Notice to End Users

This User's Guide & Technical Reference is for assisting system manufacturers and end users in setting up and installing the mainboard.

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Web site: http://www.soltek.com.tw
email: soltek@ms10.hint.net, support@mail.soltek.com.tw

Contents

Chapter 1
Introduction

Features

CPU

1. Supports Intel Pentium P54C/MMX (P55C) CPUs at 90 ~ 233 MHz;
2. Supports Cyrix 6x86(L) CPUs at PR133$^+$ ~ PR200$^+$ MHz and 6x86MX (M2) CPUs at PR166$^+$ ~ PR266$^+$;
3. Supports AMD K5: PR90 ~ PR200 and AMD K6: 166 ~ 233;
4. Provides SOCKET 7 ZIF Socket;
5. Supports 75MHz CPU clock.

Chipset

1. VIA Apollo VPX chipset;
2. PCI Rev 2.1 and APM1.1 compliant.

L2 Cache

1. Onboard supports 256K/512k write back cache with Pipelined Burst SRAMs.

Main Memory

1. Memory range from 4MB (minimum) to 512MB (maximum) with DRAM Table Free configurations;
2. Supports Fast Page Mode/EDO/Synchronous DRAM with 60ns/70ns DRAM speed;
3. Supports 4 pcs 72pin SIMM sockets and 1 piece of 168pin DIMM sockets (3.3V unbuffered type).

BIOS

1. AWARD Plug and Play BIOS;
2. Supports Advanced Power Management Function;
3. Flash Memory for easy upgrade.

I/O Function

1. Integrated USB (Universal Serial Bus) controller with two USB ports;
2. Supports 2 IDE channels with 4IDE devices (including 120MB IDE floppy);
3. Provides PCI IDE Bus Master function;
4. One floppy port (including 3.5", 1.2MB Mode 3 function);
5. Two high speed 16550 FIFO UART ports;
6. One parallel port with EPP/ECP/SPP capabilities;
7. PS/2 mouse connector;
8. Infrared module connector.

Other Functions

1. AT Form Factor with 22cm x 23cm;
2. 4 PCI Master slots and 3 ISA slots;
3. Supports SCSI/CD-ROM Boot function;

Note: *1. Make sure that the SDRAM module not only has to be 168 pin DIMM but designed for 3.3V unbuffered SDRAM as well. Double check with the SDRAM supplier before install any SDRAMs. The mainboard manufacturer has no obligation to any damage of the board by using the incorrect specification of SDRAM.*

         2. Pentium MMX (P55C), Cyrix 6x86L/6x86MX (M2), and AMD K6 are dual voltage CPUs. JP1/JP2 must be set correctly (refer to page 4). Check with your CPU supplier for the CPU voltage specification.

Mainboard Setting for Pentium MMX-166

The default settings of the following figure is for the INTEL Pentium **MMX-166** with the 512K (or 256K) cache. To get the best cooling effect, make sure that the airflow from the CPU fan is facing the heatsink.
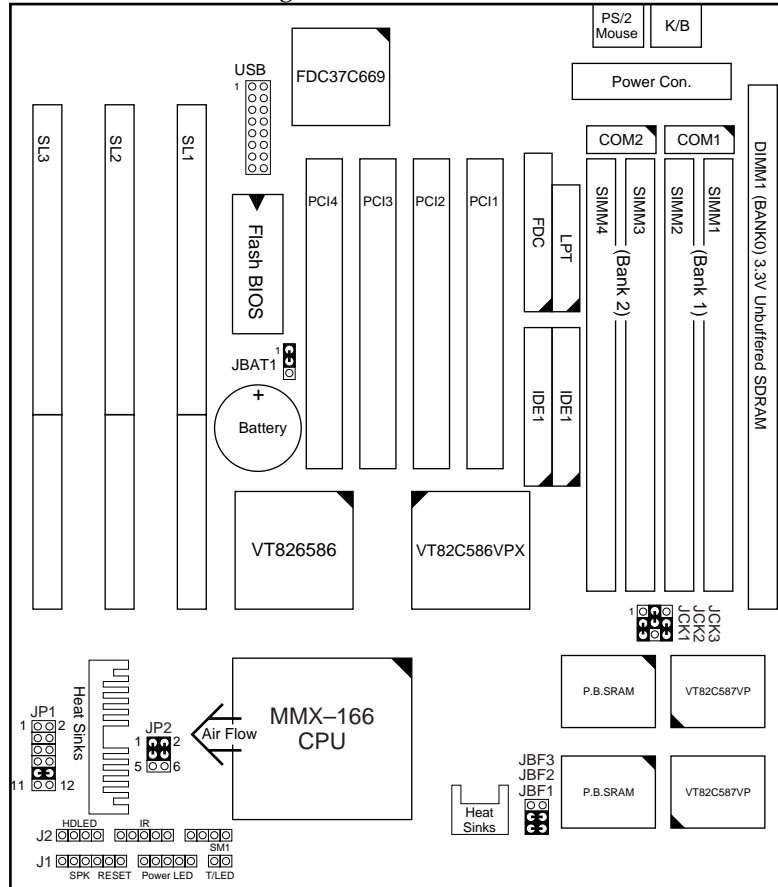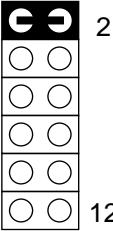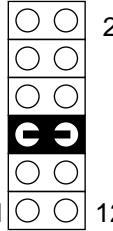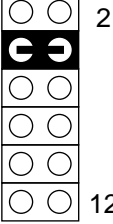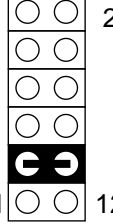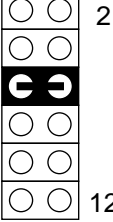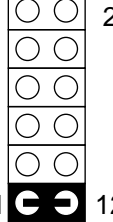
Figure 1–1. SL–53D2/D5 Motherboard Layout

Chapter 2
Hardware Setup

CPU V_{CORE} Voltage Setting

JP1: CPU V_{Core} Voltage Setting
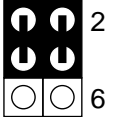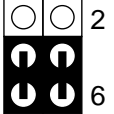
V_{Core} Voltage	JP1	V_{Core} Voltage	JP1
3.5V Pentium (P54C), 6x86, K5	Jumper on pins 1–2 (top)	2.9V K6 – 166/200 6x86MX (M2)	Jumper on pins 5–6
3.3V	Jumper on pins 3–4	2.8V MMX, 6x86L	Jumper on pins 9–10
3.2V K6 – 233 (and higher)	Jumper on pins 7–8	Reserved	Jumper on pins 11–12 (bottom)

CPU Type	V$_{Core}$
Pentium (P54C), 6x86, K5	3.52V
MMX (P55C)	2.8V
6x86L	2.8V
K6-166/200, 6x86MX (M2)	2.9V
K6-233 (or higher)	3.2V

Note: 1. *Refer to the table above to choose the correct voltage for the CPU everytime that you install a CPU.*
2. *Make sure that your JP1 & JP2 is matched with the CPU voltage, otherwise will damage the CPU or make the system unstable.*
3 *When the new CPU is announced and is not listed on this manual, please refer to the above table, select the correct voltage setting for it.*

