

Introduction

P6KFX-A

User Manual (for Award BIOS)

V2.0

Jun, 1997

P6KFX-A User's Manual 1-1

Introduction

This mainboard requires correct configuration information; otherwise, a malfunction may result.



Static electricity can cause serious damage to integrated circuit mainboard. To avoid building up a static electric charging on your body, be sure you discharge any static electricity by grounding yourself before handling the mainboard. If mainboard is handed from one person to another, they should touch hands first, then pass the mainboard.

Information presented in this publication has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this document is subject to change without notice.

Contact your dealer for warranty details.

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Introduction

About this Manual

This manual is designed to offer detailed information about the P6KFX-A mainboard. The content includes the main features of the mainboard, the installation , and the BIOS settings. There are three chapters to offer clear and detailed information of P6KFX-A.

- | | |
|------------------|---|
| Chapter 1 | Introduction
Describes the main features and major components. |
| Chapter 2 | Installation
Describes the installation of hardware including jumpers , cables and connectors. |
| Chapter 3 | BIOS Setup
Describes the setup of BIOS. Briefly explain each item and show the selection of option. |

Warning Marks

In this manual , **warning marks** are used to stress important parts or notices of text that require users' attention. There are two kinds of warning marks in this manual:



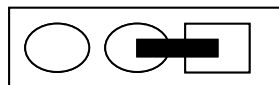
Stress the important information or instructions that must pay more attentions to and should be noted.



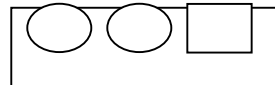
Avoid the possible system error or damages , and offer detailed information.

Graphic Descriptions of Jumper Settings

It means Pin 1 & Pin 2 are set as short.



It means Pin 1 & Pin 2 are set as open.



Introduction

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Introduction

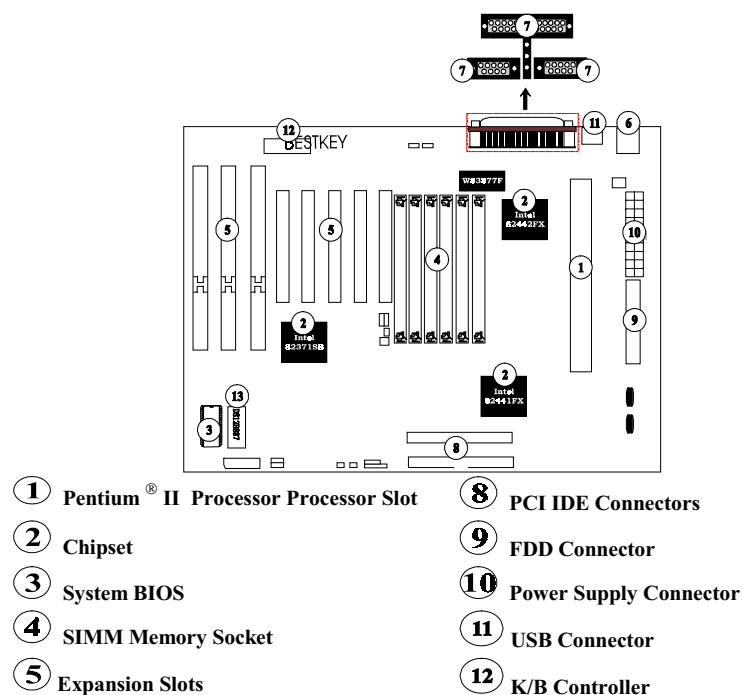
1.Introduction

Main Features

P6KFX-A is mainboard that supports a Pentium[®] II Processor based on the Intel 82440FX PCIsset (82441FX, 82442FX and 82371SB) , Winbond 83877 I/O chip. There are three ISA Bus slots and five PCI Bus slots on P6KFX-A. Three banks (6 SIMMs) DRAM with memory size up to 384 MB support fast page mode or EDO/BEDO memory type. ATX form factor lets users install the board in a PC ATX chassis.

This is a high performance all-in-one mainboard which supports Intel Pentium[®] II Processor CPU, EDO DRAM, ECC function, USB interface, PCI IDE interface.... and so on.

Mainboard Description



Specification

1. Processor Slot:

One Slot1 supports:

- Pentium® II Processor Processor Card 233/ 266 MHz CPU.
- L1 32 KB, L2 256/512KB cache built on Processor Card.

2. Chipset:

- Intel 82440FX PCIsset.
- Winbond 83877 Super I/O chip

3. System BIOS:

- Award flash BIOS.
 - DMI 2.0
 - PnP 1.0a (comply with Intel and Windows 95)
 - PCI 2.1
 - CD ROM boot

4. SIMM Memory Socket:

- 6 pieces of 72-pin SIMM sockets with memory size from 8MB to 384MB.
- Support parity or error checking and correction. (ECC function for reliability) with 36-bit SIMMs.
- Support BEDO/ EDO / Fast Page Mode DRAM .

5. Expansion Slots:

- 3 16-bit ISA slots with 100% ISA compatible function.
- 5 32-bit PCI slots all support PCI master.
 - PCI specification version 2.1.
 - CPU to PCI memory write posting with 4 Word deep buffers.
 - Convert Back-to-Back sequential CPU to PCI memory writes to PCI Burst writes.
 - PCI slot 4 and PCI slot 5 share the same IRQ.

6. PS/2 Mouse & Keyboard Set:

- Provides Connectors for PS/2 mouse & keyboard connector.

7. Serial / Parallel Ports:

- One multi-mode parallel port with chip-protect circuitry supports standard, enhanced (EPP), high speed (ECP) mode.
- Two high speed 16C550 UART compatible buffer fast serial port.

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- Supports IrDA/ASKIR Infrared Interface.
- Supports Fast IR Infrared Interface. (Optional)

8. PCI IDE Connectors:

- Build-in Intel 82371SB chip 32-bit PCI IDE interface with 2 IDE channels.
 - Support Maximum 4 IDE devices.
 - Support up to PIO mode 4 timings or Bus master.
 - Transfer 8x32 bit buffer for Bus master IDE PCI Burst
 - Support Separate Master / Slave IDE mode.
 - Plug and Play compatible.
 - Fully compatible with PCI local bus specification V2.1.

9. FDD Connector:

- Two floppy drives support 360K/720K/1.2MB/1.44MB/2.88MB floppy drives.

10. Power Supply Connector:

- Provides the connectors for ATX power supply.

11. USB Connector:

- Provides connectors for use of two USB channels.

Mainboard Layout

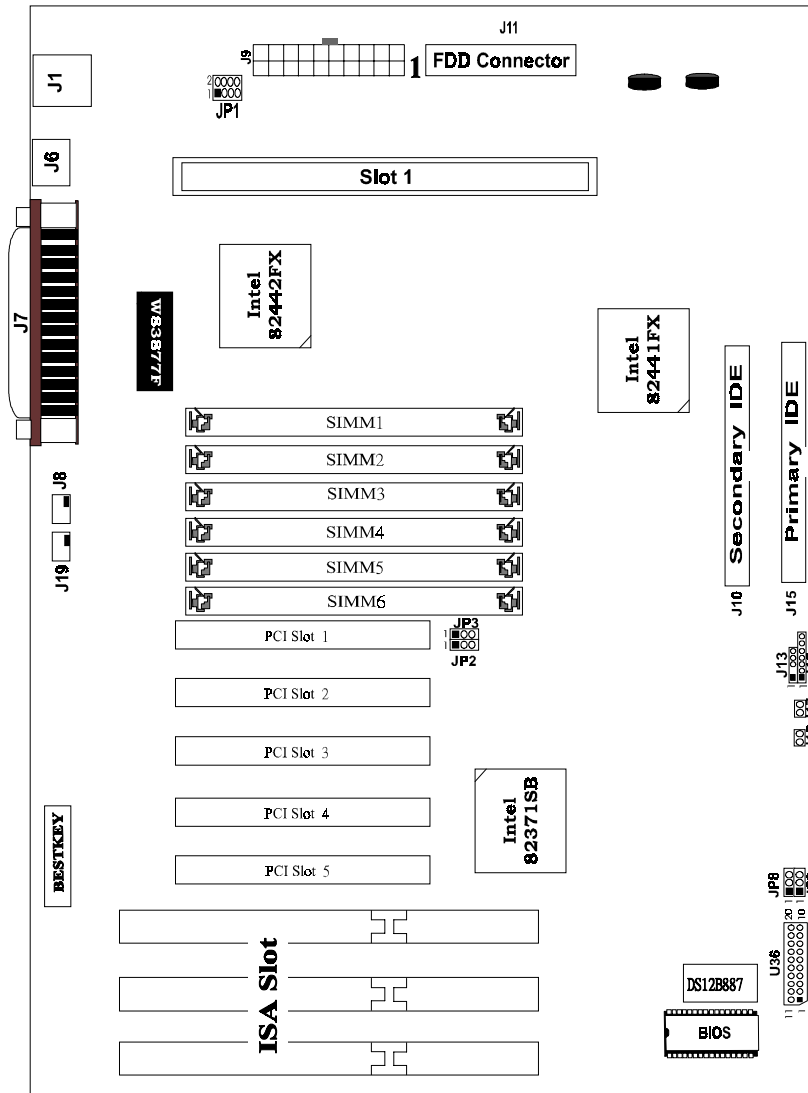


Figure1-1. P6KFX-A Mainboard Layout

2 Installation

Introduction

This chapter provides information on how to install and configure P6KFX-A Mainboard.

