

ENX-CX700M

VIA CX700M NanoITX Motherboard

User's Manual

Ver. 1.00

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If his equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product introduction**

This chapter describes the features of the motherboard and the new technology it supports. This chapter also lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.

- **Chapter 2: BIOS setup**

This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. Avalue websites

The Avalue website provides updated information on Avalue hardware and software products. Refer to the Avalue contact information.

2. Optional documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you **MUST** follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

Typography

Bold text

Indicates a menu or an item to select

Italics

Used to emphasize a word or a phrase

<Key>

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key

Example: <Enter> means that you must press the Enter or Return key

<Key1>+<Key2>+<Key3>

If you must press two or more keys simultaneously, the key names are linked with a plus sign (+)

Example: <Ctrl>+<Alt>+<D>

Command

Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets

Example: At the DOS prompt, type the command line:

awdflash [Filename]

awdflash CX7BAV10.BIN

ENX-CX700M specifications summary

Specifications	
System	
CPU	VIA Eden 1GHz fanless / C7 1.5GHz with fan(Optional)
FSB	400 MHz
BIOS	Award 4 Mb Flash ROM BIOS
System Chipset	VIA CX700M
I/O Chipset	Winbond W83627DHG-A
Memory	1 x 200-pin SODIMM 1 GB DDR2 400 SDRAM
Watchdog Timer	Reset: 1 sec.~255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring CPU temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
Expansion Slots	1 x Mini PCI, 1 x Type I/II CF
DIO	8-bit General Purpose I/O for 4 DI and 4 DO
S3/S4	Yes
Wake up on LAN or Ring	Both (PME / RPL / WOR)
Smart Fan Control	Yes , support 3 modes (Silent/Optimal/Performance)
I/O	
Back Panel I/O Port	1X PS2(KB+MS), 1 x VGA port, 2 x USB 2.0/1.1, 1 x LAN RJ45 port, 1 x Audio Mic in (1 jack), 1 x Audio Line out (1 jack)
Front Panel I/O port	2 x USB 2.0/1.1
Internal I/O	1 x USB connector support additional 2 USB ports, 1 x Front Panel connector 1 x 6-pin ATX Power connector, 1 x COM port spin header, 1 x Line in connector, 1 x LVDS connector, 1 x LCD backlight power connector, 1 x CPU Fan connector, 1 x GPIO connector, 1 x SATA II connector
Display	
Chipset	Integrated VIA UniChrome Pro II 3D/2D AGP graphics with MPEG-2/4 and WMV9 accelerator
Display Memory	VIA S3 UniChrome Pro II 3D Graphic Engine Shared system memory up to 128MB I/O
Max Resolution	2048x1536 @75Hz
Dual Display	Yes(VGA+LVDS)
Audio	
Audio Codec	Realtek® ALC888 (co-lay 888VC), 2 channel
Audio Interface	Mic in , Line out , Line in pin header

Ethernet	
LAN1	Realtek RTL 81110SC Gigabit LAN
Mechanical & Environmental	
Power Type	6 pin ATX or (option DC-DC power board)
Operating Temperature	0 - 60°C (32-104°F)
Operating Humidity	0%~90% relative humidity, non-condensing
Size (L x W)	4.72" x 4.72" (120 mm x 120 mm)

* Specifications are subject to change without notice.

This chapter describes the motherboard features and the new technologies it supports.

Product **Introduction**

1.1 Welcome!

Thank you for buying an ® ENX-CX700M motherboard!

The motherboard delivers a host of new features and latest technologies, making it another standout in the long line of quality motherboards!

Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below.

1.2 Package contents

Check your motherboard package for the following items.

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x ENX-CX700M Nano ITX Main board
- 1 x CD-ROM contains the followings:
 - User's Manual in PDF file
 - Drivers
- 1 x KB/MS cable
- 1 x COM cable
- 1 x SATA cable kit (SATA/Power)
- 2 x Copper stud nuts (for COM port)
- 1 x 6 to 20 pin ATX power cable
- 1 x Startup Manual



If any of the above items is damaged or missing, contact your retailer.

1.3 Special features

1.3.1 Product highlights

Latest processor technology

The motherboard incorporates with VIA Eden and VIA C7 processors. The new VIA Eden processor boasts an ultra-efficient architecture, world-class 90nm production and the highly efficient VIA V4 bus interface for unprecedented passively-cooled, 'fanless' performance. It also implements the CX700M system media Chipset, an all-in-one digital media IGP chipset, integrates premium graphics, audio, memory, storage, and HDTV support all in a single chip design.

VIA Eden Processor

With its signature fanless operation, the VIA Eden™ processor targets personal, business, industrial and commercial embedded computing devices that require ultra low power consumption, rock solid reliability and compatibility with standard x86 operating systems and software applications. VIA Eden processors are scalable from 400MHz to 1.5GHz all within a maximum thermal envelope of 7.5 watts, and are available with a diverse range of feature sets that enable PC functionality and connectivity from traditionally single function devices.

CX700M Northbridge Chipset

Complementing the power-efficient VIA C7® and fanless VIA Eden processors it supports, the VIA CX700M is based on a highly sophisticated power efficient architecture that enables such rich integration into a compact package with a maximum power envelope of just 3.5 watts. A number of key power management technologies are incorporated that monitor activity and dynamically control power according to system load requirements.

Advanced HDTV Display Support

Flexibility is extended to display technologies, with the VIA CX700M integrating a built in HDTV encoder for connection to the latest displays, and multi-configuration LVDS/DVI transmitter.

VIA UniChrome™ Pro Graphics Core

With an internal data flow equivalent to what is available to the latest AGP 8X graphics cards, VIA UniChrome Pro II has a separate 128-bit data path between the North Bridge for pixel data flow and texture/command access. Separate 128-bit 2D and 3D graphics engines ensure optimal performance for all multimedia, entertainment, and productivity applications.

Flawless Digital Media Playback

VIA UniChrome Pro II includes native support for the most popular digital video and audio formats through hardware MPEG-2/MPEG-4/WMV9 playback and acclaimed VIA Vinyl HD Audio suite, supporting up to eight high definition channels delivering a richer all-around digital media experience.

Advanced Memory Controller

VIA's renowned memory controller technology has been incorporated into the VIA CX700M, with support for both DDR400 and the high-bandwidth DDR2 533 memory up to 2GB with ECC capability, and 32-bit as well as 64-bit system memory to extend performance, design and cost flexibility to developers.

VIA Advanced Connectivity

The VIA CX700M offers broad connectivity with support for SATA, SATA II and PATA drives, two COM and six USB2.0 ports, and four PCI slots, allowing for considerable flexibility in board configuration. Additionally, developers can also integrate support for ISA through an ITE PCI bridge chip, combining legacy ISA connectivity with high bandwidth DDR2 memory support for more powerful embedded systems.

Unified VIA Hyperion Pro Drivers

VIA's unified approach to drivers has been established for eight generations of chipsets, allowing end users to benefit from seamless hardware and software compatibility.

DDR2 SO-DIMM

The motherboard supports memory which features data transfer rates of 533/400 MHz to meet the higher bandwidth requirements of the latest 3D graphics, multimedia, and Internet applications. The dual-row edge contacts at the module interface are spaced on 0.6mm pitch. SO-DIMM connectors utilize surface-mount termination to the host PCB.

Serial ATA technology

The motherboard supports the Serial ATA technology through the Serial ATA interfaces and the VIA CX700M chipset. The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement, and up to 300 MB/s data transfer rate.

Temperature, fan, and voltage monitoring

The CPU temperature is monitored by the ASIC (integrated in the Winbond Super I/O) to prevent overheating and damage. The system fan rotations per minute (RPM) is monitored for timely failure detection. The ASIC monitors the voltage levels to ensure stable supply of current for critical components.

1.4 Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.



-
- Unplug the power cord from the wall socket before touching any component.
 - Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity
 - Hold components by the edges to avoid touching the ICs on them.
 - Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
 - **Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply.** Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.
-

1.5 Motherboard overview

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components.

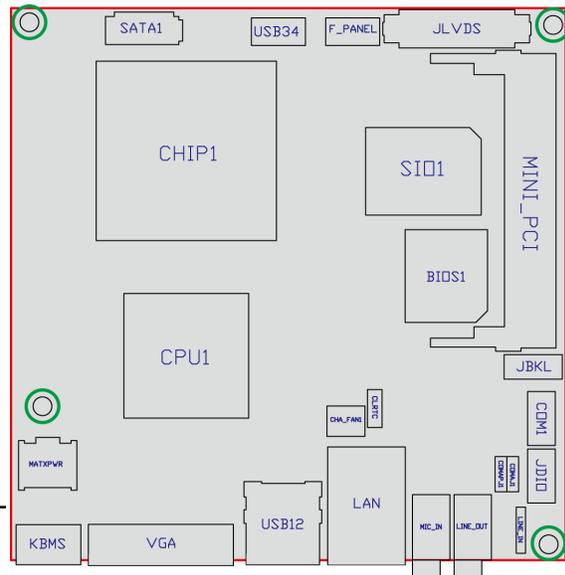
1.5.1 Placement Direction

When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

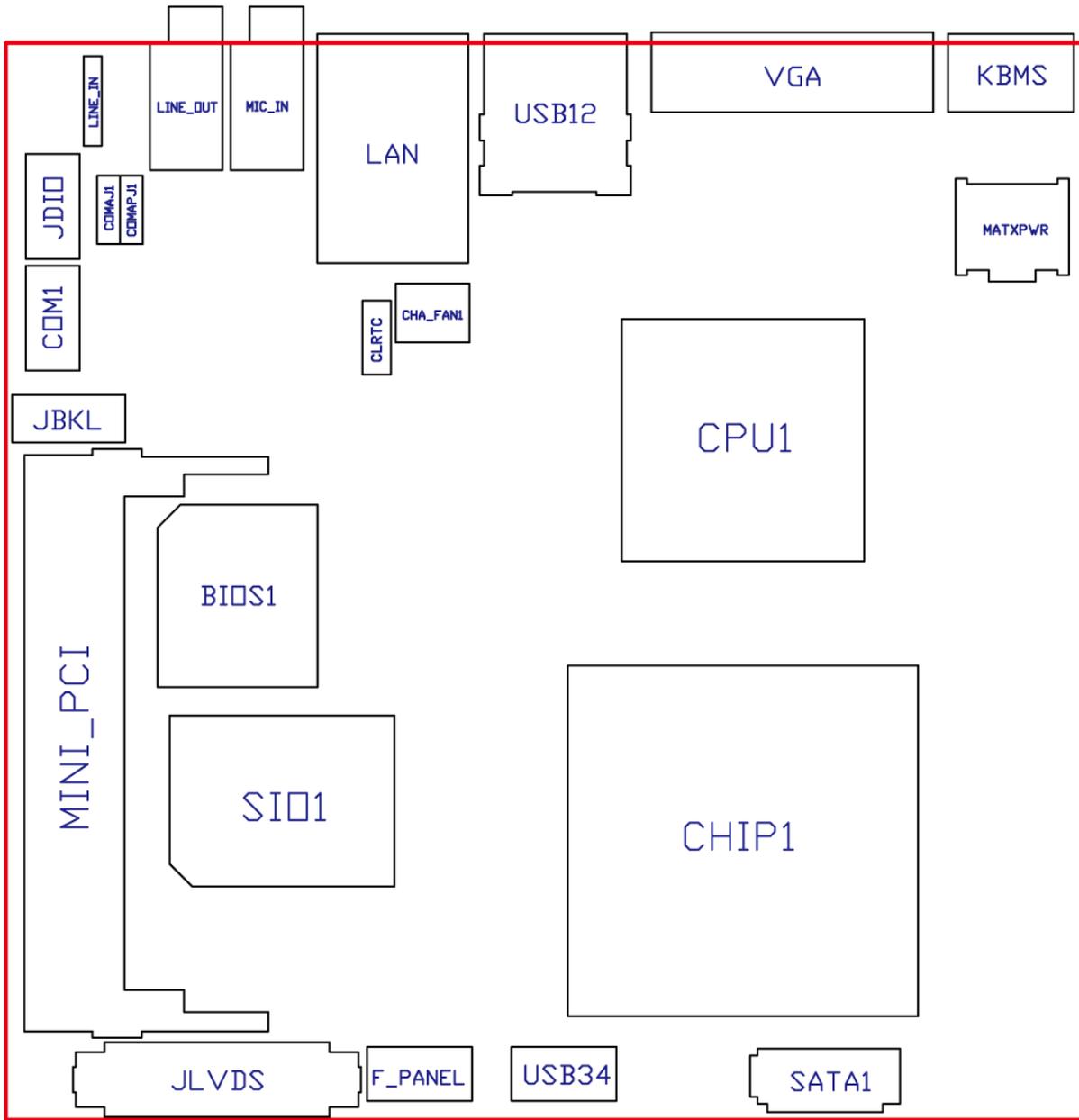
1.5.2 Screw Holes

Place four (4) screws into the holes indicated by circles to secure the motherboard to the chassis.

