

TABLE OF

Chapter 1

Features of This Motherboard.....	1
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Chapter 2

Installation.....	2
2-1 Map of the Motherboard.....	2
J-7FXA/SCSI.....	2
J-7FXA.....	3
2-2 Installation Steps.....	5
2-2-1 Jumper Settings.....	5
2-2-2 System Memory (DRAM).....	9
2-3 Central processing Unit (CPU).....	9
2-4 Expansion Cards.....	10
2-5 External Connectors.....	12

Chapter 3

AMI BIOS SETUP.....	19
3-1 STANDARD CMOS SETUP.....	20
3-2 Advanced CMOS Setup	22
3-3 Advanced Chipset Setup	24
3-4 Power Management Setup	27
3-5 PCI / Plug and Play Setup	29
3-6 Peripheral Setup	31
3-7 Auto-Detect Hard Disks	33
3-8 Change Supervisor Password	34
3-9 Auto Configuration with Optimal Settings	35
3-10 Auto Configuration with Normal Settings	36
3-11 Save Settings and Exit	37
3-12 Exit Without Saving	38

Chapter 1

Features of This Motherboard

The [J-7FXA/J-7FXA/SCSI](#) are designed for the PC user who wants a great many features in a small package. This motherboard:

- **Easy Installation:** Is equipped with BIOS supports auto detection of hard drives and plug and play to make setup of hard drives and expansion cards virtually automatic.
- **Intel chipset:** Intel's 440FX PCIset with I/O subsystems.
- **Multi-Speed Support:** Support one of 233/266 Intel Pentium II CPU on a Slot-1.
- **Error Checking and Correcting (ECC):** Using Intel's 440FX PCIset and parity DRAM Modules can detect and correct 1 bit memory errors.
- **DRAM Memory Support:** Supports 72-pin SIMMs of 4MB, 8MB, 16MB, 32MB, or 64MB to memory size between 8MB to 512MB. Support both Fast Page Mode and Extended Data Output (EDO) SIMMs.
- **ISA and PCI Expansion Slots:** Provides four 16-bit ISA slots, four 32-bit PCI slots.
- **Super Multi-I/O:** Provides two high-Speed UART compatible serial ports and one parallel port with EPP and ECP capabilities. UART2 can also be directed to the Infrared Module for wireless connections. Two floppy drives of either 5.25" or 3.5" (1.44MB or 2.88MB) are also supported without an external card.
- **PCI Bus Master IDE Controller:** On-board PCI Bus Master IDE controller with two connectors that supports four IDE devices in two channels, provides faster data transfer rates, and supports Enhanced IDE devices such as Tape Backup and CD-ROM drives. This controller supports PIO Modes 3 and 4 and Bus Master IDE DMA Mode 2.
- **Optional IrDA:** Supports an optional infrared port module for wireless interface.
- **PS/2 Keyboard, PS/2 Mouse Connector:** This motherboard supports one PS/2 mouse and one PS/2 keyboard connector.
- **Optional USB Port Connector:** This motherboard supports two USB port connectors for USB devices.
- **Power Button:** Press the button will place the system power off .
- **Optional Adaptec AIC-7880 Ultra Wide SCSI Controller:** Support transfer rate up to 40MB/s.
- **Optional Adaptec SCSI RAID Port-1 Slot:** This can supports Adaptec SCSI RAID Controller to upgrade system (For J-7FXA/SCSI only).
- **ATX Form Fator:** Dimensions 12 inches x 9.6 inches.
- **Ring-In Wake up:** When Ring-In the system can wake up from SMI mode.
- **Ring-In Power On:** When Ring-In the system can power on automatic by this function.
- **RTC Power On:** When Enabled RTC Power On controller, you can setting RTC alarm to power on system at the time you setting.

Chapter 2

Installation

2-1 Map of the Motherboard

- J-7FXA/SCSI

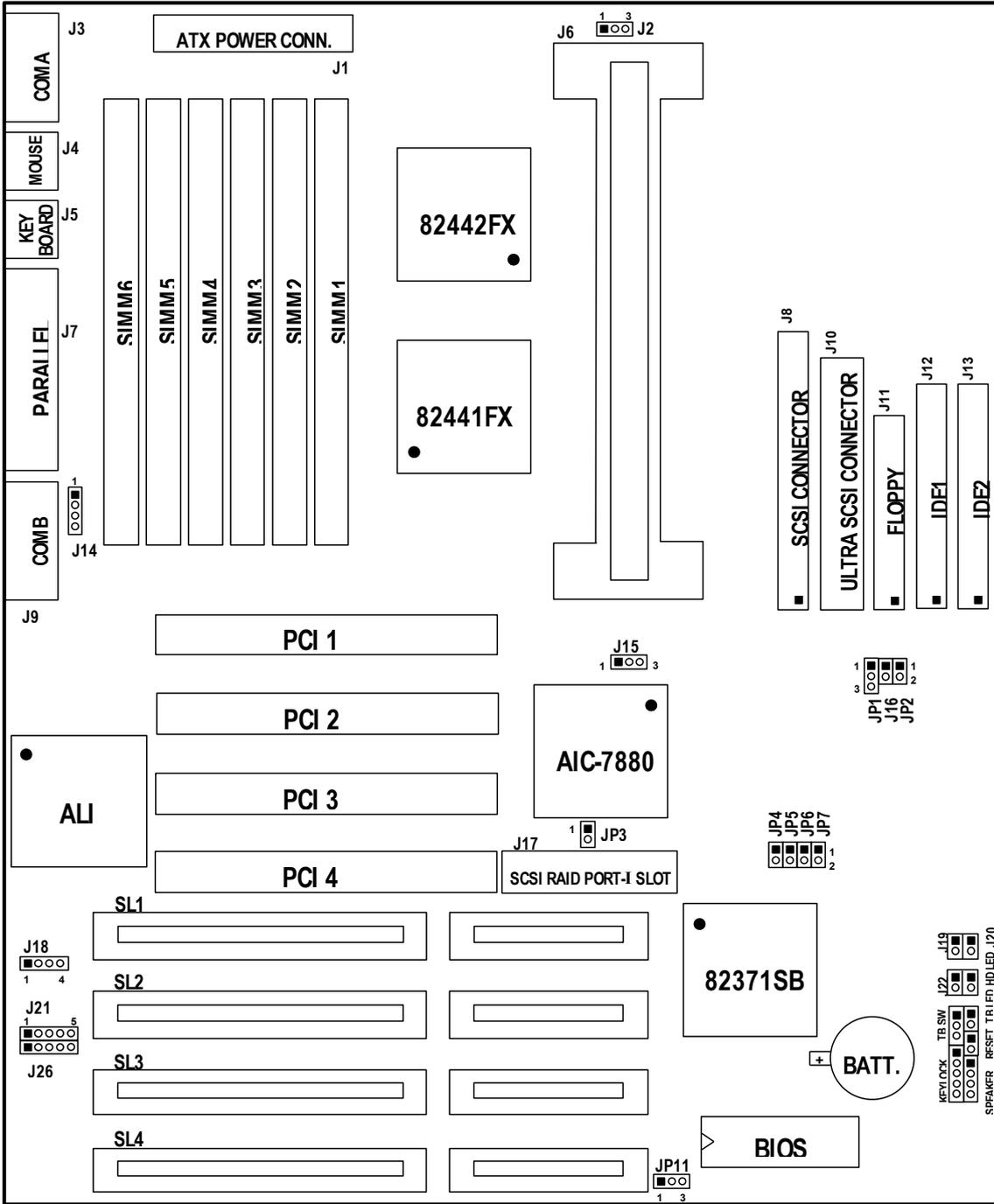


Figure 2-1

- J-7FXA

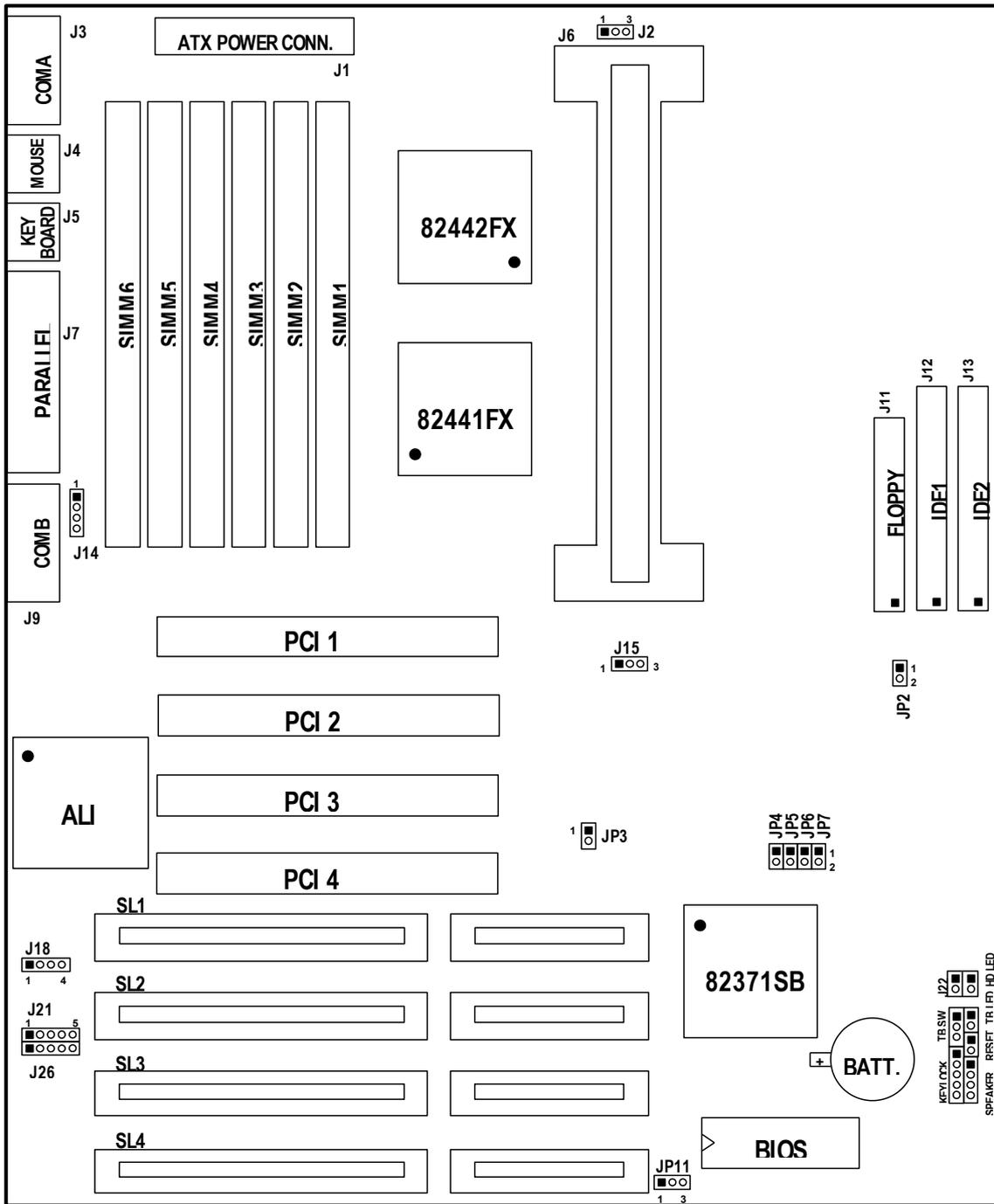


Figure 2-2

Jumpers

1) JP11

p. 5 Flash ROM Voltage Selection (Yellow color selector)