JP2: Single/Dual Voltage Select Jumper

JP2 is an jumper to use to select either single or dual CPU voltage. This jumper is designed to use with JP1 together in order to set the correct CPU voltage. **Incorrect combinations may cause the system unstable or damage the CPU.**

CPU	JP2	Note
MMX, K6, 6x86L, 6x86MX (M2)	1 ▮▮ 2 / 5 ○○ 6	Dual Voltage (default)
Pentium, K5, 6x86	1 ○○ 2 / 5 ▮▮ 6	Single Voltage

Intel Pentium MMX–166/200/233

JCK3
JCK2
JCK1

Intel MMX
CPUs

JP2
1 ☐☐ 2

JP2
1 ☐☐ 2
5 ☐☐ 6

JBF3
JBF2
JBF1

11 ☐☐ 12

(2.8V)

MMX – 166

JBF3
JBF2
JBF1

2.5x clock

MMX – 200

JBF3
JBF2
JBF1

3.0x clock

MMX – 233

JBF3
JBF2
JBF1
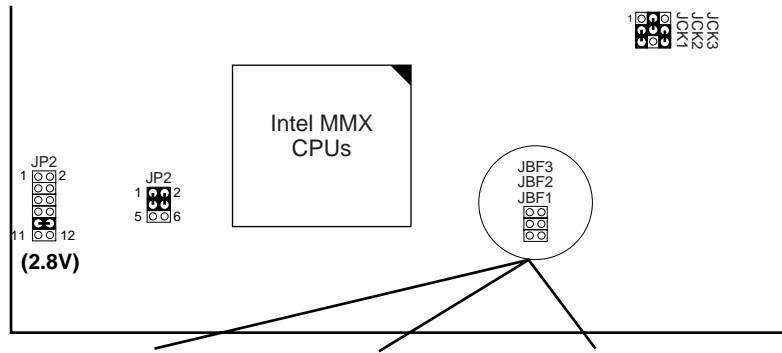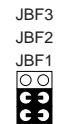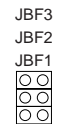
3.5x clock

Figure 2–1. CPU Type Configuration

AMD K6 CPU Settings

AMD K6 – 166/200/233

AMD K6 – 166	AMD K6 – 200	AMD K6 – 233
(2.9V)	(2.9V)	(3.2V)
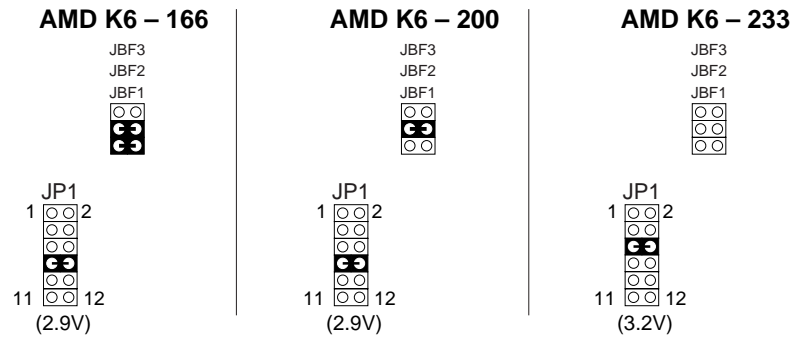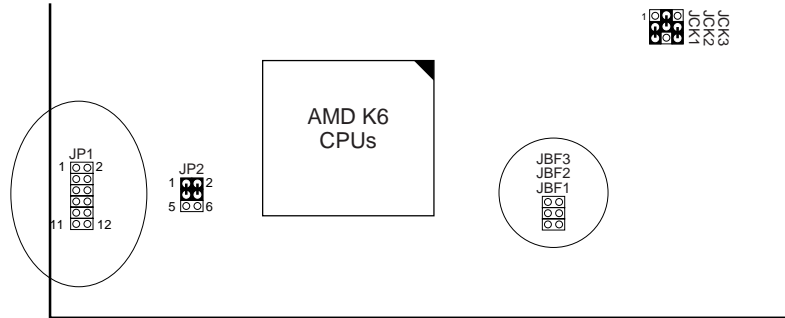
Figure 2–2. CPU Type Configuration

Note: K6–233 CPU is 3.2V or 2.1V depending on its prcess. Please check its spec before using it.

Cyrix 6x86MX (M2) – PR150/166/200/233/266

6x86MX – PR150	6x86MX– PR166	6x86MX– PR200	6x86MX– PR233	6x86MX– P266
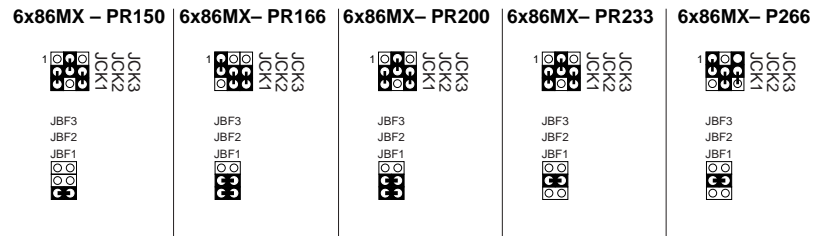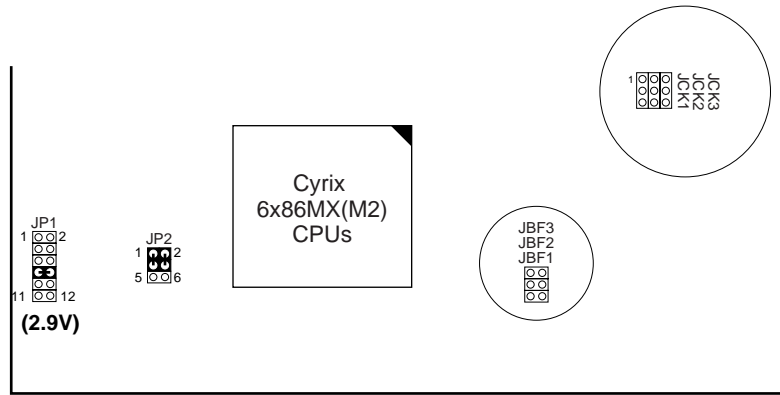
Figure 2–3. CPU Type Configuration

Cyrix 6x86L – PR133+/PR150+/PR166+/PR200+ CPUs
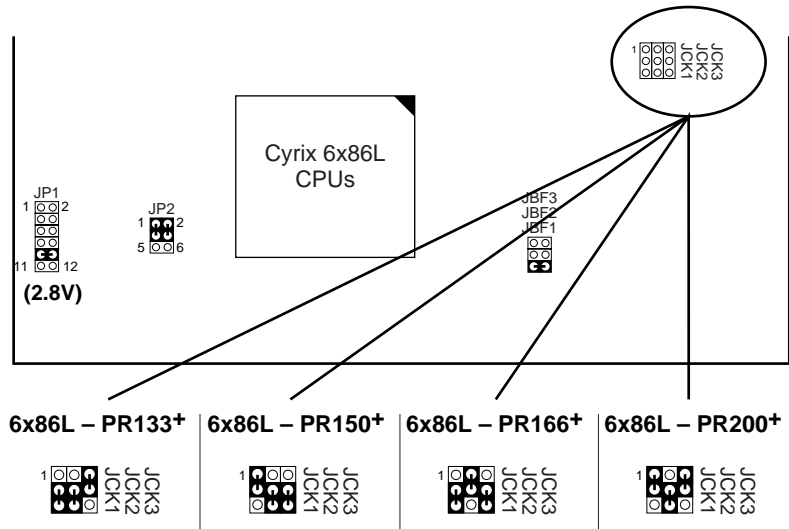
Figure 2–4. CPU Type Configuration