Place this side towards the rear of the chassis



1.5.3 Motherboard Layout

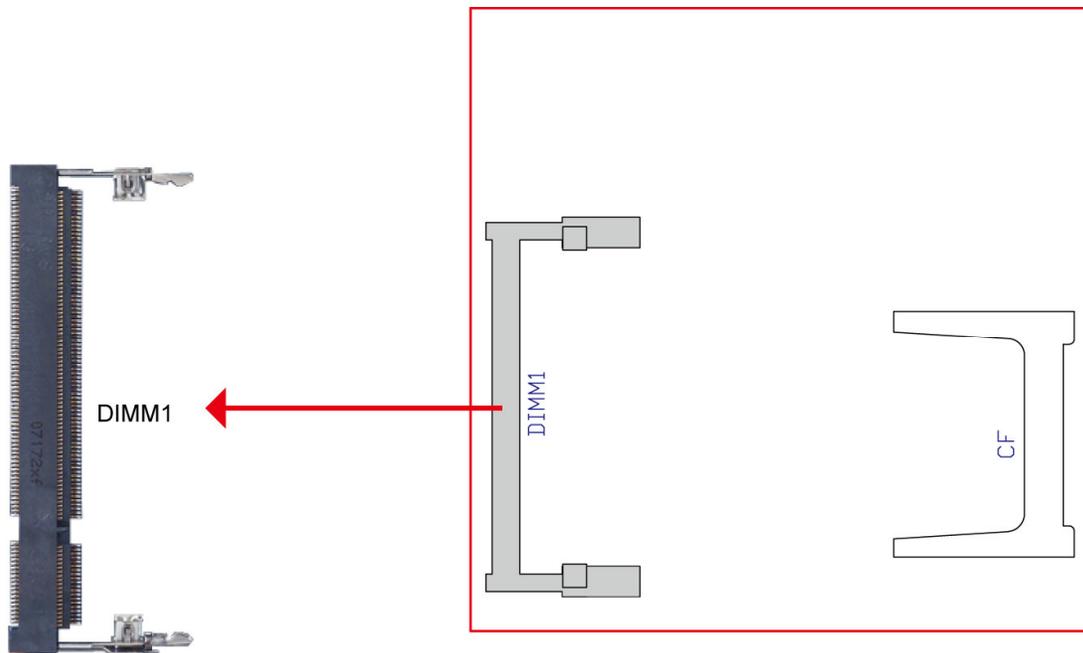


1.6 System memory

1.6.1 Overview

The motherboard comes with one 200-pin Double Data Rate 2 (DDR2) Small Outline Dual Inline Memory Modules (SO-DIMM) sockets.

A DDR2 module has the same physical dimensions as a DDR DIMM but has a 200-pin footprint compared to the 184-pin DDR DIMM. DDR2 DIMMs are notched differently to prevent installation on a DDR DIMM socket. The following figure illustrates the location of the sockets:



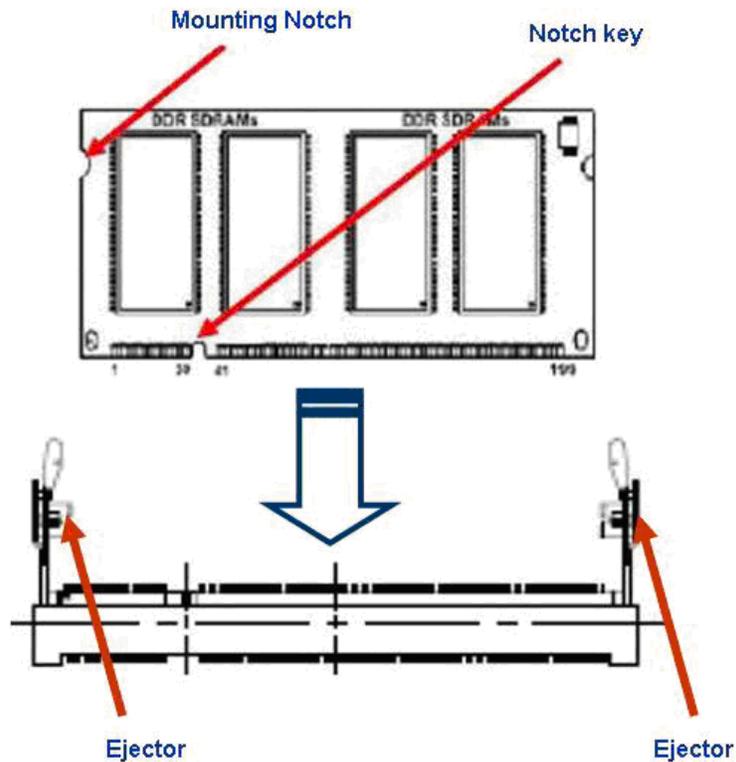
200-Pin DDR2 SO-DIMM sockets

Channel	Socket
Channel A	DIMM1

1.6.2 Memory Configurations

You may install 64 MB, 128 MB, 256 MB, 512 MB and 1 GB unbuffered ECC or non-ECC DDR SO-DIMMs into the SO-DIMM sockets using the memory configurations in this section.

1.6.3 Installing a SO-DIMM



Make sure to unplug the power supply before adding or removing SO-DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

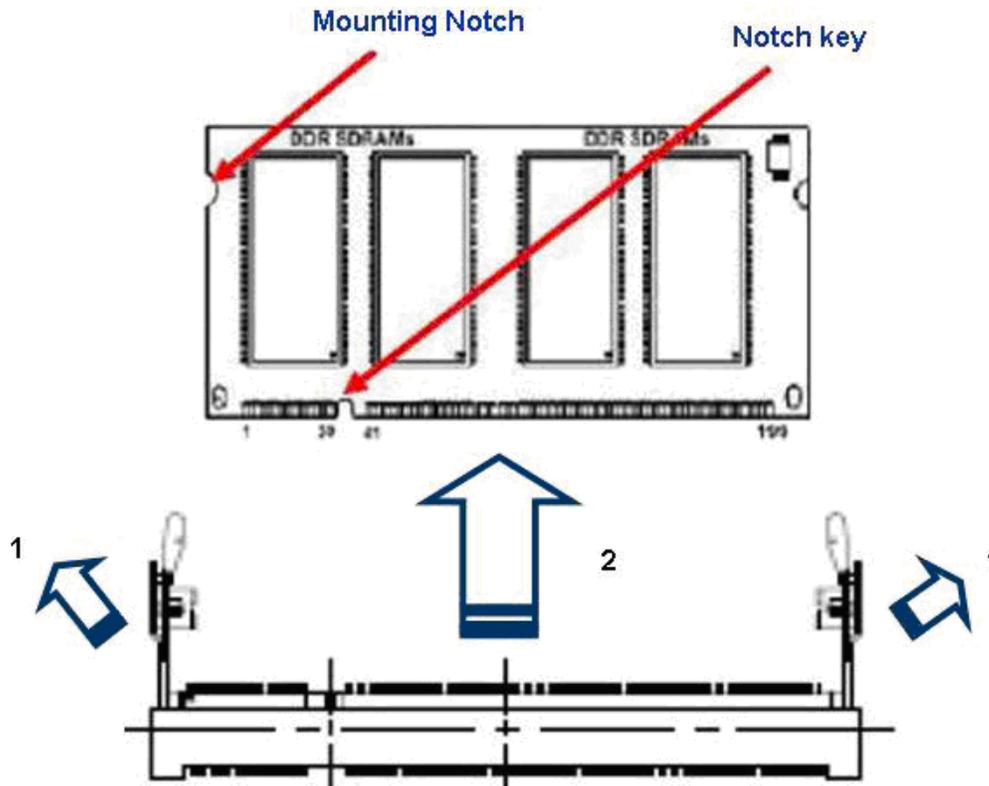
1. Unlock a SO-DIMM socket by pressing the retaining ejectors outward
2. Align a SO-DIMM on the socket such that the notch on the SO-DIMM matches the break on the socket.
3. Firmly insert the SO-DIMM into the socket until the retaining ejectors snap back in place and the SO-DIMM is properly seated.



- A DDR2 SO-DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a SO-DIMM into a socket to avoid damaging the SO-DIMM.
- The DDR2 SO-DIMM sockets do not support DDR SO-DIMMs. DO NOT install DDR SO-DIMMs to the DDR2 SO-DIMM socket.

1.6.4 Removing a SO-DIMM

1. Simultaneously press the retaining clips outward to unlock the SO-DIMM.



Support the SO-DIMM lightly with your fingers when pressing the retaining clips. The SO-DIMM might get damaged when it flips out with extra force.

2. Remove the SO-DIMM from the socket.

1.7 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.



Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

1.7.1 Installing an Expansion Card

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

1.7.2 Configuring an Expansion Card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card if needed. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

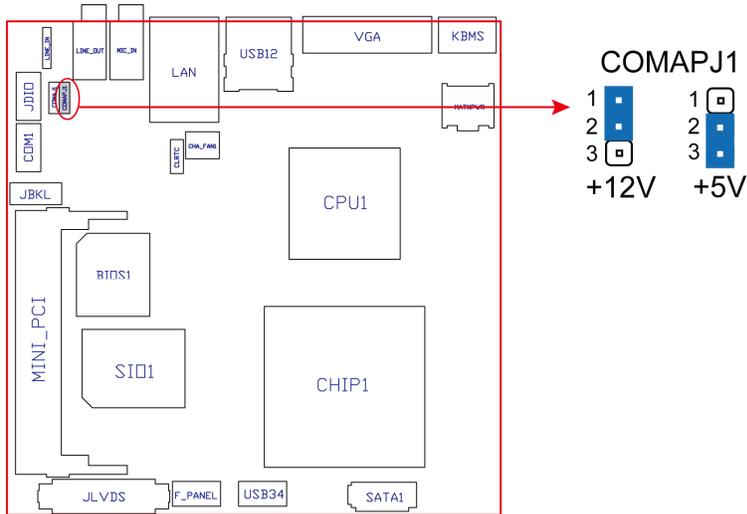
1.7.3 Mini PCI x 1

This motherboard supports Mini PCI Express wireless LAN, and TV tuner device.



2. COM1 +5V and +12V Power Select (COMAPJ1)

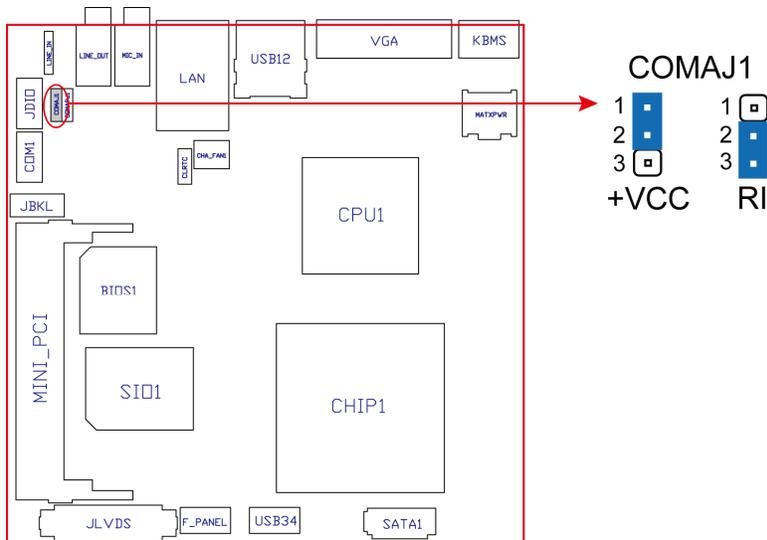
This jumper allows you to select COM1 +5V and +12V power. Set this jumper to pins 1-2 to choose +12V power. And set pins to 2-3 for +5V power.



