# CONTENTS

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*Item Checklist*

Please check that your package is complete. If you discover damaged or missing items, please contact your retailer.

Motherboard x 1

☒      40-pin IDE Connector Flat Cable x 1

☒      34-pin Floppy Disk Drive Flat Cable x 1

☒      User Manual x 1; CD  x 1

☒      VGA Connector Flat Cable x 1

☐      USB Connector Cable with bracket x 1 (Option)

☐      IrDA Module x 1 (Option)

Option : Components will be include upon customer ordering instructions per Proforma Invoice & additional external procurement cost will be included.

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# 1.    *Specifications*

## *Microprocessor*

Support Intel P54C/P55C, AMD K5/K6/K6-2, Cyrix M1/M2 and other Pentium compatible CPUs 66/75/83/95/100/112 MHz host bus clock, selectable by jumpers ZIF Socket 7

## *Cache and System Memory*

512KB pipeline burst synchronous SRAM
Three 168 pin dual in line memory module (DIMM) sockets
Support up to 768 MB of synchronous DRAM (SDRAM)

## *Chipset*

SiS 530/5595 PCI AGP/VGA chip set
Integrated AGP VGA for hardware 2D/3D video/graphics accelerators
Integrated PCI bus mastering controller
Multifunction PCI-to-ISA bridge
Universal Serial Bus (USB) and DMA controller
Two PCI IDE interfaces that support up to four IDE drives or devices
Power management logic
Real time clock

## *Video/Graphics subsystems*

Integrated high performance & high quality AGP 2D/3D accelerator
Programmable 2MB, 4MB, and 8MB shared frame buffer
Optional 4MB local frame buffer (manufacturing option)
24 bit true color RAMDAC up to 230MHz pixel clock, supports 1024*768 8/16/32 bpp @85Hz NI
DVD hardware accelerator

## *I/O features*

1 x FDD Port support up to 2.88MB
1 x Parallel Port (LPT) support ECP/EPP
2 x High Speed Serial (16C550 UART) Ports
2 x Universal Serial Bus (USB) Ports
1 x AT Keyboard Port
1 x PS/2 Mouse Port
1 x IrDA Port
1 x VGA Port

## *Expansion slots*
2X16 bit ISA slots
3X32 bit PCI slots

## *Other features*
Award BIOS
Plug and Play compatible
Advanced Power Management (APM) 1.2 support
Advanced Configuration and Power Interface (ACPI) 1.0 support

## *Form factor*
Baby AT,220mmx230mm

# 2. Chipset on this Mother Board

The Motherbaoard use the Chipset of SiS530 & SIS5595 where SIS 530 is fuinction for Host, PCI, 3D A.G.P. Video/Graphics & Memory Controller and the SiS5595 is function for PCI SYSTEM I/O.

The SiS530/5595 chipset, provides a high performance/cost index Desktop/ Mobile solution for the Intel Pentium P54C/P55C, AMD K5/K6/K6-II, Cyrix M1/M2 and other compatible Pentium CPU  with 3D A.G.P. VGA system.

The Host, PCI, 3D A.G.P. Video/Graphics & Memory Controller, SiS530 integrates the Host-to-PCI bridge, the PCI interface, the L2 cache controller, the DRAM controller, the high performance hardware 2D/3D VGA controller, and the PCI IDE controller.

The Host interface supports Synchronous/Asynchronous Host/DRAM clocking configuration to eminently improve the system performance and DRAM compatibility issues.

The L2 cache controller can support up to 1GB P.B. SRAM ( Default is 512KB ), and the DRAM controller can support SDRAM memory up to 768 MBytes.

The built-in fast PCI IDE controller supports the ATA PIO/DMA, and the Ultra DMA33/66 function that support the data transfer rate up to 66 MB/s. It provides the separate data path for two IDE channels that can eminently improve the performance under the multi-tasking environment.

The A.G.P. internal interface is supported for integrated H/W 3D VGA controller. The integrated VGA controller is a high performance and targeted at 3D graphics application. In addition, the integrated 3D Video/Graphics controller adopts the 64bits 100MHz host bus interface high technology to improve the performance eminently. To cost-effective the PC system, the share system memory architecture will be adopted and it can flexibly using the 2MB, 4MB and 8MB frame buffer size from programming the system BIOS. To enhance the system performance, SiS530 also supports the local frame buffer solution and memory sizes can support up to 8MB with SDRAM.

As for DVD solution, the integrated 3D VGA controller also support DVD H/ W accelerator to improve the DVD playback performance.

The SiS5595 PCI system I/O integrates the PCI-to-ISA bridge with the DDMA, PC/PCI DMA and Serial IRQ capability, the ACPI/Legacy PMU, the Data Acquisition Interface, the Universal Serial Bus host/hub interface, and the ISA bus interface which contains the ISA bus controller, the DMA controllers, the interrupt controllers, the Timers and the Real Time Clock (RTC). It also integrates the Keyboard Controller and PS/2 mouse interface that can support keyboard power on function for users to power on system by entering the hot key or password from keyboard.

