

Advanced Pentium Motherboard

User's Manual

IN530

USER'S MANUAL

DECLARATION

DECLARATION

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COMPLIANCE & CERTIFICATE

COMPLIANCE & CERTIFICATE

ISO 9001 Certificate:



This device was produced in our plant with advanced quality system certified by DNV QA Ltd. in according to ISO 9001.

This Certificate is valid for:

DESIGN & MANUFACTURE OF MOTHER BOARDS AND PERSONAL COMPUTERS.

CE Declaration:



CE marking is a visible declaration by the manufacturer or his authorized representatives that the electrical equipment to which it relates satisfies all the provisions of the 1994 Regulations.

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This product complies with FCC Rules Part 15 and has been tested, and complied with the EMI rules by a certified body.

In normal operation, there shall be no harmful interference caused by this device nor shall this devise accept any interference received, including interference that may cause

undesired operation of this product.

Year 2000 Compliance:



This product is tested to be qualified to bear the NSTL Year 2000 Compliant logo. Year2000 problem is mainly a problem of computer software (OS), and the hardware issue. With the support of BIOS on motherboard, the Y2K problem can be thoroughly conquered.

EASY INSTALLATION

EASY INSTALLATION

Easy Installation Steps



The following “Easy Installation” steps are for users accustomed to the assembly of a computer system. For those individuals requiring more specific information please refer to the more detailed descriptions located within the latter chapters of this manual. **Note: You must keep your power cable unplugged until the following installation steps are completed.**

Getting Start:

Touch a grounded metal surface to release static electricity stored in your body before unpacking your motherboard. For details please refer to **Precaution** section in **Chapter 3**.

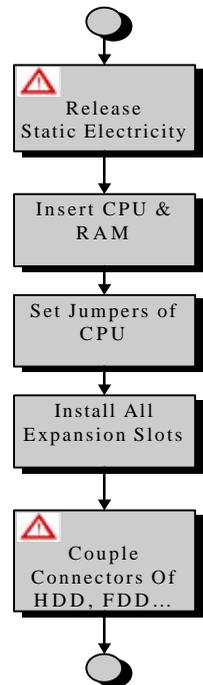
Install the CPU by correctly aligning the CPU with the Slot as noted in the motherboard diagram. Once aligned, press down on the CPU gently but firmly and lock it. Next, install the 3.3 volt unbuffered SDRAM into the 168 pin DIMMs. See **Sec. 3.2 & Sec. 3.3**.

Set CPU speed in according to **Sec.3.2**.

After completing the above steps, install any expansion Cards(PCI, ISA) into riser card and have the riser card installed firmly into the slot for riser card on board. See **Sec. 3.4**.

Plug in all cables included in the package except for the power cord. Please see **Sec. 3.5**.

Please recheck all steps to ensure no mistakes have been made and then plug in the power cord and turn on the power to enter the BIOS setup, **Chapter 4**.



EASY INSTALLATION

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1. INTRODUCTION

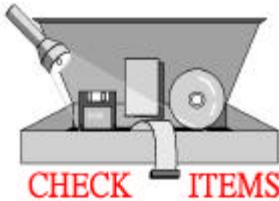
1 INTRODUCTION



How To Use This Manual

This manual provides information necessary for Original Equipment Manufactures (OEMs) and home users to build a PC-AT compatible system using the Pentium PCI/ISA motherboard. Just follow the installation procedure presented on the **EASY**

INSTALLATION Page and refer to the section number following each step if you require more detailed instructions.



Check Your Device Items

The standard package should contain following items marked with a “✓”. If you find any these items missing or damaged. Please contact your retailer.

- ✓ The IN530 motherboard
- ✓ 1 IDE ribbon cable
- ✓ 1 floppy ribbon cable
- ✓ 1 CD with drivers of Audio and SiS AGP Driver.

2. FEATURES

2 FEATURES

Photo Of The Motherboard

2. FEATURES



Features Of The Motherboard

The IN530 motherboard integrates the Pentium ® microprocessor, memory, I/O and AGP, and is designed to fit into a Micro ATX form factor chassis. Page 14 illustrates the Layout for the IN530 motherboard. Below lists the key features provided by this motherboard:

Processor (+Cache)

- ZIF Socket 7 mechanism.
- Support 66/75/83/90/95/100 MHz Host Clock.
- Intel Pentium® Family 90~233 MHz CPU with MMX™ technology or Cyrix 6X86L/MX/MII or AMD-K6/K6-2/K6-3 processor up to 450 MHz with MMX™ technology.
- 0/512KB Write Back Direct Mapped organization, Pipeline Burst Cache soldered on the motherboard.

Chipset

- SiS 530/5595 AGP/PCI/ISA Chipset
- Winbond 83877TF Super I/O Controller
- ESS 1938 PCI 3D Audio Chip

System Memory

- Two 168-pin DIMM sockets
- Minimum 8MB up to maximum 512 MB with un-buffer SDRAM.
- Support 66MHz / 100MHz SDRAM DIMM module.

Graphics Support

- Integrated H/W 3D AGP Graphic controller (2X Mode, 133 MHz), SiS 6326 enhanced.
- Supports AGP (Accelerated Graphics Port) for increased performance of Graphic Displays, special 3D operations in multimedia, and higher speed to satisfy the users optical vision.

PCI Bus Master IDE Controller

- Two PCI Bus Master IDE Ports (Up to 4 IDE Devices) for Tape Backup machines and CD-ROMs. Either the 5.25-inch or 3.5 inch (1.44MB or 2.88MB) floppy drives can be used without requiring an external card. Additionally, Floppy 3 mode (Japanese standard 3.5 inch disk drive, 1.2MB) and LS-120 floppy disk drives (3.5 inch disk drive: 120MB, 1.44MB, 720K) are also supported.
- Support Ultra DMA 33/66 MB/sec (ATA33/ATA66)
- Support PIO Mode 3, 4, run in 17 MB/sec.(Max).

Integrated I/O

2. FEATURES

- 1 Floppy Port (up to 2.88 MB), 1 Parallel Port (ECP/EPP).
- 2 Serial Ports (16C550 Fast UART Compatible).
- 1 PS/2 Mouse Connector, 1 PS/2 Keyboard connector
- 2 Standard USB Connector (48MHz).
- 1 VGA port

System BIOS

- 2MB with bootblock flash BIOS. AMD 29F002NBT.
- IDE Hard Disk Driver Auto-configuring
- Plug & Play support steerable DMA Channels and Interrupts. ISA Plug & Play
- PC98 and PnP compatible. Multi-Boot. PCI Add-In card Auto-Configure.
- Bootable from CD-ROM supported.

Green Features

- Power Management: APM 2.1.
- Additionally, with support for ACPI (Advanced Configuration and Power Interface) feature and On-Now, your system will become more wise in management of power.

Sound System

- ESS 1938 (SOLO-1) PCI 3D Audio Chip.
- 3 Audio Phone Jacks (Line out, Line in, Mic In)
- 1 MIDI/Game port, 1 CD In, 1 Modem In, 1 AUX In header.

Additional features

- Wake-On-LAN header
- Keyboard power on function (Optional)
- RTC Alarm power on function
- Modem Ring up function
- Front side USB header

Expansion Slots

- 1 ISA, 2 PCI expansion slots and one shared PCI.

