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Single Board Computer

Peak 703P Series

User's Manual

2005-08 Edition

Preface

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Acknowledgements

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Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

Federal Communications Commission (FCC) For Class A Device

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE Certification

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

> **WARNINGS**
>
> Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

> **CAUTION**
>
> Electrostatic discharge (ESD) can damage NSA components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Safety Information

Before installing and using the Peak 703P, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a hearing device.

Table of Content

Chapter 1
General Information

1.1 Features

The Peak 703P is a member of NEXCOM's P4-based SBC family. The features of this model are as follows:

- Socket 478 / uFCBGA2 479 for Intel® Pentium® M / Celeron® M Processor up to 2GHz+ with 400 MHz FSB
- Intel® 852 GM (E) / ICH4 Chipsets
- 184-pin DIMM x1, support DDR200/266 SDRAM memory up to 1GB
- Intel® 82551ER 10/100 LAN x 1 or Intel® 82541ER GbE LAN x 1
- USB 2.0 ports x 4,Serial ports x 4,LVDS interface x 1

1.2 Specification

System Architecture	- Small Form Factor with 4 screw holes for Embedded Application or Optional PCB Solder Side Protected Plastic Plate - Half-size SBC with PCI-ISA Golden finger
CPU support	- Single 478uFCPGA/479uFCBGA socket - Support Intel® Dothan : 2MB on Die L2 Cache , 400 MHz FSB, speed up to 2.0GHz - Support Intel® Pentium® M : 1MB on Die L2 Cache, 400 MHz FSB, speed up to 1.7GHz - Support Intel® Celeron®-M: 512KB on Die L2 Cache , 400 MHz FSB, speed up to 1.3GHz
Memory	- 200-pin SO-DIMM socket x 1 - Support un-buffered non-ECC DDR 200/266 up to 1GB
BIOS	- Award System BIOS - Advanced Configuration & Power Interface support - 4M bits flash ROM - Advanced Power Management support
Chipsets	- Intel® 852GM/GME (GMCH) - 4M bit Flash BIOS - Intel® FW82801 (ICH4)
LAN	- Intel®82541ER Gigabit Ethernet LAN x 1 - RJ45 with LED x 1 - Driver support: Windows 2003/2000/XP, Linux
Display	- Intel® 852GM/GME integrated dynamic video shared memory, 32 MB max adjusted by OS - VGA interface: D-sub 15-pin for standard CRT - Resolution : Up to 1600 x 1200 for CRT or UP to 1280 x 1024 for

	TFT - Internal LVDS: Support 18/24bit single pixels or 18-bit dual pixels LVDS panel (Resolution support up to 1280 x 1024) - Dual Display : Simultaneous Scan-CRT + LVDS LCD, Dual View-CRT+LVDS LCD
I/O Interface	- 5-pin for key lock - Serial port: 40-pin box headerx1 support RS232 x 4 (optional COM2 RS232/422/485 by switch) - USB 2.0 portx4 - HDD: Ultra ATA 100/66/33 support, 40 pin connector x1 - CF socket x 1 - Parallel Port: 26-pin connector x 1 - PS/2 keyboard/mouse: 6-pin MiniDIN connectorx1 - AC97 audio interface: 4-pin header x 3 for Line-in/Line-out/Mic-in/ - Speaker-out x 1 - Digital I/O port: 8 sets general purpose I/O each with TTL level Interface - LVDS Single Channel
I/O on Bracket	- Gigabit Ethernet LAN with LED x1 - PS2 Keyboard/Mouse Mini DIN x 1 - VGA 15-pin D-sub connectorx1 - USB connector x 1
System Monitor	- One Fan speed (For CPU) - System monitor controller derived from IT8712 - 7 voltage (For Vcore, +1.05V, +1.2V, +2.5V, +3V, +5V, +5V Stand-By) - 2 temperature (one for CPU internal use, another for external system use)
Real Time Clock	- On chip RTC with battery back up - Lithium battery x 1
Power Requirement	- TBD
Watchdog Timer	- 1, 2, 4, 8, ...128 seconds time-out intervals
Dimensions	- 186.5mm(L) x 127.5mm(W)
Environments	- Operating temperatures: -20°C to 70°C - Storage temperatures: -20°C to 80°C - Relative humidity: 10% to 90% (Non-condensing)
Certification	- CE approval - FCC Class A

1.3 Power Consumption Measurement

Test Condition : Win2000 HCT9.5 and KPower

Test Equipment :

CPU	Pentium-M 2.0GHz
DRAM Model P/N and Size	Apacer 78.92046.561\512MB
HDD Model P/N	DJSA-210
Power Supply Model P/N	ST-300GL

Power Rail	+12V	+5V	+3.3V
Power Consumed	0.12A	6.9A	NA

1.4 Board Layout

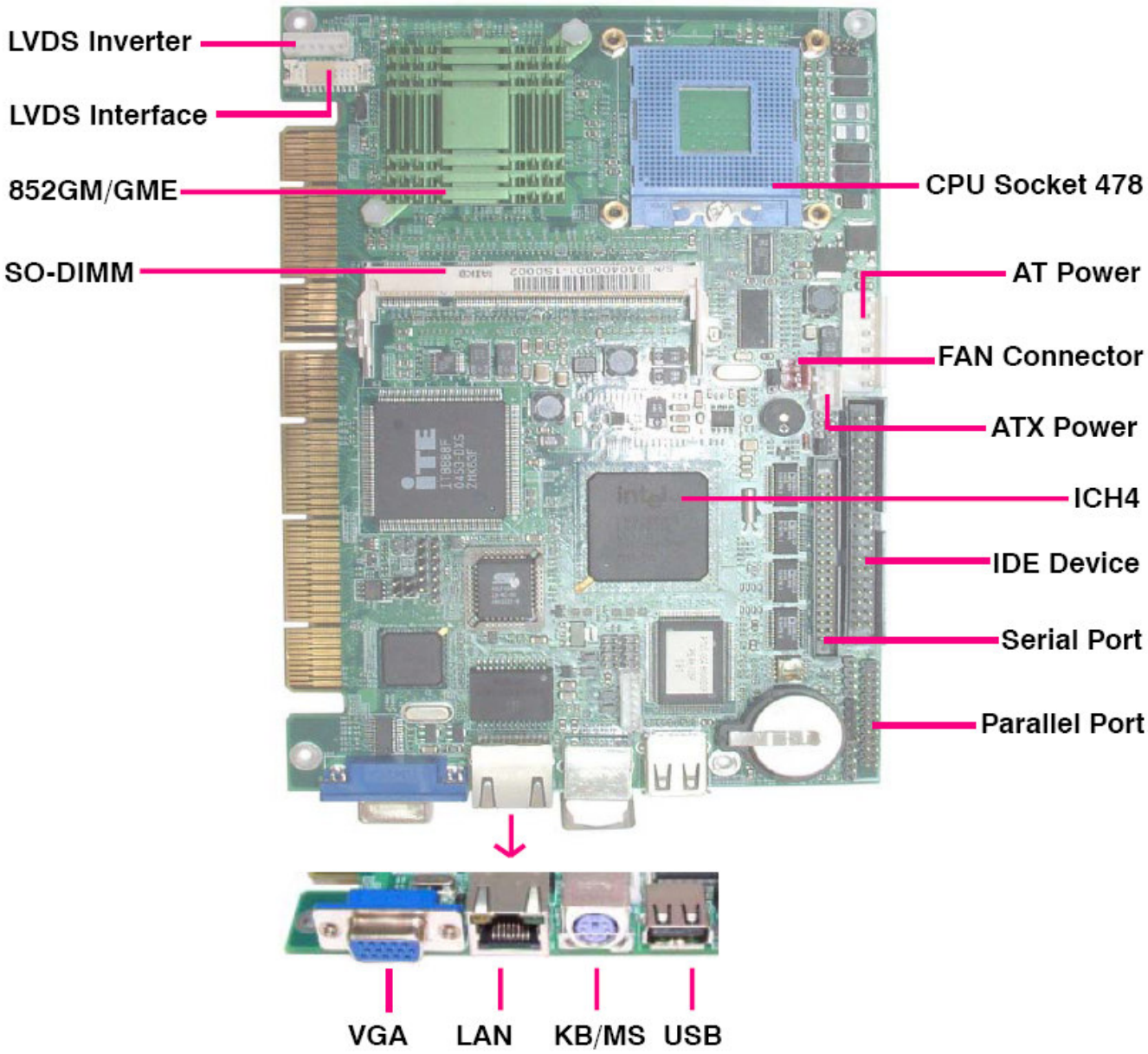


Figure 1.1: Birdeye's View of the Peak 703P

1.5 Board Dimensions

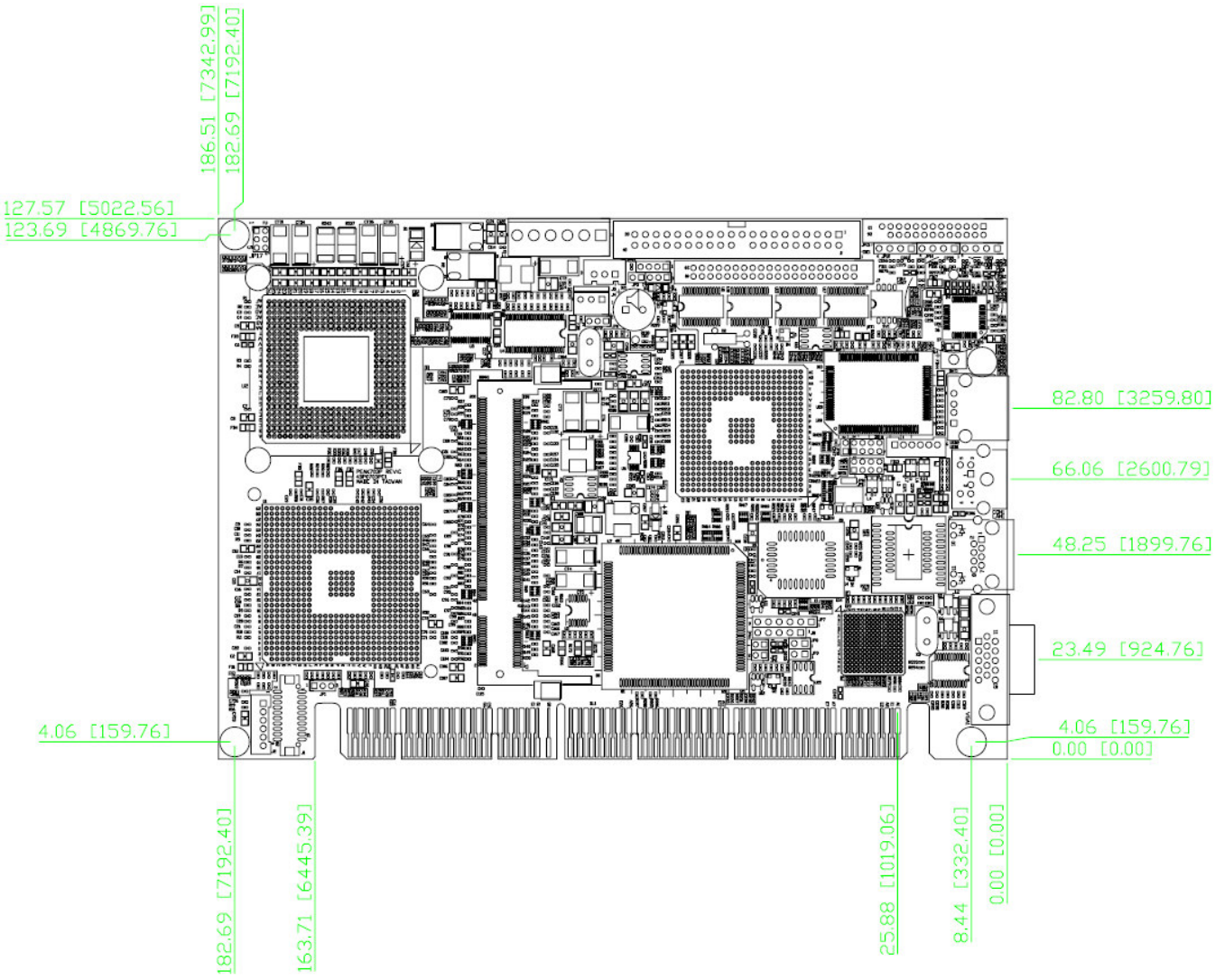


Figure 1.2: Mechanical Drawing of the Peak 703P

Chapter 2
Jumper Setting

This chapter of the User's Manual describes how to set jumpers.