Check list

The standard packing of P6KFX-A should include:

- ☒ P6KFX-A mainboard
- ☒ 1 IDE cable
- ☒ 1 Floppy cable
- ☒ 1 Retention Mechanism & 2 attach mount
- ☒ P6KFX-A User's Manual

Optional packing of P6KFX-A includes:

- ☐ Device driver package
- ☐ IrDA cable / bracket

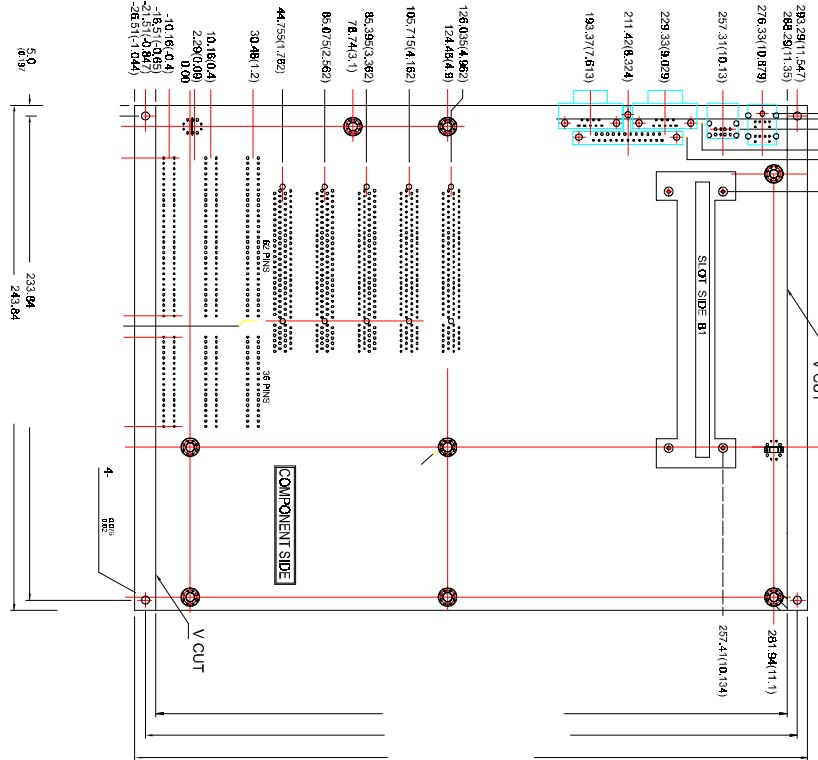
Special offer package of P6KFX-A includes:

- ☐ IrDA Motherboard Adapter

Introduction

Dimensions

P6KFX-A is designed to fit ATX form factor chassis. Check the dimensions and mounting holes for special purpose of chassis only.



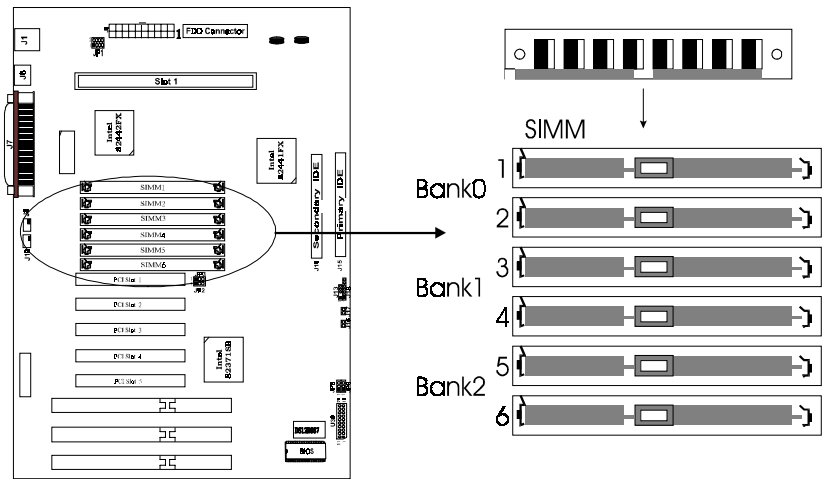
Install Main Memory

P6KFX-A Provides tremendous flexibility DRAM configurations. It accepts a maximum of 384MB memory size with fast page mode or Extended Data Output(EDO) or Burst EDO memory. The on-board DRAM is installed with 72-pin SIMM(single-In-line-Memory Module).

P6KFX-A can support non-parity SIMMs (32-bit) or parity SIMMs (36-bit). When using patity SIMMs enabling BIOS ECC function can give the system memory the ECC function (one bit error correction, double bit error detection)

Introduction

DRAM Memory Installations:



The following table lists a number of possible DRAM combinations.

Bank 0		Bank 1		Bank2		Total Memory Size
SIMM1	SIMM2	SIMM3	SIMM4	SIMM5	SIMM6	
64MB	64MB	64MB	64MB	64MB	64MB	The combination of memory size is from minimum 8 MB to maximum 384MB
32MB	32MB	32MB	32MB	32MB	32MB	
16MB	16MB	16MB	16MB	16MB	16MB	
8MB	8MB	8MB	8MB	8MB	8MB	
4MB	4MB	4MB	4MB	4MB	4MB	
none☆	none☆	none☆	none☆	none☆	none☆	

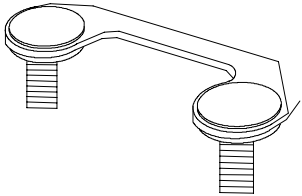
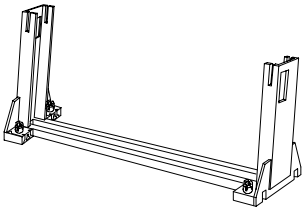
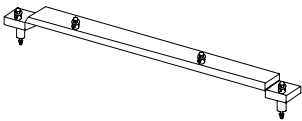
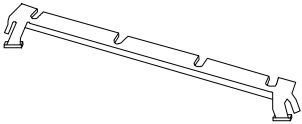
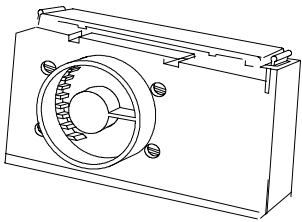
Table 2-1. P^KFX-A Memory /configuration

☆: It means the DRAM module is not installed.

☆☆The minimum memory size is 8MB. At least one bank of SIMMs

Install CPU

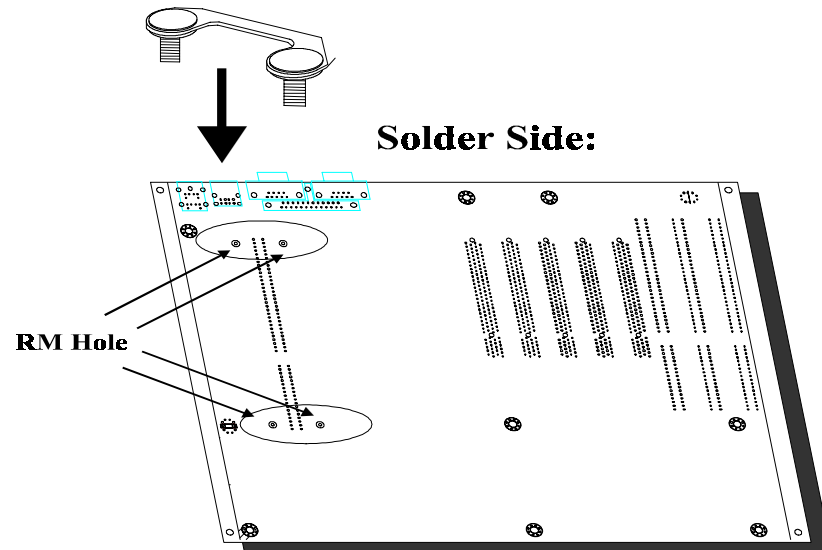
P6KFX-A provides one slot (slot) for installation of Pentium II Processor card of CB-P6 card. To install Pentium II processor card, check the direction of CPU and then put the Card onto the slot1.