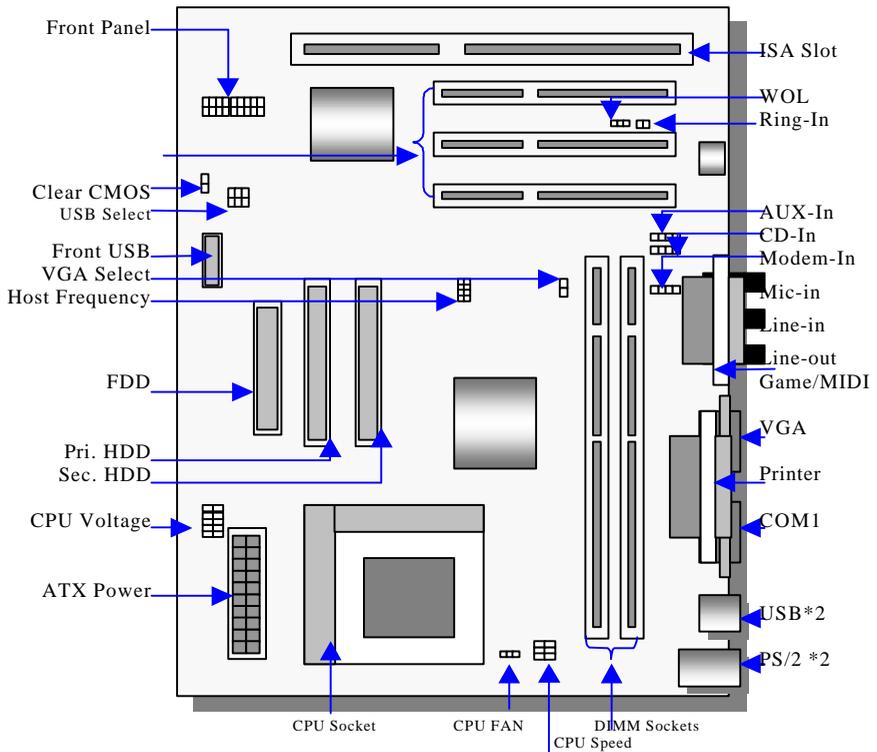
Mechanical

- This motherboard complies with the Micro ATX Form Factor specifications and is a four layers with dimensions of 9.6" x 8.1".

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3 INSTALLATION

Motherboard Layout & Main Parts



3.INSTALLATION

Significant Parts List

Front Panel Connectors

Power Switch	Sec. 3.5.5
Power LED	Sec. 3.5.5
Speaker	Sec. 3.5.5
Reset	Sec. 3.5.5
Sleep	Sec. 3.5.5
HDD LED	Sec. 3.5.5

Back Panel Connectors

PS/2-style keyboard and mouse connectors	Sec. 3.5.6
USB connectors	Sec. 3.5.6
Two serials ports	Sec. 3.5.6
One parallel port	Sec. 3.5.6
One Game Port	Sec. 3.5.6
Line-out	Sec. 3.5.6
Line-in	Sec. 3.5.6
MIC-in	Sec. 3.5.6

Expansion Slots/Sockets

SEC CPU Slot	Sec. 3.2
DIMM Sockets	Sec. 3.3
ISA/PCI Slots	Sec. 3.4

Power/IDE/FDD Connectors

IDE connectors	Sec. 3.5.1
Power connector	Sec. 3.5.4
FDD connector	Sec. 3.5.3

Additional Connectors

Clear CMOS	Sec. 3.5.7
Front Side USB	Sec. 3.5.7
USB Select	Sec. 3.5.7
VGA Select	Sec. 3.5.7
Ring-IN	Sec. 3.5.7
CPU Fan	Sec. 3.5.7
Modem-IN	Sec. 3.5.7
WOL Connector	Sec. 3.5.7
AUX-IN	Sec. 3.5.7
CD-IN	Sec. 3.5.7

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Precaution Before Start

Static Electricity Damage:



Static electricity can easily damage your motherboard. Observing a few basic precautions can help safeguard against damage that could result in expensive repairs. Follow the simple measures below to protect your equipment from static electricity damage:

1. Keep the motherboard and other system components in their anti-static packaging until you are ready to install them.
2. Touch a grounded surface before you remove any system component from its protective anti-static packaging. Unpacking and installation should be done on a grounded, anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same points as the anti-static mat.
3. After removing the motherboard from its original packaging, only place it on a grounded, anti-static surface component side up. Immediately inspect the board for damage. Due to shifting during shipping, it is suggested that the installer press down on the entire socket ICs to ensure they are properly seated. Do this only with the board placed on a firm flat surface.
4. During configuration and installation touch a grounded surface frequently to discharge any static electrical charge that may have built up in your body. The best precaution is to wear a grounded wrist strap. When handling the motherboard or an adapter card avoids touching its components. Handle the motherboard and adapter cards either by the edges or by the adapter card case-mounting bracket.

Misplaced Jumper Damage:

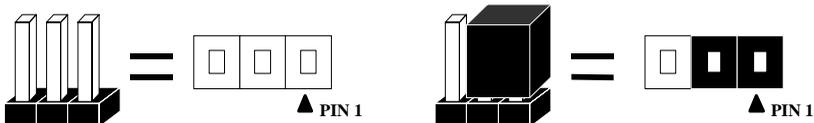


There are critical headers used for connectors or power sources. These are clearly marked separately from the jumpers listed in Motherboard Layout. Incorrectly setting jumpers and connectors may lead to damage to your motherboard. Please pay special attention not to connect these headers in wrong directions.

3.INSTALLATION

3.1 Slots And Connectors

This motherboard requires jumper setting for CPU speed. Please refer to Jumper setting List in sec.3.2.2.



In following pages, the triangle ▲ mark stands for pin 1 of connectors.

Slots/Connectors List

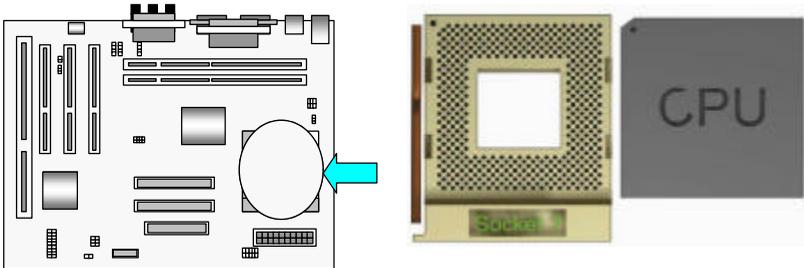
J1: VGA Port	J2: Keyboard / Mouse
J4: COM1	J5: USB1 / USB2
J8: Printer	J12: COM2 (Reserved)
J13: PCI 3	J14: PCI 2
J15: PCI 1	J16: Ring-IN
J17: WOL (Wake On LAN)	J18: CPU Fan
J19: Secondary IDE	J20: Primary IDE
J21: Floppy	J22: Front Panel
J23: ATX-Power	J24: Front USB
J25: Speaker (Reserved)	J26: ISA 1
J27: Line-in, Line-out and Mic-in	J28: AUX-IN
J29: CD-In	J30: Game / MIDI
J31: MODEM-In	

JP1:	VGA Select Jumper
JP2/JP3/JP4:	CPU Speed Ratio
JP5/JP6/JP7/JP8:	CPU Host Frequency
JP10:	USB Select
JP11/12/13/14/15:	CPU Core Voltage
JP16:	Clear CMOS

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3.2 CPU (Central Processing Unit)

This motherboard provides a Socket 7 for Pentium family processor. To complete CPU installation, please install CPU to socket firmly and arrange jumper settings carefully, presented in sec. 3.2.1 and 3.2.2.

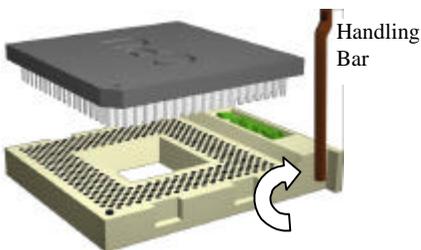


3.2.1 Install CPU

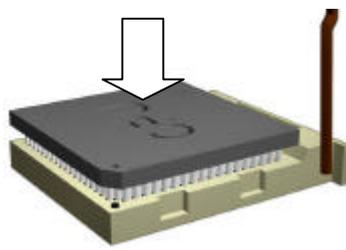
Please follow the below steps to install your CPU, and configure the types and speed in according to Processor Jumper Setting List.

Step 1: Pull the handling bar of the socket upward to the other end to loosen the socket's openings.