COM1 +5V/+12V Selection

3. COM1 RI Pin with Power Select (COMAJ1)

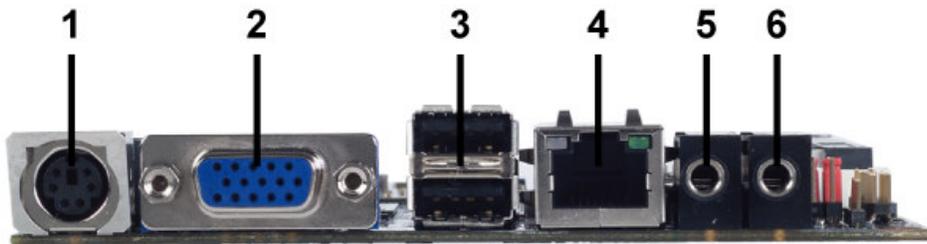
This jumper allows you to select COM1 RI pin with power select. Set this jumper to pins 1-2 to choose Com port with power. And set pins to 2-3 to choose com port without power.



COM1 RI Selection

1.9 Connectors

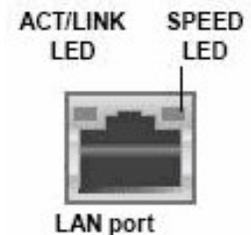
1.9.1 Rear panel connectors



- 1. PS/2 port (black).** This port is for a PS/2 mouse or PS/2 keyboard.
- 2. VGA port.** This 15-pin VGA port connects to a VGA monitor.
- 3. USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
- 4. LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

LAN port LED indications

ACT/ LINK LED		SPEED LED	
Status	Description	Status	Description
OFF	No link	OFF	10Mbps connection
Orange	Linked	Orange	100Mbps connection
Blinking	Data activity	Green	1Gbps connection

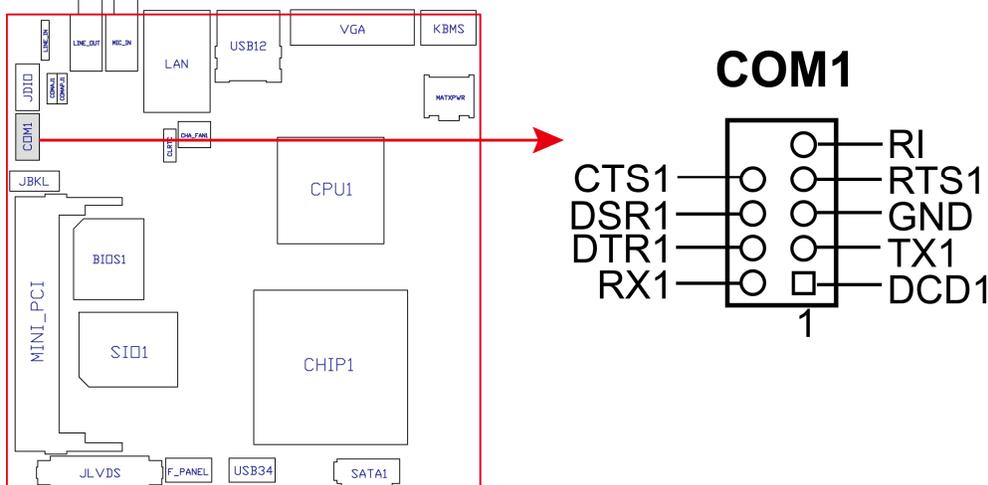


- 5. Microphone port (pink).** This port connects a microphone.
- 6. Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.

1.9.2 Internal connectors

1. Serial Port connector (COM1)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.



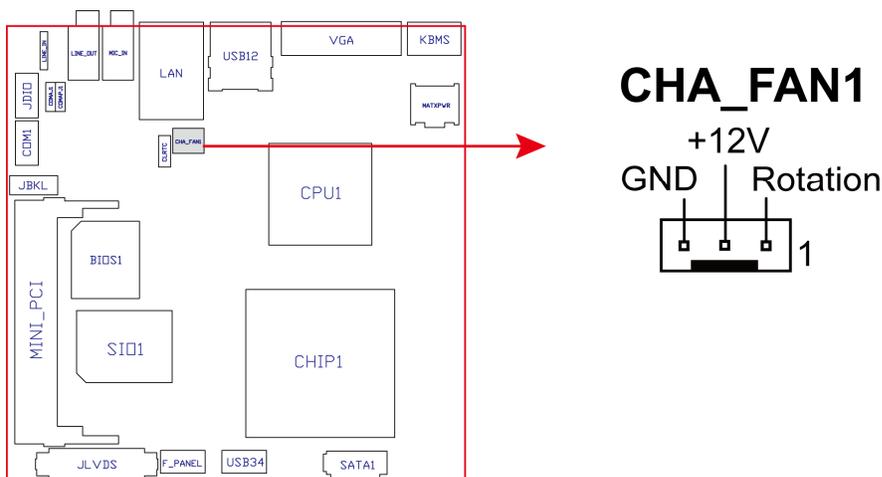
Serial Port Connector

3. Chassis Fan connectors (3-pin CHA_FAN)

The fan connectors support cooling fans of 350mA~740mA (8.88W max.) or a total of 1A~2.22A (26.64W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.



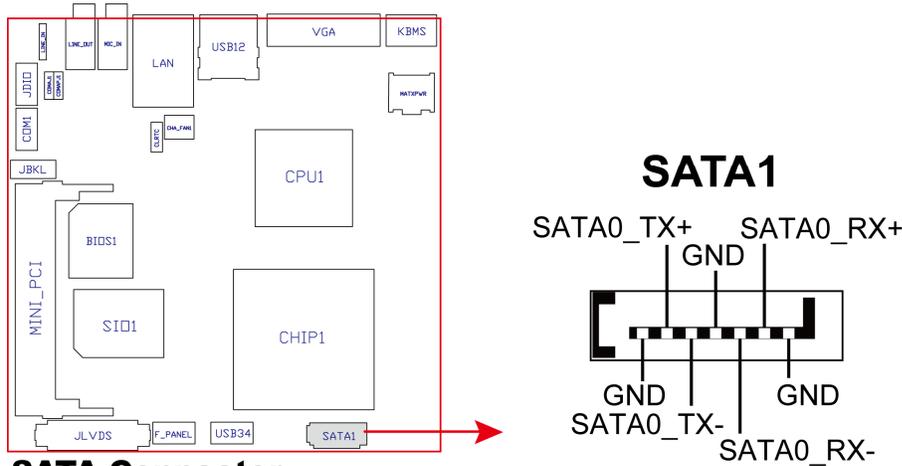
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors.



FAN Connector

6. Serial ATA connector (7-pin SATA1)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



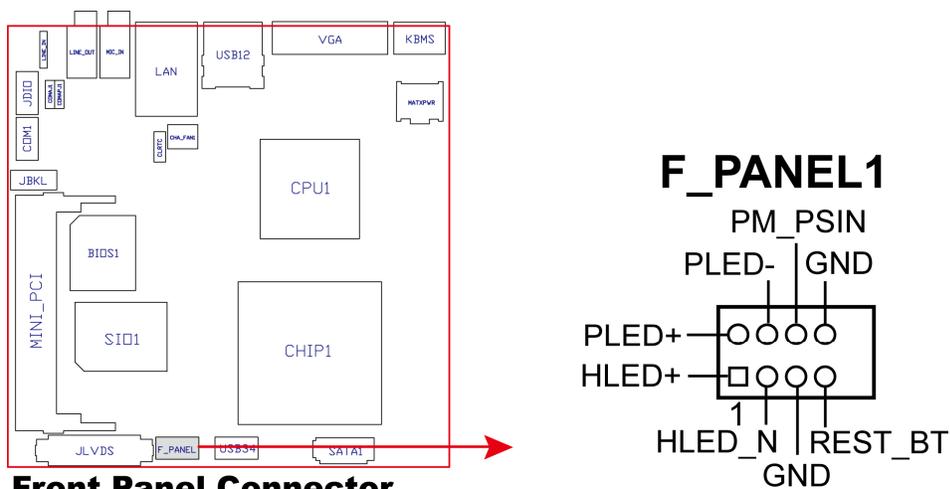
SATA Connector



Install the Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 or later before using Serial ATA.

7. Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC'97 audio standard.



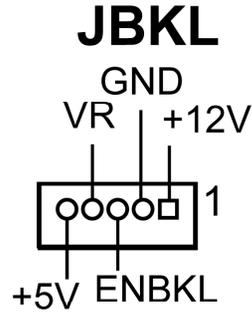
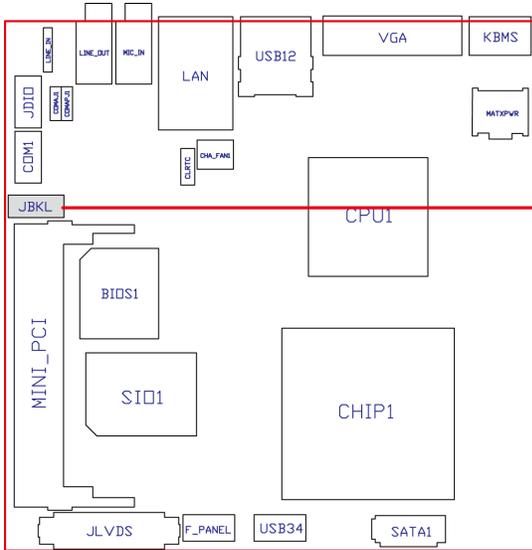
Front Panel Connector



It is recommended that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

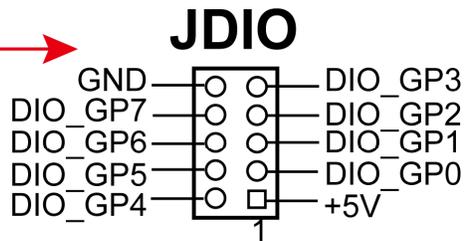
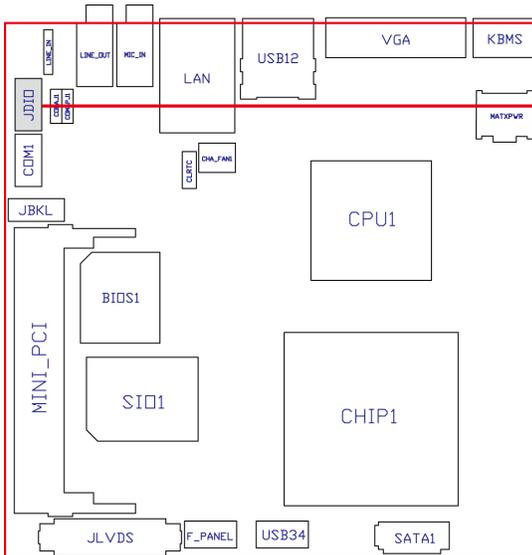
ENX-CX700M

8. LCD Inverter Connector (5-pin JBKL)



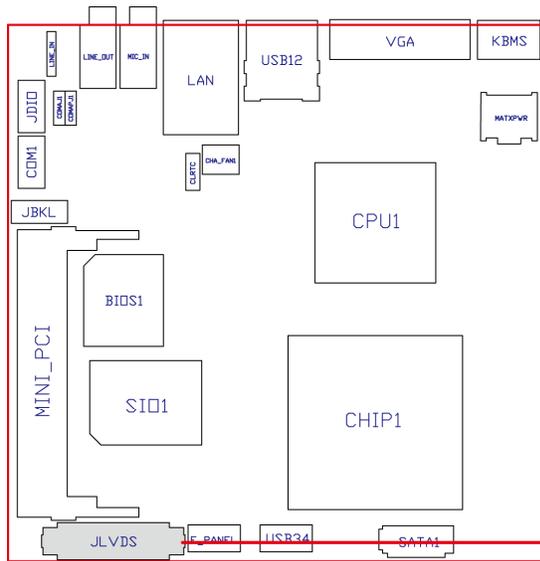
LCD Inverter Connector

9. Digital IO Connector (12-pin JDIO)

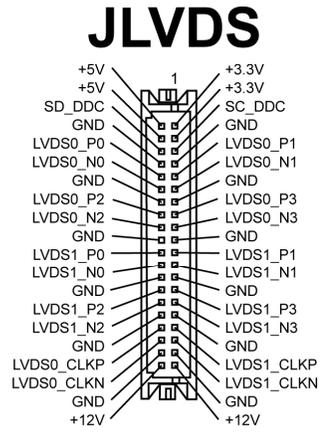


Digital IO Connector

10. LVDS Connector (40-pin JLVDS)



LVDS Connector



This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

BIOS Setup



2.1 Managing and updating your BIOS

2.1.1 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.