Note: The procedures that follow are generic for all Peak 703P series.

2.1 Before You Begin

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- ♦ A Philips screwdriver
- ♦ A flat-tipped screwdriver
- ♦ A set of jewelers Screwdrivers
- ♦ A grounding strap
- ♦ An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environment tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

2.2 Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on the computers that are still connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to your computer or yourself:

- ♦ Always disconnect the unit from the power outlet whenever you are working inside the case.
- ♦ If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- ♦ Hold electronic circuit boards (such as the Peak 703P board) by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- ♦ Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- ♦ Use correct screws and do not over tighten screws.

2.3 Setting Jumpers

A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN. Please see the following illustrations

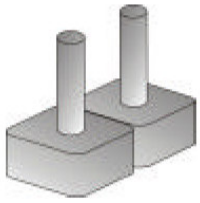
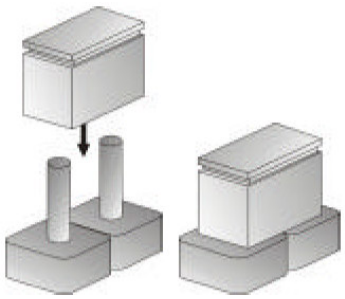
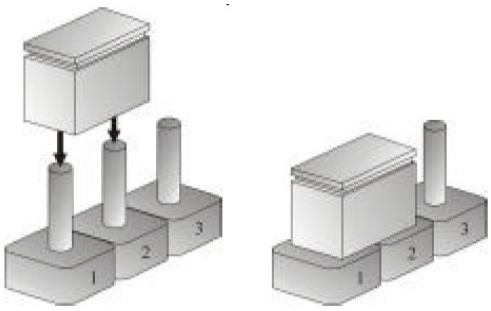
<table>
<tr><td rowspan="2">The illustrations on the right show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.</td><td>  </td><td>  </td></tr>
<tr><td>Open (Off)</td><td>Short (On)</td></tr>
<tr><td>These illustrations show a 3-pin jumper. Pins 1 and 2 are SHORT.</td><td colspan="2"> 
</td></tr>
</table>

Table 2-1: Setting Jumpers

2.4 Location of Jumpers

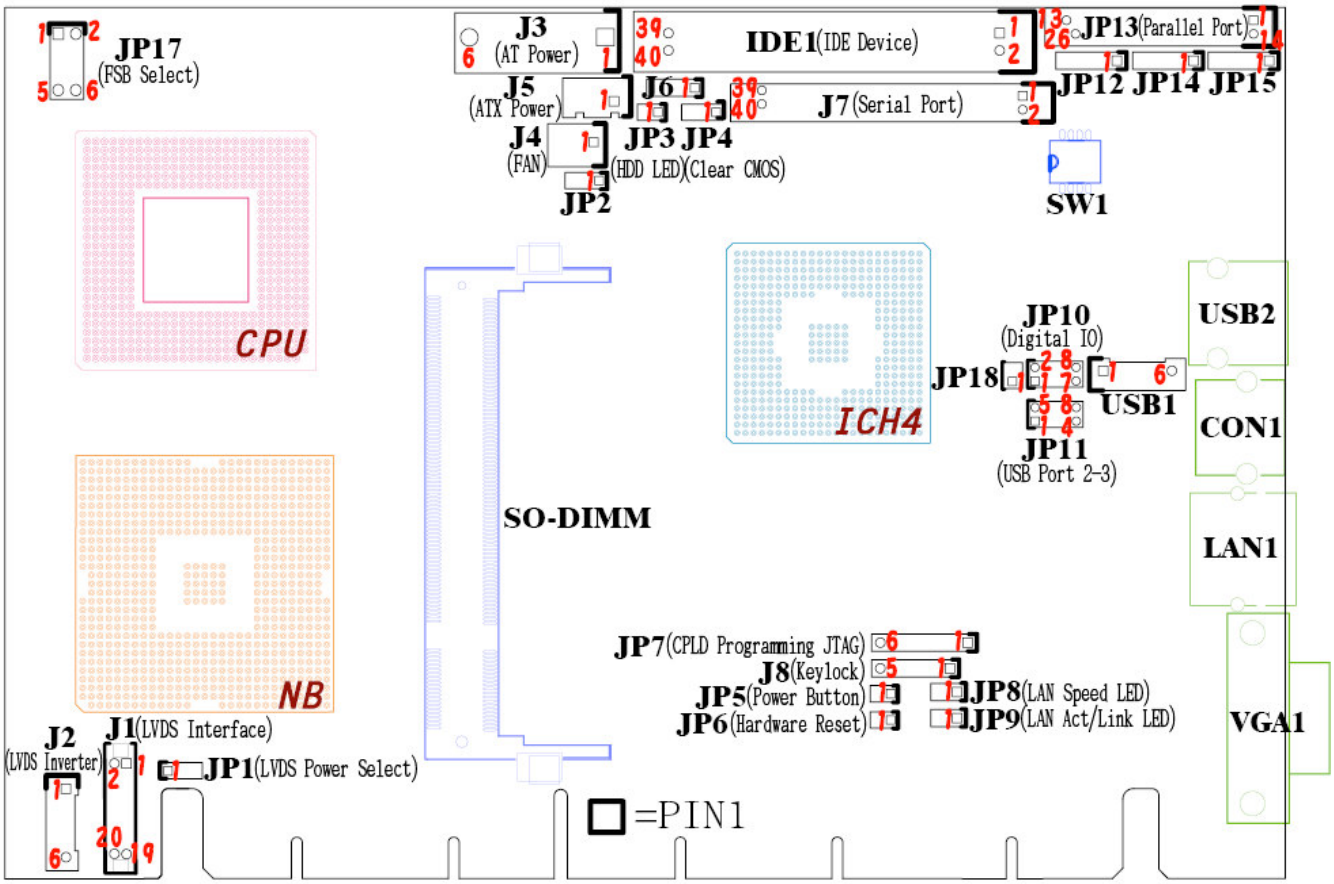


Figure 2-1: Jumper Location

2.5 Function of Jumper

Pin	Function	Pin	Function
J1	2x10 Connector for LVDS interface (18bit)	JP2	1x3 2.0mm Pin Header for FSB Select
J2	1x6 2.0mm JST Connector for LVDS Inverter	JP3	1x2 2.0mm Pin Header for HDD LED
J3	1x6 AT Power Connector	JP4	1x3 2.0mm Pin Header for On Board RTC
J4:	1x3 JST Connector for FAN	JP5	1x2 2.0mm Pin Header for Power Button
J5:	1x3 JST Connector for ATX Power	JP6	1x2 2.0mm Pin Header for Hardware Reset
J6:	1x4 2.0mm Pin Header for External Speaker	JP7	1x6 2.54mm Pin Header for CPLD Programming JTAG
J7:	2x20 2.0mm Box Header for Serial Port	JP8	1x2 2.54mm Pin Header for LAN Speed LED
J8:	1x5 2.54mm Pin Header for Keylock	JP9	1x2 2.54mm Pin Header for LAN Act/Link LED
JP1	1x3 2.0mm Pin Header for LVDS Power Select		

2.6 Pin Definition

1. J1: 2x10 Connector for LVDS interface (18bit)

Pin No.	Description	Pin No.	Description
1	LVDS_DDCPCLK	2	LVDS_DDCPDATA
3	PANEL1_VDD	4	LVDS_YAP0
5	LVDS_YAP3	6	LVDS_YAM0
7	LVDS_YAM3	8	PANEL1_VDD
9	GND	10	LVDS_YAP1
11	LVDS_CLKAP	12	LVDS_YAM1
13	LVDS_CLKAM	14	GND
15	GND	16	PANEL1_BACKLIGHT
17	LVDS_YAP2	18	PANEL1_BACKLIGHT
19	LVDS_YAM2	20	GND

2. J2: 1x6 2.0mm JST Connector for LVDS Inverter

Pin No	Definition
1	PANEL1_BACKLIGHT
2	PANEL1_VDD
3	GND
4	GND
5	NC
6	LVDS_BKLTCTL

3. J3: 1x6 AT Power Connector

Pin No	Definition
1	+12V
2	GND
3	GND
4	GND
5	+5V
6	+5V

4. J4: 1x3 JST Connector for FAN

Pin No	Definition
1	GND
2	FAN_VCC
3	FAN_TAC

5. J5: 1x3 JST Connector for ATX Power

Pin No	Definition
1	ATX5VSB
2	GND
3	PSON#

6. J6: 1x4 2.0mm Pin Header for External Speaker

Pin No	Definition
1	SPEAKER
2	GND
3	GND
4	+5V

7. LAN1: RJ45 Connector for LAN Interface

Pin No	Definition	Pin No	Definition
1	TXD0P	2	TXD0N
3	TXD1P	4	TXD2P
5	TXD2N	6	TXD1N
7	TXD3P	8	TXD3N
9	LAN_SorL_LED	10	+3.3VSBY
11	LAN_LINK_LED	12	LAN_ACT_LED
13	LGND	14	LGND

8. J7: 2x20 2.0mm Box Header for Serial Port

Pin No.	Description	Pin No.	Description
1	SP_DCD1	2	SP_DSR1
3	SP_RXD1	4	SP_RTS1
5	SP_TXD1	6	SP_CTS1
7	SP_DTR1	8	SP_RI1
9	GND	10	NC
11	SP_DCD2	2	SP_DSR2
13	SP_RXD2	4	SP_RTS2
15	SP_TXD2	6	SP_CTS2
17	SP_DTR2	8	SP_RI2
19	GND	10	NC
21	SP_DCD3	2	SP_DSR3
23	SP_RXD3	4	SP_RTS3
25	SP_TXD3	6	SP_CTS3
27	SP_DTR3	8	SP_RI3
29	GND	10	NC
31	SP_DCD4	2	SP_DSR4
33	SP_RXD4	4	SP_RTS4
35	SP_TXD4	6	SP_CTS4
37	SP_DTR4	8	SP_RI4
39	GND	10	NC

9. JP2 : 1x3 2.0mm Pin Header for FSB Select

Pin No	Definition
1, 2 Short	133MHz
*2, 3 Short	100MHz

*** = Default**

10. JP4 : 1x3 2.0mm Pin Header for On Board RTC

Pin No	Definition
*1, 2 Short by wire-wrap	Operation Mode
2, 3 Short by wire-wrap	Clear CMOS