Step 2: Place the CPU on the middle of the socket, orienting its beveled corner to line up with the socket's beveled corner. Make sure the pins of the CPU fit evenly to the socket openings.



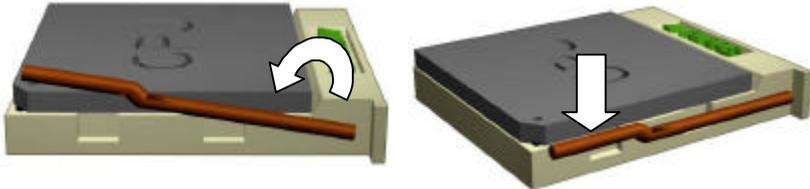
Step 1: Pull handling bar



Step 2: Place CPU

3.INSTALLATION

Step 3: Replace the handling bar downward to fasten the CPU to the socket.

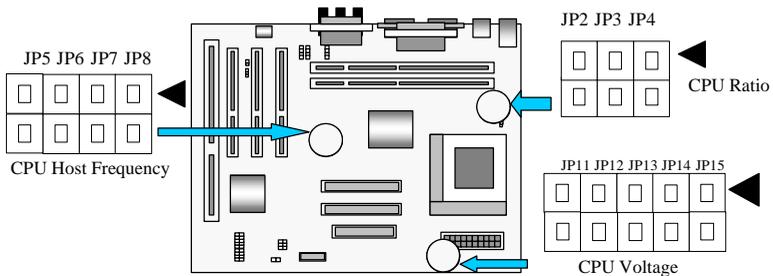


Step 3: Fasten the CPU to socket.

Warning : It is strongly recommended that a heatsink and CPU cooling fan be used to prevent the CPU from overheating. Applying a thermal of jelly between the CPU and the heatsink/fan will further cool the CPU.

3.2.2 Set CPU Frequency/Voltage/Speed

For different CPU speeds, you have to configure the jumper settings for your CPU. Please refer to the following figure and tables to carefully finish it.



Now follow the below steps to configure your CPU settings.

Step 1: Setting CPU Host Frequency (JP5, JP6, JP7, JP8)

Before setting CPU Host Frequency, one thing must be strongly concerned that the 100 MHz CPU Host Frequency only supports the DIMMs with PC/100-compliant. Since most systems will not even boot if non-compliant modules are used because of the strict timing issues involved under this speed, please be well learned that your CPU speed and DIMM module speed indeed match for each other.

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Host Freq.	JP5	JP6	JP7	JP8
66				
75				
83				
90				
95				
100				

3.INSTALLATION

Step 2: Setting CPU Core Voltage (JP11, JP12, JP13, JP14, JP15)

Host Freq.	JP11	JP12	JP13	JP14	JP15
1.8V					
2.1V					
2.2V					
2.3V					
2.4V					
2.8V					
2.9V					
3.1V					
3.2V					

3.INSTALLATION

Step 2: Setting CPU Speed (JP2, JP3, JP4)

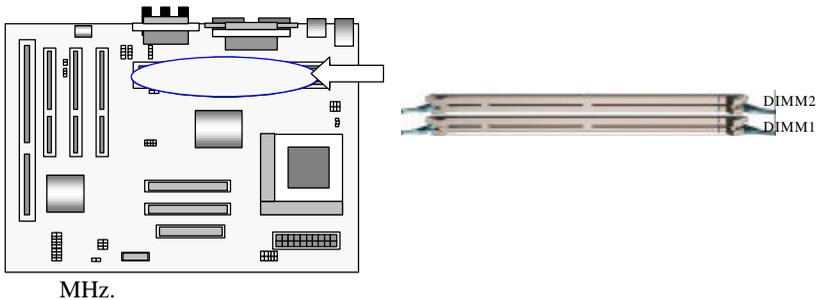
CPU Ratio	JP2	JP3	JP4
X1.5 / X3.5			
X2 / X6			
X2.5			
X3			
X4			
X4.5			
X5			
X5.5			

3.INSTALLATION

3.3 System Memory (DRAM)

3.3.1 DIMM (Dual Inline Memory Module)

The IN530 features two 168-pin DIMM sockets, share memory module. If you have only one DIMM RAM, note that you must insert it into DIMM 1. You can configure the system memory size from 8MB to 512 MB in a variety of ways by using different combinations of the three 168-pin DIMM. Note that you must use only PC/100-compliant DIMMs if the CPU Host frequency was set in 100



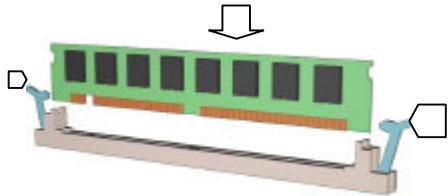
MHz.

3.3.2 Installation Procedure

Step1: Pin 1 of the DIMM must match pin 1 of the DIMM socket.

Step2: Insert the DIMM module into the DIMM socket vertically. After inserting the DIMM module completely into the socket, push up on the socket latches securing the DIMM into place.

If pin 1 of the DIMM module does not line up with pin 1 of the socket, the DIMM module will not be inserted correctly into the socket.



Be careful not to misfit the DIMM Module into DIMM sockets in wrong direction. This module can be inserted into DIMM socket only one way. Please note the “▲” for pin 1 location. To release the memory module, push both latches down and carefully

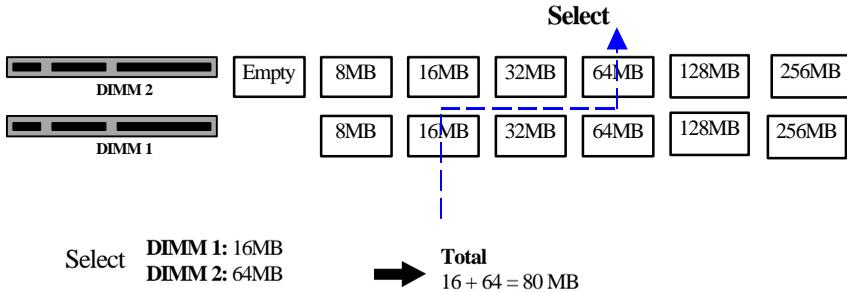
3.INSTALLATION

rock the module forward and backward while slowly lifting it upward.

3.INSTALLATION

3.3.3 DIMM Module Combinations

Each DIMM socket can be inserted with 8MB, 16MB, 32MB, 64MB, 128MB, 256MB DIMM. The total combinations are, $6*7 (=42)$ selections. You can refer to the following figure to select one way to insert your DIMM, for example:



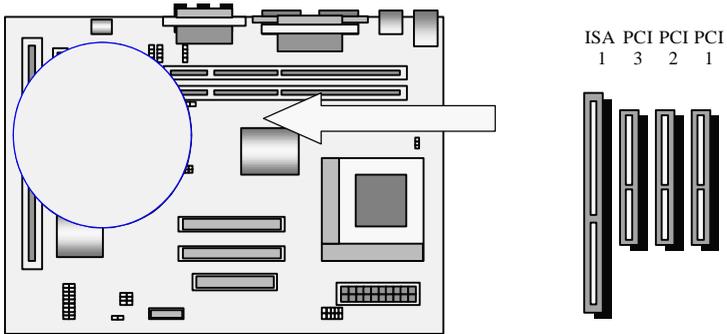
To select 1 out of 6 items (8MB, 16MB, 32MB, 64MB, 128MB, 256MB) in DIMM1. Then, repeat again in DIMM2 from 7 items (Empty, 8, 16, 32, 64, 128, 256 MB) to go through your own path.

A total of 42 combinations let you insert your DIMM modules in any way you prefer.

Note: Never leave the DIMM 1 empty.

3.INSTALLATION

3.4 Expansion Slots



This motherboard contains 4 expansion slots onboard. One 16-bit ISA Bus, two 32-bit PCI expansion slots, one shared PCI as shown above.