-
-
- | | |
|--------------------|--|
| 2) JP2 | p. 5 CPU External clock (Bus) Frequency Selection
(White color selector) |
| 3) JP4,JP5,JP6,JP7 | p. 6 CPU to Bus/Core Ratio Selection (Blue color selector) |
| 4) J19 p. 6 | Soft Power On Button Connector |
| 4) J16 p. 7 | On-Board SCSI Controller Low byte Terminator
Selection (For J-7FXA/SCSI only) |
| 6) JP1 p. 7 | On-Board SCSI Controller High byte Terminator
Selection (For J-7FXA/SCSI only) |
| 7) J15 | p. 8 Raid Card Install Selection (For J-7FXA/SCSI only) |
| 9) JP3 | p. 8 SCSI Data Bus size 16 bit/8 bit Selection (For
J-7FXA/SCSI only) |

Connectors

- | | |
|---------------|---|
| 1) J1 | p. 12 ATX Power connector (20-pins Block) |
| 1) J4 | p. 12 PS/2 Mouse connector |
| 1) J5 | p. 12 PS/2 Keyboard connector |
| 1) COMA, COMB | p. 13 Serial Port COMA and COMB connector |
| 1) J7 | p. 13 Parallel Port connector |
| 1) J21, J26 | p. 14 USB Bus connector (Two 5-pins Blocks) |
| 1) J11 | p. 14 Floppy Drive connector (34-pins Block) |
| 1) J12 | p. 14 Primary IDE connector IDE1 (40-pins Block) |
| 1) J13 | p. 15 Secondary IDE connector IDE2 (40-pins Block) |
| 1) J8,J0 | p. 15 SCSI Interface connector (For J-7FXA/SCSI only) |
| 1) J22 | p. 15 SMI Switch lead (2-pins) |
| 1) TB LED | p. 16 Turbo LED switch (3-pins) |
| 1) RESET | p. 16 Reset Switch lead (2-pins) |
| 1) KEYLOCK | p. 16 Keyboard Lock Switch (5-pins) |
| 1) SPEAKER | p. 16 Speaker connector (4-pins) |
| 1) TB SW | p. 16 Turbo switch connector (3-pins) |
| 1) HD LED | p. 16 IDE activity LED connector (2-pins) |
| 1) J2 | p. 17 CPU Cooling Fan connector |
| 1) J14 | p. 18 Infrared Module connector |
| 1) J18 p. 18 | CMOS Battery and Ext Battery connector |

Expansion Slots

- | | |
|----------------|--|
| 1) SIMM Slots | p. 9 System Memory (DRAM) |
| 3) Slot 1 (J6) | p. 9 Slot for Central Processing Unit (CPU) |
| 3) ISA 1,2,3,4 | p. 10 16-bit ISA Bus Expansion slots |
| 3) PCI 1,2,3,4 | p. 10 32-bit PCI Bus Expansion slots |
| 3) J15 p. 18 | SCSI RAID port-1 Slot (For J-7FXA/SCSI only) |

2-2 Installation Steps

Before using your computer, you must follow the steps as follows:

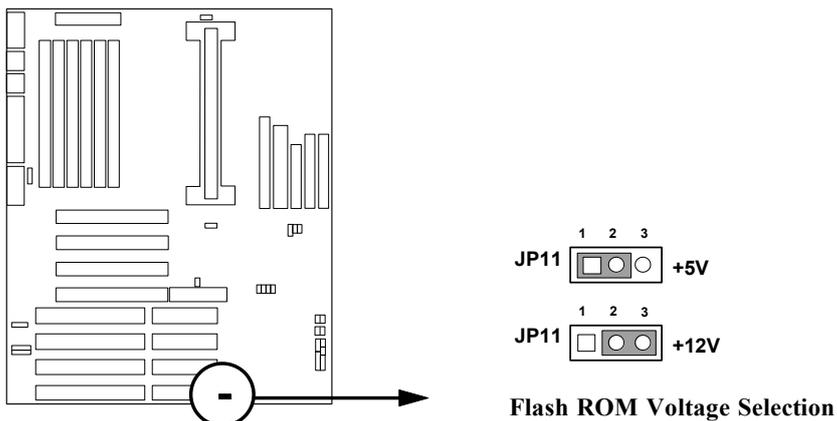
-
1. Set Jumpers on the Motherboard
 1. Install the CPU
 1. Install DRAM Modules
 1. Install Expansion card
 1. Connect Cables, Wires, and Power Supply
 1. Setup the BIOS Software

2-2-1 Jumper Settings

1. Flash ROM Voltage Selection: JP11 (Yellow color selector)

These jumpers set the voltage supplied to the Flash ROM. It depend on Flash ROM Brand.

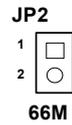
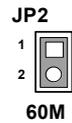
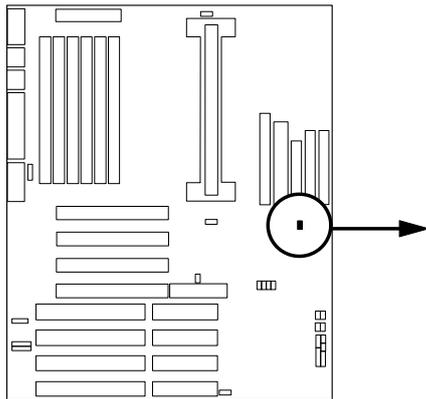
<u>Programming</u>	<u>JP11</u>	
+5V	1-2	(SST, Winbond)
+12V	2-3	(Intel, MXIC)



2. CPU External Clock (Bus) Frequency Selection: JP2 (white color selector)

These jumpers set the clock generator for what frequency to send to the CPU. The CPU's External Frequency (Bus Clock) times the Bus Ratio equals the cpu's Internal frequency (the actual speed of CPU).

<u>Selections</u>	<u>JP2</u>
60M	short
66M	open

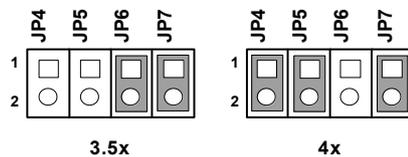
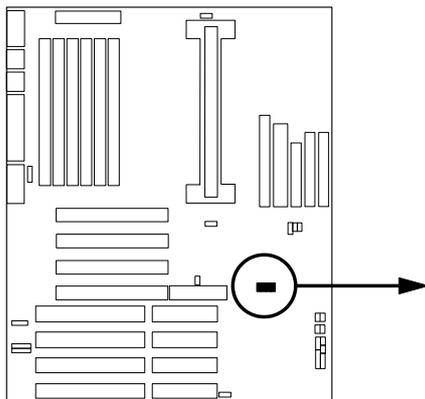


CPU External clock (Bus) Frequency Selection

3. CPU to Bus/Core Ratio Selection: JP4,JP5,JP6,JP7 (Blue color selector)

These jumpers set the ratio between Internal and External frequency within CPU. They must be set together with CPU's External Frequency.

<u>Selections</u>	<u>JP4</u>	<u>JP5</u>	<u>JP6</u>	<u>JP7</u>
3.5x	open	open	short	short
4x	short	short	open	short



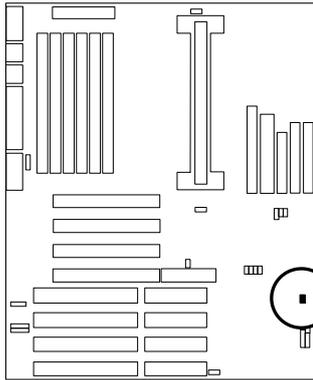
CPU to Bus/Core Ratio Selection

Table for CPU's setting:

Internal	Ratio	External	JP2	JP4	JP5	JP6	JP7
233MHz	3.5x	66MHz	open	open	open	short	short
266MHz	4.0x	66MHz	open	short	short	open	short

4. Soft Power On Button Connector: J19

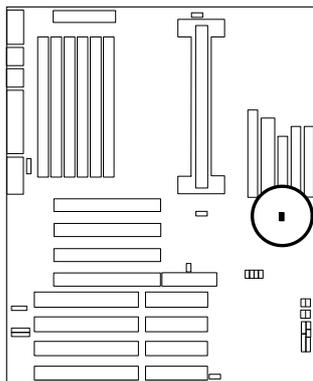
The Soft Power On connector is a 2-Pin connector. It is used to connect the push-button switch located on the front panel. System Power can be turned on or off by momentarily pressing the front panel switch. (default setting to turn off: 4 seconds).



