



### Ultra ATA/66

According to the previous ATA/IDE hard drive data transfer protocol, the signaling way to send data was in synchronous strobe mode by using the rising edge of the strobe signal. The Ultra ATA/33 protocol doubles the burst transfer rate from 16.6MB/s to 33.3MB/s, by using both the rising and falling edges of the strobe signal, this time Ultra ATA/66 doubles the Ultra ATA burst transfer rate once again (from 33.3MB/s to 66.6MB/s) by reducing setup times and increasing the strobe rate. The faster strobe rate increases EMI, which cannot be eliminated by the standard 40-pin cable used by ATA and Ultra ATA. To eliminate this increase in EMI, a new 40-pin, 80-conductor cable is needed. This cable adds 40 additional ground lines between each of the original 40 ground and signal lines. The additional 40 lines help shield the signal from EMI, reduce crosstalk and improves signal integrity.

Ultra ATA/33 introduced CRC (Cyclical Redundancy Check), a new feature of IDE that provides data integrity and reliability. Ultra ATA/66 uses the same process. The CRC value is calculated by both the host and the hard drive. After the host-request data is sent, the host sends its CRC to the hard drive, and the hard drive compares it to its own CRC value. If the hard drive reports errors to the host, then the host retries the command containing the CRC error.

Ultra ATA/66 technology increases both performance and data integrity. However there are basically five requirements for your system to run in Ultra ATA/66 mode:

1. The system board must have a special Ultra ATA/66 detect circuit, such as Advance 10 mainboard.
2. The system BIOS must also support Ultra ATA/66.
3. The operating system must be capable of DMA transfers. Win95 (OSR2) , Win98 and WindowsNT are capable.
4. An Ultra ATA/66 capable, 40-pin, 80-conductor cable is required.
5. Ultra ATA/66 compatible IDE device such as a hard drive or CD-ROM drive.

### PC-133 Memory

PC133 SDRAM Unbuffered DIMM defines the electrical and mechanical requirements for 168-pin, 3.3 Volt, 133MHz, 64/72-bit wide, Unbuffered Synchronous DRAM Dual In-Line Memory Modules (SDRAM DIMMs). Relatively , the peak bandwidth of PC-133 memory is the 33% higher than PC-100 memory. These latest SDRAMs are necessary to meet the enhanced 133MHz bus speed requirement.

Advance 10 mainboard based on VIA Apollo Pro 133(694X) chipset to adopt the PC-133 technology.



### Suspend to RAM

Suspend to RAM is a cost-effective, optimal implementation of the Advanced Configuration and Power Interface (ACPI) 1.0 specification, which makes a PC's power consumption drop to the lowest possible level and enables quick wakeup. When the system is in Suspend-to-RAM status, the system context is maintained in system memory, the system consumes only a small fraction of the power used for full operation. Instead of shutting down the system to save power when not in use and then having to reboot later, Suspend-to-RAM solution enables the system to quickly wake up, restoring all applications and features, enabling operation in a few seconds.

To implement this function, the following requirements are essential:

1. Power supply requirements: The current of 5VSB line of the power supply should be more than 0.75A.
2. Set the Jumper JSTR with pin2&pin3 closed. Refer to page 24 for detail.
3. The BIOS option "ACPI function" should be enabled, and "ACPI Suspend Type" should be set as S3 in AWARD BIOS CMOS setup. Refer to page 35 for detail
4. An ACPI-enabled operating system such as Windows 98 or Windows 2000 family is needed.
  - a. In order to install ACPI-enabled Windows 98 operating system, the setup command should be typed as shown below:  
D:\SETUP /P J  
(This manual assumes that your CD-ROM device driver letter is D:).
5. Three ways to enter Suspend-to-RAM status under ACPI-enabled Windows 98:
  - Click Start -> Shut down -> Standby to enable the system to enter Suspend-to-RAM status.
  - Click Start -> Setup -> Control Panel -> Power Management -> Advanced and choose Standby item, the system will enter Suspend-to-RAM status when you press power button.
  - From Power Management Properties in Control Panel, set the latency time in System Standby, the system will enter Suspend-to-RAM status when time out.

