

SBC Series

Single Board Computer
Half-size PICMG 1.3
with LAN, Audio, SATA

SEH-9450-LAS

User's Manual

CONTEC CO.,LTD.

Check Your Package

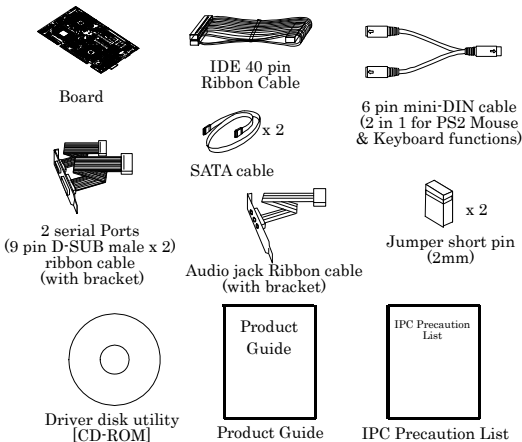
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Product Configuration List

- Industrial PICMG CPU Board (SEH-9450-LAS) ...1
 - Product Guide ...1
 - IPC Precaution List ...1
 - Driver disk utilities * 1 (CD-ROM) ...1
 - IDE 40 pin Ribbon Cable ...1
 - SATA Cable ...2
 - 2 serial Ports (9 pin D-SUB male x 2) ribbon cable (with bracket) ...1
 - Audio jack cable (with bracket) ...1
 - 6 pin mini-DIN cable (2 in 1 for PS2 Mouse & Keyboard functions) ...1
 - Jumper short pin (2.00 mm) ...2
- * 1 The CD-ROM contains the driver software and User's Manual (this Manual)



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Caution about Battery

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the local ordinances or regulations.

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1. Introduction

About the SBC

This product is a half-size sized single-board computer that supports PICMG1.3.

It uses Intel (R) 945GME Chipset. The supported CPU is Intel (R) Core Duo / Core 2 Duo processor.

For the memory, up to 4 GB (total capacity : 3.1GB) of DDR2 SDRAM can be mounted.

The all-in-one design features a wide variety of interfaces including Analog RGB, LVDS, SDVO, USB2.0 x 4, SATA x 2, 1000BASE-T/100BASE-TX, audio, IDE, serial and PS/2 Keyboard/Mouse.

When used in combination with the optional PICMG1.3-compatible Backplane BEH-0611, you can use the PCI Express / PCI bus expansion board on it.

The built-in CF card slot (Type I/II) enables boot-up from a CF card.

When to connecting external devices or building the system, please read this manual carefully.

Features

- Half-size single-board computer supporting PICMG1.3

This PICMG1.3-compatible half-size model, when used in combination with a PICMG1.3 backplane, allows you to build a system configuration that uses the PCI Express / PCI bus expansion board.

- Adoption of 945GME Chipset to allow the mounting of Intel Core Duo / Core 2 Duo processor

The use of Intel (R) 945GME + GMCH, ICH7M-DH, FWH Chipset allows you to incorporate M-socket-compatible Intel (R) Core Duo / Core 2 Duo processor (FSB 533/566MHz) CPU.

- Max. 4 GB (total capacity : 3.1GB) of DDR2 SDRAM

For the memory, up to 4 GB (total capacity : 3.1GB) of DDR2 SDRAM(400/533/667MHz) can be mounted.

- The all-in-one design features a wide variety of interfaces.

This product comes with interfaces such as Analog RGB, LVDS, SDVO, USB2.0 x 4, SATA x 2, 1000BASE-T/100BASE-TX, audio, IDE, serial and PS/2 interfaces.

- Equipped with a CF card slot (Type I/II), enabling boot-up from a CF card.

Equipped with a CF card slot (Type I/II), enabling boot-up from a CF card. It can also be used through IDE compatibility (True IDE) with ATA/ATA-4.

Customer Support

CONTEC provides the following support services for you to use CONTEC products more efficiently and comfortably.

Web Site

Japanese <http://www.contec.co.jp/>
English <http://www.contec.com/>
Chinese <http://www.contec.com.cn/>

Latest product information

CONTEC provides up-to-date information on products.

CONTEC also provides product manuals and various technical documents in the PDF.

Free download

You can download updated driver software and differential files as well as sample programs available in several languages.

Note! For product information

Contact your retailer if you have any technical question about a CONTEC product or need its price, delivery time, or estimate information.

Limited One Year Warranty

CONTEC Product is warranted by CONTEC CO., Ltd. to be free from defects in material and workmanship for up to one year from the date of purchase by the original purchaser.

Repair will be free of charge only when this device is returned freight prepaid with a copy of the original invoice and a Return Merchandise Authorization to the distributor or the CONTEC group office from which it was purchased.

This warranty is not applicable for scratches or normal wear, but only for the electronic circuitry and original boards. The warranty is not applicable if the device has been tampered with or damaged through abuse, mistreatment, neglect, or unreasonable use, or if the original invoice is not included, in which case repairs will be considered beyond the warranty policy.

How to Obtain Service

For replacement or repair, return the device freight prepaid, with a copy of the original invoice. Please obtain a Return Merchandise Authorization Number (RMA) from our Sales Administration Department before returning any product.

* No product will be accepted by CONTEC group without an RMA number.

Liability




The obligation of the warrantor is solely to repair or replace the product. In no event will the warrantor be liable for any incidental or consequential damages due to such defect or consequences that arise from inexperienced usage, misuse, or malfunction of this device.

Safety Precautions

Understand the following definitions and precautions to use the product safely.

Safety Information

This document provides safety information using the following symbols to prevent accidents resulting in injury or death and the destruction of equipment and resources. Understand the meanings of these labels to operate the equipment safely.

| | |
|---|--|
|  DANGER | DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. |
|  WARNING | WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
|  CAUTION | CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage. |

Handling Precautions

CAUTION

- Do not modify the product. CONTEC will bear no responsibility for problems, etc., resulting from modifying this product.
- Do not strike or bend the board.
Otherwise, the board may malfunction, overheat, cause a failure or breakage.
- Do not touch the board's metal plated terminals (edge connector) with your hands.
Otherwise, the board may malfunction, overheat, or cause a failure. If the terminals are touched by someone's hands, clean the terminals with industrial alcohol.
- There are switches and jumpers on the board that need to be set in advance. Be sure to check these before installing to the expansion slot.
- Only set the switches and jumpers on the board to the specified settings.
Otherwise, the board may malfunction, overheat, or cause a failure.

CAUTION

- Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Environments

Use this product in the following environment. If used in an unauthorized environment, the board may overeat, malfunction, or cause a failure.

Operating temperature

0 - 60°C

Operating humidity

10 - 90%RH (No condensation)

Corrosive gases

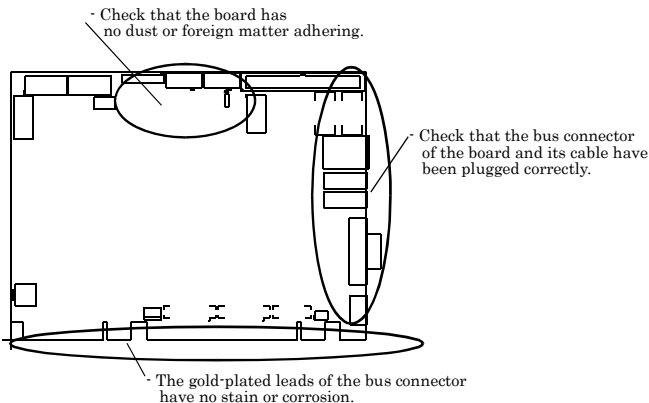
None

Floating dust particles

Not to be excessive

Inspection

Inspect the product periodically as follows to use it safely.



Storage

When storing this product, keep it in its original packing form.

- (1) Put the board in the storage bag.
- (2) Wrap it in the packing material, and then put it in the box.
- (3) Store the package at room temperature at a place free from direct sunlight, moisture, shock, vibration magnetism, and static electricity.

Disposal

When disposing of the product, follow the disposal procedures stipulated under the relevant laws and municipal ordinances.

2. System Reference

Specification

Table 2.1. Functional Specifications < 1 / 2 >

| Type | Specifications |
|----------------------------|---|
| Supported CPU | Intel(R) Core Duo / Core 2 Duo (FSB 533 / 667 MHz) |
| Cache | Built in CPU |
| Processor socket | Socket M |
| Memory (Option) | Up to MAX 4G, DDR2 400 / 533 / 667, 200 pin SO-DIMM Socket X 2 *1 |
| Chipset | Intel(R) 945GME+ ICH7M-DH |
| BIOS | Phoenix AwardBIOS, PnP support |
| VGA | Built in Intel 945GME, One Analog RGB D-Sub 15pin connector. One LVDS (18bit) I/F: (One box-header 30-pins and one box-header 20-pins connectors) One SDVO I/F (box-header 30-pins connector) *2 |
| Keyboard / Mouse connector | One PS/2 keyboard/Mouse connector (Bundled the 2 in 1 cable) |
| Serial I/F | One box-header 10-pin connector (RS-232C) One box-header 10-pin connector (RS-232C/422/485) Baud rate: 115,200 - 50 bps (programmable) |
| Parallel I/F | None |
| On board expansion bus | Mini PCI bus |
| LAN Port | 1000BASE-T/100BASE-TX, Intel 82573E controller, One RJ-45 connector. *3 Wake On LAN support |
| IDE I/F | One EIDE ports, up to two IDE devices One box-header 40-pin connector, support Ultra DMA 33/66/100 *4 The CF card slot and it shares with a Slave port. |
| SATA I/F | Two Serial ATA 1.0 compliant ports |
| FDD I/F | None |
| Compact Flash Slot *5 | Type I/II x 1, IDE Slave Master port connection, Support booting *6 |
| SSD Socket | None |
| USB Port | 4ch USB2.0 compliant ports, one box-header 10-pin connector that support 2ch, Two USB type A connectors support 2ch. |
| RAID | RAID0, RAID1 |
| Audio | AC97 CODEC., One pin-header 10-pin connector for speaker-out, line-in, microphone-in. |

*1 Max. available memory capacity is 3.1GB. (ECC is not support.)

*2 PCI-E X16 SDVO PORT can't use at same time.

*3 1000 BASE-T is supported with the Windows 2000 and Windows XP.

*4 IDE port cannot support by UltraDMA66/100 mode at the time of CF card use.

*5 This CF card slot do not have the hot-swap function. The card cannot remove from slot and attach to slot at the time of a power supply ON.

The card may be damaged if a power supply is turned off at the time of card access.

*6 IDE Slave port can support one drive at the time of CF card use.