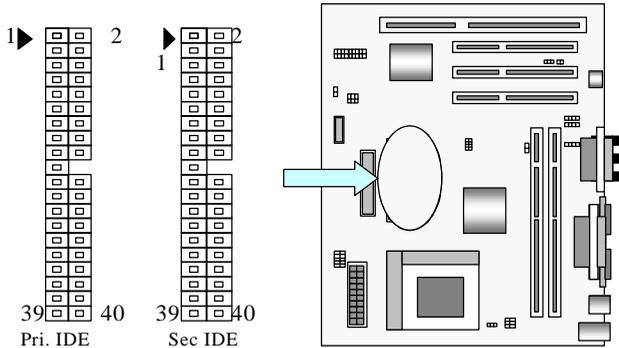
All three PCI expansion slots accept PCI as master cards and are fully supported by the PCI 2.1 specification.

To install expansion cards, please read the expansion card's documentation for instructions and cautions.

3.INSTALLATION

3.5 Connectors

This IN530 motherboard contains IDE, floppy, power input, front panel, back panel and additional connectors.



3.5.1 Primary IDE Connector (J20, 39-pin block, Black)

This connector supports two primary channel IDE devices via a ribbon cable. When two IDE devices are installed using the primary IDE connector, make sure that the second IDE device is set to slave mode as indicated in the device's manual.

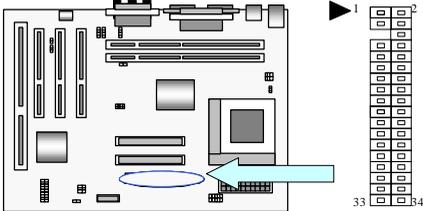
3.5.2 Secondary IDE Connector (J19, 39-pin block, White)

This connector supports two secondary channel IDE devices as well as the 120MB Floppy drives via a ribbon cable. When two IDE devices are installed using the secondary IDE connector, make sure that the second IDE device is adjusted to slave mode as instructed in the device's manual.

WARNING: When you connect a ribbon cable to these ports, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 edge of the onboard connector.

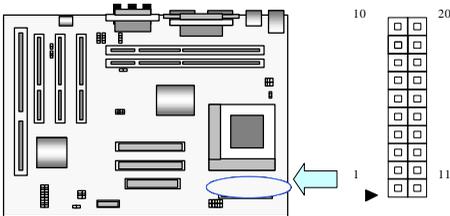
3.INSTALLATION

3.5.3 Floppy Drive Connector (J21, 33-pin block)



The FDC sub-system can control three types of floppy drives (1.2, 1.44 and 2.88MB) or compatible tape drives. The connection to the floppy drive is via a header (J19). The floppy disk interface includes 48mA drivers and inputs on the drive interface.

3.5.4 Power Input Connector (J23, 20-pin block)

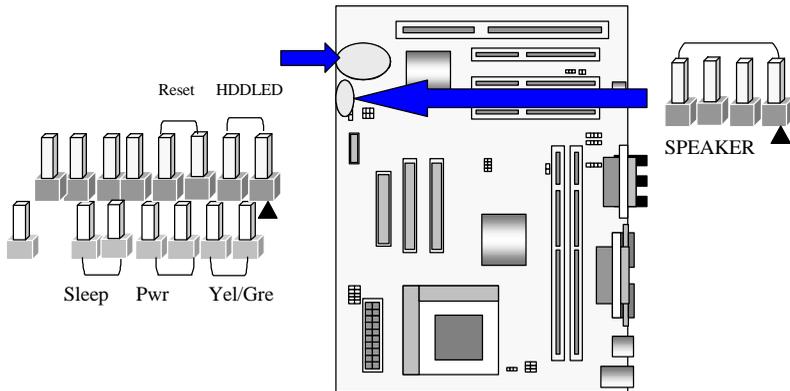


This connector supports a standard ATX power supply. When connecting, make sure the lock key matches the hook attached on a power supply cable. The power cord should be unplugged when you connect it.

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3.5.5 Front Panel connectors

Front Panel includes headers for the following six I/O connectors:
Power Switch, Power LED, Speaker, Reset, Sleep and HDD LED.



Reset Switch Connector (J22, 2-pin)

This connector supports the front panel case-mounted reset button. It is advised that the reset switch be used for rebooting the system in order to extend the life of the system's power supply.

HDD (IDE) LED Connector (J22, 4-pin)

The IN530 supports one straight 4-pin header for connecting to front Panel Hard Disk activity LED indicator.

Sleep Switch (J22, 2-pin)

When the APM (Advanced Power Management) feature is enabled in the system BIOS and the operating system's APM driver is loaded, the system can enter the sleep (standby) mode in one of the following ways:

- ◆ Optional front panel sleep/resume button
- ◆ Prolonged system inactivity using the BIOS inactivity timer feature (Section 4.5)

The 2-pin header supports a front panel sleep/resume switch, which must be a

3.INSTALLATION

momentary SPST type that is normally open

Power Switch (J22, 2-pin)

This connector supports the ATX case-mounted Power Switch, which in turn supports System Suspend function. When the BIOS sets the Power Button function to “Delay 4 sec.”, the system can be set to the suspended mode once you push the power switch for no longer than 4 seconds. If the power switch is pushed down for over 4 seconds the system will be totally Power Off. When the BIOS setting sets the Delay 4 second to “Instant-off”, then Power Switch function work as regular power switch.

Power LED (J22, 2-pin)

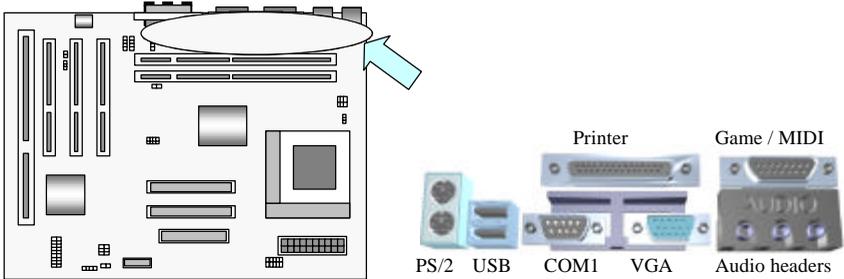
This header can be connected to a 2-color LED that will light yellow or green when the computer is in suspend or normal operation.

Speaker Connector (J25, 4-pin)

It is used to drive a chassis-mounted speaker if desired. Or this header will be removed and replaced with an integrated Buzzer.

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3.5.6 Back Panel Connectors



PS/2 Keyboard and Mouse Ports (J2)

The motherboard offers 1 PS/2 Keyboard and 1 PS/2 Mouse port.



Universal Serial Bus (USB) Ports (J5)

The motherboard has two USB connectors. USB devices provide a more convenient operating environment and improve data transferring capacity. True Plug & Play, this new bus technology will support over 127 different peripherals through a Hub.



3.INSTALLATION

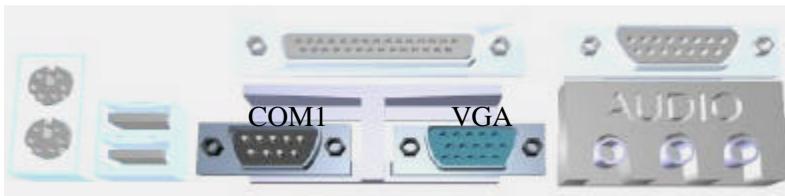
Parallel Port (Printer, J8)

The IN530 includes a parallel port (EPP/ECP compatible). The parallel port is capable of being disabled or remapped to either the secondary LPT address or the primary LPT address through BIOS if another parallel port is installed.



Serial Port/VGA Port (COM1, J4/ VGA, J1)

The motherboard has two serial ports (one on rare panel, one on board). The electrical characteristics are compliant with the EIA-232-D Serial Communications Specifications. The serial ports may be remapped over other installable serial ports or disabled through the BIOS.



