CONTENTS

HOW TO USE THIS MANUAL

To obtain maximum use from this manual it is suggested:

Read Page A COMPONENT LOCATION DIAGRAM where you find the mainboard layout diagram. Please refer to it when you configure the system.

Read Page B CHECK LIST OF THE PACKAGING where you find the packing contents.

Read about an overview of the mainboard features, and how to upgrade as well as to change hardware configurations such as memory size, CPU type, jumper settings lists and connectors in the following categories:

Chapter 1 Introduction
Chapter 2 Installation

When you have finished reading of both chapter 1 and chapter 2, turn to **Chapter 3 AMI BIOS Setup** where you will find the update BIOS procedure and the further information which is stored in the SETUP is the system hardware configuration.

The back of this manual contains **APPENDIX A** which shows you how to setup Pentium®II、CeleronTM、Pentium®II XeonTM and processors with SECC2 package, **APPENDIX B** which shows you how to setup thermister and **APPENDIX C** which is a list of request form for technical support.

Your system dealer will set up the mainboard according to your demand of the computer. It means that the current settings of your mainboard may not be the same as the defaults shown in this user's manual. If you need to change your configuration, please ask your dealer first. Be sure this will not void your system warranty, or ask your dealer to do it for you.

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CHAPTER 1 INTRODUCTION

The ATC-6400 mainboard utilizes Intel 440GX AGPset which can perform with all current Intel Pentium®II processors in both Slot 1 and Slot 2(option) , in addition to Intel Pentium®II Xeon™ processors(with higher memory configurations included a larger, faster Level 2 cache) which is optimized for workstation and server platforms. It also supports 100MHz system bus and SDRAM high-performance.

1-1 SYSTEM FEATURES

- Supports INTEL Pentium®II CPU (233MHz~450MHz) and INTEL Celeron™ CPU (266MHz~333MHz) by using Slot1; Pentium®II Xeon™ CPU (400MHz ~500MHz) by using Slot2(option).

- INTEL 440GX AGPset.

- Uses four 3.3V168-pin DIMM sockets, provides four banks of 64-bit wide path up to 2GB SDRAM (with parity chip ECC support).

- Built-in 3 Switching Voltage Regulators.

- Supports auto-detect CPU core voltage range from 1.8V to 3.5V.

- Supports one AGP slot, six 32-bit PCI revision 2.1 slots.

- Dual Master IDE connectors support Ultra DMA/33 (33MB/sec), up to four devices in two channels for connecting of high capacity hard drive, CD-ROM, Zip, LS-120...etc.

- National Semiconductor 309 high-speed Ultra Multi-I/O chip.

- The USB (Universal Serial Bus) connector supports up to 127 peripheral devices.

- Built-in ATX power connector.

- Supports Infrared transfer (IrDA TX/RX) header.

- One FDC port supports two devices.

- Two 16550A fast UARTs compatible serial ports.

- One EPP/ECP mode parallel printer port.

- Fan On / Off Control, Power Button , Resume Reset and Modem Ring On , Software Power Off Control, Wake-On-LAN.(with ATX power)

- Built-in Hardware Health Monitoring (Winbond W83781D chip).

- ATX form factor, hardware dimension is 305mm x 244mm (12.0" x9.6").

1-2 Software Power Off Control

The mainboard designs to support Software Power Off Control feature through the SMM code in the BIOS under Windows 95/98, Windows 3.1x, and MS-DOS operation system environment. In order to reach this feature, you should use **ATX power supply**.

First, you should connect the power switch cable to the connector "PS-ON" on the mainboard. In the BIOS screen of 'POWER MANAGEMENT SETUP', choose "User Defined" (or "Min. Power Saving" or "Max. Power Saving") in 'Power Manager' and choose "Yes" in 'PM Control by APM'.

In Windows 95/98, if you would like to power off the system, you just choose "shutdown the computer ?" in the "Shut Down Windows" from Windows 95/98, then the system power will be off directly and become the stand-by status. In the mean time, you will find the power LED light is blinking. If you would like to restart the system, just press the power switch button, and the system will be powered on.

1-3 SB-Link Sideband Signals (JP6)

In order to migrate the legacy Sound Blaster compatible audio to the PCI bus, EMU8008 incorporates a pair of SB-Link request/grant sideband signals (PCPCIR   EQN and PCPCIGNTN) to interface to the PCI bus. SB-Link is a mechanism that was defined and developed by INTEL as a docking solution which allows ISA slots to exist in docking stations connected to desktop PC PCI bus.

1-4 Wake-On-LAN

The remote Wake-On-LAN mode of operation is a mechanism that uses Advanced Micro Device Magic Packet technology to power up a sleeping workstation on the network. This mechanism is accomplished when the LAN card receives a specific packet of information, called a Magic Packet, addressed to the node on the network. For additional protection, Secure ON is an optional security feature that can be added to the Magic Packet that requires a password to power up the sleeping workstation. When the LAN card is in remote Wake-On-LAN mode, main system power can be shut down leaving power only for the LAN card and auxiliary power recondition.

The LAN card performs no network activities while in the remote Wake-On-LAN mode of operation-It only monitors the network for receipt of a Magic Packet. If a Magic Packet is addressed to the LAN card on the network, the LAN card wake up the system. If the Secure ON feature has been enabled, the password added to the Magic Packet is also verified prior to waking up the system.

You should select two kinds of PCI Ethernet cards with WOL function. One is INTEL and the other is with PME signal supporting.

1-5 Thermister

This means that users can monitor the CPU temperature through thermister. When setting up the thermister, the BIOS will load the CPU temperature automatically. There is a choice of the warning beep sound if the user set the option on. If the CPU temperature is overheated, the user will get the notice from the thermister. This time you should shut down the computer and check your devices. Or you can contact with you dealer.

1-6 Hardware Monitor

Hardware Doctor is a self-diagnostic system for PC and must be used with *Winbond W83781D IC series* product. It will protect PC Hardware by monitoring several critical items including Power Supply Voltage, Fans Speed, and CPU & System temperature, which may damage system under malfunction.

■ *Run Hardware Doctor*

Select "Start" / "Programs" / " Hardware Doctor", and then you will see the main menu as below.
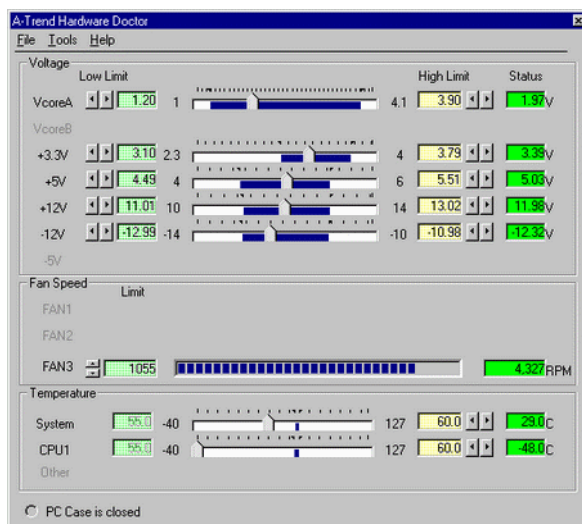
■ *Guideline to use Hardware Doctor*

Vcore ：VcoreA means the CPU working voltage. VcoreB includes variety of voltages such as Second CPU,1.5V for Pentium®II GTL bus, 2.5V for Clock Generator...etc.

STATUS ：The status column means the current status of the item. Different background color has different meaning. "Green" means the item is normal; "Red" means it's out of range and a warning message reminding you to treat this error will pop up at this time.

LIMIT ：User can adjust all limit value by clicking "arrow boxes". After saving the file and executing the program again, the limit range will be modified. Of course, User can set back limits to default value by choosing the "Default" item under "File" pull-down menu.

EXIT ：Only choosing the "Exit" item under the " File" will exit Hardware Doctor. If you click the " X " minimize box on the right corner of the caption bar, it will just be minimized as an icon.

HELP ：If you need more detailed information about how to use this application, please refer to the content of "Help" item in Hardware Doctor menu bar.

