliant with AC'97 Version 2.3 specification.
  - Fast ATA/133 IDE controllers.

##### **Dimensions**

- ATX Form Factor:
  - 20.5cm (W) \* 29.3cm (L) (Version 1.0)
  - 20.5cm (W) \* 30.48cm (L) (Version 1.1)

##### **Slots**

- Five 32-bit PCI bus master slots.
- One AGP 8x slot
- One CNR slot, for Version 1.1 only.  
(See p.12 for supporting information.).

##### **Serial ATA**

- Supports 2 serial ATA (SATA) ports.
- Compliant with SATA 1.0 specification.
- Data transfer rates up to 150MB/s

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### **Main Memory**

- Supports up to 2 DDR devices.
- Supports 200/266/333/400 MHz DDR devices.
- Certified DDR400 List
  - Please check the website:  
<http://www.biostar.com.tw/products/mainboard/board.php3?name=Nf325-A7>
- Maximum memory size is 2GB.

<b>DIMM Socket Location</b>	<b>DDR Module</b>	<b>Total Memory Size (MB)</b>
DIMM1	128MB/256MB/512MB/1GB *1	Max is 2 GB.
DIMM2	128MB/256MB/512MB/1GB *1	

### **Super I/O**

- Chip: ITE IT8712F.
- Low Pin Count Interface.
- Provides the most commonly used legacy Super I/O functionality.
- Environment Control initiatives,
  - H/W Monitor
  - ITE's "Smart Guardian" function

### **On Board IDE**

- Supports 4 IDE disk drives.
- Supports PIO mode 4, Block Mode and Ultra DMA 33/66/100/133 bus master mode.

### **10/100 LAN**

- PHY: RTL8201BL
- Supports 10 Mb/s and 100 Mb/s auto-negotiation.
- Half/Full duplex capability.

### **On Board AC'97 Sound Codec**

- Chip: ALC655
- Compliant with AC'97 Version 2.3 specification.
- Supports S/PDIF-out (optional).
- Supports 6 channels.

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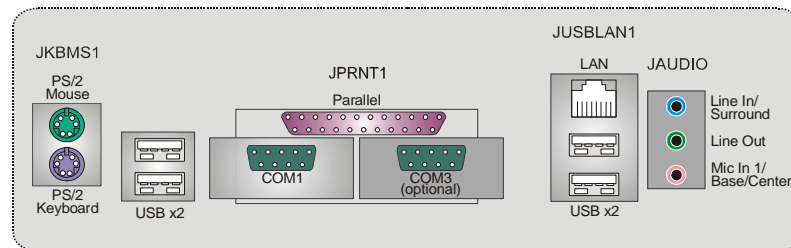
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### Front Side On-board Peripherals

- 1 audio out header supports 1 line-in, 1 line-out, and 1 MIC ports.
- 1 serial header supports 1 serial COM port. (JCOM2, optional)
- 1 CD-in connector supports 1 CD-ROM device.  
(One extra CD-in connector is optional for v1.1 only.)
- 1 S/PDIF-out connector supports 1 digital audio-out port.  
(Digital audio-out function is optional for both versions.)
- 1 S/PDIF-in connector supports 1 digital audio-in port.  
(Digital audio-in function is optional for v1.1 only.)
- 1 floppy connector supports 2 FDD devices with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
- 2 USB headers support 4 USB 2.0 ports.
- 2 IDE connectors support 4 hard disk devices.
- 2 Serial ATA connectors support 2 SATA devices.

### Rear (Back) Side Connectors

- 1 parallel port.
- 1RJ-45 LAN jack.
- 1 audio port.
- 1 PS/2 keyboard & mouse port.
- 1 serial port. (JCOM3 is optional.)
- 4 USB 2.0 ports.



**B. BIOS & Software**

**BIOS**

- Award legal BIOS.
- Supports APM1.2.
- Supports ACPI.
- Supports USB Function.