Intel Pentium/AMD K5 CPU Settings

CPU 1.5X Clock Setting (Red Caps)

Pentium CPUs
K5 CPUs

JP1
1 ▢ 2
11 ▢ 12
(3.5V)

JP2
1 ▢ 2
5 ▢ 6

JBF3
JBF2
JBF1

JCK3
JCK2
JCK1

Pentium – 90
K5 – PR90
JCK3
JCK2
JCK1

Pentium – 100
K5 – PR100
JCK3
JCK2
JCK1
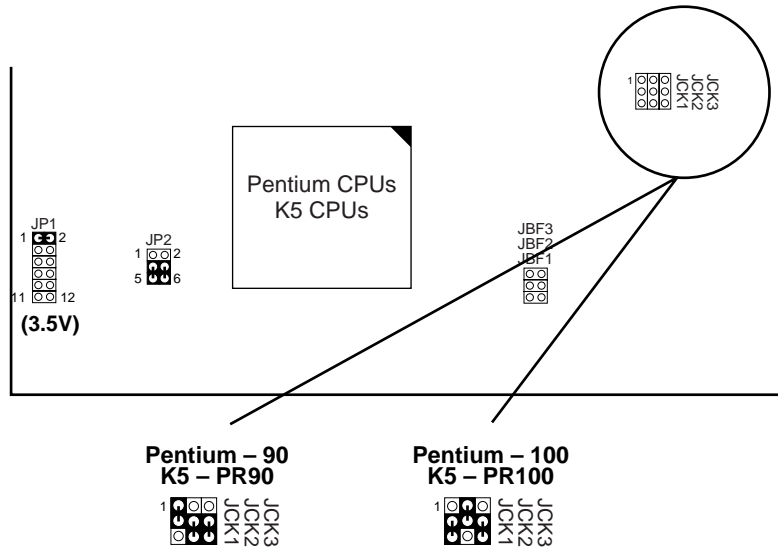
Figure 2–5. CPU Type Configuration

CPU 2.0X Clock Setting (Red Caps)
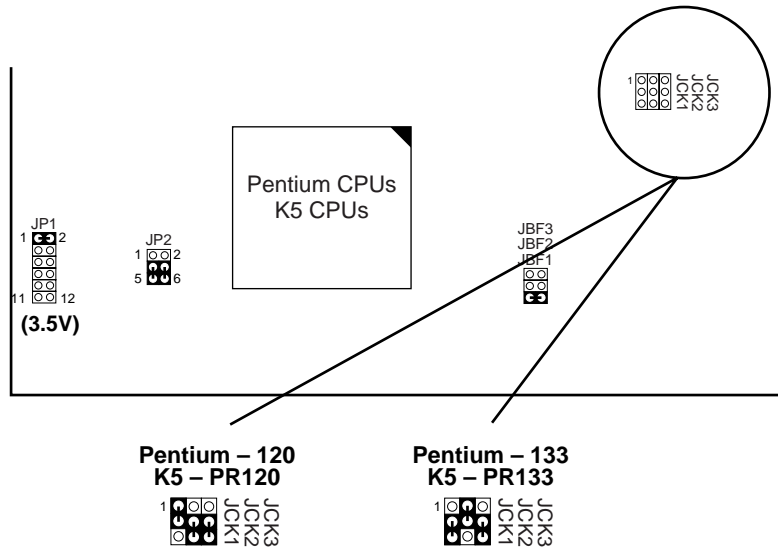
Figure 2–6. CPU Type Configuration

CPU 2.5X Clock Setting (Red Caps)
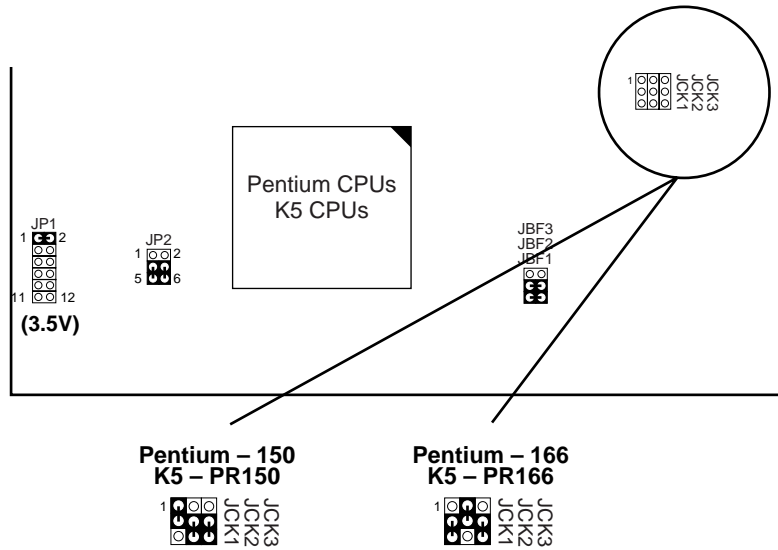
Figure 2–7. CPU Type Configuration

CPU 3.0X Clock Setting (Red Caps)

Pentium CPUs

JP1

JP2

JBF3
JBF2
JBF1

(3.5V)

Pentium – 180

Pentium – 200
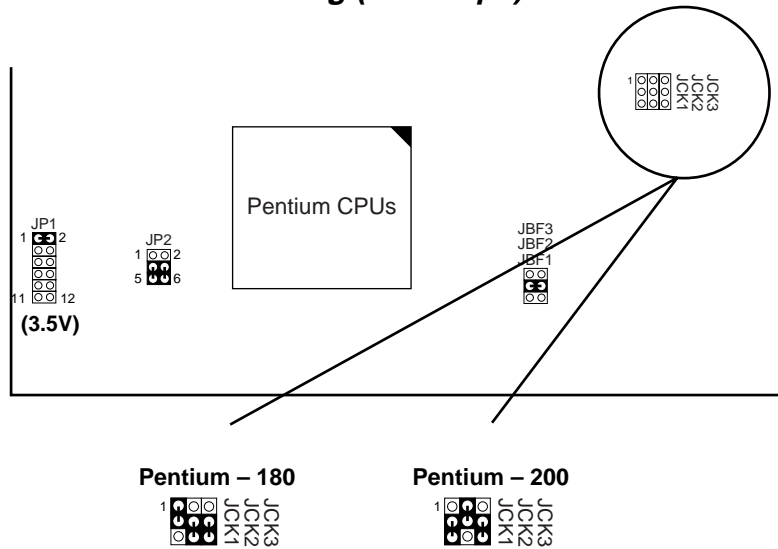
Figure 2–8. CPU Type Configuration

System Memory Configuration

This Apollo VPX motherboard supports 72-pin SIMMs and 168pin DIMMs (3.3V unbuffered type) of 4MB, 8MB, 16MB, or 32MB to form a memory size between 4MB to 512MB (total of 6 rows are supported).