This product integrate the AGP function via a VGA port beside the COM1. The Accelerated Graphics Port (AGP or A.G.P.) is a high performance interconnect targeted at 3D graphical display applications.

3.INSTALLATION

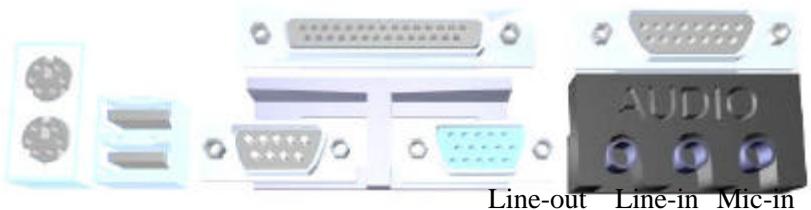
GAME / MIDI Port (J30)

The IN530 integrate a Game/MIDI port. This port can let you pulg a joystick or MIDI device.



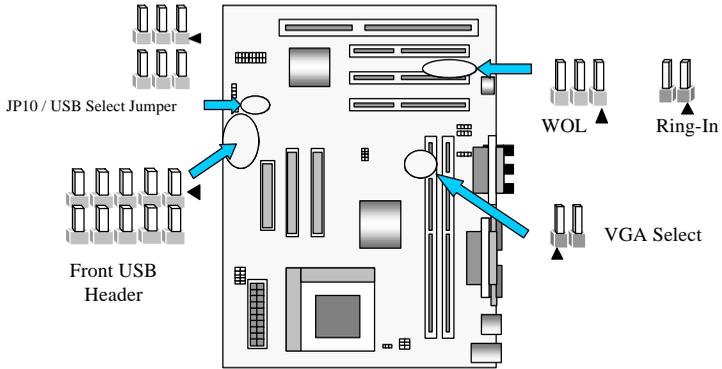
Audio Port (Line-in, Line-out, MIC-in) (J27)

The IN530 also provides external sound system through a user accessible stereo jack connector soldered to the PWA.This jack allow the connection of self-amplified speakers, Line-in voice input and MIC-in voice input.



3.INSTALLATION

3.5.7 Additional Connectors



Front USB Header (J24, 10-pin)

You can use either this Front USB or Back Panel USB by setting the USB Select jumper. Following table shows the jumper settings.

USB Select Jumper

USB Select	Front USB (J24)	Back USB (J5-2)
JP10		

WOL (Wake On LAN) (J17, 3-pin)

This header is used for remote wakeup of the computer through a network. WOL requires a PCI add-in network interface card (NIC) with remote wakeup capabilities. The remote wakeup header on the NIC must be connected to the onboard Wake on LAN header. For Wake on LAN, the 5-V standby line for the power supply must be capable of delivering 5V±5% at 720mA.

3.INSTALLATION

Ring In (J16, 2-pin)

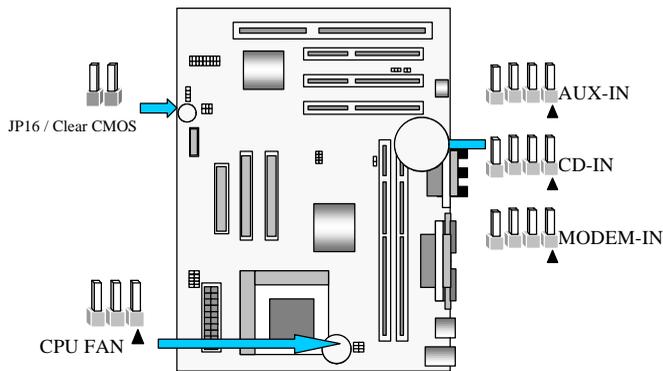
This header is used for remote wakeup of the computer through a modem. Ring-In requires an add-in modem card with remote wakeup capabilities. The remote wakeup header on the add-in modem card must be connected to the onboard Ring-In header.

A connector is available for Modem In from PCI/ISA Modem drives.

VGA Select (JP1, 2-pin)

This header is used for selection of onboard VGA port or Add-in VGA card. To use the onboard VGA function, please leave the jumper uncapped.

3.INSTALLATION



Clear CMOS (JP16, 2-pin)

You can insert a cap over this header to clear the CMOS data and reload the default settings.

CPU Fan (J18, 3-pin)

Your Pentium CPU may have an attached heatsink and Fan; this connector is for the CPU Fan.

AUX-IN Header (J28, 4-pin, White)

Access to the AUX-In header for audio input from AUX devices.

CD-IN Header (J29, 4-pin, Black)

A connector is available for audio input from CD-ROM drives.

MODEM-IN Header (J31, 4-pin, Green)

A connector is available for Modem In from PCI/ISA Modem drives. such as speakerphones, fax modems, and answering machines..

3.INSTALLATION

Ready To Turn On Power

◆ Check Again



1. Is the CPU installed exactly and firmly into socket (Sec. 3.2)?
2. Are all the DRAM modules installed properly (Sec. 3.3)?
3. Did you insert expansion card (VGA, Sound.... etc.) already (Sec. 3.4)?
4. Are you sure that all the connectors (described in Sec 3.5) have been connected to their variable devices (Sec. 3.5)?

◆ Yes, I have checked and assured the above steps!



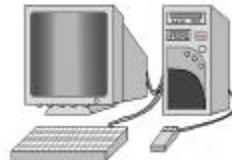
Now get ready to turn on your device by the following steps.

1. Mount your motherboard to the chassis frame and close the case cover.
2. Switch off all power.
3. Connect the power supply cord into inlet of the system case.
4. Connect the power supply cord into an outlet of power supply.
5. Connect Monitor signal cable to system VGA port, and the monitor power cord to power outlet.
6. Now turn on monitor and system power.

After Power on, The power LED on the front panel of the system case will light. For ATX power supplies, the system LED will light when the ATX power switch is pressed.

The system will then do a power-on tests item by item, and additional messages will appear on screen. If the screen blinks or the tests stops more than 30 seconds, the system may have failed the power-on test. If so, please recheck the above steps or call your retailer for assistance.

If the power-on test goes well, hold down <F2> button on the keyboard to enter BIOS Setup. Next, follow the instructions in the next chapter, **BIOS SETUP**.



3.INSTALLATION

4. BIOS SETUP

4 BIOS SETUP



The IN530 motherboard uses AMI BIOS, which is stored in a Flash EEPROM and can be upgraded by a floppy disk-based program. The BIOS has a built-in Setup Program that allows users to modify the basic system configuration settings. The settings are then stored in a dedicated battery-backed memory, called CMOS RAM that retains the information when the power is turned off. The BIOS provides

critical low-level support for the system's central processing, memory and I/O subsystems. The AMI BIOS has been customized by adding important, nonstandard, features such as virus and password protection, power management, and detailed fine-tuning of the chipset which controls the system. The remainder of this manual is intended to guide you through the process of configuring your system using the BIOS Setup.

4.1 How To Enter BIOS Setup

The AMI BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration information in CMOS RAM and begins the process of checking the system and configuring it through the power-on self test (POST). When these preliminaries are finished, the BIOS seek an operation system on the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands over control of system operation to it.

To start Setup, press the <F2> key during boot-up before POST (Power On Self Test):

If you are late to press <F2> after POST. You will be unable to get access into BIOS Setup after. If you do want to enter BIOS Setup. You can press the "RESET" button on the system case to reset the system or restart by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys.

4. BIOS SETUP

4.2 How to setup

4.2.1 Operations Keys

These keys help you to set up your BIOS values.

<↑> , <↓>	Move to previous / next item Change Values
<←> , <→>	First page -- Select sub-menu . Other pages – Select item
<Esc>	First page – Quit and not save changes into CMOS Other Pages -- Exit current page and return to Main Menu
<Enter>	Enter and select options.
<F5>	Load Setup Defaults.
<F6>	Load original values.
<F10>	Save all the CMOS changes and exit Setup.

4.2.2 In Case of Problems

If after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the CMOS settings that resets your system to its default configuration.