**Software**

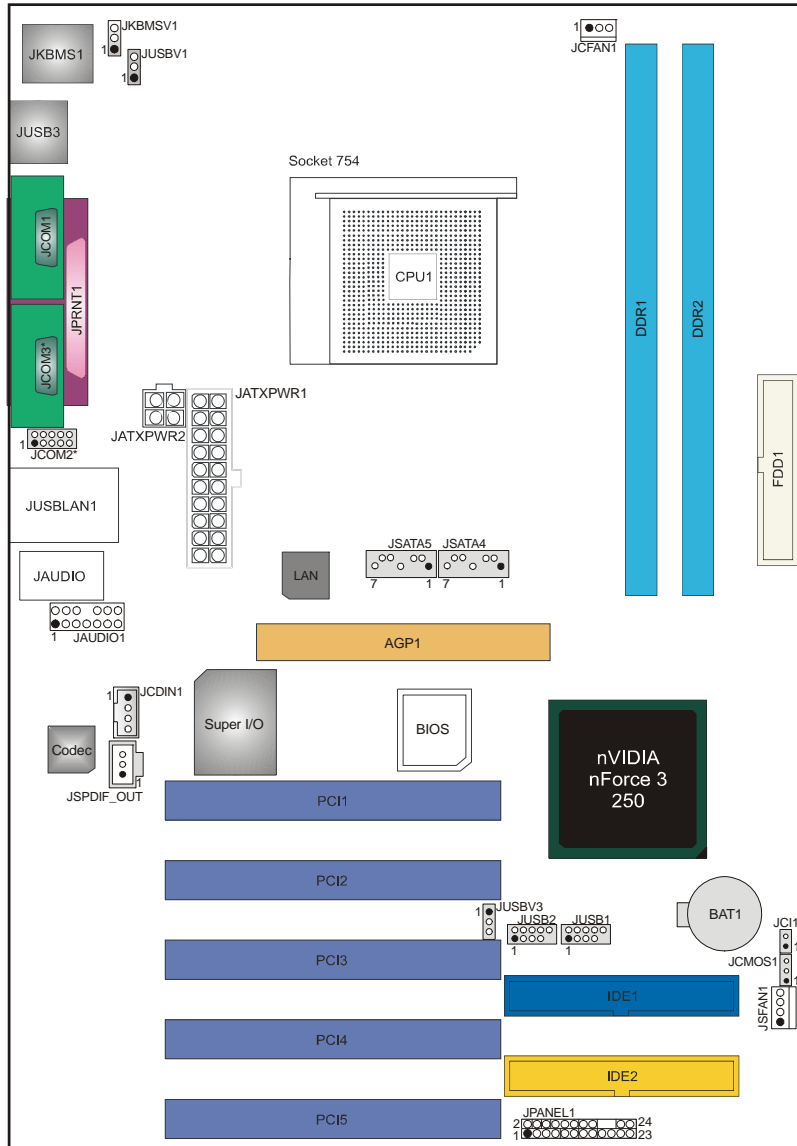
- Supports Warpspeeder™, 9th Touch™, WINFLASHER™ and FLASHER™.
- Offers the highest performance for Windows 98SE, Windows 2000, Windows Me, Windows XP, SCO UNIX etc.

**1.2 PACKAGE CHECKLIST**

- FDD Cable X 1
- HDD Cable X 1
- User's Manual X 1
- Fully Setup Driver CD X 1
- Rear I/O Panel for ATX Case X 1
- USB 2.0 Cable X1 (optional)
- S/PDIF Cable X 1 (optional)
- Serial ATA Cable X 1 (optional)
- Serial ATA Power Switch Cable X 1 (optional)

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### 1.3 LAYOUT OF VERSION 1.0