Picture	Title
	Retention Mechanism(RM) attach mount with Baseboard: Ensure retention module stays on Baseboard.
	Retention Mechanism(RM) over slot1: Prevent Pentium II Processor movement.
	Heatsink Support on baseboard: Prevents heatink movement Supports Heatsink on Thermal Plate Heatsink Maximum weight 250grams This graphic is only a sample. It may be the different type from Intel Box Processor.
	Top Bar: Top bar is snapped into rigid pins after CPU (with heatsink) is inserted into Slot1 connector.
	Pentium II Processor with Heatsink or Fan

Introduction

First Step

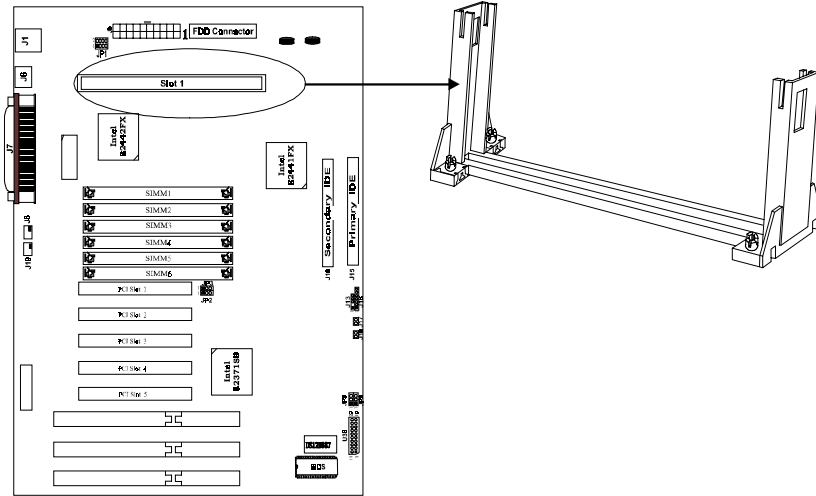
Pre-install 2pcs of attach mount in motherboard RM hole.



Second Step:

Place RM over "RM attach studs" on BB

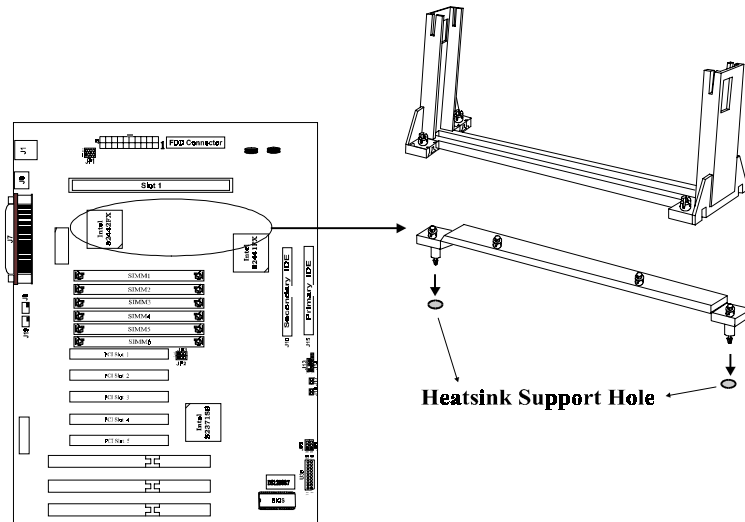
Introduction



Introduction

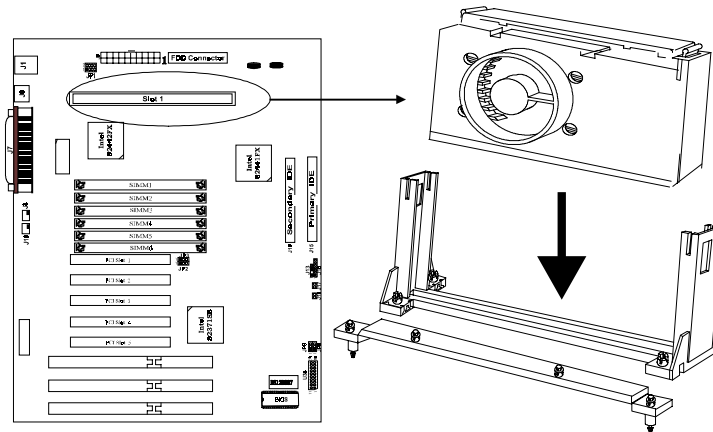
Third Step:

Install Heatsink support on Baseboard. If you used Intel Box processor, please skip third step, and follow Intel Box processor install guide to install heatsink supporter.



Forth Step:

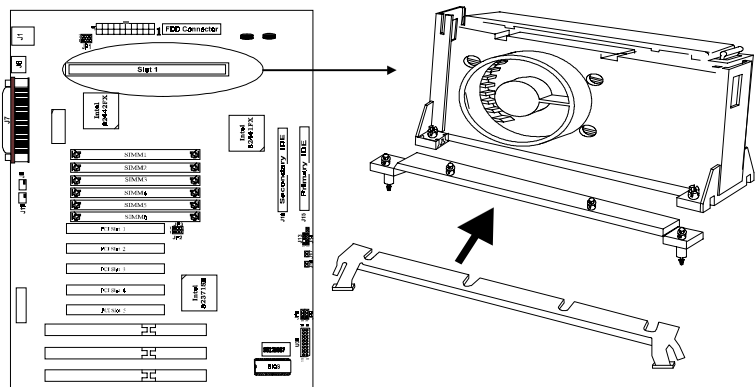
Install Pentium II Processor with fan or heatsink on Baseboard. Connect CPU Fant connector to power on.



Introduction

Complete:

Top bar is snapped into ridid pins after CPU (with heatsink) is inserted into Slot1 connector. After installing step by step, the process is completed.

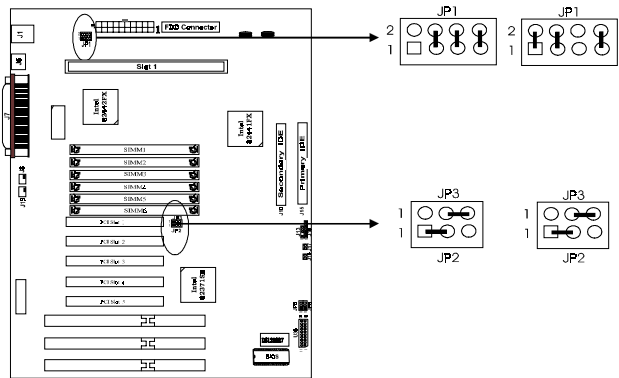


CPU Frequency and Bus frequency:

To install the CPU at its correct frequency. Please refer the folloeing table to set up CPU frequency.

Core CPU Freq.	Host Clock	Clock Multiplier	JP1	JP2	JP3
233 MHz	66	3.5	short 5-6, 7-8	short 1-2	short 2-3
266MHz	66	4	short 1-2, 3-4, 7-8	short 1-2	short 2-3

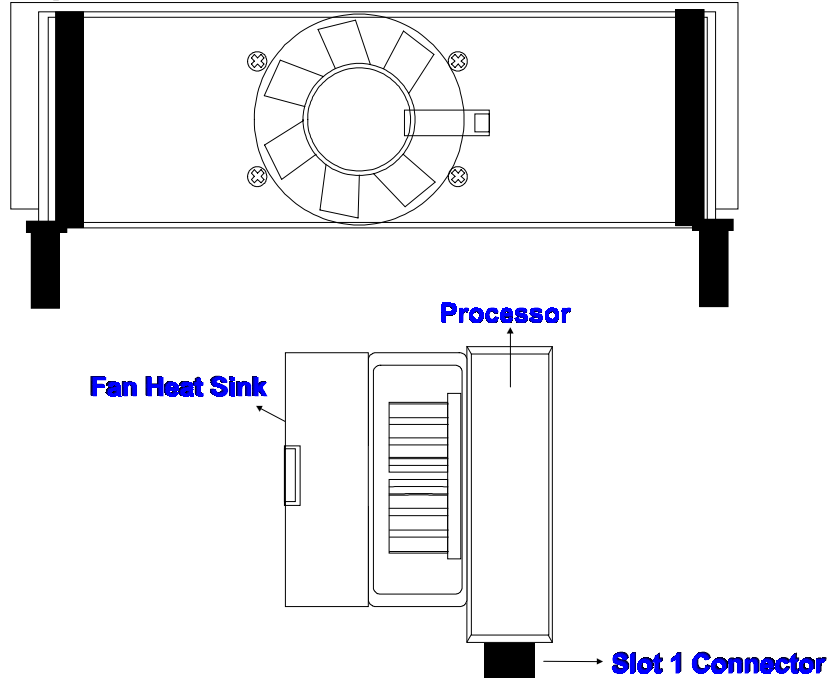
Table 2-2. CPU Frequency and Bus Frequency



Introduction

CPU Fan:

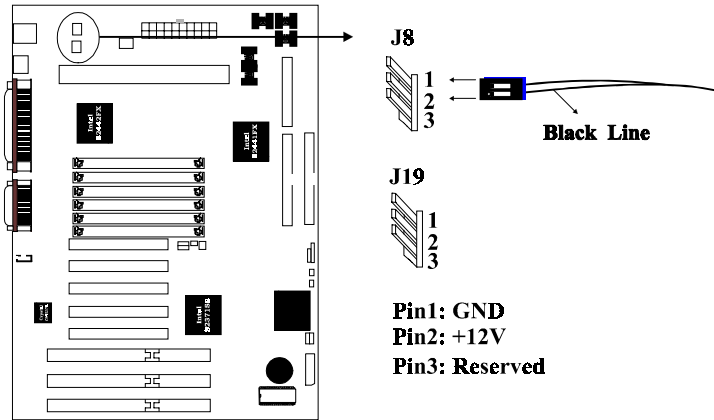
The Pentium II Processor needs one fan / heatsink installed on to help heat dissipation. Do not install Pentium II Processor without the fan/ heatsink.