CHAPTER 2 INSTALLATION

2-1 INSTALLATION PROCEDURE

Before installing the computer, please prepare all components such as CPU, DRAM; peripherals such as hard drive, keyboard, CD-ROM and accessories such as cables. Then install the system as following:

1. Plug CPU/ heat sink (refer to Pentium$^\circledR$II installation guide or **Appendix A**), and RAM modules on the mainboard.
2. Plug add-on cards into PCI/ISA slots, if needed.
3. Connect cables to peripheral devices, power supply…
4. Make sure all components and devices are well connected, turn on the power and setup System BIOS(especially for CPU setting) based on your configuration.
5. Install peripheral devices, add-on card drivers and test them.
6. If all of above procedures are running successfully, turn the power off and screw the chassis cover to the chassis, and then connect external devices which are cabled to the system.

2-2 CPU INSTALLATION

The ATC-6400 mainboard has a JumperFree feature that let users needn't to set up the CPU clock frequency, and voltage through jumpers. It is smart enough to detect and recognize the CPU voltage and enables users to setup the CPU frequency only from the BIOS Setup Screen. A system equipped with JumperFree mainboard will be booted up by defaulted CPU frequency at the very first time. Users can adjust the frequency through "Hardware Monitor Setup" from the BIOS Setup Screen. And then the system will run at the setting CPU frequency.

2-2-1 CPU TYPE SELECTION

ATC-6400 supports INTEL Pentium®ll CPU 、 INTEL Celeron™ CPU and INTEL Pentium®ll Xeon™ CPU(option).

1. Press the <Del> key when the system is booting up.
2. The BIOS Setup main menu will appear.
3. Select " HARDWARE MONITOR SETUP "

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20
(C)1998 American Megatrends, Inc. All Rights Reserved
Standard CMOS Setup
Advanced CMOS Setup
Advanced Chipset Setup
Power Management Setup
PCI / Plug and Play Setup
Peripheral Setup
Hardware Monitor Setup
Auto-Detect Hard Disks
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

4. Then the "Hardware Monitor Setup" screen will appear.

※※ **NOTE**

If an incorrect CPU frequency is set through the BIOS, a system failure may occur. Users can solve this problem by keeping pressing the "F10" key on the keyboard at boot to clear up the previous set frequency (i.e. back to the default frequency 66MHz x 3.5x). Then reset the correct frequency in BIOS. Lastly turn off and then restart the computer by pressing the power button.

5a. Intel Pentium® II 233MHz (66 x 3.5)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	66MHz	Available Options:
CPU Ratio Selection	3.5x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
≡≡ System Hardware Monitor ≡≡		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	ESC:Exit ↑↓:Sel
-12.000V	-11.484V	PgUp/PgDn:Modify
-5.000V	-4.763V	F2/F3:Color

5b. Intel Pentium® II & Celeron™ 266MHz (66 x 4.0)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	66MHz	Available Options:
CPU Ratio Selection	4.0x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
≡≡ System Hardware Monitor ≡≡		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	ESC:Exit ↑↓:Sel
-12.000V	-11.484V	PgUp/PgDn:Modify
-5.000V	-4.763V	F2/F3:Color

✎ " Current VID " & " VID Setting " are optional items, please refer to page 40.

5c. Intel Pentium® II & Celeron™ 300MHz (66 x 4.5)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	66MHz	Available Options:
CPU Ratio Selection	4.5x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
≡≡ System Hardware Monitor ≡≡		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

5d. Intel Pentium® II & Celeron™ 333MHz (66 x 5.0)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	66MHz	Available Options:
CPU Ratio Selection	5.0x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
≡≡ System Hardware Monitor ≡≡		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

5e. Intel Pentium® II 350MHz (100 x 3.5)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	100MHz	Available Options:
CPU Ratio Selection	3.5x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
== System Hardware Monitor ==		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

5f. Intel Pentium® II & Xeon™ (option) 400MHz (100 x 4.0)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	100MHz	Available Options:
CPU Ratio Selection	4.0x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
== System Hardware Monitor ==		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

5g. Intel Pentium® II & Xeon™ (option) 450MHz (100 x 4.5)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	100MHz	**Available Options:**
CPU Ratio Selection	4.5x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
== System Hardware Monitor ==		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

5h. Intel Pentium® II Xeon™ 500MHz (100 x 5.0) (option)

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20		
(C)1998 American Megatrends, Inc. All Rights Reserved		
CPU Frequency Selection	100MHz	**Available Options:**
CPU Ratio Selection	5.0x	3.0x
VCC3 Voltage Setting	3.4V	3.5x
Current VID	2.00V	4.0x
VID Setting	2.00V	4.5x
		5.0x
== System Hardware Monitor ==		5.5x
Current CPU Temperature	20°C/68°F	6.0x
Current System Temperature	26°C/78°F	6.5x
Current CPU Fan Speed	0 PPM	7.0x
Current Chassis Fan Speed	0 PPM	7.5x
Current Power Fan Speed	0 PPM	8.0x
Vcore	1.920V	
Vtt	1.472V	
Vio	3.392V	
+ 5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

2-3 SYSTEM MEMORY INSTALLATION

The ATC-6400 provides four 168-pin DIMM sockets for system memory expansion to 2GB SDRAM. These four DIMMs are arranged to four banks, please refer to page A. Each bank provides 64-bit wide data path.
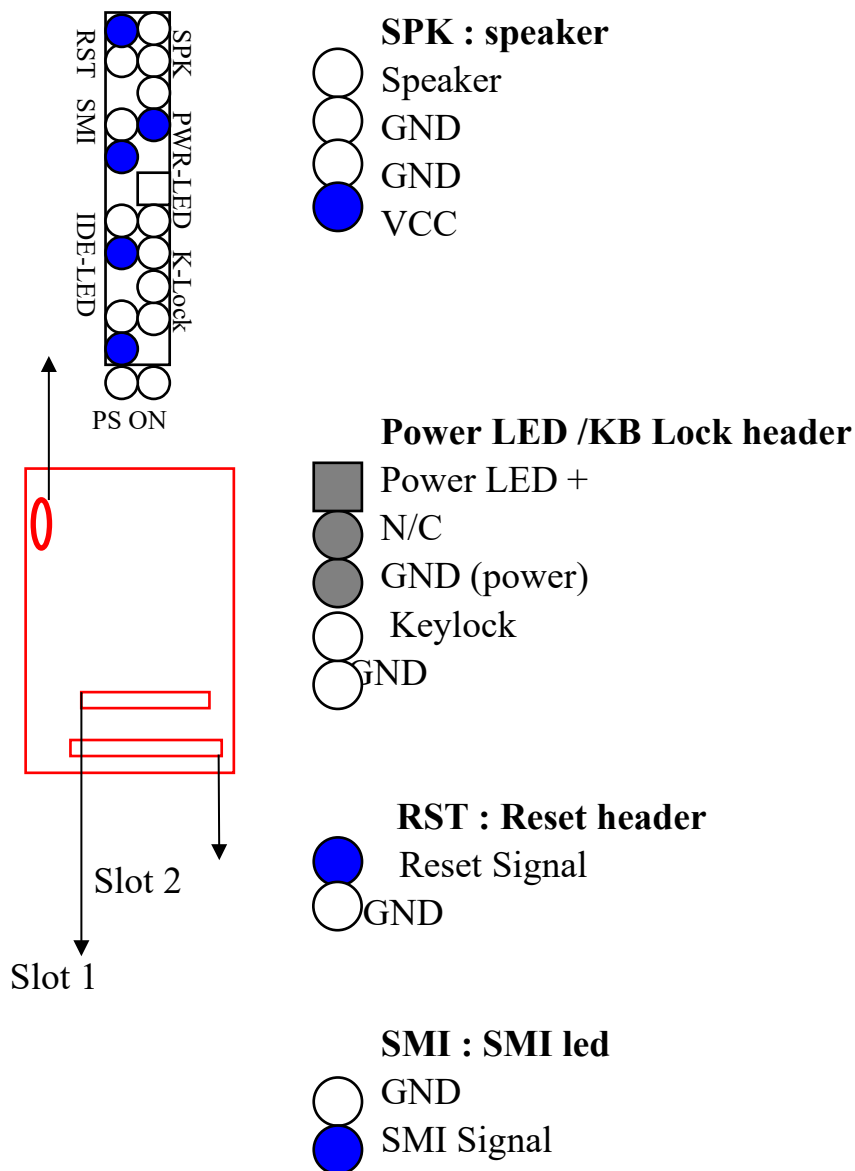
※**PC-100 Compliant Memory Module of Samples of System Memory Combinations Options** ※