The same ways used to power up the system can be used to wake up the system from Suspend-to-RAM status. For example, pushing the power button, through the Wake-on-LAN, Wake-on-Modem function or RTC Alarm.



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## Chapter 2

### Installation Instructions

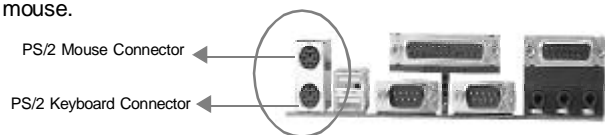
This section covers External Connectors, Jumper Settings and Memory Configuration. Refer to the mainboard layout chart for locations of all jumpers, external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The particular state of the jumpers, connectors and ports are illustrated in the following figures. Before setting the jumpers or inserting these connectors, please pay attention to the directions.

**Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, otherwise your mainboard and expansion cards might be seriously damaged.**

#### External Connectors

##### PS/2 Keyboard Connector, PS/2 Mouse Connector

PS/2 keyboard connector is for the usage of PS/2 keyboard. If using a standard AT size keyboard, an adapter should be used to fit this connector. PS/2 mouse connector is for the usage of PS/2 mouse.



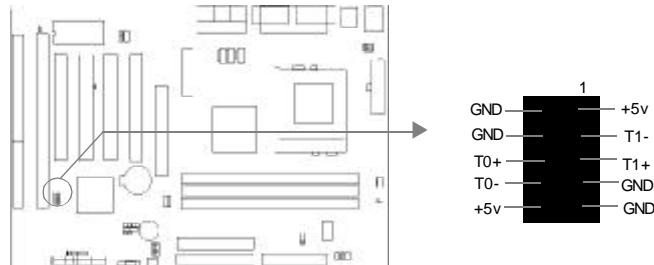
##### USB1, USB2

Two USB ports are available for connecting USB devices.



##### USB3, USB4

Two USB ports are not available on the back panel. Therefore, we provide a 10-pin ribbon cable with bracket to connect Built-in on-board USB header. ( manufacturing option)





### Parallel Port Connector and Serial Port Connector (UART1, UART2)

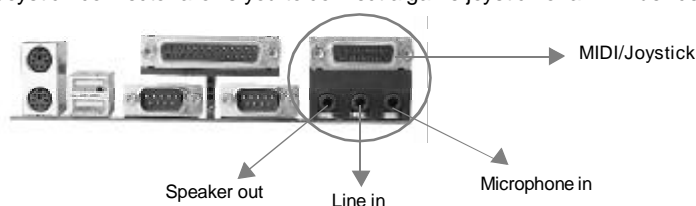
The parallel port connector can be connected to a parallel device such as a printer, while the serial port connector can be connected to a serial port device such as a serial port mouse. You can enable/disable them and choose the IRQ or I/O address in "Integrated Peripherals" from AWARD BIOS SETUP.



### Line-in jack, Microphone-in jack, Speaker-out jack and MIDI/Joystick connector

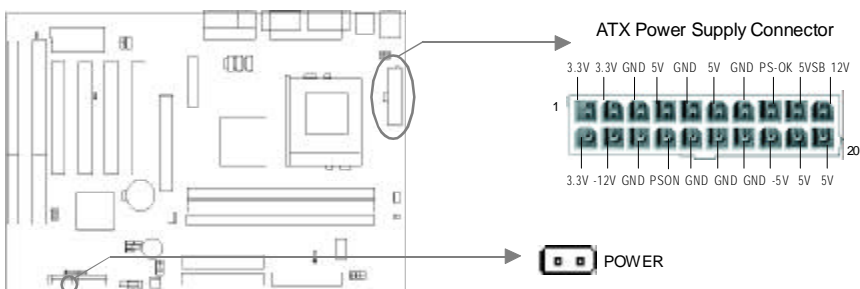
The Line-in jack can be connected to devices such as a cassette or minidisc player for playback or recording. The Microphone-in jack can be connected to a microphone for voice input. The Speaker-out jack allows you to connect speakers or headphones for audio output from the internal amplifier.