DOS environment

- a. Insert a 1.44MB floppy disk into the drive.
- b. At the DOS prompt, type format **A:/S** then press <Enter>.

Windows® XP environment

- a. Insert a 1.44 MB floppy disk to the floppy disk drive.
- b. Click **Start** from the Windows® desktop, then select **My Computer**.
- c. Select the 3 1/2 Floppy Drive icon.
- d. Click **File** from the menu, then select **Format**. A **Format 3 1/2 Floppy Disk** window appears.
- e. Select **Create an MS-DOS startup disk** from the format options field, then click **Start**.

Windows® 2000 environment

To create a set of boot disks for Windows® 2000:

- a. Insert a formatted, high density 1.44 MB floppy disk into the drive.
 - b. Insert the Windows® 2000 CD to the optical drive.
 - c. Click **Start**, then select **Run**.
 - d. From the Open field, type **D:\bootdisk\makeboot a:** assuming that D: is your optical drive.
 - d. Press <Enter>, then follow screen instructions to continue.
2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

2.2 BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in section “2.1 Managing and updating your BIOS.”

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup”. This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program.

Press during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.



-
- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section “2.7 Exit Menu.”
 - The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
 - Visit the Avalue website to download the latest BIOS file for this motherboard.
-

2.2.1 Legend Box

The keys in the legend bar allow you to navigate through the various setup menus.

Key(s)	Function Description
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
Esc	Return to the main menu from a sub-menu or prompts you to quit the setup program
←, →	Move to the item in the left or right hand
↑, ↓	Move to previous or next item
Enter	Brings up a selection menu for the highlighted field
+ or PgUp	Moves the cursor to the first field
- or PgDn	Moves the cursor to the last field
F5	Loads the previous values
F6, F7	Loads the fail-safe / optimized defaults
F10	Saves changes and exits Setup

2.2.2 List Box

This box appears only in the opening screen. The box displays an initial list of configurable items in the menu you selected.

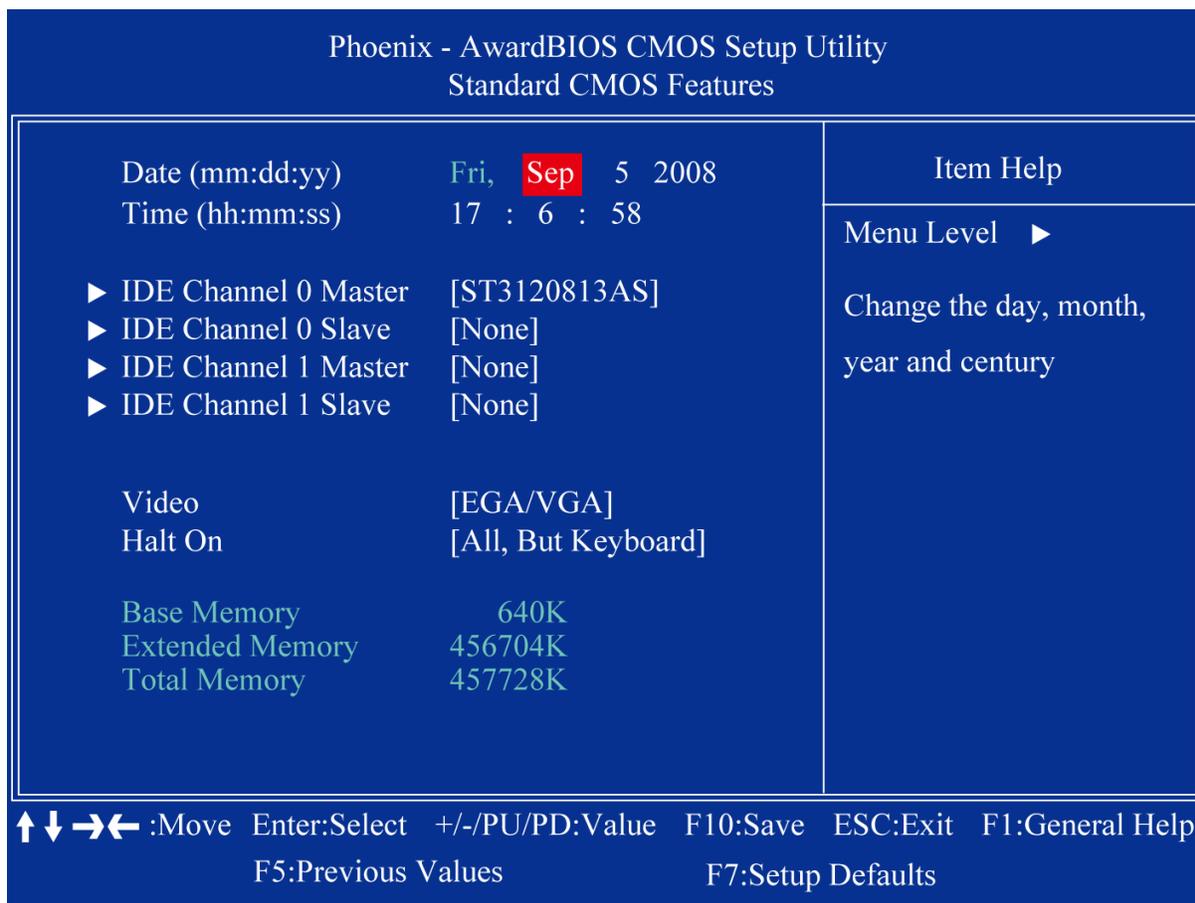
2.2.3 Sub-menu

Note that a right pointer symbol (▶) appears to the left of certain fields. This pointer indicates that you can display a sub-menu from this field. A sub-menu contains additional options for a field parameter. To display a sub-menu, move the highlight to the field and press <Enter>. The sub-menu appears. Use the legend keys to enter values and move from field to field within a sub-menu as you would within a menu. Use the <Esc> key to return to the main menu.

Take some time to familiarize yourself with the legend keys and their corresponding functions. Practice navigating through the various menus and submenus. If you accidentally make unwanted changes to any of the fields, press <F6> to load the fail-safe default values. While moving around through the Setup program, note that explanations appear in the Item Specific Help window located to the right of each menu. This window displays the help text for the currently highlighted field.

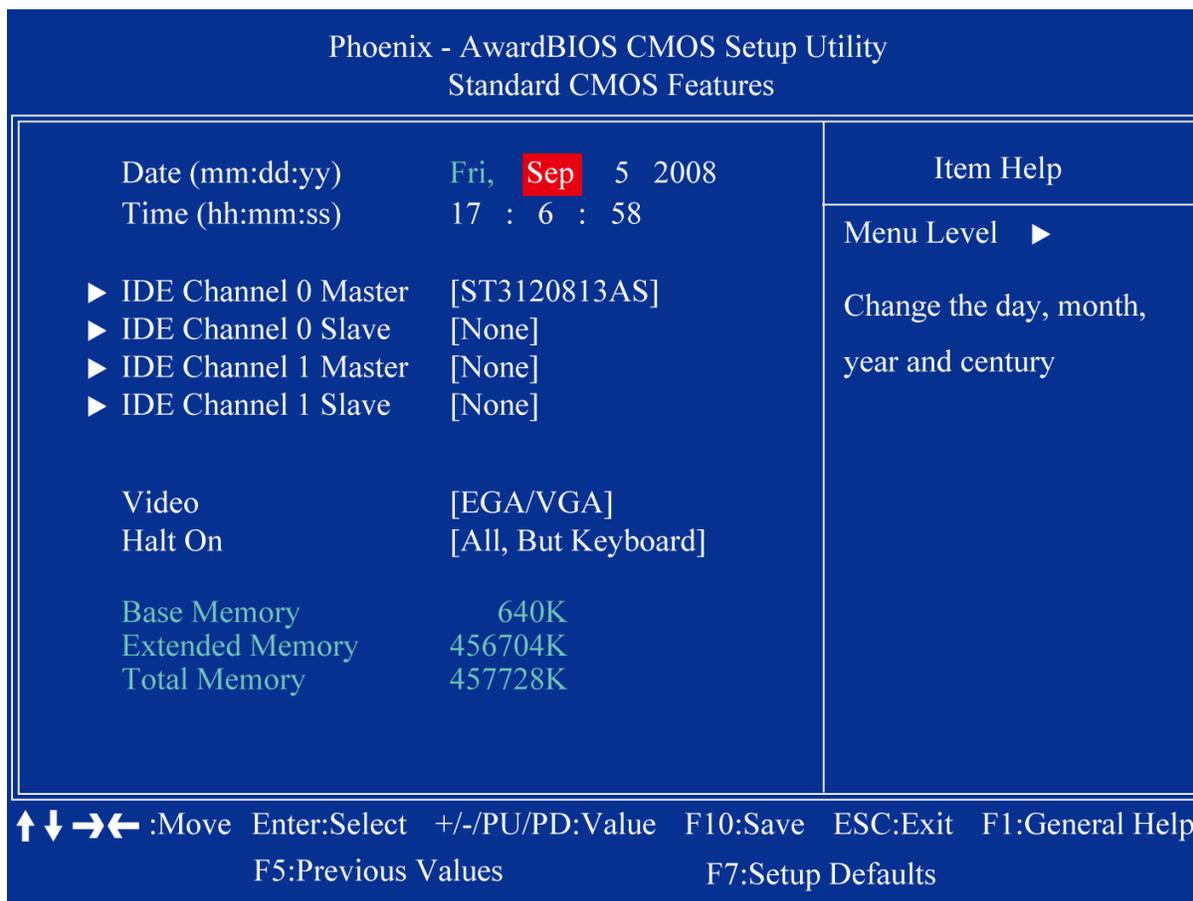
2.3 BIOS menu screen

When you enter the BIOS, the following screen appears. The BIOS menu screen displays the items that allow you to make changes to the system configuration. To access the menu items, press the up/down/right/left arrow key on the keyboard until the desired item is highlighted, then press [Enter] to open the specific menu.



2.3.1 Standard CMOS Features

The Standard CMOS Features screen gives you an overview of the basic system.



2.3.1.1 Date [Day, xx/xx/xxxx]

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

2.3.1.2 Time [xx:xx:xx]

The time format is <hour> <minute> <second>, based on the 24-hour clock.

2.3.1.3 IDE Channel 0/1 Master / Slave

- IDE HDD Auto-Detection
[Press Enter] to select this option for automatic device detection.
- IDE Device Setup
[Auto]: Automatically detects IDE devices during POST
[None]: Select this when no IDE device is used. The system will skip the auto-detection setup to make system start up faster.
[Manual]: User can manually input the correct settings.
 - ✓ Access Mode: The options are CHS/LBA/Large/Auto
 - ✓ Capacity: Capacity of currently installed hard disk
 - ✓ Cylinder: Number of cylinders

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- ✓ Head: Number of heads
- ✓ Precomp: Write precomp
- ✓ Landing Zone: Landing zone
- ✓ Sector: Number of sectors

2.3.1.4 Video

This category detects the type of adapter used for the primary monitor that must match your video display card and monitor.

- EGA / VGA: Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters.
- CGA 40: Color Graphics Adapter, power up in 40 column mode.
- CGA 80: Color Graphics Adapter, power up in 80 column mode.
- MONO: Monochrome adapter, includes high resolution monochrome adapters.

2.3.1.5 Halt On

Sets the system to halt on errors according to the system functions specified in each option.

Configuration options: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]

2.3.1.6 Memory

This category displays base memory, extended memory, and total memory detected during POST (Power On Self Test).