The built-in USB controller, which is fully compliant to OHCI (Open Host Controller Interface), provides two USB ports capable of running full/low speed USB devices.

The Data Acquisition Interface offers the ability of monitoring and reporting the environmental condition of the PC. It could monitor 5 positive analog voltage inputs, 2 Fan speed inputs, and one temperature input.

In addition, SiS5595 also supports ACPI function to meet Advanced Configuration and Power Interface (ACPI) 1.0 specification for Windows 98 environment, it can support power-management timer, Power button, Real-time clock alarm wake up, more sleeping state, ACPI LED for sleeping and working state
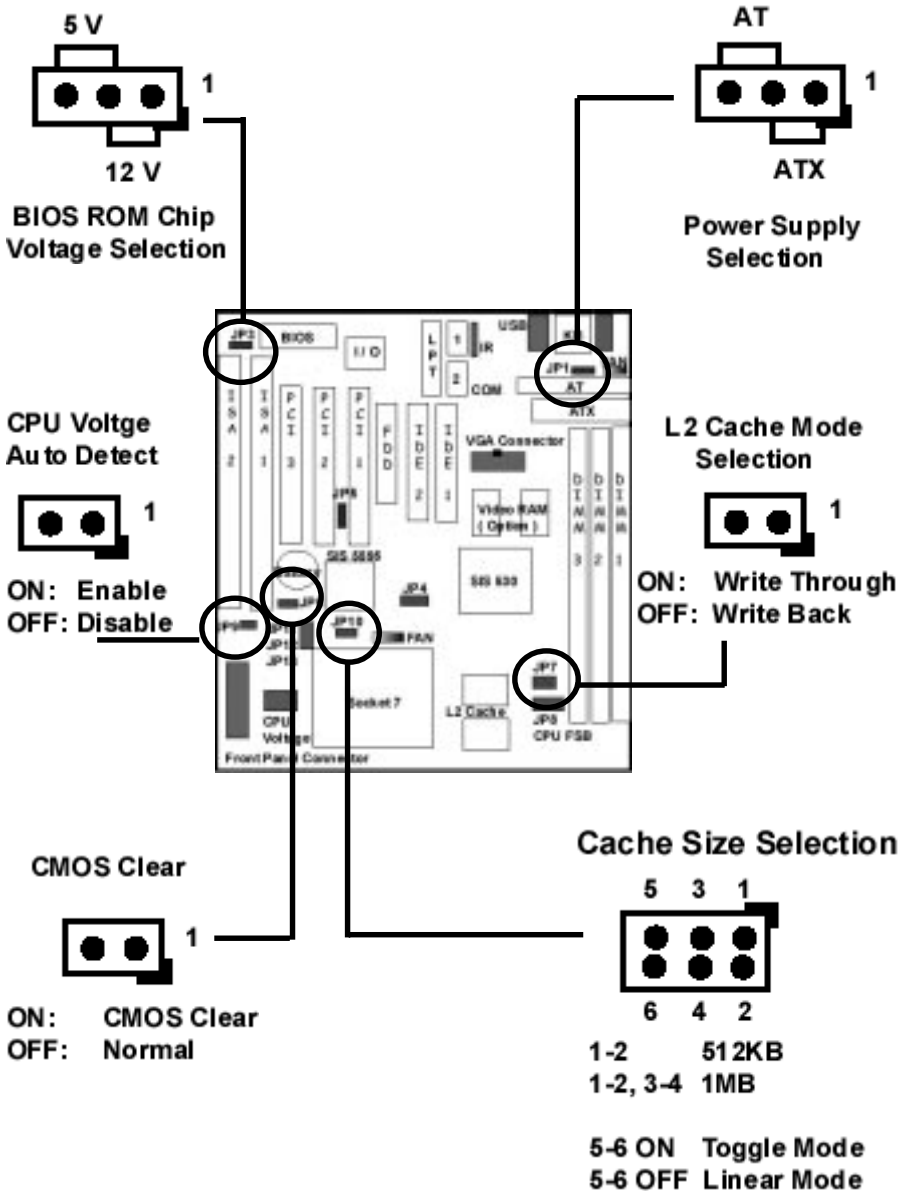
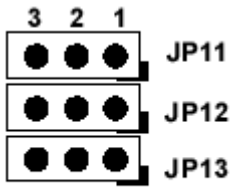# *3. Parts Of The Mother Board*
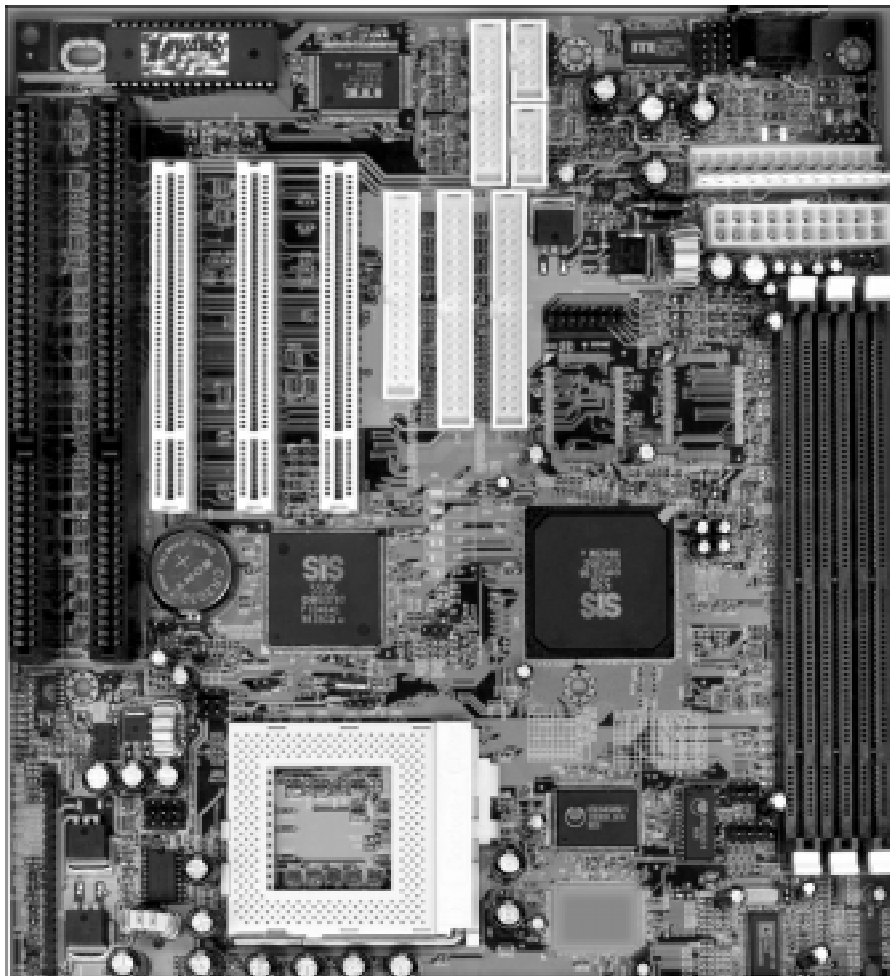
# 4. MotherBoard Layout Quick View
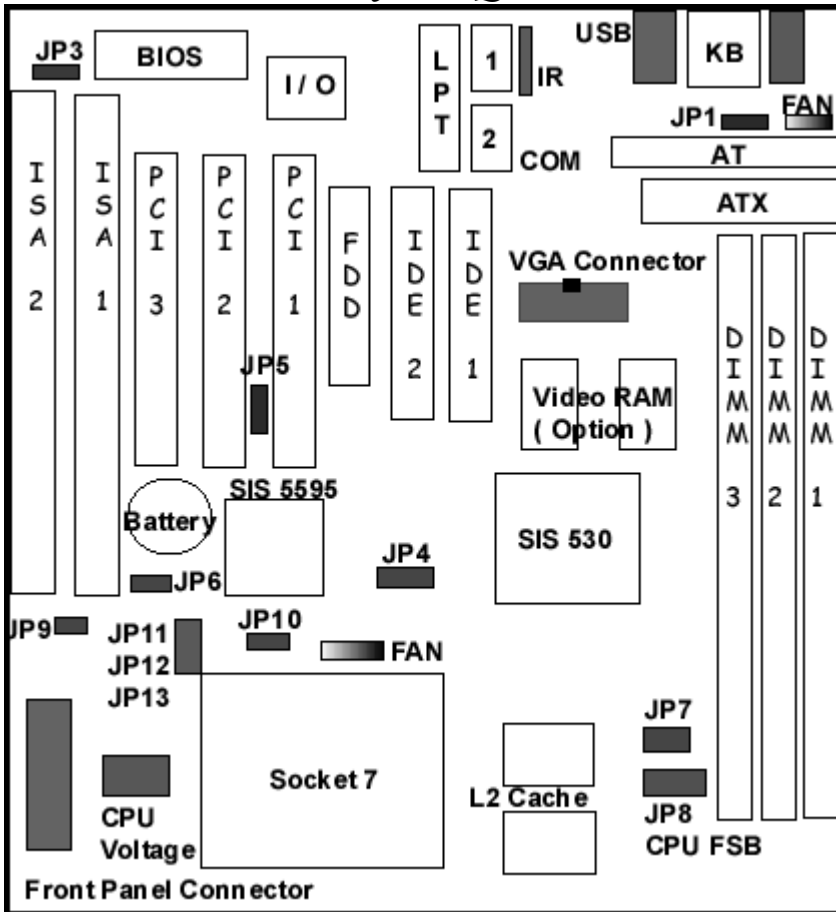