Introduction

Install Fan Power On-board: (J8 and J19)

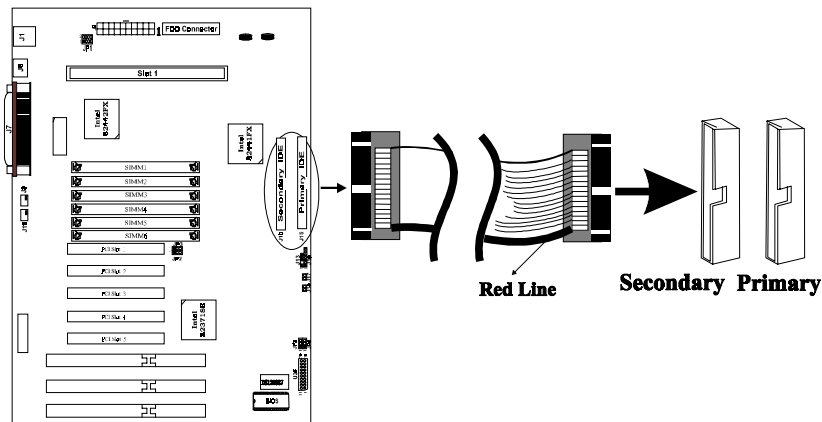
If the fan has 2-pin power-cord, please connect the CPU cooling fan power and chassis cooling fan power to J8 and J19.



Install Cables

IDE Connector: (J10, J15)

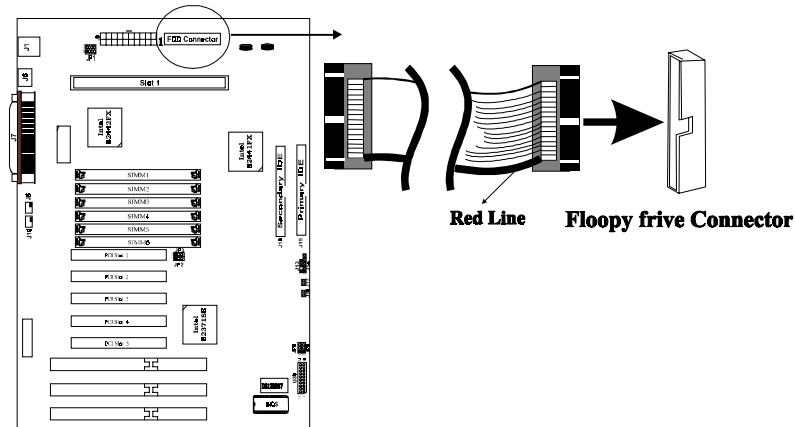
P6KFX-A provides 2 PCI IDE connectors which supports 2 ATAPI IDE devices (for example, Hard Drive and CD-ROM) on each connector. Use 40-pin IDE cable to connect IDE devices and IDE connector.



Floppy Disk Connector: (J11)

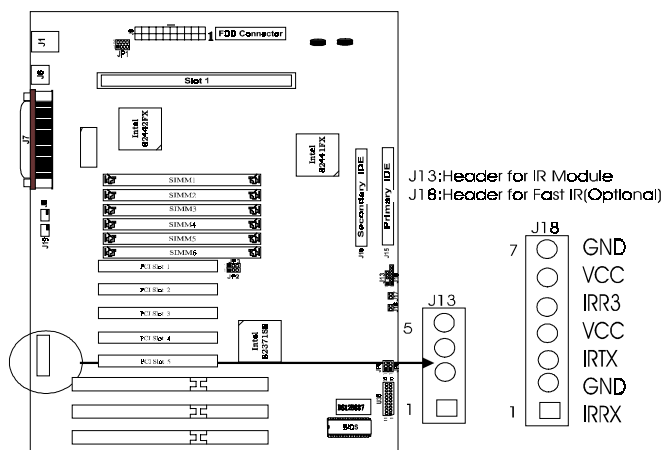
P6KFX-A provides one floppy drive connector with one 34-pin floppy cable. It can support 2 floppy drivers with type : 360KB/ 720KB/ 1.2 MB / 1.44MB / 2.88MB.

Introduction



IrDA : (J13: Header for IR Module / J18: Header for Fast IR)

P6KFX-A is an IrDA-capable mainboard. It gives users IR wireless data exchange directly from mobile computers, printers and PDAs,.....etc. Optional IrDA cable/bracket provides connector with IrDA module.



20-pin Front Panel Switch Connector: (U36)

In order to help quick install front panel switch, these headers are integrated in 20-pin header set.

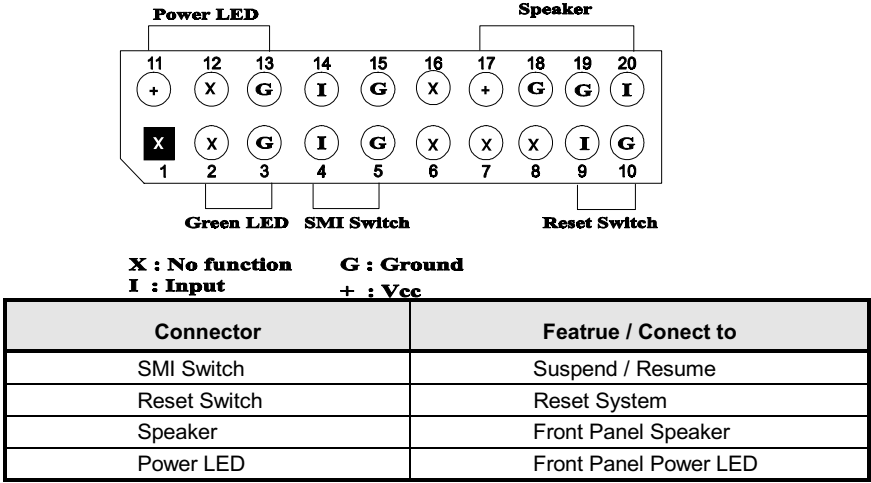
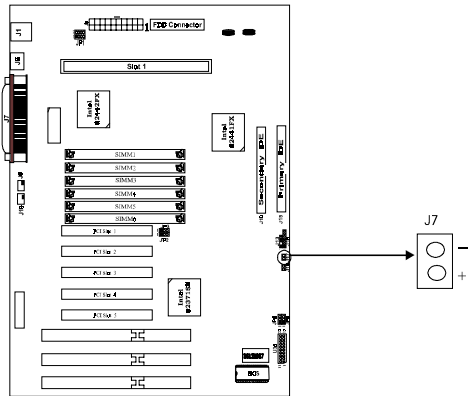


Table 0-1. Front Panel Switch Connector

H.D.D. LED: (J17)

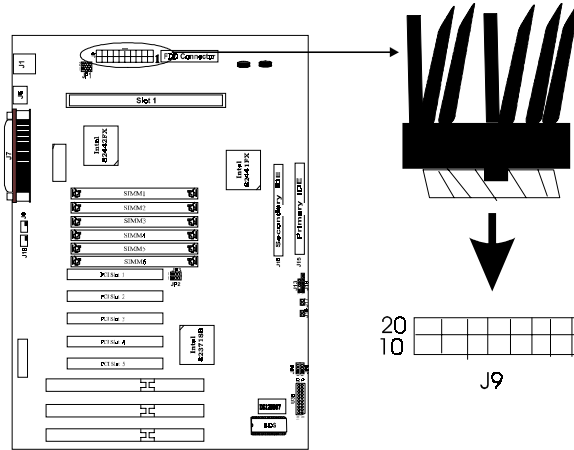
P6KFX-A provides one set of IDE HDD LED headers to connect the front panel HDD LED. When the IDE devices are accessed, the LED will indicate the activity.



Power Supply Connector: (J9)

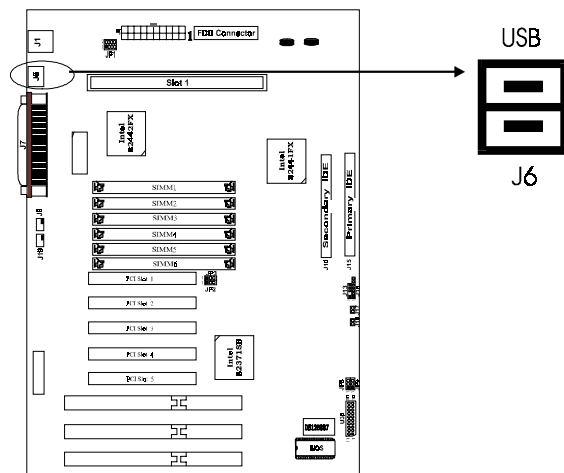
P6KFX-A provides one set of ATX power supply connectors. Follow the direction to install the power cable on connectors.