2.3.2 Advanced BIOS Features

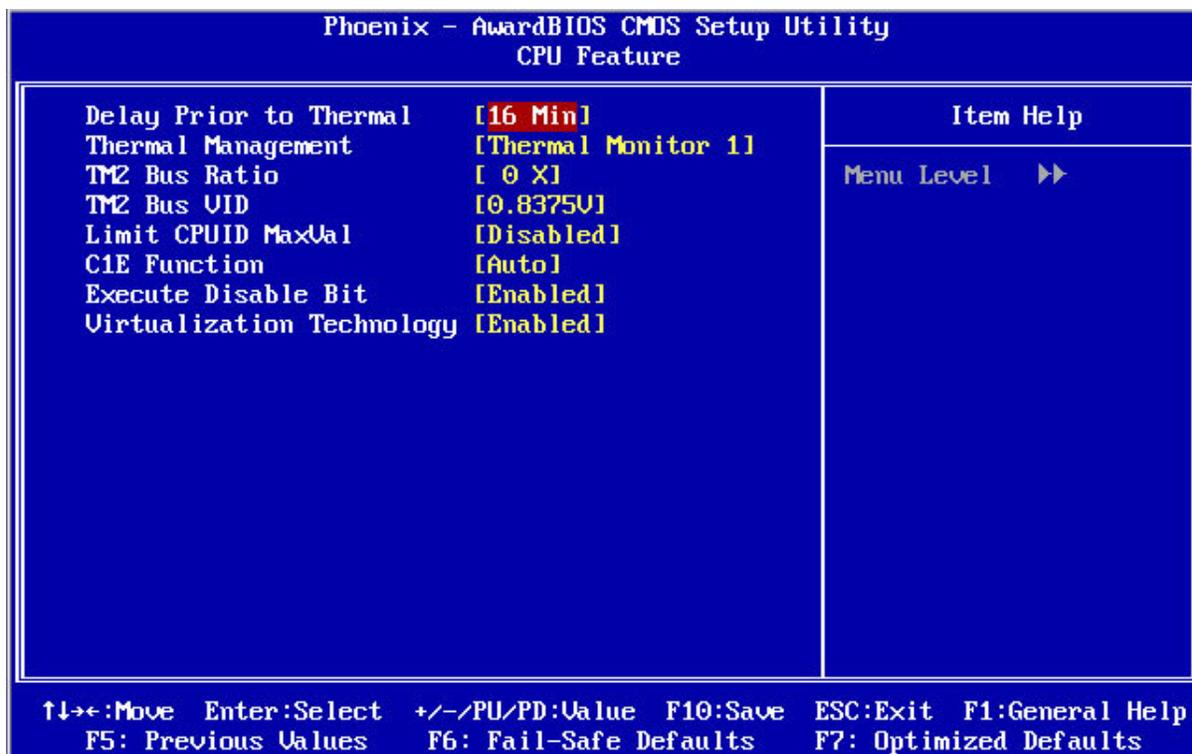
The “Advanced BIOS Features” screen appears when choosing the “Advanced BIOS Features” item from the “Initial Setup Screen” menu. It allows the user to configure the RX945G according to his particular requirements. Below are some major items that are provided in the Advanced BIOS Features screen. A quick booting function is provided for your convenience. Simply enable the Quick Booting item to save yourself valuable time.

Phoenix - AwardBIOS CMOS Setup Utility		
Advanced BIOS Features		
▶ CPU Feature	[Press Enter]	Item Help
▶ Hard Disk Boot Priority	[Press Enter]	
Virus Warning	[Disabled]	Menu Level ▶
CPU L1 & L2 Cache	[Enabled]	
CPU L2 Cache ECC Checking	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[CDROM]	
Second Boot Device	[CDROM]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	
Boot Up NumLock Status	[On]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	[Setup]	
MPS Version Control For OS	[1.4]	
OS Select For DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
Small Logo (EPA) Show	[Disabled]	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5:Previous Values F7:Setup Defaults

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2.3.2.1 CPU Feature



- Delay Prior to Thermal
The Delay Prior To Thermal BIOS feature controls the activation of the Thermal Monitor's automatic mode. It allows you to determine when the Pentium 4's Thermal Monitor should be activated in automatic mode after the system boots. For example, with the default value of 16 Minutes, the BIOS activates the Thermal Monitor in automatic mode 16 minutes after the system starts booting up.
- Thermal Management
Set up support CPU Thermal Monitor 2 (TM2) or not.
- TM2 Bus Ratio
Set up TM2 Bus Ratio.
- TM2 Bus VID
Set up TM2 Bus VID
- Limit CPUID MaxVal
Set Limit CPUID MaxVal to 3. This should be disabled for WinXP
- C1E Function
CPU C1E function select
- Execute Disable Bit
When disabled, forces the XD feature flag to always return 0
- Virtualization Technology
When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.

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2.3.2.4 CPU L1 & L2 Cache

Enabling this feature speeds up memory access.

Item	Description
Enable	Enable cache
Disable	Disable cache

2.3.2.5 Quick Power On Self Test

This allows the system to skip certain tests to speed up the boot-up procedure.

Item	Description
Enable	Enable quick POST
Disable	Normal POST

2.3.2.6 First / Second / Third Boot Device

The BIOS tries to load the OS from the devices in the sequence set here. The options are:

Item	Description
Floppy	Floppy Device
LS120	LS120 Device
HDD	Hard Disk Device
CDROM	CDROM Device
ZIP100	ZIP-100 Device
USB-FDD	USB Floppy Device
USB-ZIP	USB ZIP Device
USB-CDROM	USB CDROM Device
USB-HDD	USB Hard Disk Device
Legacy LAN	Network Device
Disabled	Disabled any boot device

2.3.2.7 Boot Other Device

Use this to boot another device. The options are “Enabled” and “Disabled”.

2.3.2.8 Boot Up NumLock Status

Sets the boot up Num Lock status. The options are “On” and “Off”.

Item	Description
On	Enable NumLock
Off	Disable NumLock

2.3.2.9 Typematic Rate Setting

The typematic rate is the rate key strokes repeat as determined by the keyboard controller. The commands are “Enabled” or “Disabled”. Enabling allows the typematic rate and delay to be selected.

2.3.2.10 Typematic Rate (Chars/Sec)

The BIOS accepts the following input values (characters/second) for typematic rate: 6, 8, 10, 12, 15, 20, 24, and 30.

2.3.2.11 Typematic Rate (Msec)

Typematic delay is the time interval between the appearances of two consecutive characters, when the key is continuously depressed. The input values for this category are: 250, 500, 750, and 1000 (ms).

2.3.2.12 Security Option

This category determines whether the password is required when the system boots up or only when entering setup. The options are:

Item	Description
System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.



To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

2.3.2.13 MPS Version Control for OS

This option is only valid for multiprocessor motherboards as it specifies the version of the Multiprocessor Specification (MPS) that the motherboard will use. The MPS is a specification by which PC manufacturers design and build Intel architecture systems with two or more processors.

MPS 1.1 was the original specification. MPS version 1.4 adds extended configuration tables for improved support of multiple PCI bus configurations and greater expandability in the future. In addition, MPS 1.4 introduces support for a secondary PCI bus without requiring a PCI bridge.

2.3.2.14 Small Logo (EPA) Show

This item allows you enabled/disabled the small EPA logo show on screen at the POST step.

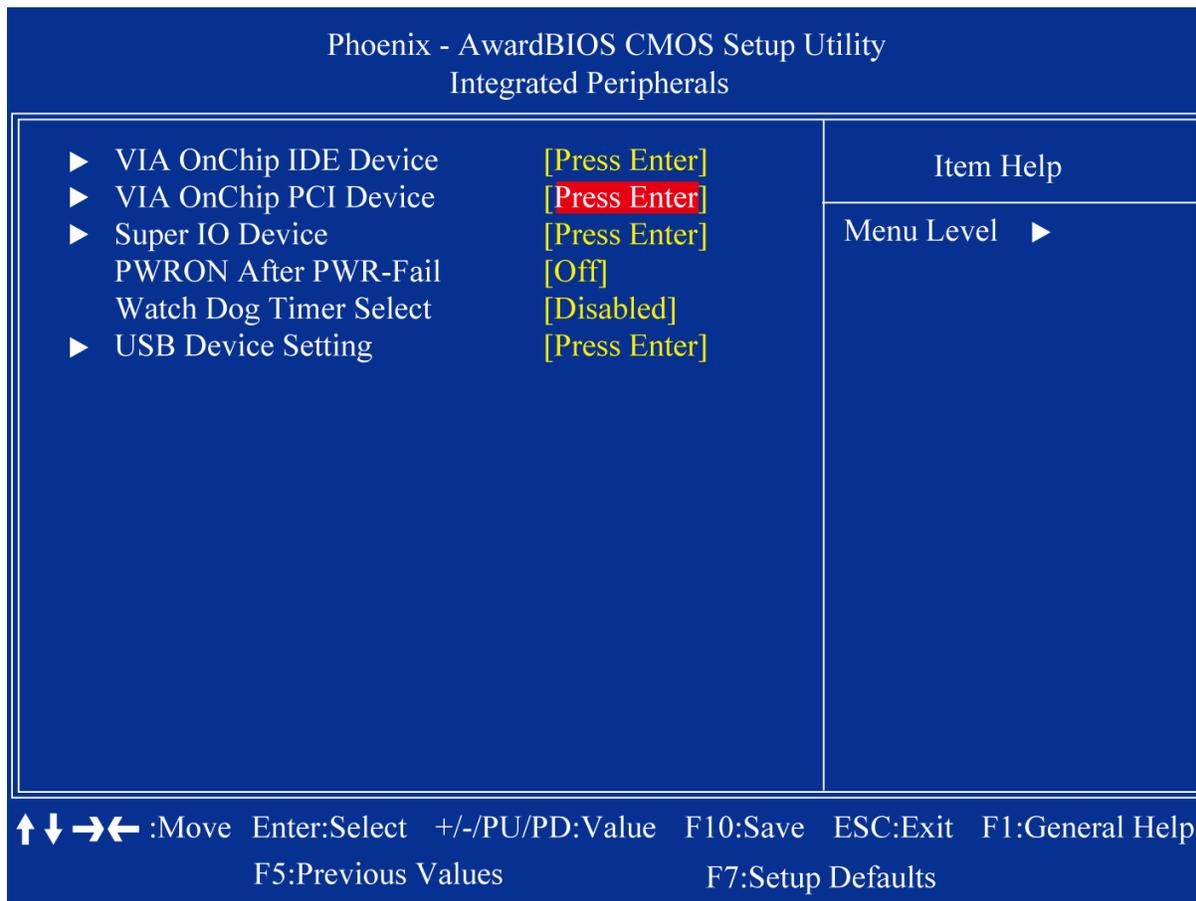
Item	Description
Enabled	EPA Logo shows is enabled
Disabled	EPA logo show is disabled

better video performance. However, if any program writes to this memory area, a system error may result.

2.3.3.5 Init Display First

This item allows you to choose the first display interface to initiate while booting. The choice is "PCI Slot" or "Onboard".