BANK0 DIMM 1	BANK1 DIMM 2	BANK2 DIMM 3	BANK3 DIMM4	Total Memory DIMM 1-4
32MB	-	-	-	32MB
-	32MB	-	-	32MB
-	-	32MB	-	32MB
-	-	-	32MB	32MB
32MB	32MB	-	-	64MB
-	32MB	32MB	-	64MB
-	-	32MB	32MB	64MB
32MB	32MB	32MB	-	96MB
:	:	:	:	:
32MB	32MB	32MB	32MB	128MB
64MB	-	-	-	64MB
:	:	:	:	:
-	64MB	64MB	64MB	192MB
64MB	64MB	64MB	64MB	256MB
:	:	:	:	:
128MB	128MB	128MB	128MB	512MB
:	:	:	:	:
256MB	256MB	256MB	256MB	1GB
:	:	:	:	:
512MB	512MB	512MB	512MB	2GB

2-4 CONNECTORS DESCRIPTION

The locations of following connectors are indicated in page A. When you plug cables or wires into the following connectors, you should have the pin 1 edge of the cable align with the pin 1 end of the connector.

**CONN1 :** speaker, keyboard lock, reset, SMI, turbo LED, and IDE LED connectors.

SPK : speaker
Speaker
GND
GND
VCC

Power LED /KB Lock header
Power LED +
N/C
GND (power)
Keylock
GND

RST : Reset header
Reset Signal
GND

SMI : SMI led
GND
SMI Signal

RST SMI   IDE-LED

SPK   PWR-LED   K-Lock

PS ON

Slot 2

Slot 1

Pin 12 ← ⊙⊙N : **Power Button**
Pin 24 ← ~~Pin 12~~ : PS_ON   Pin 24 : +5VSB

IDE-LED : IDE devices indicator LED
connector. IDE-LED stays ON indicates

○ GND   on-board IDE devices in operation. The red
● +5V   wire of HDD connector must be connected to
the pin which is +5V.

(3,4) CPU FAN
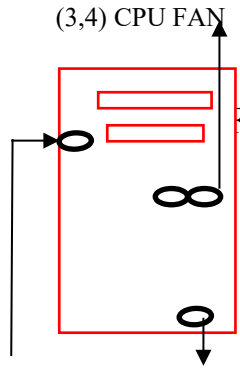
FAN : CPU cooling fan connector. Wire with
+12V voltage (most likely red wire) must be
plugged into pin2, and GROUND wires
(most likely black wire) must be plugged into
pin3. Please confirm the wire color
re-presentation with your supplier.

(2) PWR FAN (1) Chassis FAN

CAUTION: Plug the wire into wrong connector will

1 ⬜ ND   DAMAGE fan and mainboard.
2 ○ 2V   **FAN3 & FAN4 for Pentium®II & Xeon™ CPU Fan.**
3 ○ nse   **FAN1 for Chassis Fan.**
FAN2 for Power Fan.

IR1 : Infrared / Fast Infrared module connector.
IR1
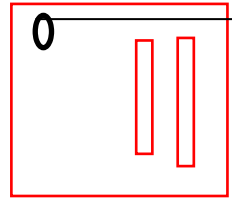
1 ⬜ +5V
2 ○ FIRRX
3 ○ IRRX
4 ○ GND
5 ○ IRTX
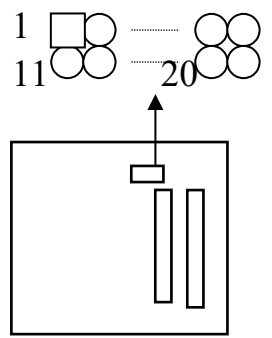
1 ⬜⊙ ···· ⊙⊙ 10   **PW1 :** ATX mode +3.3/5/12V power supply connector.
11 ⊙⊙ ···· ⊙⊙ 20

1	3.3V	6	+5V	11	3.3V	16	GND
2	3.3V	7	GND	12	-12V	17	GND
3	GND	8	PWRGD	13	GND	18	-5V
4	+5V	9	5VSB	14*	PS_ON	19	+5V
5	GND	10	+12V	15	GND	20	+5V

* PS_ON : Soft-Off power control

FDC1 : this connector is used to connect the floppy
drive through a cable.

34   2

33   1
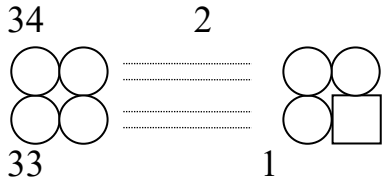
pin	signal	pin	signal
2	RWC-	20	STEP-
4	reserved	22	Write Data
6	FDEDIN	24	Write Gate
8	Index-	26	Track 00-
10	Motor EnableA-	28	Write Protect-
12	Drive Sele.B-	30	Read Data-
14	Drive Sele.A-	32	Side 1 Sele.-
16	Motor EnableB-	34	DisketteChange
18	DIR-		
All of odd pins are ground			
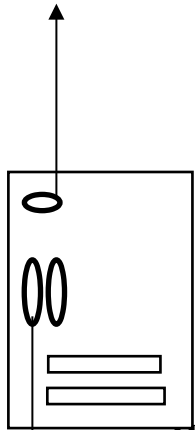
IDE1/IDE2 : these two connectors are used to connect
IDE devices through IDE cables, a total
of 4 devices can be connected.

40

4
2   1

pin	signal	pin	signal
1	Reset IDE	21	DDRQ0(1)
2	GND	22	GND
3	Host Data 7	23	I/O Write-
4	Host Data 8	24	GND
5	Host Data 6	25	I/O Read-
6	Host Data 9	26	GND
7	Host Data 5	27	IORDY
8	Host Data 10	28	N/C
9	Host Data 4	29	DDAK0- (1-)
10	Host Data 11	30	GND
11	Host Data 3	31	IDE1:IRQ14 IDE2:IRQ15 or MIRQ0
12	Host Data 12	32	IOCS16-
13	Host Data 2	33	Addr 1
14	Host Data 13	34	N/C
15	Host Data 1	35	Addr 0
16	Host Data 14	36	Addr 2
17	Host Data 0	37	ChipSele.1P-

18	Host Data 15	38	ChipSele.3P-
19	GND	39	Activity
20	Key	40	GND

COM1/COM2 : these two connectors are used to connect serial port cables.
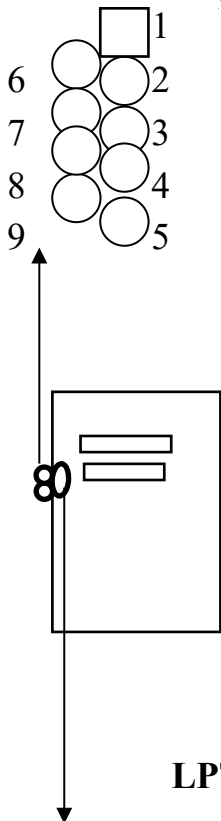
pin	signal name
1	NDCDA/B
2	NSINA/B
3	NSOUTA/B
4	NDTRA/B
5	GND
6	NDSRA/B
7	NRTSA/B
8	NCTSA/B
9	NRIA/B

A is COM1, B is COM2

LPT : this connector is used to connect parallel port cable.
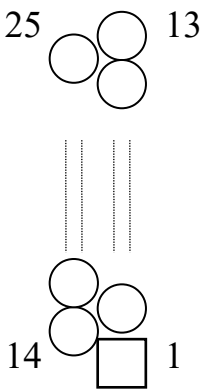
pin	signal	pin	signal
1	STROBE-	10	ACK-
2	Data Bit 0	11	BUSY
3	Data Bit 1	12	PE
4	Data Bit 2	13	SLCT
5	Data Bit 3	14	Auto Feed-
6	Data Bit 4	15	ERROR-
7	Data Bit 5	16	INIT-
8	Data Bit 6	17	SLCT IN-
9	Data Bit 7		
Pin18 -- pin25 are GND			

LPT

PS/2 Mouse
Keyboard
conn.