Soft Power On Button Connector

**5. On-Board SCSI Controller Low byte Terminator Selection: J16
(For J-7FXA/SCSI only)**

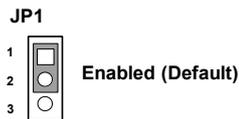
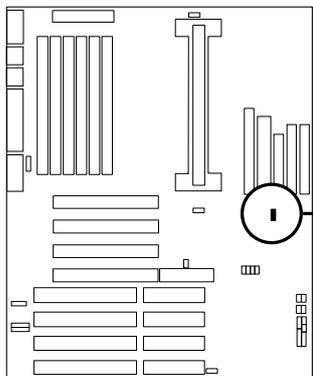
<u>Selections</u>	<u>J16</u>
Enabled	short
Select by BIOS	open (Default)



On-Board SCSI controller Low byte Terminator Selection

**6. On-Board SCSI Controller High byte Terminator Selection: JP1
(For J-7FXA/SCSI only)**

<u>Selections</u>	<u>JP1</u>
Enabled	1-2 (Default)
Select by BIOS	2-3

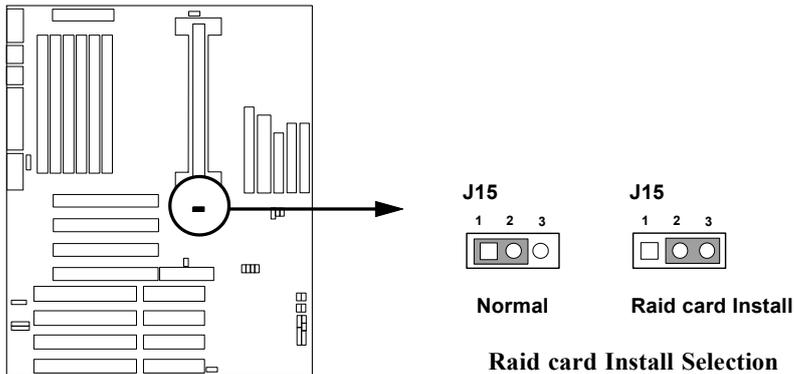


On-Board SCSI controller High byte Terminator Selection

7. Raid Card Install Selection: J15 (For J-7FXA/SCSI only)

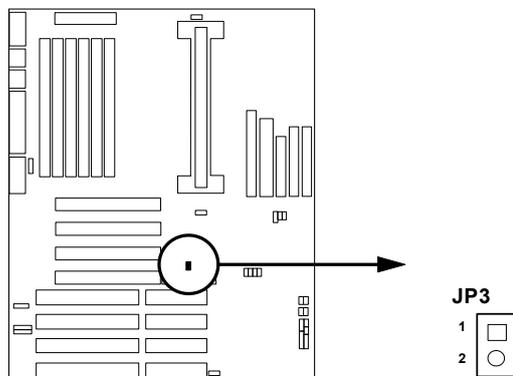
This jumper is setting for SCSI Raid Card, when SCSI Raid Card Install please set 2-3 closed, otherwise open it.

<u>Selections</u>	<u>J15</u>
Normal	1-2
Raid card Installed	2-3



8. SCSI Data Bus size 16 bit/8 bit Selection: JP3 (For J-7FXA/SCSI only)

Set this jumper according the type of SCSI devices. Set this jumper closed, if any 16-bit SCSI device is used, otherwise leave it open.



2-2-2 System Memory (DRAM)

This motherboard supports four 72-pin SIMMs of 4MB, 8MB, 16MB, 32MB, or 64MB to form a memory size between 8MB to 512MB. The DRAM can be either 60ns or 70ns Fast Page Mode or EDO RAM. The sequence must be Bank0 (SIMM1 & SIMM2); Bank1(SIMM3 & SIMM4); Bank2 (SIMM5 & SIMM6).

2-3 Central Processing Unit (CPU)

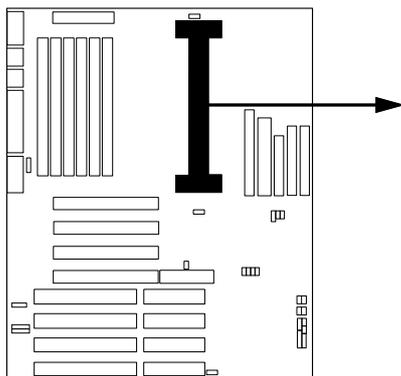
The motherboard provides a Slot-1 (J6) for Pentium II CPU. The CPU on board must have a fan or heat sink attached to prevent overheating.

WARNING: *Without a fan or heat sink, the CPU will overheat and cause damage to both the CPU and the motherboard.*

To install a CPU, first turn off your system and remove its cover. Locate the Slot-1 and place RETENTION MODULE as following:

IMPORTANT: *You must set jumper JP4, JP5, JP6, JP7 “CPU to Bus frequency Ratio” and jumpers JP2 “Bus Frequency Selection” on [page 6](#) depending on the CPU that you install.*

- ① Attach heat sink to the CPU.
- ② Place Part A on slot 1 and gently screw four corners on top of the motherboard.



Part A

- ③ Place Part B on motherboard.

-
-
- ④ Slide CPU in slot 1.
 - ⑤ Press Part C into two end of Part B.
 - ⑥ Press Part D into heat sink.

Part C

Part B

Part D

2-4 Expansion Cards

You must read the documentation come with expansion card for any hardware or software settings that may be required to setup your specific card.

Installation Procedure:

1. Read the documentation from your expansion card.
1. Set any necessary jumpers on your expansion card.
1. Remove your computer's cover.
1. Remove the bracket on the slot you intend to use.
1. Carefully align the card's connectors and press firmly.
1. Secure the card on the slot with the screw you remove in step 4.
1. Replace the computer's cover.
1. Setup the BIOS if necessary.
1. Install the necessary software drivers for your expansion card.

Assigning IRQs for Expansion Cards

Some expansion cards may require an IRQ to operate. Generally an IRQ must be exclusively assigned to only one device. In an standard design there are 16 IRQs available but most of them are occupied by the system and leaves 6 free for expansion cards.

Either ISA or PCI expansion cards may require an IRQs. System IRQs are available to cards installed in the ISA expansion first, and any remaining IRQs can be used by PCI cards. Currently, there are two types of ISA cards. An original ISA expansion card design, known as "Legacy" ISA cards, they request configuration of the card's jumpers manually and then install it in any available slot on the ISA bus, and others known as Plug and Play. You may use Microsoft's Diagnostic (MSD.EXE) utility included in the DOS directory to see a map of your used and any free IRQs. For Windows 95 users, the "Control Panel" icon in "My Computer", contains a "System" icon which gives you a "Device Manager" tab. Double clicking on a specific device gives you a "Resources" tab which shows the Interrupt number and address. Make sure that no two devices use the same IRQs, or your computer will experience problems when those two devices are in use at the same time.

To simplify this process the motherboard has complied with the Plug and Play (PNP) specification which was developed to allow automatic system configuration whenever a PNP-compliant card is added to the system. For PNP cards, IRQs are assigned automatically from those available.

If the system has both Legacy and PNP ISA cards installed, IRQs are assigned to PNP cards from those not used by Legacy cards. The PCI and PNP configuration of the BIOS setup utility can be used to indicate which IRQs are being used by Legacy cards. For older Legacy cards that do not work with the BIOS, you can contact your vendor for an ISA Configuration Utility.

An IRQ number is automatically assigned to PCI expansion cards after those used by Legacy and PNP ISA cards. In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI. To install a PCI card, you need to set something called the INT (interrupt) assignment. Since all the PCI slots on this motherboard use an INTA #, be sure that the jumpers on your PCI cards are set to INT A.

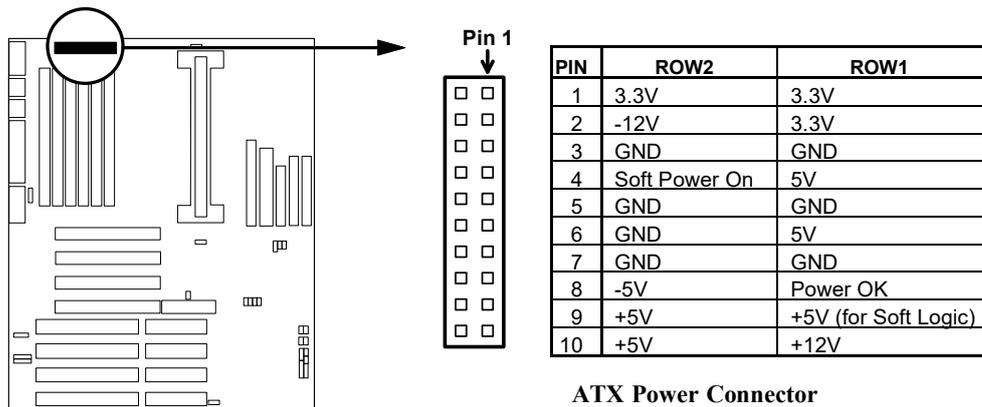
Assigning DMA Channels for ISA Cards

Some ISA cards, both Legacy and PNP may also need to use a DMA (Direct Memory Access) channel. DMA assignments for this motherboard are handled the same way as the IRQ assignment process described above. You can select a DMA channel in the PCI and PNP configuration section of the BIOS Setup utility. In the BIOS setup, you should choose "Yes" for those IRQ's and DMA's you wish to reserve for Legacy cards.

2-5 External Connectors

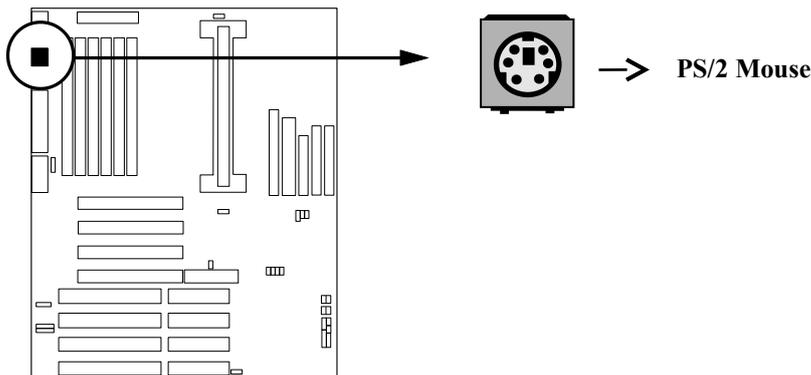
1. ATX Power Connector (20-pins block): J1

ATX Power Supply connector. This is a new defined 20-pin connector that usually comes with ATX case. The ATX Power Supply allows to use soft power on momentary switch that connect from the front panel switch to 2-pin Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.