The Apollo VPX chipset supports "Table Free" configuration so that DRAM module can be installed at any capacity.

Jumper Settings
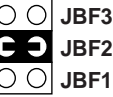
JBAT1: Clear CMOS Data
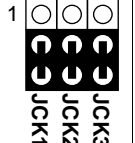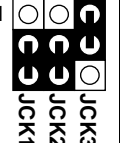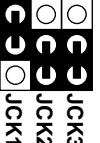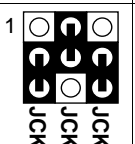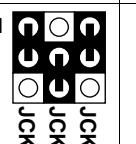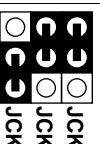
Clear the CMOS memory by shorting this jumper momentarily; then remove the cap to retain new settings.

COMS Data	JBAT1
Clear Data	1
Retain Data (default)	1

JBF & JCK: Bus Ratio and External Bus Clock Select

Set the jumper according to your CPU clock.

JBF1~3	1.5x 3.5x	2.0x	2.5x	3.0x
CPU Bus Ratio Setting	JBF3 JBF2 JBF1	JBF3 JBF2 JBF1	JBF3 JBF2 JBF1	JBF3 JBF2 JBF1

JCK1~3	50MHz	55MHz	60MHz
CPU Clock Setting	JCK1 JCK2 JCK3	JCK1 JCK2 JCK3	JCK1 JCK2 JCK3
	66MHz	**75MHz**	**83MHz**
	JCK1 JCK2 JCK3	JCK1 JCK2 JCK3	JCK1 JCK2 JCK3

Power Connector

The power connector has two 10-pin male header connectors. Plug the dual connectors from the power directly onto the board connector while making sure the black leads are in the center.

Power Con.
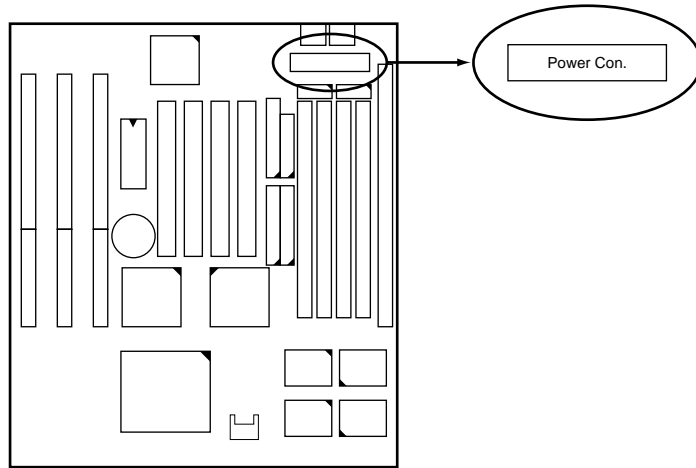
IDE LED Activity Light: (J2 pin1–4)

This connector connects to the hard disk activity indicator light on the case.

Infrared Port Module Connector (J2 pin6–10)

The system board provides a 5-pin infrared connector—IR1 as an optional module for wireless transmitting and receiving. **Pin 6 through 10 are Transmit, GND, Receive (low speed), Receive (high speed), and Vcc, respectively.**

J2 pin12, 13: Reserved

SMI Switch (J2 pin14, 15)

Toggle this jumper forces the system to sleep and the system won't wake up until the hardware event is coming. (The BIOS Power Management setting muse be Enabled.)

Speaker Connector (J1 pin1–4)

The speaker connector is a 4-pin connector for connecting the system and the speaker. (See the following drawing for jumper position.)

Reset Switch (J1 pin5, 6)

The system board has a 2-pin connector for rebooting your computer without having to turn off your power switch. This prolongs the life of the system's power supply.

Power LED and Keylock Switch (J1 pin8–12)

The keylock switch is a 5-pin connector for locking the keyboard for security purposes. (See the following drawing for jumper position, and pin1~3 is connected to power LED and pin 4~5 is connected to keylock switch.)

Turbo LED (J1 pin14, 15)

Connect the case's turbo LED to this connector.
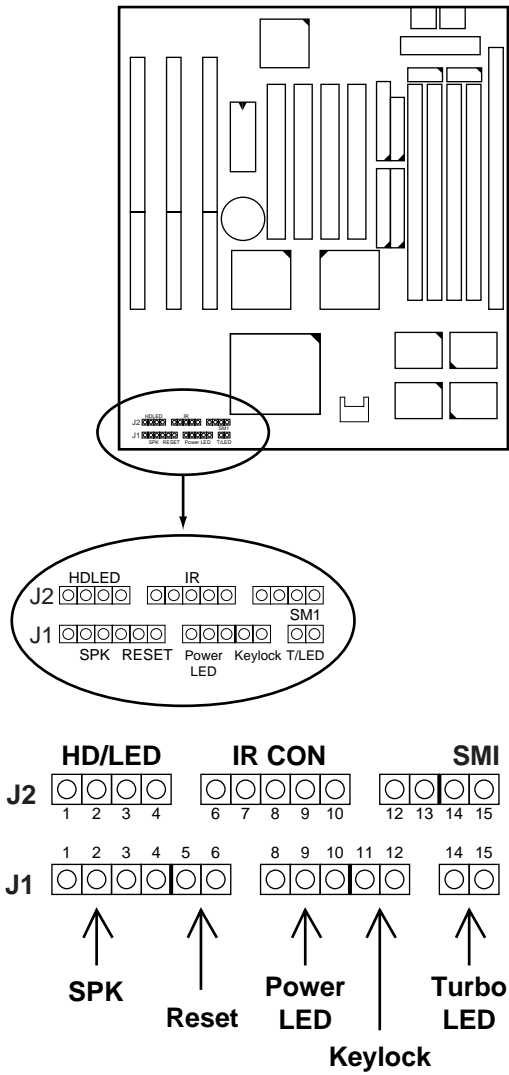
USB: *USB Connector*

This jumper connects to the USB cable to provide USB device.
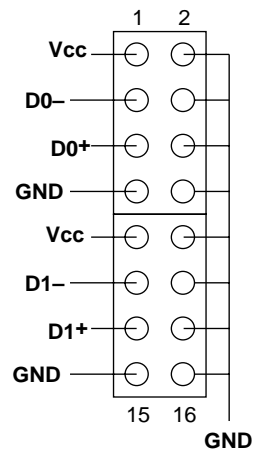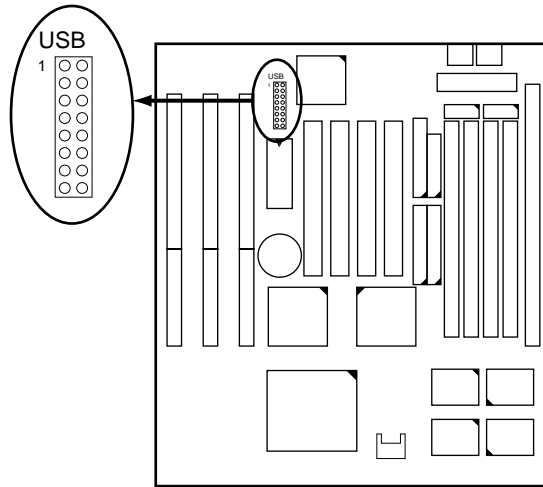
J2 Switch Signal Summary