The MIDI/Joystick connector allows you to connect a game joystick or a MIDI device.



### ATX Power Supply Connector & Power Switch (POWER)

Be sure to connect the power supply plug to this connector in its proper orientation. The power switch (POWER) should be connected to a momentary switch (power button). When powering up your system, first turn on the mechanical switch of the power supply (if one is provided), then push once the power button. When powering off the system, you needn't turn off the mechanical switch, just **Push once** the power button.



**Note:** \* If you change "soft-off by PWR-BTTN" from default "Instant-off" to "Delay 4 Secs" in the "POWER MANAGEMENT SETUP" section of the BIOS, the power button should be pressed for more than 4 seconds before the system powers down.



### Hard Disk LED Connector (HD LED)

The connector connects to the case's IDE indicator LED indicating the activity status of IDE hard disk. The connector has an orientation. If one way doesn't work, try the other way.

### Reset Switch (RESET)

The connector connects to the case's reset switch. Press the switch once, the system resets.

### Speaker Connector (SPEAKER)

The connector can be connected to the speaker on the case.

### Power LED Connector (PWRLED)

The power LED has four status. When the system is in power up status, the LED is on. When the system is in suspend status, the LED is blink. When the system is in Suspend to RAM, the LED is off. When the system is in Soft-Off status, the LED is off. The connector has an orientation.

### ACPI LED Connector (ACPI\_LED)(Reserved)

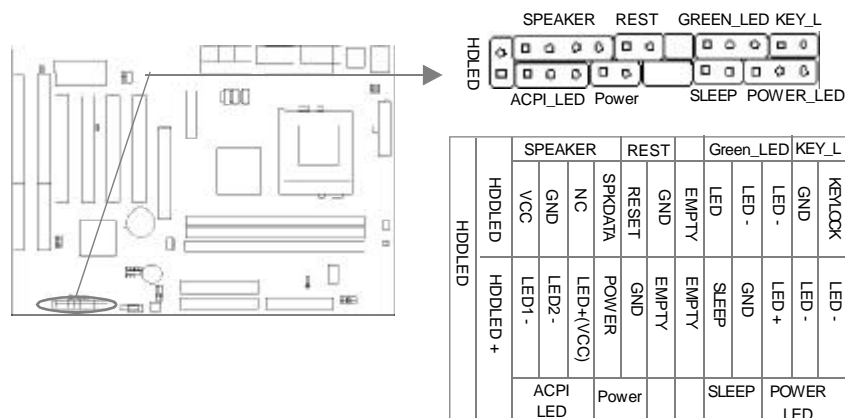
The ACPI LED is double-color lights with three pins. Pin1&Pin2 drive different color lights. If Pin1 drives orange light, Pin2 drives green light, the following status will come out. When the system is in power up status, the LED is green on. When the system is in suspend status, the LED is green blink. When the system is in suspend to RAM status, the LED is orange on. When the system is in soft-off status, the LED is off.

### GREEN LED Connector (GREEN\_LED)

The GREEN LED has four status. When the system is in three status (including power up, suspend, soft-off), the LED is off. When the system is in suspend to RAM status, the LED is on.

### Hardware Green Connector (SLEEP)

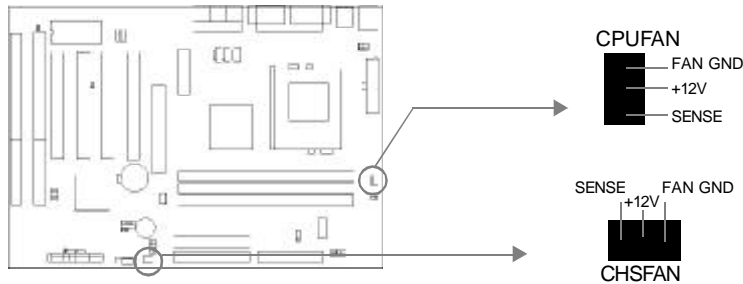
Push once the switch connected to this header, the system enters suspend mode.





### Fan Connector (CPUFAN, CHSFAN)

The fan speed of these two fans can be detected and viewed in “PC Health” section of the BIOS. They will be automatically turned off after the system enters suspend mode.