Table 2.1. Functional Specifications < 2 / 2 >

| Type | Specifications | | | | | | | | |
|--|--|---------------|--------|---------|----|----------|--------|-------|------|
| Watchdog Timer | Software programmable 255 levels (1 - 255sec). When time up: Reset | | | | | | | | |
| General-purpose I/F | None | | | | | | | | |
| Hardware Monitor | Monitoring of the temperature of CPU and board, power supply voltage, and fan speed | | | | | | | | |
| RTC | The coin type Lithium battery specification is shown in table <table border="1" data-bbox="364 316 733 427"> <thead> <tr> <th>Specification</th> <th>CR2450</th> </tr> </thead> <tbody> <tr> <td>Voltage</td> <td>3V</td> </tr> <tr> <td>Capacity</td> <td>620mAh</td> </tr> <tr> <td>Weigh</td> <td>6.3g</td> </tr> </tbody> </table> <p>* Backup time: Over 7 years at 25°C. * Real Time Clock accurate: ±3 minutes/month at 25°C.</p> | Specification | CR2450 | Voltage | 3V | Capacity | 620mAh | Weigh | 6.3g |
| Specification | CR2450 | | | | | | | | |
| Voltage | 3V | | | | | | | | |
| Capacity | 620mAh | | | | | | | | |
| Weigh | 6.3g | | | | | | | | |
| Power Management | Power management setup via BIOS Modem Ring On/Wake One LAN Supports PC98/PC99 ACPI Power management | | | | | | | | |
| Bus specification/Size (mm) | SHB Express™ (PICMG 1.3) 167.64 / (L) x 126.50 (H) | | | | | | | | |
| DC Power Requirements | +12VDC±5% +5VSB (Stand by) ±5% (only when using the ATX power supply) | | | | | | | | |
| Power supply specifications (Max.) | Power Consumption (Intel Core™2 Duo T7200 2.06GHz/667 MHz): +12VDC±5%, 3.0A +5VSB±5%, 0.5A | | | | | | | | |
| Operating temperature/ Operating Humidity | 0 - 60°C *7 10 - 90%RH (No condensation) | | | | | | | | |
| Storage temperature | -20 - 80°C | | | | | | | | |
| Floating dust particles | Not to be excessive | | | | | | | | |
| Corrosive gases | None | | | | | | | | |
| Weight | 480g | | | | | | | | |
| Operating System Support | Windows XP Professional Windows XP Home Edition Windows 2000 Professional | | | | | | | | |

*7 Depends on the specification of CPU and heat sink.

Power Management Features

- Support both ACPI (Advanced Configuration and Power Interface) and legacy (APM) power management.
- ACPI v2.0 compliant
- APM v1.2 compliant
- PCI bus clock run, Power Management Enable (PME) control, all with hardware automatic wake-up
- Multiple suspends power plane controls and suspends status indicators
- Normal, doze, sleep, suspend and conserve modes
- Global and local device power control

Power Requirements

Your system requires a clean, steady power source for reliable performance of the high frequency CPU on the product, the quality of the power supply is even more important. For the best performance makes sure your power supply provides a range of 11.4 volts minimum to 12.6 volts maximum DC power source.

Power Consumption

For typical configurations, the CPU card is designed to operate with at least a 250W power supply. A higher-wattage power supply should be used for heavily-loaded configurations.

The power supply must meet the following requirements:

- Rise time for power supply: 2 ms - 20 ms
- Minimum delay for reset to Power Good: 100ms
- Minimum Power down warning: 1 ms

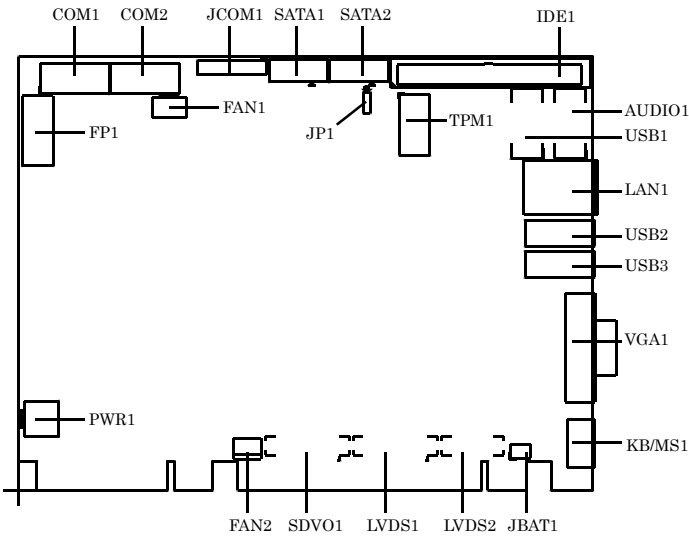
The following table lists the power supply's tolerances for DC voltages:

Table 2.2. DC voltage tolerance

| DC Voltage | Acceptable Tolerance |
|-------------------|----------------------|
| + 5VSB (Stand by) | ±5% |
| + 12V | ±5% |

Connector & Jumper Location

Top side



Bottom side

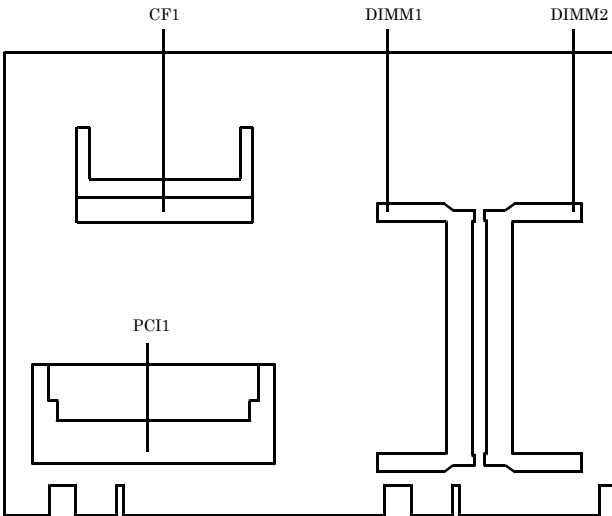


Figure 2.1. Connector & Jumper Location

Table 2.3. SBC Connectors

| Item | Content |
|------------------|---------------------------------------|
| AUDIO1 | Audio Connector |
| CF1 | Compact Flash Slot |
| COM1 | Serial 1 Port Connector |
| COM2 | Serial 2 Port Connector |
| DIMM1, DIMM2 | DIMM Memory Socket |
| FAN1 | CPU FAN Connector |
| FAN2 | System FAN Connector |
| FP1 | Front Panel Connector |
| IDE1 | Primary IDE Connector |
| JBAT1 | CMOS / ROM Clear |
| JP1 | CF Setting |
| KB/MS1 | PS/2 Keyboard / Mouse Connector |
| LAN1 | 10/100/Giga LAN Connector |
| LVDS1, LVDS2 | LVDS Connectors |
| PCI1 | Mini PCI Slot |
| PWR1 | Power Connector |
| SATA1, SATA2 | Serial ATA Connectors |
| SDVO1 | Serial Digital Video Output connector |
| USB1, USB2, USB3 | USB Port Connectors |
| VGA1 | 15 pin D-Sub Connecto |

Block Diagram

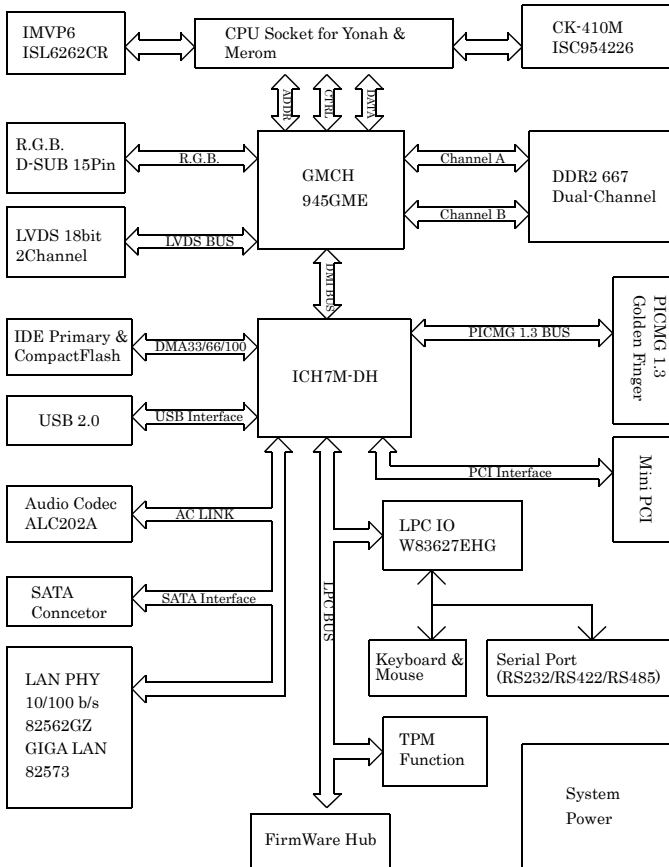


Figure 2.2. Block Diagram

3. Hardware Installations

This chapter provides information on how to use the jumpers and connectors on the product in order to set up a workable system.

Installation procedure

- (1) Confirm the power supply is off.
- (2) Install the processor with correct orientation.
- (3) Mount the Heat sink on the top of the processor. (The heat sink with a fan connects a fan cable to the fan connector on a board.)
- (4) Insert the DDR2 SDRAM module with correct orientation.
- (5) Confirm this product into to PICMG backplane.
- (6) Insert all external cables. (Keyboard, Mouse, LAN, etc)
- (7) Prepare a CRT monitor for CMOS setup.
- (8) Turn on the power.
- (9) Enter the BIOS setup mode by pressing 'DEL' key during boot up.
- (10) Use the 'Load BIOS Optimal Defaults' feature.
- (11) Configure the **Peripheral Setup** and the **Standard Setup** correctly.



CAUTION

The CMOS memory may be in an undefined state at power-on after a period of no battery backup.

CPU Installation:

This product supports a single Intel socket-M type Core Duo processor or Core 2 Duo processor. The processor's VID pins automatically program the voltage regulator on the CPU card to the required processor voltage. The host bus speed is automatically selected. The processor connects to the CPU card through the socket M.

The socket-M comes with a turn lock to secure the processor. Make sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket.

After you have installed the processor into the socket-M, check if the configuration setup for the CPU type and speed are correct. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

Refer to the description of optional heat sink fan appending for attachment of a heat sink fan.

Main Memory Installation: DIMM1, DIMM2

The product supports one single-side or double-sided DDR2-667 unregistered SO-DIMM, 200-pin sockets for a maximum total memory of 2GB.

This product supports the following memory features:

- 200-pin SO-DIMM with gold-plated contacts
- 400 / 533 / 667 Mhz DDR2 SDRam
- 1.8V memory only.
- Single or double-sided SO-DIMM in the following sizes:

NOTE : Install 4GB Memory Only recognize 3.1GB

Table 3.1. DDR2 SDRAM

| SO-DIMM Capacity | Non-ECC configuration |
|------------------|-----------------------|
| 256MB | 32M x 16 |
| 512MB | 32M x 16 |
| 512MB | 64M x 8 |
| 1GB | 64M x 8 |
| 1GB | 128M x 8 |
| 2GB | 128M x 8 |

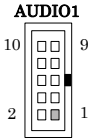
CAUTION

All memory components and SO-DIMM used with the SEH-9450-LAS CPU card must comply with the PC SDRAM Specification. These include: the PC SDRAM Specification (memory component specific), the PC Un-buffered DIMM Specification, and the PC Serial Presence Detect Specification.

Audio Connector: AUDIO1

This connector connects the Audio jack cable.

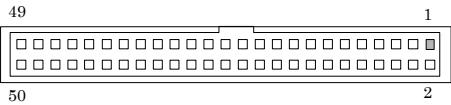
Table 3.2. Audio Connector

|  | PIN No. | Function | PIN No. | Function |
|---|---------|------------|---------|------------|
| | 10 | LINE-IN-L | 9 | LINE-IN-R |
| | 8 | GND | 7 | GND |
| | 6 | MICIN | 5 | NC |
| | 4 | GND | 3 | GND |
| | 2 | LINE-OUT-L | 1 | LINE-OUT-R |

Compact Flash Slot: CF1

This product provides a Compact Flash interfaces. This interface is a very small removable mass storage device. It provides compatibility plus True IDE functionality compatible with ATA/ATA-4.