COM 1

COM2

USB 1   USB 0
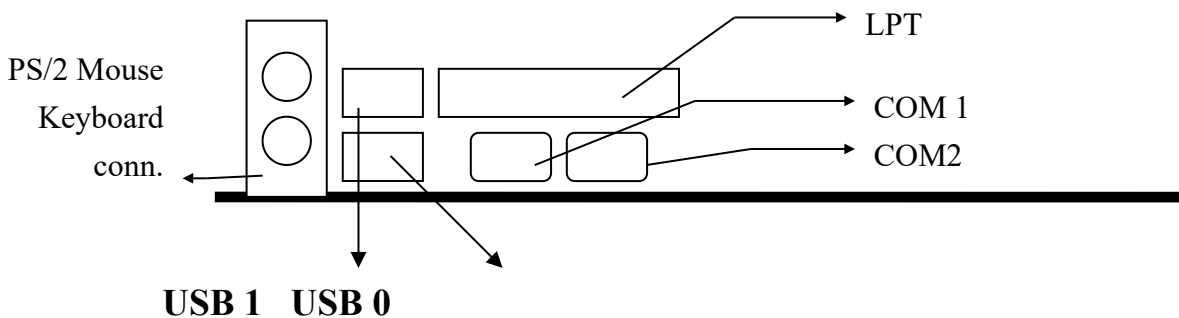
2-5 IDE DRIVER INSTALLATION

The IDE driver installation procedure is the following :

Setup for Windows 95 :

1. Start Windows 95

2. Select "START", "RUN".

3. Install INF.EXE before you install IDE driver: Type "D or E:\ INF.EXE".

4. Put the CD into your CD-ROM drive:

   Type "D or E:\IDE\WIN95\SETUP.EXE".

5. Restart the computer, then follow the instructions on your

   screen to install the new IDE driver we offer in the CD.

6. Exit Windows 95, turn the power off; then turn the power on.
 (The other platforms please refer to readme file.)

2-6 HARDWARE DOCTOR INSTALLATION

➢**Setup for Win95/98**

1. Start Windows95/98.
2. Insert All-In-One CD into your CD-ROM drive.
3. Choose "Install Hmonitor (Option)" in the installation main menu.
4. Press "OK" to begin setup.
   (***In Win95, it may show a screen to prompt user to restart the computer,
    press "Yes" to restart the computer, then repeat the step 1-4.)
5. Click the button to install Hardware Doctor software.
6. Press "OK" to complete the setup program.

➢**Setup for WinNT**

1. Start WinNT.
2. Insert All-In-One CD into your CD-ROM drive.
3. Choose "Install Hmonitor (Option)" in the installation main menu.
4. Press "Next" to start the installation.
5. Press "Next".
6. Press "Next".
7. Choose "Finish" to complete the installation.
8. Select "Start", "Shut down", "Resart the computer".

Note: After finishing Hardware Doctor installation, in WinNT you must restart your computer, but in Win95/98 you don't have to.

CHAPTER 3 AMI BIOS SETUP

AMI BIOS manufacturer provides access to the system BIOS through the hardware and software on each ATC-6400 mainboard. The hardware consists of a Flash ROM and the software is a group of programs that are installed in the ROMBIOS along with all the other data the BIOS must contain.

The ATC-6400 mainboard will require special driver supplied by the manufacturer to update the BIOS SETUP program. It is a good idea to read the next page for details of how to update BIOS driver installation or you can ask your system dealer to do it for you.

When the driver has been successfully updated, it is very important to contact your system dealer to change the CMOS settings for your computer. The CMOS settings are shown in the following pages.

NOTE : To clear CMOS you should unplug the power cord, then set 2-3 to clear, put it back to normal position and plug the power cord again.

	JP8
Normal	1-2
Clear	2-3

Normal CMOS   **Clear CMOS**

PCI sl   8

Floppy
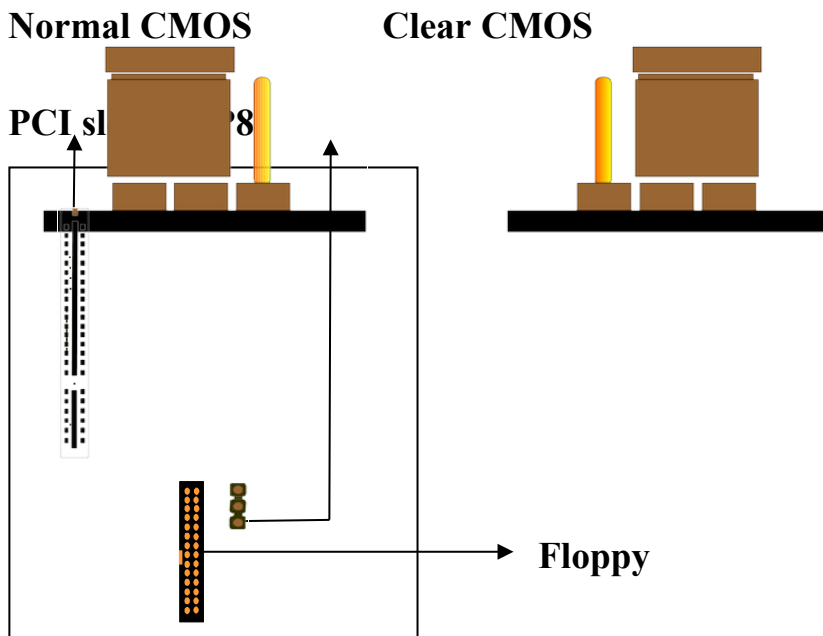
3-1 UPDATE BIOS PROCEDURES

If the BIOS needs to be updated, you can get the updated BIOS driver from the CD we offer in the package. The BIOS updated CD includes :

"amiflash.com" -- BIOS updated utility program

The updated procedure is in the following:

1. Boot the system to DOS mode in a normal manner.
2. Insert the updated CD to the CD ROM drive.
3. Change working directory to CD ROM drive, which contains the updated BIOS CD.
   -- Type "d:\flash" or "e:\flash", then press "ENTER" key.
4. Run the BIOS updated utility -- Type "amiflash", "ENTER".
5. Type "(updated BIOS file name with version number).bin", ENTER.
6. If you do not want to save the old BIOS version, type "N" when the screen displays the message : " Do you want to save BIOS (Y/N) ?".
7. Type "Y" when the screen shows the message : " Are you sure to program (Y/N) ?".
8. Follow the instructions on the screen. DO NOT remove the CD from the CD ROM drive nor turn the system power off until the BIOS updated is completed.
9. Turn the power off. Clear the data in CMOS according to the procedure described in the previous page.
10. Turn the system power on and test that your system is working properly.

3-1-1 UPDATE PENTIUM® II BIOS API

Intel also provides MICROCODE API(Applications Programming Interface) for Pentium®II processor-based mainboard user to updated data block in BIOS quickly and easily. (You can find this utility in the CD that we offer in the package.)

The BIOS code on the Pentium®II processor-based mainboards contains data that is specific to each silicon stepping of the processor. Integrators must ensure that this BIOS stepping data matches the processor stepping used. When the BIOS does not contain stepping data that matches the processor stepping, integrators must updated the data in the BIOS before shipping the system. Historically, Pentium®II systems have been updated by replacing the entire BIOS with a new revision of BIOS that contains the correct stepping data.

Intel's BIOS updated API allows stepping data within the BIOS to be updated as needed. Mainboards that contain a BIOS with the Intel-defined BIOS updated API can be quickly and easily updated, if required, without obtaining a complete BIOS upgrade. Using this utility, integrators can easily verify that the correct stepping data is present in all Pentium®II processor-based mainboards. However, if the stepping data requires updating, the mainboard BIOS must contain the Intel-defined BIOS updated API, otherwise a complete BIOS upgrade is required from the mainboard vendor.