Introduction



USB Connector: (J6)

Universal Serial Bus (USB) is a new industry standard interface for ease use of PC peripheral expansion. USB Connector provides two USB ports with USB devices.



Introduction

PS/2 Mouse & Keyboard Connector: (J1)

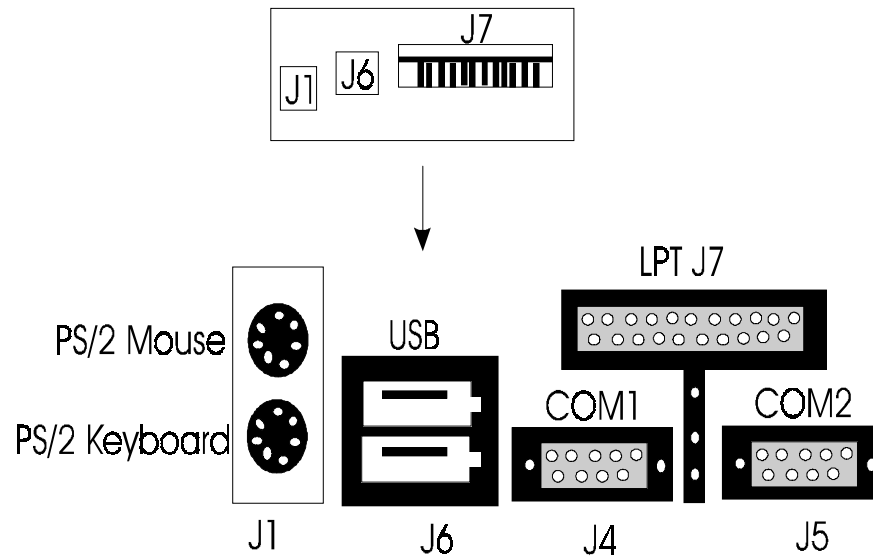
P6KFX-A provides PS/2 Mouse & Keyboard set.

Serial Port COM1 and COM2 : (J4, J5)

P6KFX-A provides two high speed 16550 UART compatible serial ports.

Parallel Port Printer Connector : (J7)

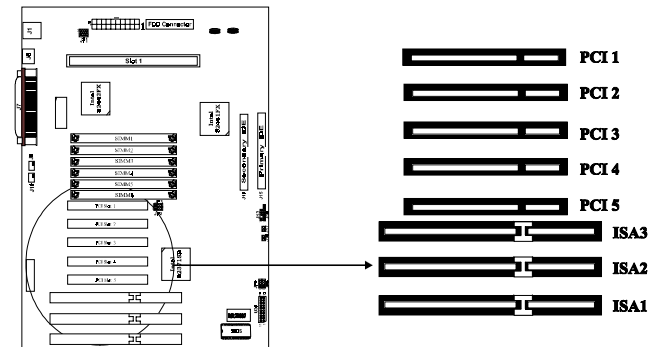
P6KFX-A provides one set of high speed parallel port connector. The parallel port can support bidirection / EPP / ECP mode.



Introduction

Install Add-on Card

P6KFX-A provides three ISA slots and five PCI slots. ISA 3 and PCI 5 slots are shared and can not be installed at the same time.

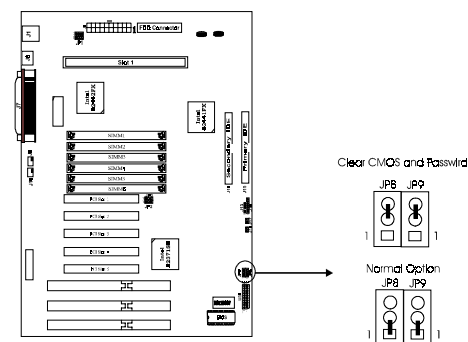


Other Jumpers

Clear CMOS (JP9) and Clear Password (JP8)

BIOS setting values and password are stored in CMOS RAM. To clear CMOS Data of your computer, please open the computer chassis; short 2-3 of JP9 with short jumper; power on your system carefully; when screen displays, power off your system; then CMOS data will be cleared. For normal operation, please short 1-2 of JP9 and close your computer chassis.

To disable Password of your system, please short 2-3 of JP8 at system power on stage; short 1-2 in normal stage.



Summary

Jumper Setting:

Jumper Block	Function	Configuration (Jumper short)	
JP1	Pentium® II Processor Speed	233MHz	266MHz
		5-6, 7-8	1-2, 3-4, 7-8
JP2		1-2	1-2
JP3		2-3	2-3
JP8	Clear CMOS	2-3	
	Normal Option	1-2	
JP9	Clear Password	2-3	
	Normal Option	1-2	

Table 0-2. Jumper Settings

Host Clock Setting:

The table below presents the detailed Jumper Settings for different CPU Clock. Users can refer to this table for the reference if you cannot find out the proper CPU type on “**Table 2-4. Jumper Settings**”.

Host Clock	60 MHz	JP2 short 2-3 JP3 short 1-2
	66 MHz	JP2 short 1-2 JP3 short 2-3
CPU Core Clock	Host Clock * 2.5	JP1 shot 3-4, 5-6, 7-8
	Host Clock * 3	JP1 shot 1-2, 5-6, 7-8
	Host Clock * 3.5	JP1 shot 5-6, 7-8
	Host Clock * 4	JP1 shot 1-2, 3-4, 7-8

Table 0-3. Host Clock Settings

Pentium® II Processor Speed Table:

The table below shows the configuration for different speeds of the Pentium® Pro Processor.

Pentium® II	Cache Size	Host Freq.	PCI Freq.	ISA Freq.
-------------	------------	------------	-----------	-----------

Introduction

Processor		(MHz)	(MHz)	(MHz)
233MHz	L1 32KB, L2 256 / 512KB	66	33	8.33
266MHz	L1 32KB, L2 256 / 512KB	66	33	8.33

Table 0-4. CPU Speed

Connector Table:

Connector	Function	Description
J1	PS/2 Keyboard & Mouse Dual high Connector	Connect to PS/2 Keyboard & Mouse
J4	Serial Port One (COM1)	9-pin male Connector
J5	Serial Port Two (COM2)	9-pin male Connector
J6	USB Port 1 & Port 2 Connector	Connect to 2 channel of USB cable
J7	Parallel Port Connector	25-pin female Connector
J8	Chassis Fan Connector	Connect to 2 or 3-pin power card
J19	CPU Fan (Support Intel Box Processor)	Connect to 2 or 3-pin power card
J9	ATX Power Supply Connector	Connect to ATX Power Supply Power Connector
J10	Secondary Hard Disk Connector	Connect to the 2nd IDE channel for 1 or 2 IDE drives
J11	Floppy Disk Connector	Connect to one or two floppy drive
J13	IR Header (Intel)	Connect to Infra-red cable/ bracket
J15	Primary Hard Disk Connector	Connect to the 1st IDE channel for 1 or 2 IDE drives
J16	ATX Power ON / OFF Switch	Connect to ATX Chassis Power Switch
J17	Hard Disk LED Connector	Connect to chassis front panel HDD indicator
J18	Fast Infrared (IR) Connector	Connect to FIR cable / bracket

Table 0-5. Connectors

3 Built-in BIOS Setup Program

SETUP Program

This chapter describes the Award BIOS setup for P6KFX-A. The setup program uses a number of menus that you can specify changes to your hardware and turn the special features on or off.

To enter the BIOS setup program, users can turn on or reboot the system. Press the key when the system displays "Press DEL to enter SETUP".

The following screen will be displayed.

ROM PCI/ISA BIOS <<P6KFX-A0>> CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURATION LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	INTEGRATED PERIPHERALS SUPERVISOR PASSWORD USER PASSWORD IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type ...	

Figure 0-1. SETUP Main Menu



The instructions at the bottom of Main Menu Screen show the items of each option.

- ☐ **STANDARD CMOS SETUP** - This option allows users to check or modify the basic system configuration.
- ☐ **BIOS FEATURES SETUP** - This option is used to setting the various system options for the users, including the virus warning, external cache, security option, boot operations, and video BIOS shadow, etc.
- ☐ **CHIPSET FEATURES SETUP** - This option allows users to control the features of chipset.
- ☐ **POWER MANAGEMENT SETUP** - This option allows users to set the power saving status for reducing the power consumption.