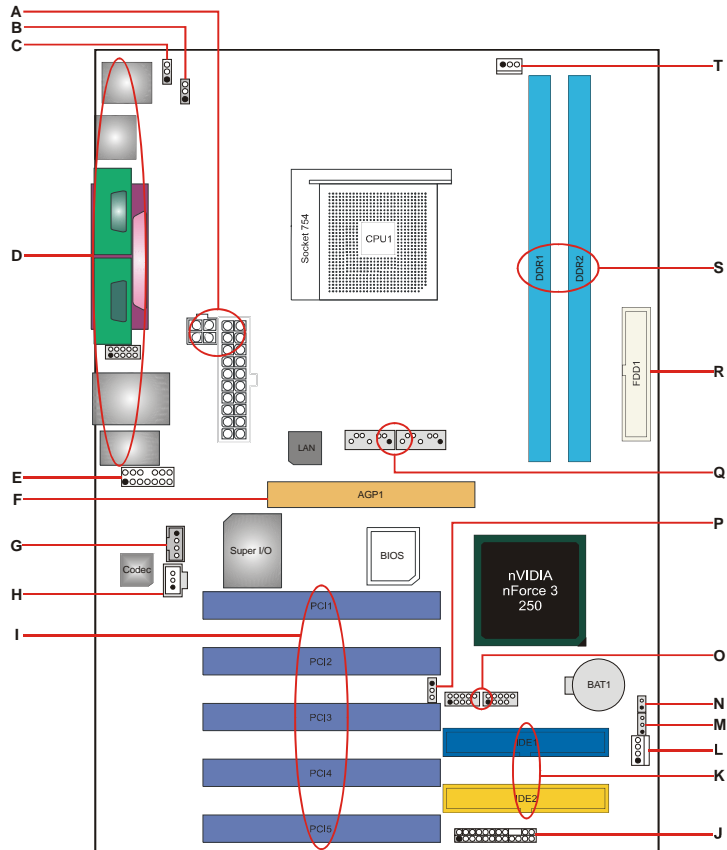


**Note:**

1. ● represents the 1<sup>st</sup> pin.
2. JCOM2 and JCOM3 are optional, and only one of them can be chosen.

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### 1.4 COMPONENTS OF VERSION 1.0