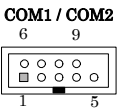
Table 3.3. Compact Flash Slot

|  | | | |
|---|----------|---------|----------|
| PIN No. | Function | PIN No. | Function |
| 1 | GND | 2 | D3 |
| 3 | D4 | 4 | D5 |
| 5 | D6 | 6 | D7 |
| 7 | CS1# | 8 | GND |
| 9 | GND | 10 | GND |
| 11 | GND | 12 | GND |
| 13 | VCC | 14 | GND |
| 15 | GND | 16 | GND |
| 17 | GND | 18 | A2 |
| 19 | A1 | 20 | A0 |
| 21 | D0 | 22 | D1 |
| 23 | D2 | 24 | NC |
| 25 | GND | 26 | GND |
| 27 | D11 | 28 | D12 |
| 29 | D13 | 30 | D14 |
| 31 | D15 | 32 | CS# |
| 33 | GND | 34 | IOR# |
| 35 | IOW# | 36 | VCC |
| 37 | IRQ15 | 38 | VCC |
| 39 | CSEL# | 40 | NC |
| 41 | SDRST# | 42 | IORDY |
| 43 | SDREQ | 44 | SDDACK# |
| 45 | CF_LED2# | 46 | SDIAG |
| 47 | D8 | 48 | D9 |
| 49 | D10 | 50 | GND |

Serial Port Connector: COM1 / COM2

Serial 1 (COM1), Serial 2 (COM2), are onboard serial ports of the product. The following table shows the pin assignments of these connectors.

Table 3.4. Serial Port Connector

|  | PIN No. | RS-232C | RS-422 | RS-485 |
|---|---------|---------|--------|--------|
| | | 1 | DCD | TX- |
| | 2 | RXD | TX+ | TX+ |
| | 3 | TXD | RX+ | RX+ |
| | 4 | DTR | RX- | RX- |
| | 5 | GND | GND | GND |
| | 6 | DSR | N.C. | N.C. |
| | 7 | RTS | N.C. | N.C. |
| | 8 | CTS | N.C. | N.C. |
| | 9 | RI | N.C. | N.C. |
| | 10 | N.C. | N.C. | N.C. |

⚠ CAUTION

- For RS-485, TX+(pin 2) and RX+ (pin 3) must jumper together inside the D type connector.
- TX- (pin 1) and RX- (pin 4) is the same.

RS-422 / RS-485 specifications

- Transmission system: Asynchronous, half-/full-duplex serial transmission conforming to RS-422/RS-485
- Baud rate : 115,200 - 50bps (programmable)
- Signal extensible distance: 1.2km Max.

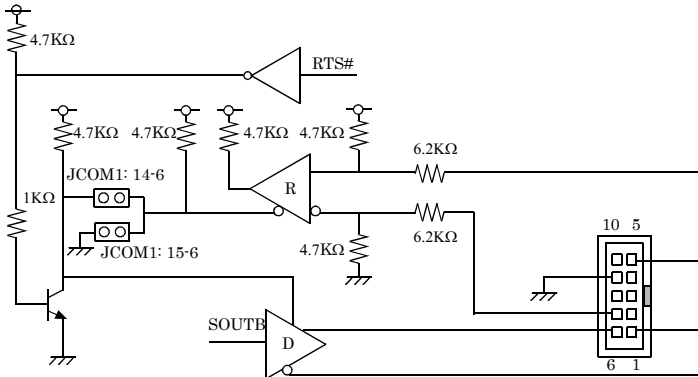



Figure 3.1. RS-422 / RS-485

CPU FAN Connector: FAN1

FAN1 is a 4-pins box-header for the CPU cooling fan power connector. The fan must be a 12V fan. Pin 3 is for Fan tachometer input. Pin 4 is for PWM Fan output control. Pin 2 is for 12V voltage.

Table 3.5. CPU FAN Connector


| FAN1 | PIN No. | Function |
|---|----------------|-----------------|
| 4 3 2 1 | 1 | GND |
|  | 2 | POWER |
| | 3 | FAN Sense |
| | 4 | PWM FAN control |

Housing: 5102-04 (molex)
Contact: 5104 (molex)

System FAN Connector: FAN2

FAN2 is a 3-pins box-header for the CPU cooling fan power connector. The fan must be a 12V fan. Pin 3 is for Fan speed sensor input. Pin 2 is for PWM regulating voltage output.

Table 3.6. System FAN Connector

| FAN2 | PIN No. | Function |
|---|----------------|-----------------|
| 1 2 3 | 1 | GND |
|  | 2 | +12V |
| | 3 | FAN sense |

Housing: 5102-03 (molex)
Contact: 5103 (molex)

Front Panel Connector: FP1

FP1 consist of header can be connected to a front panel power switch. The front panel connector includes headers for these I/O connections:

Power Switch (Power BT)

This header can be connected to a power push switch for ATX power supply.

Reset Switch (RESET)

This header can be connected to a reset push switch.

Power LED

This header can be connected to an LED that will light when the computer is powered on.

Hard drive activity LED (IDE ACT)

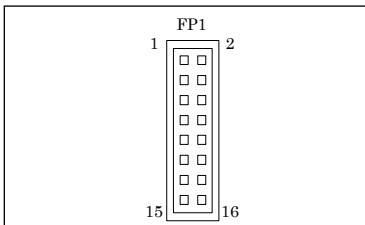
This header can be connected to an LED to provide a visual indicator that data is being read from or written to an IDE hard drive. For the LED to function properly, the IDE drive must be connected to the onboard IDE controller.

Speaker (BUZZER)

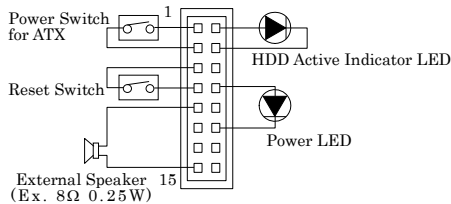
A speaker can be installed on the SEH-9450-LAS as a manufacturing option. The speaker is connected by a jumper on pins 9, 11, 13, 15 of the front panel connector.

The speaker (on-board or off-board) provides error beep code information during the POST in the event that the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

Table 3.7. Front Panel Connector



| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|---------------------|
| 1 | Power BT | 2 | VCC |
| 3 | GND | 4 | IDE ACT |
| 5 | RESET | 6 | N.C. |
| 7 | GND | 8 | VCC |
| 9 | VCC | 10 | N.C. |
| 11 | N.C. | 12 | GND (for Power LED) |
| 13 | N.C. | 14 | N.C. |
| 15 | BUZZER | 16 | N.C. |



| | | | |
|--------------|---------------|--------------|------|
| Speaker | 9, 11, 13, 15 | Power Button | 1, 3 |
| Reset Button | 5, 7 | HDD LED | 2, 4 |
| Power LED | 8, 10, 12 | | |

IDE port Connector: IDE1

This product provides a bus-mastering PCI IDE interface. This interface support PIO Mode 3, PIO Mode 4, ATAPI devices (e.g., CD-ROM), and Ultra DMA/33/66/100 synchronous-DMA mode transfers. The BIOS supports logical block addressing (LBA) and extended cylinder head sector (ECHS) translation modes. The BIOS automatically detects the IDE device transfer rate and translation mode. After connecting the single end to the board, connect the two plugs at the other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Please refer to your hard disk documentation for the jumper setting.

Table 3.8. Primary IDE Connector (IDE1)

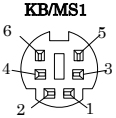
| IDE1 | | | |
|----------------|-----------------|----------------|-----------------|
| | | | |
| PIN No. | Function | PIN No. | Function |
| 1 | RESET | 2 | GND |
| 3 | D7 | 4 | D8 |
| 5 | D6 | 6 | D9 |
| 7 | D5 | 8 | D10 |
| 9 | D4 | 10 | D11 |
| 11 | D3 | 12 | D12 |
| 13 | D2 | 14 | D13 |
| 15 | D1 | 16 | D14 |
| 17 | D0 | 18 | D15 |
| 19 | GND | 20 | NC |
| 21 | DREQ | 22 | GND |
| 23 | IOW | 24 | GND |
| 25 | IOR | 26 | GND |
| 27 | IORDY | 28 | ALE |
| 29 | DACK | 30 | GND |
| 31 | IRQ | 32 | NC |
| 33 | A1 | 34 | PDIAG |
| 35 | A0 | 36 | A2 |
| 37 | CS1 | 38 | CS3 |
| 39 | HD ACT | 40 | GND |

Keyboard / Mouse Connector: KB/MS1

The CPU card provides a standard PS/2 keyboard/mouse connector for attaching a PS/2 keyboard/mouse. You will connect with an add-on cable for a PS/2 keyboard/mouse. You can select that plug a PS/2 mouse directly, PS/2 keyboard directly or both (use Y-cable) by jumper setting.

The PS2 Connector pin definition is shown below:

Table 3.9. Keyboard / Mouse Connector (KB/MS1)

|  | PIN No. | Function |
|---|---------|----------|
| | | 1 |
| | 2 | MS Data |
| | 3 | GND |
| | 4 | +5VSB |
| | 5 | KB Clock |
| | 6 | MS Clock |

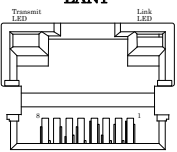
⚠ CAUTION

The mouse and keyboard can be plugged into either PS/2 connector. Power to should be turned off before a keyboard or mouse is connected or disconnected

Adapter connector for Giga LAN: LAN1

This connector is for the LAN adapter that has LED indicate for 10/100/1000 Base-TX RJ45 (1X1) with LEDs integrated magnetics connector. The follow table shows the pin assignments of this connector.

Table 3.10. GIGA LAN

|  | PIN No. | Function | |
|--|---------|------------|------------|
| | | 100Base-TX | 1000Base-T |
| | 1 | TX+ | TRD+(0) |
| | 2 | TX- | TRD-(0) |
| | 3 | RX+ | TRD+(1) |
| | 4 | NC | TRD+(2) |
| | 5 | NC | TRD-(2) |
| | 6 | RX- | TRD-(1) |
| | 7 | NC | TRD+(3) |
| | 8 | NC | TRD-(3) |

Right LED: Link LED

Link: Green, Active: Blink

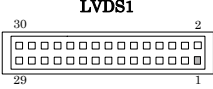
Left LED: Transmit LED

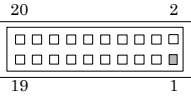
10M: Off, 100M Gree, 1000M: Orange

LVDS LCD Connector: LVDS1 / LVDS2

LVDS1 and LVDS2 consist of 30-pin and 20-pin connectors that using the Hirose's DF13A-30DP-1.25V /DF13A-20DP-1.25V. The SEH-9450-LAS supports 2 channels (2 x 18-bit) of LVDS LCD panel display.

Table 3.11. LVDS Connector

|  <p style="text-align: center;">LVDS1</p> | PIN No. | Function | PIN No. | Function |
|---|---------|----------|---------|-----------|
| | | 2 | TXL1+ | 1 |
| | 4 | TXL1- | 3 | TXL0- |
| | 6 | GND | 5 | GND |
| | 8 | N.C. | 7 | TXL2+ |
| | 10 | N.C. | 9 | TXL2- |
| | 12 | GND | 11 | GND |
| | 14 | +3.3V | 13 | TXL_CLK+ |
| | 16 | +3.3V | 15 | TCL_CLK- |
| | 18 | GND | 17 | GND |
| | 20 | DCC_DATA | 19 | DCC_CLOCK |
| | 22 | RST | 21 | LVDS_OUT |
| | 24 | BKL_ADJ | 23 | LVDS_IN |
| | 26 | +5V | 25 | BL_EN |
| | 28 | +12V | 27 | GND |
| | 30 | +12v | 29 | GND |

|  <p style="text-align: center;">LVDS2</p> | PIN No. | Function | PIN No. | Function |
|---|---------|----------|---------|------------|
| | | 2 | TXU1+ | 1 |
| | 4 | TXU1- | 3 | TXU0- |
| | 6 | GND | 5 | GND |
| | 8 | N.C. | 7 | TXU2+ |
| | 10 | N.C. | 9 | TXU2- |
| | 12 | GND | 11 | GND |
| | 14 | +5V | 13 | TXU_CLOCK+ |
| | 16 | +5V | 15 | TXU_CLOCK- |
| | 18 | +5V | 17 | GND |
| | 20 | +12V | 19 | +12V |

VDD: +3.3V LCD power out (1A Max.)