J2	Pin	Signal Description
HDD LED Connector	1	+5V
	2	HDD LED Signal
	3	HDD LED Signal
	4	+5V
N.C.	5	No Connection
Infrared Connector	6	Infrared Transmit Signal
	7	GND
	8	Infrared Receive Signal (low speed)
	9	Infrared Receive Signal (high speed)
	10	+5V
N.C.	11	No Connection
	12	
	13	
SMI	14	GND
	15	SMI Signal

J1 Switch Signal Summary

J1	Pin	Signal Description
Speaker Connector	1	Speaker Signal
	2	No Connection
	3	Ground
	4	+5V
Reset Switch	5	Reset Signal
	6	Ground
N.C.	7	No Connection
Power LED Connector	8	+5V
	9	No Connection
	10	Ground
Keylock Connector	11	Keylock Signal
	12	GND
N.C.	13	No Connection
Turbo LED Connector	14	Turbo LED Connector
	15	Ground

Chapter 3
Award BIOS Setup

This VIA VPX motherboard comes with the AWARD BIOS from AWARD Software Inc. Enter the Award BIOS program's Main Menu as follows:

1. Turn on or reboot the system.

   After a series of diagnostic checks, the following message will appear:

   ```
   PRESS <DEL> TO ENTER SETUP
   ```

2. Press the <DEL> key and the main program screen appears as in the following page.

```
                        ROM PCI/ISA BIOS
                        CMOS SETUP UTILITY
                       AWARD SOFTWARE, INC.
┌─────────────────────────────────┬─────────────────────────────────┐
│                                  │                                  │
│   STANDARD CMOS SETUP            │     INTEGRATED PERIPHERALS       │
│                                  │                                  │
│   BIOS FEATURES SETUP            │     SUPERVISOR PASSWORD          │
│                                  │                                  │
│   CHIPSET FEATURES SETUP         │     USER PASSWORD                │
│                                  │                                  │
│   POWER MANAGEMENT SETUP         │     IDE HDD AUTO DETECTION       │
│                                  │                                  │
│   PNP/PCI CONFIGURATION          │     HDD LOW LEVEL FORMAT         │
│                                  │                                  │
│   LOAD SETUP DEFAULTS            │     SAVE & EXIT SETUP            │
│                                  │                                  │
│                                  │     EXIT WITHOUT SAVING          │
│                                  │                                  │
├──────────────────────────────────┴─────────────────────────────────┤
│ Esc : Quit                         ↑ ↓ → ←  : Select Item           │
│ F10 : Save & Exit Setup            (Shift) F2 : Change Color         │
├─────────────────────────────────────────────────────────────────────┤
│                  Time, Date, Hard Disk Type...                      │
└─────────────────────────────────────────────────────────────────────┘
```

3. Using one of the arrows on your keyboard to select an option and press <Enter>. Modify the system parameters to reflect the options installed in the system.

4. You may return to the Main Menu anytime by press <ESC> .

5. In the Main Menu, "SAVE AND EXIT SETUP" saves your changes and reboots the system, and "EXIT WITHOUT SAVING" ignores your changes and exits the program.

Standard CMOS Setup

Standard CMOS Setup allows you to record some basic system hardware configuration and set the system clock and error handling. You only need to modify the configuration values of this option when you change your system hardware configuration or the configuration stored in the CMOS memory got lost or damaged.

Run the Standard CMOS Setup as follows:

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of options appears.

```
                        ROM PCI/ISA BIOS
                       STANDARD CMOS SETUP
                       AWARD SOFTWARE, INC.
┌──────────────────────────────────────────────────────────────────────┐
│  Date (mm:dd:yy) : Thu, May 9 1996                                     │
│  Time (hh:mm:ss) :  15 : 45 : 10                                       │
│                                                                        │
│  HARD DISKS         TYPE   SIZE    CYLS HEAD  PRECOMP  LANDZ  SECTOR  MODE │
│                                                                        │
│  Primary Master   : Auto    0        0    0       0      0       0  Auto │
│  Primary Slave    : Auto    0        0    0       0      0       0  Auto │
│  Secondary Master : Auto    0        0    0       0      0       0  Auto │
│  Secondary Slave  : Auto    0        0    0       0      0       0  Auto │
│                                 ┌────────────────────────────────────┐ │
│  Drive A : 1.44M, 3.5 in.       │     Base Memory:     640K          │ │
│  Drive B : None                 │ Extended Memory:   15360K          │ │
│  Floppy 3 Mode Support : Disabled│     Other Memory:     384K        │ │
│                                 ├────────────────────────────────────┤ │
│  Video  : EGA/VGA               │    Total Memory:   16384K          │ │
│  Halt On : All Errors           └────────────────────────────────────┘ │
│                                                                        │
│  Esc : Quit          ↑ ↓ → ←    : Select Item   PU/PD/+/− : Modify    │
│  F1 : Help          (Shift) F2 : Change Color                         │
└──────────────────────────────────────────────────────────────────────┘
```

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/− keys.

A short description of screen options follows:

Date (mm:dd:yy)   Set the current date and time.
Time (hh:mm:ss)

Primary   This field records the specifications
(Secondary)   for all non-SCSI hard disk drives
Master/Slave   installed in your system. Refer to
the respective documentation on
how to install the drivers.

Drive A/B   Set this field to the types of floppy
disk drives installed in your system.
The choices are:
360KB, 5.25 in.,
1.2MB, 5.25 in.,
720KB, 3.5 in.,
1.44M, 3.5 in. (default),
2.88MB, 3.5 in., or None
120MB, 3.5in., IDE Floppy Drive
(Auto detect).

Floppy 3 Mode   Drive A/B, Both: Enabled 3.5-inch,
Support   1.2MB function.
Disabled (default): Disabled 3.5-
inch, 1.2MB function.

Video   Set this field to the type of video
display card installed in the system.
The choices are: Monochrome;
Color 40x25; VGA/EGA (default);
or Color 80x25

Halt On   Set this filed to the type of errors
that will cause the system to halt.
The choices are: All Errors (default);
No Errors; All, But Keyboard;
All, But Diskette; or
All, But Disk/Key

3. Press <ESC> to return to the Main Menu when you finish
setting up in the "Standard CMOS Setup".

BIOS Features Setup

BIOS Features Setup allows you to improve your system performance or set up some system features according to your preference.

Run the BIOS Features Setup as follows:

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of options appears.

```
                    ROM PCI/ISA BIOS
                    BIOS FEATURES SETUP
                    AWARD SOFTWARE, INC.
┌──────────────────────────────────────┬──────────────────────────────────────┐
│Virus Warning            : Disabled   │ Video  BIOS Shadow   : Enabled       │
│CPU Internal Cache       : Enabled    │ C8000-CBFFF Shadow   : Disabled      │
│External Cache           : Enabled    │ CC000-CFFFF Shadow   : Disabled      │
│Quick Power on Self Test : Enalbed    │ D0000-D3FFF Shadow   : Disabled      │
│Boot Sequence            : A,C, SCSI  │ D4000-D7FFF Shadow   : Disabled      │
│Swap Floppy Drive        : Disabled   │ D8000-DBFFF Shadow   : Disabled      │
│Boot Up Floppy Seek      : Disabled   │ DC000-DFFFF Shadow   : Disabled      │
│Boot Up NumLock Status   : On         │                                      │
│Gate A20 Option          : Fast       │                                      │
│Typematic Rate Setting   : Disabled   │                                      │
│Typematic Rate (Chars/Sec): 6         │ ESC : Quit      ↑↓→←: Select Item    │
│Typematic Delay (Msec)   : 250        │ F1  : Help      PU/PD/+/- : Modify   │
│Security Option          : Setup      │ F5  : Old Values (Shift)F2 : Color   │
│IDE second Channel Control: Enabled   │ F6  : Load BIOS Defaults             │
│PCI/VGA Palette Snoop    : Disabled   │ F7  : Load Setup Defaults            │
│OS Select for DRAMs>64MB : Non-OS/2   │                                      │
└──────────────────────────────────────┴──────────────────────────────────────┘
```

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys. An explanation of the <F> keys follows:

    <F1>: "Help" gives options available for each item.

    Shift <F2>: Change color.

    <F5> : Get the previous values. These values are the values with which the user started the current session.

    <F6>: Load all options with the BIOS default values.

    <F7>: Load all options with the Setup default values.

A short description of screen options follows:

Virus Warning   Enabled: Activates automatically
                                 when the system boots
                                 up causing a warning
                                 message to appear if
                                 there is anything
                                 attempts to access the
                                 boot sector or hard disk
                                 partition table.
                     Disabled: No warning message
                                 will appear when there is
                                 something attempts to
                                 access the boot sector or
                                 hard disk partition table
                     *Note: Many diagnostic (or boot
                              manager) programs which
                              attempt to access the boot sector
                              table can cause the above
                              warning message. If you will be
                              running such a program, we
                              recommend that you disable the
                              virus protection first.*

CPU Internal   Choose Enabled (default) or
Cache   Disabled. This option allows you to
                     enable or disable the CPU's internal
                     cache.

External Cache   Choose Enabled (default) or
                     Disabled. This option allows you to
                     enable or disable the external cache
                     memory.

Quick Power On   Choose Enabled (default)or
Self Test   Disabled. This option allows you to
                     speed up the Power On Self Test
                     routine.

Boot Sequence Default is "A, C, SCSI". This option determines which drive to look for first for an operating system.

Swap Floppy Drive Choose Enabled or Disabled (default). This option swaps floppy drive assignments when it is enabled.

Boot Up Floppy Seek Enabled: During POST, BIOS checks the track number of the floppy disk drive to see whether it is 40 or 80 tracks.

Disabled (default): During POST, BIOS will not check the track number of the floppy disk drive.

Boot Up NumLock Status Choose On (default) or Off. This option lets user to activate the NumLock function at boot-up.

Gate A20 Option Choose Normal or Fast (default). This option allows the RAM to access the memory above 1MB by using the fast gate A20 line.

Typematic Rate Setting Choose Enabled or Disabled (default). Enable this option to adjust the keystroke repeat rate.

Typematic Rate (Chars/Sec) Range between 6 (default) and 30 characters per second. This option controls the speed of repeating keystrokes.

Typematic Delay (Msec) Choose 250 (default), 500, 750, and 1000. This option sets the time interval for displaying the first and the second characters.

Security Option	Choose System or Setup (default). This option is to prevent unauthorized system boot-up or use of BIOS Setup.
IDE Second Channel Control	Enabled: (default) Reserved IRQ15 for secondary IDE device. Disabled: Release IRQ15 for other devices.
PCI/VGA palette Snoop	Choose Enabled or Disabled (default). It determines whether the MPEG ISA cards can work with PCI/VGA or not.
Video BIOS Shadow	Enabled (default): Map the VGA BIOS to system RAM. Disabled: Don't map the VGA BIOS to system RAM.
C8000-CBFFF to DC000-DFFF Shadow	These options are used to shadow other expansion card ROMs.

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Chipset Features Setup

Chipset Features Setup changes the values of the chipset registers. These registers control the system options.

Run the Chipset Features Setup as follows:

1. Choose "CHIPSET FEATURES SETUP" from the Main Menu and a screen with a list of options appears.

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/− keys.

```
                    ROM PCI/ISA BIOS
                CHIPSET FEATURES SETUP
                 AWARD SOFTWARE, INC.
┌─────────────────────────────────────┬────────────────────────────────────┐
│ DRAM Auto Configuration  : Enabled   │ OnChip USB              : Disabled  │
│ DRAM Timing Control      : Normal    │ USB Keyboard Support*   : Disabled  │
│ SDRAM Cycle Length       : 3         │                                    │
│                                      │                                    │
│ Sustained 3T Write       : Disabled  │                                    │
│ Read Pipeline            : Enabled   │                                    │
│ Write Pipeline           : Enabled   │                                    │
│ Cache Timing             : Fast      │                                    │
│ Linear Burst             : Disabled  │ ESC : Quit       ↑↓→←: Select Item │
│                                      │ F1  : Help       PU/PD/+/- : Modify │
│ Video BIOS Cacheable     : Disabled  │ F5  : Old Values (Shift)F2 : Color  │
│ System BIOS Cacheable    : Disabled  │ F6  : Load BIOS Defaults            │
│ Memory Hole At 15Mb. Addr.: Disabled │ F7  : Load Setup Defaults           │
└─────────────────────────────────────┴────────────────────────────────────┘
```

A short description of screen options follows:

DRAM Auto Configuration — Choose Enabled (default) or Disabled. The system sets all options on the left side of the screen automatically when choose Enabled.

DRAM Timing Control — Choose 60ns or 70ns (default). Do not change this setting unless you know the DRAM access time spec.

SDRAM Cycle Length — Use the default setting.

Sustained 3T Write — Use the default setting.

Read/Write Pipeline — Use the default setting.

Cache Timing — Use the default setting.

Linear Burst — Choose Disabled (default) or Enabled. Only when the CPU is either Cyrix or AMD then you may choose Enabled.

Video BIOS Cacheable   Choose Enabled or Disabled (default). When Enabled, the access to the VGA BIOS ROM addressed at C0000H-C7FFFH is cached.

System BIOS Cacheable   Choose Enabled or Disabled (default). When Enabled, the access to the system BIOS ROM addressed at F0000H-FFFFFH is cached.

Memory Hole At 15M-16M   Choose Enabled or Disabled (default). In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory's space below 16MB.

SDRAM Speculative Read   Use the default setting. This function allows a DRAM read request to be generated slightly before the address has been fully decoded.

OnChip USB   Enabled: Enable USB function and will occupy one IRQ.

Disabled (default): Disable USB function and will not occupy IRQ. Choose Disabled when it is not connect to an USB device.

USB Keyboard Support   Choose Disabled (default) or Enabled.
Disabled: No USB keyboard is installed.
Enabled: USB keyboard is connected.

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Power Management Setup

Power Management Setup sets the system's power saving functions.

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of options appears.

```
                         ROM PCI/ISA BIOS
                       POWER MANAGEMENT SETUP
                        AWARD SOFTWARE, INC.
 ┌─────────────────────────────────────────────────────────────────────────┐
 │ Power Management    : Disabled      IRQ 5  (LPT 2)       : Primary        │
 │ PM Control by APM   : No            IRQ 6  (Floppy Disk) : Primary        │
 │ Video Off option    : Suspend -> Off IRQ 7  (LPT 1)      : Primary        │
 │ Video Off Method    : V/H SYNC+Blank IRQ 8  (RTC Alarm)  : Disabled       │
 │ Conserve Mode       : Disabled      IRQ 9  (IRQ2 Redir)  : Secondary      │
 │ Modem Use IRQ       : 3             IRQ 10 (Reserved)    : Secondary      │
 │                                     IRQ 11 (Reserved)    : Secondary      │
 │      ** PM Timers **                IRQ 12 (PS/2 mouse)  : Primary        │
 │ HDD Power Down      : Disabled      IRQ 13 (Coprocessor) : Primary        │
 │ Doze Mode           : Disabled      IRQ 14 (Hard Disk)   : Primary        │
 │ Suspend Mode        : Disabled      IRQ 15 (Reserved)    : Disabled       │
 │                                                                           │
 │      ** PM Events **                                                      │
 │ VGA                 : OFF                                                 │
 │ LPT & COM           : LPT/COM                                             │
 │ HDD & FDD           : ON        ESC : Quit      ↑↓→←: Select Item         │
 │ DMA/Master          : OFF       F1  : Help     PU/PD/+/- : Modify         │
 │ Primary INTR        : ON        F5  : Old Values (Shift)F2 : Color        │
 │ IRQ3 (COM 2)        : Primary   F6  : Load BIOS Defaults                  │
 │ IRQ4 (COM 1)        : Primary   F7  : Load Setup Defaults                 │
 └─────────────────────────────────────────────────────────────────────────┘
```

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

Power Management	Choose Max. Saving, User Define, Disabled (default), or Min Saving.
PM Control by APM	Choose Yes or No (default). You need to choose Yes when the operating system has the APM functions, choose No otherwise.
Video Off Option	Choose N/A (default), Doze, Standby, or Suspend. This function determines the timing of the monitor closed down functions.

Video Off Method   Choose Blank , DPMS, or V/H Sync+Blank (default). You can chose either DPMS or V/H Sync+Blank when the monitor has the Green function. You need to choose Blank when the monitor does not have the Green function.
Note: Some VGA cards don't allow V/H Sync to be turned off directly.

Conserve Mode   Use the default setting.

MODEM Use IRQ   Assign the IRQ number to the modem which is being used so that the ring signal can wakeup the system. The default setting is 3 (COM2).

HDD power Down   Time is adjustable from 1 to 15 minutes. When the set time has elapsed, the BIOS sends a command to the HDD to power down, which turns off the motor.

Doze Mode   This option sets the CPU speed down to 33MHz during this mode.

Suspend Mode   This option allows you to choose the mode for the different timers. The Standby Mode turns off the VGA monitor, and the Suspend Mode turns off the CPU and saves the energy of the system.

VGA   Enabled: the system can not enter the power saving mode when monitor is on.
Disabled: the system can enter the power saving mode when monitor is on.

LPT & COM   Use the default setting.

HDD & FDD   Use the default setting.

DMA/Master   Use the default setting.

Primary INTR   Use the default setting.

IRQ x   Set these IRQs individually.
Activity detected from any enabled
IRQ channel (ON) will wake up the
system.

3. Press <ESC> and follow the screen instructions to save or
   disregard your settings.

PnP/PCI Configuration Setup

PnP/PCI Configuration Setup configures the PCI bus slots.

Run the PnP/PCI Configuration Setup as follows:

1. Choose "PnP/PCI CONFIGURATION SETUP" from the Main Menu and a screen with a list of options appears.

```
                   ROM PCI/ISA BIOS
                 PNP/PCI CONFIGURATION
                  AWARD SOFTWARE, INC.

 ┌──────────────────────────────────┬──────────────────────────────────┐
 │ PNP OS Installed       : No      │ CPU to PCI Write Buffer  : Enabled│
 │ Resources Controlled By  : Manual│ PCI Dynamic Bursting     : Enabled│
 │ Reset Configuration Data : Disabled│ PCI Master 0 WS Write   : Enabled│
 │                                  │                                  │
 │ IRQ-3  assigned to : Legacy ISA  │ PCI IRQ Actived By       : Edge   │
 │ IRQ-4  assigned to : Legacy ISA  │ PCI IDE IRQ Map to       : PCI-AUTO│
 │ IRQ-5  assigned to : PCI/ISA PnP │  Primary   IDE INT#      : A      │
 │ IRQ-7  assigned to : PCI/ISA PnP │  Secondary IDE INT#      : B      │
 │ IRQ-9  assigned to : PCI/ISA PnP │                                  │
 │ IRQ-10 assigned to : PCI/ISA PnP │                                  │
 │ IRQ-11 assigned to : PCI/ISA PnP │                                  │
 │ IRQ-12 assigned to : PCI/ISA PnP │                                  │
 │ IRQ-14 assigned to : PCI/ISA PnP │                                  │
 │ IRQ-15 assigned to : PCI/ISA PnP │                                  │
 │ DMA-0  assigned to : PCI/ISA PnP │                                  │
 │ DMA-1  assigned to : PCI/ISA PnP │ ESC : Quit      ↑↓→←: Select Item │
 │ DMA-3  assigned to : PCI/ISA PnP │ F1  : Help    PU/PD/+/- : Modify  │
 │ DMA-5  assigned to : PCI/ISA PnP │ F5  : Old Values (Shift)F2 : Color│
 │ DMA-6  assigned to : PCI/ISA PnP │ F6  : Load BIOS Defaults          │
 │ DMA-7  assigned to : PCI/ISA PnP │ F7  : Load Setup Defaults         │
 └──────────────────────────────────┴──────────────────────────────────┘
```

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/− keys.

A short description of screen options follows:

PNP OS Installed   Yes: OS supports Plug and Play function.
No (default): OS doesn't support Plug and Play function.

Note: BIOS will automatically disable all PnP resources except the boot device card when select Yes on Non-PnP OS.