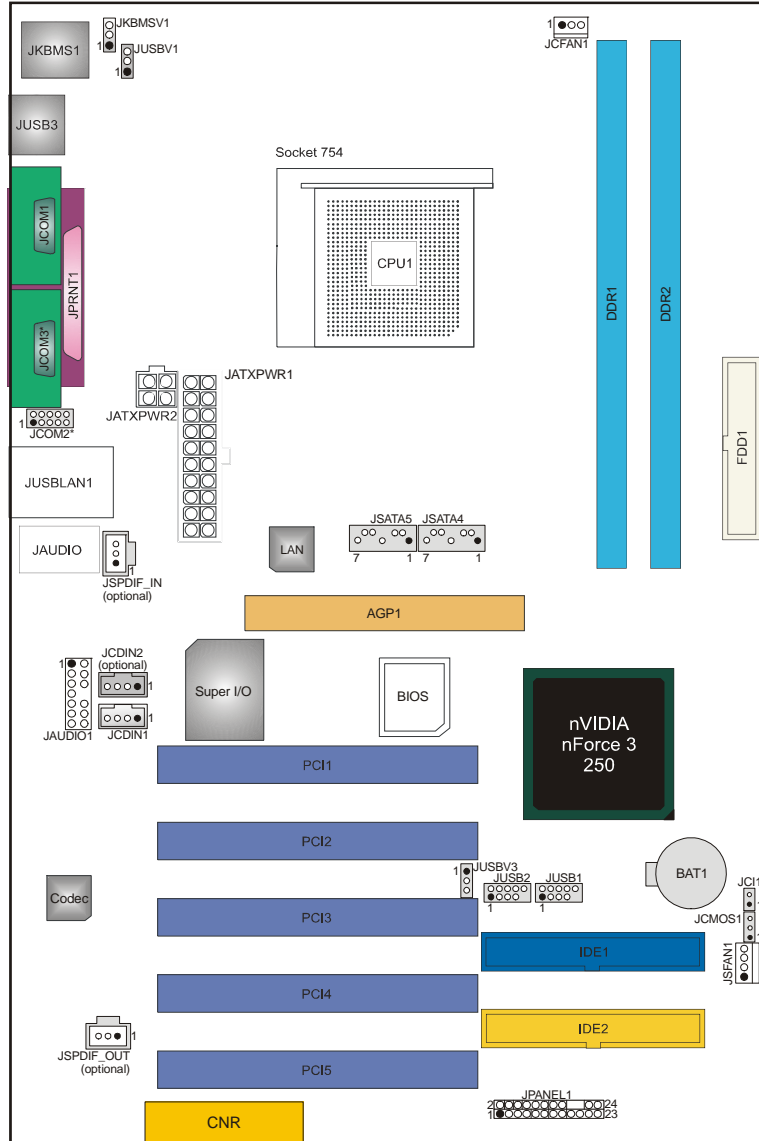


- |  |   |
|--|---|
| <b>A.</b> JATXPWR1~2: ATX power connectors.                | <b>K.</b> IDE1~2: Hard disk connectors.     |
| <b>B.</b> JUSBV1: Power source for JUSB3.                  | <b>L.</b> JSFAN1: System fan connector.     |
| <b>C.</b> JKBMSV1: Power source for JKBMS1.                | <b>M.</b> JCMOS1: Clear CMOS Header.        |
| <b>D.</b> Back panel connectors.                           | <b>N.</b> JCI1: Case open Header.           |
| <b>E.</b> JAUDIO1: Audio out header.                       | <b>O.</b> JUSB1~2: Front USB headers.       |
| <b>F.</b> AGP1: Accelerated Graphics Port slot.            | <b>P.</b> JUSBV3: Power source for JUSB1~2. |
| <b>G.</b> JCDIN1: CD-ROM audio-in header                   | <b>Q.</b> JSATA4~5: Serial ATA connectors.  |
| <b>H.</b> JSPDIF_OUT: Digital audio out header (optional). | <b>R.</b> FDD1: Floppy disk connector.      |
| <b>I.</b> PCI1~5: Peripheral Component Interconnect slots. | <b>S.</b> DDR1~2: DDR memory modules.       |
| <b>J.</b> JPANEL1: Front panel connector.                  | <b>T.</b> JCFAN1: CPU fan connector         |



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## 1.5 LAYOUT OF VERSION 1.1



**Note:**

1. ● represents the 1<sup>st</sup> pin.
2. JCOM2 and JCOM3 are optional, and only one of them can be chosen.



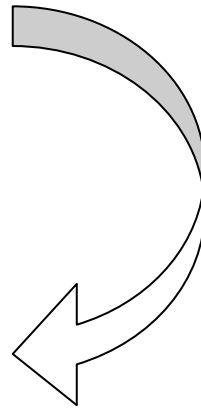
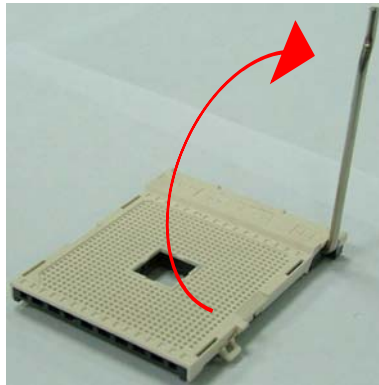
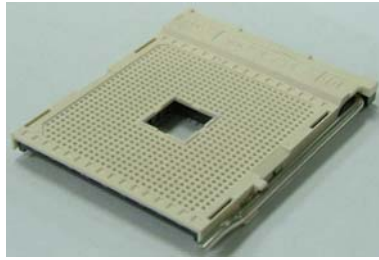
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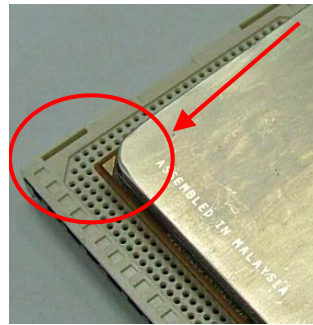
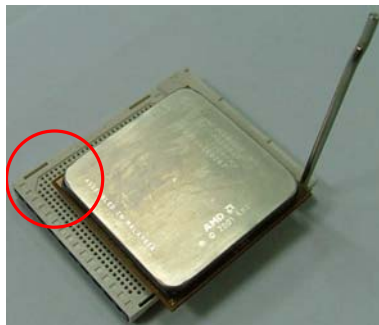
## CHAPTER 2: HARDWARE INSTALLATION

### 2.1 CENTRAL PROCESSING UNIT (CPU)

**Step 1:** Pull the lever sideways away from the socket and then raise the lever up to a 90-degree angle.



**Step 2:** Look for the black cut edge on socket, and the white dot on CPU should point forwards this black cut edge. The CPU will fit only in the correct orientation.