Mini PCI type III expansion socket: PCI1

The Mini PCI specification defines an alternate implementation for small form factor PCI card.

Table 3.12. Mini PCI socket

| Pin No. | Signal name | Pin No. | Signal name | Pin No. | Signal name | Pin No. | Signal name |
|---------|-------------|---------|-------------|---|-------------------|---------|------------------|
| 1 | TIP | 2 | RING | 63 | 3.3V | 64 | FRAME# |
| Key | | Key | | 65 | CLKRUN# | 66 | TRDY# |
| 3 | 8PMJ-3 | 4 | 8PMJ-1 | 67 | SERR# | 68 | STOP# |
| 5 | 8PMJ-6 | 6 | 8PMJ-2 | 69 | GND | 70 | 3.3V |
| 7 | 8PMJ-7 | 8 | 8PMJ-4 | 71 | PERR# | 72 | DEVSEL# |
| 9 | 8PMJ-8 | 10 | 8PMJ-5 | 73 | C/BE1 | 74 | GND |
| 11 | LED1_GRNP | 12 | LED2_YELP | 75 | AD14 | 76 | AD15 |
| 13 | LED1_GRNN | 14 | LED2_YELN | 77 | GND | 78 | AD13 |
| 15 | CHSGND | 16 | RESERVED | 79 | AD12 | 80 | AD11 |
| 17 | INTB# | 18 | 5V | 81 | AD10 | 82 | GND |
| 19 | 3.3V | 20 | INTA# | 83 | GND | 84 | AD09 |
| 21 | RESERVED | 22 | RESERVED | 85 | AD08 | 86 | C/BE0 |
| 23 | GND | 24 | 3.3VAUX | 87 | AD07 | 88 | 3.3V |
| 25 | CLK | 26 | RST# | 89 | 3.3V | 90 | AD06 |
| 27 | GND | 28 | 3.3V | 91 | AD05 | 92 | AD04 |
| 29 | REQ# | 30 | GNT# | 93 | RESERVED | 94 | AD02 |
| 31 | 3.3V | 32 | GND | 95 | AD03 | 96 | AD00 |
| 33 | AD31 | 34 | PME# | 97 | 5V | 98 | RESERVED |
| 35 | AD29 | 36 | RESERVED | 99 | AD01 | 100 | RESERVED |
| 37 | GND | 38 | AD30 | 101 | GND | 102 | GND |
| 39 | AD27 | 40 | 3.3V | 103 | AC_SYNC | 104 | M66EN |
| 41 | AD25 | 42 | AD28 | 105 | AC_SDATA_IN | 106 | AC_SDATA_OUT |
| 43 | RESERVED | 44 | AD26 | 107 | AC_BIT_CLK | 108 | AC_CODEC_ID0# |
| 45 | C/BE3 | 46 | AD24 | 109 | AC_CODEC_ID1# | 110 | AC_RESET# |
| 47 | GND | 48 | IDSEL | 111 | MOD_AUDIO_MON | 112 | RESERVED |
| 49 | GND | 50 | GND | 113 | AUDIO_GND | 114 | GND |
| 51 | AD21 | 52 | AD22 | 115 | SYS_AUDIO_OUT | 116 | SYS_AUDIO_IN |
| 53 | AD19 | 54 | AD20 | 117 | SYS_AUDIO_OUT_GND | 118 | SYS_AUDIO_IN GND |
| 55 | GND | 56 | PAR | 119 | AUDIO_GND | 120 | AUDIO_GND |
| 57 | AD17 | 58 | AD18 | 121 | RESERVED | 122 | MPCIACT# |
| 59 | C/BE2 | 60 | AD16 | 123 | VCC5VA | 124 | 3.3VAUX |
| 61 | IRDY# | 62 | GND | 8PMJ = 8 position modular jack connector pin, hereinafter referred to as RJ-45. | | | |

Power supply Connector: PWR1

Table 3.13. Power supply connector

| PIN No. | Function | PIN No. | Function |
|---------|----------|---------|----------|
| 3 | +12V | 1 | GND |
| 4 | +12V | 2 | GND |

Suitable Housing: 39-01-2200 (Correpond)
 Suitable: Contact: 5556 (correspond)
 Maker: Molex

Serial ATA Connector: SATA1 / SATA2

Serial ATA is the revolutionary ATA interface that provides scalable performance for IDE device. With up to 150MB/s data transfer rate, Serial ATA is faster than current Parallel ATA and delivers superior input/output performance. In addition, the Serial ATA interface is furnished with RAID 0,1 function for extra performance enhancement and data protection.

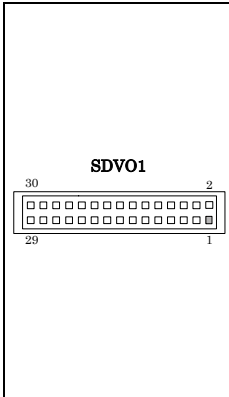
Table 3.14. Serial ATA Connector

| Pin no. | Function |
|---------|----------------|
| 1 | GND |
| 2 | Serial ATA TX+ |
| 3 | Serial ATA TX- |
| 4 | GND |
| 5 | Serial ATA RX- |
| 6 | Serial ATA RX+ |
| 7 | GND |

Serial Digital Video Output: SDVO1

The SDVO specification defines an alternate implementation for PCI express card. The pin assignments are as follows:

Table 3.15. SDVO1 Connector

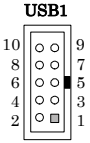
|  | PIN No. | Function | PIN No. | Function |
|--|---------|--------------|--------------|-------------|
| | | 2 | SDVOB_GREEN- | 1 |
| | 4 | SDVOB_GREEN+ | 3 | SDVOB_RED+ |
| | 6 | GND | 5 | GND |
| | 8 | SDVOB_CLK- | 7 | SDVOB_BLUE- |
| | 10 | SDVOB_CLK+ | 9 | SDVOB_BLUE+ |
| | 12 | GND | 11 | GND |
| | 14 | SDVOB_INT- | 13 | SDVO_DATA |
| | 16 | SDVOB_INT+ | 15 | SDVO_CLOCK |
| | 18 | GND | 17 | GND |
| | 20 | PCIRST- | 19 | RESERVED |
| | 22 | GPIO21 | 21 | RESERVED |
| | 24 | NC | 23 | GND |
| | 26 | +3.3V | 25 | +5V |
| | 28 | LVDS_OUT | 27 | +5V |
| | 30 | LVDS_IN | 29 | LVDS_RST |

Note: PCIe X16 SDVO PORT Can't use at same time

USB Connector: USB1, USB2, USB3

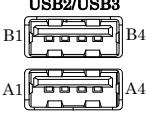
This product have four USB (v2.0 compliant) ports. One box-header connector USB1. This box-header connector is for the optimal USB cable to provide two A Type connectors; and two USB A Type connectors.

Table 3.16. USB Pin-header Connector

|  | Pin No. | Function | Pin No. | Function | |
|---|---------|----------|---------|----------|-------|
| | | 10 | N. C. | 9 | N. C. |
| | | 8 | GND | 7 | GND |
| | | 6 | USB1+ | 5 | USB0+ |
| | | 4 | USB1- | 3 | USB0- |
| | | 2 | VCC1 | 1 | VCC0 |

* Optional USB Cable: USB Connector Cable

Table 3.17. USB A type Connector

|  | Pin No. | Function | Pin No. | Function | |
|---|---------|----------|----------|----------|----------|
| | | A1 | USB2_VCC | B1 | USB3_VCC |
| | | A2 | USB2- | B2 | USB3- |
| | | A3 | USB2+ | B3 | USB3+ |
| | A4 | USB2_GND | B4 | USB3_GND | |

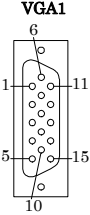
⚠ CAUTION

Computer systems that have an unshielded cable attached to a USB port may not meet FCC Class B requirements, even if no device or a low-speed USB device is attached to the cable. Use shielded cable that meets the requirements for full-speed devices

VGA Connector: VGA1

This is a VGA connector (D-Sub 15 pin). The pin assignment is shown below.

Table 3.18. VGA Connector



| VGA1 | | | |
|---|----------|---------|----------|
|  | | | |
| PIN No. | Function | PIN No. | Function |
| 1 | RED | 9 | N.C |
| 2 | GREEN | 10 | GND |
| 3 | BLUE | 11 | D-DATE |
| 4 | N.C | 12 | N.C |
| 5 | GND | 13 | H-SYNC |
| 6 | GND | 14 | V-SYNC |
| 7 | GND | 15 | D-DCLK |
| 8 | GND | | |

4. Jumper Setting

Clear CMOS Content & BIOS setting cancel: JBAT1

The time, date, and CMOS values can be specified in the Setup program. The CMOS values can be returned to their defaults by using the Setup program. The RAM data contains the password information is powered by the onboard button cell battery. User can erase the CMOS memory content by short pin2 and pin3 of JBAT1 together.



Table 4.1. Clear CMOS Content

| JBAT1 | Function |
|--|----------------------------|
|  <p>2 4 6 ○ ○ ○ ○ ○ ○ 1 3 5</p> | Normal Operation (Default) |
|  <p>2 4 6 ○ ○ ○ ○ ○ ○ 1 3 5</p> | Clear CMOS Content |

It is possible to start by invalidating the BIOS setting because pin 2 of JBAT1 and pin 4 are connected and the system is started. If the system doesn't start, please try this setting. Please set the setup screen again when the system starts.

Please connect pin 2 and pin 4 in the state of driving usually.

Table 4.2. Clear CMOS (in ROM) Content

| JBAT1 | Function |
|--|----------------------------|
|  <p>2 4 6 ○ ○ ○ ○ ○ ○ 1 3 5</p> | Normal Operation (Default) |
|  <p>2 4 6 ○ ○ ○ ○ ○ ○ 1 3 5</p> | ROM Clear |

Setting the RS-422/RS-485 receiver disable control jumper

When the RS-422/RS-485 port is used, the RTS signal is used for driver enable control. Connecting JCOM1 Pins 14 and 16 disables the receiver at the same time, preventing the port from receiving output data to an external device.

RS-422/485 setting

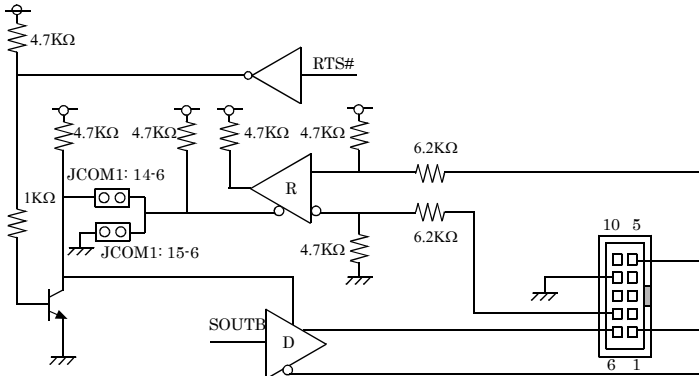


Figure 4.1. RS-422/485 Setting

I/O addresses and instructions

The table below lists I/O addresses for use as SERIAL2.