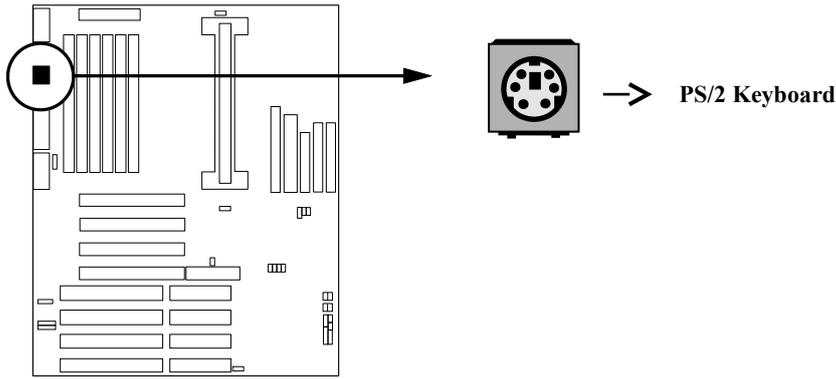
2. PS/2 Mouse Connector: J4 (MOUSE)

The PS/2 Mouse is a 6-pins miniature DIN connector. It is for a standard PS/2 style mouse.



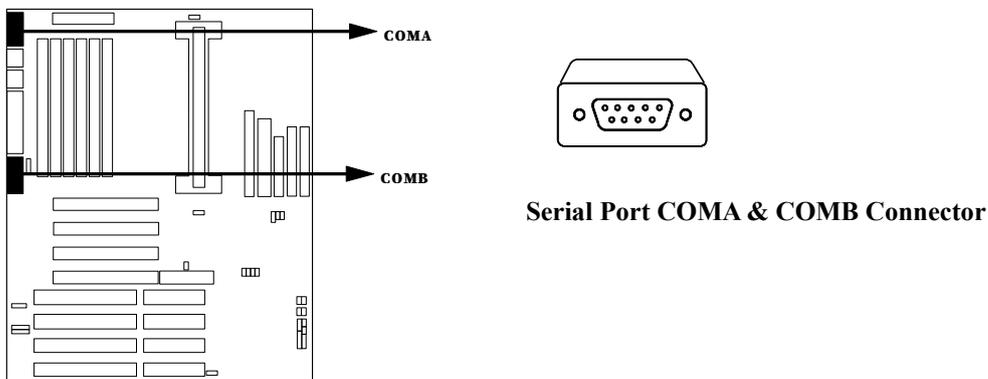
3. PS/2 Keyboard Connector: J5 (KEYBOARD)

The PS/2 Keyboard connector is a 6-pins miniature DIN connector. It is for a standard PS/2 style keyboard.



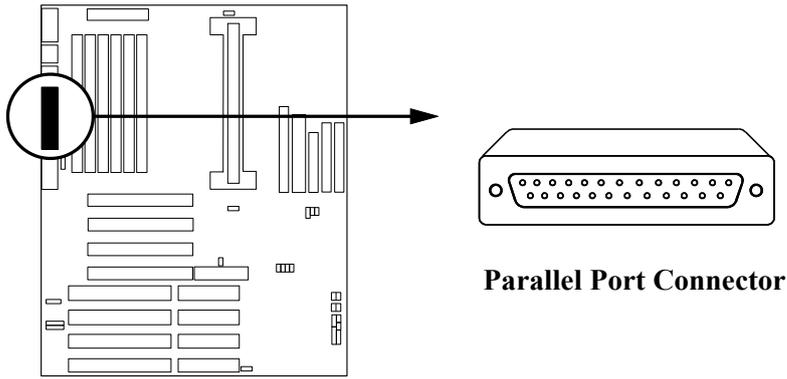
4. Serial Port COM1 and COM2 Connector: COMA, COMB

COMA and COMB are the 9-pin D-subminiature mail connector. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 “Peripheral Management Setup “ section for more detail information.



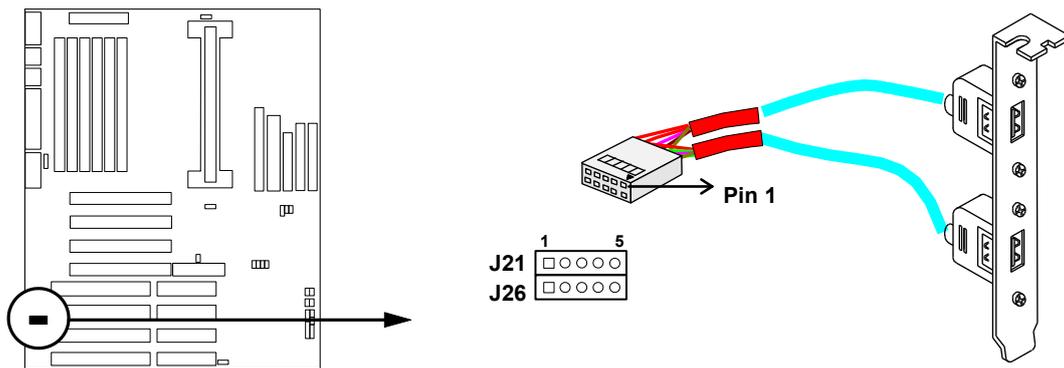
5. Parallel Port Connector: J7 (PARALLEL)

Parallel Port connector is a 25-pins D-Subminiature Receptacle connector. The On-board Parallel Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 “Peripheral Management Setup” section for more detail information.



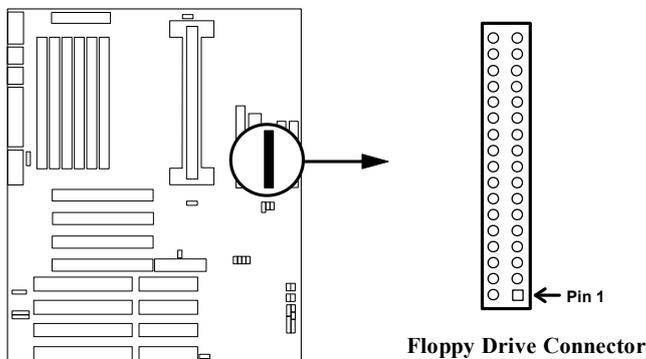
6. USB Bus connector (Two 5-pins blocks): J21, J26

These connectors support the provided twist pairs cables with mounting bracket (**Optional**). The two USB ports on the mounting bracket will be used for connect USB devices.



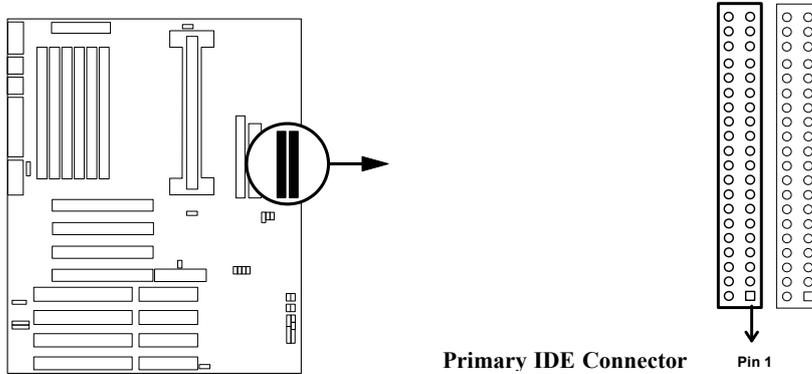
7. Floppy drive Connector (34-pins block): J11

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives.



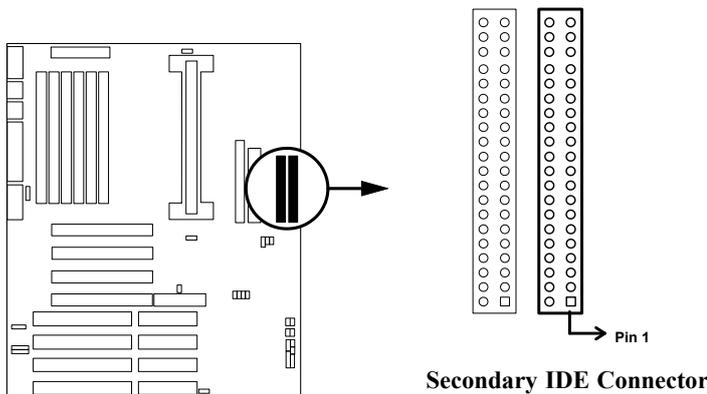
8. Primary IDE Connector IDE1 (40-pins block): J12

This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.



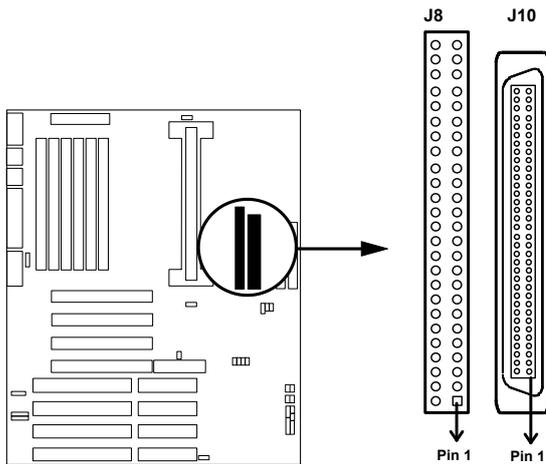
9. Secondary IDE Connector IDE2 (40-pins block): J13

This connector able to connect second set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also need to configure two hard disks as one for Masters and other for slave using one ribbon cable.



10. SCSI Interface Connector: J8, J10 (For J-7FXA/SCSI only)

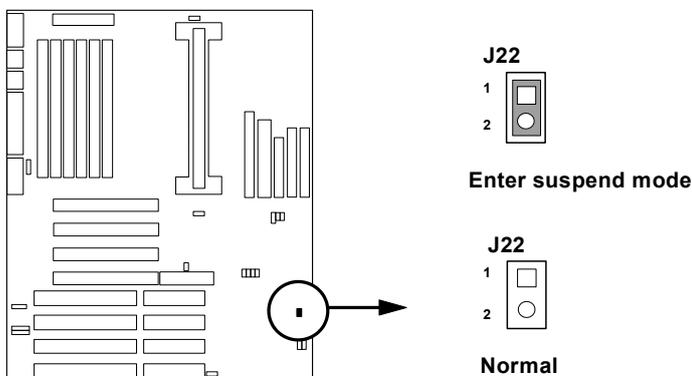
This Motherboard supports two SCSI Port Connectors, J8 is a 2X25 pin header for 8-bit Fast SCSI-II interface, J10 is a 68 pin Female Miniature receptacle header for 16-bit Fast and Wide SCSI-II interface. The SCSI Ports can be disabled through BIOS setup. Please refer to Chapter 3 “PCI / Plug and Play setup” section.