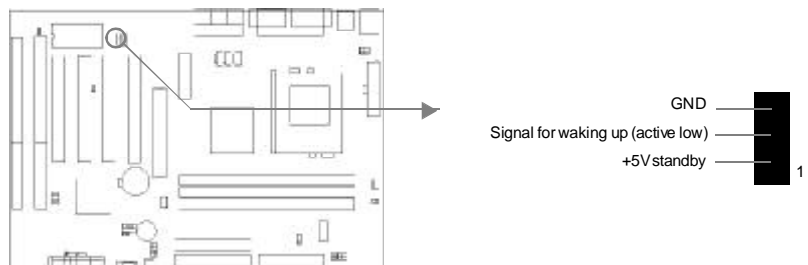
### Wake-Up On LAN (WOL)

Through the Wake-Up On LAN function, a wake event occurring from the network can wake up the system. If this function is to be used, please be sure an ATX 2.01 power supply of which 5VSB line is capable of delivering 720mA, and a LAN adapter which supports this function are used. Then connect this header to the relevant connector on the LAN adapter, set “PowerOn by Ring/LAN” as Enabled in the “POWER MANAGEMENT SETUP” section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.



### Wake-Up On Internal Modem (WOM)

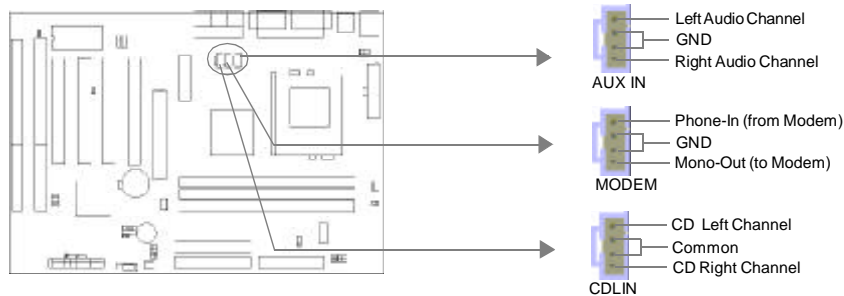
Through the Wake-Up On Internal Modem function, the system which is in the power-off status can be powered on by a ring signal received from the internal modem. If this function is to be used, be sure an internal modem card which supports the function is used. Then connect this header to the relevant connector on the modem card, set “PowerOn by Ring/LAN” as Enabled in the “POWER MANAGEMENT SETUP” section of the BIOS. Save & exit, then boot the operating system once to make sure this function takes effect.





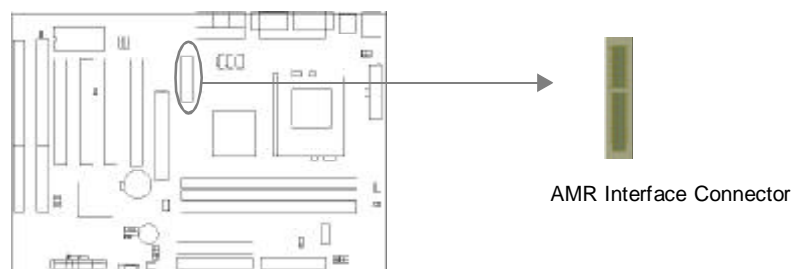
### Internal Audio Connectors (AUX, CDLIN, MODEM)

AUX and CDLIN connectors allow you to receive stereo audio input from such sound sources as a CD-ROM, TV tuner, or MPEG card. The MODEM connector allows the onboard audio to interface with a voice modem card with a similar connector. It also allows the sharing of mono\_in (such as a phone) and mono\_out (such as a speaker) between the onboard audio and the voice modem card.