The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset screen without a good reason. Your system manufacturer for the best performance and reliability has carefully chosen the Chipset defaults. Even a seemingly small change to the Chipset setup may cause the system to become unstable.

4. BIOS SETUP

4.3 Setup Screen

When you enter the AMI BIOS CMOS Setup Utility, the setup screen will presents four menus (Main, Advanced, Security and Exit) on upper bar and own feature items below. This setup screen allows you to select one from “Main”, “Advanced”, “Security” and “Exit” by using <←> or <→>. To move to feature items, use <↑> and <↓>. To select option or change value, press “Enter”. Following shows the Setup

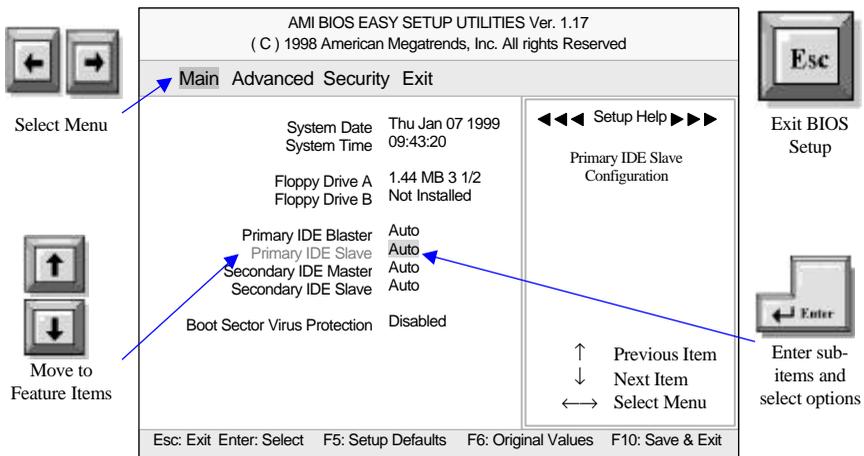


Figure 1: Setup Screen

Screen.

A brief description for selected feature item will appears on right rectangle region.

4. BIOS SETUP

4.4 Main Menu

Select the “Main” menu to enter basic setup of your system (Figure2). You can set the system Date and clock, Floppy Disk type, Hard Disk type and Virus Protection.

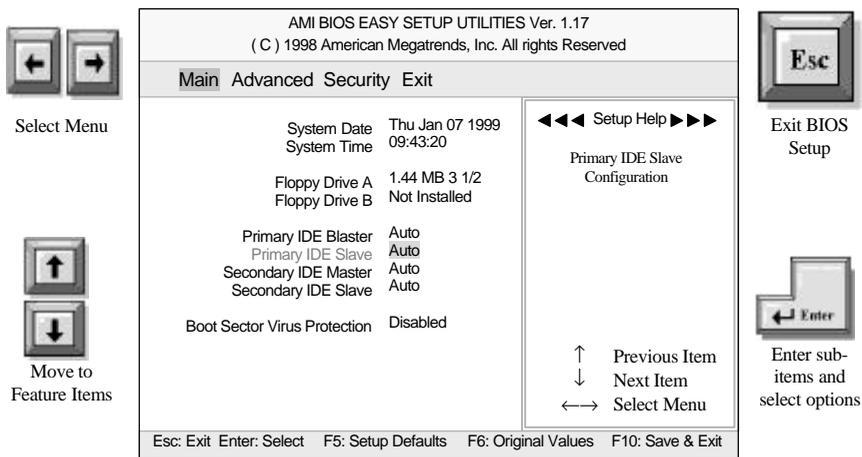


Figure 2 : Main Menu

4.4.1 System Date

The BIOS determines the day of the week from the other date information. This field is for information only. Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

4.4.2 System Time

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to the desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

4. BIOS SETUP

4.4.3 Floppy Drive A/B

Select the correct specifications for the diskette drive(s) installed in the computer.

Option	Description
None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

4.4.4 Primary/Secondary IDE Master/Slave

Option	Description
Not Installed	No Hard Disk installed.
1 to 46	Drive types 1 through 46 with preprogrammed values
User	Enter values into each drive parameter field manually.
Auto	Detect HDD type automatically
CDROM	Use for ATAPI CD-ROM drives
Floptical	Use for ATAPI Floptical drives

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

NOTE: We recommend that you select type AUTO for all drives.

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST, every time the system boots.

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1. Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for drive types 1 through 46.
2. Select USER and enter values into each drive parameter field.
3. Select CD-ROM to install CD-ROM to this drive.
4. Select Floptical to install ATAPI Floptical drive.

4. BIOS SETUP

5. Use the IDE HDD AUTO DETECTION function in Setup.

Here is a brief explanation of drive specifications:

- **IDE Device Configuration:** The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any pre-defined type are classified as type USER.
- **Cylinders:** Number of cylinders
- **Heads:** Number of heads
- **Write Precompensation:** Write precompensation cylinder
- **Sectors:** Number of sectors
- **Maximum Capacity Size:** Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.
- **LBA Mode (Logical Block Addressing):** During drive accesses, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.
- **Block Mode:** Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. The Choice: Yes, No.
- **Fast Programmed I/O Modes:** The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-5) for each of the four IDE devices that the onboard IDE interface support. The choices: 0, 1, 2, 3, 4, 5, Auto.
- **32 Bit Transfer Mode:** This item only act when the chipset support this function.

4.4.5 Boot Sector Virus Protection

This will enable a warning message if a virus attempts to write to the boot sector or the partition table of the hard disk drive. Keep in mind that this feature not only protects the boot sector, but the entire hard drive.

4. BIOS SETUP

4.5 Advanced Menu

This Advanced Menu (Figure 3) contains industry-standard options additional to the core PC AT BIOS. This section describes all fields offered by AMI Software in this screen. Some fields may vary from those in your Setup program. Your system board designer may omit or modify some fields. Advanced Menu shows four main feature items, please press <Enter> to get access to sub items.

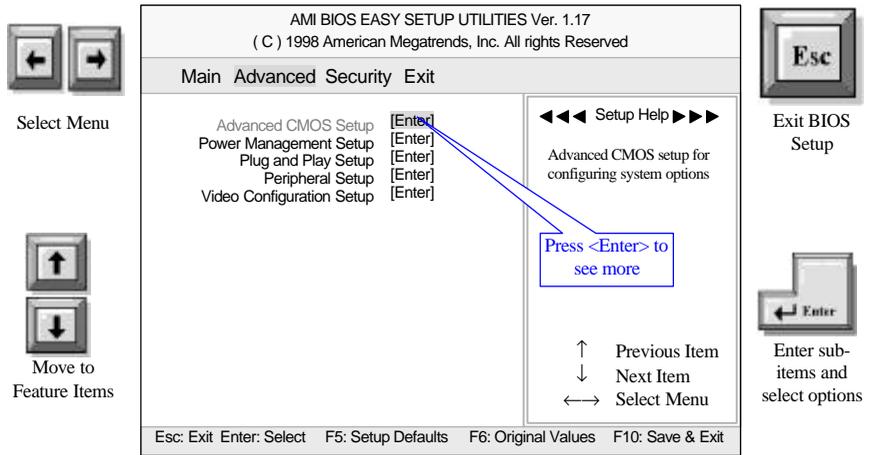


Figure 3: Advanced Menu

4. BIOS SETUP

4.5.1 Advanced CMOS Setup

Select “Advanced CMOS Setup” and press <Enter>, then the screen will be replaced with another individual one for Advanced CMOS Setup, shown as figure 4. You can