Put the CD into CD-ROM drive, e.g. drive E, and then type
E:\>"ENTER", and type \api\checkup.

The main menu should now be displayed, showing the following four options :
   1) Check and load updated
   2) Specify stepping data file [current : pep.pdb]
   3) Help
   4) Quit without loading updated

Select 1 to know the stepping filename, select 2 to load right patch code, then select 1 to updated proper patch code. Now, the screen will show the message "please remove CD from CD-ROM drive". Then cold boot (mechanical power off) system to continue. For more information, please refer to "CHECKUP.HLP" file.

3-2 AMI SYSTEM BIOS
CONFIGURATION SETUP

The following pages explain how to set up the system configuration (CMOS) under the AMI BIOS. The SETUP program is stored in the Read-Only-Memory (ROM) on the mainboard. To do the SETUP procedure, press the <Del> key when the system is booting up. The following main menu will appear. Please select " STANDARD CMOS SETUP" to enter the next screen.

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20

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Standard CMOS Setup

Advanced CMOS Setup

Advanced Chipset Setup

Power Management Setup

PCI / Plug and Play Setup

Peripheral Setup

Hardware Monitor Setup

Auto-Detect Hard Disks

Change Supervisor Password

Auto Configuration with Optimal Settings

Auto Configuration with Fail Safe Settings

Save Settings and Exit

Exit Without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

The section on the bottom of the main menu explains how to control this screen.
The other section displays the items highlighted in the list.

This screen records some basic hardware information, and sets the system clock and error handling. These records can be lost or corrupted if the on-board battery has failed or is weak.

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<div align="center">

Standard CMOS Setup

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Advanced Chipset Setup

Power Management Setup

PCI / Plug and Play Setup

Peripheral Setup

Hardware Monitor Setup

Auto-Detect Hard Disks

Change Supervisor Password

Auto Configuration with Optimal Settings

Auto Configuration with Fail Safe Settings

Save Settings and Exit

Exit Without Saving

</div>

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – STANDARD CMOS SETUP
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Date (mm/dd/yyyy) : Wed Sep 02,1998   **Base Memory: 0 KB**

Time (hh/mm/ss) : 13:30:10   **Extd Memory:0 MB**

Floppy Drive A: 1.44 MB 3 1/2

Floppy Drive B: Not Installed

	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk Mode	PIO Mode	32Bit Mode
Pri Master : Auto										On
Pri Slave : Auto							On			
Sec Master : Auto							On			
Sec Slave : Auto							On			

Boot Sector Virus Protection   Disabled

Month	**Jan - Dec**	**ESC : Exit ↑↓: Sel**
Day	**01 - 31**	**PgUp/PgDn :Modify**
Year	**1901 - 2099**	**F2/F3:Col or**

Date	The date format is <day>, <month><date><year>.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
month	The month, Jan. through Dec.
date	The date, from 1 to 31
year	The year, from 1900 to 2099

Time

The time format is <hour><minute><second>. And the time is calculated based on the 24-hour military-time clock. For example, 1p.m. is 13:00:00.

Drive A
Drive B

This category identifies the types of floppy disk drive A or drive B that has been installed in the system.

Not installed	No floppy drive installed
360K, 5.25 in	5.25" PC-type 360KB capacity
1.2M, 5.25 in	5.25" AT-type 1.2MB capacity
720K, 3.5 in	3.5" double-side 720KB capacity
1.44M, 3.5 in	3.5" double-side 1.44MB capacity
2.88M, 3.5 in	3.5" double-side 2.88MB capacity

Primary Master
Primary Slave
Secondary Master
Secondary Slave

These categories identify the types of 2 channels that have been installed in the system. There are 46 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to 46 are predefined. Type **'user'** is user-definable. Press PgUp/PgDn to select a numbered hard disk type. If you select **'Auto', the** BIOS will auto-detect the HDD & CD-ROM Drive at the POST stage and show the IDE for HDD & CD-ROM Drive. If you select **'user'**, you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be from your hard disk vender or dealer. If the controller of the HDD interface is ESDI, the selection shall be '**Type 1'**; if SCSI, the selection shall be **'Not installed'**. If no device is installed select **'Not installed'** and press <Enter>.

Type	drive type
SIZE	automatically adjusts
CYLS	number of cylinders
HEAD	number of heads
WPcom	write precom
SEC	number of sectors
MODE	mode type

Boot Sector Virus Protection

When this item is enabled, the AMI BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the error message will appear. Afterwards, if necessary, you will be able to run an antivirus program to locate and remove the problem before any damage is done.

> Boot Sector Write!!
> VIRUS: Continue (Y/N) ?

Enabled	Activate automatically when the system boots up, if anything attempts to access the boot sector or hard disk partition table will cause a warning message to appear.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

Many disk diagnostic programs which attempt to access the boot sector table can cause the warning message. If you will be running such a program, we recommend you first disable Virus Protection beforehand.

Memory

This category is displayed only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K or 640K based on the memory installed on the motherboard.

Extended Memory How much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

The Advanced Setup Screen will be displayed after choosing the Advanced icon from the AMI BIOS Setup main menu screen.

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Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – ADVANCED CMOS SETUP		
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Quick Boot	**Disabled**	**Available Options :**
1st Boot Device	**Floppy**	**Disable**
2nd Boot Device	**IDE-0**	**Enable**
3rd Boot Device	**CD-ROM**	
Try Other Boot Devices	**Yes**	
Initial Display Mode	**Silent**	
Hit <TAB> Message Display	**No**	
BootUp CPU Speed	**High**	
BootUp Num-Lock	**On**	
Floppy Drive Swap	**Disabled**	
Floppy Drive Seek	**Enabled**	
Primary Display	**Absent**	
Password Check	**Setup**	
Boot To OS/2 > 64MB	**No**	
Internal Cache	**WriteBack**	
External Cache	**Disabled**	
System BIOS Cacheable	**Disabled**	
C000, 16k Shadow	**Cached**	
C400, 16k Shadow	**Cached**	
C800, 16k Shadow	**Disabled**	
CC00, 16k Shadow	**Disabled**	
D000, 16k Shadow	**Disabled**	**ESC : Exit ↑↓: Sel**
D400, 16k, Shadow	**Disabled**	**PgUp/PgDn : Modify**
D800, 16k, Shadow	**Disabled**	**F2/F3 : Color**

Quick Boot	If this option is set to "Enabled", the system will not do a raw checking over 1MB but sizing only. During sizing, the system will remove the tick sound.
1st Boot Device *2nd Boot Device* *3rd Boot Device*	This category determines which drive to search first/ secondly/ thirdly for the Disk operating System. You can select from items below: Disable, IDE0, IDE1, IDE2, IDE3, Floppy, LS-120, ATAPI EIP, CD-ROM, SCSI, Network.
Try Other Boot Devices	Choose Yes, then BIOS will try to boot from other Boot Devices if all selected Boot Devices failed to boot from only the selected Boot Devices.
Initial Display Mode	If you choose "Silent" mode, the system will show full screen logo in booting. And "BIOS" mode won't show it.
Hit <TAB> Message Display	This item is enabled when the setting of *Initial Display Mode* is Silent. If you set Yes, you can see the message: "<TAB> - Switch back to POST screen, <DEL> - to run SETUP" show on the screen.
BootUp CPU Speed	Select the default system speed- the normal operating speed at power up. The choice: high, low (Set the speed to high/low).
BootUp Num-Lock	This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

On	Keypad is numeric keys.
Off	Keypad is arrow keys.

Floppy Drive Swap	This item allows you to determine whether to enable the swap floppy driver or not.
Floppy Drive Seek	During POST, the BIOS will determine if the floppy disk drive installed is 40tracks(360K) or 80tracks(720K, 1.2M, 1.44M).

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number.

Primary Display	This category includes the type of video adapter used for the

primary system monitor.