11. SMI suspend switch lead: J22

This allows the user to manually place the system into a suspend mode or “Green” mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure below) connects to the case-mounted suspend switch. If you do not have a suspend switch on your case, you may use the “Turbo Switch” connector connects to SMI suspend switch. SMI is activated when it detects a **short to open** therefore leaving it shorted will not cause any problems. At first time may require one or two pushes depending on the position of the switch. Wake-up function can be controlled by settings in the BIOS or by press any key from the keyboard (SMI lead cannot wake-up the system). If you want to use this connector “Suspend Switch”, in the POWER MANAGEMENT SETUP of the BIOS software should be change setting to **Enable** (see [page 27](#)).

<u>Selections</u>	<u>J22</u>
Enter suspend mode	short
Normal	open



12. Turbo LED switch: TBLED

The motherboard's turbo function is always on. The turbo LED will remain constantly lit while the system power is on. You may wish to connect the Power LED from the system case to this lead. See the figure on [page 17](#).

13.Reset switch lead: RESET

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

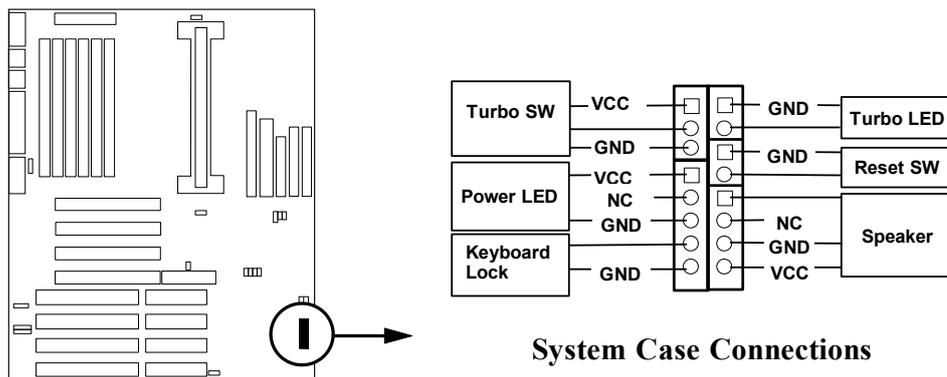
14.Keyboard lock switch lead: KEYLOCK

This 5-pin connector connects to the case-mounted key switch for locking the keyboard for security purposes. See the figure below.

15.Speaker connector: SPEAKER

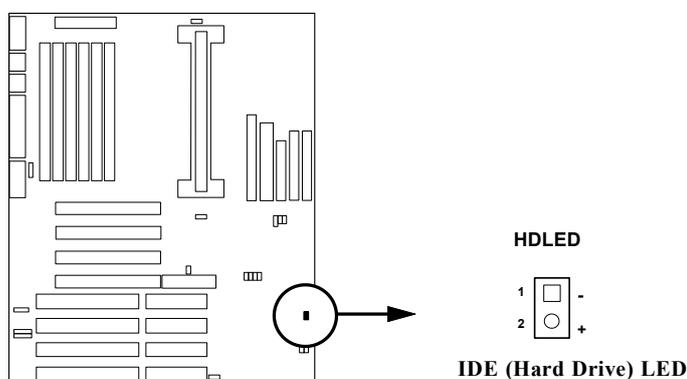
This 4-pin connector connects to the case-mounted speaker. See the figure below.

16.Turbo switch connector: TBSW



17.IDE activity LED: HDLED

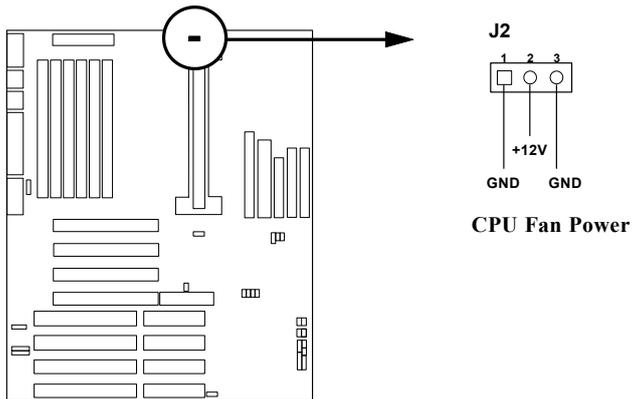
This connector connects to the hard disk activity indicator light on the case.



18. CPU cooling fan connector: J2

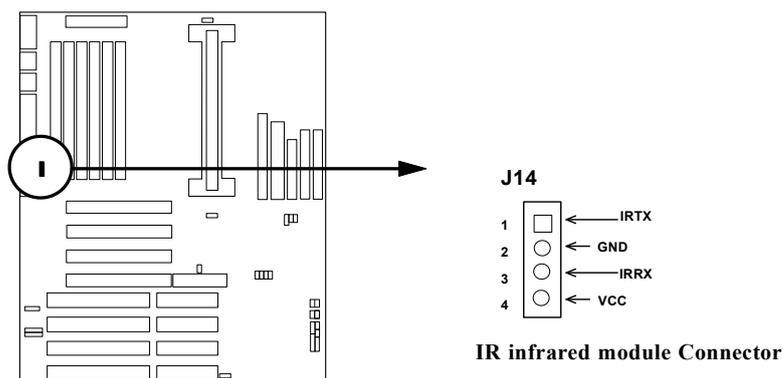
This connector supports a CPU cooling fan of 500mAMP (6WATT) or less. Depending on the fan manufacturer, the wiring may be different. The red wire should be positive, while the black should be ground. Connect the fan to the board taking into consideration the polarity of the connector.

WARNING: *Damage may occur to the motherboard and/or the CPU fan if these pins are incorrectly used.*



19. IR infrared module connector: J14

This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to small opening on system cases that support this feature. You must also configure the setting through BIOS setup on [page 31](#) to select HPSIR/ASKIR. Use the four pins as shown on the Back View and connect a ribbon cable from the module to the motherboard according to the pin definitions.



20. CMOS Battery and Ext Battery connector: J18

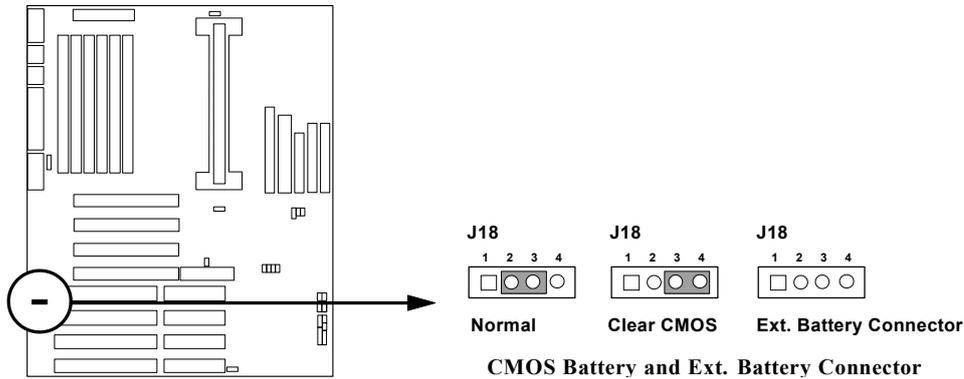
Selections

Normal
Clear CMOS

J18

2-3 (Default)
3-4 (Momentarily)

Ext. Battery Connector open



21. SCSI RAID Port-1 Slot: J17 (For J-7FXA/SCSI only)

This Slot is support Adaptec SCSI RAID controller for increasing reliability in file server under network system.

Chapter 3 AMIBIOS SETUP

AMIBIOS provides a built-in Setup program which allows user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS RAM so the data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM stay unchanged unless there is configuration change in the system, such as hard drive replacement or new equipment is installed.

It is possible that CMOS had a battery failure which cause data lose in CMOS RAM. If so, re-enter system configuration parameters become necessary.

Default Settings

Every option in AMIBIOS Setup contains two default values: an Fail-Safe default and the Optimal default value.

Optimal Defaults: The Optimal default values provide optimum performance settings for all devices and system features.

Fail-Safe Defaults: The Fail-Safe default settings consist of the safest set of parameters. Use them if the system is behaving erratically. They should always work but do not provide optimal system performance characteristics.

To enter Setup Program

Power on the computer system and press key immediately will bring you into BIOS CMOS SETUP UTILITY.

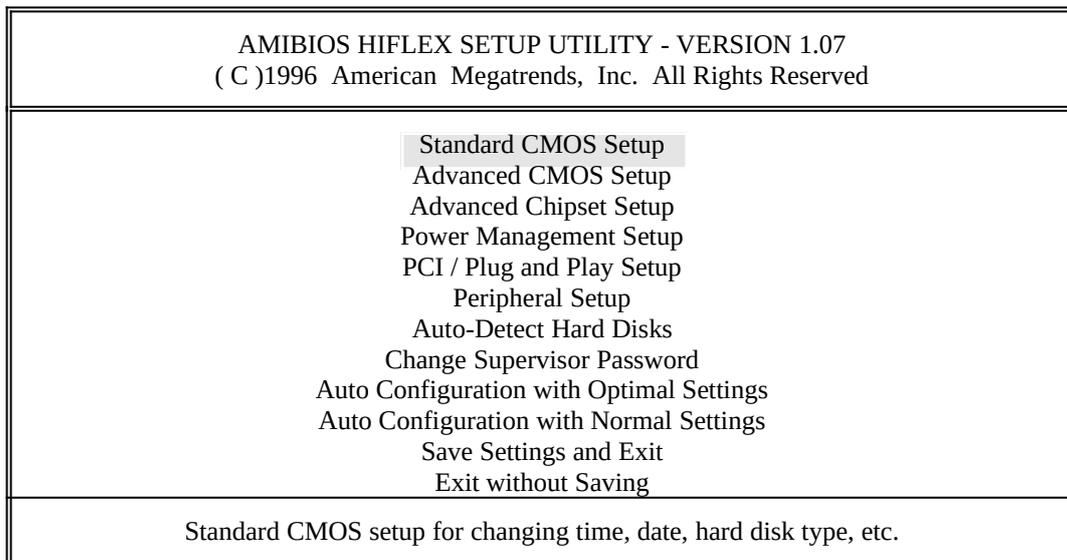


Figure 3-1

The menu displays all the major selection items and allow user to select any one of shown item. The selection is made by moving cursor (press any direction key) to the item and press <Enter> key. An on-line help message is displayed at the bottom of the screen as cursor is moving to various items which provides user better understanding of each function. When a selection is made, the menu of selected item will appear so the user can modify associated configuration

parameters.