*** = Default**

11. JP5: 1x2 2.0mm Pin Header for Power Button

Pin No	Definition
1	PWRBT#
2	GND

12. JP6: 1x2 2.0mm Pin Header for Hardware Reset

Pin No	Definition
1	RESET#
2	GND

13. JP7: 1x6 2.54mm Pin Header for CPLD Programming JTAG

Pin No	Definition
1	+3.3VSBY
2	GND
3	TCK
4	TDO
5	TDI
6	TMS

14. JP8: 1x2 2.54mm Pin Header for LAN Speed LED

Pin No	Definition
1	LAN_Speed#
2	5VSB

15. JP9: 1x2 2.54mm Pin Header for LAN Act/Link LED

Pin No	Definition
1	LAN_Active#
2	LAN_Link#

16. JP10: 2x4 2.0mm Pin Header for Digital IO

Pin No.	Description	Pin No.	Description
1	Digital Input 1	2	Digital Output 1
3	Digital Input 2	4	Digital Output 2
5	Digital Input 3	6	Digital Output 3
7	Digital Input 4	8	Digital Output 4

17. JP11: 2x4 2.0mm Pin Header for USB Port 2-3

Pin No	Definition	Pin No	Definition
1	+5V	5	GND
2	USBP3-	6	USBP4+
3	USBP3+	7	USBP4-
4	GND	8	+5V

18. JP12: 1x4 2.54mm Pin Header for Audio Line Out

Pin No	Definition
1	Line Out Left
2	Audio GND
3	JD1
4	Line Out Right

19. SW1: Serial Port Mode Select

Mode	SW1-1	SW1-2	SW1-3	SW1-4
RS232	OFF	OFF	OFF	OFF
RS422	ON	ON	ON	ON
RS485	ON	ON	OFF	ON

20. JP13: 2x13 2.0mm Pin Header for Parallel Port

Pin No	Definition	Pin No	Definition
1	STB#	2	AFD#
3	PD0	4	ERR#
5	PD1	6	INIT#
7	PD2	8	SLIN#
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK#	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

21. JP14: 1x4 2.54mm Pin Header for Audio Line In

Pin No	Definition
1	Line In Left
2	Audio GND
3	JD2
4	Line In Right

22. JP15: 1x4 2.54mm Pin Header for Audio Mic In

Pin No	Definition
1	Mic In 1
2	Audio GND
3	JD2
4	Mic In 2

23. JP17 : 2x3 2.0mm Pin Header for FSB Select(852GME Only)

Pin No	Definition
1, 2 Short	533MHz
*1, 2 Open	400MHz

*** = Default**

24. JP18: 1x2 2.0mm Pin Header for Thermal Alert LED

Pin No	Definition
1	VCC5
2	Thermal Alert

25. USB1: 1x6 2.0mm JST Connector for USB Port 2

Pin No	Definition
1	+5V
2	USBP2-
3	USBP2+
4	GND
5	GND
6	GND

26. USB2: USB Connector for USB Port 1

Pin No	Definition
1	+5V
2	USBP1-
3	USBP1+
4	GND
5	GND
6	GND

27. CON1: Mini Din Connector for KB/MS

Pin No	Definition
1	LKBDAT
2	LMDAT
3	KGND
4	KB/MS_VCC
5	LKBCLK
6	LMCLK
7	KGND
8	KGND
9	KGND

28. IDE1: 2x20 2.54mm Box Header for IDE Device

Pin No	Definition	Pin No	Definition
1	RESET#	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	DDRQ0	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IORDY#	28	GND
29	DDACK0	30	GND
31	IRQ14	32	NC
33	DA1	34	P66DET
35	DA0	36	DA2
37	HDCS1#	38	HDCS3#
39	HDACT#	40	GND

29. VGA1: DB-15 Connector for CRT Interface

Definition	Pin No			Definition
		6		ANA-GND
RED	1		11	NC
		7		ANA-GND
GREEN	2		12	DDCDAT
		8		ANA-GND
BLUE	3		13	HSYNC
		9		VCC
NC	4		14	VSYNC
		10		DIG-GND
DIG-GND	5		15	DDCCLK

Chapter 3
Expansion Capability

3.1 Installing SODIMM

1. Always turn off your computer and remove the rechargeable battery pack before installing your Kingston memory.

2. Insert the module into the socket at a slight angle (approximately 30 degrees). Note that the socket and module are both keyed, which means the module can be installed one way only.

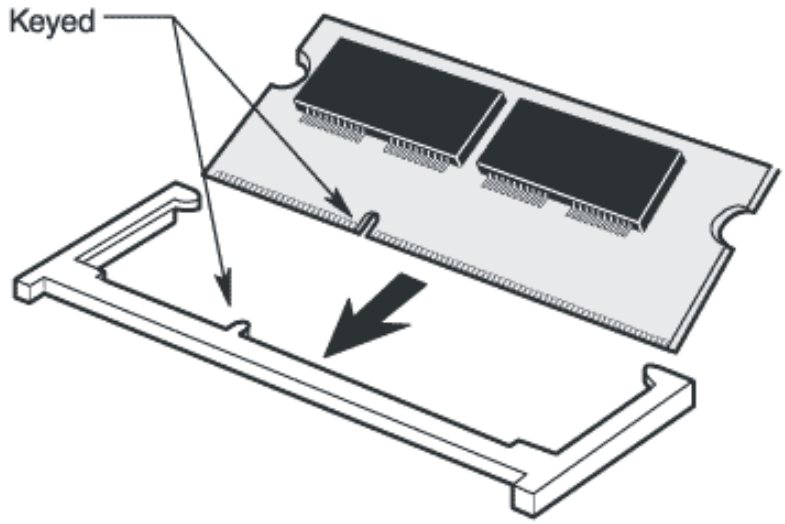


Figure 3-1: How to Install SODIMM (1)

3. To seat the module into the socket, apply firm, even pressure to each end of the module (see the arrows) until you feel it slip down into the socket. If you are having problems getting the module to seat properly, try rocking the module up and down slightly, while continuing to apply pressure.

- When properly seated, the contact fingers on the edge of the module will almost completely disappear inside the socket.

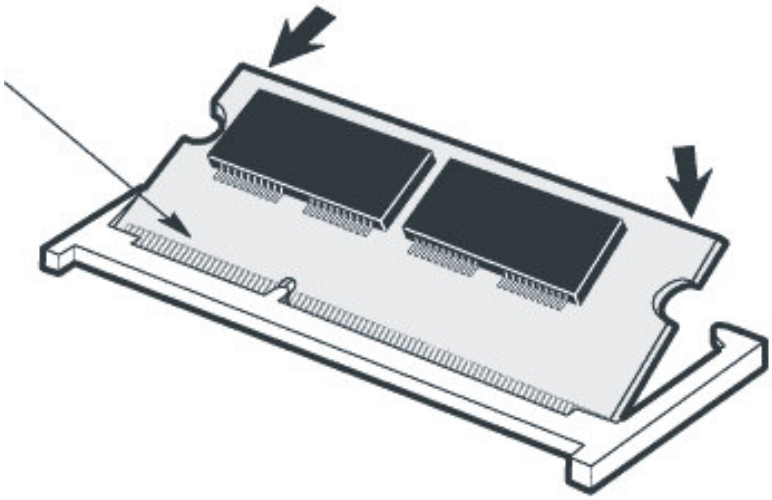


Figure 3-2: How to Install SODIMM (2)

4. With the module properly seated in the socket, rotate the module downward, as indicated in the illustration. Continue pressing downward until the clips at each end of the socket lock into position. With most sockets, you will hear a distinctive CLICK, indicating the module is correctly locked into position.

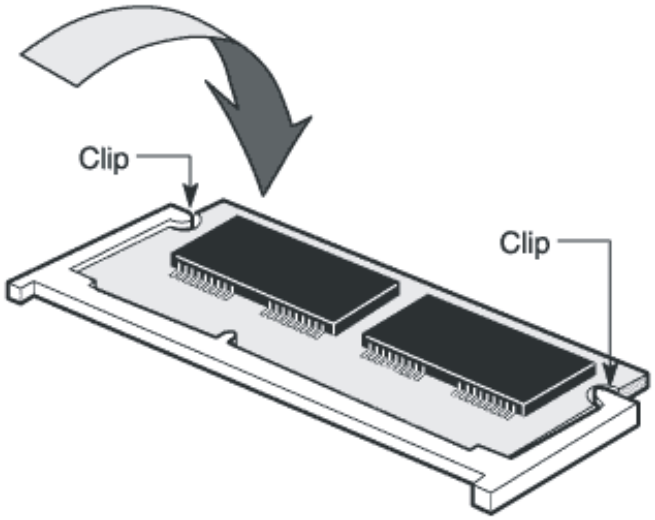


Figure 3-3: How to Install SODIMM (3)

5. Once the module or modules have been installed, the computer's cover can be reinstalled.
6. Reinstall the rechargeable battery pack and any cables disconnected during the installation process.

3.2 Installing Compact Flash

1. To install a Compact Flash memory card into PEAK 703P, align the notches on the card with the Compact Flash socket in the PEAK 703P. Then firmly insert the card into the socket until it is completely seated.

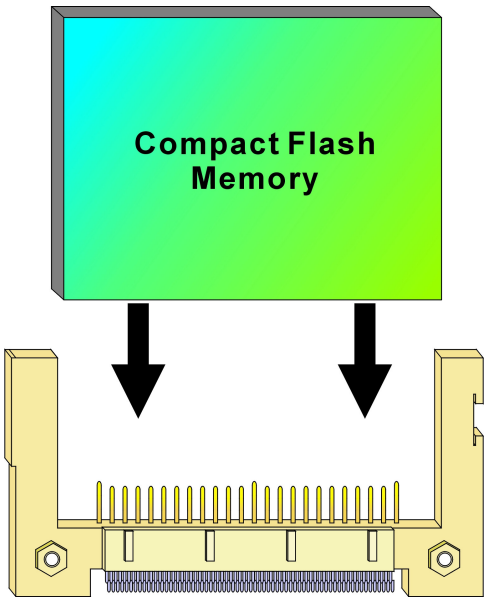


Figure 3-4: How to Install Compact Flash Memory (1)

2. To remove the Compact Flash memory card from PEAK 703P, pull out the memory card from the Compact Flash socket.

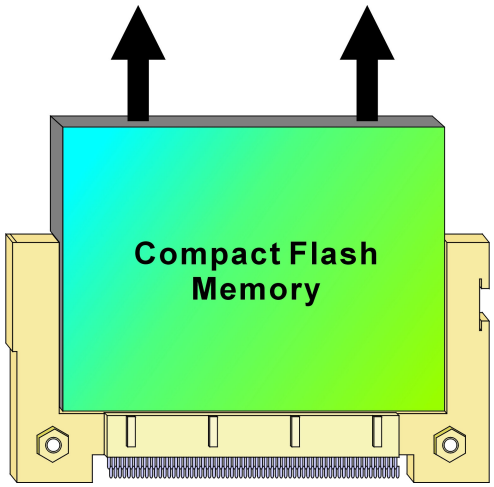


Figure 3-5: How to Uninstall Compact Flash Memory (2)

3.3 Installing Intel Pentium-M CPU and Fan Heatsink

Below is the installation instruction:

Note: Prepare a slot type screwdriver before starting the installation process.

Step 1: Be sure that the beveled corner of the CPU as shown in the picture is aligned with that of the socket.