Table 4.5. I/O Addresses and instructions

| I/O address | DLAB | Read/Write | Register | |
|-------------|------|------------|------------------------------|------------------|
| | | | Register Name | Register Address |
| 02F8H | 0 | W | Transmitter holding Register | THR |
| | | R | Receiver buffer Register | RBR |
| | 1 | W | Divisor latch Register (LSB) | DLL |
| 02F9H | 1 | W | Divisor latch Register (MSB) | DLM |
| | 0 | W | Interrupt enable Register | IER |
| 02FAH | X | R | Interrupt ID Register | IIR |
| 02FBH | X | W | Line control Register | LCR |
| 02FCH | X | W | Modem Control Register | MCR |
| 02FDH | X | R | Line status Register | LSR |
| 02FEH | X | R | Modem Status Register | MSR |
| 02FFH | X | R/W | Scratch Register | SCR |

5. CPU Board Resources

System address map

The GMCH memory map includes a number of programmable ranges. All of these ranges must be unique and non-overlapping. There are no hardware interlocks to prevent problems in the case of overlapping ranges. Accesses to overlapped ranges may produce indeterminate results.

Compatibility Area

| Address | Description |
|-------------|---------------------------|
| 0 - 640KB | DOS area |
| 640 - 768KB | Video Buffer area |
| 768 - 896KB | Expansion Area |
| 896 - 960KB | Extended System BIOS Area |
| 960 - 1MB | System BIOS Area |

Memory Segment

| Memory Segments | Comments |
|--|------------------------------|
| 00000h - 9FFFFh | 0 - 640K DOS Region |
| A0000h - BFFFFh | Video Buffer |
| B0000h - B7FFFh | Monochrome Adapter range |
| C0000h - CBFFFh | Video BIOS |
| CC000h - DFFFFh | Expansion Area |
| E0000h - EFFFFh | Extended System BIOS Area |
| F0000 - FFFFFh | System BIOS Area |
| 100000h - 7FFFFFFFh | Extended Memory Area |
| 00100000 to Top of Main Memory | Main DRAM Address Range |
| Top of Main Memory | Extended SMRAM Address Range |
| Top of Main Memory To 4GB | PCI Memory Address Range |
| FEC0000h - FECFFFFFFh, FEE00000h - FEEFFFFFFh | APIC configuration space |
| FFE0000h - FFFFFFFFh | High BIOS Area |

PCI Routing Information

| IDSEL | INT | Onboard Function |
|-------|-------|------------------|
| AD25 | INT H | LAN Intel 82573E |
| AD26 | INT G | SATA |

6. Watch-Dog-Timer (WDT) Setting

Introduction

The watchdog timer serves as a safeguard against possible system lock-up in your industrial computer system. In most industrial environments, there are heavy equipment, generators, high-voltage power lines, or power drops that have adverse effects on your computer system. For instance, when a power drop occurs, it could cause the CPU to come to a halt state or enter into an infinite loop, resulting in a system lock-up.

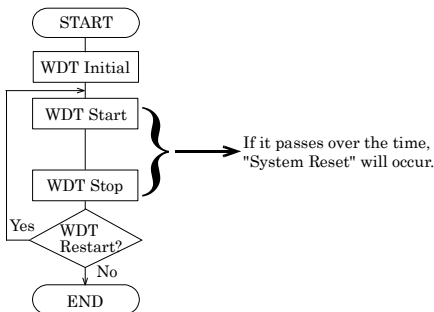
With the watchdog timer enabled, a RESET can be automatically generated unless the CPU periodically triggers the timer within the time-out interval. That is, while the system gets hung up, the running program can't trigger the timer periodically. The timer will generate a reset signal to reboot the system. This feature allows a running program to restart in an orderly way when a power glitch or any abnormal condition occurs.

The watchdog timer comes with 255-level time-out interval, 1 - 255 seconds per interval, which can be adjusted by software setting. There is a tolerance of 2 second for this time-out interval. For example, if the time-out interval has been set to 32 seconds, your program should trigger the watchdog timer before 28 seconds are elapsed. Otherwise, after 28-32 seconds are elapsed, the system will automatically reboot. To keep the system running normally, your program should trigger the watchdog timer every 28 seconds.

The I/O port is defined at address 2e/2fH. You can trigger/enable/disable the timer by writing port2e/2fH.

Here is an example for flow chart and programming how to use the watch-dog-timer.

(1) Example flow chart



(2) Example programming

The following example is written in Intel8086 assembly language.

```
;=====
;<WDT Initial>
;=====
;-----
;Enter the extended function mode
;-----
MOV DX,2EH
MOV AL,87H
OUT DX,AL
OUT DX,AL

;-----
;Set WDT function at pin89
;-----
MOV DX,2EH
MOV AL,2BH
OUT DX,AL
MOV DX,2FH
MOV AL,0DH
OUT DX,AL

;-----
;Select logical device WDT(number 8)
;-----
MOV DX,2EH
MOV AL,07H
OUT DX,AL
MOV DX,2FH
MOV AL,08H
OUT DX,AL

;-----
;Activate logical device WDT(number 8)
;-----
MOV DX,2EH
MOV AL,30H
OUT DX,AL
MOV DX,2FH
MOV AL,01H
OUT DX,AL

;-----
;Set timer unit : second
;-----
MOV DX,2EH
MOV AL,F5H
OUT DX,AL
MOV DX,2FH
MOV AL,00H
OUT DX,AL
;-----
```

```

;Exit the extended function mode
;-----
MOV DX,2EH
MOV AL,AAH
OUT DX,AL

;=====
;<WDT START : counter set and a start >
;=====
;-----
;Enter the extended function mode
;-----
MOV DX,2EH
MOV AL,87H
OUT DX,AL
OUT DX,AL
;-----
;Select logical device WDT(number 8)
;-----
MOV DX,2EH
MOV AL,07H
OUT DX,AL
MOV DX,2FH
MOV AL,08H
OUT DX,AL
;-----
;Set time of WDT and start to count down
;-----
MOV DX,2EH
MOV AL,F6H
OUT DX,AL
MOV DX,2FH
;-----
-----
;The data of an example is 15 seconds.(01H=1sec.- FFH=255sec.)
MOV AL,0FH ; 0FH = 15Sec.
;-----
-----
OUT DX,AL
;-----
;Exit the extended function mode
;-----
MOV DX,2EH
MOV AL,AAH
OUT DX,AL
;=====
;<WDT STOP>
;=====
;-----
;Enter the extended function mode
;-----

```



```
MOV DX,2EH
MOV AL,87H
OUT DX,AL
OUT DX,AL
;-----
;Select logical device WDT(number 8)
;-----
MOV DX,2EH
MOV AL,07H
OUT DX,AL
MOV DX,2FH
MOV AL,08H
OUT DX,AL
;-----
;Stop count down of WDT
;-----
MOV DX,2EH
MOV AL,F6H
OUT DX,AL
MOV DX,2FH
;-----
;The data of 00H is stop WDT
MOV AL,00H
;-----
OUT DX,AL
;-----
;Exit the extended function mode
;-----
MOV DX,2EH
MOV AL,AAH
OUT DX,AL
```

CAUTION

The timer's intervals have a tolerance of ± 2 seconds.

7. Hardware Monitor

Hardware Monitor

Hardware Monitor function is included in Hardware Monitor controller (Winbond W83627HF) on this product.

You can read Temperature, Voltage and Fan Sensor output of SBC.

Temperature

Two Thermistor are mounted on SBC as following. You can read Temperature of this position.

Voltage

You can read +3.3V, +5V, +1.05, +1.8V, +1.5V, 5VSB, Vcore of SBC.

VTT(1.05V) : CPU I/O voltage

Vcore : CPU core voltage

Speed Sensor

FAN Speed Sensor signal is input in FAN1 / FAN2 pin3 when you use FAN with speed sensor. You can read FAN speed.



CAUTION

You must use FAN with speed sensor if you would like to read FAN Speed.

8. BIOS Setup

Introduction

This chapter discusses Award's Setup program built into the FLASH ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The rest of this chapter is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The Award BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

- 1 By pressing immediately after switching the system on, or
- 2 By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

Press F1 to continue, DEL to enter SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Table 8.1. Using Setup

| Key | Function |
|--------------------|--|
| Up Arrow | Move to the previous item |
| Down Arrow | Move to the next item |
| Left Arrow | Move to the item on the left (menu bar) |
| Right Arrow | Move to the item on the right (menu bar) |
| Esc | Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu |
| Move Enter | Move to the item you desired |
| PgUp key | Increase the numeric value or make changes |
| PgDn key | Decrease the numeric value or make changes |
| + key | Increase the numeric value or make changes |
| - key | Decrease the numeric value or make changes |
| Esc key | Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu |
| F1 key | General help on Setup navigation keys |
| F5 key | Load previous values from CMOS |
| F6 key | Load the fail-safe defaults from BIOS default table |
| F7 key | Load the optimized defaults |
| F10 key | Save all the CMOS changes and exit |

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AwardBIOS™ supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

A Final Note About Setup

The information in this chapter is subject to change without notice.

Main Menu

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

Note that a brief description of each highlighted selection appears at the bottom of the screen.

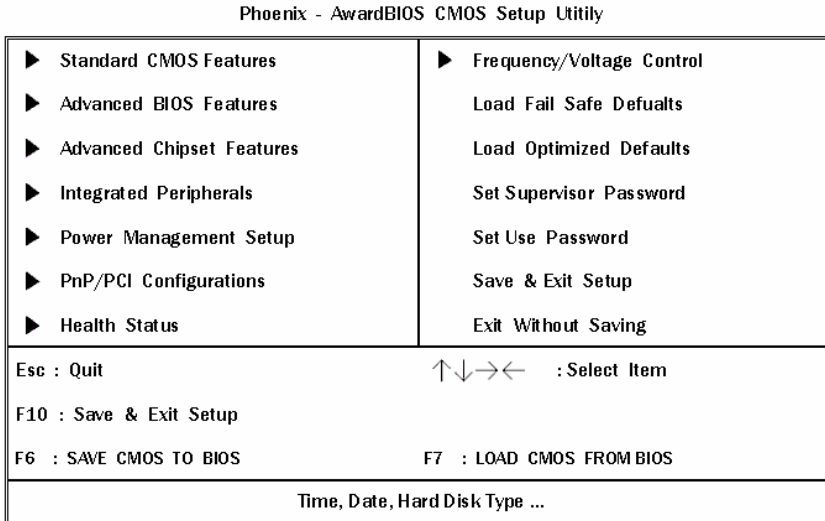


Figure 8.1. Main Menu

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

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

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your 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 Configuration

This entry appears if your system supports PnP / PCI.

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 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.