### Audio/Modem Riser Interface Connector (AMR)

The AMR Interface Connector is the interface between the mainboard and the Audio/Modem Riser card. The connector provides all necessary signals which supports several different configurations of audio and modem in the system, such as audio and modem on the Riser, audio on the mainboard and modem on the Riser, or no audio with modem on the Riser. Advance 10 mainboard provides you with audio onboard solution, onboard audio can be enabled/disabled. Either AMR (Audio/Modem Riser) card or MR (Modem Riser) card can be used on this system. This software configurable AC' 97 audio and modem system gives customers an advanced, multimedia solution at an extremely low price. The AC' 97 audio and modem system can be enabled/disabled in "Integrated Peripherals" in AWARD BIOS CMOS Setup.

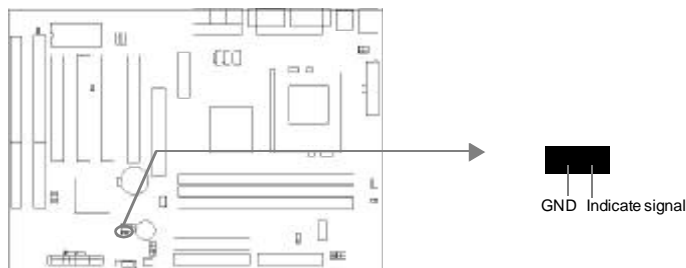






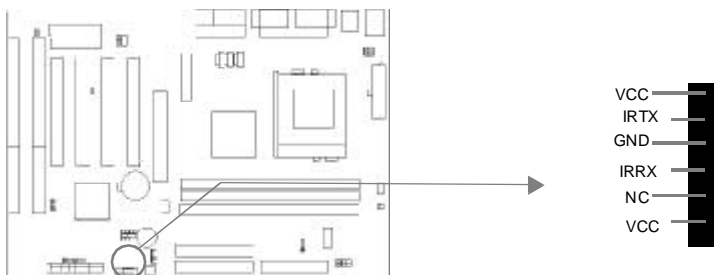
### Chassis Security Switch (CHSSEC)

The connector connects to the chassis security switch on the case. The system can detect the chassis intrusion through the status of this connector. If the connector has been closed once, the system will record the status and indicate the chassis has been opened. You can receive this information from QDI ManageEasy software.



### Infrared Header (IrDA)

This connector supports wireless transmitting and receiving. If using this function, set "UART 2 Mode" to HPSIR or ASKIR and configure the settings from the "INTEGRATED PERIPHERALS" section of the BIOS.






### Expansion Slots & I/O Ports description

Slot / Port	Description
PCI 1	First PCI slot.
PCI 2	Second PCI slot.
PCI 3	Third PCI slot.
PCI 4	Fourth PCI slot.
DIMM1	First DIMM slot.
DIMM2	Second DIMM slot.
DIMM3	Third DIMM slot.
IDE 1	Primary IDE port.
IDE 2	Secondary IDE port.
AMR	AMR slot.
AGP	AGP slot.
FLOPPY	Floppy Drive Port.

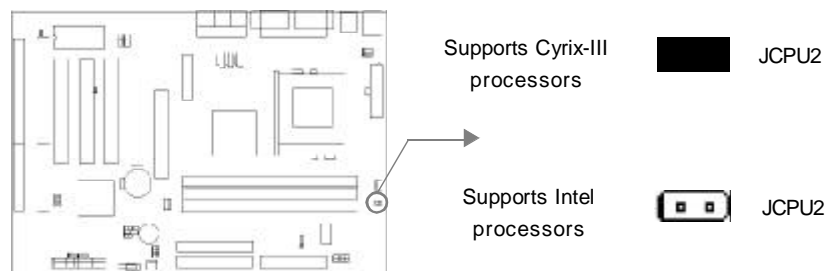


### **Jumper Settings**

Jumpers are located on the mainboard, they represent, clear CMOS jumper JCC, enable keyboard password power-on function jumper JKB etc. Pin 1 for all jumpers are located on the side with a thick white line ( Pin1→  ), refer to the mainboard' s silkscreen . Jumpers with three pins will be shown as  to represent pin1 & pin2 connected and  to represent pin2 & pin3 connected.