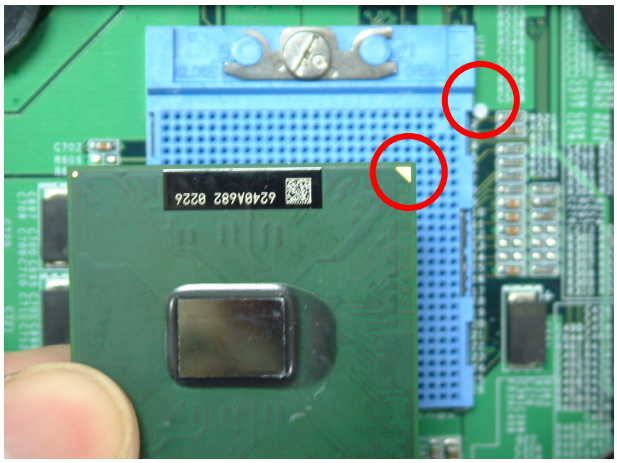


Figure 3-6: How to Install CPU (1)

Step 2: Screw it tight as shown in the picture.

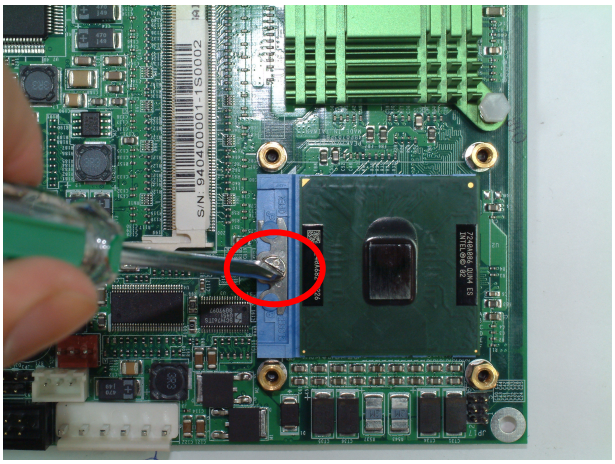


Figure 3-7: How to Install CPU (2)

Step 3: Apply the heatsink ointment to the location on the CPU as indicated by the arrow.

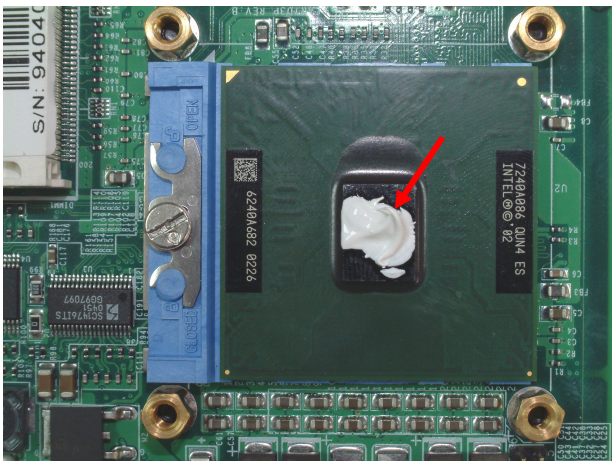


Figure 3-8: How to Install CPU (3)

Step 4: Attach the heatsink onto the CPU. The exhaust opening should face the Northbridge. Connect the power connector to the jumper and tighten the four screws as shown.

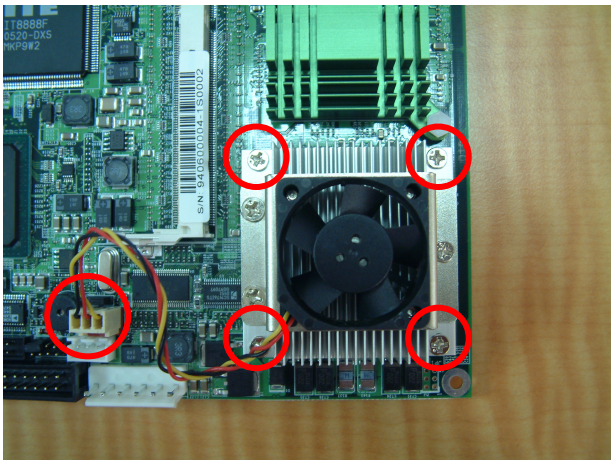


Figure 3-9: How to Install fan heatsink (1)

Chapter 4
Award BIOS Setup

This chapter explains how to use the BIOS Setup program for the Peak 703P. The current BIOS setup pictures in the chapter are for reference only, which may change by the BIOS modification in the future. User can download any major updated items or reversion from NEXCOM web site http://www.nexcom.com.tw. If any unclear message occurs, please contact NEXCOM customer service representative for help or log onto http://www.nexcom.com.tw/contact/contact.htm.

4.1 About the BIOS

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- ♦ Hard drives, diskette drives, and peripherals
- ♦ Video display type and display options
- ♦ Password protection from unauthorized use
- ♦ Power management features

The settings made in the Setup program intimately affect how the computer performs. It is important, therefore, first to try to understand all the Setup options, and second, to make settings appropriate for the way you use the computer.

4.2 When to Run BIOS

This program should be executed under the following conditions:

- ♦ When changing the system configuration
- ♦ When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- ♦ When resetting the system clock
- ♦ When redefining the communication ports to prevent any conflicts
- ♦ When making changes to the Power Management configuration
- ♦ When changing the password or making other changes to the security setup

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

4.3 Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

♦ If the error occurs before the display device is initialized, a series of beeps will be transmitted.

♦ If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing <Del> allows you to enter Setup. Another way to enter Setup is to power on the computer and wait for the following message during the POST:

TO ENTER SETUP BEFORE BOOT
PRESS <CTRL+ALT+DEL > KEY

Press the <Del> key or press the <Ctrl>, <Alt>, and <Esc> keys to enter Setup:

4.4 The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The main menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

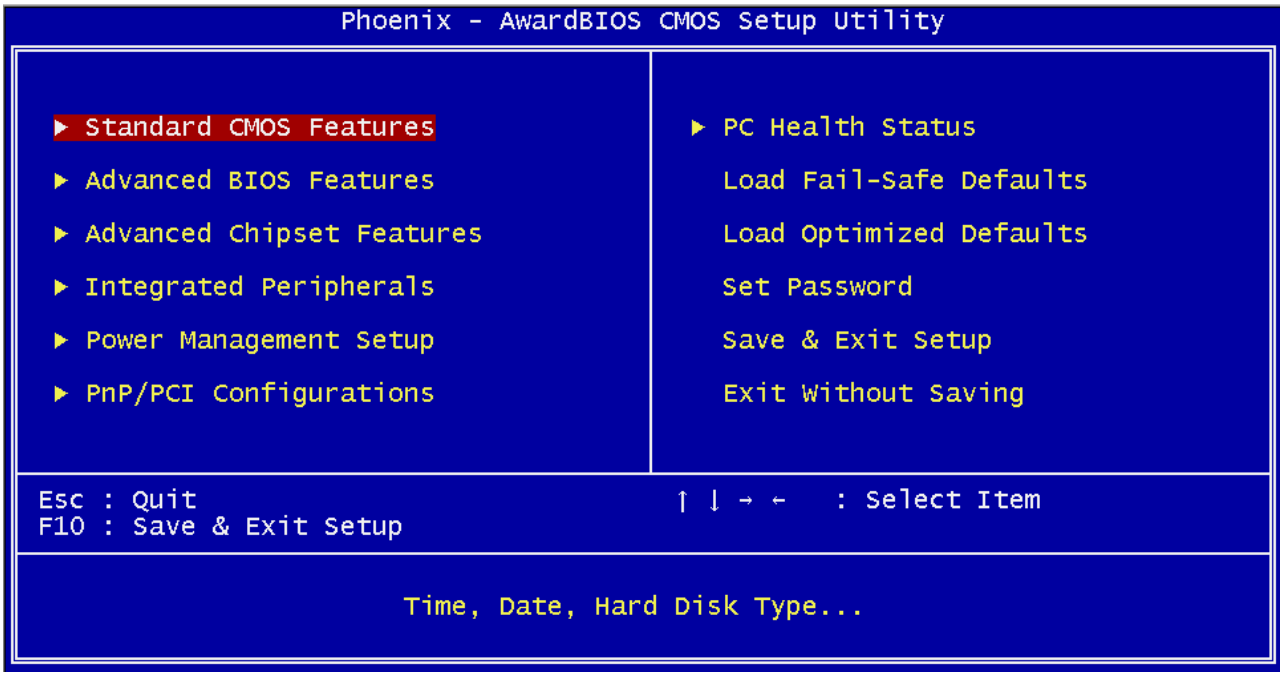


Figure 4-1: BIOS Setup Utility Main Menu

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on the system.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize the system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP/PCI Configurations
This entry appears if your system supports Plug and Play and PCI Configuration.

PC Health Status
Displays CPU, System Temperature, Fan Speed, and System Voltages Value.

Load Fail-Safe Defaults
Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults
Use this menu to load the BIOS default values, i.e., factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the option to change these defaults to meet their needs.

Set Password
Enables you to change, set, or disable the supervisor or user password.

Save & Exit Setup
Saves CMOS value changes to CMOS and exits setup

Exit Without Saving
Ignores all CMOS value changes and exits setup.

4.5 Getting Help

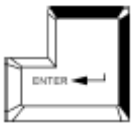
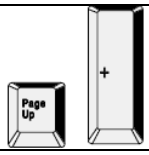
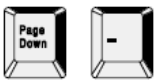
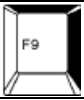
Main Menu

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

Status Page Setup Menu/Option Page Setup Menu

4.6 Control Keys

The table below lists the keys that help you navigate the setup program.

Up arrow		Move to previous item
Down arrow		Move to next item
Left arrow		Move to the item to the left
Right arrow		Move to the item to the right
Esc key		Main Menu: Quit without saving changes to CMOS Status/Option Page Setup Menus: Exit current page and return to Main Menu.
Enter Key		Select or Accept an Item
PgUp/plus key		Increase the numeric value or make changes
PgDn/minus key		Decrease the numeric value or make changes
F1 key		General help, only for Status Page Setup Menu and Option Page Setup Menu
F2/Shift + F2 key		Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F5 key		Restore the previous CMOS value from CMOS (only for Option Page Setup Menu)
F6 key		Load the default CMOS value from BIOS default table (only for Option Page Setup Menu)
F7 key		Load the Setup default value (only for Option Page Setup Menu)
F9 Key		Menu in BIOS
F10 key		Save all the CMOS changes (only for Main Menu)

4.7 Standard CMOS Features

Selecting Standard CMOS Features on the main program screen displays the following menu:

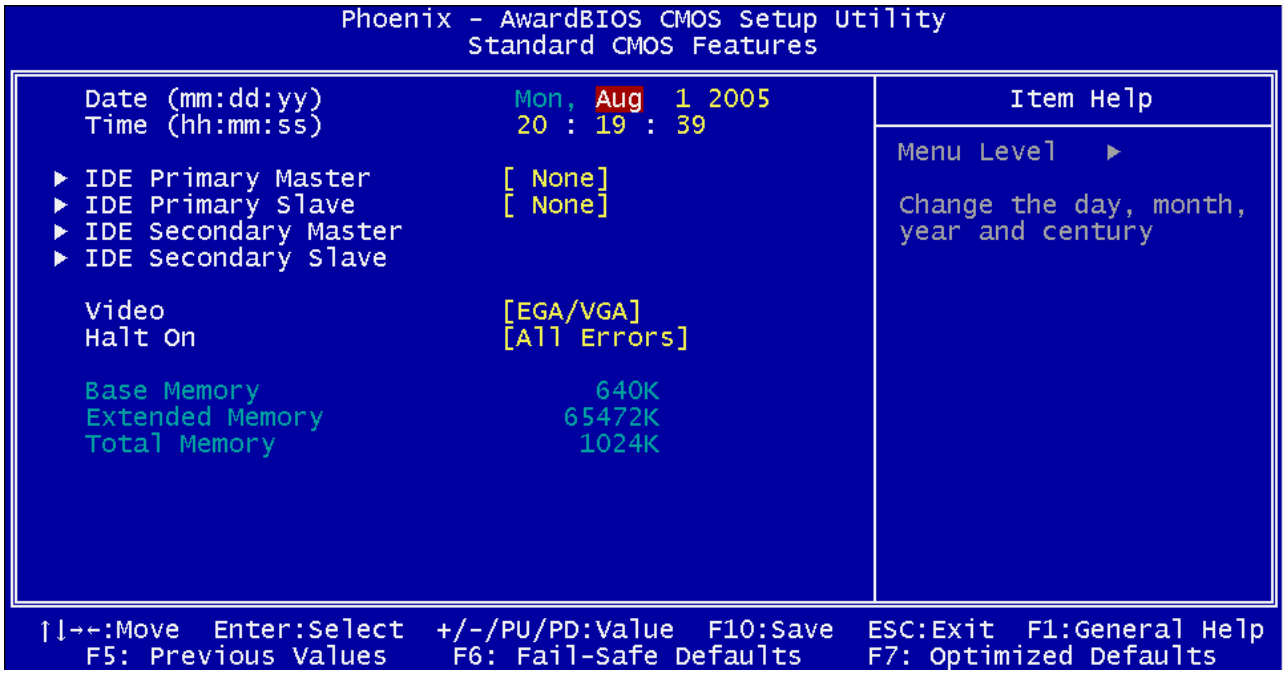


Figure 4-2: BIOS – Standard CMOS Features

The Standard CMOS Setup utility is used to configure the following features:

Date (mm:dd:yy)

The BIOS determines the day of the week from the other data 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.