**Special Connector description**
**JP1:     AT & ATX Power Supply Selection**
**JP3:     BIOS ROM Chip Voltage Selection**
**JP4:     SiS5595 Version Selection**
**JP5:     SB_Link Connector**
**JP6:     CMOS Clear**
**JP7:     L2 Cache Size Selection**
**JP8:     CPU Front Side Bus Setting**
**JP9:     CPU Voltage Auto detect Selection ( For Intel CPU Only )**
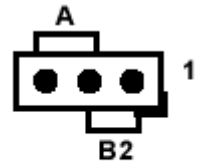**JP10:   L2 Cache Mode Selection**
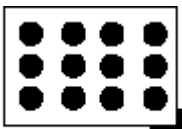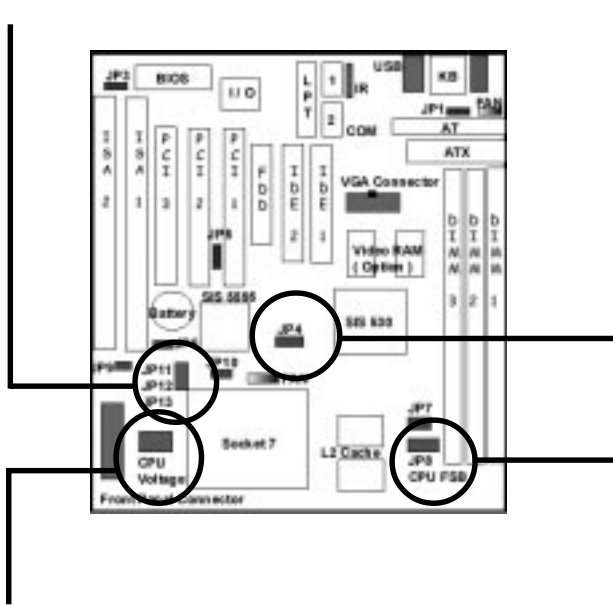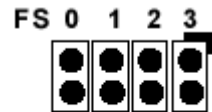**JP11~13 CPU Ratio Selection**