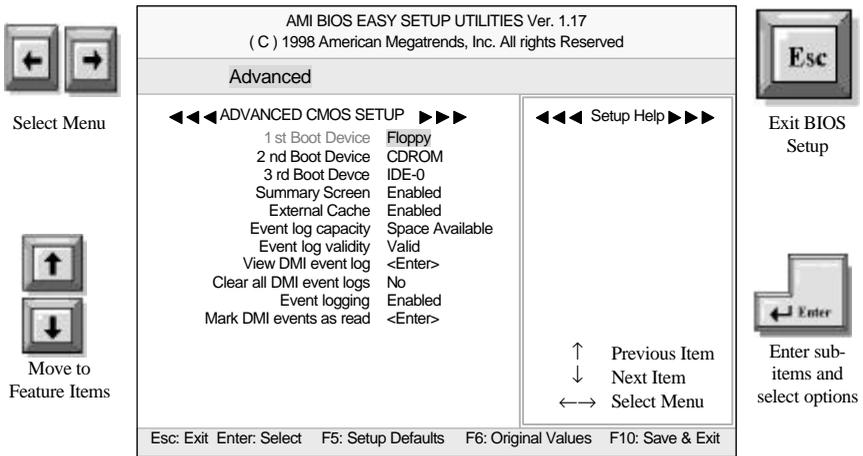


Figure 4: Advanced CMOS Setup

1 st/2 nd/3 rd Boot Device

This options sets the primary device for the initial boot sequence after the AMIBIOS POST is done. It contains 11 selections for you to choose to boot the system from or Disabled for none. The Choice: Disabled, IDE-0, IDE-1, IDE-3, Floppy, LS-120, ATAPI ZIP, CDROM, SCSI, NETWORK, I20.

Summary Screen

You can select “Enabled” to show the system summary information after POST (Power On Self Test) or “Disabled” to hide it.

External Cache

Select “Enabled” to use the External Cache.

4. BIOS SETUP

4.5.2 Power Management Setup

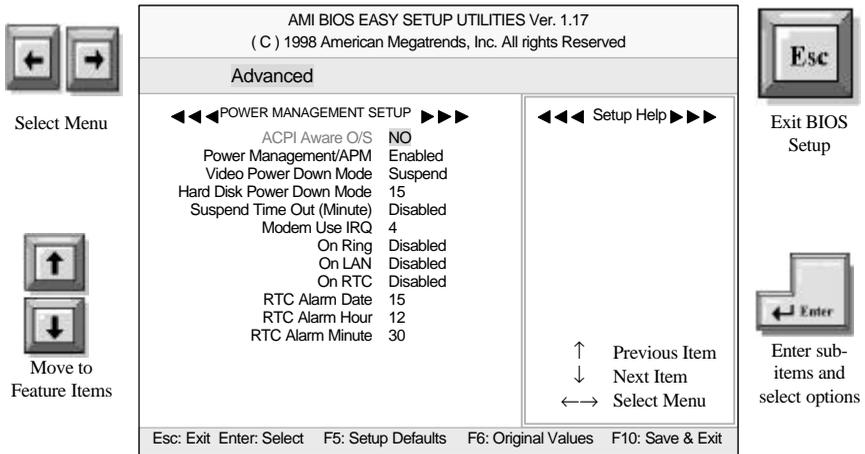


Figure 6: Power Management Setup

ACPI Aware O/S

ACPI (Advanced Configuration and Power Interface) evolves the existing motherboard configuration interfaces to support these advanced architectures in a more robust, and potentially more efficient manner.

Power Management/APM

If “Enabled”, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting “Enabled” gives better power savings. The choices: Disabled, Enabled

Video Power Down Mode

This item specifies the power state that the video subsystem enters when AMIBIOS places it in a power saving state after a pre-specified period of display inactivity has expired. The choices: Disabled, Standby, Suspend.

4. BIOS SETUP

Hard Disk Power Down Mode

This item specifies the power conserving state that the hard disk drive enters after the pre-specified time period of hard drive inactivity has expired. The choices: Disabled, Standby, Suspend.

Suspend Time Out (Minute)

This item specifies the time of system inactivity while in the Standby mode. When this length of time expires, the computer enters Suspend mode. The choices: Disabled, 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 60.

Mode Use IRQ

This item allows you to manually set the IRQ option for the modem. The choices: N/A, 3, 4, 5, 7, 9, 10, 11.

On Ring

If your system has a Ring-in header, you can select “Enabled” to enable the system to be powered on from Ring. The choices: Disabled, Enabled.

On LAN

If your system has a Ring-in header, you can select “Enabled” to enable the system to be powered on from a LAN card. The choices: Disabled, Enabled.

On RTC

This allows you to have an unattended or automatic power up of your system. You may enable your system to power up at a certain time of someday by selecting “Enabled” to configure it. The choices: Disabled, Enabled.

4. BIOS SETUP

4.5.3 Plug and Play Setup

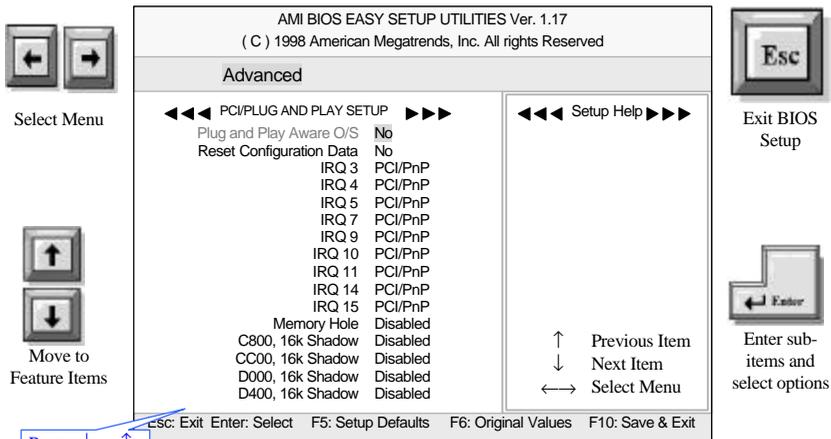


Figure 7: Plug and Play Setup

Plug and Play Aware O/S

This item allows you to determine installed PnP OS or not.

If the OS (Operation System) follows the Plug and Play specification, for example, Win 95, 98. Set this item to Yes. The choices: No, Yes.

Reset Configuration Data

Normally, you leave this field “No”. Select “Yes” to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

IRQ 3/4/5/7/9/10/11/12/14/15

These items allocate the bus that the specified IRQ line is used on. These options allows you to reserve IRQs for legacy ISA adapter cards. The determine if AMIBIOS should remove an IRQ from the pool of available IRQs. This pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the user can use these options to reserve the IRQ by assigning an ISA setting to it. Onboard I/O is

4. BIOS SETUP

configured by AMIBIOS. All IRQs used by onboard I/O are configured as PCI/PnP. The choices: PCI/PnP, ISA.

Memory Hole

You can reserve an area (15M-16M) of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

Shadow

Software that resides in a read-only memory (ROM) chip on a device is called *firmware*. The AMI BIOS permits *shadowing* of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals, such as, for example, a SCSI adapter.

Shadowing copies firmware from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM bus. Firmware not shadowed must be read by the system through the 8-bit X-bus. Shadowing improves the performance of the system BIOS and similar ROM firmware for expansion peripherals, but it also reduces the amount of high memory (640 KB to 1 MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardwire shadowing of the system BIOS and eliminate a System BIOS Shadow option.