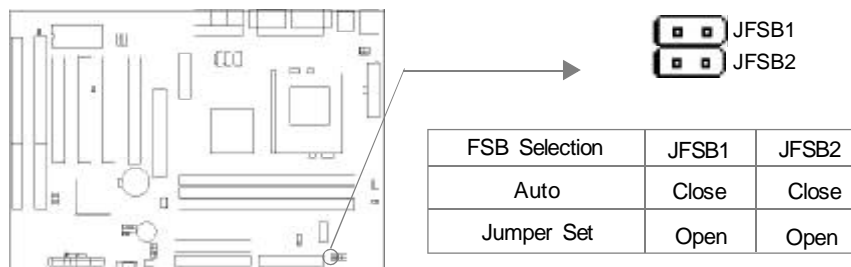
### **Processors Selection(JCPU2)**

Advance 10 mainboard supports Intel® processors and Cyrix-III processors. If you use Intel® processors , set the jumper JCPU2 as opened. If your use Cyrix-III processors, set the jumper JCPU2 as closed.



### **FSB Frequency Selection(JFSB1, JFSB2)**

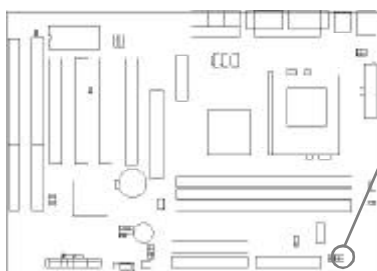
The jumper labeled JFSB1 and JFSB2 are located on the mainboard providing users with FSB frequency selection. If it is set as Auto with JFSB1 and JFSB2 closed, the system detects the CPU front side bus automatically. If it is set as Jumper setting with JFSB1 and JFSB2 opened, the CPU front side bus can be set manually. For more FSB frequency selection, you could check it in AWARD BIOS CMOS Setup and set the proper frequency that you need.





### Overclocking Jumper Setting (JCLK1, JCLK2)

Jumpers labeled JCLK1, JCLK2 are located on the mainboard providing users with CPU overclocking feature. The host bus speed can be set as 66/100/133MHz. Refer to the chart below for the location of these jumpers, and the table for information on how to set them.



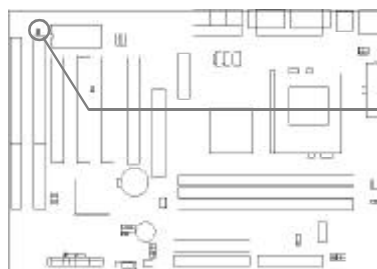
1 JCLK1  
1 JCLK2

CPU FSB	JCLK1	JCLK2
66MHz	Pin2&Pin3 closed	Pin2&Pin3 closed
100MHz	Pin1&Pin2 closed	Pin2&Pin3 closed
133MHz	Pin1&Pin2 closed	Pin1&Pin2 closed

If CPU FSB is set as 66MHz, the system only run at 66MHz front side bus even if a processor with 100MHz or higher. If CPU FSB is set as 100MHz, the system can run at 100MHz front side bus even if a processor with 66MHz FSB is installed. Setting up to 133MHz FSB is also supported. However, whether or not your system can be overclocked depends on your processor's capability. Whether the processor is bus ratio locked or unlocked should also be taken into account. For bus ratio unlocked processor, this overclocking feature can be implemented by setting JFSB1 and JFSB2 as all opened, meanwhile respectively adjusting the bus clock higher and the bus ratio (Multiplier) lower in "SpeedEasy CPU Setup" in AWARD BIOS CMOS Setup. We do not guarantee the overclocking system to be stable.

### BIOS-ProtectEasy Jumper (JAV)

The BIOS of the mainboard is contained inside the Flash ROM. If the jumper JAV is set as closed, you will be unable to flash the BIOS to the mainboard. However in this status, the system BIOS is protected from being attacked by serious virus such as CIH virus.



Flash Write Enabled JAV

Flash Write Disabled JAV

Setting the jumper JAV as opened(default), meanwhile disabling the "Flash Write Protect" item from "BIOS Features Setup" in AWARD BIOS CMOS Setup, allows you to flash the BIOS to the Flash ROM.