# 5-1   Jumper Overview

**5 V**

**1**

**12 V**

**BIOS ROM Chip
Voltage Selection**

**AT**

**1**

**ATX**

**Power Supply
Selection**

**CPU Voltge
Auto Detect**

**1**

ON:   Enable
OFF: Disable

**L 2 Cache Mode
Selection**

**1**

ON:    Write Through
OFF: Write Back

**CMOS Clear**

**1**

ON:    CMOS Clear
OFF:   Normal

## Cache Size Selection

**5   3   1**

**6   4   2**

1-2           512KB
1-2, 3-4   1MB

5-6 ON   Toggle Mode
5-6 OFF  Linear Mode

**JP11**
**JP12**
**JP13**

**CPU Ratio Setting**
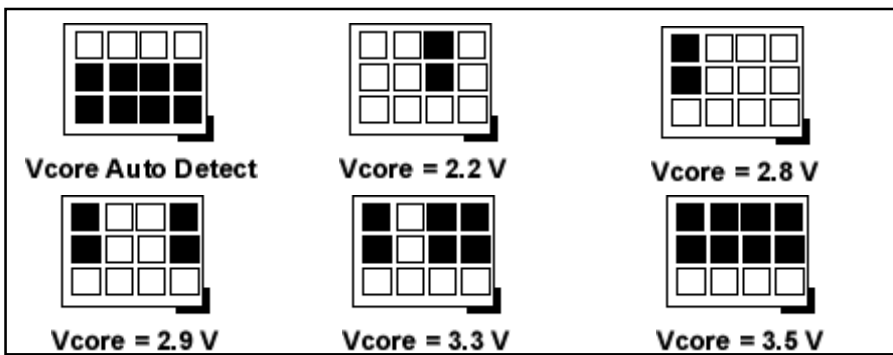
**SIS 5595 Version Selection**

**J10  CPU Vcore Selection**

**CPU Front Side BUS**

# 5-2 CPU Jumper Setting



CPU Front Side BUS

JP11
JP12
JP13

CPU Ratio Setting

J10 CPU Vcore Selection
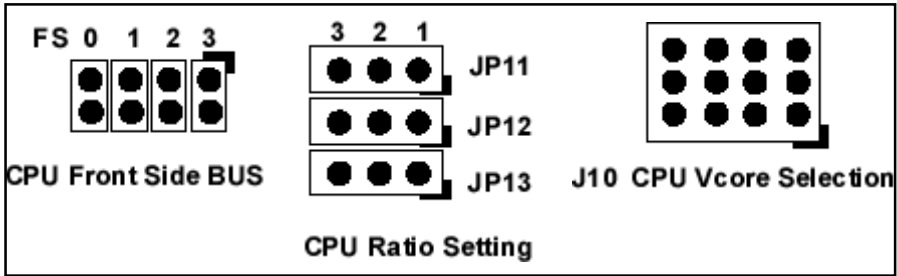
| CPU Clock | FS 0 | FS 1 | FS 2 | FS 3 | SDRAM Clock | PCI Clock |
|-----------|------|------|------|------|-------------|-----------|
| 66 MHZ | ON | ON | ON | OFF | 66 | 33 |
| 75 MHZ | OFF | ON | ON | OFF | 75 | 30 |
| 83 MHZ | ON | OFF | ON | OFF | 83 | 33 |
| 95 MHZ | OFF | OFF | ON | OFF | 95 | 31 |
| 100 MHZ | ON | ON | OFF | OFF | 100 | 33 |
| 112 MHZ | OFF | ON | OFF | OFF | 112 | 37 |
| 124 MHZ | ON | OFF | OFF | OFF | 124 | 31 |
| 133 MHZ | OFF | OFF | OFF | OFF | 133 | 33 |