Absent	There is no video adapter.
VGA/EGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA40x25	Color Graphics Adapters, power up in 40 column mode.
CGA80x25	Color Graphics Adapters, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

Password Check   This item enables the password check option every time when the system boots or when the end user runs Setup. If 'Always' is chosen, a user password prompt appears every time when the computer is turned on. If 'Setup' is chosen, the password prompt appears if AMIBIOS is executed.

Boot To OS/2 > 64MB   This item allows you to access the memory that is over 64MB in OS/2.

Internal Cache External Cache   This option is about the type of caching algorithm used by AMIBIOS and the CPU for L1(internal) /L2(External) cache memory.

Writeback	A write-back algorithm is used.
Write-through	A write-through algorithm is used.
Disabled	AMIBIOS does not specify the type of caching algorithm. (Internal cache: the algorithm is set by the CPU.)

System BIOS Cacheable   Select Enabled allows the system BIOS ROM at F0000h–FFFFFh to be cacheable that may result in better system performance.

C000,16k Shadow (C400,C800,CC00, D000,D400,D800, DC00)   This item determines if the ISA option ROM in the range of C000h-D000h can be shadowed.
The choice: Disabled, Enabled, Cached.

This screen controls the setting of the chipset on the mainboard.

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Standard CMOS Setup
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Hardware Monitor Setup
Auto-Detect Hard Disks
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – ADVANCED CHIPSET SETUP
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*****SDRAM Timing*****		Available Options:
Configuration SDRAM Timing by SPD	Enabled	Disabled
SDRAM RAS# to CAS# delay	3 SCLKs	Enabled
SDRAM RAS# Precharge	3 SCLKs	
SDRAM CAS# Latency	3 SCLKs	
SDRAM Leadoff Cmd Timming	4 SCLKs	
DRAM Integrity Mode	Non-ECC	
Memory Hole	Disabled	
VGA Frame Buffer USWC	Disabled	
PCI Frame Buffer USWC	Disabled	
USWC Write Post	Disabled	
Graphics Aperture Size	128MB	
8bit I/O Recovery Time	3 SCLKs	
16bit I/O Recovery Time	2 SCLKs	
USB Passive Release	Enabled	
PIIX4 Passive Release	Enabled	
PIIX4 Delayed Transaction	Disabled	
ClkGen Spread Spectrum	Disabled	
ClkGen for PCI Slot/DIMM	Disabled	ESC: Exit ↑↓: Sel
USB Function	Enabled	PgUp/PgDn : Modify
USB Keyboard Legacy Support	Disabled	F2/F3:Color

Configure SDRAM Timing by SPD	If this item is set to Enabled, the SDRAM timing will be the SPD (EEPROM) default setting.
SDRAM RAS-to-CAS Delay	You can select RAS to CAS Delay time in SCLKs of 2/2 or 3/3.The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The choice: 2,3 SCLKs.
SDRAM RAS# Precharge Time	Define the length of time for Row Address Strobe is allowed to precharge. The choice: 2,3 SCLKs.
SDRAM CAS latency Time	You can select CAS latency time in SCLKs of 2/2 or 3/3.The system board designer should set the values in this field depending on the DRAM installed. The choice: 2,3 SCLKs.
SDRAM Leadoff Cmd Timming	This set number of CPU clocks allowed former reads and writes to DRAM are performed. The choice: 4SCLKs, 3SCLKs, auto.
DRAM Integrity Mode	Select Non-ECC, EC-Only or ECC…depending on the type of DRAM installed in your system. The choice : Non-ECC, EC-Only, ECC.
Memory Hole	In order to improve performance, certain space in memory can be reserved for ISA cards. The choice: 512KB-640KB,15MB-16MB.
VGA Frame Buffer USWC	If you choose enabled, the VGA Frame Buffer from A000-Bfff will be set to USWC cache type and will improve VGA performance.
PCI Frame Buffer USWC	If you choose enabled, the PCI Frame Buffer from A000-Bfff will be set to USWC cache type and will improve PCI performance.
Graphics Aperture Size	Select the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycle that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information. The choice 4, 8, 16, 32, 64, 128, 256 MB
8 Bit I/O Recovery Time	The recovery time is the length of time, measured in CPU clocks, which the system will be delayed after the completion of an I/O request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed

to allow for the completion of the I/O. This item allows you to determine the recovery time allowed for 8- bit I/O. The choices are Disabled and 1 to 8 Sysclk.

16 Bit I/O Recovery Time   This item allows you to determine the recovery time for 16-bit I/O. The choices are Disabled and 1 to 4 Sysclk.

USB Passive Release   In case of enable item, PIIX4 will use Passive Release while transferring control information or data for USB transactions. Otherwise, PIIX4 will perform PCI access for USB without using Passive Release.

PIIX4 Passive Release   If you choose enabled, the Passive Release mechanism encodes the PHOLD# signal when PIIX4 is a PCI master.

PIIX4 Delayed Transaction   The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support the compliance with PCI specification version 2.1.The choice: Enabled/Disabled

ClkGen Spread Spectrum   Enable / Disable this item will make BIOS enable / disable the clock generator spread spectrum.

ClkGen for PCI Slot/DIMM   If this item is enabled, the unused DIMM and PCI slot clock will be disabled. If this item is disabled, the unused DIMM and PCI slot will still get the active clock signal.

USB function   When the option is enabled, open USB function and allocate IRQ and I/O port for USB controller.

USB keyboard Legancy support   Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

This screen controls the 'green' features of this mainboard.

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Exit Without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – POWER MANAGEMENT SETUP
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		Available Options:
ACPI Aware O/S	**No**	
Power Management/APM	Disabled	No
Green PC Monitor Power State	Stand By	Yes
Video Power Down Mode	Stand By	
Hard Disk Power Down Mode	Disabled	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Throttle Slow Clock Ratio	50-62.5%	
Modem Use IO Port	N/A	
Modem Use IRQ	3	
Display Activity	Ignore	
Device 6 (Serial port 1)	Monitor	
Device 7 (Serial port 2)	Monitor	
Device 8 (Parallel port)	Ignore	
Device 5 (Floppy Disk)	Ignore	
Device 0 (Primary master IDE)	Ignore	
Device 1 (Primary slave IDE)	Ignore	
Device 2 (Secondary master IDE)	Ignore	
Device 3 (Secondary slave IDE)	Ignore	
System Thermal	Ignore	
Thermal Slow Clock Ratio	50-62.5%	
CPU Critical Temperature	$65^0C/149^0F$	
Power Button Function	On/Off	
Ring Resume From Soft Off	Disabled	
LAN Resume From Soft Off	Enabled	ESC: Exit ↑↓: Sel
RTC Alarm Resume From Soft Off	Disabled	PgUp/PgDn : Modify
RTC Alarm Date	15	F2/F3:Color

ACPI Aware O/S   This item allows you to determine the ACPI OS or not.

Power Management /APM   When you set enabled, an Advanced Power Management device will be activated to enhance the Max.Power Saving Mode and stop the CPU internal clock.

Green PC Monitor Power State   Specify the power management state that the Green PC-compliant video monitor enters after the specified period of expired display inactivity. The choice: Stand By, Suspend, Off.

Video Power Down Mode   This feature allows the VGA adapter to operate in a power saving mode.

Disabled	Monitor will remain on during power saving mode.
Standby	Monitor blanked when the system enters Standby mode.
Suspend	Monitor blanked when the system enters the Suspend mode.

Hard Disk Power Down Mode   When you choose enabled, after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Standby Time Out (Minute)   This option specifies the length of a period of system inactivity while in Full power on state. When this length of time expires, the computer enters Standby power state. The settings are *Disabled, 1 min, 2 min, 4 min, 8 min, 10 min, 20 min, 30 min, 40 min, 50 min or 60 min.* The default setting is *Disabled.*

Suspend Time Out (Minute)   This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state. The settings are *Disabled, 1 min, 2 min, 4 min, 8 min, 10 min, 20 min, 30 min, 40 min, 50 min or 60 min.* The default setting is *Disabled.*

Throttle Slow Clock Ratio   When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

Modem Use IO Port   This item determines the IO Port in which the MODEM can be used. The choice: N/A, 3F8h/COM1, 2F8h/COM2, 3E8h/COM3, 2E8h/COM4.