Time (hh:mm:ss)

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 Pg Dn key to increment the setting, or type the desired value into the field.

IDE Devices (Primary/Secondary Master/Slave)

Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel. If you leave this item at Auto, the system will automatically detect and configure any IDE devices it finds. If it fails to find a hard disk, change the value to Manual and then manually configure the drive by entering the characteristics of the drive in the items below:

- ♦ Capacity Approximate hard disk drive capacity

- ♦ Cylinder Number of cylinders
- ♦ Head Number of heads
- ♦ Precomp Write pre-compensation cylinder
- ♦ Landing Zone Landing zone
- ♦ Sector Number of sector

Refer to your drive's documentation or look on the drive if you need to obtain this information. If no device is installed, change the value to None.

Video

Set this field to the type of graphics card installed in your system. If you are using a BGA or higher resolution card, choose the EGA/VGA option. The options are:

- ♦ EGA/VGA Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA or PGA monitor adapters
- ♦ CGA40 Color Graphics Adapter, power up in 40 column mode
- ♦ CGA80 Color Graphics Adapter, power up in 80 column mode
- ♦ MONO Monochrome adapter, includes high resolution monochrome adapters

Halt On

During the Power-On Self-Test (POST), the computer stops if the BIOS detect a hardware error. This setting determines which type of error will cause the system to halt during boot. The options are:

- ♦ All Error: Whenever the BIOS detects a non-fatal error, the system will be stopped and you will be prompted.
- ♦ No Errors: The system boot will not stop for any error that may be detected.
- ♦ All, But Keyboard: The system boot will not stop for a keyboard error, but it will stop for all others.

After you have made your selections in the Standard CMOS Setup screen, press <ESC> to go back to the main screen.

4.8 Advanced BIOS Features

Selecting Advanced BIOS Feature on the main program screen displays this menu, which allows you to define advanced information about your system. You can make modifications to most of these items to improve your system performance or set up system features according to your preference, without causing fatal errors to your system.

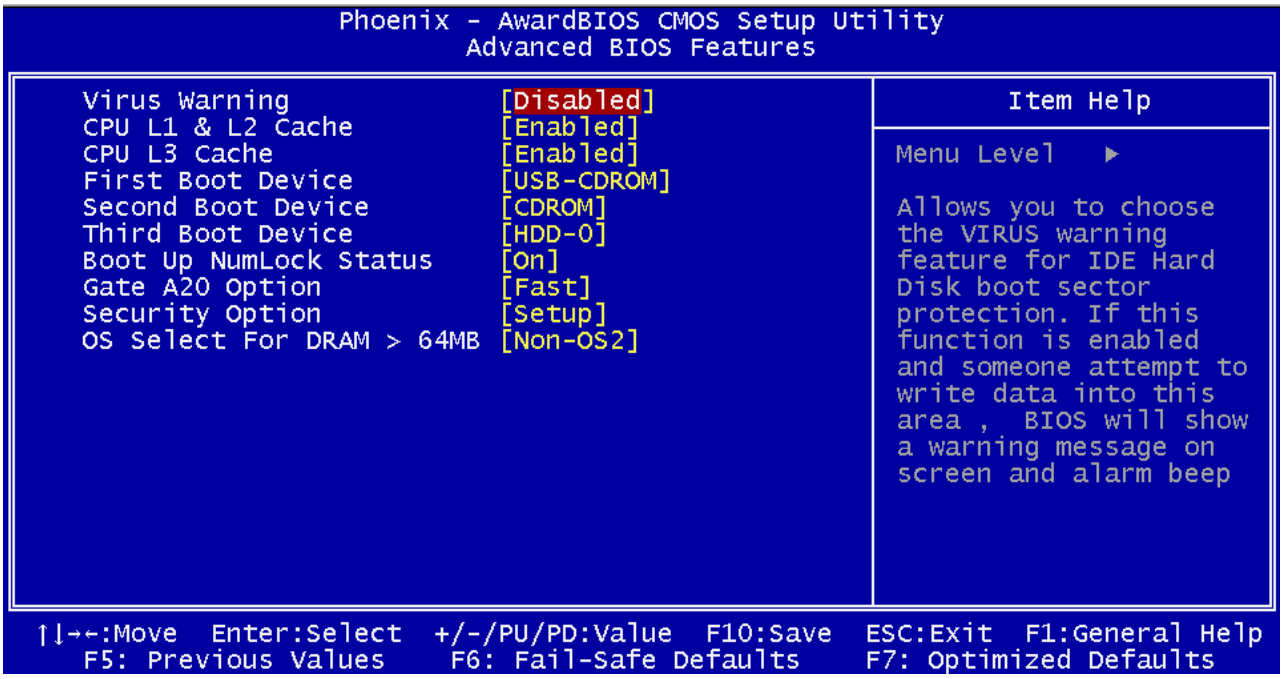


Figure 4-3: BIOS – Advanced BIOS Features

The following explains the options for each feature:

Virus Warning

Allow you to choose the Virus Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and an alarm will beep.

♦ Enabled: Activates automatically when the system boots up causing the following warning message to appear when anything attempts to access the boot sector or hard disk partition table:

> !WARNING!
> Disk boot sector is to be modified
> Type "Y" to accept write or "N" to abort write
> Award Software, Inc.

♦ Disabled: No warning message will appear when an attempt is made to access the boot sector or hard disk partition table.

Note: This function is available only for DOS and other operating systems that do not trap INT13. For complete protection against viruses, install virus software in your operating system and update the virus definitions regularly.
Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you disable the virus warning.

CPU L1, L2 and L3 Cache

Cache memory is an additional memory that is much faster than conventional DRAM (system memory).

This BIOS feature is used to enable or disable the processor's Level 1, Level 2 and Level 3 cache. Naturally, the default and recommended setting is Enabled.

Note: This field will be available only if your CPU supports this function.

First/Second/Third Boot Device

BIOS attempts to load the operating system from the devices in the sequence selected. The available choices are: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USBZIP, USB-CDROM, USB-HDD, LAN, and Disabled.

Boot Up NumLock Status

Toggle between On or Off to control the state of the NumLock key when the system boot. If On, the numeric keypad is in numeric mode. If Off, the numeric keypad is in cursor control mode.

Gate A20 Option

Gate A20 refers to the way the system addresses memory above 1MB (extended memory). This feature enables you to select whether the chipset or the keyboard controller should control Gate A20. The options are:

- **Normal:** A pin in the keyboard controller controls Gate A20
- **Fast :** Let system chipsets control Gate A20. The fast setting improves system speed, particularly with OS/2 and windows.

Security Option

Enables you to select whether the password is required every time the system boots or only when you enter Setup.

- **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 setup.

OS Select For DRAM> 64MB

Set to OS2 if the system memory size is greater than 64MB and the operating system is OS/2.

4.9 Advanced Chipset Features

Since the features in this section are related to the chipset in the CPU board and all are optimized, you are not recommended to change the default settings in the setup table, unless you understand the chipset features.

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manage bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. The

default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system has mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

Selecting Advanced Chipset Features on the main program screen displays this menu:

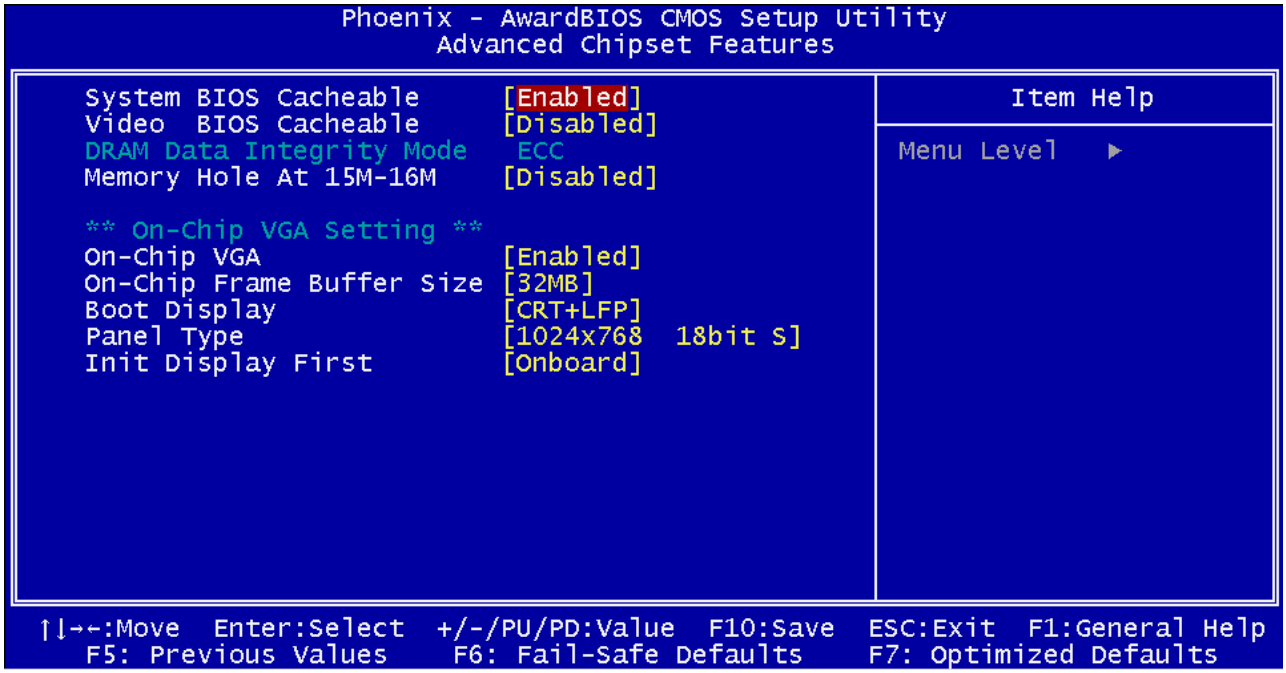


Figure 4-4: BIOS – Advanced Chipset Features

System BIOS cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The available choices are Enabled, Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS ROM at C0000h, resulting in better video performance. However, if any program writes to this memory area, a system error may result. The choices: Enabled, Disabled.