| | 2.5 x | 3.0 x | 2.0 x | 3.5 x | 4.5 x | 5.0 x | 4.0 x | 5.5 x |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| JP11 | 1- 2 | 1- 2 | 1- 2 | 1- 2 | 2- 3 | 2- 3 | 2- 3 | 2- 3 |
| JP12 | 2- 3 | 2- 3 | 1- 2 | 1- 2 | 2- 3 | 2- 3 | 1- 2 | 1- 2 |
| JP13 | 2- 3 | 1- 2 | 2- 3 | 1- 2 | 2- 3 | 1- 2 | 2- 3 | 1- 2 |



Vcore Auto Detect

Vcore = 2.2 V

Vcore = 2.8 V

Vcore = 2.9 V

Vcore = 3.3 V

Vcore = 3.5 V

# 5-3 *Install System Memory Modules*

This motherboard support 3 slots for 168-pin 3.3V Non-buffered DIMM modules, providing support for up to 768 MB of main memory using DIMM modules from 8MB to 256MB. For 66MHz host bus CPUs, please use 10ns or faster DIMM modules. For 100MHz host bus CPUs, please use 8ns or faster DIMM modules. The following is the example to install the system SDRAM memory module combination: if you have two DIMM Modules, you has better install them into DIMM Slot 1 & Slot 2 with the Max possible memory size up to 256MB ( 128 + 128 ) if the 128MB DIMM module is available.

| Numbers of the Memory Module | DIMM1 | DIMM2 | DIMM3 | Memory Size | Max. Size |
|---|---|---|---|---|---|
| 1 | 1st | | | 8~256MB | 256 MB |
| 2 | 1st | 2nd | | 8~256 MB | 512 MB |
| 3 | 1st | 2nd | 3rd | 8~256 MB | 768 MB |
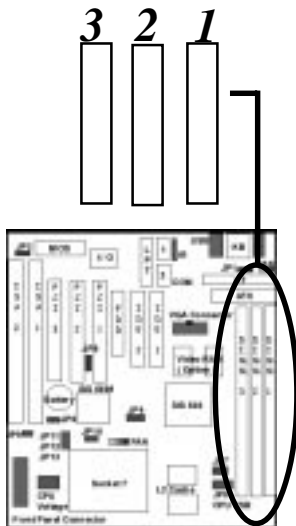


The DIMM types supported SDRAM (Synchronous DRAM). The following is the summary:
**Single side:**
1Mx64 (8MB), 2Mx64 (16MB), 4Mx64 (32MB), 8Mx64 (64MB), 16Mx64 (128MB)
**Double side:**
1Mx64x2 (16MB), 2Mx64x2 (32MB), 4Mx64x2 (64MB), 8Mx64x2 (128MB).
**Total Memory Size:**
There is no jumper setting required for the memory size or type. It is automatically detected by the system BIOS, and the total memory size is to add them together.

*Please Install the DIMM Module from DIMM Slot 1*

**11**

# 5-4 Install the Central Processing Unit (CPU)

**Step 1: Set the CPU Freqency FSB Clock (JP8) [ Refer to Page 10 ]**

1.    The SDRAM Clock will depending on the DIMM Module the User used.
       The PC-100 spec. SDRAM basicly can support 100MHZ or above Clock
2.    The possible Front Side Bus setting are from 66 to 133 MHz.
3.    If you want to overclock the CPU, please make sure the other
       peripher als can work fine with one another. That mean you need to
       well test the whole system with your own configuration, otherwise,
       please set the default and safe setting with 66MHZ or 100MHZ front
       side bus.
3.    Please make sure you are using the correct DIMM module with the
       related CPU type. For the 100MHZ or faster front side bus, you need to
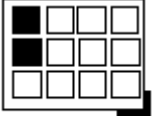       use the PC100 type DIMM module.
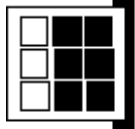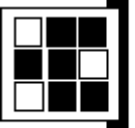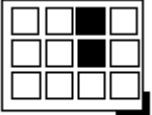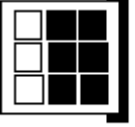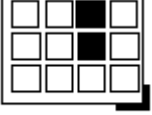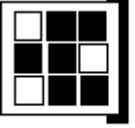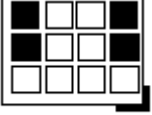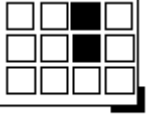
**Step 2: Set CPU Freqency Ratio ( JP11, JP12, JP13 ) [ Refer to Page 10 ]**

1.    Normally, The CPU itself will mention about the Frequency and the
       Clock Ratio and also the Voltage of the Vcore, Please refer to the CPU
       Type ans select the correct CPU Ratio