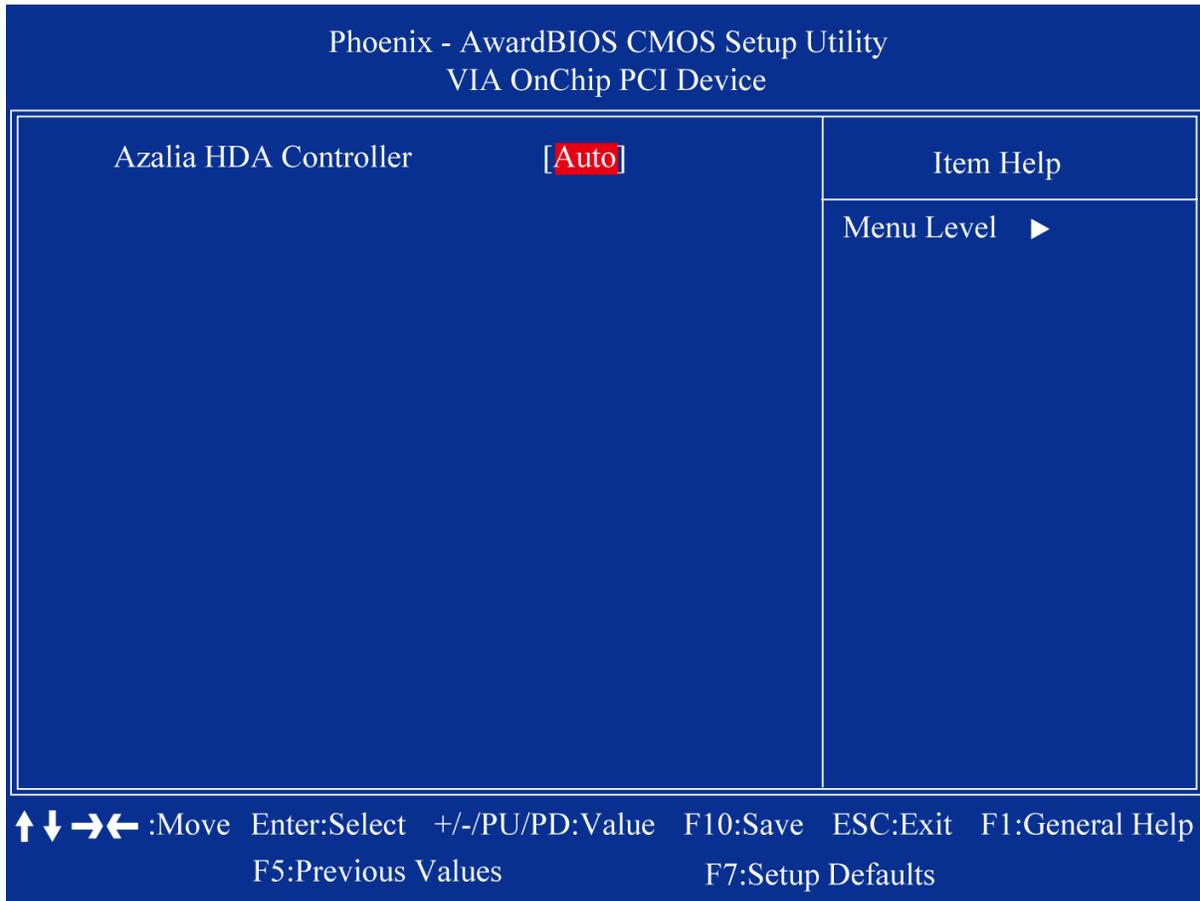
2.3.4 Integrated Peripherals



2.3.4.1 VIA OnChip IDE Device

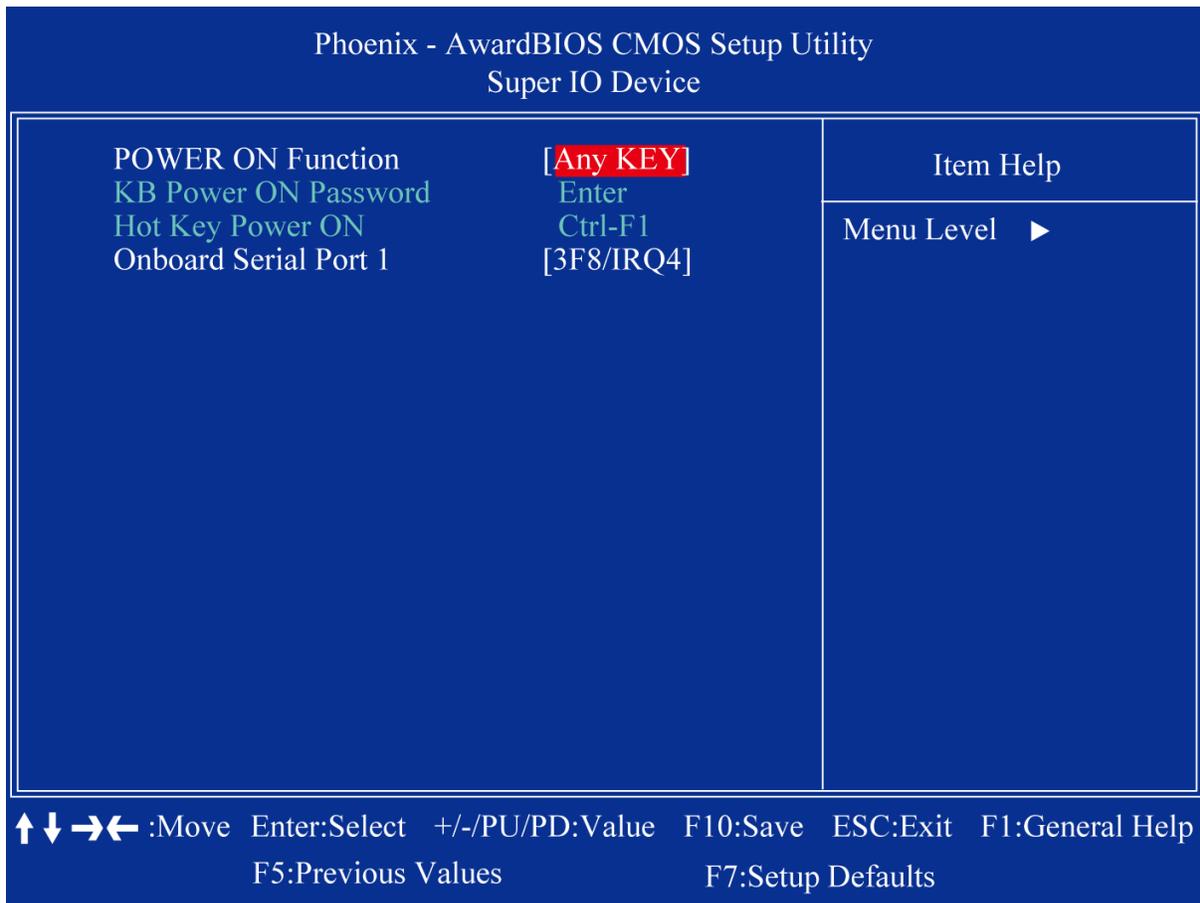
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2.3.4.2 VIA OnChip PCI Device



- Azalia/AC97 Audio Select
Select [Disabled] if you do not want to use Azalia audio. Configuration options:
[Auto] [Disabled]

2.3.4.3 Super IO Device



- **KB Power ON Password**
The system will ask for a password, after entering the correct password the keyboard can then be used.
- **Hot Key Power ON**
Awaken the system by pressing the hot key button. The choices are “Ctrl-F1”, “Ctrl-F2”, “Ctrl-F3” to “Ctrl-F8”.
- **Onboard Serial Port 1**
The settings are “3F8/IRQ4”, “2F8/IRQ3”, “3E8/IRQ4”, “2E8/IRQ3”, and “Disabled” for the on-board serial connector.

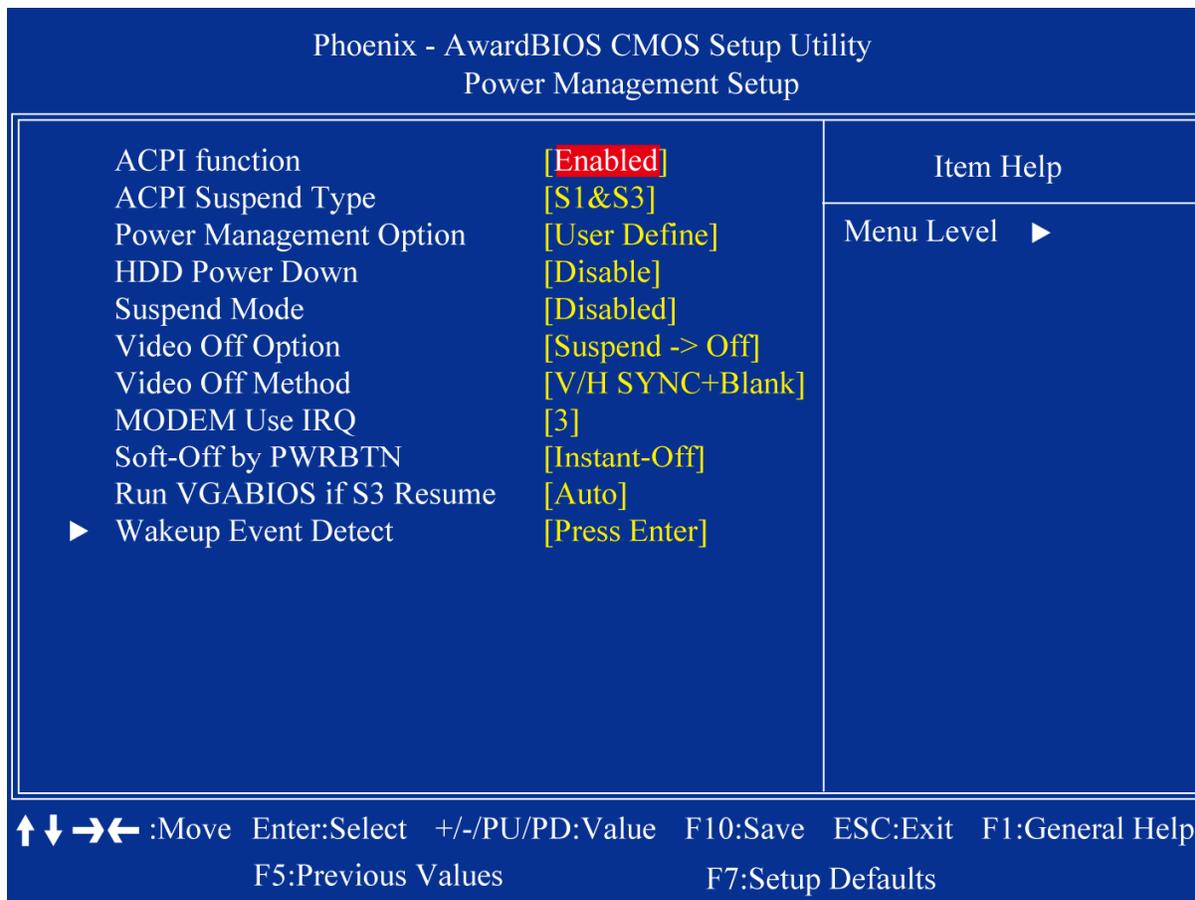
2.3.4.4 Watch Dog Timer Select

This option will determine watch dog timer. The choices: Disabled, 10, 20, 30, 40 Sec. 1, 2, 4 Min.

2.3.4.5 USB Device Setting

2.3.5 Power Management Setup

The power management setup controls the single board computer's "green" features to save power. The following screen shows the manufacturer's defaults.



2.3.5.1 ACPI Function

The choices are "Enabled" and "Disabled".

2.3.5.2 ACPI Suspend Type

This item allows you to set ACPI suspend type to S1/POS(Power On Suspend) or S3/STR(Suspend To RAM).

2.3.5.3 Power Management

There are three selections for Power Management, and each of them has fixed mode settings.

Item	Description
Min. Power Saving	Minimum power management, HDD Power Down = 15 Min
Max. Power Saving	Maximum power management, HDD Power Down =1 Min
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down

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	which ranges from 1 min. to 15 min. and disable.
--	--

2.3.5.4 HDD Power Down

Select “1-15 mins” to enable HDD Power Down mode between 1 to 15 mins. Select “Disabled” to disable HDD Power Down function.

2.3.5.5 Suspend Mode

Item	Description
Min. Power Saving	Minimum power management, HDD Power Down = 15 Min
Max. Power Saving	Maximum power management, HDD Power Down =1 Min
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

2.3.5.6 Video Off Method

Use this to select the method to turn off the video. The choices are “Blank Screen”, “V/H SYNC+ Blank”, and “DPMS”.

2.3.5.7 Video Off In Suspend

When the system is in suspend mode, the video will turn off. The choices are “No” and “Yes”.

2.3.5.8 MODEM Use IRQ

This determines the IRQ in which the MODEM can use. The choices: NA, 3, 4, 5, 7, 9, 10, 11.