Video BIOS shadows into memory area C0000-C7FFF. The remaining areas shown on the BIOS Features Setup screen may be occupied by other expansion card firmware. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

4. BIOS SETUP

4.5.4 Peripherals Setup

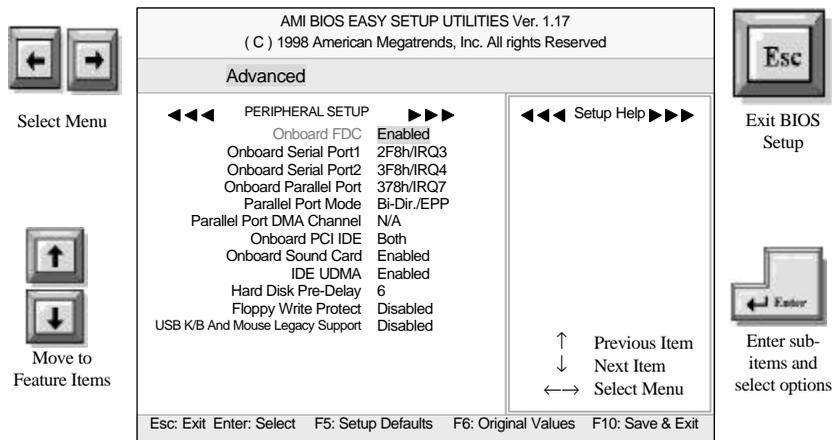


Figure 8: Peripheral Setup

Onboard FDC

Set this option to Enabled to enable the floppy drive controller on the motherboard. The choices: Auto, Disabled, Enabled.

Onboard Serial Port1/Port2

This two items specifies the base I/O port address for Serial Port 1 or 2. The choices: Auto, Disabled, 3F8h/CoM1, 2F8h/COM2, 3E8h/COM3, 2E8h/COM4.

Onboard Parallel Port

This item allows you to determine access onboard parallel port controller with which I/O address. The choices: Auto, Disabled, 378h, 278h, 3BCh.

Parallel Port Mode

Select an operating mode for the onboard parallel (Printer) port. The choices: Output Only, Bi-Dir./EPP, ECP.

4. BIOS SETUP

Parallel Port DMA Channel

The option will be auto-configured when the “Parallel Port Mode” is selected.

Onboard PCI IDE

This item specifies the IDE channel used by the onboard IDE controller. The choices: Disabled, Primary, Secondary, Both.

Onboard Sound Card

This motherboard implement a sound system onboard. You can select to enable or disable this onboard sound function.

IDE UDMA

IDE UDMA function. The choices: Enabled, Disabled.

Hard Disk Pre-Delay

For some legacy IDE devices require time to get ready before operation. This item allows you to set the Delay time for it.

Floppy Write Protect

Except the lock tab on floppy disk. The AMI BIOS provide the function to let you enable or disable the Floppy Disk write protection by Firmware. The choices: Enabled, Disabled.

USB K/B And Mouse Legacy Support

Set this option to Enabled to provide support for a non-USB keyboard and mouse. The choices: Disabled, Enabled.

4. BIOS SETUP

4.5.5 VGA Configuration Setup

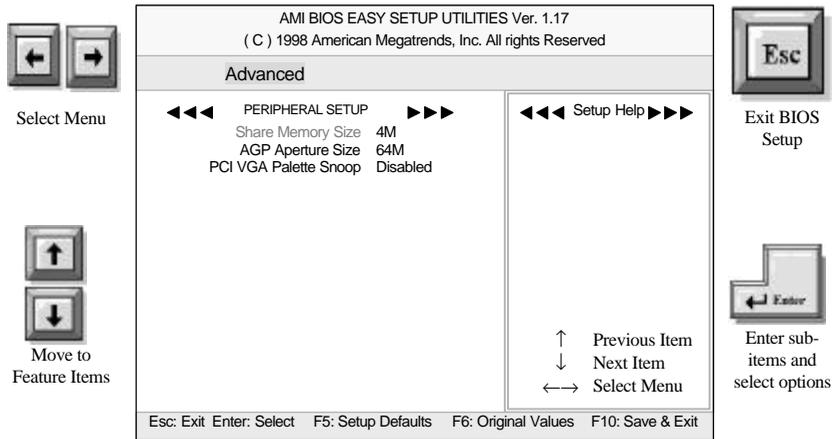


Figure 9: VGA Configuration Setup

Share Memory Size

This system integrate a AGP VGA function that can share the system memory. The choices: 2, 4, 8MB.

AGP Aperture Size

Select the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Those cycles that hit the aperture range are forwarded to the AGP without any transiation.

PCI VGA Palette Snoop

Some display cards that are not standard VGA such as graphics accelerators or MPEG cards may not show the correct colors, this item can correct this problem once you set it to Enabled, to default setting leave at Disabled.

4. BIOS SETUP

4.6 Security Menu

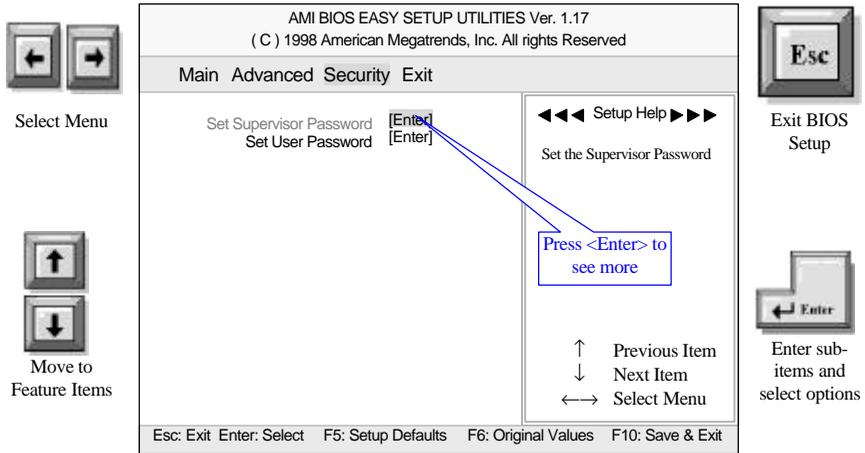


Figure 10: Security Menu

4.6.1 Set Supervisor Password

Once this item is set with a password. The BIOS Setup will not be accessible unless you enter the correct password. Select "Set Supervisor Password" and press "Enter", the screen will display star symbol "*" instead of the characters entered. After the new password is entered, retype the new password as prompted and press "Enter". If the password confirmation is incorrect, an error message appears. If the new password is entered with out error, press <ESC>. The password is stored in NVRAM after AMIBIOS completes its cycle. Next time when booting the system, a password prompt will appears if the password function is enabled.

4.6.2 Set User Password

If this feature is supported, you can set the password for users who know password to enter the system. To set password is as the same way as above.

4. BIOS SETUP

4.7 Exit Menu

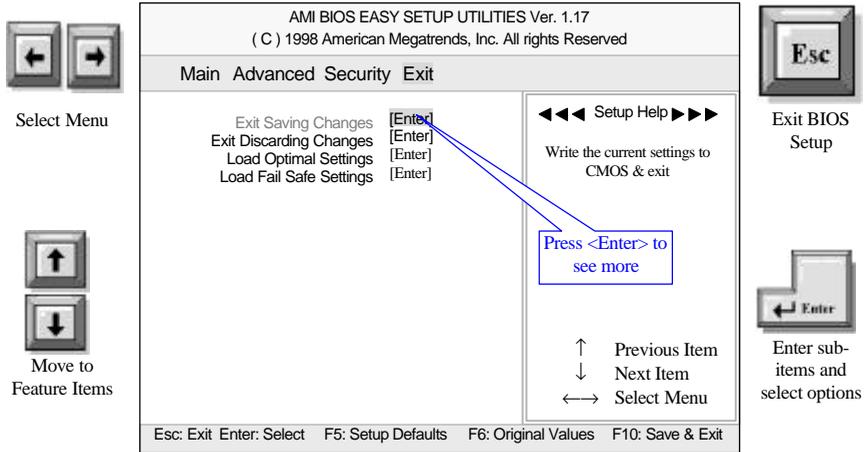


Figure 11: Exit Menu

4.7.1 Exit Saving Changes

Once you had completed the BIOS Setup, save and exit BIOS Setup by press <Enter>.

4.7.2 Exit Discarding Changes

To Exit BIOS Setup without saving any settings.

4.7.3 Load Optimal Settings

This item will load the default settings initialed by manufacture to run in high performance.

4. BIOS SETUP

4.7.4 Load Fail Safe Settings

Once your system fail to boot up normally, to select this item to reload the Fail Safe Settings.