3-1 STANDARD CMOS SETUP

Choose "Standard CMOS Setup" in the AMIBIOS HIFLEX SETUP UTILITY menu (Figure 3-1). The Standard CMOS Setup allows user to configure system setting such as current date and time, type of hard disk drive installed in the system, floppy drive type, and the type of display monitor. When a field is highlighted (direction keys to move cursor and <Enter> key to select), the entries in the field will be changed by pressing <PgDn> or <PgUp> keys or user can enter new data directly from the keyboard.

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.07 (C)1996 American Megatrends, Inc. All Rights Reserved									
Date (mm/dd/yyyy): Fri Apr 18, 1997									
Time (hh/mm/ss): 09:11:18									
Floppy Drive A: 1.2 MB 5 1/4"									
Floppy Drive B: Not Installed									
				LBA	Blk	PIO	32Bit		
	Type	Size	Cyln	Head	Wpcom	Sec	Mode	Mode	Mode
Pri	Master	: Auto			Off	Off	Auto	Off	
Pri	Slave	: Auto			Off	Off	Auto	Off	
Sec	Master	: Auto			Off	Off	Auto	Off	
Sec	Slave	: Auto			Off	Off	Auto	Off	
Boot Sector Virus Protection Disable									
Month : Jan - Dec					ESC : Exit ↑↓ : Sel				
Day : 01 - 31					PgUp/PgDn : Modify				
Year : 1901 - 2099					F2/F3 : Color				

Figure 3-2

- **Floppy Drive A, B**

Choose the Floppy Drive A or B to specify the floppy drive type. The settings are 360KB 5 1/4", 1.2MB 5 1/4", 720MB 3 1/2", 1.44MB 3 1/2", 2.88MB 3 1/2".

- **Pri Master, Pri Slave, Sec Master, Sec Slave**

Choose these types to configure the hard disk drive named in the option. When you press Enter key on a field the following parameters are listed: Type, LBA/Large Mode, Block Mode, 32Bit Mode, and PIO Mode. All parameters relate

to IDE drives except Type.

- **User-Defined Drive**

If you are configuring any 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, Heads, Write Precompensation, Landing Zone, Sectors, Capacity.

Specifications for SCSI hard disks need not to be entered here since they operate using device drivers and are not supported by any the BIOS. If you install any vendor's SCSI controller card, please refer to their respective documentation on how to install the required SCSI drivers.

- **Configuring IDE Drives**

If the hard disk drive to be configured is an IDE drive, select the appropriate drive field (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select Auto. AMIBIOS automatically detects the IDE drive parameters and displays them.

Note: If hard disk Pri Master/Slave and Sec Master/Slave were used Auto option, than the hard disk size and model will be auto-detect and display during POST.

- **Boot Sector Virus Protection:** During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the error message will appear, in the mean time, you can run an anti-virus program to locate the problem. Default value is Disabled.

3-2 Advanced CMOS Setup

Figure 3-3 shows manufacturer's default values of J-7FXA/J-7FXA SCSI.

AMIBIOS SETUP - ADVANCED CMOS SETUP (C)1996 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	Available Options: Disabled Enabled Cached
Pause on Config. Screen (Sec.)	Disabled	
Boot From SCSI/IDE	IDE	
BootUp Sequence	A:, C:, CDROM	
BootUp Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
Floppy Access Control	Normal	
HDD Access Control	Normal	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot To OS/2	No	

Internal Cache	Reserved	
External Cache	WriteBack	
System BIOS Cacheable	Disabled	
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

Figure 3 - 3

- **Quick Boot:** Set this option to Enabled to permit AMIBIOS to boot within 5 seconds. This option replaces the old above 1MB Memory Test option. The Optimal setting is Enabled. The Fail-Safe default setting is Disabled.

Setting Description

- Disabled ● Test all system memory.
 - Wait up to 40 seconds for READY signal from the IDE drive.
 - Wait up to 0.5 seconds after sending a RESET signal to the IDE drive to permit the IDE drive to send a READY signal.
 - Check if the key was pressed.
- 2. En ● All the functions above will be viceversa.
 - ab
 - le
 - d

- **Boot Up Sequence:** This option sets the sequence of boot drives that AMIBIOS attempts to boot from after AMIBIOS POST completes. The default settings are A: , C: , CDROM. The Optimal and Fail-Safe default settings are C: , A:, CDROM.
- **Floppy Drive Swap:** Set this option to Enabled to specify that floppy drives A: and B: are swapped. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.
- **Floppy Drive Seek:** When this option is set to Enabled, AMIBIOS performs a Seek command on floppy drive A: before booting the system. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.
- **Floppy Access Control:** Set floppy drive to normal access or READ-ONLY mode. The Optimal and Fail-Safe default settings are Normal.
- **HDD Access Control:** Set hard drive to normal access or READ-ONLY mode. The Optimal and Fail-Safe default settings are Normal.

-
- **PS/2 Mouse Support:** When this option is set to Enabled, AMIBIOS supports a PS/2 mouse. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.
 - **Primary Display:** This option configures the primary display subsystem in the computer. The settings are Mono (monochrome), 40CGA, 80CGA, OR VGA/EGA. The Optimal and Fail-Safe default setting are VGA/EGA.
 - **Password Check:** This option specifies the type of AMIBIOS password protection that is implemented. The Optimal and Fail-Safe default settings are Setup. The settings are Setup or Always.
 - **Setup:** The password prompt appears only when an end user attempts to run SETUP Utility.
 - **Always:** A password prompt appears every time the computer is powered on or rebooted.
 - **Boot To OS/2:** Set this option to YES when using OS2 operating systems with installed greater than 64MB of DRAM. The default is No.
 - **Internal Cache:** This option selects the type of caching algorithm used by AMIBIOS and the CPU for L1 cache memory (internal to the CPU). The Optimal and Fail-Safe default settings are WriteThru. The descriptions are list below:

setting	Description
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. The algorithm is set by the CPU.
 - **External Cache:** This option selects the type of caching algorithm used by AMIBIOS and the CPU for L2 secondary (external) cache memory. The Optimal default setting is Reserved. The Fail-Safe default setting is Disabled. The descriptions are list below:

setting	Description
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.
 - **System BIOS Cacheable:** AMIBIOS always copies the system BIOS from ROM to RAM for faster execution. Set this option to Enabled to permit the contents of the F0000h RAM memory segment to be written to and read from cache memory. The Settings are Enabled or Disabled. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.
 - C000, 16k Shadow

- C400, 16k Shadow
- These options specify how the contents of the video ROM are handled. The settings are:

Setting	Description
Disabled	The Video ROM is not copied to RAM.
Cached	The contents of the video ROM area from C0000h - C7FFFh RAM area can be written to or read from cache memory.
Shadow	The contents of the video ROM area from C0000h - C7FFFh are copied (shadowed) from ROM to RAM for faster execution.

- C800, 16k Shadow
- CC00, 16k Shadow
- D000, 16k Shadow
- D400, 16k Shadow
- D800, 16k Shadow
- DC00, 16k Shadow
- These options specify how the contents of the adapter ROM named in the option title are handled. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards, the Optimal and Fail-Safe default settings are Disabled. The settings are:

Setting	Description
Disabled	The specified ROM is not copied to RAM.
Cache	The contents of the ROM area are not only copied from ROM to RAM for faster execution, the contents of the RAM area can be written to read from cache memory.
Shadow	The contents of the ROM area are copied from ROM to RAM for faster execution.

3-3 Advanced Chipset Setup

Figure 3-4 shows manufacturer's default values of J-7FXA/J-7FXA SCSI.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP (C)1996 American Megatrends, Inc. All Rights Reserved		
Auto Configure DRAM Disabled	Timing	Available Options: Disabled Enabled
DRAM Speed (ns)	70	
DRAM Read Burst Timing (B/E/F)	x2/3/4	
DRAM Write Burst Timing (B/E/F)	x3/3/3	
RASx# to CASx# Delay	Enabled	
MA Wait State	0 W/S	
RAS Precharge	4 Clocks	

DRAM Parity/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	Disable	
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	
USB Function	Disabled	ESC:Exit ↑↓:Sel
USB Keyboard/Mouse Support	Disabled	PgUp/PgDn: Modify
		F2/F3 : Color

Figure 3-4

- **Auto Configure DRAM Timing:** Set this option to Enable if you want manually adjust the DRAM timing. The Optimal default setting is Enabled with DRAM Speed set to 60ns. The Fail-Safe default setting is Disabled.
- **DRAM Speed (ns):** This option specifies the RAS access time (in nanoseconds) for the DRAM used in the computer for system memory. The settings are 50, 60, or 70. The Fail-Safe default setting are 70.
- **CPU To IDE Posting:** Set this option to Enabled to enable posted messages from the CPU to the IDE CONTROLLER. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.
- **USWC Write Posting:** Set this option to Enabled to use USWC (Uncacheable, Speculatable, Write-Combined) memory. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.
- **CPU To PCI Write Posting:** Set this option to Enabled go give priority posted messages from the CPU to the PCI bus. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.
- **PCI To DRAM Pipeline:** Set this option to Enabled to enable the pipeline from the PCI bus to system memory. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.
- **PCI Burst Write Combine:** Set this option to Enabled to allow write instructions to be combined in PCI Burst mode. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.
- **Read Around Write:** Set this option to Enabled to allow read operations to bypass write operations in the memory controller. The settings are

Enabled or Disabled. The Optimal and Fail-Safe default settings are Enabled.

- **8-Bit I/O Recovery Times:** This option defines the recovery time from 1 to 8 for 8-Bit I/O.
- **16-Bit I/O Recovery Times:** This option defines the recovery time from 1 to 4 for 16-Bit I/O.

3-4 Power Management Setup

Figure 3-5 shows manufacturer's default values of J-7FXA/J-7FXA SCSI.