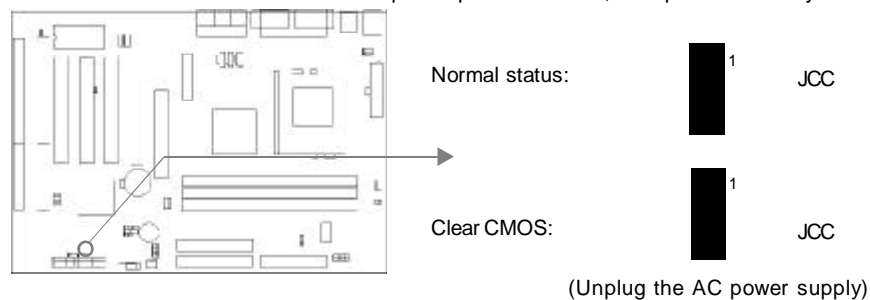
The DMI (Desktop Management Interface) system information such as the CPU type/speed, memory size, and expansion cards will be detected by the onboard BIOS and stored in the flash ROM. Whenever the system hardware configuration is changed, DMI information will be updated automatically. However, setting jumper JAV as closed makes flashing BIOS and updating DMI information impossible. Therefore, set JAV as closed when changing the system hardware configuration, or the error message “Unkown Flash Type” will be displayed on the screen, and DMI information update will be fail.

Setting the jumper JAV as opened(default), meanwhile disabling the “Flash Write Protect” item from “BIOS Features Setup” in AWARD BIOS CMOS Setup, allows you to flash the BIOS to the Flash ROM.

Setting the jumper JAV as closed, the Pentium®III Processor Number can be not readable whatever disabling or enabling “Processor Number Feature” item from “BIOS Features Setup” in AWARD BIOS CMOS Setup.

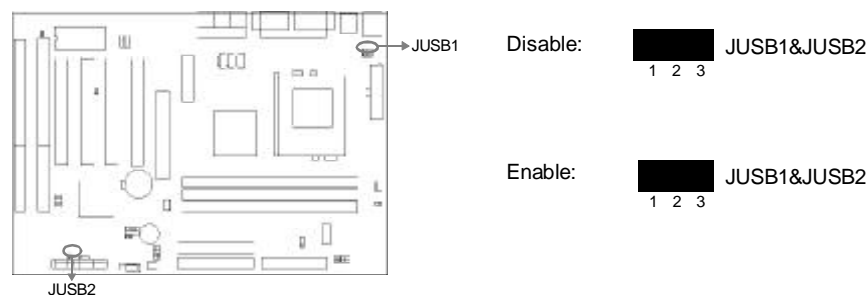
### Clear CMOS (JCC)

If you want to clear CMOS, unplug the AC power supply first, close JCC (pin1 & pin2) once, set JCC back to the normal status with pin2 & pin3 connected, then power on the system.



### Enable USB KeyDevice Wake-up Function (JUSB1, JUSB2)

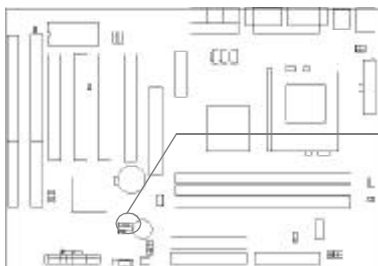
The mainboard provides the advanced USB keyDevice wake-up function. The system can be waken up from its power saving status including ACPI S3 by activating USB keyDevice. When using this function, set JUSB1&JUSB2 with pin1 & pin2 closed. Otherwise, set JUSB1&JUSB2 with pin2 & pin3 closed for disabling.





### AC97&MC97 Selection (JMC1, JMC2, JAC1)

Advance 10 mainboard is compatible with AC97 and MC97 specification. Refer to the table for information on how to set them.



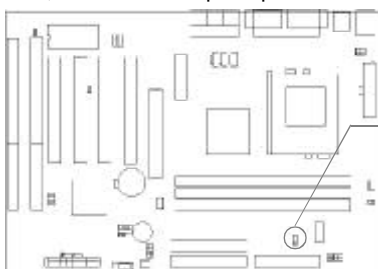
Jumper Function	JAC1	JMC1	JMC2
AC97 Only	1-2	1-2	1-2
AC97+MC97	1-2	1-2, 3-4	Open

'1-2' represents pin1 & pin2 closed

'2-3' represents pin2 & pin3 closed

### Suspend to RAM Switch (JSTR)

If you want to Disable Suspend to RAM function, set JSTR with pin1&pin2 closed, otherwise, set JSTR with pin2&pin3 closed for implementing this function.