Supervisor / User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Save

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

| | | |
|------------------------|-----------------------|--|
| Date (mm:dd:yy) | Wed, Jul 18 2007 | Item Help |
| Time (hh:mm:ss) | 14 : 27 : 10 | |
| ▶ IDE Channel 0 Master | [None] | Menu Level ▶ Change the day, month, year and century |
| ▶ IDE Channel 0 Slave | [None] | |
| ▶ IDE Channel 2 Master | [None] | |
| ▶ IDE Channel 2 Slave | [None] | |
| Video | [EGA/VGA] | |
| Halt On | [All , But Keyboard] | |
| Base Memory | 640K | |
| Extended Memory | 514048K | |
| Total Memory | 515072K | |

↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.2. Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Main Menu Selections

This table shows the selections that you can make on the Main Menu

Table 8.2. Main Menu Selections

| Item | Options | Description |
|----------------------|--|---|
| Date | Month DD YYYY | Set the system date. Note that the 'Day' automatically changes when you set the date |
| Time | HH : MM : SS | Set the system time |
| IDE Channel 0 Master | Options are in its sub menu | Press <Enter> to enter the sub menu of detailed options |
| IDE Channel 0 Slave | Options are in its sub menu | Press <Enter> to enter the sub menu of detailed options |
| IDE Channel 2 Master | Options are in its sub menu | Press <Enter> to enter the sub menu of detailed options |
| IDE Channel 2 Slave | Options are in its sub menu | Press <Enter> to enter the sub menu of detailed options |
| Video | EGA/VGA CGA 40 CGA 80 MONO | Select the default video device |
| Halt On | All Errors No Errors All, but Keyboard | Select the situation in which you want the BIOS to stop the POST process and notify you |
| Base Memory | N/A | Displays the amount of conventional memory detected during boot up |
| Extended Memory | N/A | Displays the amount of extended memory detected during boot up |
| Total Memory | N/A | Displays the total memory available in the system |

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

Use the legend keys to navigate through this menu and exit to the main menu. Use Table 3 to configure the hard disk.

Table 8.3. IDE Adapters configurations

| Item | Options | Description |
|---|-----------------------------------|--|
| IDE HDD Auto-detection | Press Enter | Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu. |
| IDE Channel 0/2 Master/Slave | None Auto Manual | Selecting 'manual' lets you set the re-maining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE ! |
| Capacity | Auto Display your disk drive size | Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program. |
| Access Mode | CHS LBA Large Auto | Choose the access mode for this hard disk |
| The following options are selectable only if the 'IDE Channel 0/2 Master/Slave' item is set to 'Manual' | | |
| Cylinder | Min = 0 Max = 65535 | Set the number of cylinders for this hard disk. |
| Head | Min = 0 Max = 255 | Set the number of read/write heads |
| Precomp | Min = 0 Max = 65535 | **** Warning: Setting a value of 65535 means no hard disk |
| Landing zone | Min = 0 Max = 65535 | **** |
| Sector | Min = 0 Max = 255 | Number of sectors per track |

Advanced BIOS Features Setup

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

Phoenix - AwardBIOS CMOS Setup Utility Advanced BIOS Features

| | | Item Help |
|---|----------------------------|---------------|
| ▶ | CPU Feature | [Press Enter] |
| ▶ | Hard Disk Boot Priority | [Press Enter] |
| | Virus Warning | [Disabled] |
| | CPU L1 & L2 Cache | [Enabled] |
| | Quick Power On Self Test | [Enabled] |
| | First Boot Device | [USB-FDD] |
| | Second Boot Device | [Hard Disk] |
| | Third Boot Device | [CDROM] |
| | Boot Other Device | [Enabled] |
| | Boot Up NumLock Status | [On] |
| | Gate A20 Option | [Fast] |
| | Typematic Rate Setting | [Disabled] |
| x | Typematic Rate (Chars/Sec) | 6 |
| x | Typematic Delay (Msec) | 250 |
| | Keyboard Clock | [1.6MHz] |
| | Security Option | [Setup] |
| | APIC Mode | Enabled |
| | MPS Version Control For OS | [1.4] |
| | OS Select For DRAM > 64MB | [Non-OS2] |
| | | Menu Level ▶ |

↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defulats F7: Optimized Defaults

Figure 8.3. Advanced BIOS Features Setup

CPU Feature

Phoenix - AwardBIOS CMOS Setup Utility
CPU Feature

| | | |
|---|---------------------------------|-------------------------------|
| Delay Prior to Thermal C1E Function Execute Disable Bit | [16 Min] [Auto] [Enabled] | Item Help Menu Level ► |
|---|---------------------------------|-------------------------------|

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.4. CPU Feature Setup

Press <Enter> to configure the settings relevant to CPU Feature.

Table 8.4. CPU Features Selections

| Description | Choice | | | | | | | | | | | | |
|---|--|-------------------------------|--|-------|------------|----------|-----------|---------------------------------|------------|--------|-----------|---------------------------------|--|
| <p>Delay Prior to Thermal</p> <p>Select the interval to setup the delay timer for CPU Thermal-Throttling</p> | <table border="1"> <tr> <td colspan="2">Delay Prior to Thermal</td> </tr> <tr> <td>4 Min</td> <td>..... []</td> </tr> <tr> <td>8 Min</td> <td>..... []</td> </tr> <tr> <td>16 Min</td> <td>..... [█]</td> </tr> <tr> <td>32 Min</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓ :Move ENTER:Accept ESC:Abort</td> </tr> </table> | Delay Prior to Thermal | | 4 Min | [] | 8 Min | [] | 16 Min | [█] | 32 Min | [] | ↑↓ :Move ENTER:Accept ESC:Abort | |
| Delay Prior to Thermal | | | | | | | | | | | | | |
| 4 Min | [] | | | | | | | | | | | | |
| 8 Min | [] | | | | | | | | | | | | |
| 16 Min | [█] | | | | | | | | | | | | |
| 32 Min | [] | | | | | | | | | | | | |
| ↑↓ :Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| <p>C1E Function</p> <p>CPU C1E Function Select.</p> | <table border="1"> <tr> <td colspan="2">C1E Function</td> </tr> <tr> <td>Auto</td> <td>..... [█]</td> </tr> <tr> <td>Disabled</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓ :Move ENTER:Accept ESC:Abort</td> </tr> </table> | C1E Function | | Auto | [█] | Disabled | [] | ↑↓ :Move ENTER:Accept ESC:Abort | | | | | |
| C1E Function | | | | | | | | | | | | | |
| Auto | [█] | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | |
| ↑↓ :Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |

| Description | Choice |
|--|--|
| <p>Execute Disable Bit</p> <p>When disabled, forces the XD feature flag to always return 0.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Execute Disable Bit</p> <p>Enabled [<input checked="" type="checkbox"/>]</p> <p>Disabled []</p> <hr/> <p style="text-align: center;">↑↓ :Move ENTER:Accept ESC:Abort</p> </div> |

Hard Disk Boot Priority

Phoenix - AwardBIOS CMOS Setup Utility
Hard Disk Boot Priority

| 1. Bootable Add-in Cards | Item Help |
|--------------------------|---|
| | <p>Menu Level ▶</p> <p>Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.</p> |

↑↓↔ :Move Enter:Select +/~/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.5. Hard Disk Boot Priority Setup

With the field, there is the option to choose, aside from the hard disks connected, “Bootable add-in Cards” which refers to other external device.

Virus Warning

When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.



CAUTION

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 first disable the virus warning.

| | |
|----------|---|
| Enabled | Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table. |
| Disabled | No warning message will appear when anything attempts to access the boot sector or hard disk partition table. |

Table 8.5. Advance BIOS Feature Selections

| Description | Choice |
|--|--|
| <p>CPU L1 & L2 Cache</p> <p>Cache memory is additional memory that is faster than conventional DRAM. These allow you to enable (speed up memory access) or disable the cache function.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">CPU L1 & L2 Cache</p> <hr/> <p>Disabled []</p> <p>Enabled [■]</p> <hr/> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Quick Power On Self Test</p> <p>Select Enabled to reduce the amount of time required to run the power-on self-test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Quick Power On Self Test</p> <hr/> <p>Disabled []</p> <p>Enabled [■]</p> <hr/> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |

| Description | Choice | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--------------------|--|-------|-----------|-----------|-------------|-------|-------------|--------|-----------|---------|-------------|---------|-----------|-----------|-----------|-----|-----------|----------|-----------|--------------------------------|--|
| <p>First Boot Device</p> <p>The BIOS attempts to load the operating system from the devices in the sequence selected in these items.</p> | <table border="1" data-bbox="572 177 945 491"> <thead> <tr> <th colspan="2">First Boot Device</th> </tr> </thead> <tbody> <tr><td>LS120</td><td>..... []</td></tr> <tr><td>Hard Disk</td><td>..... []</td></tr> <tr><td>CDROM</td><td>..... []</td></tr> <tr><td>ZIP100</td><td>..... []</td></tr> <tr><td>USB-FDD</td><td>..... [■]</td></tr> <tr><td>USB-ZIP</td><td>..... []</td></tr> <tr><td>USB-CDROM</td><td>..... []</td></tr> <tr><td>LAN</td><td>..... []</td></tr> <tr><td>Disabled</td><td>..... []</td></tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | First Boot Device | | LS120 | [] | Hard Disk | [] | CDROM | [] | ZIP100 | [] | USB-FDD | [■] | USB-ZIP | [] | USB-CDROM | [] | LAN | [] | Disabled | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| First Boot Device | | | | | | | | | | | | | | | | | | | | | | | |
| LS120 | [] | | | | | | | | | | | | | | | | | | | | | | |
| Hard Disk | [] | | | | | | | | | | | | | | | | | | | | | | |
| CDROM | [] | | | | | | | | | | | | | | | | | | | | | | |
| ZIP100 | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-FDD | [■] | | | | | | | | | | | | | | | | | | | | | | |
| USB-ZIP | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-CDROM | [] | | | | | | | | | | | | | | | | | | | | | | |
| LAN | [] | | | | | | | | | | | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Second Boot Device</p> <p>The BIOS attempts to load the operating system from the devices in the sequence selected in these items.</p> | <table border="1" data-bbox="572 539 945 853"> <thead> <tr> <th colspan="2">Second Boot Device</th> </tr> </thead> <tbody> <tr><td>LS120</td><td>..... []</td></tr> <tr><td>Hard Disk</td><td>..... [■]</td></tr> <tr><td>CDROM</td><td>..... []</td></tr> <tr><td>ZIP100</td><td>..... []</td></tr> <tr><td>USB-FDD</td><td>..... []</td></tr> <tr><td>USB-ZIP</td><td>..... []</td></tr> <tr><td>USB-CDROM</td><td>..... []</td></tr> <tr><td>LAN</td><td>..... []</td></tr> <tr><td>Disabled</td><td>..... []</td></tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Second Boot Device | | LS120 | [] | Hard Disk | [■] | CDROM | [] | ZIP100 | [] | USB-FDD | [] | USB-ZIP | [] | USB-CDROM | [] | LAN | [] | Disabled | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Second Boot Device | | | | | | | | | | | | | | | | | | | | | | | |
| LS120 | [] | | | | | | | | | | | | | | | | | | | | | | |
| Hard Disk | [■] | | | | | | | | | | | | | | | | | | | | | | |
| CDROM | [] | | | | | | | | | | | | | | | | | | | | | | |
| ZIP100 | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-FDD | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-ZIP | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-CDROM | [] | | | | | | | | | | | | | | | | | | | | | | |
| LAN | [] | | | | | | | | | | | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Third Boot Device</p> <p>The BIOS attempts to load the operating system from the devices in the sequence selected in these items.</p> | <table border="1" data-bbox="572 895 945 1209"> <thead> <tr> <th colspan="2">Third Boot Device</th> </tr> </thead> <tbody> <tr><td>LS120</td><td>..... []</td></tr> <tr><td>Hard Disk</td><td>..... []</td></tr> <tr><td>CDROM</td><td>..... [■]</td></tr> <tr><td>ZIP100</td><td>..... []</td></tr> <tr><td>USB-FDD</td><td>..... []</td></tr> <tr><td>USB-ZIP</td><td>..... []</td></tr> <tr><td>USB-CDROM</td><td>..... []</td></tr> <tr><td>LAN</td><td>..... []</td></tr> <tr><td>Disabled</td><td>..... []</td></tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Third Boot Device | | LS120 | [] | Hard Disk | [] | CDROM | [■] | ZIP100 | [] | USB-FDD | [] | USB-ZIP | [] | USB-CDROM | [] | LAN | [] | Disabled | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Third Boot Device | | | | | | | | | | | | | | | | | | | | | | | |
| LS120 | [] | | | | | | | | | | | | | | | | | | | | | | |
| Hard Disk | [] | | | | | | | | | | | | | | | | | | | | | | |
| CDROM | [■] | | | | | | | | | | | | | | | | | | | | | | |
| ZIP100 | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-FDD | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-ZIP | [] | | | | | | | | | | | | | | | | | | | | | | |
| USB-CDROM | [] | | | | | | | | | | | | | | | | | | | | | | |
| LAN | [] | | | | | | | | | | | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | |

| Description | Choice |
|--|---|
| <p>Boot Other Device</p> <p>The BIOS attempts to load the operating system from the devices in the sequence selected in these items.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>Boot Other Device</p> <p>Disabled []</p> <p>Enabled [■]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Boot Up NumLock Status</p> <p>Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>Boot Up NumLock Status</p> <p>Off []</p> <p>On [■]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Gate A20 option</p> <p>Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows</p> | <div style="border: 1px solid black; padding: 5px;"> <p>Gate A20 Option</p> <p>Normal []</p> <p>Fast [■]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Typematic Rate Setting</p> <p>When Disabled, the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystrokes repeat at a rate determined by the keyboard controller in your system. When Enabled, you can select a typematic rate and typematic delay.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>Typematic Rate Setting</p> <p>Disabled [■]</p> <p>Enabled []</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |

| Description | Choice |
|---|---|
| <p>Typematic Rate (Chars/Sec)</p> <p>When the typematic rate setting is enabled, you can select a typematic rate (the rate at which character repeats when you hold down a key) of 6, 8, 10, 12, 15, 20, 24 or 30 characters per second.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Typematic Rate (Chars/Sec)</p> <p>6 [<input checked="" type="checkbox"/>]</p> <p>8 []</p> <p>10 []</p> <p>12 []</p> <p>15 []</p> <p>20 []</p> <p>24 []</p> <p>30 []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Typematic Delay (Msec)</p> <p>When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Typematic Delay (Msec)</p> <p>250 [<input checked="" type="checkbox"/>]</p> <p>500 []</p> <p>750 []</p> <p>1000 []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Keyboard Clock</p> <p>Select the keyboard clock.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Keyboard Clock</p> <p>6MHz []</p> <p>8MHz []</p> <p>12MHz []</p> <p>16MHz [<input checked="" type="checkbox"/>]</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Security Option</p> <p>Select whether the password is required every time the system boots or only when you enter setup. If you have set a password, select whether the password is required every time the System boots, or only when you enter Setup.</p> <p>System: The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.</p> <p>Setup: The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Security Option</p> <p>Setup [<input checked="" type="checkbox"/>]</p> <p>System []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Note: 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.</p> | |

| Description | Choice | | | | | | | | |
|--|---|------------------------------------|--|---------|-------------|--------------------------------|-------------|--------------------------------|--|
| <p>APIC Mode</p> <p>APIC stands for Advanced Programmable Interrupt Controller.</p> <p>Note : This item is show only</p> | <table border="1"> <tr> <td colspan="2" data-bbox="593 161 964 201">APIC Mode</td> </tr> <tr> <td data-bbox="593 201 716 233">Enabled</td> <td data-bbox="716 201 964 233">..... [■]</td> </tr> <tr> <td colspan="2" data-bbox="593 384 964 416">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | APIC Mode | | Enabled | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| APIC Mode | | | | | | | | | |
| Enabled | [■] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |
| <p>MPS Version Control For OS</p> <p>Use the Multiprocessor Specification (MPS) for OS option to specify the MPS version to be used. MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability.</p> | <table border="1"> <tr> <td colspan="2" data-bbox="593 445 964 485">MPS Version Control For OS</td> </tr> <tr> <td data-bbox="593 485 716 517">1.1</td> <td data-bbox="716 485 964 517">..... []</td> </tr> <tr> <td data-bbox="593 517 716 549">1.4</td> <td data-bbox="716 517 964 549">..... [■]</td> </tr> <tr> <td colspan="2" data-bbox="593 671 964 703">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | MPS Version Control For OS | | 1.1 | [] | 1.4 | [■] | ↑↓:Move ENTER:Accept ESC:Abort | |
| MPS Version Control For OS | | | | | | | | | |
| 1.1 | [] | | | | | | | | |
| 1.4 | [■] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |
| <p>OS Select For DRAM > 64M</p> <p>Select the operating system that is running with greater than 64MB of RAM on the system.</p> | <table border="1"> <tr> <td colspan="2" data-bbox="593 727 964 767">OS Select For DRAM > 64M</td> </tr> <tr> <td data-bbox="593 767 716 799">Non-OS2</td> <td data-bbox="716 767 964 799">..... [■]</td> </tr> <tr> <td data-bbox="593 799 716 831">OS2</td> <td data-bbox="716 799 964 831">..... []</td> </tr> <tr> <td colspan="2" data-bbox="593 919 964 951">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | OS Select For DRAM > 64M | | Non-OS2 | [■] | OS2 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| OS Select For DRAM > 64M | | | | | | | | | |
| Non-OS2 | [■] | | | | | | | | |
| OS2 | [] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |

Advanced Chipset Features Setup

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

| | |
|--|--------------------------------------|
| DRAM Timing Selectable [By SPD] x CAS Latency Time Auto x DRAM RAS# to CAS# Delay Auto x DRAM RAS# Precharge Auto x Precharge delay (tRAS) Auto x System Memory Frequency Auto SLP_S4# Assertion Width [1 to 2 Sec.] System BIOS Cacheable [Enabled] Video BIOS Cacheable [Disabled] Memory Hole At 15-16M [Disabled] ▶ PCI Express Root Port Func [Press Enter] ** VGA Setting ** PEG/Onchip VGA Control [Auto] On-Chip Frame Buffer Size [8MB] DVMT Mode [DVMT] DVMT/FIXED Memory Size [128MB] Boot Display [CRT+LFP] Panel Number [1024 x 768] | Item Help Menu Level ▶ |
|--|--------------------------------------|

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.6. Advanced Chipset Features Setup

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages 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. It must be stated that these items should never need to be altered. 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.

Table 8.6. Advance Chipset Feature Selections

| Description | Choice | | | | | | | | |
|--|--|-------------------------------|--|--------|-----------|--------|-------------|--------------------------------|--|
| DRAM Timing Selectable The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs. | <table border="1"> <tr> <td colspan="2">DRAM Timing Selectable</td> </tr> <tr> <td>Manual</td> <td>..... []</td> </tr> <tr> <td>By SPD</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | DRAM Timing Selectable | | Manual | [] | By SPD | [■] | ↑↓:Move ENTER:Accept ESC:Abort | |
| DRAM Timing Selectable | | | | | | | | | |
| Manual | [] | | | | | | | | |
| By SPD | [■] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |

| Description | Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------------------|--|------|------------|---|-----------|---|-----------|---|-----------|------|------------|------|------------|---|-----------|----|-----------|----|-----------|----|-----------|----|-----------|----|-----------|----|-----------|
| <p>CAS Latency Time</p> <p>When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.</p> <p>You can select CAS latency time in HCLK of 3/4/5/6 or Auto. The system board designer should set the values in this field, depends on the DRAM installed specifications of the installed DRAM or the installed CPU.</p> | <table border="1"> <thead> <tr> <th colspan="2">CAS Latency Time</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>6</td> <td>..... []</td> </tr> <tr> <td>Auto</td> <td>..... [■]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | CAS Latency Time | | 5 | [] | 4 | [] | 3 | [] | 6 | [] | Auto | [■] | | | | | | | | | | | | | | | | |
| CAS Latency Time | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>DRAM RAS# to CAS# delay</p> <p>This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.</p> | <table border="1"> <thead> <tr> <th colspan="2">DRAM RAS# to CAS# Delay</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>..... []</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>6</td> <td>..... []</td> </tr> <tr> <td>Auto</td> <td>..... [■]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | DRAM RAS# to CAS# Delay | | 2 | [] | 3 | [] | 4 | [] | 5 | [] | 6 | [] | Auto | [■] | | | | | | | | | | | | | | |
| DRAM RAS# to CAS# Delay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>DRAM RAS# Precharge</p> <p>The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refresh. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.</p> | <table border="1"> <thead> <tr> <th colspan="2">DRAM RAS# Precharge</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>..... []</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>6</td> <td>..... []</td> </tr> <tr> <td>Auto</td> <td>..... [■]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | DRAM RAS# Precharge | | 2 | [] | 3 | [] | 4 | [] | 5 | [] | 6 | [] | Auto | [■] | | | | | | | | | | | | | | |
| DRAM RAS# Precharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Precharge delay (tRAS)</p> <p>This item controls the number of DRAM clocks to activate the precharge delay. The default setting for the DRAM Cycle time tRAS is Auto.</p> | <table border="1"> <thead> <tr> <th colspan="2">Precharge delay (tRAS)</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [■]</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>6</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>8</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>13</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | Precharge delay (tRAS) | | Auto | [■] | 4 | [] | 5 | [] | 6 | [] | 7 | [] | 8 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 13 | [] | 14 | [] | 15 | [] |
| Precharge delay (tRAS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Description | Choice | | | | | | | | | | |
|---|---|-------------------------|--|---------------|-------------|--------------|-------------|-------------|-----------|-------------|-------------|
| <p>System Memory Frequency</p> <p>This item sets the main memory frequency. When you use an external graphics card, you can adjust this to enable the best performance for your system.</p> | <table border="1"> <thead> <tr> <th colspan="2">System Memory Frequency</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [■]</td> </tr> <tr> <td>533MHz</td> <td>..... []</td> </tr> <tr> <td>667MHz</td> <td>..... []</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | System Memory Frequency | | Auto | [■] | 533MHz | [] | 667MHz | [] | | |
| System Memory Frequency | | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | |
| 533MHz | [] | | | | | | | | | | |
| 667MHz | [] | | | | | | | | | | |
| <p>SLP_S4# Assertion Width</p> <p>Allows you to set the SLP_S4# assertion width. The default setting is 1 to 2 Sec.</p> | <table border="1"> <thead> <tr> <th colspan="2">SLP_S4# Assertion Width</th> </tr> </thead> <tbody> <tr> <td>4 to 5 Sec.</td> <td>..... []</td> </tr> <tr> <td>3 to 4 Sec.</td> <td>..... []</td> </tr> <tr> <td>2 to 3 Sec.</td> <td>..... []</td> </tr> <tr> <td>1 to 2 Sec.</td> <td>..... [■]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | SLP_S4# Assertion Width | | 4 to 5 Sec. | [] | 3 to 4 Sec. | [] | 2 to 3 Sec. | [] | 1 to 2 Sec. | [■] |
| SLP_S4# Assertion Width | | | | | | | | | | | |
| 4 to 5 Sec. | [] | | | | | | | | | | |
| 3 to 4 Sec. | [] | | | | | | | | | | |
| 2 to 3 Sec. | [] | | | | | | | | | | |
| 1 to 2 Sec. | [■] | | | | | | | | | | |
| <p>System BIOS Cacheable</p> <p>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.</p> | <table border="1"> <thead> <tr> <th colspan="2">System BIOS Cacheable</th> </tr> </thead> <tbody> <tr> <td>Disabled</td> <td>..... []</td> </tr> <tr> <td>Enabled</td> <td>..... [■]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | System BIOS Cacheable | | Disabled | [] | Enabled | [■] | | | | |
| System BIOS Cacheable | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | |
| Enabled | [■] | | | | | | | | | | |
| <p>Video BIOS Cacheable</p> <p>Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.</p> | <table border="1"> <thead> <tr> <th colspan="2">Video BIOS Cacheable</th> </tr> </thead> <tbody> <tr> <td>Disabled.....</td> <td>[■]</td> </tr> <tr> <td>Enabled.....</td> <td>[]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | Video BIOS Cacheable | | Disabled..... | [■] | Enabled..... | [] | | | | |
| Video BIOS Cacheable | | | | | | | | | | | |
| Disabled..... | [■] | | | | | | | | | | |
| Enabled..... | [] | | | | | | | | | | |
| <p>Memory Hole At 15M-16M</p> <p>In order to improve performance, certain space in memory can be reserved for ISA card. This memory must be mapped into the memory space below 16MB.</p> | <table border="1"> <thead> <tr> <th colspan="2">Memory Hole At 15M-16M</th> </tr> </thead> <tbody> <tr> <td>Disabled.....</td> <td>[■]</td> </tr> <tr> <td>Enabled.....</td> <td>[]</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | Memory Hole At 15M-16M | | Disabled..... | [■] | Enabled..... | [] | | | | |
| Memory Hole At 15M-16M | | | | | | | | | | | |
| Disabled..... | [■] | | | | | | | | | | |
| Enabled..... | [] | | | | | | | | | | |