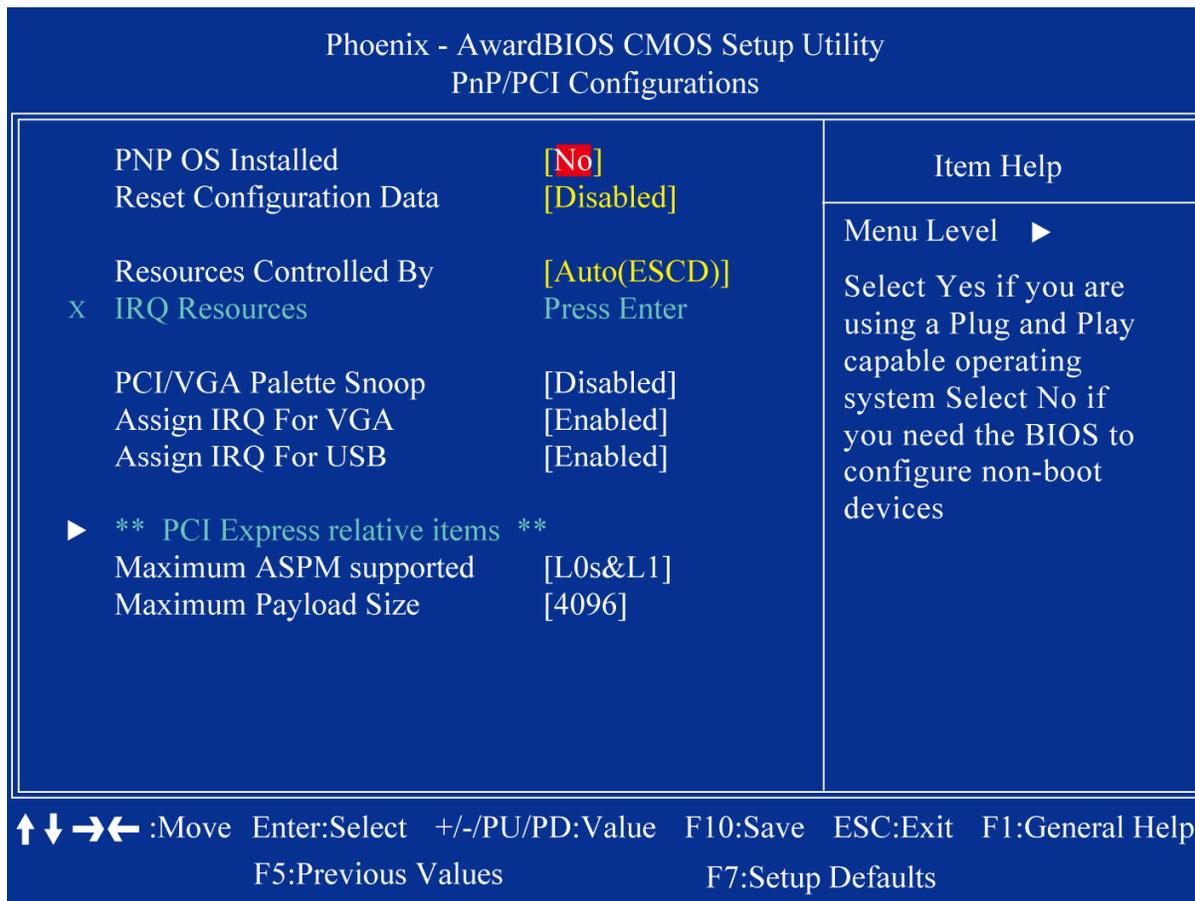
2.3.5.9 Soft-Off by PWR-BTTN

If you choose “Instant-Off”, then pushing the ATX soft power switch button once will switch the system to “system off” power mode. You can choose “Delay 4 sec”. If you do, then pushing the button for more than 4 seconds will turn off the system, whereas pushing the button momentarily (for less than 4 seconds) will switch the system to “suspend” mode.

2.3.5.10 Run VGABIOS if S3 Resume

Select “Auto” to run VGA BIOS if S3 resume automatically. The “Yes” enables running VGA BIOS if S3 resume. The “No” disables this function.

2.3.6 PnP/PCI Configurations



2.3.6.1 Reset Configuration Data

The default is “Disabled”. Select Enabled to reset Extended System Configuration Data (ESCD) if you have installed a new add-on card, and system configuration is in such a state that the OS cannot boot.

2.3.6.2 Resources Controlled By

The commands here are “Auto(ESCD)” or “Manual”. Choosing “Manual” requires you to choose resources from the following sub-menu. “Auto(ESCD)” automatically configures all of the boot and Plug and Play devices, but you must be using Windows 95 or above.

2.3.6.3 PCI/VGA Palette Snoop

This is set to “Disabled” by default.

2.3.6.4 Maximum Payload Size

This allows you to set the maximum TLP payload size for PCI Express devices. The options are [128 bytes], [256 bytes], [512 bytes], [1024 bytes], [2048 bytes], and [4096 bytes].

2.3.7 PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
PC Health Status		
Current System Temp	49°C/120°F	Menu Level ►
Current CPU2 Temperature	38°C/100°F	
Fan1 Speed	0 RPM	
Vcore	0.82V	
VIN0	3.68V	
VIN1	12.34V	
VIN2	5.29V	
VIN3	3.59V	
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F7:Setup Defaults		

2.3.7.1 Current SYSTEM Temperature

This item shows you the current system temperature.

2.3.7.2 Current CPU2 Temperature

This item shows you the current CPU temperature.

2.3.7.3 FAN1 SPEED

This item shows you the current fan speed.

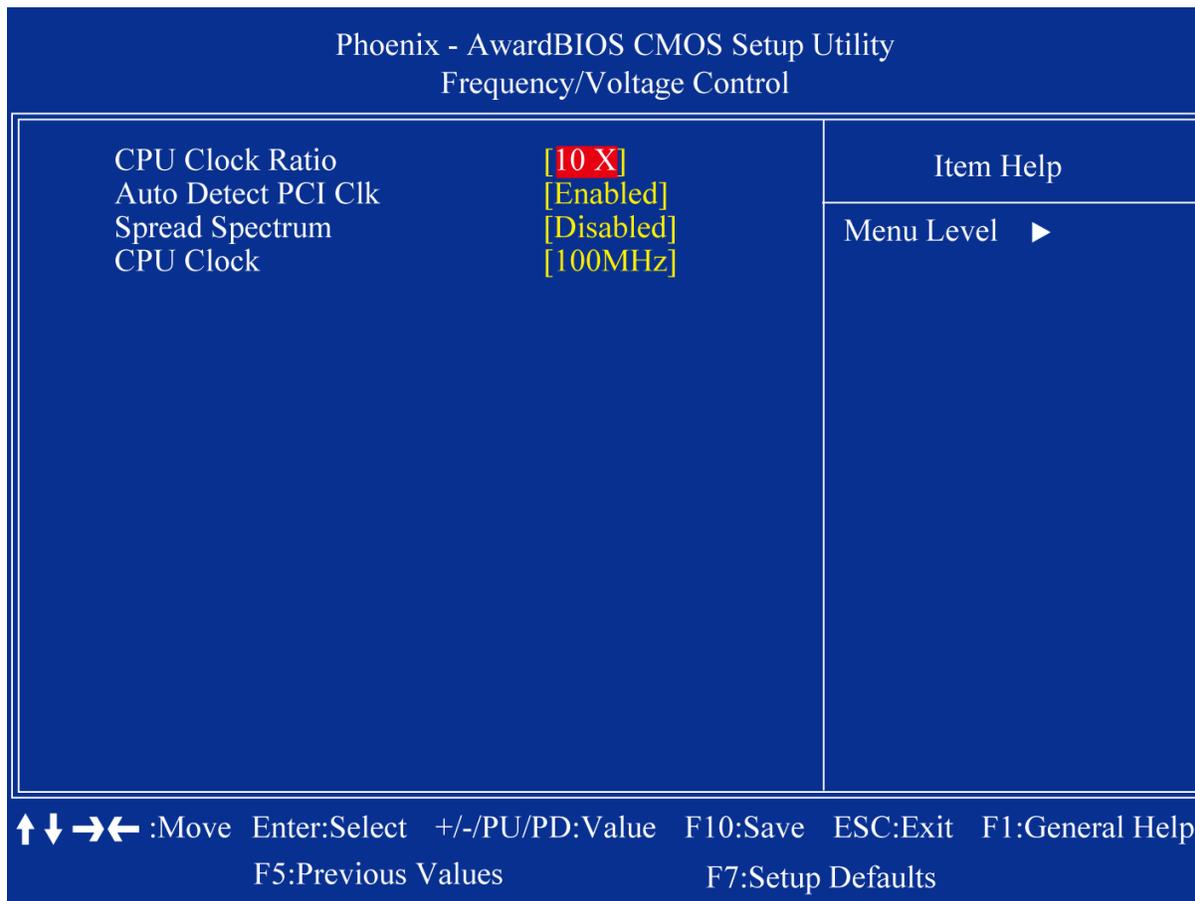
2.3.7.4 Vcore

This item shows you the current Vcore voltage value.

2.3.7.5 VIN0/1/2/3

This item shows you the current voltage value.

2.3.8 Frequency/Voltage Control



2.3.8.1 Auto Detect PCI Clk

This allows you to enable or disable auto detect PCI clock. The choices are “Enabled” and “Disabled”.

2.3.8.2 Spread Spectrum

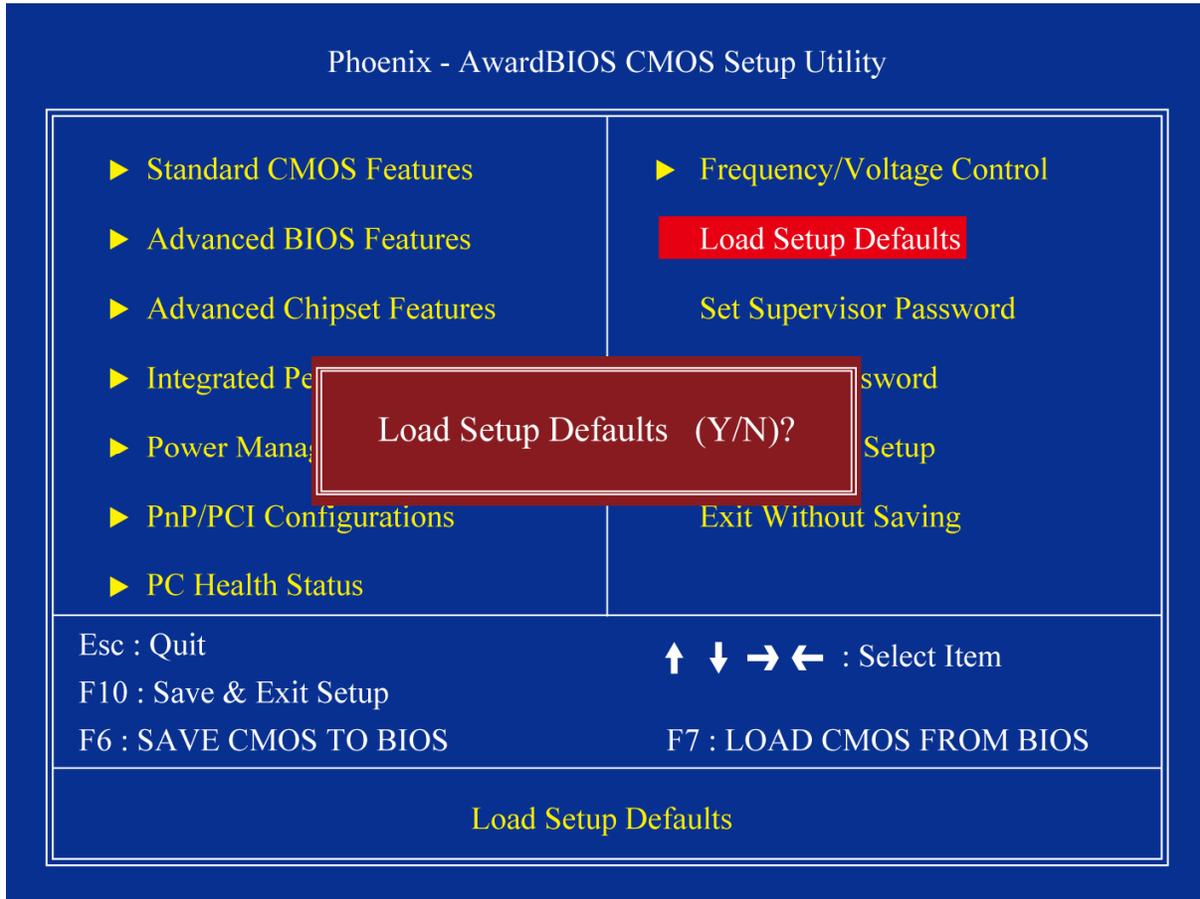
This setting allows you to reduce EMI by modulating the signals the CPU generates so that the spikes are reduced to flatter curves. This is achieved by varying the frequency slightly so that the signal does not use any particular frequency for more than a moment. The choices are “Disabled” and “Enabled”.