Modem Use IRQ   This item determines the IRQ in which the MODEM can be used. The choice: N/A,3,4,5,7,9,10,11.

Display Activity   When you set *Monitor*, any video activity restarts the global timer for Standby mode. The choice: Ignore, monitor

Device0-3,5-8   When you set *Monitor,* these options enable event monitoring on the specified hardware interrupt request line. If you choose *Monitor* and the computer is in a power saving state, AMIBIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.
AMIBIOS reloads the Standby and Suspend timeout timers if an activity occurs on the specified IRQ line.
There are two settings in this item respectively,*Monitor* and *Ignore.* The Optimal and Fail-Safe default settings are *Disabled* for all the above options except **Device 6,7,5,0** and **2.**

System Thermal   Choose *Monitor*, and the installed thermister will be in work.

Thermal Slow Clock Ratio   This item allows the system speed to slow down at the rate you set when the CPU temperature is overheated.

CPU Critical Temperature   When this item is enabled, we can set the CPU warning temperature. If the CPU temperature is higher than the setting temperature, the system will beep.

Power Button Function   On/Off: when push the power button, the system power will be on/ off immediately.
Suspend: when push the power button, it will enter suspend mode.

Ring Resume From Soft Off   Enabled: when the system is in suspend mode, it can be woken up by modem. Otherwise, not.

LAN Resume From Soft Off   Enabled: when the system is in suspend mode, it can be woken up by the ethernet card.

RTC Alarm Resume From Soft Off   Enabled: when the system is in suspend mode, it can waken up automatically on the setting date and time.

RTC Alarm Date (Hour,Minute,Sec.)   Date, Hour, Minute, Second Alarm: let users set the desired date and time. After power off, the system will automatically power on at the specified date and time.

The screen configures the PCI Bus slots.

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Exit Without Saving

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ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP		
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Plug and Play Aware O/S	No	Available Options:
Clear NVRAM	No	No
Primary Graphics Adapter	PCI	Yes
PCI VGA Palette Snoop	Disabled	
Allocate IRQ to PCI VGA	Yes	
PCI IDE BusMaster	Disabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	INTA	
OffBoard PCI IDE Secondary IRQ	INTA	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
IRQ14	PCI/PnP	ESC: Exit ↑↓: Sel
IRQ15	PCI/PnP	PgUp/PgDn : Modify
Reserved Memory Size	Disabled	F2/F3:Color

Plug and Play Aware O/S	Set this option to *Yes* if the operating system installed in the computer is Plug and Play-aware. AMIBIOS only detects and enables PnP ISA adapter cards that are required for system boot.
Clear NURAM	This item allows you to determine whether to reset the configuration data or not.
Primary Graphics Adapter	This item will activate the AGP in the multi-display environment, it displayed if you set 'PCI'. But when the system has both AGP and PCI VGA card, the AGP monitor will not display.

PCI VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

Enabled	When PCI/VGA working with MPEG ISA/VESA VGA Card.
Disabled	When PCI/VGA not working with MPEG ISA/VESA Card.

Allocate IRQ to PCI VGA	When this item is enabled, the system will assign an IRQ to VGA. Otherwise, the VGA will not occupy an IRQ, and the IRQ of VGA will be released for other usage.
PCI IDE BusMaster	Set this option *enabled* in order to specify that the IDE controller on the PCI local bus has bus mastering capability.
OffBoard PCI IDE Card	Specify if an off-board PCI IDE controller adapter card is used in the computer. The choices are Slot1~6 and Auto.
OffBoard PCI IDE Primary IRQ	Specify the PCI interrupt used by the primary IDE channel on the OffBoard PCI IDE controller.
OffBoard PCI IDE Secondary IRQ	Specify the PCI interrupt used by the Secondary IDE channel on the OffBoard PCI IDE controller.
DMA Channel (0, 1, 3, 5, 6, 7) IRQ (3, 4, 5, 7, 9, 10, 11, 14, 15)	This item allows you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot. The choices are PCI/PnP and ISA/EISA.
Reserved Memory Size/ Address	Reserve a memory size starting from Reserved Memory Address for ISA legacy device. The choices are Disabled,16K,32K and 64K.

This section page includes all the items of IDE hard drive and Programmed Input/Output features.

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Standard CMOS Setup
Advanced CMOS Setup
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Peripheral Setup
Hardware Monitor Setup
Auto-Detect Hard Disks
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – PERIPHERAL SETUP	
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		Available Options:
OnBoard FDC	Auto	Auto
OnBoard Serial Port1	3F8h	Disabled
OnBoard Serial Port2	2F8h	Enabled
Serial Port2 Mode	Normal	
IR Duplex Mode	N/A	
OnBoard Parallel Port	378	
Parallel Port Mode	ECP	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	3	
OnBoard IDE	Both	
		ESC: Exit ↑↓: Sel
		PgUp/PgDn : Modify
		F2/F3:Color

On Board FDC   This item can enable or disable the floppy disk controller.

On Board
Serial Port 1   User can select serial port IRQ. Choose 'Auto', system will assign an IRQ for it. Note : "Auto" is not recommended.

On Board
Serial Port 2   User can select serial port IRQ. Choose Auto, system will assign an IRQ for it. Note : "Auto" is not recommended.

Serial Port2
Mode   Determine which type of IR module will be used.
The choice: Sharp-IR, IrDA

IR DuplexMode   Allow user to control the Infrared communication duplex mode.

On Board
Parallel Port   Let user select IRQ for parallel port. Choose Disabled, the parallel port will be disabled

Parallel Port
Mode   Let user select error check mode. This item is not recommended to change except user has special request.

EPP Version   Select an operating mode of the onboard parallel port. Set this item based on your peripheral. The choice: 1.7, 1.9.

Parallel Port
IRQ   It is a flexible IRQ option for selecting whenever the parallel port mode is 5 or 7.

Parallel Port
DMA Channel   If the setting of the Parallel Port Mode option is ECP, this option will be available.

OnBoard IDE   Specify the onboard IDE controller channels that will be used.
The choice: Disabled, Primary, Secondary, Both

This screen is about CPU Freq./Ratio settings and hardware monitor .

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Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup Hardware Monitor Setup Auto-Detect Hard Disks Change Supervisor Password Auto Configuration with Optimal Settings Auto Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS HIFLEX SETUP UTILITY – HARDWARE MONITOR SETUP		
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CPU Frequency Selection	66MHz	Available Options:
CPU Ratio Selection	3.5x	66 Mhz
VCC3 Voltage Setting	3.4V	75 Mhz
Current VID	2.00V	83 Mhz
VID Setting	2.00V	100 Mhz
		105 Mhz
≡≡ System Hardware Monitor ≡≡		112 Mhz
Current CPU Temperature	20°C/68°F	124 Mhz/3
Current System Temperature	26°C/78°F	124 Mhz/4
Current CPU Fan Speed	0 PPM	133 Mhz/3
Current Chassis Fan Speed	0 PPM	133 Mhz/4
Current Power Fan Speed	0 PPM	140 Mhz
Vcore	1.920V	150 Mhz
Vtt	1.472V	
Vio	3.392V	
+5.000V	5.085V	
+12.000V	11.741V	
-12.000V	-11.484V	ESC:Exit ↑↓:Sel
-5.000V	-4.763V	PgUp/PgDn:Modify
		F2/F3:Color

☞ **"Current VID" and "VID Setting" are optional.**

AMIBIOS HIFLEX SETUP UTILITY – HARDWARE MONITOR SETUP		
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CPU Frequency Selection	100MHz	**Available Options:**
CPU Ratio Selection	3.5x	100 Mhz
VCC3 Voltage Setting	3.4V	105 Mhz
Current VID	2.00V	112 Mhz
VID Setting	2.00V	124 Mhz/3
		124 Mhz/4
≡≡ System Hardware Monitor ≡≡	20°C/68°F	133 Mhz/3
Current CPU Temperature	26°C/78°F	133 Mhz/4
Current System Temperature	0 PPM	140 Mhz
Current CPU Fan Speed	0 PPM	150 Mhz
Current Chassis Fan Speed	0 PPM	
Current Power Fan Speed	1.920V	
Vcore	1.472V	
Vtt	3.392V	
Vio	5.085V	
+5.000V	11.741V	
+12.000V	-11.484V	ESC:Exit ↑↓:Sel
-12.000V	-4.763V	PgUp/PgDn:Modify
-5.000V		F2/F3:Color