Enable STR



JSTR  
1

Disable STR



JSTR  
1

### Memory Configuration

This mainboard provides three 168 pin 3.3V PC133 un-buffered/buffered DIMM sockets to support a flexible memory size ranging from 8MB up to 1.5GB for SDRAM or from 8MB up to 768MB for EDO memory. PC66/PC100/PC133MHz SDRAM with SPD, 66MHz EDO DIMMs and later memory VCM (Virtual Channel Memory) SDRAM are supported. The following set of rules allows optimum configurations.

- Possible SDRAM DIMM memory sizes are 16MB, 32MB, 64MB, 128MB, 256MB, 512MB in each DIMM socket.
- Possible EDO DIMM memory sizes are 16MB, 32MB, 64MB, 128MB, 256MB in each DIMM socket.
- Processor with 66MHz FSB should be paired with PC66, PC100, PC133 SDRAM  
processor with 100MHz FSB should be paired with either PC100 or PC133 SDRAM,  
processor with 133MHz FSB should be paired only with PC133 SDRAM.
- supports Suspend to RAM



## Chapter 3

### BIOS Description

#### Utility Support:

##### AWDFLASH.EXE

This is a flash memory write/read utility used for the purpose of upgrading your BIOS when necessary. Before doing so, please note:

- **We strongly recommend you only upgrade BIOS when encounter problems.**
- **Before upgrading your BIOS, review the description below to avoid making mistakes, destroying the BIOS and resulting in a non-working system.**

When you encounter problems, for example, you find your system does not support the latest CPU released after our current mainboard, you may therefore upgrade the BIOS, please don't forget to set JAV as close and disable the "Flash Write Protect" item in AWARD BIOS CMOS Setup first.

Follow the steps exactly for a successful upgrade.

1. Create a bootable system floppy diskette by typing Format A:/s from the DOS prompt under DOS6.xx or Windows 9x environment.
2. Copy AWDFLASH.EXE (version>7.07) from the directory \Utility located on QDI Mainboard Utility CD onto your new bootable diskette.
3. Download the updated BIOS file from the Website (<http://www.qdigrp.com>). Please be sure to download the suitable BIOS file for your mainboard.
4. Uncompress the file download, copy the BIOS file (xx.bin) onto the bootable diskette, and note the checksum of this BIOS which is located in readme file.
5. Reboot the system from the bootable diskette created.
6. Then run the AWDFLASH utility at the A:\ prompt as shown below:

```
A:\AWDFLASH xxxx.bin
```

Follow the instruction through the process. Don't turn off power or reset the system until the BIOS upgrade has been completed.

If you require more detailed information concerning AWDFLASH Utility, for example, the different usage of parameters, please type A:\>AWDFLASH /?



## AWARD BIOS Description

### Entering Setup

Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press the <Ctrl> + <Alt> + <Esc> keys, to enter the AWARD BIOS CMOS Setup Utility.

#### Press <Del> to enter SETUP

Once you have entered, the Main Menu (Figure 1) appears on the screen. The main menu allows you to select from eleven setup functions and two exit choices. Use the arrow keys to select among the items and press the <Enter> key to accept or enter the sub-menu.



Figure-1 Main Menu

### Load Fail-Safe Defaults

The Fail-Safe Defaults are secure and useful for system. It is recommended users load the Fail -Safe Defaults when the system is in trouble.

### Load Optimized Defaults

The Optimized Defaults are common and efficient. It is recommended users load the optimized defaults first, then modify the needed configuration settings.

### Standard CMOS Features Setup

The basic CMOS settings included in "Standard CMOS Features" are Date, Time, Hard Disk Drive Types, Floppy Disk Drive Types, and VGA etc. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value desired in each item.