AMIBIOS SETUP - POWER MANAGEMENT SETUP (C)1996 American Megatrends, Inc. All Rights Reserved		
Power Management/APM	Disabled	Available Options: Disabled Enabled
Green PC Monitor Power State	Blank	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Stand By	
Hard Disk Time Out (Minute)	1	
Standby Time Out (Minute)	1	
Suspend Time Out (Minute)	1	
Slow Clock Ration	1:8	
Modem Use IRQ	N/A	
IRQ3	Both	
IRQ4	Both	
IRQ5	Ignore	
IRQ7	Monitor	
IRQ8	Ignore	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ12	Both	
IRQ13 Monitor	Ignore	
IRQ15	Monitor	
		ESC:Exit ↑↓ : Sel PgUp/PgDn : Modify F2/F3:Color

Figure 3-5

-
-
- Set this option to Enabled to enable the Intel 82ff0FX ISA power management features and APM (Advanced Power Management). The settings are Enabled, Inst-On (instant-on), or Disabled. The Optimal and Fail-Safe default settings are Disabled.
 - **Green PC Monitor Power State:** This option specifies the power state that the green PC-compliant video monitor enters when AMIBIOS places it in a power savings state after the specified period of display inactivity has expired. The settings are Off, Standby, Suspend, or Disabled. The Optimal and Fail-Safe default settings are Standby.
 - **Video Power Down Mode:** This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired. The settings are Disabled, Standby, or Suspend. The Optimal and Fail-Safe default settings are Disabled.
 - **Hard Disk Power Down Mode:** This option specifies the power conserving state that the hard drive enters after the specified period of hard drive inactivity has expired. The settings are Disabled, Standby, or Suspend. The Optimal and Fail-Safe default settings are Disabled.
 - **Hard Disk Time Out (Minute):** This option specifies the length of a period of hard disk drive inactivity. When this length of time expires, the computer enters power-conserving state specified in the Hard Disk Power Down Mode option (see the previous page). The settings are Disabled, 1 minute ~ 15 minutes. The Optimal and Fail-Safe default settings are Disabled.
 - **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 minute ~ 15 minutes. The Optimal and Fail-Safe default settings are 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 minute ~ 15 minutes. The Optimal and Fail-Safe default settings are Disabled.
 - **Slow Clock Ratio:** This option specifies the speed at which the system clock runs in power saving states. The settings are expressed as a ratio between the normal CPU clock speed and the CPU clock speed when the computer is in the power-conserving state. The settings are 1:1, 1:2, 1:4, 1:8, 1:16, 1:32, 1:64, or 1:128. The Optimal and Fail-Safe defaults are 1:8.
 - **IRQ3 ~ IRQ15:** When set to Monitor, these options enable event monitoring on the specified hardware interrupt request line. If set to 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.

- AMIBOIS reloads the Standby and Suspend time out timers if activity occurs on the specified IRQ line.

3-5 PCI / Plug and Play Setup

Figure 3-6 shows manufacturer's default values of J-7FXA/J-7FXA SCSI.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP (C)1996 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options: No Yes
Clear NVRAM ON every Boot	No	
On Board PCI SCSI Disabled	Controller	
PCI Latency Timer (PCI Clocks)	32	
PCI VGA Palette Snoop	Disabled	
Allocate IRO to PCI VGA	No	
PCI IDE BusMaster	Disabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	INTA	
OffBoard PCI IDE secondary IRQ	INTB	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 2	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	P PCI/PnP	
IRQ5	P PCI/PnP	
IRQ6	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	

IRQ10	PCI/PnP	ESC:Exit ↑↓:Sel PgUp/PgDn: Modify F2/F3 : Color
IRQ11	PCI/PnP	
IRQ12	PCI/PnP	
IRQ14	PCI/PnP	
IRQ15	PCI/PnP	

Figure 3-6

- **Plug and Play Aware O/S:** Set this option to Yes if the operating system in this computer is aware of and follow the Plug and Play specification. Currently, only Windows 95 is PnP-aware. The settings are Yes or No. The Optimal and Fail-Safe default settings are No.
- **PCI Latency Timer (PCI Clocks):** This option specifies the latency timings (in PCI clocks) for all PCI devices on the PCI bus. The Settings are 32, 64, 96, 128, 160, 192, 224, or 248. The Optimal and Fail-Safe default settings are 64.
- **PCI VGA Palette Snoop:** When this option is set to Enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example, if there are two VGA devices in the computer (one PCI and one ISA) and the:

VAG Palette snoop Bit Setting Action

Disabled	Data read and written by the CPU is only directed to the PCI VGA device's palette registers.
Enabled	Data read and Written by the CPU is directed to the both the PCI VGA device's palette registers and the ISA VGA device palette registers, permitting the palette registers of both device to be identical.

This option must be set to Enabled if an ISA adapter card requires VGA palette snooping.

The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.

- **PCI IDE Bus Master:** Set this option to Enabled to specify that the IDE controller on the PCI local bus includes a bus mastering capability. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.
- **Offboard PCI IDE Card:** This option specifies if an offboard PCI IDE controller adapter card is installed in the computer. You must specify the PCI expansion slot on the motherboard where the offboard PCI IDE controller is installed. If an offboard PCI IDE controller is used, the onboard IDE controller is automatically disable. The settings are Auto (AMIBIOS

automatically determines where the offboard PCI IDE controller adapter card is installed), Slot1, Slot2, Slot3, or Slot4. The Optimal and Fail-Safe default settings are Auto.

- If an offboard PCI IDE controller adapter card is installed in the computer, you must also set the Offboard PCI IDE Primary IRQ and Offboard PCI IDE Secondary IRQ options.
- Offboard PCI IDE Primary IRQ, Offboard PCI IDE Secondary IRQ: These options specify the PCI interrupt used by the Primary (or Secondary) IDE channel on the offboard PCI IDE controller. The settings are Disabled, Hardwired, INTA, INTB, INTC, or INTD. The Optimal and Fail-Safe default settings are Disabled.
- IRQ3 ~ IRQ15: These options specify the bus that the specified IRQ line is used on. These options allow you to reserve IRQs for legacy ISA adapter cards.
- These options determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these options to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as PCI/PnP.

3-6 Peripheral Setup

Figure 3-7 shows manufacturer's default values of J-7FXA/J-7FXA SCSI.

AMIBIOS SETUP - PERIPHERAL SETUP (C)1996 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Auto	Available Options: Auto Disable Enabled
OnBoard Serial Port1	Auto	
Serial Port1 Ring to Power on	Disabled	
OnBoard Serial Port2	Auto	
Serial Port2 Mode	Normal	
IR Duplex Mode	N/A	
IR Transmitter Polarity	N/A	
IR Receiver Polarity	N/A	
Serial Port2 Ring to Power On	Disabled	
OnBoard Parallel Port	Auto	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	Auto	
Parallel Port DMA Channel	N/A	
Power Switch Control	4SEC off	

RTC Alarm to Power On	Disabled	ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color
RTC Alarm Date	Disabled	
RTC Alarm Hour	12	
RTC Alarm Minute	29	
RTC Alarm Second	29	
OnBoard IDE	Both	

Figure 3-7

- **OnBoard FDC:** This option enables the floppy drive controller on the motherboard. The settings are Auto, Enabled or Disabled. The Optimal and Fail-Safe default settings are Auto.
- **OnBoard Serial Port1, OnBoard Serial Port2:** These option enable serial ports on the motherboard and specifies the base I/O port address for serial ports. The settings are Auto, Disabled, 3F8h, 2F8h, 3E8h, 2E8h. The Optimal and Fail-Safe default settings are Auto.
- **Serial Port 2 Mode:** This option enables the IR functions on the motherboard. The settings are Normal, IrDA, ASKIR. The Optimal and Fail-Safe default settings are Normal.
- **OnBoard Parallel Port:** This option enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The settings are Auto, Disabled, 378h, 78h, 3BCh. The Optimal and Fail-Safe default settings are Auto.
- **Parallel Port Mode:** This option allows the user to select the parallel port mode. The settings are Normal, Bi-Dir, EPP, ECP. The Optimal and Fail-Safe default settings are Normal.

Setting	Description
Normal	The normal parallel port mode is used. This is the default setting.
Bi-Dir	Use this setting to support bidirectional transfers on parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. 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 2.5Mbs. ECP provides symmetric bidirectional communications.

- **Power Switch Control:** This option allows user to manually place the system

into a suspend mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. The settings are 4 Seconds Off, 1 Touch, Suspend. The Optimal and Fail-Safe default settings are 4 Seconds Off.

- **RTC Alarm to Power On (ALi Chipset only):** This option enables computer wake up automatically within 31 days. The settings are Enabled or Disabled.
- **OnBoard IDE:** This option specifies the onboard IDE controller channels that will be used. The settings are Both, Disabled, Primary, Secondary. The Optimal and Fail-Safe default settings are Both.

3-7 Auto-Detect Hard Disks

The “Auto-Detect Hard Disks” Utility is a very useful tool, especially when you do not know which hard disk type you are using. You can use this utility to detect the correct disk type and install into the system automatically. You can also set DISK TYPE to “Auto” in the Standard CMOS Setup to have same result. The BIOS will Auto-detect the hard disk size and model on display during POST.

Figure 3-8 shows all the setting after you executed Auto-Detect Hard Disks function.

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.07									
(C)1996 American Megatrends, Inc. All Rights Reserved									
Date (mm/dd/yyyy): Fri Apr 18, 1997									
Time (hh/mm/ss): 09:11:18									
Floppy Drive A: 1.2 MB 5 1/4									
Floppy Drive B: Not Installed									
				LBA	Blk	PIO	32Bit		
Type	Size	Cyln	Head	Wpcom	Sec	Mode	Mode	Mode	Mode
Pri Master	: User	1626	3305	16	65535	63	On	On	4 Off
Pri Slave	: Not Installed								
Sec Master	: Not Installed								
Sec Slave	: Not Installed								
Boot Sector Virus Protection Disable									

Month : Jan - Dec
Day : 01 - 31
Year : 1901 - 2099

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

Figure 3-8

3-8 Change Supervisor Password

This option lets you configure the system to require a password each time the system boots or an attempt is made to enter the Setup program (Refer to Figure 3-3 for the details).