**Step 3: Set the CPU Voltage, Vcore ( J10 ) [ Refer to Page 10 ]**

1.    There are the voltage range from 2.2V to 3.5V could be secectable.
       Please refer to the CPU specification to set the correct CPU Vcore.
2.    User also can set the Jumper ( J10 ) to CPU Voltage as Auto Detect
       ( Refer to page 10 ) form the AMD series CPU. For the Intel series
       CPU, User need to set further jumper JP9 as OFF for the CPU Voltage
       auto detect

*Example for the most current CPU Setting:*

| | | | |
|---|---|---|---|
| **Intel MMX 233 MHZ** | 66 MHZ | JP11 JP12 JP13 x 3.5 | Vcore = 2.8 V |
| **AMD K6-2 300 MHZ** | 100 MHZ | JP11 JP12 JP13 x 3.0 | Vcore = 2.2 V |
| **AMD K6-2 333 MHZ** | 95 MHZ | JP11 JP12 JP13 x 3.5 | Vcore = 2.2 V |
| **AMD K6-2 400 MHZ** | 100 MHZ | JP11 JP12 JP13 x 4.0 | Vcore = 2.2 V |
| **Cyrix MII 300MHZ** | 75 MHZ | JP11 JP12 JP13 x 3.0 | Vcore = 2.9 V |
| **AMD K6-2 350 MHZ** | 100 MHZ | JP11 JP12 JP13 x 3.5 | Vcore = 2.2 V |

**13**

# 5-5 External Conncetion

1.Unplug your power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

2.Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. The Four Corners of the connectors are labeled on the motherboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18in. (46cm), with the second drive connector no more than 6in. (15cm) from the first connector.

3.The motherboard requires a power supply and a "power good" signal. Make the ATX power supply can take at least 10mAmp load on the 5V Standby lead (5VSB) to meet the standard ATX specification.

4. To prevent electrical spikes, make sure that the power supply is not connected to an outlet when making or removing connections. Power supplies contain power remains, which can damage electrical components.

**5. Expansion Card Installation Procedure**

! Read the documentation for your expansion card and make any necessary hardware or software settings for your expansion card, such as jumpers.

! Remove your computer system's cover and the bracket plate on the slot you intend to use. Keep the bracket for possible future use.

! Carefully align the card's connectors and press firmly.

! Secure the card on the slot with the screw you removed above.

! Replace the computer system's cover.

! Set up the BIOS if necessary (such as IRQ xx Used By ISA: Yes in PNP AND PCI SETUP)

# 5-5-1 Power Cable

**ATX Power Supply Connector (ATXPWR, 20-pins)**

Plug the connector from the power directly into the 20-pin male ATX PW con-
nector on the motherboard as shown in the following figure. The plug from the
power supply will only insert in one orientation because of the different hole
sizes. Find the proper orientation and push down firmly making sure that the
pins are aligned and the power supply is off before connecting or disconnecting
the power cable.



**ATX Power Connector**
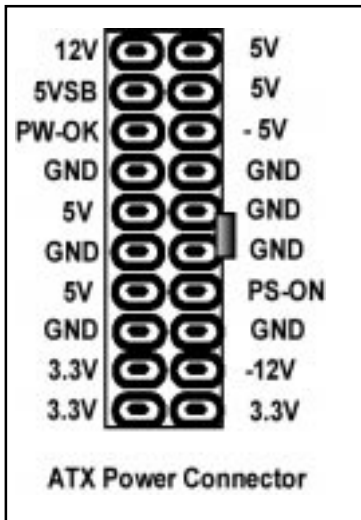
Make sure that your ATX power supply
can supply at least 10 mAmp on the 5-
volt standby lead (5VSTB). You may ex-
perience difficulty in powering on your
system if your power supply cannot sup-
port the load. For Wake on LAN sup-
port, your ATX power supply must sup-
ply at least 1 Amp.

You should plug in/out the Power Cable
to/from the Mother Board more carefully,
all the Pins should be conect at the
same time.
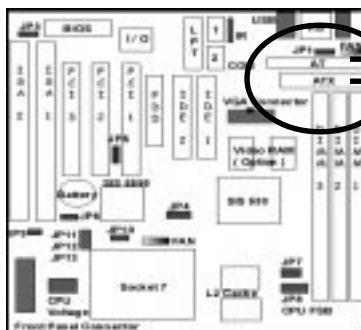