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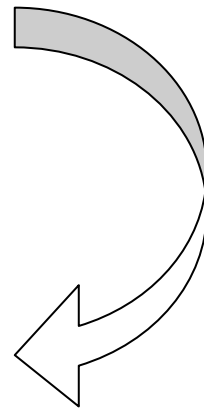
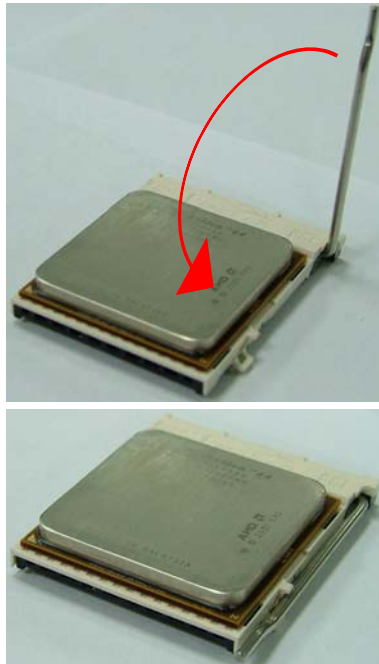
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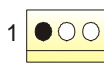
**Step 3:** Hold the CPU down firmly, and then close the lever to complete the installation.




**Step 4:** Put the CPU Fan on the CPU and buckle it. Connect the CPU FAN power cable to the JCFAN1. This completes the installation.

## 2.2 FAN HEADERS

### CPU Fan Header: JCFAN1

 <b>JCFAN1</b>	Pin	Assignment
	1	Ground
	2	+12V
	3	FAN RPM rate sense

### System Fan Header: JSFAN1

 <b>JSFAN1</b>	Pin	Assignment
	1	Ground
	2	+12V
	3	FAN RPM rate sense

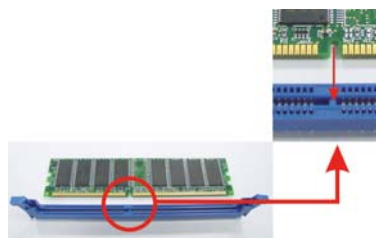
**Note:**

The JCFAN1 and JSFAN1 support system cooling fan with Smart Fan Control utility. It supports 3 pin head connector. 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 GND.

## 2.3 MEMORY MODULES INSTALLATION

### 2.2.1 DDR Module installation

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.



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



**2.4 CONNECTORS, & SLOTS**

**Floppy Disk Connector: FDD1**

The motherboard provides a standard floppy disk connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.

**Hard Disk Connectors: IDE1~2**

The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~5, Bus Master, and Ultra DMA 33/66/100/133 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). The IDE connectors can connect a master and a slave drive, so you can connect up to four hard disk drives. The first hard drive should always be connected to IDE1.

**AGP1: Accelerated Graphics Port Slot**

Your monitor will attach directly to that video card. This motherboard supports video cards for PCI slots, but it is also equipped with an Accelerated Graphics Port (AGP). An AGP card will take advantage of AGP technology for improved video efficiency and performance, especially with 3D graphics.

**Peripheral Component Interconnect Slots: PCI1~5**

This motherboard is equipped with 1 standard PCI slot. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designated as 32 bits.


**CNR1: Communication Network Riser Slot  
(For Version 1.1 only)**

The CNR specification is an open Industry Standard Architecture, and it defines a hardware scalable riser card interface, which supports modem only.

*Note:* This CNR slot supports Smartlink CNR Card only.

**Serial ATA Connector: JSATA4~5**

The motherboard has a SATA Controller in nForce 3 250 with 2 channels SATA interface; it satisfies the SATA 1.0 spec and with transfer rate of 1.5Gb/s.

 <p>JSATA4/JSATA5</p>	Pin	Assignment	Pin	Assignment
	1	Ground	2	TX+
	3	TX-	4	Ground
	5	RX-	6	RX+
	7	Ground		

## CHAPTER 3: HEADERS & JUMPERS SETUP

### 3.1 HOW TO SETUP JUMPERS

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



Pin1-2 closed

### 3.2 DETAIL SETTINGS

#### Power Connectors: JATXPWR1/PATXPWR2


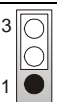
JATXPWR1: This connector allows user to connect 20-pin power connector on the ATX power supply.