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.07 (C)1996 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
Enter new supervisor password:
Auto Configuration with Normal Settings Save Settings and Exit Exit without Saving
Change the supervisor password

Figure 3-9

3-9 Auto Configuration with Optimal Settings

This option provide optimum performance settings for all devices and system features; however, you need to be sure that your HARDWARE ENVIRONMENT are very stable before you enable this option.

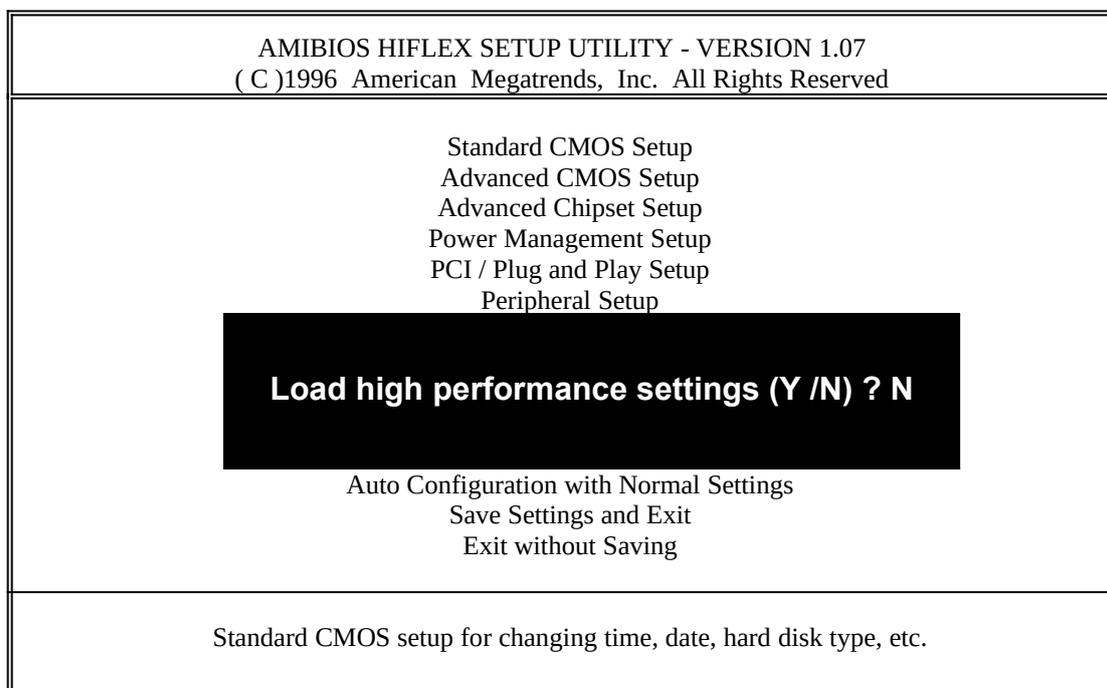


Figure 3-10

3-10 Auto Configuration with Normal Settings

This option consist of the safest set of parameters. Use them if the system is behaving erratically. They should always work but do not provide optimal system performance characteristics.

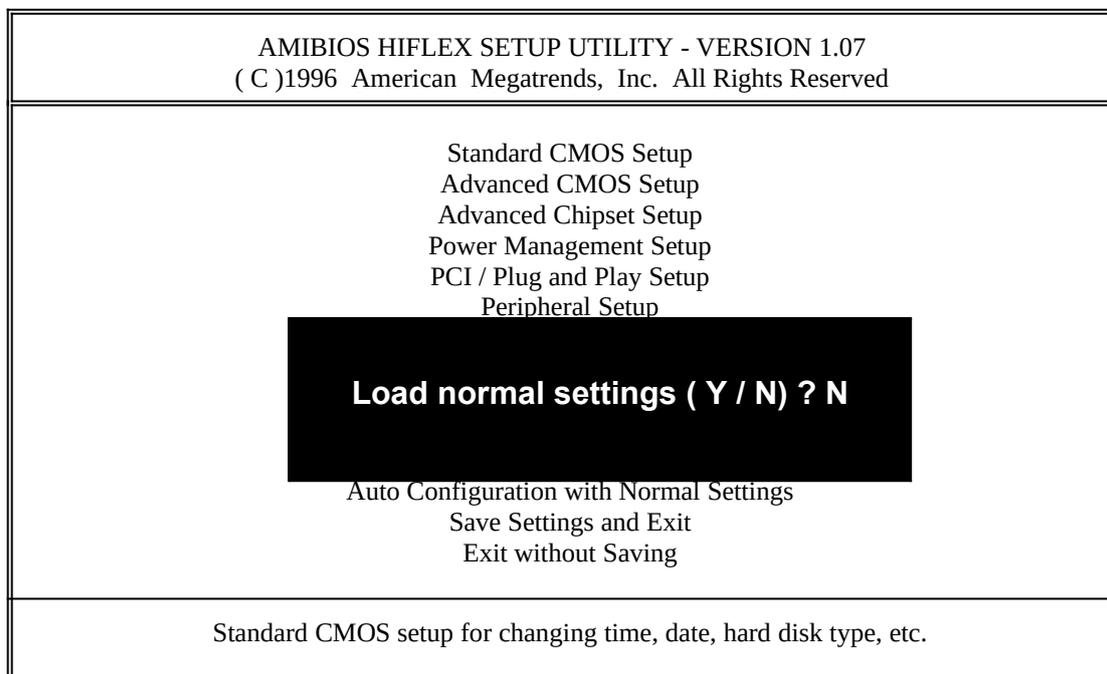


Figure 3-11

3-11 Save Settings and Exit

This option will bring you back to boot up procedure with all the changes you just made which are recorded in the CMOS RAM.

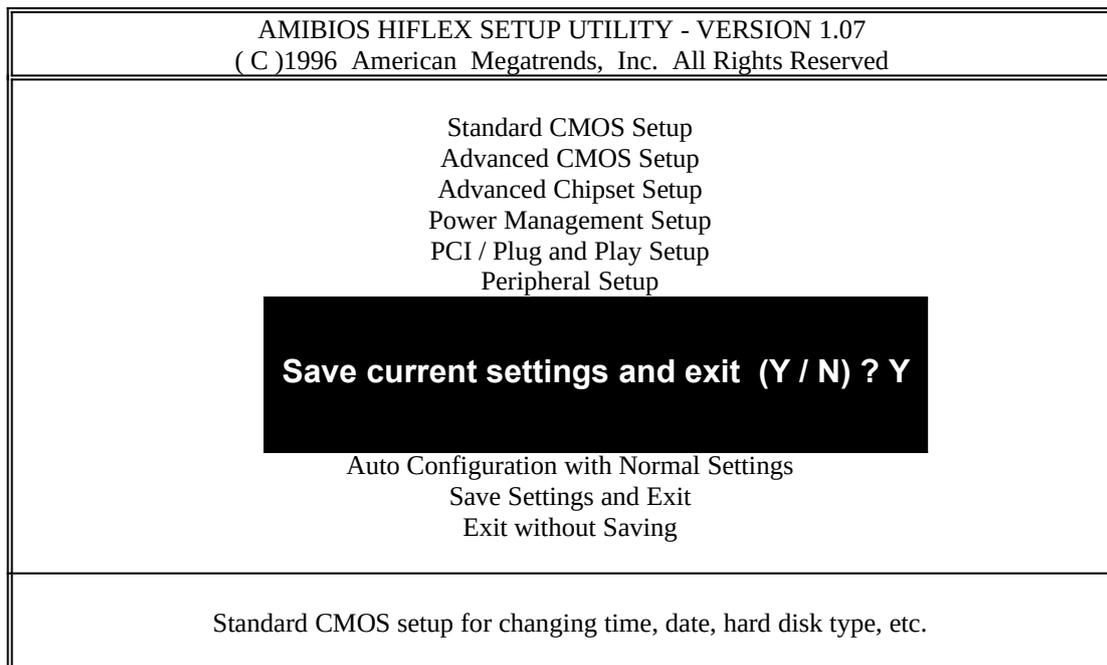


Figure 3-12

3-12 Exit Without Saving

This option will bring you back to normal boot up procedure without saving any data into CMOS RAM. All of the old data in the CMOS will not be changed.

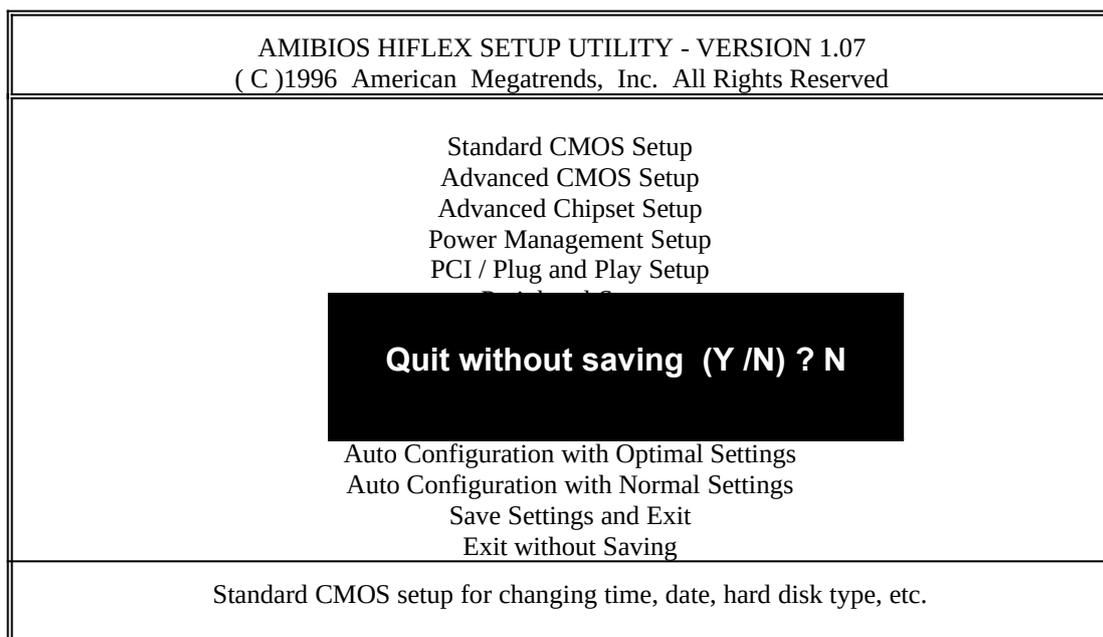


Figure 3-13