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- ☐ **PNP/PCI CONFIGURATION SETUP** - This option is used to setting the various system function and internal addresses of the PCI devices. Allows users to configure system IRQ and DMA to **PCI/ISA PnP** or **Legacy ISA**.
- ☐ **LOAD BIOS DEFAULTS** - Users can load the BIOS default values to boot the system safely.
- ☐ **LOAD SETUP DEFAULTS** - This option supports the better performance for the system. It is recommended to choose **SETUP Defaults** for the setup.
- ☐ **INTEGRATED PERIPHERALS** - This option allows users to decide how many kinds peripherals need to change their I/O type, mode and used or not. This options also allows user to set the various system function and onboard PCI IDE controller.
- ☐ **SUPERVISOR PASSWORD** - Password is required when entering and changing all of the SETUP option or booting your system. Users can change the current password stored in the CMOS by accessing this option.
- ☐ **USER PASSWORD** - Password is required when booting your system and entering to change only the USER PASSWORD. Users can change the current password stored in the CMOS by accessing this option.
- ☐ **IDE HDD AUTO DETECTION** - This option can automatic detect the hard disk drive type(s) including the number of cylinders and heads, write pre-compensation time, read/write head landing zone, and number of sectors per track.
- ☐ **SAVE & EXIT SETUP** - After saving the changes what you have made in the SETUP program, then exit and reboot the system.
- ☐ **EXIT WITHOUT SAVING** - Abandon all previous settings, then exit and reboot the system.

After choosing an item from the SETUP main menu, move the cursor by using the **↑,↓,→,←** arrow keys and press **<Enter>**. To modify the setting of an option, simply press the **<PgUp>** or **<+>** and the **<PgDn>** or **<->** keys. Press the **<F2>** key when changing the color setting, **<F1>** for a context sensitive help function, and the **<ESC>** key when quitting SETUP.

Standard CMOS Setup

ROM PCI/ISA BIOS <<P6KFX-A0>>
STANDARD CMOS SETUP
AWARD SOFTWARE, INC

Data (mm:dd:yy) : Mon, April 18 1997									
Time (hh:mm:ss) : 17 : 58 : 42									
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 Extended Memory: 11264K Other Memory: 384K <hr/> Total Memory: 12288K						
Drive B	: None								
Video	: EGA/VGA								
Halt On	: All Errors								
Esc : Quit ↑ ↓ → ← : Select Item PU/PD/+/- : Modify F1 : Help (Shift)F2 : Change Color									

Figure 0-2. Standard CMOS SETUP Screen

Date - Allows manual setting of the electronic calendar on the mainboard.

Time - Sets the internal clock of the system which includes hour, minutes, and seconds.

Primary Master - Specifies the physical and electronic properties of the standard hard disk drives installed. Relevant specifications include the type, number of cylinders (CYLS), heads (HEAD), write pre-compensation time (PRECOMP), read/write head landing zone (LANDZ), number of sectors per track (SECTOR), and HDD mode (MODE). Selecting "**AUTO**" in the hard disk type item avoids the necessity of loading the HDD specifications and the function of the IDE HDD Auto Detection option in the main menu. The system BIOS will automatically detect the hard drive installed on the system upon bootup.

Drive A:/B: - Specifies the capacity and format of the floppy drive installed in your system.

Video - Specifies the display adapter installed.

Halt On - Enables the system to halt on several conditions/options. The default value is set as "**All Errors**."

Base/Extended/Other Memory - A small section in the lower right corner of the screen displays the important information about your system which includes the base, extended, and other memory sizes. They are updated automatically by the SETUP program according to the status detected by the BIOS self-test. This section of the Standard CMOS SETUP screen is for viewing purpose only; therefore, manual modifications are not allowed.

Introduction

BIOS Features Setup

ROM PCI/ISA BIOS <<P6KFX-A0>> BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
Level 1 Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
Level 2 Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	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	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate(Chars/Sec)	: 6		
Typematic Delay(Msec)	: 250		
Security Option	: Setup	ESC : Quit	↑↓→←: Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
OS Select For DRAM >64MB	: Non-OS2	F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 0-3. BIOS Features Setup Screen

Virus Warning - Allows the virus warning feature for the hard disk boot sector to display a warning message and produce a beep sound whenever an attempt is made to write on the hard disk's boot sector. The default value for this option is **"Disabled."**

Level 1/2 Cache - Enables the Level 1/2 Cache cache when this options is set to **"Enabled"** (default).

Quick Power On Self Test - Allows the power on self test to run at either a fast or a normal speed. The available options are:

- Disabled
- Enabled(default)

Introduction

Boot Sequence - Selects the drive where the system would search for the operating system to run with. The available options are:

- A,C, SCSI (default)
- C, CDROM, A
- D, A, SCSI
- F, A, SCSI
- SCSI, C, A
- C,A, SCSI
- CDROM, C, A
- E, A, SCSI
- SCSI,A, CI
- LS/ZIPI,C

Swap Floppy Drive - ***nabled*** will effectively change the A: drive to B: and the B: to A: drive. ***isabled*** (default) sets the floppy drives in their default states.

Boot Up Floppy Seek - Checks whether the floppy drives installed on the system are correct or not. This option operation usually occurs when the magnetic heads of the floppy drives produce a sound during power on self test. The available options are:

- Enabled (default)
- Disabled

Boot Up NumLock Status - Sets the <Num Lock> key to either on or off during system boot-up. The available options are:

- On (default)
- Off

Boot Up System Speed - Sets the speed of the system during power on self test sequence. The available options are:

- High (default)
- Low

Gate A20 Option - Boosts the performance of system with softwares by using the protected mode such as OS/2 or UNIX. This option determines the accessibility of the extended memory. The available options are:

- Fast (default)
- Normal

Typematic Rate Setting - Defines the setting of the keyboard typematic rate. The available options are:

- Disabled (default)
- Enabled

Typematic Rate (Chars/Sec) - Specifies the key repeat rate, in seconds, of keyboard characters. The available options are:

- 6 (default)
- 10
- 15
- 24
- 8
- 12
- 20
- 30

Typematic Delay (Msec) - Selects the delay, in milliseconds, before a key repeats itself. The available options are:

- 250 (default)
- 500
- 750
- 1000

Security Option - Determines if the password will be asked for every boot (***System***), or when entering into the SETUP program (***Setup*** - default). Refer to the section entitled SUPERVISOR PASSWORD for the password setting procedure.

Introduction

PCI/VGA Palette Snoop - Selects "abled" to solve the abnormal color in Windows while using ISA MPEG and PCI VGA card. The available options are:

- Disabled (default)
- Enabled

OS Select For DRAM>64MB -Selects the OS if DRAM > 64MB. This option allows you to access the memory that over 64MB in OS/2. The available options are:

- Non-OS2 (default)
- OS2

Video BIOS Shadow - Enables the system shadowing and achieve the best performance of the system. The available options are:

- Enabled (default)
- Disabled

C8000-CBFFF, CC000-CFFFF, D0000-D3FFF, D4000-D7FFF, D8000-DBFFF, DC000-DFFFF Shadow - If you have a shadowing of the BIOS at any of the above segments, you may set the appropriate memory cacheable function to ***abled***". Otherwise, select "***Disabled***" (default).

Chipset Features Setup

OM PCI/ISA BIOS <<P6KFX-A0>> CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	: Enabled	Video RAM Cacheable	: Enabled
DRAM Speed Selection	: 60ns	Memory Hole at 15M-16M	: Disabled
DRAM RAS# Precharge Time	: 3	8 Bit I/O Recovery Time	: 1
MA Additional Wait State	: Disabled	16 Bit I/O Recovery Time	: 1
RAS# To CAS# Delay	: Disabled	Passive Release	: Enabled
DRAM Read Burst <B/E/F>	: x2/2/3	Delayed Transaction	: Disabled
DRAM Write Burst <B/E/F>	: x2/2/3		
ISA Bus Clock	: PCICLK/4		
DRAM Refresh Queue	: Enabled		
DRAM Refresh Type	: CAS-RAS		
DRAM ECC/Parity Select	: Disabled		
Fast Dram Refresh	: Disabled		
Read-Around-Write	: Enabled		
DRAM Fast Leadoff	: Enabled		
USWC Write Post	: Enabled		
PCI Burst Write Combine	: Enabled		
PCI-To-DRAM Pipeline	: Enabled	ESC : Quit	↑↓←→ : Select Item
CPU-To-PCI Write Post	: Enabled	F1 : Help	PU/PD/+/- : Modify
CPU-To-PCI IDE Posting	: Enabled	F5 : Old Values	(Shift)F2 : Color
System BIOS Cacheable	: Enabled	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 0-4. Chipset Features Setup Screen

Auto Configuration - The default values of this options is **abled** (default).

When enabled, this options is for the following DRAM and cache options.

Otherwise, **abled** allows you to program each option .

- Enabled (default)
- Disabled



The following items are controlled by **Auto Configuration** when users select **abled**. For this reason, their default values will be changed by the speed of CPU. These items are :

A Additional Wait State", AS# To CAS# Delay", RAM Read Burst<B/E/F>“, RAM Write Burst<B/E/F>“, and SA Clock”.