JATXPWR2: By connecting this connector, it will provide +12V to CPU power circuit.

<p><b>JATXPWR1</b></p>	<b>Pin</b>	<b>Assignment</b>	<b>Pin</b>	<b>Assignment</b>
	1	+3.3V	11	+3.3V
	2	+3.3V	12	-12V
	3	Ground	13	Ground
	4	+5V	14	PS_ON
	5	Ground	15	Ground
	6	+5V	16	Ground
	7	Ground	17	Ground
	8	PW_OK	18	-5V
	9	Standby Voltage +5V	19	+5V
10	+12V	20	+5V	
<p><b>JATXPWR2</b></p>	<b>Pin</b>	<b>Assignment</b>	<b>Pin</b>	<b>Assignment</b>
	1	+12V	3	Ground
	2	+12v	4	Ground

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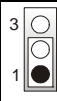
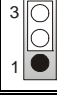
### Power Source Selection Headers for USB: JUSBV1/JUSBV3

	Assignment	Description
 <p>Pin 1-2 close</p>	+5V	JUSBV1: +5V for JUSB3. JUSBV3: +5V for JUSB1/2.
 <p>Pin 2-3 close</p>	+5V standby Voltage	JUSBV1: JUSB3 is powered with +5V standby voltage. JUSBV3: JUSB1/2 are powered +5V standby voltage.

**Note:**

In order to support this function “Power-on system via USB device,” “JUSBV3” jumper cap should be placed on Pin 2-3 individually.

### Power Source Selection Headers for Keyboard/Mouse: JKBMSV1

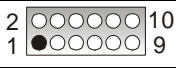
	Assignment	Description
 <p>Pin 1-2 close</p>	+5V	+5V for PS/2 keyboard and mouse
 <p>Pin 2-3 close</p>	+5V Standby Voltage	PS/2 keyboard and mouse are powered with +5V standby voltage.

**Note:**

In order to support this function “Power-on system via keyboard and mouse”, “JKBMSV1” jumper cap should be placed on Pin 2-3.

### COM2 Header: JCOM2 (Optional)

This header allows user to connect additional serial cable on the PC back panel. It can be used to connect serial devices, for example, mouse or modem.

 <b>JCOM2-Header</b>			
Pin	Assignment	Pin	Assignment
1	RIN1	2	RIN3
3	DOUT2	4	DOUT3
5	Ground	6	RIN2
7	DOUT1	8	RIN4
9	-XRI1	10	NA



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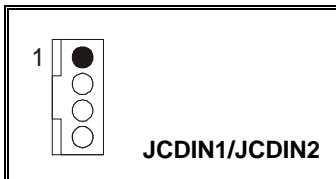
### Front Panel Audio-out Header: JAUDIO1

This connector will allow user to connect with the front audio out put headers on the PC case. It will disable the output on back panel audio connectors.

Pin	Assignment	Pin	Assignment
1	Mic in/center	2	Ground
3	Mic power/Bass	4	Audio power
5	Right line out/Speaker out Right	6	Right line out/Speaker out Right
7	Reserved	8	Key
9	Left line out/Speaker out Left	10	Left line out/Speaker out Left
11	Right line in/Rear speaker Right	12	Right line in/Rear speaker Right
13	Left line in/Rear speaker Left	14	Left line in/Rear speaker Left

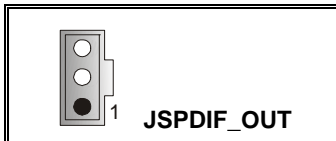
### CD-ROM Audio-in Connector: JCDIN1/JCDIN2 (JCDIN2 is optional.)

This connector allows user to connect the audio source from the variety devices, like CD-ROM, DVD-ROM, PCI sound card, PCI TV turner card etc..

	Pin	Assignment
 <b>JCDIN1/JCDIN2</b>	1	Left channel input
	2	Ground
	3	Ground
	4	Right channel input

### Digital Audio-out Connector: JSPDIF\_OUT (optional)

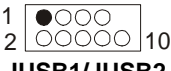
This connector will allow user to connect the PCI bracket SPDIF output header.