Memory Hole At 15M-16M

In order to improve performance, certain space in memory is reserved for ISA cards; this memory must be mapped into the memory. The choices: Enabled, Disabled.

On-Chip VGA

By default, the On-Chip VGA or chipset-integrated VGA is Enabled.

On-Chip Frame Buffer Size

The On-Chip Frame Buffer Size can be set as 1, 4, 8, 16 or 32MB. This memory is shared with the system memory.

Boot Display

Boot Display determines the display output device where the system boots. The options are Auto, CRT, LFP, and CRT+LFP.

Panel Type

This field allows user to decide the LVDS panel resolution. Please refer to the BIOS for the resolution. After you have made your selections in the Advanced Chipset Features setup, press <ESC> to go back to the main screen. The options are 640x480 18bits, 800x600 18bis, 1024x768 18bits.

Init Display First

This feature allows you to select whether to boot the system using the onboard AGP graphics card or the PCI graphics card.

4.10 Integrated Peripherals

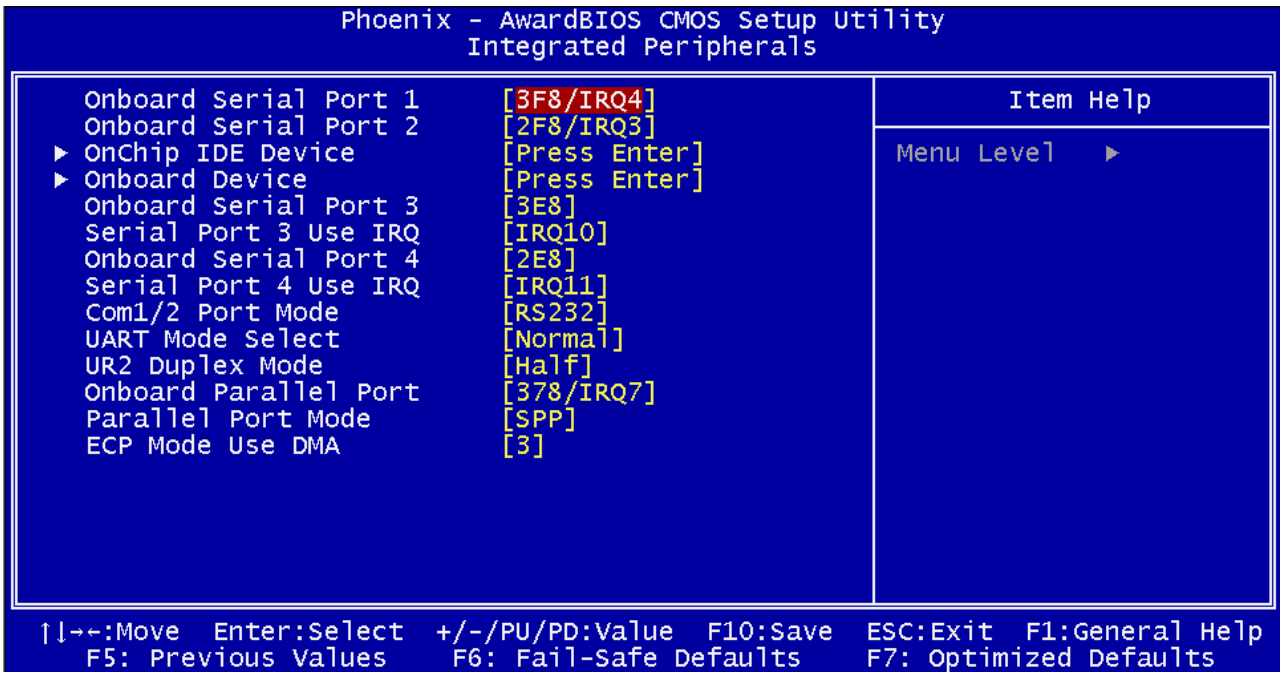


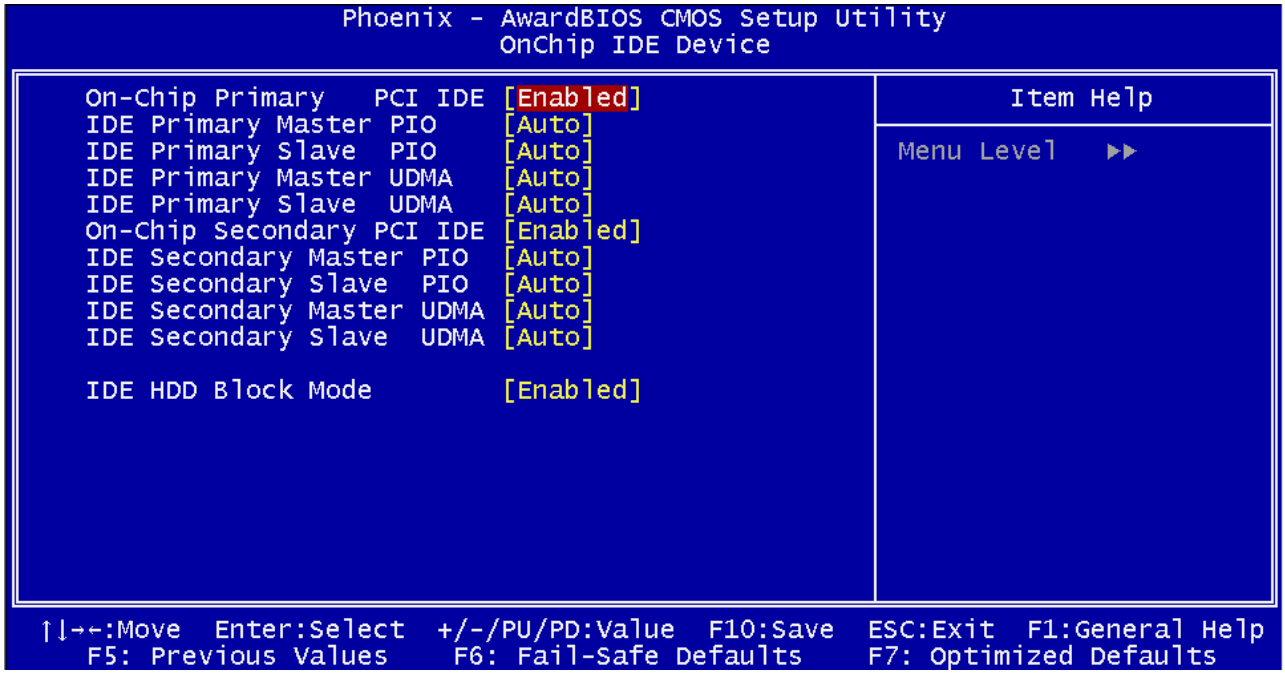
Figure 4-5: BIOS – Integrated Peripherals

Onboard Serial Ports (1, 2, 3, 4)

This feature allows you to manually select the I/O address and IRQ for the first, second, third and forth serial ports. It is recommended that you leave it as Auto so that the BIOS can select the best settings for it. But if you need a particular I/O port or IRQ that's been taken up by this serial port, you can manually select an alternative I/ O port or IRQ for it. You can also disable this serial port if you do not need to use it. Doing so frees up the I/O port and IRQ used by this serial port. Those resources can then be reallocated for other devices to use.

OnChip IDE Device

Select this item to setup the IDE device features. When you select this item, the following menu shows:



On-Chip Primary/Secondary PCI IDE

The system chipset contains a PCI IDE interface with support for an IDE channel. Select Enabled to activate the primary IDE interface. Select Disabled to deactivate this interface.

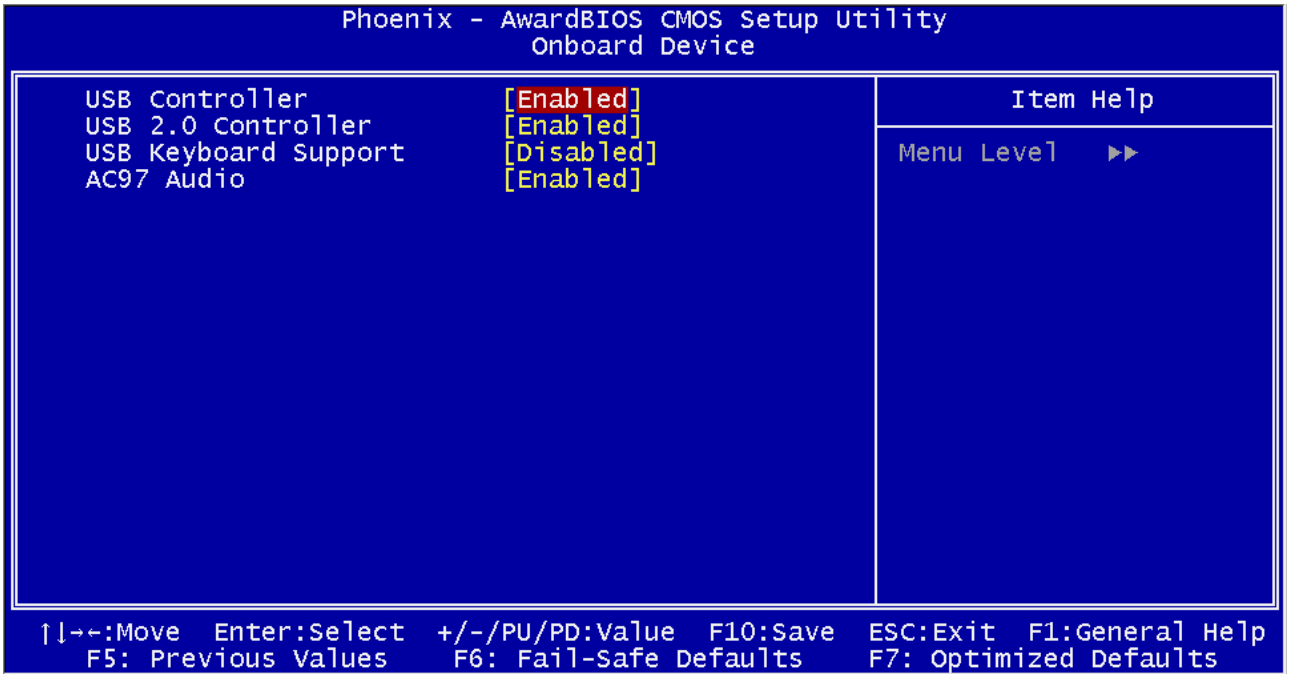
IDE Primary/Secondary Master/Slave PIO

The four IDE PIC (Programmable Input/Output) fields let you set a PIC mode (0-1) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The choices are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, and Mode 4.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sectors read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optional number of block read/write per sector the drive can support. The available choices are Enabled, Disabled.

Onboard Device



USB Controller

Select Enabled if your system contains a Universal Serial Bus controller and you have USB peripherals.

USB 2.0 Controller

Select Enabled if your system contains a Universal Serial Bus 2.0 controller and you have USB 2.0 peripherals.

USB Keyboard Support

Select Enabled if your USB controller is enabled and it needs USB keyboard support in legacy (old) OS operating systems such as DOS.

AC97 Audio

Selecting Auto will enable the AC'97 audio if it is detected onboard.

Serial Port 3\4 Use IRQ

This function assigns an IRQ to the serial port 3\4.

Com 1/2 Port Mode

Select an operating mode for Com1/2 port among RS-232, RS-485 and RS-422 through the BIOS setting.

UART Mode Select

Select an operating mode for the serial port.
The choices are: Normal, IrDA, ASKIR.