CPU Frequency Selection	Use this item to set CPU base clock frequency which includes 66, 75, 83, 100, 105, 112, 124, 133, 140, 150MHz. The default setting is 66MHz.
	After you change the CPU Clock Frequency and the system can not start, please do the following procedures:
	1. **Turn the system off firstly.**
	2. **Turn on the system and keep pressing " F10 " key at boot.**
	3. **Select the proper frequency in this item.**
	4. **Shut the system down again.**
	5. **Turn on the system.**
CPU Ratio Selection	Use this item to set CPU ratio which includes 3.0x, 3.5x, 4.0x, 4.5x, 5.0x, 5.5x, 6.0x, 6.5x, 7.0x, 7.5x, 8.0x. The default setting is 3.5x.
VCC3 Voltage Setting	The selection of I/O voltage. Recommend users not to change the default setting.

Note: If you change your CPU from 66MHz to 100MHz (or from 100MHz to 66MHz), there is a message showed on the screen at boot such as " The CPU has been changed. Press F1 to run SETUP. Press F2 to load default values and continue. "

➤The following items are optional.

Current VID   It shows the default figure of VID setting, 2.00V.

VID Setting   You can adjust the figure of Vcore by pressing the PgUp/PgDn key. This function is helpful when you perform the overclock of CPU. The system will automatically detect your CPU Vcore. And the adjustable figure range is from +0.4V to -0.1V. That means if your CPU Vcore is 2.0V, the choice is from 1.90V~2.40V. If your CPU Vcore is 2.8V, you can change it from 2.7V to 3.2V.

➤**The following items are for System Hardware Monitor:**

Current CPU Temperature   It shows the current system temperature.

Current System Temperature   This field displays the current system temperature if your computer contains a monitoring system.

Current CPUFAN /ChassisFAN/ PWRFAN Speed   It shows the running speed of the system fan, chassis fan and power fan. The figure will be changed when the system is running. If you do not install the fan, the figure will be 0.

IDE Hard Disks Auto Detection:

This allows you to detect the IDE hard disk drivers' parameters and enter them into "Standard CMOS Setup" automatically. If the auto-detected parameters displayed do not match the ones that should be used for your hard drive, do not accept them. Press<N> to reject the values and enter the correct ones manually on the Standard CMOS Setup screen.

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Standard CMOS Setup
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Auto-Detect Hard Disks
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving

Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

AMIBIOS SETUP – STANDARD CMOS SETUP

Date (mm/dd/yyyy) : Wed Sep 02,1998   Base Memory: 0 KB

Time (hh/mm/ss) : 13:30:10   Extd Memory:0 MB

Floppy Drive A: 1.44 MB 3 1/2

Floppy Drive B: Not Installed

	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk Mode	PIO Mode	32Bit Mode
Pri Master :	User	4335	8400	16	0	63	On	On	4	On
Pri Slave :	Not Installed									
Sec Master :	Not Installed									
Sec Slave :	Not Installed									

Boot Sector Virus Protection   Disabled

Month	Jan - Dec	ESC : Exit ↑↓: Sel
Day	01 - 31	PgUp/PgDn :Modify
Year	1901 - 2099	F2/F3:Col or

This allows you to set the supervisor password.

Enter/Change password : Enter the current password, at the prompt, key-in your new password (up to six alphanumeric characters), press <Enter>. At the next prompt, confirm the new password by typing it again and press <Enter>.

Disable password : Press the <Enter> key instead of entering a new password when the 'Enter Password' dialog box appears. A message will appear confirming that the password is disabled.

```
┌─────────────────────────────────────────────────────────────┐
│          AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20         │
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├─────────────────────────────────────────────────────────────┤
│                     Standard CMOS Setup                      │
│                     Advanced CMOS Setup                      │
│                     Advanced Chipset Setup                   │
│          ┌──────────────────────────────────────┐           │
│          │                                      │           │
│          │   Enter new supervisor password:     │           │
│          │                                      │           │
│          └──────────────────────────────────────┘           │
│                   Auto-Detect Hard Disks                     │
│                Change Supervisor Password                    │
│          Auto Configuration with Optimal Settings            │
│          Auto Configuration with Fail Safe Settings          │
│                   Save Settings and Exit                     │
│                   Exit Without Saving                        │
├─────────────────────────────────────────────────────────────┤
│      Standard CMOS setup for changing time, date, hard disk type, etc.   │
│        ESC:Exit  ↑↓:Sel  F2/F3:Color  F10:Save & Exit        │
└─────────────────────────────────────────────────────────────┘
```

CAUTION :If you forgot your password, you must disable the CMOS by turning the power off and set JP8 to '2-3' position. And then set JP8 back to '1-2' position to reload the system.

This allows you to load optimal settings which are stored in the BIOS ROM. To use this function, select it from main menu and press<Enter>. A line will appear on the screen, Type<Y> and press <Enter>, then the Setup default values will be load.

```
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                    Standard CMOS Setup
                    Advanced CMOS Setup
                   Advanced Chipset Setup
                  Power Management Setup
                   PCI / Plug and Play Setup

       ┌──────────────────────────────────────────┐
       │                                          │
       │  Load high performance settings (Y/N) ? N │
       │                                          │
       └──────────────────────────────────────────┘

                 Change Supervisor Password
              Auto Configuration with Optimal Settings
             Auto Configuration with Fail Safe Settings
                    Save Settings and Exit
                    Exit Without Saving

   Standard CMOS setup for changing time, date, hard disk type, etc.
        ESC:Exit  ↑↓:Sel  F2/F3:Color  F10:Save & Exit
```

When your mainboard has problems and needs to trouble shoot the system, you can use this function. Type <Y> and press <Enter> to enable this function.

```
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                    Standard CMOS Setup
                    Advanced CMOS Setup
                   Advanced Chipset Setup
                  Power Management Setup
                   PCI / Plug and Play Setup

       ┌──────────────────────────────────────────┐
       │                                          │
       │    Load failsafe settings (Y/N) ? N       │
       │                                          │
       └──────────────────────────────────────────┘

                 Change Supervisor Password
              Auto Configuration with Optimal Settings
             Auto Configuration with Fail Safe Settings
                    Save Settings and Exit
                    Exit Without Saving

   Standard CMOS setup for changing time, date, hard disk type, etc.
        ESC:Exit  ↑↓:Sel  F2/F3:Color  F10:Save & Exit
```

The last second item of the main menu is 'save settings and exit'. This allows you to save the new setting values in the CMOS memory and continue with the booting process.Select what you want to do, press<Enter>.

AMIBIOS HIFLEX SETUP UTILITY – VERSION 1.20
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Standard CMOS Setup **Advanced CMOS Setup** **Advanced Chipset Setup** **Power Management Setup** **PCI / Plug and Play Setup** **Peripheral Setup** Save current settings and exit (Y/N) ? Y **Auto Configuration with Optimal Settings** **Auto Configuration with Fail Safe Settings** **Save Settings and Exit** **Exit Without Saving**
Standard CMOS setup for changing time, date, hard disk type, etc. **ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit**

The last item of the main menu is 'exit without saving'. If you select this item and press 'Y', then you can exit the BIOS setup utility without recording any new values or changing old ones.

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Standard CMOS Setup **Advanced CMOS Setup** **Advanced Chipset Setup** **Power Management Setup** **PCI / Plug and Play Setup** **Peripheral Setup** Quit without saving (Y/N) ? N **Auto Configuration with Optimal Settings** **Auto Configuration with Fail Safe Settings** **Save Settings and Exit** **Exit Without Saving**
Standard CMOS setup for changing time, date, hard disk type, etc. **ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit**