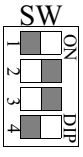
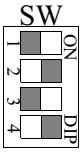
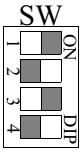
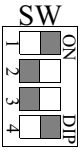
Quick Reference

Quick Jumpers Setup:

Pentium Pro DIP Switch settings.

CPU Core Frequency	150MHz	166MHz	180MHz	200MHz
DIP Switch Setting				

Quick BIOS Setup:

After hardware Setup is completed, turn the power switch on, then press <**DEL>** key to access the AMI BIOS SETUP program. A "**BIOS SETUP UTILITIES**" will display on the screen.

1. Select "**STANDARD CMOS SETUP**" to set Date /Time and Floppy drive type, and also set Hard Disk Type to "Auto"
2. Select "**Auto Configuration with Optimal Settings**" and type "Y" to load BIOS optimal setup.
3. Select "**Save Settings and Exit**" and press the <Enter> key to save the setting information in the CMOS memory and continue with the booting process.

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Table Of Contents

1 Introduction

1.1 Overview

The P6F70 is a quality, high performance, function-enhanced mainboard based on the powerful Intel Pentium Pro processor operating at 150/166/180/200MHz. This mainboard is designed around the latest and fastest Intel 82440FX chipset in a standard AT form factor.

The P6F70 mainboard delivers workstation level performance with its integrated Bus Mastering EIDE (Enhanced IDE) controller, concurrent PCI bus, and its ability to accommodate new technology EDO (Extended Data Out) and BEDO (Burst Extended Data Out) memory up to 1GB. When this high data stream bandwidth mainboard is equipped with one or two powerful 64-bit Pentium Pro processors with built-in 256/512KB level 2 cache, your system has the power to handle future demanding communication, multi-media, multi-tasking and intensive 32-bit applications on advanced 32-bit operating systems.

The P6F70 mainboard achieves the highest reliability by supporting the ECC (Error Checking and Correction) memory protection on the data bus. This enables the P6F70 mainboard to have superior data integrity and be fault-tolerant in respect to memory errors while running applications.

The P6F70 mainboard offers outstanding I/O capabilities. It contains a full set of PC I/O, such as dual channel PCI EIDE interfaces, a floppy controller, two FIFOed serial ports, an EPP/ECP capable bidirectional parallel port, an IrDA compatible infrared port, two USB (Universal Serial Bus) ports, a AT keyboard connector and a PS/2 mouse connector. Five PCI local bus slots and four ISA bus slots provide expandability to add on peripheral cards.

In addition to superior hardware capabilities, features like bus mastering EIDE driver, Plug and Play, APM (Advanced Power Management), DMI (Desktop Management Interface) and BIOS upgradability are provided on the P6F70 platform.

With workstation level performance, superior data integrity and outstanding I/O capabilities, the P6F70 Dual Pentium Pro mainboard is an ideal computer foundation for a wide range of demanding applications; such as Networking multiuser enviroments, Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Aided Engineering (CAE), Data base mamagement, Desktop publishing, Image processing and artifical intelligence.

1.2 P6F70 Specifications/Features

Hardware

CPU	Supports Single or Dual Intel Pentium Pro 150/166/ 180/200 MHz on two ZIF Sockets 8
VRM	Two voltage regulator modules on board Provides 2.1V to 3.5V operating voltage.
Coprocessor	CPU built-in floating point unit
Speed	System bus clock 60/66 MHz PCI bus clock 30/33 MHz ISA bus clock 7.5/8.33 MHz
Chipset	Intel's 82440FX PCIset Winbond's 83877 I/O chip
L2 Cache	CPU built-in 256/512KB
DRAM	8 x 72-pin SIMM sockets Supports 8MB to 1GB memory Supports FPM, EDO, BEDO DRAMs Parity/ECC memory protection
EIDE Controller	Supports four IDE devices in two channels Supports PIO mode 0 through mode 4 drives Supports Bus Mastering DMA mode 2 drives
Enhanced I/O	One floppy disk controller One Standard/EPP/ECP bidirectional parallel port Two 16550 compatible high speed serial ports One IrDA compatible Infrared port Two USB (Universal Serial Bus) ports
Mouse/Keyboard	PS/2 mouse header AT keyboard connector

Expansion Slots	Five 32-bit PCI slots Four 16-bit ISA slots (One PCI/ISA shared slot)
Options	External Infrared port cable with mounting bracket External dual USB ports cable with mounting bracket

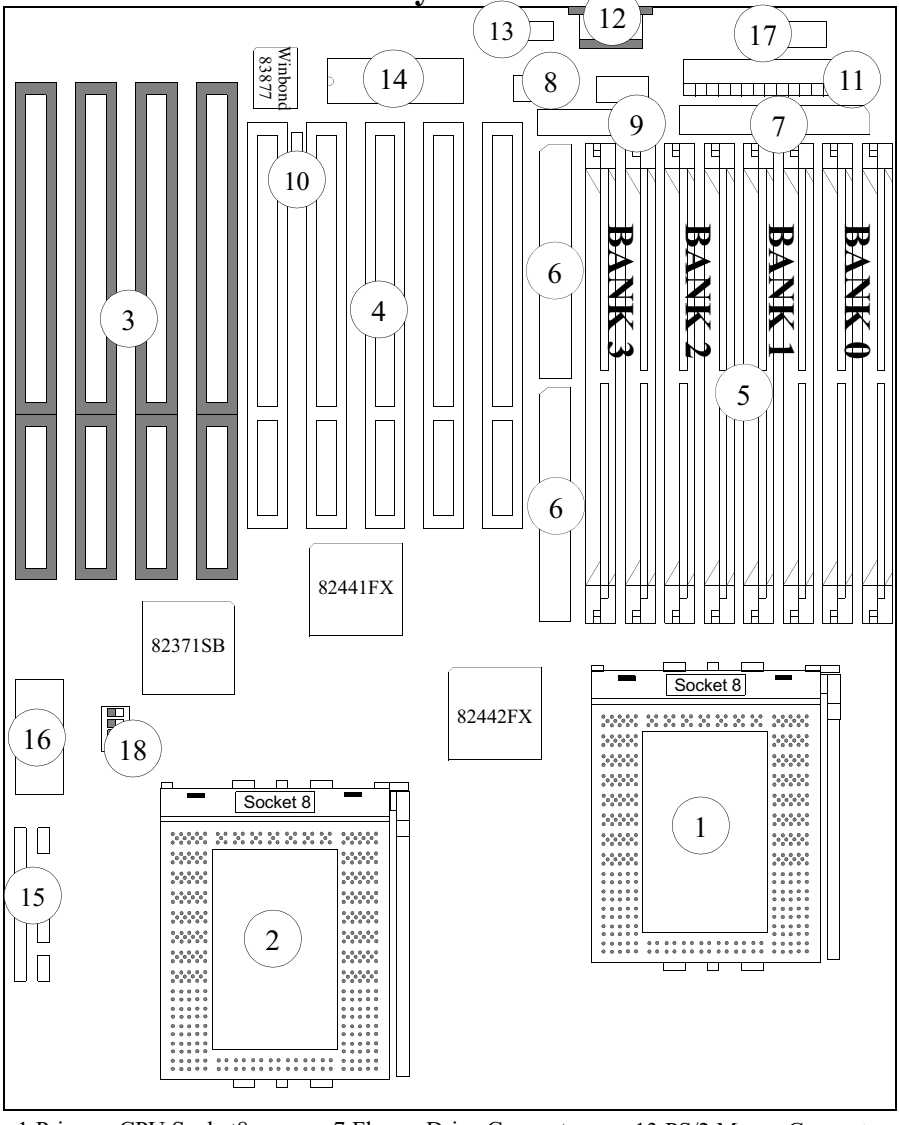
Software

BIOS	AMI Pentium Pro PCI BIOS Flash BIOS with ESCD (Extended System Configuration Data) block Supports APM, PnP, DMI and EIDE devices Built-in NCR SCSI BIOS
Driver	Bus mastering EIDE driver
Utilities	Flash utility to upgrade BIOS DMI utility to manage system resources
O.S.	Operates with MS_DOS, Windows 3.x, Windows for Work Groups 3.x, Windows 95, Windows NT, OS/2, Novell Netware, Novell UnixWare 1.1 and SCO Unix 4.2

Environment

Ambient Temperature	0^{0}C to 50^{0}C (Operating)
Relative Humidity	0 to 85% (Operating)
Vibration	0 to 500 Hz
DC Voltage	4.95V to 5.25V
DC Voltage	-5V, +12V, -12V, 5% tolerance

1.3 P6F70 Mainboard Layout



1:Primary CPU Socket8
2:Secondary CPU Socket
3:ISA Expansion Slots
4:PCI Expansion Slots
5:Memory Module Sockets
6:IDE Connectors
7:Floppy Drive Connector
8:Serial Port Connectors
9:Parallel Port Connector
10:IR Port Connector
11:AT Power Connector
12: Keyboard Connector
13:PS/2 Mouse Connector
14:Flash BIOS
15:Front panel Connectors
16:RTC with Battery
17:USB Header Connector
18:DIP Switch

1.4 Microprocessor

The P6F70 mainboard is designed to operate with single or dual Intel Pentium Pro processor 150/166/180/200 MHz. Two on-board switching Voltage Regulator Modules (VRM) provide the required 2.1 to 3.5 volts for the processors. Pentium Pro processor will send 4 VID (Voltage Identification) signals to the VRM, and the VRM shall generate correct voltage for the processor accordingly. The VRM is a DC-to-DC voltage converter which converts the system power supply voltage to the voltage required for the processor core.

A cooling fan and heat sink assembly is required to protect the CPU from being damaged due to overheat.

1.5 Level 2 Cache

The Pentium Pro processor integrates a L2 cache controller and 256/ 512KB cache on the package.

1.6 Chipset

The Intel 82440FX PCIset is compliant to the PCI Rev 2.1 specification which consists of one 82441FX PCI/Memory Controller (PMC), one 82442FX Data Bus Accelerator (DBX), and one 82371SB PCI ISA/IDE Accelerator (PIIX3).

82441FX (PMC):	- CPU interface controller - Integrated DRAM controller - Fully synchronous PCI bus interface
82442FX (DBX):	- Extensive CPU-to-DRAM, PCI-to-DRAM and CPU-to-PCI data buffering

82371SB (PIIX3):	- Interface between the PCI and ISA buses - USB controller - EIDE controller - Seven DMA channels, one timer/ counter, two eight-channel interrupt controllers, NMI logic, SMI interrupt logic, and PCI/ISA bus arbitrator.

1.7 Main Memory

The P6F70 mainboard provides eight 72-pin SIMM sockets to support up to 1GB of system memory. The sockets support 1M x 32/ 36 (4MB), 2M x 32/36 (8MB), 4M x 32/36 (16MB), 8M x 32/36 (32MB), 16M x 32/36 (64MB), and 32M x 32/36 (128MB) single- or double-sided modules. Minimum memory size, using two 1M x 32 SIMM modules, is 8MB and maximum memory size, using eight 32M x 32/36 SIMM modules, is 1GB.

The P6F70 supports three types of DRAMs, Fast Page Mode (FPM), Extended Data Out (EDO), and Burst Extended Data Out (BEDO). Memory Timing requires 70ns or faster for FPM and 60ns or faster for EDO and BEDO DRAMs.

Both parity and non-parity as well as ECC (Error Checking and Correction) are supported. The ECC is a hardware scheme used to achieve superior system main memory data integrity. The ECC detects all single and dual-bit errors, and corrects all single-bit error during main memory access. The Parity scheme can only do single-bit error detection. The ECC or Parity can only be supported properly if all DRAMs are 72-bit wide (by 36).

The eight SIMM sockets are divided into four banks of two sockets each. The sockets are designated Bank 0, Bank 1, Bank2 and Bank3. Each bank provides a 64-bit non-parity or 72-bit parity/ECC data path. **Both SIMMs in a bank must be of the same memory size, type and speed.** There are no jumper settings required for the memory size or type, which is automatically detected by the BIOS.

EDO DRAM is designed to improve the DRAM read performance. It holds the memory data valid until the next memory access cycle, unlike FPM DRAM that tri-states the memory data when the precharge cycle occurs, prior to the next memory access cycle.

BEDO DRAM provides burst accesses during read and write cycles, increasing system performance by 3 - 7% when compared with EDO.

1.8 Enhanced IDE Support

The P6F70 mainboard provides two enhanced high performance PCI IDE interfaces capable of supporting four PIO mode 0 through mode 4 and bus-mastering DMA mode 2 ATAPI devices. Detection of IDE device type and transfer rate (PIO mode) is automatically determined by the BIOS.

The traditional PIO IDE requires a substantial amount of CPU bandwidth to handle all the activities of IDE access including waiting for mechanical activity. The Bus Master logic designed in the Intel 82440FX chipset is intended to reduce the workload of the CPU and to increase the CPU efficiency. The Bus Master will take care of the data transfer between IDE and memory and let the CPU handle other tasks. In true multi-tasking operating systems such as Windows 95, Windows NT, and OS/2, by using bus-mastering IDE, the CPU bandwidth can be freed up to complete other tasks while disk data transfers are occurring. In order to make the EIDE drive operate at bus-mastering DMA mode 2, the driver must be loaded properly.

1.9 Universal Serial Bus Support

The P6F70 provides two USB ports. The USB is a serial bus interface standard that is designed to bring the "Plug and Play" concept to the outside of the computer system chassis. The bus allows devices to be attached, configured, used and also detached while the host system is in operation.

The USB will allow as many as 63 devices to be daisy chained in any combination per port. Up to 12Mbits/sec transfer rate, makes it suitable for devices such as keyboard, mouse, digital joystick, game pad, fax/modem, scanner, printer, ISDN and telephony device.

1.10 Real-time Clock, CMOS RAM and Battery

The integrated real-time clock (RTC) provides a time of day clock, 100-year calendar with alarm features. The RTC also has 242 bytes battery backed CMOS RAM which stores the system setup information and password. The RTC and CMOS RAM can be set via the BIOS SETUP program. The content of the CMOS RAM can be cleared by placing a shunt to short pin1 and pin2 of JP6 for 5 seconds when the system power is off.

The built-in Lithium battery of RTC is used to provide power to the RTC and CMOS memory which has seven years lifetime if the system does not power up. When the system powers up, the power for the RTC and CMOS RAM is supplied from the 5 V power supply to extend the life of the battery.

1.11 IrDA Infrared Support

A 5-pin header connector is used to connect a Hewlett Packard HSDSL-1000 compatible IrDA Infrared module. Once the module is installed, the user can use application software such as Laplink to transfer files between the computer system and portable devices such as laptops and printers. The Serial port 2 must be configured to support an IrDA module via the BIOS SETUP program.

1.12 System Overheat Thermal Control

Two thermal sensor ICs are designed into the P6F70 mainboard to monitor the system temperature. When the system temperature exceeds 50^{0}C, either the system will enter power management suspend mode from full-on-mode or the CPU clock will be stop to prevent the system from overheat. A DC buzzer also can be hook up to JP9 to notify of system overheating.

1.13 Power Supply

It is highly recommended that you use a high quality power supply. As with all computer products a stable power source is necessary for reliable operation. It is even more important for Dual Pentium Pro processors which are running at 200MHz such high clock rate. To achieve the highest system reliability be sure that your power supply could provide 5V DC voltage, range between 4.95V and 5.25V.

2 Hardware Installation

2.1 Unpacking

The P6F70 mainboard package contains the following:

* P6F70 mainboard
* One IDE 40-pin ribbon cable
* One floppy 34-pin ribbon cable
* Two serial ports cable with mounting bracket
* One parallel port cable and one PS/2 mouse port cable with mounting bracket
* User's manual
* One driver/utility diskette
* **Optional** dual USB ports cable with mounting bracket
* **Optional** Infrared port cable with mounting bracket

Before removing the mainboard from its anti-static bag, you need to eliminate any static electricity that may be accumulated on your body by touching a grounded or anti-static surface. If nothing is available, touch the housing of the power supply which is plugged into the AC outlet.

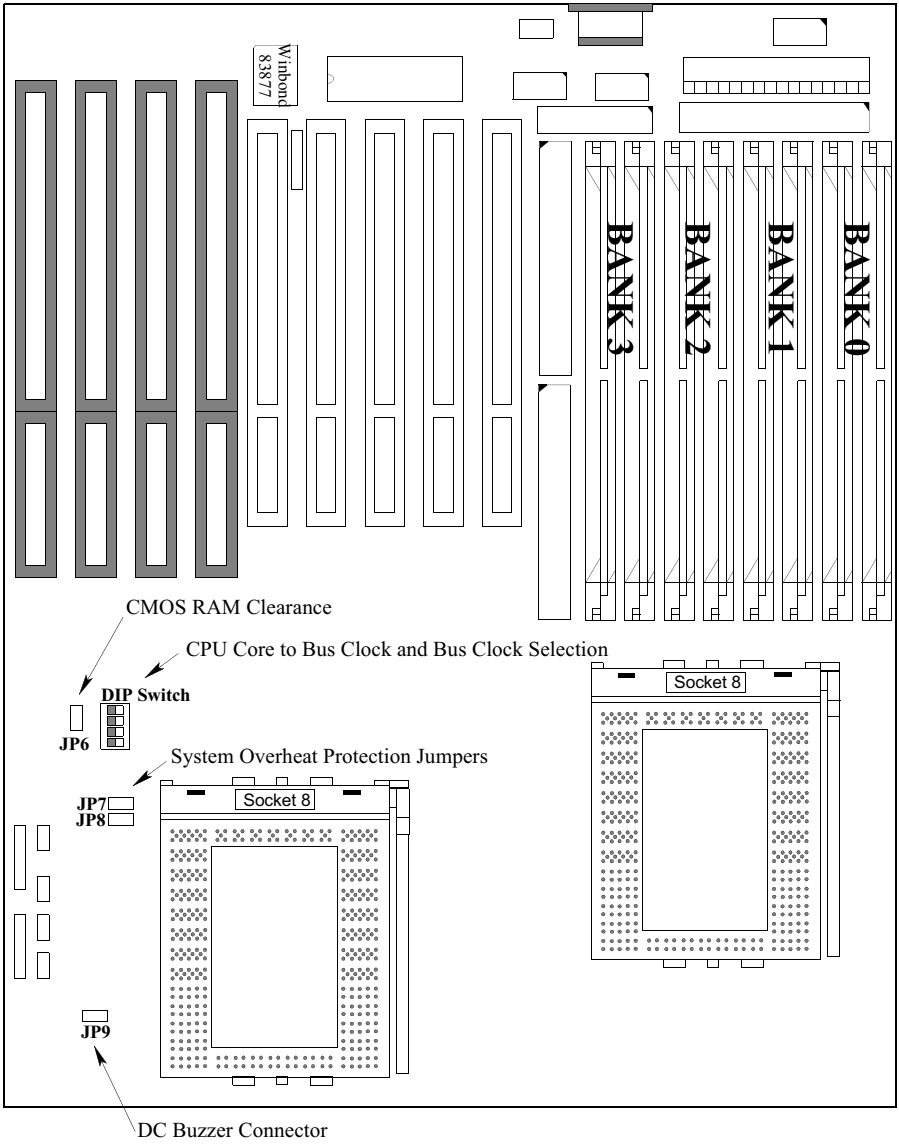
After removing the mainboard from its anti-static bag, place it only on a grounded or anti-static surface, component side up. Inspect the mainboard to see if it is damaged, call the vender immediately if it is damaged.

2.2 Installation

The P6F70 is designed to fit into a standard AT form factor chassis. The pattern of the mounting holes and the position of the back panel connectors match the AT system board specification. Chassis may come with various mounting fasteners which are made of metal or plastic. It is highly recommended to use as many metal fasteners as possible to mount the mainboard in the chassis for better grounding.

To install the mainboard you need to set DIP switches and jumpers, attach connectors, install CPU and SIMM memory modules.

P6F70 Mainboard DIP Switch and Jumper Location

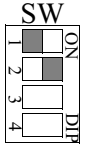
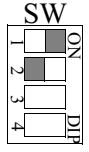
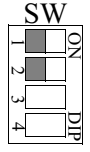
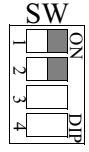


2.2.1. Setting DIP Switch and Jumpers

This section provides the DIP switch and jumper settings for the P6F70 mainboard. You need to configure DIP switch to set CPU core to bus clock multiplier and CPU bus clock. Also, you need to set jumper to enable system overheat protection feature or clear CMOS RAM.

CPU Core to Bus Clock Multiplier Selection

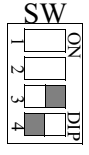
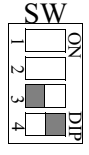
The DIP Switch position 1 and 2 are used to set CPU core to bus clock multiplier

Core to Bus Clock Multiplier	x2.5	x3	x3.5	x4
DIP Switch Setting				

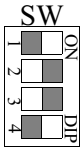
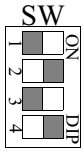
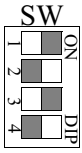
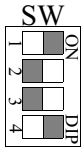
CPU Bus Clock Selection.

The DIP Switch position 3 and 4 are used to set CPU bus clock

.

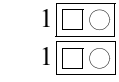
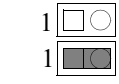
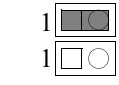
CPU Bus Clock	60MHz	66MHz
PCI Bus Clock	30MHz	33.3MHz
ISA Bus Clock	7.5MHz	8.33MHz
DIP Switch Setting		

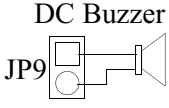
intel® Pentium Pro DIP Switch settings

CPU Core Frequency	150MHZ	166MHz	180MHz	200MHz
DIP Switch Setting				

System Overheat Protection

Jumpers JP7, JP8 are used to enable system overheat protection features.

Jumpers	System Response
 JP7 JP8	System overheat protection feature is disabled
 JP7 JP8	When system tempature exceed 50 °C, CPU clock will be stop.
 JP7 JP8	When system temperature exceeds 50 °C, system will enter Power Management “suspend mode” if the “Power Management/APM” is set to “Enabled” in BIOS Power Management Setup.



When system temperature exceeds 50 °C, DC buzzer will beep t
notify of system overheating

2.2.2 Clear CMOS and Password

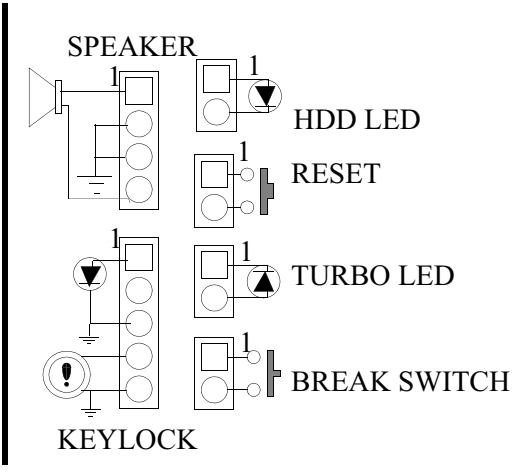
If your system can not boot up because you forget your password, or the CMOS settings need to be reset to default values because the system BIOS is updated, the following instructions can be performed to clear the CMOS and password.

1. Power off the system
2. Place a shunt to short pin1 and pin2 of JP6 for 5 seconds
3. Remove the shunt
4. Power on the system

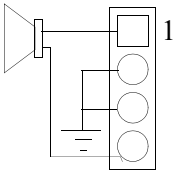
2.2.3 Attaching Connectors

Front Panel Connectors

There are 6 connectors on the Mainboard for switches and indicator lights on the system's front panel.

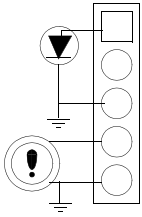


Speaker Connector



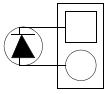
Pin Assignment
1. Speaker out
2. Ground
3. Ground
4. +5V

Keylock Connector



Pin Assignment
1. LED Cathode
2. N. C.
3. LED Anode (Ground)
4. Keylock
5. Ground

HDD LED Connector

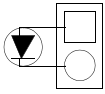


Pin Assignment
1. LED Anode
2. LED Cathode

Reset Connector

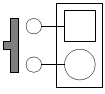
Pin Assignment
1. Power Good
2. Ground

Turbo LED Connector



Pin Assignment
1. LED Cathode
2. LED Anode (Ground)

Break Switch Connector

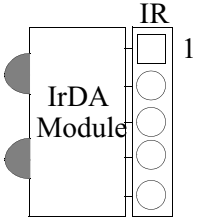


Pin Assignment
1. Break
2. Ground

The front panel on your case may have a turbo switch to deactivate the Turbo mode when a slower speed is required for a specific application. The Intel 82440FX chipset does not support the hardware deturbo function. An alternative method of using <CTRL><ALT><+/-> keys to change the speed may be used if necessary.

IR Connector

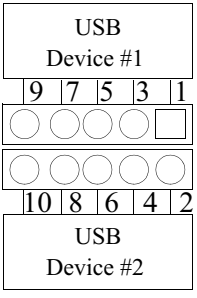
IR Connector



Pin Assignment
1. +5V
2. N. C.
3. IR Receiver
4. Ground
5. IR Transmitter

USB Connector

USB Connector

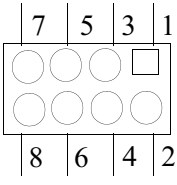


Pin Assignment

1. +5V	2. +5V
3. USB D0-	4. USB D1-
5. USB D0+	6. USB D1+
7. Ground	8. Ground
9. Ground	10. Ground

PS/2 Mouse Connector

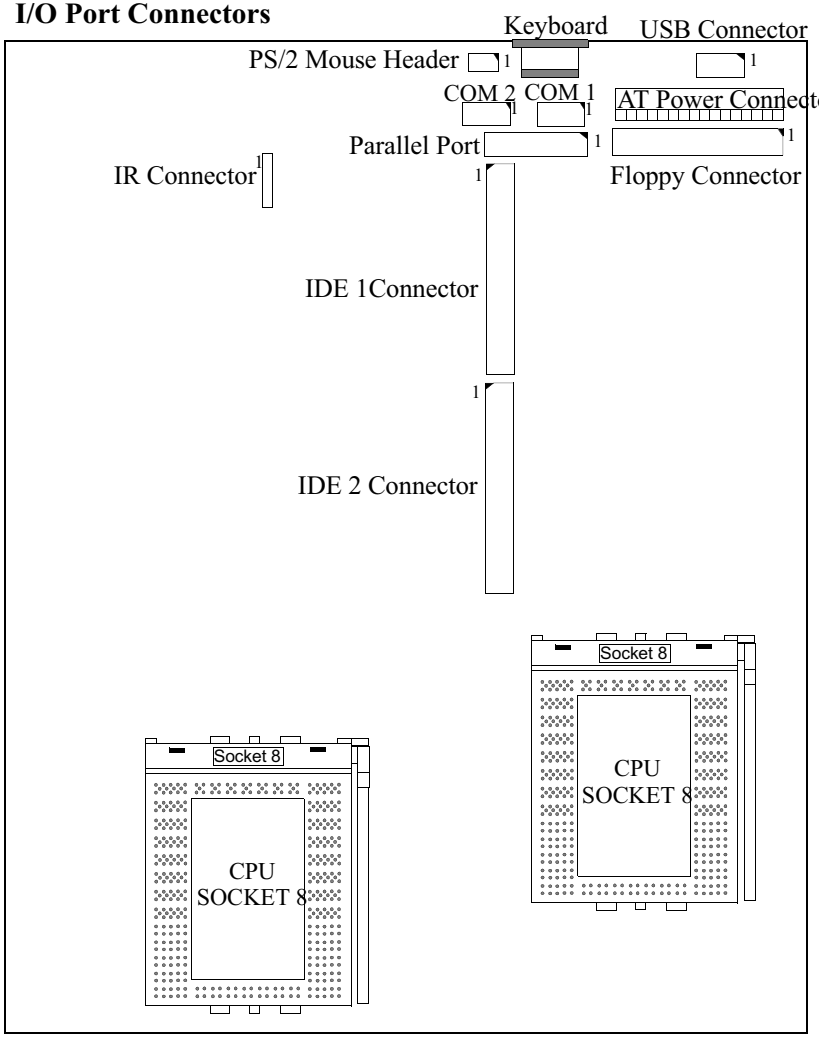
PS/2 Mouse Connector



Pin Assignment

1. +5V	2. N.C.
3. N.C.	4. N.C.
5. MSDATA	6. N.C.
7. Ground	8. MSCLK

I/O Port Connectors



Caution!!

You must orient the cable connector so that the pin 1(color) edge of the cable is at the pin 1 of the I/O port connector.

Use the following information to connect the floppy disk drives, IDE drives, USB cable, and PS/2 mouse cable.

1. You must orient the cable connector so that the pin 1(color) edge of the cable is at the pin 1 of the I/O port connector.

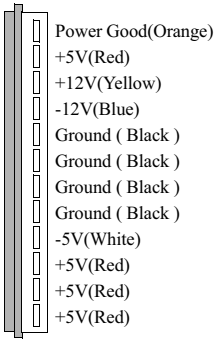
2. A floppy disk drive ribbon cable has 34 wires and 2 connectors to support 2 floppy disk drives. The connector with twisted wires always connects to drive A, and the connector which does not have twisted wire connects to drive B.

3. An IDE drive ribbon cable has 40 wires and 2 connectors to support two IDE drives. If a ribbon cable connects to two IDE drives at the same time, one of them has to be configured as Master and the other one has to be configured as Slave by setting the drive select jumpers on the drives. Consult the documentation that comes with your IDE drive for details on jumper locations and settings.

Power Supply Connector

The P6F70 mainboard provides power connectors to support AT power supplies connectors. **Incorrect installation of the power supply could result in serious damage to the mainboard and connected peripherals. Make sure the power supply is unplugged before connecting the leads from the power supply.**

AT Power Connector



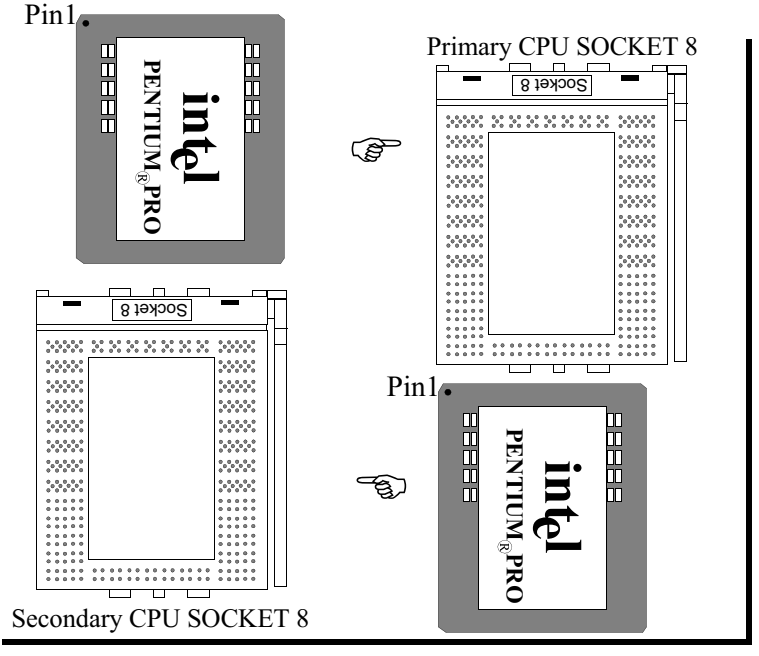
Most AT power supplies have two connectors. Each connector has six wires, two of which are black.

Orient the two connectors so the black wires are along side each other, making the black wires plug in the middle of the connector. Align the plastic guide pins on the lead cables with the connector on the mainboard. Press the lead connector so that its plastic clips snap into place and secure the leads in the connector.

2.2.4 Installing CPU

The P6F70 supports Single/Dual Intel Pentium Pro processors operating at 150/166/180/200 MHz. To avoid being broken by the pressure of CPU insertion, the mainboard must be placed on a flat antistatic surface before the CPU is installed. Do not touch the CPU pins with your fingers during the installation.

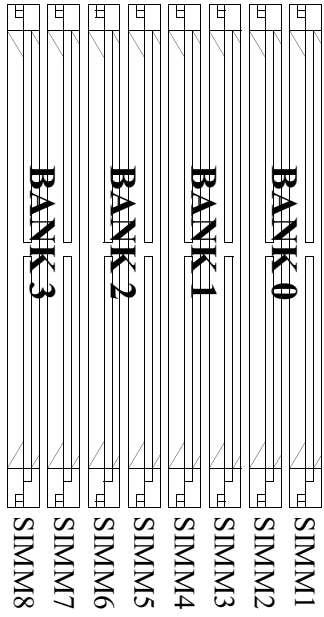
1. Push the CPU ZIF socket's lever to the side a little and raise it as far as it can go.
2. Align the CPU with the ZIF Socket 8 as shown in the figure below, then insert the CPU into the socket.
3. Press the lever down to snap it into place at the side of socket. You will feel some resistance as the pressure starts to secure the CPU in the socket.
4. Install a heatsink with a cooling fan that is required to protect the CPU from being damaged due to overheat.



2.2.5 Installing System Memory

The P6F70 Mainboard has eight SIMM Sockets to support up to 1GB of system memory. The eight SIMM sockets (SIMM1 ~ SIMM8) are divided into 4 Banks, Bank0 (SIMM1, SIMM2), Bank1 (SIMM3, SIMM4), Bank2 (SIMM5, SIMM6) and Bank3 (SIMM7,SIMM8).

Memory can be installed by using 72-pin FPM/ EDO/BEDO SIMM memory modules. There are no jumper settings required for the memory size or type, which is automatically detected by the BIOS. Due to the P6F70 Mainboard high speed design, the memory modules for the P6F70 must meet all of the following requirements.



DRAM TYPE	FPM (Fast Page Mode) EDO (Extended Data Output) BEDO (Burst Extended Data Output)	
DATA INTEGRITY	None	Supports ECC/Parity
MODULED SIZE	**Single-sided** 1Mx32, 4Mx32, 16Mx32 **Double-sided** 2Mx32, 8Mx32, 32Mx32	**Single-sided** 1Mx36, 4Mx36, 16Mx36 **Double-sided** 2Mx36, 8Mx36, 32Mx36
REQUIREMENTS	DRAM Speed : 60ns or 70ns RAS Access Time : 60ns ~ 70ns CAS Access Time : 10ns ~ 25ns Two SIMM modules must be installed at a time and each pair of modules must be the same size, type and speed.	

The following table shows the system memory configuration which **does not** support ECC/Parity feature

BanK SIMM	BANK 0 SIMM1,2	BANK 1 SIMM3,4	BANK 2 SIMM5,6	BANK 3 SIMM7,8
DRAM TYPE	FPM EDO BEDO	FPM EDO BEDO	FPM EDO BEDO	FPM EDO BEDO
DRAM SIZE	Empty 1Mx32 (4M) 2Mx32 (8M) 4Mx32 (16M) 8Mx32 (32M) 16Mx32 (64M) 32Mx32 (128M)	Empty 1Mx32 (4M) 2Mx32 (8M) 4Mx32 (16M) 8Mx32 (32M) 16Mx32 (64M) 32Mx32 (128M)	Empty 1Mx32 (4M) 2Mx32 (8M) 4Mx32 (16M) 8Mx32 (32M) 16Mx32 (64M) 32Mx32 (128M)	Empty 1Mx32 (4M) 2Mx32 (8M) 4Mx32 (16M) 8Mx32 (32M) 16Mx32 (64M) 32Mx32 (128M)

The following table shows the system memory configuration which support ECC/Parity feature

BanK SIMM	BANK 0 SIMM1,2	BANK 1 SIMM3,4	BANK 2 SIMM5,6	BANK 3 SIMM7,8
DRAM TYPE	FPM EDO BEDO	FPM EDO BEDO	FPM EDO BEDO	FPM EDO BEDO
DRAM SIZE	Empty 1Mx36 (4M) 2Mx36 (8M) 4Mx36 (16M) 8Mx36 (32M) 16Mx36 (64M) 32Mx36 (128M)	Empty 1Mx36 (4M) 2Mx36 (8M) 4Mx36 (16M) 8Mx36 (32M) 16Mx36 (64M) 32Mx36 (128M)	Empty 1Mx36 (4M) 2Mx36 (8M) 4Mx36 (16M) 8Mx36 (32M) 16Mx36 (64M) 32Mx36 (128M)	Empty 1Mx36 (4M) 2Mx36 (8M) 4Mx36 (16M) 8Mx36 (32M) 16Mx36 (64M) 32Mx36 (128M)

3 BIOS Configuration

After hardware configuration of P6F70 Mainboard is completed, and system hardware has been assembled, the completed system may be powered up. At this point, software setup should be run to ensure that system information is correct.

Normally, system setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks at the time the system is powered up. If an error is encountered, the error will be reported in one of two different ways. If the error occurs before the display device is initialized, a series of beeps will be transmitted. If the error occurs after the display device is initialized, the screen will display the error message.

3.1 Entering Setup

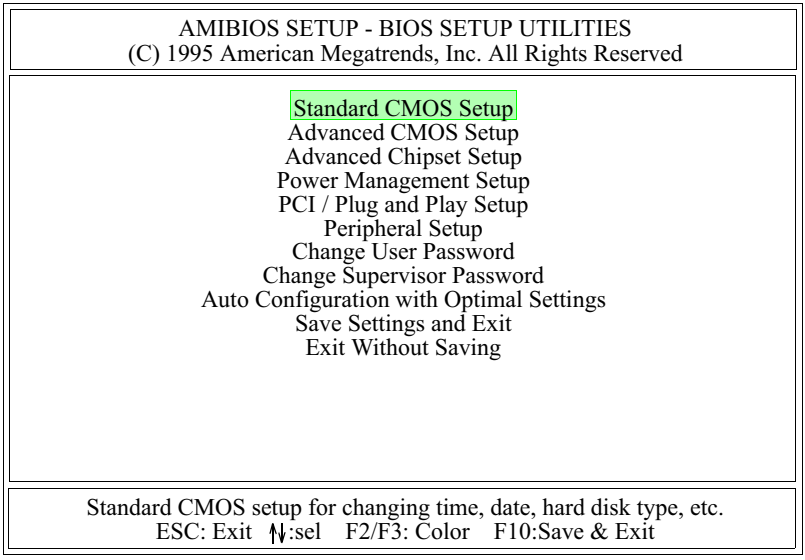
To enter the BIOS Setup Utilities, power on the computer and press the <DEL> key at the same time or press the <DEL> key during the POST (Power-On Self Test). The Main Menu of "BIOS SETUP UTILITIES" will appear on the screen.

3.2 Main Menu

The Main Menu allows you to select from nine setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> key to enter the sub-menu.

The on-screen description of the highlighted setup function is displayed at the bottom of the screen.

Main Menu



Standard CMOS Setup
Set the time and date. Configure disk drives.

Advanced CMOS Setup
Configure basic system performance parameters.

Chipset Advanced Setup
Configure features specific to the chipset used in the computer.

Power Management Setup
Configure power conservation features.

PCI/Plug and Play Setup
Configure PCI and Plug-and-Play features.

Peripheral Setup
Configure I/O support.

Change User Password
Set, change or disable user password to limit access to the setup and/or system.

Change Supervisor Password
Set, change or disable supervisor password to limit access to the setup and/ or system.

Auto Configuration with Optimal settings
Load default configuration settings to get reliable and optimal performance.

Save Settings and Exit
Save changes to CMOS and exit setup.

Exit without saving
Abandon all changes and exit setup.

3.3 Standard CMOS Setup

Standard CMOS Setup options are displayed by choosing Standard CMOS Setup from the Main Menu. The Standard CMOS Setup Utility is used to set Time/Date and configure disk drives.

Use the arrow keys to highlight the item, use <PgUp>/<PgDn> key to change the value, and use <ESC> key to exit to the Main Menu.

The on-screen description of the highlighted setup function is displayed at the bottom of the screen.

Date/Time
Select the Date/Time option to change the date or time.The time uses 24-hour clock format. For example, 1P.M. is 13:00:00.

Standard CMOS Setup

```
AMIBIOS SETUP - STANDARD CMOS SETUP
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Date (mm/dd/yyyy): Wed Jun 19, 1996
Time (hh/mm/ss)     : 09:21:53

Floppy Drive A:   1.44  MB 3½
Floppy Drive B:   Not Installed

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

Boot Sector Virus Protection      Disabled

Month:      Jan - Dec                    Esc: Exit   : Sel
  Day:      01 - 31                      PgUp/PgDn : Modify
 Year:      1901 - 2099                  F2/F3 : Color
```

Floppy Drive A, B
Choose the Floppy Drive A or B to specify the floppy drive type. The options are Not Installed, 360 KB 5¼, 1.2 MB 5¼, 720 KB 3½, 1.44 MB 3½, or 2.88 MB 3½.

Pri Master, Pri Slave, Sec Master, Sec Slave
Choose these items to configure the hard disk drive named in the option. The options are Type, LBA Mode, Block Mode, PIO Mode and 32Bit Mode. All parameters are related to IDE drives except **Type**.

Configuring an MFM Drive
If configuring an old MFM hard disk drive, you must know the drive parameters (number of heads, number of cylinders, number of sectors, the starting write precompensation cylinder, and drive capacity). And set the appropriate hard disk drive type 1 - 46.

User-Defined Drive
If you are configuring a SCSI drive or an MFM, RLL, ARLL, or ESDI drive with drive parameters that do not match drive types 1-46, you must select User in the Type field. You must then enter the drive parameters on the screen that appears. The drive parameters include:

Cylinders: The number of cylinders in the disk drive.

Heads: The number of heads.

Write Precompensation: The size of a sector gets progressively smaller as the track diameter diminishes. But each sector must still hold 512 bytes. Write precompensation circuitry on the hard disk compensates for the physical difference in sector size by boosting the write current for sectors on inner tracks. This parameter is the cylinder number where write precompensation begins.

Landing Zone: This number is the cylinder location where the heads will normally park when the system is shut down.

Sectors: The number of sectors per cylinder. MFM drives have 17 sectors per track. RLL drives have 26 sectors per track. ESDI drives have 34 sectors per track. SCSI and IDE drives have more sectors per track.

Size: The formatted capacity of the drive is (Number of heads) x (Number of cylinders) x (Number of sectors per cylinder) x (512 bytes per sector)

Configuring IDE Drives
If the hard disk drive to be configured is an IDE drive, select the appropriate drive item (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select “Auto” or “User”. If select “Auto”, AMIBIOS automatically detects the IDE drive model every time during the POST when system boots up. If select “User” and press <Enter> key, AMIBIOS will detect the IDE drive parameters and display them.

LBA Mode: Choose On to support IDE drives with capacities greater than 528 MB.

Block Mode: Choose On to support IDE drives that use Block Mode.

PIO Mode: Select the IDE Programmed I/O mode. The options are Auto, 0, 1, 2, 3, 4 or 5. Choose Auto to allow AMIBIOS to automatically detect the PIO mode that the IDE drive being configured. If you select 0-5 you must make absolutely certain that you are selecting the PIO mode supported by the IDE drive.

32Bit Mode: Choose On to support IDE drives that permit 32-bit accesses.

Configuring a CD-ROM Drive
Select the appropriate drive item (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select CDROM. You can boot the computer from a CD-ROM drive.

Boot Sector Virus Protection
AMIBIOS issues a warning message when any program (or virus) issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The options are Enabled or Disabled. If enabled, the following appears when a write is attempted to the boot sector. You may have to type N several times to prevent the boot sector write.

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

The following appears after any attempt to format any cylinder, head, or sector of any hard disk drive via the BIOS INT 13 Hard Disk Drive Service:

Format!!!
Possible VIRUS: Continue (Y/N)? _

3.4 Advanced CMOS Setup

Advanced CMOS Setup options are displayed by choosing the "Advanced CMOS Setup" from the Main Menu. The "Advanced CMOS Setup" includes all of the AMI enhanced BIOS features.

Advanced CMOS Setup

AMIBIOS SETUP - ADVANCED CMOS SETUP
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Quick Boot	Enabled	Available Options:
BootUp Sequence	C:, A:, CDROM	Disabled
BootUp CPU Speed	High	Enabled
BootUp Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
Mouse Support	Disabled	
Typematic Rate	Fast	
System Keyboard	Present	
Primary Display	VGA/EGA	
Password Check	Setup	
Parity Check	Disabled	
OS/2 Compatible Mode	Disabled	
Wait For 'F1' If Error	Enabled	
Hit 'DEL' Message Display	Enabled	
System BIOS Cacheable	Enabled	
C000, 16k Shadow	Cached	
C400, 16k Shadow	Cached	
C800, 16k Shadow	Disabled	
CC00, 16k Shadow	Disabled	
D000, 16k Shadow	Disabled	
D400, 16k Shadow	Disabled	ESC : Exit ↑↓:Sel
D800, 16k Shadow	Disabled	PgUp/PgDn:Modify
DC00, 16k Shadow	Disabled	F2/F3:Color

The on-screen options of the highlighted setup item are at the right section of the screen.

Use the arrow keys to highlight the item, use <PgUp>/<PgDn> key to change the value, and use <ESC> key to exit to the Main Menu.

Quick Boot
Set this option to Enabled to instruct AMIBIOS to boot quickly when the computer is powered on.When set to "Enabled", AMIBIOS does not test system memory above 1MB nor wait up to 40 seconds for a READY signal from the IDE hard disk drive. If a READY signal

is not received immediately from the IDE drive, AMIBIOS does not configure the drive. AMIBIOS also does not wait for 0.5 second after sending a RESET signal to the IDE drive to allow the IDE drive time to get ready again. The options are Disabled or Enabled. The Optimal default setting is Enabled.

BootUp Sequence
This feature sets the sequence of boot drives (floppy drive A:, hard disk drive C:, or a CD-ROM drive) that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The options are C:,A:,CDROM, A:,C:, CDROM or CDROM,C:,A:. The Optimal default setting is C:,A:,CDROM.

BootUp CPU Speed
This feature lets you specify the CPU speed at system boot. The options are Low or High. The Optimal default setting is High.

BootUp NumLock
Set this feature to Off to turn the Num Lock key off when the computer is booted so you can use the arrow keys on both the numeric keypad and the keyboard. The options are On or Off. The Optimal default setting is On.

Floppy Drive Swap
Set this feature to Enabled to permit drives A: and B: to be swapped. The options are Enabled or Disabled. The Optimal default setting is Disabled.

Floppy Drive Seek
This feature is used to enable floppy controller perform a Seek operation at system boot. The options are Disabled or Enabled. The Optimal default setting is Disabled.

Mouse Support
When this feature is set to Enabled, AMIBIOS supports a PS/2-type mouse. The options are Enabled or Disabled. The Optimal default setting is Disabled.

Typematic Rate
This feature specifies the speed at which a keystroke is repeated. The options are Fast or Slow. The Optimal default setting is Fast.

System Keyboard
This feature specifies whether a keyboard is attached to the computer. The options are Present or Absent. The Optimal default setting is Present.

Primary Display
This feature specifies the type of display monitor and adapter in the computer. The options are Mono, CGA40x25, CGA80x25, VGA/EGA, or Absent. The Optimal default setting is VGA/EGA.

Password Check
This feature enables password checking every time the computer is powered on or every time BIOS Setup is executed. If Always is chosen, a user password prompt appears every time the computer is turned on. If Setup is chosen, the password prompt appears if BIOS Setup is executed. The Optimal default setting is Setup.

Parity Check
Set this feature to Enabled to check the parity of all system memory. The options are Disabled or Enabled. The Optimal default setting is Disabled.

OS/2 Compatible Mode
Set this feature to Enabled to permit AMIBIOS to run with IBM OS/2. The options are Enabled or Disabled. The Optimal default setting is Disabled.

Wait For 'F1' if Error
AMIBIOS POST error messages are followed by:
Press <F1> to continue
If this feature is set to Disabled, AMIBIOS does not wait for you to press the <F1> key after an error message. The options are Disabled or Enabled. The Optimal default setting is Enabled.

Hit 'Del' Message Display
Set this feature to Disabled to prevent
Hit <DEL> if you want to run Setup
from appearing on the first AMIBIOS screen when the computer boots. The options are Disabled or Enabled. The Optimal default setting is Enabled.

System BIOS Cacheable
When this feature is set to Enabled, the contents of the F0000h system memory segment can be read from or written to L2 secondary cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution. The options are Enabled or Disabled. The Optimal default setting is Enabled.

C000,16K Shadow, C400,16K Shadow, C800,16K Shadow, CC00,16K Shadow, D000,16K Shadow, D400,16K Shadow, D800,16K Shadow, DC00,16K Shadow
These features control the location of the contents of the 16KB of ROM beginning at the specified memory location. If no adaptor ROM is using the specified ROM area, this area is made available to the local bus. The options are Enabled, Cache, and Disabled.

Enabled: The contents of the specified ROM are copied to the system memory (RAM) for faster execution.

Cache: The contents of the specified ROM are copied to the system memory (RAM) for faster execution. Also, the contents of the RAM area can be read from or written to cache memory.

Disabled: The contents of the specified ROM are not copied to the system memory.

The Optimal default settings are Cached for C000 and C400 segments and Disabled for the other segments. In the AMIBIOS for the Intel 82440FX chipset, the E000h page is used as ROM during POST, but shadowing is disabled and the ROM CS# signal is disabled to make the E000h page available on the local bus.

3.5 Advanced Chipset Setup

Advanced Chipset Setup options are displayed by choosing the "Advanced Chipset Setup" from the Main Menu. The "Advanced Chipset Setup" controls the settings for the board's chipset. All the entries on the screen are automatically configured. **Besides the "DRAM Speed", "DRAM Integrity Mode", and "Universal Serial Bus" features, do not make any change unless you are familiar with the chipset.**

The on-screen options of the highlighted setup item are at the right section of the screen.

Use the arrow keys to highlight the item, use <PgUp>/<PgDn> key to change the value, and use <ESC> key to exit to the Main Menu.

Advanced Chipset Setup

AMIBIOS SETUP - ADVANCED CHIPSET SETUP
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Auto Configure DRAM Timing	Enabled	Available Options:
DRAM Speed (ns)	60	50
DRAM Read Burst Timing (B/E/F)	x2 /2 /3	60
DRAM Write Burst Timing (B/E/F)	x2 /2 /3	70
RASx# to CASx# Delay	Disabled	
MA Wait State	0 W/S	
RAS Precharge	3 Clocks	
DRAM Integrity Mode (ECC)	Disabled	
DRAM Fast Leadoff	Disabled	
DRAM Refresh Type	RAS Only	
DRAM Refresh Queue	Enabled	
VGA Frame Buffer USWC	Disabled	
PCI Frame Buffer USWC	Disabled	
Fixed Memory Hole	Disabled	
CPU To IDE Posting	Enabled	
USWC Write Posting	Enabled	
CPU To PCI Posting	Enabled	
PCI To DRAM Pipeline	Enabled	
PCI Burst Write Combine	Enabled	
Read Around Write	Enabled	
8-Bit I/O Recovery Times	1 SysClk	
16-Bit I/O Recovery Times	1 SysClk	
Universal Serial Bus	Disabled	ESC : Exit ↑↓:Sel
USB Passive Release Enable	Enabled	PgUp/PgDn:Modify
USB Clock	48 MHz	F2/F3:Color

DRAM Speed (ns)
Specify the RAS access speed of the SIMMs installed in the motherboard as system memory. The options are 50ns, 60ns or 70 ns. The Optimal default setting is 60ns. If you have installed SIMMs with different speeds in the motherboard, select the speed of the slowest SIMM. You must always use SIMMs that have the same speed within a memory bank.

DRAM Integrity Mode (ECC)
Use this feature to enable ECC (Error Checking and Correction) memory protection. The ECC can only be supported properly for SIMM modules with parity chips. The options are Enabled or Disabled. The Optimal default setting is disabled.

Fixed Memory Hole
Use this feature to specify an area in memory that cannot be addressed on the ISA bus. The options are Disabled, 512KB-640KB, or 15MB-16MB. The Optimal default setting is Disabled.

8-Bit I/O Recovery Times
This feature specifies the length of the delay (in SYSCLKs) inserted between consecutive 8-bit I/O operations. The options are Disabled, 1, 2, 3, 4, 5, 6, 7, or 8. The Optimal default setting is 1.

16-Bit I/O Recovery Times
This feature specifies the length of the delay (in SYSCLKs) inserted between consecutive 16-bit I/O operations. The options are Disabled, 1, 2, 3 or 4. The Optimal default setting is 1.

Universal Serial Bus
To activate the Universal Serial Bus function, this features has to be set to Enabled.

3.6 Power Management Setup

Power Management Setup options are displayed by choosing the “Power Management Setup” from the Main Menu. The “Power Management Setup” is used to configure power conservation features.

Use the arrow keys to highlight the item, use <PgUp>/<PgDn> key to change the value, and use <ESC> key to exit to the Main Menu.

Power Management Setup

AMIBIOS SETUP - POWER MANAGEMENT SETUP
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Power Management /APM	Disabled	Available Options:
Green PC Monitor Power State	Off	Disabled
Video Power Down Mode	Disabled	Enabled
Hard Disk Power Down Mode	Disabled	Inst-on
Hard Disk Time Out (Minute)	Disabled	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Slow Clock Ratio	1:8	
IRQ3	Both	
IRQ4	Both	
IRQ5	Ignore	
IRQ7	Monitor	
IRQ8	Ignore	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ12	Both	
IRQ13	Ignore	ESC : Exit ↑↓:Sel
IRQ14	Both	PgUp/PgDn:Modify
IRQ15	Both	F2/F3:Color

Power Management/APM

Use this feature to enable the power management and APM (Advanced Power Management) features. The options are Enabled, Disabled or Inst-on. The Optimal default setting is Disabled.

Green PC Monitor Power State

This feature specifies the power management state that the Green PC-compliant video monitor enters after the specified period of display inactivity has expired. The options are Standby, Suspend, Off or Blank. The optimal default setting is Off.

Video Power Down Mode

This feature specifies the power management state that the video subsystem enters after the specified period of display inactivity has expired. The options are Disabled, Standby, or Suspend. The Optimal default settings are Disabled.

Hard Disk Power Down Mode
This feature specifies the power management state that the hard disk drive enters after the specified period of hard disk inactivity has expired. The options are Disabled, Standby, or Suspend. The Optimal default settings are Disabled.

Hard Disk Timeout (Min)
This feature specifies the length of a period of hard disk inactivity. When this period expires, the hard disk drive enters the power-conserving mode specified in the Hard Disk Power Down Mode option. The options are Disabled, 1 Min (minutes), and all one minute intervals up to and including 15 Min. The Optimal default setting is Disabled.

Standby Timeout
This feature specifies the length of the period of system inactivity before the computer enters Standby mode from Full-on mode. In Standby mode, some power use is curtailed. The options are Disabled, 1 Min, 2 Min, and all one minute intervals up to and including 15 Min. The Optimal default setting is Disabled.

Suspend Timeout
This feature specifies the length of the period of system inactivity before the computer enters Suspend mode from Standby mode. In Suspend mode, nearly all power use is curtailed. The options are Disabled, 1 Min, 2 Min, and all one minute intervals up to and including 15 Min. The Optimal default setting is Disabled.

Slow Clock Ratio
This feature specifies the speed at which the system clock runs in power saving modes. The settings are expressed as a ratio between the normal clock speed and the power down clock speed. The options are 1:1, 1:2 (half as fast as normal), 1:4 (the normal clock speed), 1:8, 1:16, 1:32, 1:64, or 1:128. The Optimal default setting is 1:8.

IRQ 3, IRQ 4, IRQ 5, IRQ 7, IRQ8, IRQ 9, IRQ 10, IRQ 11, IRQ 12, IRQ 13, IRQ 14, IRQ 15
The options are Ignore, Monitor, WakeUp or Both (Monitor and WakeUp). The system will enter the power saving mode from the full on

mode, if no activities on the named “Monitor” IRQ lines occur for a specified length of time. When any activity on the named “WakeUp” IRQ line occurs, the system will return to the full on mode.

3.7 PCI/Plug and Play Setup

PCI/Plug and Play Setup options are displayed by choosing the “PCI/ Plug and Play Setup” from the Main Menu. The “PCI/Plug and Play Setup” is used to configure PCI and Plug and Play features.

PCI/Plug and Play Setup

AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP
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Plug and Play Aware O/S	No	Available Options:
PCI Latency Timer (PCI Clocks)	32	No
PCI VGA Palette Snoop	Disabled	Yes
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	INTA	
OffBoard PCI IDE Secondary IRQ	INTB	
1st Priority IRQ for PCI	Auto	
2nd Priority IRQ for PCI	Auto	
3rd Priority IRQ for PCI	Auto	
4th Priority IRQ for PCI	Auto	
IRQ3	PCI / PnP	
IRQ4	PCI / PnP	
IRQ5	PCI / PnP	
IRQ7	PCI / PnP	
IRQ9	PCI / PnP	
IRQ10	PCI / PnP	
IRQ11	ISA / EISA	
IRQ12	PCI / PnP	
IRQ14	PCI / PnP	
IRQ15	PCI / PnP	
DMA 0	PCI / PnP	
DMA 1	PCI / PnP	
DMA 3	PCI / PnP	
DMA 5	ISA / EISA	
DMA 6	PCI / PnP	
DMA 7	PCI / PnP	ESC : Exit ↑↓:Sel
Reserved Memory Size	Disabled	PgUp/PgDn:Modify
Reserved memory Address	C8000	F2/F3:Color

The on-screen options of the highlighted setup item are at the right section of the screen.

Use the arrow keys to highlight the item, use <PgUp>/<PgDn> key to change the value, and use <ESC> key to exit to the Main Menu.

Plug and Play Aware O/S
Set this feature 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. Windows 95 is a PnP-aware Operating System which will detect and enable all other PnP-aware adapter cards. Set this option to No if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP. You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly. The options are No or Yes. The Optimal default setting is No.

PCI Latency Timer (PCI Clocks)
This feature sets latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks. The options are 32, 64, 96, 128, 160, 192, 224, or 248. The Optimal default setting is 32.

PCI VGA Palette Snoop
The purpose of this feature is to allow multiple VGA adapter cards on different busses (PCI and ISA) in a system to have data written from CPU to each set of palette registers in every VGA device. The Optimal default settings is Disabled.

OffBoard PCI IDE Card
This feature specifies if an OffBoard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion slot on the motherboard where the OffBoard PCI IDE controller card is installed. If an OffBoard PCI IDE controller is used, the onboard IDE controller is automatically disabled. The settings are Auto, Slot1, Slot2, Slot3, or Slot4.

If Auto is selected, AMIBIOS automatically determines the correct setting for this option. The Optimal default setting is Auto.

In the AMIBIOS for the Intel 82440FX chipset, this option forces IRQ 14 and 15 to a PCI slot on the PCI local bus. This is necessary to support non-PCI compliant IDE adapter cards.

OffBoard PCI IDE Primary IRQ
This feature specifies the PCI interrupt used by the primary IDE channel on the OffBoard PCI IDE controller. The options are Disabled, INTA, INTB, INTC, INTD or Hardwired. The Optimal default setting is INTA.

OffBoard PCI IDE Secondary IRQ
This feature specifies the PCI interrupt used by the secondary IDE channel on the OffBoard PCI IDE controller. The options are Disabled, INTA, INTB, INTC, INTD or Hardwired. The Optimal default setting is INTB.

IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, IRQ12, IRQ14, IRQ15, DMA0, DMA1, DMA3, DMA5, DMA6, DMA7
These features specify the bus that the named interrupt request lines (IRQs) and DMA lines (DMAs) are used on. These options allow you to specify IRQs and DMAs for uses by legacy ISA adapter cards.
These features determine if AMIBIOS should remove an IRQ or DMA from the pool of available IRQs and DMAs passed to BIOS configurable devices.

The available IRQ and DMA pools are determined by reading the ESCD NVRAM. If more IRQs and DMAs must be removed from the pools, the end user can use these PCI/Plug and Play Setup features to remove the IRQ or DMA by assigning the option to the ISA/EISA setting. The IRQs used by onboard I/O are configured as PCI/PnP.
The options are PCI/PnP or ISA/EISA. The Optimal default setting is PCI/PnP except IRQ11 and DMA5.

Reserved Memory Size
This feature specifies the size of the memory area reserved for legacy ISA adapter cards. The options are Disabled, 16K, 32K, or 64K. The Optimal default setting is Disabled.

Reserved Memory Address
This feature specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards. The options are C0000, C4000, C8000, CC000, D0000, D4000, D8000, or DC000. The Optimal setting is C8000.

3.8 Peripheral Setup

Peripheral Setup options are displayed by choosing the "Peripheral Setup" from the Main Menu. The "Peripheral Setup" is used to configure Onboard I/O devices.

The on-screen options of the highlighted setup item are at the right section of the screen.

Use the arrow keys to highlight the item, use <PgUp>/<PgDn> key to change the value, and use <ESC> key to exit to the Main Menu.

Peripheral Setup

AMIBIOS SETUP - PERIPHERAL SETUP
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OnBoard FDC	Auto
OnBoard Serial Port1	Auto
OnBoard Serial Port2	Auto
Serial Port2 Mode	Normal
OnBoard Parallel Port	Auto
Parallel Port IRQ	7
Parallel Port Mode	SPP/EPP
Parallel Port DMA Channel	0
OnBoard IDE	Both

Available Options:
Auto
Disabled
Enabled

ESC : Exit ↑↓:Sel
PgUp/PgDn:Modify
F2/F3:Color

OnBoard FDC
This feature enables the floppy drive controller on the motherboard. The options are Enabled, Disabled or Auto. The Optimal default setting is Auto.

OnBoard Serial Port1
This feature enables serial port 1 on the motherboard and specifies the base I/O port address for serial port 1.The options are Auto, 2F8h, 3F8h, 3E8h, 2E8h or Disabled. The Optimal default setting is Auto.

OnBoard Serial Port2
This feature enables serial port 2 on the motherboard and specifies the base I/O port address for serial port 2. The options are Auto, 3F8h, 2F8h, 3E8h, 2E8h or Disabled. The Optimal default setting is Auto.

Serial Port2 Mode
Set this feature to IrDA, if an IrDA Infrared module is used in the system.

OnBoard Parallel Port
This feature enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The options are Auto, 3BCh, 378h, 278h or Disabled. The Optimal default setting is Auto.

Parallel Port Mode
This feature specifies the parallel port mode. ECP and EPP are both bidirectional data transfer schemes that adhere to the IEEE P1284 specifications. The options are:

SPP/EPP: The parallel port can be used with devices that adhere to the Standard Parallel Port (SPP) and Enhanced Parallel Port (EPP) specifications. EPP uses the existing parallel port signals to provide asymmetric bidirectional data transfer driven by the host device.

ECP: The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve transfer rates of approximately 2.5 Mbs. ECP provides symmetric bidirectional communications.

Parallel Port DMA Channel
This feature is only available if the setting for the Parallel Port Mode option is ECP. The options are 0, 1, or 3. The Optimal default setting is 0.

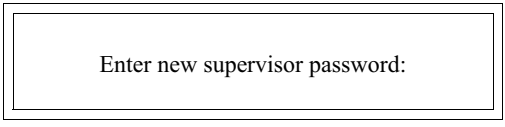
OnBoard IDE
This feature specifies the onboard IDE controller channels that will be used. The options are both Primary, Secondary, Both, or Disabled. The Optimal default setting is Primary.

3.9 Change User/Supervisor Password

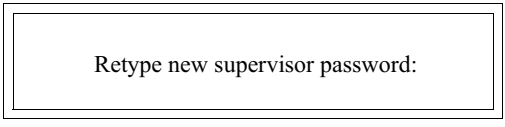
BIOS Setup has an optional password feature. The system can be configured so that all users must enter a password every time the system boots or when BIOS Setup is executed. You must set the Supervisor password before you can set the User password.

The password check option is enabled in Advanced CMOS Setup by choosing either Always (the password prompt appears every time the system is powered on) or Setup (the password prompt appears only when BIOS is run). The password is stored in CMOS RAM.

The following screen appears when you select the Change User/ Supervisor Password from the Main Menu



Enter a 1 – 6 character password. The password does not appear on the screen when typed. After the new password is entered, the following screen appears.



Retype the new password and press <Enter> to confirm the new password or press <Enter> without typing the new password to disable the password function. If the password confirmation is incorrect, an error message appears. If the new password is entered without error, press <Esc> to return to the Main Menu.

The password is stored in CMOS RAM after BIOS Setup completes. The next time the system boots, you are prompted for the password if the password function is enabled.

3.10 Auto Configuration with Optimal Settings

"Auto Configuration with Optimal Settings" loads optimal settings which are stored in the BIOS ROM.

The defaults loaded only affect the Advanced CMOS Setup, Advanced Chipset Setup, Power Management Setup, PCI/Plug and Play Setup, and Peripheral Setup. There is no effect on the Standard CMOS Setup. To use this feature, highlight it on the Main Menu and press <Enter>. A line will appear on the screen asking if you want to load the high performance settings. Press the <Y> key and then press the <Enter> key if you want to load the Optimal Settings.

3.11 Save Setting and Exit

Selecting this function and pressing the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.

3.12 Exit Without Saving

Selecting this function and pressing the <Enter> key to exit the BIOS Setup Utility without recording any new values or changing old ones.

4 Driver and Utility

4.1 Flash Utility

The BIOS of the P6F70 mainboard can be upgraded by using a Flash utility. A new version of the BIOS can be downloaded from the factory's BBS and Web site. Consult your vendor for the factory's BBS phone number and Web site address. The system BIOS is stored in a 1M-bit Flash EEPROM which can be erased and reprogrammed by the Flash utility.

There are two files in the FLASH directory.

AMIFLASH.COM	The Flash utility for AMI BIOS upgrade.
README.TXT	A text file of instructions

The Flash utility will not work with any memory manager software running in the system. In order to make sure no memory manager software is running, boot your system from a bootable floppy disk which does not contain CONFIG.SYS nor AUTOEXEC.BAT files. If you are using MS-DOS 6.x, you can press <F5> function key while the “Starting MS-DOS...” appears on the screen to bypass the CONFIG.SYS and AUTOEXEC.BAT.

4.2 EIDE Bus Master Driver

The Bus Master EIDE logic designed in the Intel 82440FX chipset is intended to reduce the workload of the CPU and make the CPU running more efficiently. It will take care the data transfer between IDE drives and system memory and let CPU handle other tasks. In order to make the EIDE drive operate at bus-mastering DMA mode 2, the driver must be loaded properly.

There is a self-extracting archives file BMEIDE.EXE in the BMEIDE directory. Execute the BMEIDE.EXE to extract the following files.

BMIDE_95.EXE	Windows 95 archives
BMIDE_NT.EXE	Windows NT achieve
BMIDEOS2.EXE	OS/2 archives
README.TXT	A text file of instructions
LICENSE.TXT	A text file of license

4.3 Desktop Management Interface (DMI) Utility

The AMI DMI Wizard is a DOS utility with a graphical interface that allows you to display and/or modify DMI system configuration data. The DMI Wizard can read /update the system BIOS file stored on the ROM file in the computer, or it can read/update a user-supplied .ROM file.

There is a self-extracting achieve file DMIWIZ.EXE in the DMIWIZ directory. Execute the DMIWIZ.EXE to extract the following files.

AMIDMI.000 INSTALL.EXE INSTALL.INF	Copy these 3 files to the hard drive and run INSTALL.EXE This will create a directory “DMIWIZ” that contains DMI utilities.
DMIWIZ.DOC	DMI Wizard User's Manual (WinWord 6.x format)

5 Problems and Trouble Shooting

Use the following checklist for trouble shooting when you have problems with your mainboard. Consult your supplier or factory if problems persist. If you are a system integrator, VAR or OEM, a POST diagnostics card is recommended for port 80h codes. Refer to “AMIPOST.DOC” for details about AMI POST diagnostic beep codes, checkpoint codes, and error message explanation. The AMIPOST.DOCcan be downloaded from the factory's BBS and Web site.

Symptom	Possible Causes
No Video 3 beeps or No beep and POST Card display d3h	Memory Error 1. Bad or poor quality SIMM modules 2. SIMM modules are not properly installed 3. Both SIMMs in a bank are not the same size, type or speed
No Video 8 beeps	Video Error 1. Bad VGA card 2. Bad PCI/ISA slot 3. VGA card is not properly installed in its slot
No Video No beep	1. Bad BIOS 2. Incorrect CPU speed setting 3. Bad power supply 4. Incorrect power supply installation
Losing CMOS Setup	1. Poor quality power supply 2. Low voltage battery (< 2.5V)
Boot Fail	1. Bad drive 2. Incorrect drive installation 3. Improper device driver installation 4. Incorrect BIOS setup 5. Incorrect jumper setting
Intermittent Hang	1. Poor quality SIMM modules 2. Poor quality drive 3. Incorrect BIOS setup 4. Improper device drive or OS installation