DRAM Speed Selection - Allows to select DRAM speed. The default value is 60ns which is preferable. After changing this option will affect RAS Prechange option. The available options are:

- 60 ns (default)
- 70

Introduction

DRAM RAS# Precharge Time - Selects RAS# precharge time for DRAM access. The available options are:

- 3 (default)
- 4

MA Additional Wait State - One additional wait state is inserted before the assertion of the first Maxx and CAS#/RAS# assertion during DRAM read or write leadoff cycles. The available options are:

- Disabled (default)
- Enabled

RAS# To CAS# Delay - Allows 1 clock delay or none between assertion of RAS# and CAS#. The available options are:

- Disabled (default)
- Enabled

DRAM Read Burst Timing <B/E/F> - Controls DRAM Read Burst Timings. If users set the option to x2/2/3, the Burst Read Timings of **B**EDO, **E**DO and **F**PM DRAM respectively are x222, x222, and x333. The available options are:

- x2/2/3 (default)
- x2/3/4
- x3/4/4
- x1/2/3

DRAM Write Burst Timing <B/E/F> - Controls DRAM Write Burst Timings. The available options are:

- x2/2/3(default)
- x3/3/4
- x3/3/3
- x4/4/4

ISA Bus Clock - ISA clock divide by 4 or 3 depending on PCI bus clock. Users can refer to the formula for clear figure. (**ISA Clock = PCI Clock / 3 or ISA Clock = PCI Clock / 4**). The available options are:

- PCICLK/4 (default)
- PCICLK/3

DRAM Refresh Queue - If DRAM is set to **nabled**, the internal 4 deep refresh queue is enable for adjusting the DRAM refresh rate. The available options are:

- Enabled (default)
- Disabled

DRAM Refresh Type - If you choose **nabled**, the DRAM refresh type is RAS only; otherwise, the DRAM refresh type is CAS-before-RAS. The available options are:

- CAS-RAS (default)
- RAS Only

DRAM ECC/Parity Select - Enables the option for detecting memory error. The available options are:

- Disabled (default)
- Parity
- ECC

Fast Dram Refresh - The fast refresh mode implements a refresh cycle every 32 host clocks. The available options are:

- Disabled (default)
- Enabled

Introduction

Read-Around-Write -When the option is disabled, all posted writes in the DBX are retired before a CPU or PCI read access is rescheduled. The available options are:

- Enabled (default)
- Disabled

DRAM Fast Leadoff -One clock is pulled in while accessing DRAM if this option is enabled. The options are:

- Enabled (default)
- Disabled

USWC Write Post -When enabled, the memory controller allows posting of CPU to PCI cycles destined for a USMC region even during a passive release cycle.

- Enabled (default)
- Disabled

PCI Burst Write Combine - If this option is set as enabled, DBX is allowed to combine back-to-back sequential CPU to PCI Writes into a single PCI Write Burst. The available options are:

- Enabled (default)
- Disabled

PCI-To-DRAM Pipeline - Restricts pipelining of PCI to DRAM Write cycles when this option is set as disabled. The available options are:

- Enabled (default)
- Disabled

CPU-To-PCI Write Post - Enables the PCU to PCI posting. The available options are:

- Enabled (default)
- Disabled

CPU-To-PCI IDE Posting - When this option is set as disabled, the cycles are treated as normal I/O write transactions. The available options are:

- Enabled (default)
- Disabled

System BIOS Cacheable - Allows shadowing of the system BIOS and improves the system performance. The available options are:

- Disabled (default)
- Enabled

Video RAM Cacheable - Sets the mode of the system video BIOS shadowing mode. The available options are:

- Disabled (default)
- Enabled

Memory Hole at 15M-16M - Enables this option to reserve the certain space in memory for ISA cards. The available options are:

- Disabled (default)
- Enabled

8 Bit I/O Recovery Time - Defines the 8-bit I/O recovery time with one of the following system clock options. The available options are:

- 1 (default)
- 2/3/4/5/6/7/8/NA

16 Bit I/O Recovery Time - Defines the 16-bit I/O recovery time with one of the following system clock options. The available options are:

- 1 (default)
- 2/3/4/NA

PCI Passive Release - Enables or disables the passive release mechanism encoded on the PHOLD# signal when "CI to ISA/IDE Xecelerator" is the master of a PCI transaction. The available options are:

- Disabled (default)
- Enabled

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PCI Delayed Transaction - Enables or disables the delayed transaction mechanism when CI to ISA/IDE Xecelerator" is the target of a PCI transaction. The available options are:

- Enabled (default)
- Disabled

Power Management Setup

ROM PCI/ISA BIOS <<P6KFX-A0>> Power MANAGEMENT SETUP AWARD SOFTWARE, INC.	
Power Management : Disabled	** Power Down & Resume Events **
PM Control by APM : Yes	IRQ3 (COM 2) : ON
Video Off Method : DPMS	IRQ4 (COM 1) : ON
MODEM Use IRQ : 3	IRQ5 (LPT 2) : ON
	IRQ6 (Floppy Disk) : ON
Doze Mode : Disabled	IRQ7 (LPT 1) : ON
Standby Mode : Disabled	IRQ8 (RTC Alarm) : OFF
Suspend Mode : Disabled	IRQ9 (IRQ2 Redir) : ON
HDD Power Down : Disabled	IRQ10 (Reserved) : ON
	IRQ11 (Reserved) : ON
**Wake Up Events In Doze & Standby **	IRQ12 (PS/2 Mouse) : ON
IRQ3 (Wake-Up Event) : ON	IRQ13 (Coprocesor) : ON
IRQ4 (Wake-Up Event) : ON	IRQ14 (Hard Disk) : ON
IRQ8 (Wake-Up Event) : OFF	IRQ15 (Reserved) : ON
IRQ12 (Wake-Up Event) : ON	
	ESC : Quit ↑↓→←: Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

Figure 0-5. Power Management Setup Screen

Power Saving Mode - Allows users to determine how often the Power Saving actives . The available options are:

- Disable (default)
- Max Saving
- Min Saving
- User Define

PM Control by APM - Sets the power management (PM) control by APM. The available options are:

- Yes (default)
- No

Video Off Method - Sets the video power green method . The available options are:

- DPMS (default)
- V/H SYNC+Blank
- Blank Screen

MODEM Use IRQ - In order to support resume on ring and to pass APM 1.2, this option is required to be set same IRQ as the modem add-in-card used. The available options are:

- 3 (default)
- 4/5/7/9/10/11/NA

Doze Mode - Sets the time interval when the system enters DOZE mode. The available options are:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

Introduction

Standby Mode - Sets the timer interval when the system enters STANDBY mode.

The available options are:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

Suspend Mode -Sets the time interval when the system enters SUSPEND mode.

The available options are:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

HDD Power Down - Sets the timer of the HDD when to enter the Standby mode.

The available options are:

- Disabled (default)
- 1....15 Min

Wake Up Events In Doze & Standby

IRQ 3/4/8/12 (Wake-Up Event) - Sets the wake-up event to **N** or **FF** when system enters the suspend mode.

Power Down & Resume Events

Power Down Activities - The manual also lists the Power Management SETUP (PM) events by which the system wakes up from STANDBY or SUSPEND modes.

Switch the following parameters to **N** or **FF**:

- COM Ports Accessed
- LPT Ports Accessed
- Drive Ports Accessed
- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT 1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocesor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)



*The default values of **IRQ3 (COM2)**, and **IRQ8 (RTC Alarm)** "are **OFF** now. In the following version (V1.2), these values will be changed to **ON**.*

PNP/PCI CONFIGURATION Setup

ROM PCI/ISA BIOS <<2A69HE1A >>
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

Resources Controlled By	: Auto	PCI IRQ Activied By	: Level
Reset Configuration Data	: Disabled	PCI IDE IRQ Map To	: PCI-AUTO
		Primary IDE INT#	: A
		Secondary IDE INT#	: B

Introduction

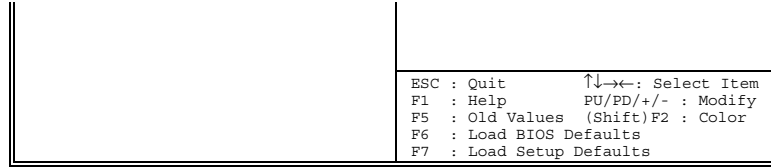


Figure 0-6. PNP/PCI CONFIGURATION SETUP Screen

Resources Controlled By - Allows users to use what kind IRQs assignment. The available options are:

- Auto (default)
- Manual



The default of "Resources Controlled By" is Auto. If users set Manual option for the setting, "IRQ-3 / IRQ-4 / IRQ-5 / IRQ-7 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / IRQ-14 / IRQ-15 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to" options below will be shown on the screen.