UR2 Duplex Mode

In an infrared port mode, this field appears. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time. Select the value required by the IR device connected to the IR port.

Onboard Parallel Port

This feature allows you to select the I/O address and IRQ for the onboard parallel port. The default I/O address of 378h and IRQ of 7 should work well in most cases. Unless you have a problem with the parallel port, you should leave it at the default settings. The choices: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, and Disabled.

Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) and ECP+EPP.

ECP Mode Use DMA

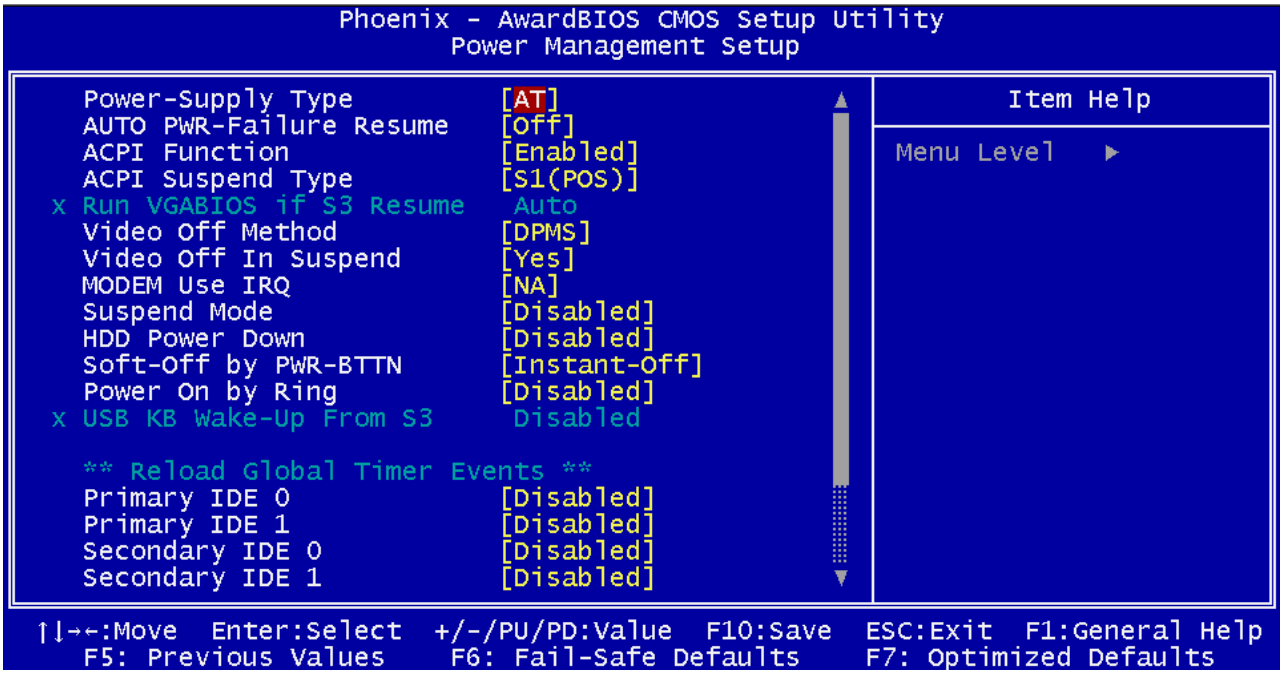
When the on-board parallel port is set to ECP mode, the parallel port can use DMA3 or DMA1.

4.11 Power Management Setup

This option lets you control system power management. The system has various power-saving modes including powering down the hard disk, turning off the video, suspending to RAM, and software power down that allows the system to be automatically resumed by certain events.

The power-saving modes can be controlled by timeouts. If the system is inactive for a time, the timeouts begin counting. If the inactivity continues so that the timeout period elapses, the system enters a power saving mode. If any item in the list of Reload Global Timer Events is enabled, then any activity on that item will reset the timeout counters to zero.

If the system is suspended or has been powered down by software, it can be resumed by a wake up call that is generated by incoming traffic to a modem, a LAN card, a PCI card, or a fixed alarm on the system realtime clock. Selecting Power Management Setup on the main program screen displays this menu:



Power-Supply Type

Switch to ATX if it is an ATX power supply type.

Auto Power-Failure Resume

This setting specifies whether your system reboots after a power failure.
There are three selections:
Off: The system will remain off when power comes back after a power failure.
On: The system will switch on when power comes back after a power failure.
Former-Sts: The system will return to the last state before the power failure when power returns.

ACPI Function

The ACPI standard (Advanced Configuration and Interface power) allows the operating system directly to check the functions of energy saving and the PnP (Plug and Play) functionality. The ACPI functions are normally activated by the BIOS. The choices are: Enabled and Disabled.

ACPI Suspension Type

This option specifies what technology must be used for the state of hibernation. The choices are as below:

- S1 (POS) Power on Suspend
- S3 (STR) Suspend to RAM
- S1& S3

Video Off Method

This determines the manner in which the monitor is blanked. There are three choices:

1. V/H SYNC+Blank: This selection will cause the system to turn off the vertical and horizontal

synchronization port and write blanks to the video buffer.

2. Blank Screen: This option only writes blanks to the video buffer.
3. DPMS Support: Select this option if your monitor supports the Display Power Management signaling (DPMS) standard of the Video Electronics Standard to select video power management values.

Video Off In Suspend

This determines the manner in which the monitor is blanked. The choices: Yes, No.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use. The choices are 3, 4, 5, 7, 9, 10, 11, and NA Suspend Mode After the selected period of system inactivity, all devices except the CPU shut off. The choices are 1~2 min, 2~3 min,…. Up to 1 hour.

Suspend Mode

After the selected period of system inactivity, all devices except the CPU shut off. The choices are 1~2 min, 2~3 min,…. Up to 1 hour.

HDD Power Down

After the selected period of drive inactivity, the hard disk drive powers down while all other devices remain active.

Soft-Off by PWR-BTTN

This function can turn the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity. The choices are Delay 4 seconds, and Instant-Off.

Power On by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The choices: Enabled, Disabled.

Reload Global Timer Events

Primary/Secondary IDE 0/1
FDD, COM, LPT Port
PCI PIRQ [A-D]#

The events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything, which occurs to a device, which is configured as Enabled, even when the system is in a power down mode. The choices are Enabled, and Disabled.

After you have made your selections in the Power Management setup, press the <ESC> key to go back to the main program screen.

4.12 PnP/PCI Configurations

This section describes configuring the PCI bus system. Peripheral Component Interface is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.
Selecting PnP/PCI Configurations on the main program screen displays this menu:

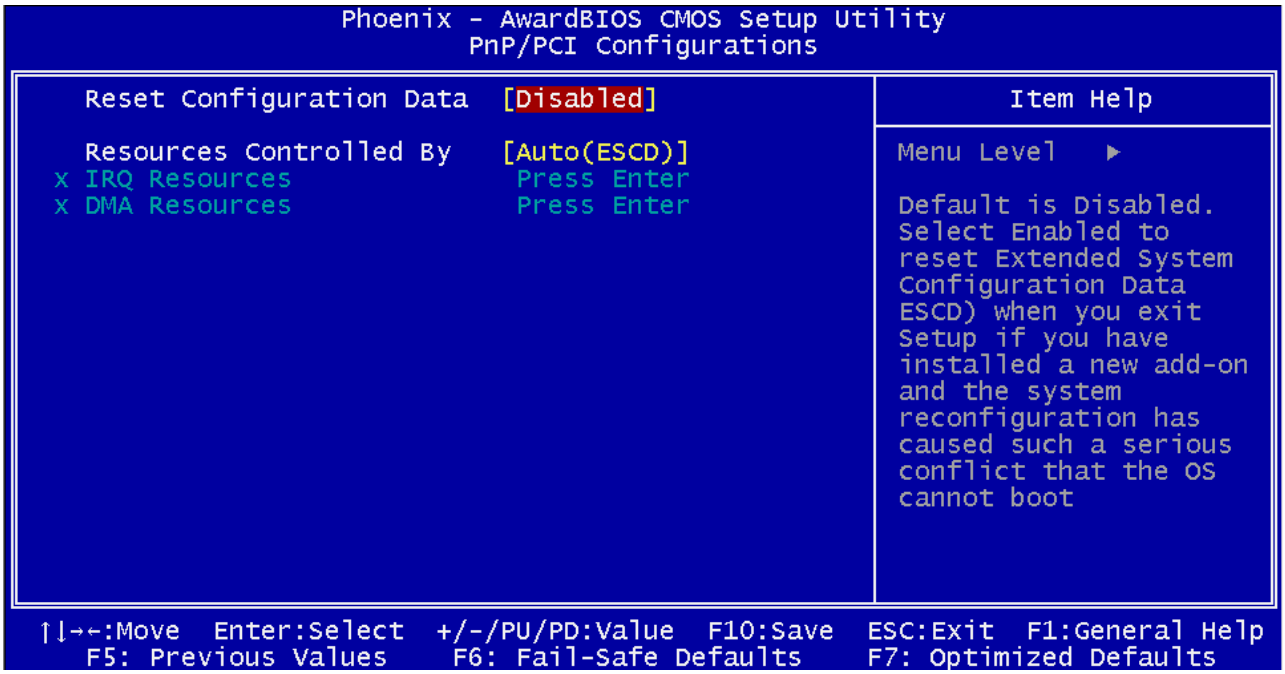


Figure 4-7: BIOS – PnP/PCI Configurations

Reset Configuration Data

Normally, you leave this field Disabled, Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on Card and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The choices are Enabled and Disabled.

Resources Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as going into each of the submenus that follows this field. The choices are Auto (ESCD), Manual.

4.13 PC Health Status

When main boards support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds. These are the read only items.
After you have read the PC Health Status, press the <ESC> key to go back to the main program screen.

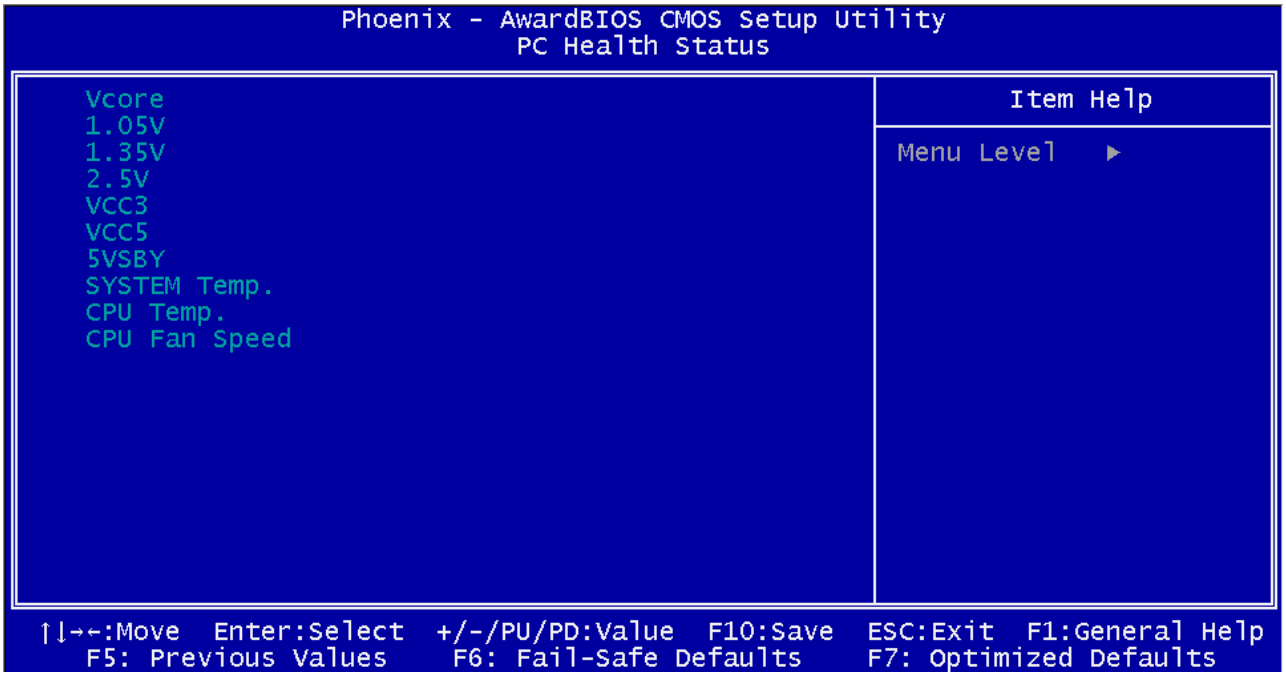


Figure 4-8: PC Health Status

4.14 Load Fail-Safe Defaults

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the whole setup utility. Press the <Y> key and then <Enter> to install the defaults. Press the <N> key and then <Enter> to not install the defaults.
Use this option if you have changed your system and it does not operate correctly or does not power up.