**AT Power Supply**

**ATX Power Supply**

**AT Power Supply Connector (ATPOWER, 12-pins)**

AT

**Refer to Page to Page 8**
**Set the JP1 as 2-3 for AT Power Supplt**
1

ATX
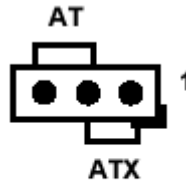
**Power Supply**
**Selection**

This connector connects to a standard AT power supply. To connect the leads from the power supply, ensure first that the power supply is not plugged. Most power supplies provide two plugs (P8 and P9), each containing six wires, two of which are black. Orient the connectors so that the black wires are together. Please refer to the following:
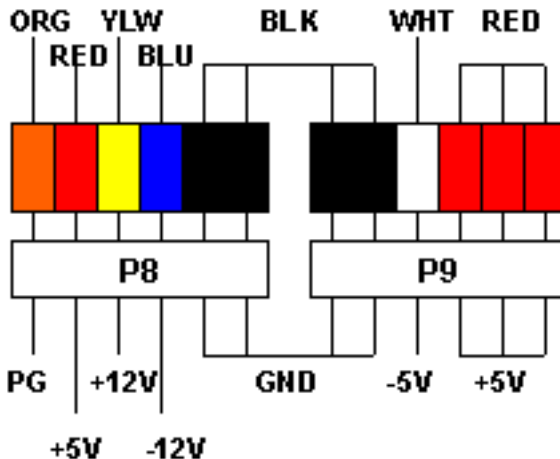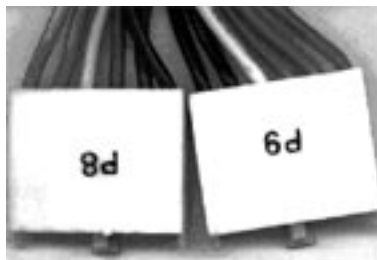
# 5-5-2 KB, Mouse, USB

**The onboard keyboard connector**

is a five-pin AT-compatible connector. The view angle of drawing shown here is from back panel of the housing. If you want to use the PS/2 Keyboard, you need to add one adapter that converts the signal from AT to PS/2 specification.

**PS/2 Mouse Connector**

The onboard PS/2 mouse connector is a 6-pin Mini-Din connector marked PS2.The view angle of drawing shown here is from back panel of the housing.

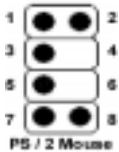| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | Mouse Data | 2 | N.C. |
| 3 | Ground | 4 | +5VDC |
| 5 | Mouse CLK | 6 | N.C |
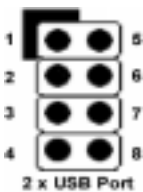
**USB Connector X 2**

You can attach USB devices to the USB connector. The Mother board contains two USB connectors. USB is a new serial bus design that is capable of cascading low-/medium-speed peripherals (less than 12Mbps) such as keyboard, mouse, joystick, scanner, printer and modem/ISDN.

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | +5 VDC | 5 | +5VDC |
| 2 | DATA - | 6 | DATA- |
| 3 | DATA + | 7 | DATA+ |
| 4 | Ground | 8 | Ground |

# 5-5-3     *Front Panel Connection*



**Front Panel Connector**
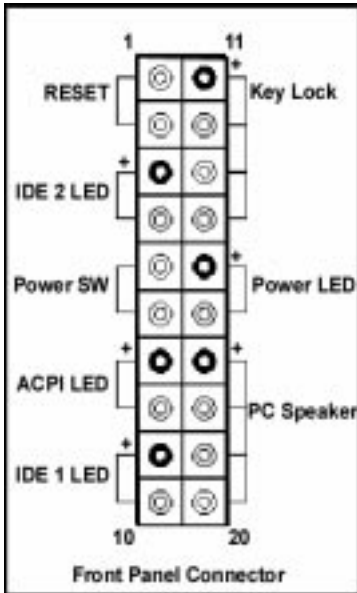
**1). IDE Activity LED ( Pin 9,10)**
This connector connects to the IDE (hard disk) activity indicator light on the system abinet.

**2). System Power LED ( Pin 15,16 )**
This 3-pin connector lights the system power LED when the motherboard has power.

**3). ACPI LED (Pin 7,8)**
ACPI LED can use to control the blinking of a LED at the freqency of 1 HZ to indi-cate the system is at power saving mode.

**4). ATX Power Switch ( Pin 5,6 )**
The system power is controlled by a push-switch, connected to this lead. Pushing the button once will turn on the power and pushing again will turn off the power. The system power LED shows that status of the system's power. If the power to the ATX power supply is interrupted while the motherboard is on, standby power will remember that the motherboard should be on and boot the computer when power is reapplied to the ATX power supply.
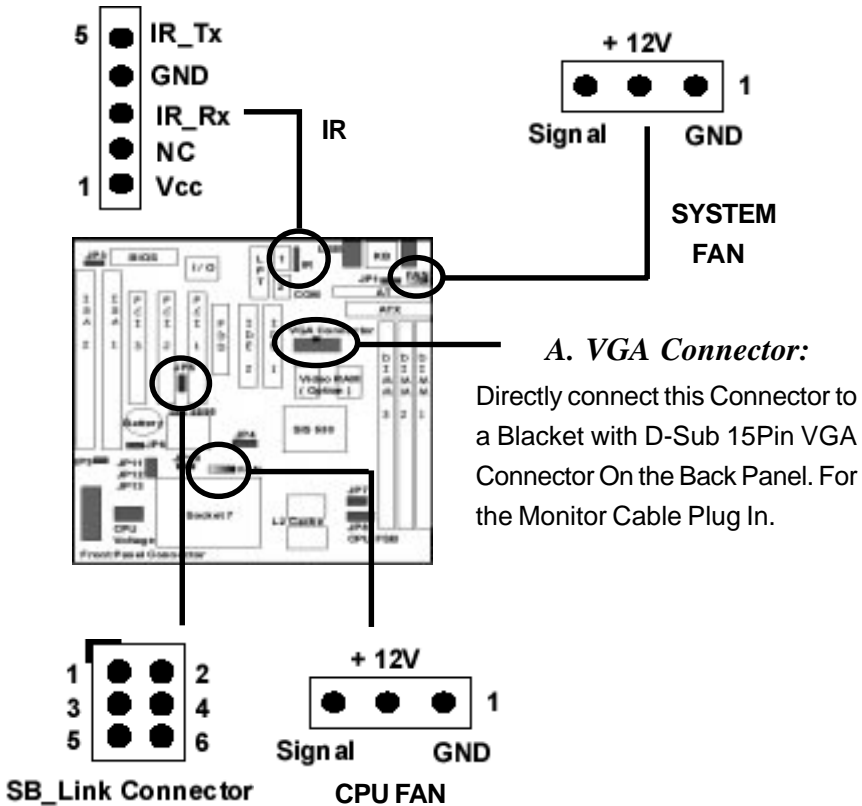
**5). Reset Switch ( Pin 1,2 )**
This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system power supply.