Reset Configuration Data - Clears the data in ESCD area. (Extended System Configuration). The available options are:

- Enabled (default)
- Disabled

IRQ-3 / IRQ-4 / IRQ-5 / IRQ-7 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / IRQ-14 / IRQ-15 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to - Users can select resources controlled by **anual"** method to fix legacy ISA card IRQ & DMA in Plug & Play problem . Legacy card has the highest priority to use someone IRQ# & DMA# which one assigned by manual . The available options are:

- PCI/ISA PnP (default)
- Legacy ISA

PCI IRQ Activated By - Programs the PCI IRQ to single edge or logic level.

Level/Edge sensitivity is programmed per controller. Every IRQ input for a given bank is either **DGE"** or **EVEL"** (default) triggered.

PCI IDE IRQ Map To - Defines the IDE IRQ Routing either from the PCI Bus or the ISA Bus. The available options are:

- PCI-AUTO (default)
- ISA
- PCI-SLOT 1
- PCI-SLOT 2
- PCI-SLOT 3
- PCI-SLOT 4



If user sets this option to SA", both the rimary IDE INT#" and econdary IDE INT#" options below will not be shown on the screen.

Primary/Secondary IDE INT# - Defines the primary/secondary IDE INT# of the PCI IDE card. The available options are:

- A (default of Primary IDE INT#)
- B (default of Secondary IDE INT#)
- C
- D

Introduction



This option may not be able to configure all the values within the SETUP program according to the installed equipments (i.e., floppy drives A: & B:, hard disk drives C: & D:).

Load BIOS Defaults

In the event of a loss in memory on the configuration SETUP, the user can restore the information on the BIOS by loading its default values. Loading the BIOS defaults provides safety booting of the system.

Load Setup Defaults

SETUP defaults are considered default values with which the system will be enabled to perform better. This is due to the enabling of some options within the SETUP program. However, if problems are encountered after loading the SETUP defaults, reboot the system and load the BIOS defaults instead.

Introduction

INTEGRATED PERIPHERALS

ROM PCI/ISA BIOS <<2A69HE1A >> INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
IDE HDD Block Mode : Enabled	USB Controller : Enabled
IDE Primary Master PIO : Auto	USB Keyboard Support : Disabled
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
On-Chip Primary PCI IDE : Enabled	
On-Chip Secondary PCI IDE : Enabled	
PCI Slot IDE 2nd Channel : Enabled	
Onboard FDD Controller : Enabled	
Onboard UART 1 : 3F8/IRQ4	
Onboard UART 2 : 2F8/IRQ3	
Onboard UART 2 Mode : Standard	
Onboard Parallel Port : 378/IRQ7	
Parallel Port Mode : Normal	
	ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults

Figure 0-7. PNP CONFIGURATION SETUP Screen

IDE HDD Block Mode - Determines the block transfer mode will be used or not .
The available options are:

- Enabled (default)
- Disabled

IDE Primary/Secondary Master/ Slave PIO - Sets the advanced hard disk PIO transfer mode which effects your hard disk transfer rate. The program will auto detect the mode of this option when users select “*Auto*”. Otherwise, you must set this option by yourself. The available options are:

- Auto (default)
- Mode 0
- Mode 1
- Mode 2
- Mode 3
- Mode 4

On-Chip Primary/Secondary PCI IDE - Enables or Disables the primary/secondary PCI IDE of Intel IDE controller. Selecting “*isabled*” can release IRQ14.

- Enabled (default)
- Disabled

PCI Slot IDE 2nd Channel - *Enables* or *Disables* the second IDE channel of PCI slot if users use the PCI IDE card on board. The available options are:

- Enabled (default)
- Disabled

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Onboard FDD Controller - Enables or Disables the FDD controller or on-board I/O chip. The available options are:

- Enabled (default)
- Disabled

Onboard UART 1/2 - Sets the I/O address for serial port 1/2.

- 3F8/IRQ4 (default of Onboard serial Port 1)
- 2F8/IRQ3 (default of Onboard serial Port 2)
- 3E8/IRQ4
- 2E8/IRQ3
- Disabled

Onboard UART 2 Mode - Determines which type IR module to be used. The available options are:

- Standard (default)
- ASKIR
- HPSIR



If users set this option to "Standard" (default), the "IR Duplex Mode" option below will not be shown on the screen.

IR Duplex Mode - Allows users to control the infrared communication duplex mode. The available options are:

- Half (default)
- Full

Onboard Parallel Port - Sets the I/O address for the parallel port. The available options are:

- 378H/IRQ7 (default)
- Disabled



If users set this option to "Disabled", the "Parallel Port Mode" option below will not be shown on the screen.

Parallel Port Mode - Selects the working mode of parallel port. The available options are:

- Normal (default)
- ECP+EPP
- EPP
- ECP



1. *If users set this option to "Normal", the "CP Mode Use DMA" and "Parallel Port EPP Type" options below will not be shown on the screen.*
2. *If users set this option to "EPP", the "CP Mode Use DMA" option below will not be shown on the screen.*
3. *If users set this option to "ECP", the "Parallel Port EPP Type" option below will not be shown on the screen.*

ECP Mode Use DMA - Selects the DMA channel of ECP Mode to transfer your data. The available options are:

- 3 (default)
- 1

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Parallel Port EPP Type - Determines what version of EPP protocol to be supported . The available options are:

- EPP1.7 (default)
- EPP1.9

USB Controller - Enables or disables USB controller. The available options are:

- Enabled
- Disabled

USB Keyboard Support - This item is hidden if USB controller is disabled. To use USB legacy keyboard, please set this item to be enabled. The available options are:

- Disabled (default)
- Enabled

SUPERVISOR PASSWORD

The SUPERVISOR PASSWORD utility allows you to set, change, and disable the password which is stored in the BIOS. To change the password setting, press <Enter> on the SUPERVISOR PASSWORD option of the main menu and then type the new password.

Configure the Security Option within the BIOS Features Setup corresponding to the setting in this utility. SUPERVISOR PASSWORD access right hither than USER PASSWORD .

The password can be at most 8 characters long. The program will require you to confirm the new password before it exits and will enable the utility. To disable the SUPERVISOR PASSWORD, press the <F1> when the program asks you to enter the new password.

USER PASSWORD

USER PASSWORD only can be used when the system is booting . Users only can enter SETUP screen to change the USER PASSWORD.

The password can be at most 8 characters long. The program will require you to confirm the new password before it exits and enables the utility. To disable the USER PASSWORD, press the <F1> as the program asks you to enter the new password.

IDE HDD Auto Detection

The IDE HDD Auto Detection provides auto configuration of the hard drive installed in the system. It supports LBA, Large, and Normal modes. If the system's hard disk drive has a capacity of over 528MB and does not supports LBA functions, you may select either the LBA mode or the Large mode. On the other hand, if the

Introduction

hard disk drive's capacity is over 528MB but does support LBA functions, you may select the Large mode in order to use the area over 528MB.



- a. *The LBA and Large modes will only appear on the screen when the installed hard disk drive is specified to support the LBA mode.*
- b. *In the case when a hard disk drive's cylinder specification exceeds 1024, and does not support the LBA functions, only the Large mode will be displayed on the screen.*
- c. *With a hard disk drive supporting cylinders below 1024, only the Normal mode will appear on the screen. The Normal mode will also be shown on the screen under conditions a & b above.*
- d. *Hard disk drives with less than 528MB total capacity must be set to Normal mode when combined with either old BIOS versions or the Award BIOS.*



LBA and Large modes are new specifications which may not be fully supported by all operating systems. An example of which is the current version of UNIX System (R3.2.4) which is still unable to support the LBA function. Therefore, determine the specifications of your hard disk drive and operating system before selecting the drive's mode.

After pressing the <Enter> key on this item of the main menu, the display screen will show the following screen.

```
ROM PCI/ISA BIOS <<2A69HE1A >>
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS      TYPE  SIZE  CYLS HEAD PRECOMP LANDZ SECTOR  MODE
-----
Primary Master  :
    Select Primary Master  Option (N=Skip) : N
    OPTIONS      SIZE  CYLS HEAD PRECOMP LANDZ SECTOR  MODE
    -----
    1            0    0    0    0    0    0    NORMAL

Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation
Esc : Skip
```

Figure 0-8. IDE HDD Auto Detection Screen

Once the program detects the type of hard disk installed, it will display the relative information such as the type, cylinders, heads, write pre-compensation, landing zone, number of sectors per track, size and mode. A message asking you to accept the IDE HDD detected will also be flashed on the screen.

Quitting SETUP

After making all modifications in the SETUP program, go to the option "Save & Exit SETUP" then press the <Enter> key.

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Press <Y> to confirm the changes made, and the <N> or the <ESC> keys if further modifications are still necessary before exiting the SETUP program. Once the <Y> key is pressed, the system will automatically exit the program and reboot. However, if you want to cancel all changes made under the SETUP program, go to the option "Exit Without Saving".

Press <Y> and the system will exit the SETUP program then reboot without saving any of the changes made.



You may also use the <F10> key to save the new settings.