Resources Controlled By	Choose Manual (default) or Auto. The BIOS checks the IRQ/DMA channel number on the ISA and PCI card manually if chose Manual and the IRQ/DMA channel number will be checked automatically if choose Auto.
Reset Configuration Data	Choose Enabled or Disabled (default). Disabled means to retain PnP configuration data in BIOS and Enabled means to reset PnP configuration data in BIOS.
IRQ-x assigned to DMA-x assigned to	Legacy ISA: Manually assigns IRQ/DMA to device. PCI/ISA PnP: BIOS assigns IRQ/DMA to device automatically.
CPU To PCI Write Buffer	Use the default setting.
PCI Dynamic Bursting	Use the default setting.
PCI Master 0 WS Write	Use the default setting.

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Load Setup Defaults

Load Setup Defaults option loads the default system values to the system configuration fields. If the CMOS is corrupted the defaults are loaded automatically. Choose this option and the following message appears:

```
"Load Setup Defaults (Y/N)? N"
```

To use the Setup defaults, change the prompt to "Y" and press <Enter>.

Integrated Peripherals

Integrated Peripherals option changes the values of the chipset registers. These registers control system options in the computer.

1. Choose "INTEGRATED PERIPHERALS" from the Main Menu and a screen with a list of options appears.

```
                          ROM PCI/ISA BIOS
                       INTEGRATED PERIPHERALS
                         AWARD SOFTWARE, INC.

On-Chip IDE First Channel  : Enabled    Onboard Parallel Port     : 378/IRQ7
On-Chip IDE Second Channel : Enabled    Parallel Port Mode+         : Normal
IDE Prefetch Mode          : Enabled    ECP Mode Use DMA+           : 3
IDE HDD Block Mode         : Enabled    Parallel Port EPP Type+    : EPP1.7
IDE Primary Master PIO     : Auto
IDE Primary Slave  PIO     : Auto
IDE Secondary Master PIO   : Auto
IDE Secondary Slave  PIO   : Auto
IDE Primary Master UDMA    : Auto
IDE Primary Slave  UDMA    : Auto
IDE Secondary Master UDMA  : Auto
IDE Secondary Slave  UDMA  : Auto

Onboard FDD Controller     : Enabled
Onboard UART 1             : Auto
Onboard UART 2             : Auto     ESC : Quit        ↑ ↓ → ←: Select Item
Onboard UART2 Mode         : Standard F1  : Help        PU/PD/+/- : Modify
IR Duplex Mode*            : Half     F5  : Old Values (Shift)F2 : Color
Use IR Pins*               : IR-RX2TX2 F6  : Load BIOS Defaults
Fast_IR MODE Pins*         : IRR3     F7  : Load Setup Defaults
```

*: These Settings are only effective under "Onboard UART 2 Mode" option is set HPSIR.
+: These options only valid at Parallel Port Mode at ECP+EPP.

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

OnChip IDE First/Second Channel

Enabled (default): Turn on the onboard IDE function.

Disabled: Turn off the onboard IDE function.

IDE Prefetch Mode   Use the default setting.

IDE HDD Block Mode

Choose Enabled (default) or Disabled. If your hard disk size is larger than 540MB, choose Enabled, and, if you are using the IDE HDD Auto Detection option, the BIOS will choose this option automatically. (Note: Some old HDD models don't provide this feature.)

IDE Primary Master/Slave PIO IDE Secondary Master/Slave PIO

Choose Auto (default) or Mode 0~4. The BIOS will detect the HDD Mode type automatically when you choose Auto. You need to set to a lower mode than Auto when your hard disk becomes unstable.

IDE Primary Master/Slave UDMA IDE Secondary Master/Slave UDMA

Choose Disabled or Auto (default).
Auto: Automatically detects the HDD Ultra DMA function.
Disabled: Disabled the HDD Ultra DMA function.

Onboard FDD Controller

Choose Enabled (default) or Disabled. Choose Disabled when you use an ISA card with FDD function, or , choose Enabled to use the onboard FDD connector.

Onboard UART1   Choose Auto (default), 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Disabled.

Do not set port 1 & 2 to the same value except for Disabled.

Onboard Serial UART2   Choose Auto (default), 3F8/IRQ4 , 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Disabled.

Onboard UART2 Mode   Choose Standard, HPSIR, or ASKIR.

IR Duplex Mode   Choose Half (default), or Full.
Half: Doesn't transmit and receive activities at the same time.
Full: Transmit and receive activities at the same time.

Use IR Pins; FAST_IR MODE Pins   Use default setting.

Onboard Parallel Port   Choose the printer I/O address: 378H/IRQ7 (default), 3BCH/IRQ7, 278H/IRQ5

Parallel Port Mode   Choose SPP (default), ECP + EPP, EPP, or ECP mode. The mode depends on your external device that connects to this port.

ECP Mode Use DMA   Choose DMA3 (default) or DMA1. Most sound cards use DMA1. Check with your sound card configuration to make sure that there is no conflict with this function.

: This option will not be displayed unless the EPP/ECP function is selected..

Parallel Port EPP Type   Choose EPP1.7 (default) or EPP1.9. EPP1.9 supports hardware handshake. This setting is dependent on your EPP device.

Note: The above 2 options will not be displayed unless the EPP/ECP function is selected.

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Supervisor/User Password

These two options allows you to set your system passwords. Normally, supervisor has a higher right to change the CMOS setup option than the user. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Change Password" in the Main Menu and press <Enter>. The following message appears:

   "Enter Password:"

2. The first time you run this option, enter your password up to only 8 characters and press <Enter>. The screen does not display the entered characters.

3. After you enter the password, the following message appears prompting you to confirm the password:

   "Confirm Password:"

4. Enter exact the same password you just typed again to confirm the password and press <Enter>.

5. Move the cursor to Save & Exit Setup to save the password.

6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.

7. Move the cursor to Save & Exit Setup to save the option you did, otherwise the old password will still be there when you turn on your machine next time.

8. Press <ESC> to exit to the Main Menu.

Note: If you forget or lose the password, the only way to access the system is to clear the CMOS RAM by setting JBAT1. All setup information will be lost and you need to run the BIOS setup program again.

IDE HDD Auto Detection

IDE HDD Auto Detection detects the parameters of an IDE
hard disk drive and automatically enters them to the
Standard CMOS Setup screen.

The screen will ask you to select a specific hard disk for
Primary Master after you select this option. If you accept a
hard disk detected by the BIOS, you can enter "Y" to
confirm and then press <Enter> to check next hard disk.
This function allows you to check four hard disks and you
may press the <ESC> after the <Enter> to skip this function
and go back to the Main Menu.

Save & Exit Setup

Save & Exit Setup allows you to save all modifications you
have specified into the CMOS memory. Highlight this
option on the Main Menu and the following message
appears:

```
SAVE to CMOS and EXIT (Y/N)? Y
```

Press <Enter> key to save the configuration changes.

HDD Low Level Format

Do not use this utility unless you have help from engineers
or some technical background.

Exit Without Saving

Exit Without Saving allows you to exit the Setup utility
without saving the modifications that you have specified.
Highlight this option on the Main Menu and the following
message appears:

```
Quit Without Saving (Y/N)? N
```

You may change the prompt to "Y" and press <Enter> key
to leave this option.