**6). IDE 2 Activity LED ( Pin 3,4 )**
Further indicator for the IDE 2 Device Activity LED

# *5-5-4  FAN, IR, SB_Link, VGA  Connector*



*A. VGA Connector:*

Directly connect this Connector to a Blacket with D-Sub 15Pin VGA Connector On the Back Panel. For the Monitor Cable Plug In.

## *B. CPU & System Cooling FAN Connector:*

This connectors support a CPU cooling fan of 500 mA (6WATT, +12V) or less. Orient the fan so that the heat sink fins allow airflow to go across the onboard heat sink(s). Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive (+12V), while the black should be ground. Connect the fan plug to the board taking into consideration the polarity of the connector.

## C.    IrDA Compliant Infrared Module Connector

This connector support the optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. You must also configure UART 2. Use Infrared in Chipset Features Setup to select whether UART 2 is directed for use with COM2 or IrDA. When IrDA is selected in BIOS, COM2 will be disabled. Use the five pins as shown and connect a ribbon cable from the module to the motherboard to the pin definitions.

Pin 1    Vcc

Pin 2    NC

Pin 3    IR_RX

Pin 4    GND

Pin 5    IR_TX

```
5  ●  IR_Tx
   ●  GND
   ●  IR_Rx
   ●  NC
1  ●  Vcc
```
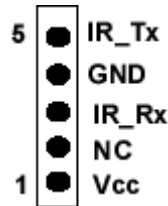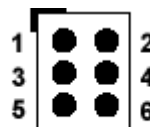
## D.    SB-Link

originated from Creative to propose a standard which can be a bridge between the mainboard and PCI sound card to deliver Sound Blaster 16 compatibility under DOS real-mode environment. Sound Blaster 16 was almost the standard of the ISA Bus sound cards, a lot of games were Programmed for Sound Blaster especially under DOS environment. If the users are still interested in playing these game titles, they might have compatibility problems with the new up graded PCI Bus sound card. This header adopts Intels PC/PCI technology to deliver Sound Blaster 16 compatibility to PCI Bus sound card, enabling users to play real-mode DOS games. Connect the cable provided by PCI sound card to this connector.

| Pin | Significance of signal |
|-----|------------------------|
| 1   | GNT#                   |
| 2   | Ground                 |
| 3   | KEY                    |
| 4   | REQ#                   |
| 5   | Ground                 |
| 6   | SERIRQ                 |

```
1 ● ● 2
3 ● ● 4
5 ● ● 6
```
**SB_Link Connector**

# *5-6  Power On Procedure*

1.After all connections are made, close the system case cover.

2.Be sure that all switches are off (in some systems, marked with 0)

3.Make sure your power supply voltage is correctly set to 110V or 230V.

4.Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.

5.Connect the power cord into a power outlet that is equipped with a surge protector.

6.You may then turn on your devices in the following order:

Your monitor

External SCSI devices (starting with the last device on the chain)

Your system power. For ATX power supplies, you need to switch on the power supply as well as press the ATX power switch on the front of the    case.

7.The power LED on the front panel of the system case will light. For ATX power supplies, the system LED will light when the ATX power switch is pressed. The monitor LED may light up after the system power up. if it complies with "green" standards or if it has a power standby feature. The system will then run power-on tests. While the tests are running, additional messages will appear on the screen. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

8.During power-on, hold down <Delete> to enter BIOS setup menu if you want to run the BIOS Setup Utility.

Powering Off your computer: You must first exit or shut down your operating system before switching off the power switch. For ATX power supplies, you can press the ATX power switch after exiting or shutting down your operating sys-tem. If you use Windows 95/98, click the Start button, click Shut Down, and then click Shut down the computer. The system will give three quick beeps after about 30 seconds and then power off after Windows shuts down.

The message "You can now safely turn off your computer" will not appear when shutting down with ATX power supplies.