2.3.8.3 CPU Clock

The choice: 100

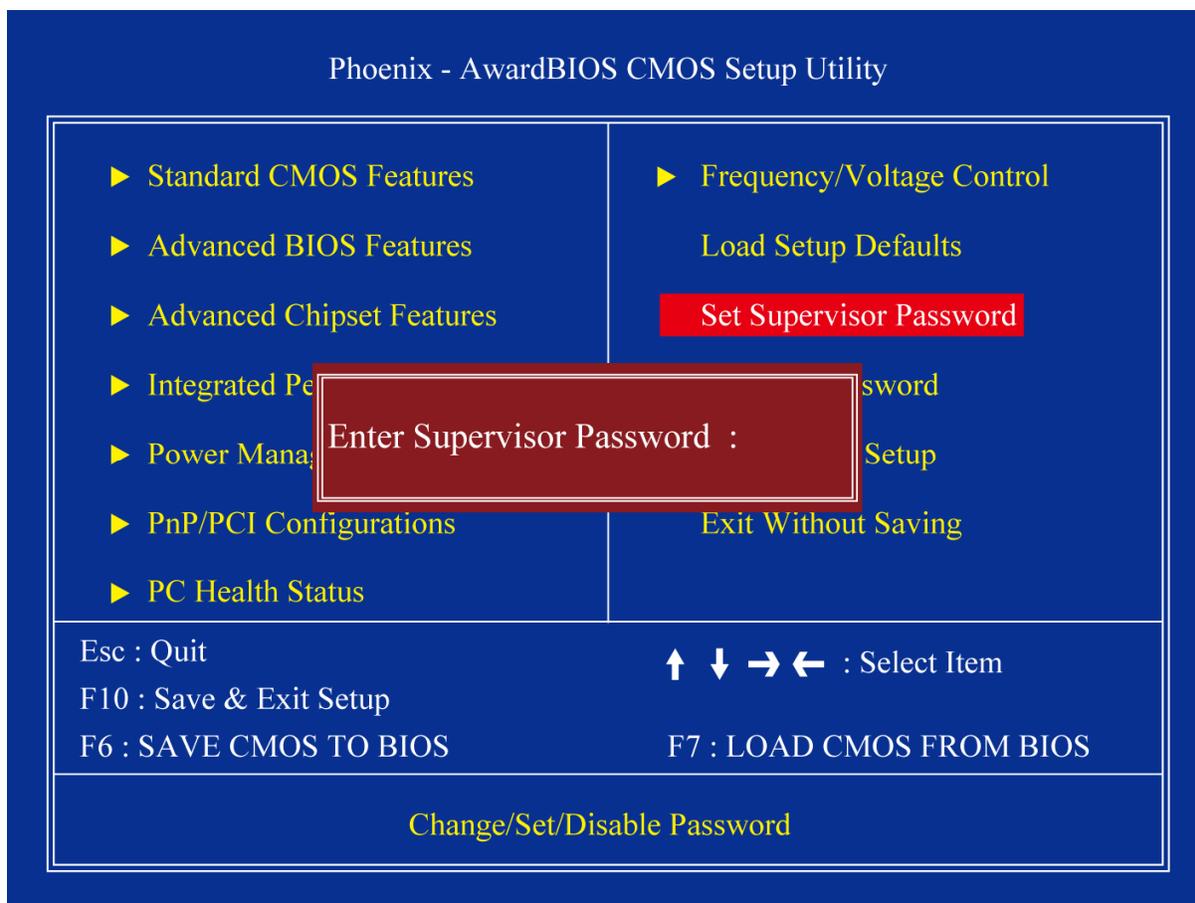
2.3.9 Load Setup Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs. Press <Y> to load the default values setting for optimal performance system operations.



2.3.10 Set Supervisor Password

You can set password to be able to enter/change the options of setup menus.



Follow these steps to change the password.

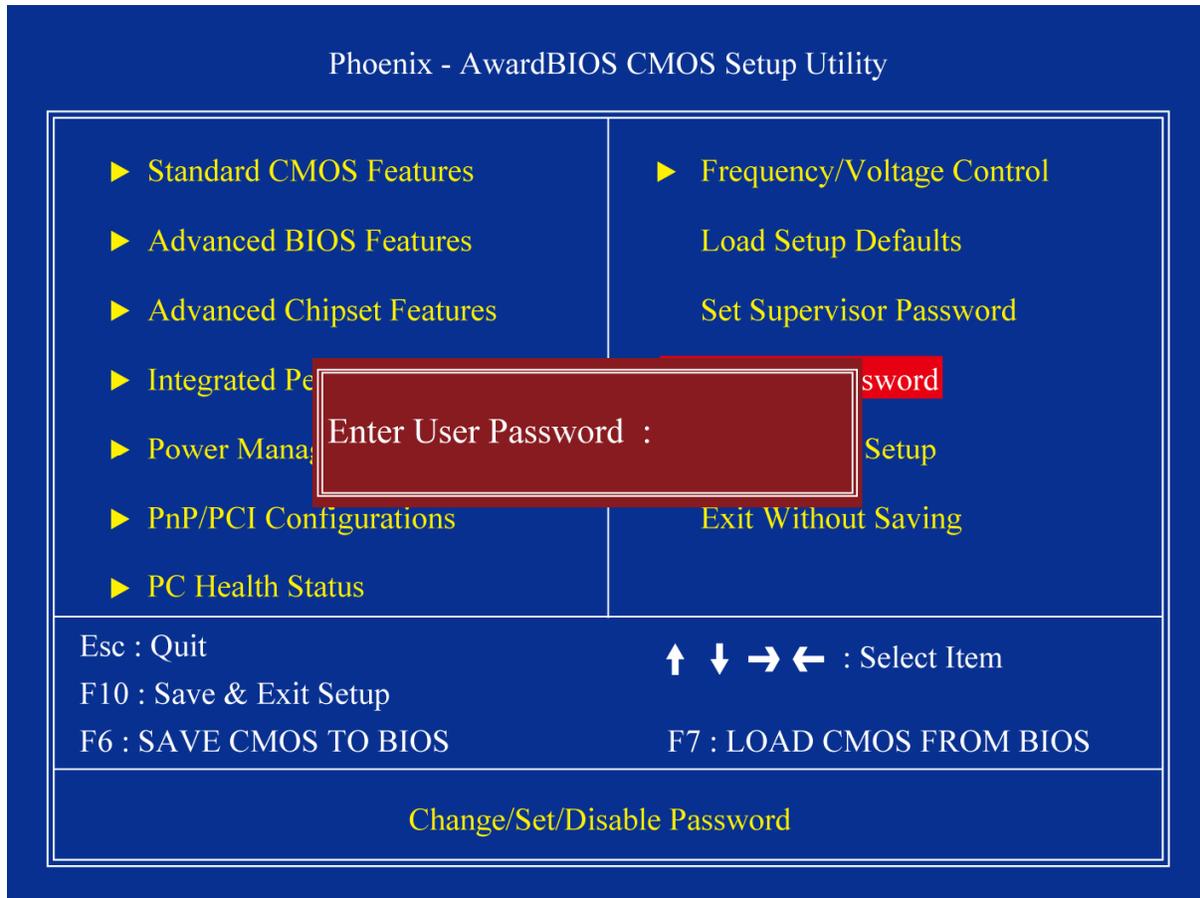
- Choose the “Set Supervisor Password” option from the “Initial Setup Screen” menu and press <Enter>. The screen displays the following message:
- Please Enter Your Password
- Press <Enter>.
- If the CMOS is good and this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen displays the following message:

Please Confirm Your Password

- Type the current password and press <Enter>.
- After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password must be no longer than eight (8) characters. Remember, to enable the password setting feature, you must first select either “Setup” or “System” from the “Advanced BIOS Features” menu.

2.3.11 Set User Password

You can set password to be able to enter/change the options of setup menus.



Follow these steps to change the password.

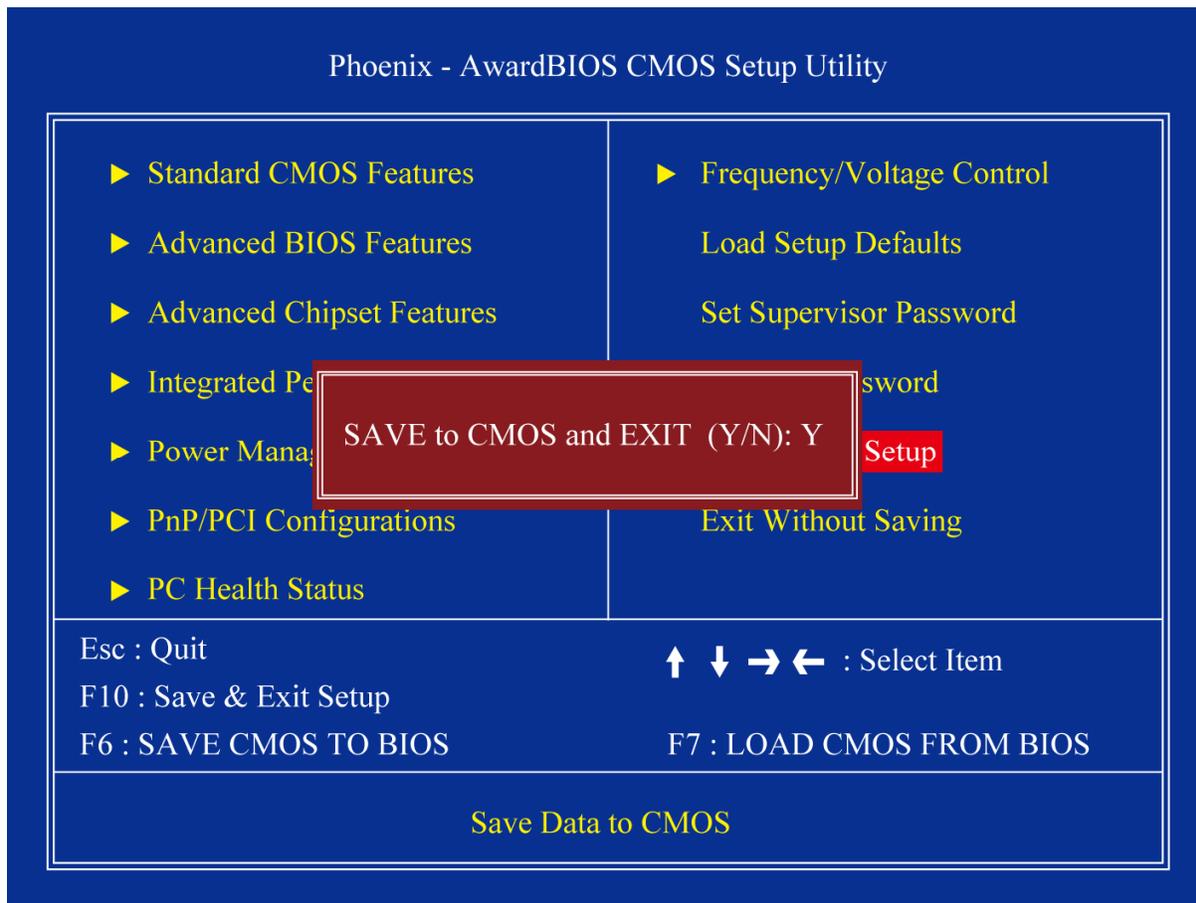
- Choose the "Set User Password" option from the "Initial Setup Screen" menu and press <Enter>. The screen displays the following message:
- Please Enter Your Password
- Press <Enter>.
- If the CMOS is good and this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen displays the following message:

Please Confirm Your Password

- Type the current password and press <Enter>.
- After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password must be no longer than eight (8) characters. Remember, to enable the password setting feature, you must first select either "Setup" or "System" from the "Advanced BIOS Features" menu.

2.3.12 Save & Exit Setup

If you select this and press <Enter>, the values entered in the setup utilities will be recorded in the CMOS memory of the chipset. The processor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.



2.3.13 Exit Without Saving

Selecting this option and pressing <Enter> lets you exit the setup program without recording any new values or changing old ones.