	Pin	Assignment
 <b>JSPDIF_OUT</b>	1	+5V
	2	SPDIF OUT
	3	Ground





**Front USB Headers: JUSB1~2**

This connector allows user to connect additional USB cables on the PC front panel. Also can be connected with internal USB devices, like USB card reader.

 <p><b>JUSB1/JUSB2</b></p>	Pin	Assignment	Pin	Assignment
	1	+5V (fused)	2	+5V (fused)
	3	USB-	4	USB-
	5	USB+	6	USB+
	7	Ground	8	Ground
	9	Key	10	NC

**Close CMOS Header: JCMOS1**

By placing the jumper on pin2-3, it allows user to restore the BIOS safe setting and the CMOS data, please carefully follow the procedures to avoid damaging the motherboard.

JCMOS1	Assignment
 <p><b>Pin 1-2 close</b></p>	Normal Operation (Default).
 <p><b>Pin 2-3 close</b></p>	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. Reset your desired password or clear the CMOS data.

## CHAPTER 4: USEFUL HELP

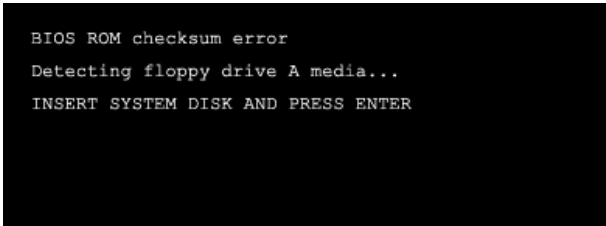
### 4.1 AWARD BIOS BEEP CODE

Beep Sound	Meaning
One long beep followed by two short beeps	Video card not found or video card memory bad
High-low siren sound	CPU overheated System will shut down automatically
One Short beep when system boot-up	No error found during POST
Long beeps every other second	No DRAM detected or install

### 4.2 EXTRA INFORMATION

#### A. BIOS Update

After you fail to update BIOS or BIOS is invaded by virus, the Boot-Block function will help to restore BIOS. If the following message is shown after boot-up the system, it means the BIOS contents are corrupted.



```
BIOS ROM checksum error
Detecting floppy drive A media...
INSERT SYSTEM DISK AND PRESS ENTER
```

In this Case, please follow the procedure below to restore the BIOS:

1. Make a bootable floppy disk.
2. Download the Flash Utility "AWDFLASH.exe" from the Biostar website: [www.biostar.com.tw](http://www.biostar.com.tw)
3. Confirm motherboard model and download the respectively BIOS from Biostar website.
4. Copy "AWDFLASH.exe" and respectively BIOS into floppy disk.
5. Insert the bootable disk into floppy drive and press Enter.
6. System will boot-up to DOS prompt.
7. Type "Awdflash xxxx.bf/sn/py/r" in DOS prompt.
8. System will update BIOS automatically and restart.
9. The BIOS has been recovered and will work properly.

**B. 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.

**4.3 TROUBLESHOOTING**

<b>Probable</b>	<b>Solution</b>
<ol style="list-style-type: none"><li>1. No power to the system at all Power light don't illuminate, fan inside power supply does not turn on.</li><li>2. Indicator light on keyboard does not turn on.</li></ol>	<ol style="list-style-type: none"><li>1. Make sure power cable is securely plugged in.</li><li>2. Replace cable.</li><li>3. Contact technical support.</li></ol>
System inoperative. Keyboard lights are on, power indicator lights are lit, and hard drive is spinning.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.
System does not boot from hard disk drive, can be booted from optical drive.	<ol style="list-style-type: none"><li>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.</li><li>2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.</li></ol>
System only boots from optical drive. Hard disk can be read and applications can be used but booting from hard disk is impossible.	<ol style="list-style-type: none"><li>1. Back up data and applications files.</li><li>2. Reformat the hard drive. Re-install applications and data using backup disks.</li></ol>
Screen message says "Invalid Configuration" or "CMOS Failure."	Review system's equipment. Make sure correct information is in setup.
Cannot boot system after installing second hard drive.	<ol style="list-style-type: none"><li>1. Set master/slave jumpers correctly.</li><li>2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.</li></ol>