4.15 Load Optimized Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the whole setup utility. Press the <Y> key and then <Enter> to install the defaults. Press the <N> key and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press the <F7> key.

4.16 Set Password

The User Password utility sets the password. The main board is shipped with the password disabled. If you want to change the password, you must first enter the current password, then at the prompt enter your new password. The password is case sensitive. You can use up to eight alphanumeric characters. Press <Enter> after entering the password. At the next prompt, confirm the new password by retyping it and pressing <Enter> again.
To disable the password dialog box appears. A message appears confirming that the password has been disabled. If you have set supervisor and user Password, only the supervisor password allows you to enter the BIOS setup program.

Note: If you forget your password, the only way to solve this problem is to discharge the CMOS memory by **turning power off and placing a shunt (jumper cap) on jumper JP2 to short pin 2 and pin 3 for five seconds, then putting the shunt back to pin 1 and pin 2 of JP2.**

4.17 Save & Exit Setup

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

4.18 Exit Without Saving

Selecting this option and pressing <Enter> will exit the Setup utility without recording any new values or changing old ones.

Appendix A
IO Port Address Map

A.1 IO PORT ADDRESS MAP

ADDRESS RANGE	Function
[00000022 - 0000003F]	Motherboard resources
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System Speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F]	Motherboard resources
[00000070 - 00000073]	System CMOS/real time clock
[00000074 - 0000007F]	Motherboard resources
[00000080 - 00000090]	Direct memory access controller
[00000091 - 00000093]	Motherboard resources
[00000094 - 0000009F]	Direct memory access controller
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000FF]	Numeric data processor
[00000170 - 00000177]	Secondary IDE Channel
[000001F0 - 000001F7]	Primary IDE Channel
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[00000290 - 00000297]	Motherboard resources

[00000290 - 0000029F]	Motherboard resources
[000002E0 - 000002E0]	Motherboard resources
[000002E8 - 000002EF]	Communications Port(COM4)
[000002F8 - 000002FF]	Communications Port (COM2)
[00000376 - 00000376]	Secondary IDE Channel
[00000378 - 0000037F]	Print Port (LTP1)
[000003B0 - 000003BB]	Inter®82852/82855 GM/GME Graphics Controller
[000003C0 - 000003DF]	Inter®82852/82855 GM/GME Graphics Controller
[000003E8 - 000003EF]	Communications Port (COM3)
[000003F6 - 000003F6]	Primary IDE Channel
[000003F8 - 000003FF]	Communications Port (COM3)
[00000400 - 000004BF]	Motherboard resources
[000004D0 - 000004D1]	Motherboard resources
[00000500 - 0000051F]	Intel®82801DB/DBM SMBus Controller – 24C3
[00000A79 - 00000A79]	ISAPNP Read Data Port
[00000D00 - 0000FFFF]	PCI bus
[0000D000 - 0000D03F]	Intel® 82541ER-Based Gigabit Ethernet Connection
[0000E000 - 0000E01F]	Intel® 82801DB/DBM Universal Host Controller – 24C2
[0000E100 - 0000E11F]	Intel® 82801DB/DBM Universal Host Controller – 24C4
[0000E200 - 0000E207]	Inter®82852/82855 GM/GME Graphics Controller
[0000E400 - 0000E4FF]	Realtek AC'97 Audio
[0000E500 - 0000E53F]	Realtek AC'97 Audio
[0000F000 - 0000F00F]	Intel® 82801DB Ultra ATA Storage Controller – 24CB

Appendix B
GPI/O Programming

B.1 Programming the GPI/O

This appendix provides definitions for the four GPI/O pins in the Peak 703P series. GPI/O (General Purpose Input/Output) pins are provided for custom system design. The pin programming as input mode (GPI) or output mode (GPO) is depending on the configuration. The GPIO of Peak703P is JP10 2x4 2.0mm Pin Header. The pin definitions are shown in the following table:

Pin No.	GPI/O mode	Default Corresponding Pin	Default PowerOn	Pin No.	GPI/O mode	Default Corresponding Pin	Default PowerOn
1	Digital Output 1	1	Read High	2	Digital Input 1	1	High
3	Digital Output 2	1	Read High	4	Digital Input 2	1	High
5	Digital Output 3	1	Read High	6	Digital Input 3	1	High
7	Digital Output 4	1	Read High	8	Digital Input 4	1	High

Table B-1 : JP10 -GPI/O Connector Pin Definition

- All digital outputs have pull-up to +3.3V
- BIOS controls the GPI/O Default Function
- Bit1~3: Reading the bit returns the digital input corresponding pin. Write is ignored.
  0 -Corresponding pin level low
  1 -Corresponding pin level high
- Bit4~7: The bit corresponds to pin of digital output. Reading the bit returns its value that written before.
  0 -Corresponding pin driven to low
  1 -Corresponding pin released to high (default)

Appendix C
Watchdog Timer

C.1 Watchdog Timer Working Procedure

The Watchdog Timer (WDT) is a special hardware device that monitors the computer system during normal operation. The WDT has a clock circuit that times down from a set number to zero. If a monitored item occurs before the timer reaches zero, the WDT resets and counts down again. If for some reason the monitored item doesn't occur before the timer reaches zero, the WDT performs an action, such as a diagnostic operation (rebooting the computer) or generate an NMI.

You must enter timer values into the WDT Configuration Register (Write the control value to the Configuration Port), and clear (read the Configuration Port).

WDT Configuration port	I/O port 2E0h	Read/Writable, default at 2E0h
Watch Dog Timer	Disabled	Disable WDT functions (Default setting)
	Enabled	Enable WDT functions control by **WDT time out active for** and **WDT Time Out Active Time**
WDT Time out active for	Reset Output	Reset system when WDT time out
	NMI Output	Generate NMI when WDT time out
	WDT Notice Output	1. Located at J8 pin No. 6 2. Normal work output low level 3. Output high level when WDT time-out, read or write WDT configuration port return to normal work (output low level)
WDT Time Out Active Time	1 sec/min 2 sec/min 4 sec/min 8 sec/min 16 sec/min 32 sec/min 64 sec/min 128 sec/min	WDT time out occurs after the selected time level

Table C-1 : Watchdog Timer Character and Function

C.2 Watchdog Timer Control Register

The Watchdog Timer Control Register controls the EDT working mode. Write the value to the WDT Configuration Port. The following table describes the Control Register bit definition.

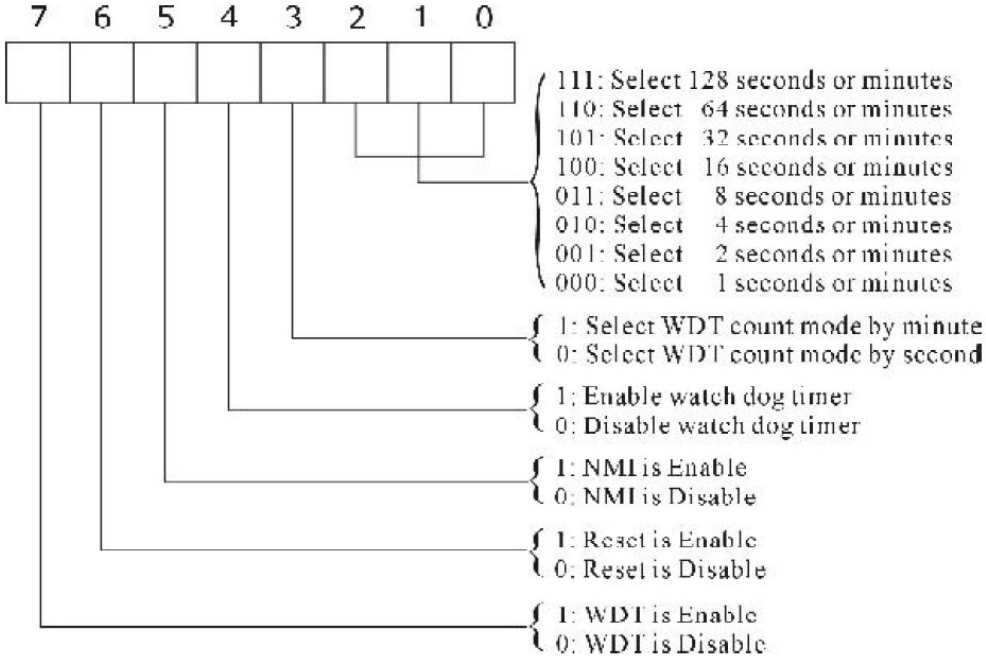


Table C-2 : WDT Control Register Bit Definition

C.3 Watchdog Timer Programming Procedure

Power On or Reset the System

The initial value of WDT Control Register (D4~D0) is zero, when power is on or reset the system. The following shows the initial value of WDT (00000000b):

Bit	Value	Mean
7	0	Disable WDT
6	0	Reset output is disable
5	0	NMI output is disable
4	0	WDT Notice output is disable
3	0	Select WDT count mode by second
2, 1, 0	0 0 0	Select time-out occurs after 1 second/minute

Table C-3 : WDT Control Register Initial Value

Clear the WDT

The WDT counter internal cannot be longer than the preset time; otherwise, the WDT generates a NMI (Non Maskable Interrupt) or sends a reset signal to the system.

Note: Before running WDT, clear the WDT to make sure the initial value is zero before enabling the WDT.

WDT Control Register (Write to WDT configuration port)

Note: This register writes to the WDT configuration port.

You can set the WDT Control Register to control the WDT working mode.

Follow below instructions to set the initial value of the WDT working mode.

1. Select the WDT time out occurs time
   Time-out intervals are decided by values of bit 2, bit 1, bit 0 in I/O port 2E0h minute or second is decided by values of bit 3 in I/O port 2E0h
2. Enable or Disable WDT Notice Output decide by bit 4 value in I/O port 2E0h
3. Enable or Disable NMI Output decide by bit 5 value in I/O port 2E0h
4. Enable or Disable Reset Output decide by bit 6 value in I/O port 2E0h
5. Enable or Disable the WDT decide by bit 7 value in I/O port 2E0h

After finishing the above settings, you must output the Control Register's value to the WDT Configuration Port. Then WDT will start according to the above settings.

Note: Build a mechanism in the program to continue to read the WDT Configuration Port for clearing WDT before time out.