PCI Express Root Port Function

Phoenix - AwardBIOS CMOS Setup Utility
PCI Express Root Port Func

| | | |
|-----------------------|---------|-------------------------------|
| PCI Express Port 1 | [Auto] | Item Help Menu Level ► |
| PCI Express Port 2 | [Auto] | |
| PCI Express Port 3 | [Auto] | |
| PCI Express Port 4 | [Auto] | |
| PCI Express Port 5 | [Auto] | |
| PCI Express Port 6 | [Auto] | |
| PCI-E Compliancy Mode | [v1.0a] | |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.7. PCI Express Root Port Function

Table 8.7. PCI Express Root Port Function Selections

| Description | Choice | | | | | | | | | | |
|---|---|------------------------------|--|-------|-------------|---------|-------------|--------------------------------|-------------|--------------------------------|--|
| <p>PCI Express Port 1/2/3/4/5/6</p> <p>This item allows you to enable or disable or Auto configure the PCI Express Port 1/2/3/4/5/6.</p> | <table border="1"> <tr> <td colspan="2">PCI Express Port 1</td> </tr> <tr> <td>Auto</td> <td>..... [■]</td> </tr> <tr> <td>Enabled</td> <td>..... []]</td> </tr> <tr> <td>Disabled</td> <td>..... []]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | PCI Express Port 1 | | Auto | [■] | Enabled | []] | Disabled | []] | ↑↓:Move ENTER:Accept ESC:Abort | |
| PCI Express Port 1 | | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | |
| Enabled | []] | | | | | | | | | | |
| Disabled | []] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>PCI-E Compliancy Mode</p> <p>This item allows you to set PCI Express compliancy mode.</p> | <table border="1"> <tr> <td colspan="2">PCI-E Compliancy Mode</td> </tr> <tr> <td>v1.0a</td> <td>..... [■]</td> </tr> <tr> <td>v1.0</td> <td>..... []]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | PCI-E Compliancy Mode | | v1.0a | [■] | v1.0 | []] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| PCI-E Compliancy Mode | | | | | | | | | | | |
| v1.0a | [■] | | | | | | | | | | |
| v1.0 | []] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |

VGA setting

The field under the On-Chip VGA Setting and their defaults settings are:

Table 8.8. VGA Setting Selections

| Description | Choice | | | | | | | | | | |
|--|---|---------------------------|--|------------|-----------|----------|-------------|--------------------------------|-------------|--------------------------------|--|
| <p>PEG/On Chip VGA Control</p> <p>Select VGA Control by PCI Express Graphic, On-chip or Auto.</p> | <table border="1"> <thead> <tr> <th colspan="2">PEG/Onchip VGA Control</th> </tr> </thead> <tbody> <tr> <td>Onchip VGA</td> <td>..... []</td> </tr> <tr> <td>PEG Port</td> <td>..... []</td> </tr> <tr> <td>Auto</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | PEG/Onchip VGA Control | | Onchip VGA | [] | PEG Port | [] | Auto | [■] | ↑↓:Move ENTER:Accept ESC:Abort | |
| PEG/Onchip VGA Control | | | | | | | | | | | |
| Onchip VGA | [] | | | | | | | | | | |
| PEG Port | [] | | | | | | | | | | |
| Auto | [■] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>On-Chip Frame Buffer Size</p> <p>When Enabled, a fixed VGA frame buffer from A000h to BFFFh and a CPU-to-PCI write buffer are implemented.</p> | <table border="1"> <thead> <tr> <th colspan="2">On-Chip Frame Buffer Size</th> </tr> </thead> <tbody> <tr> <td>1MB</td> <td>..... []</td> </tr> <tr> <td>8MB</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | On-Chip Frame Buffer Size | | 1MB | [] | 8MB | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| On-Chip Frame Buffer Size | | | | | | | | | | | |
| 1MB | [] | | | | | | | | | | |
| 8MB | [■] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>DVMT Mode</p> <p>Allows you to set the Dynamic Video Memory Technology (DVMT) mode.</p> | <table border="1"> <thead> <tr> <th colspan="2">DVMT Mode</th> </tr> </thead> <tbody> <tr> <td>FIXED</td> <td>..... []</td> </tr> <tr> <td>DVMT</td> <td>..... [■]</td> </tr> <tr> <td>BOTH</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | DVMT Mode | | FIXED | [] | DVMT | [■] | BOTH | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| DVMT Mode | | | | | | | | | | | |
| FIXED | [] | | | | | | | | | | |
| DVMT | [■] | | | | | | | | | | |
| BOTH | [] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>DVMT/FIXED Memory Size</p> <p>Allows you to set the Dynamic Video Memory Technolosy (DVMT) memory sieze.</p> | <table border="1"> <thead> <tr> <th colspan="2">DVMT/FIXED Memory Size</th> </tr> </thead> <tbody> <tr> <td>64MB</td> <td>..... []</td> </tr> <tr> <td>128MB</td> <td>..... [■]</td> </tr> <tr> <td>224MB</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | DVMT/FIXED Memory Size | | 64MB | [] | 128MB | [■] | 224MB | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| DVMT/FIXED Memory Size | | | | | | | | | | | |
| 64MB | [] | | | | | | | | | | |
| 128MB | [■] | | | | | | | | | | |
| 224MB | [] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |

| Description | Choice | | | | | | | | |
|--|---|--------------|--|-----------|-----------|------------|-------------|------------|-----------|
| <p>Boot Display</p> <p>This item allows you to select the boot display device.</p> <p>Note : When installing SDVO, then it will display CRT+EFP item.</p> | <table border="1"> <thead> <tr> <th colspan="2">Boot Display</th> </tr> </thead> <tbody> <tr> <td>CRT</td> <td>..... []</td> </tr> <tr> <td>CRT+LFP</td> <td>..... [■]</td> </tr> <tr> <td>CRT+EFP</td> <td>..... []</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | Boot Display | | CRT | [] | CRT+LFP | [■] | CRT+EFP | [] |
| Boot Display | | | | | | | | | |
| CRT | [] | | | | | | | | |
| CRT+LFP | [■] | | | | | | | | |
| CRT+EFP | [] | | | | | | | | |
| <p>Panel Number</p> <p>These fields allow you to select the LCD Panel type.</p> | <table border="1"> <thead> <tr> <th colspan="2">Panel Number</th> </tr> </thead> <tbody> <tr> <td>800 x 600</td> <td>..... []</td> </tr> <tr> <td>1024 x 768</td> <td>..... [■]</td> </tr> <tr> <td>1280 x1024</td> <td>..... []</td> </tr> </tbody> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | Panel Number | | 800 x 600 | [] | 1024 x 768 | [■] | 1280 x1024 | [] |
| Panel Number | | | | | | | | | |
| 800 x 600 | [] | | | | | | | | |
| 1024 x 768 | [■] | | | | | | | | |
| 1280 x1024 | [] | | | | | | | | |

Integrated Peripherals

This section sets configurations for your hard disk and other integrated peripherals. The first screen shows three main items for user to select. Once an item selected, a submenu appears. Details follow.

Phoenix - AwardBIOS CMOS Setup Utility

Integrated Peripherals

| | |
|---|------------------|
| <ul style="list-style-type: none"> ▶ OnChip IDE Device [Press Enter] ▶ Onboard Device [Press Enter] ▶ SuperIO Device [Press Enter] | <p>Item Help</p> |
| <p>Menu Level ▶</p> | |

↑↓:Move Enter>Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.8. Integrated Peripherals

OnChip IDE Device

Phoenix - AwardBIOS CMOS Setup Utility
OnChip IDE Device

| | | |
|----------------------------------|------------------|--------------|
| HDD Select | [UDMA33] | Item Help |
| IDE HDD Block Mode | [Enabled] | |
| IDE DMA transfer access | [Enabled] | Menu Level ► |
| On-Chip Primary PCI IDE | [Enabled] | |
| IDE Primary Master PIO | [Auto] | |
| IDE Primary Slave PIO | [Auto] | |
| IDE Primary Master UDMA | [Auto] | |
| IDE Primary Slave UDMA | [Auto] | |
| ** On-Chip Serial ATA Setting ** | | |
| SATA Mode | [IDE] | |
| On-Chip Serial ATA | [Enhance Mode] | |
| SATA PORT Speed Settings | [Disabled] | |
| x PATA IDE Mode | Secondary | |
| SATA Port | P0,P2 is Primary | |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.9. OnChip IDE Device

Table 8.9. On Chip IDE Device Selections

| Description | Choice | | | | | | | | |
|---|---|-------------------|--|-------------|-----------|--------|-------------|--------------------------------|--|
| <p>HDD Select</p> <p>You can choose your hard disk type to Auto Select or UDMA 33.</p> | <table border="1"> <tr> <td colspan="2">HDD Select</td> </tr> <tr> <td>Auto Select</td> <td>..... []</td> </tr> <tr> <td>UDMA33</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | HDD Select | | Auto Select | [] | UDMA33 | [■] | ↑↓:Move ENTER:Accept ESC:Abort | |
| HDD Select | | | | | | | | | |
| Auto Select | [] | | | | | | | | |
| UDMA33 | [■] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |

| Description | Choice |
|---|--|
| <p>IDE HDD Block mode</p> <p>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 optimal number of block read/writes per sector the drive can support.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">IDE HDD Block Mode</p> <hr/> <p>Disabled []</p> <p>Enabled [■]</p> <hr/> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>IDE DMA transfer access</p> <p>This item allow you to enable or disable the IDE DMA transfer access.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">IDE DMA transfer access</p> <hr/> <p>Disabled []</p> <p>Enabled [■]</p> <hr/> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>On-Chip Primary PCI IDE</p> <p>The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select <i>Enabled</i> to activate each channel separately.</p> | <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">On-Chip Primary PCI IDE</p> <hr/> <p>Disabled []</p> <p>Enabled [■]</p> <hr/> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |

| Description | Choice |
|---|---|
| <p>IDE Primary Master / Slave PIO</p> <p>The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) 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.</p> | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">IDE Primary Master PIO</p> <p>Auto [<input checked="" type="checkbox"/>]</p> <p>Mode 0 []</p> <p>Mode 1 []</p> <p>Mode 2 []</p> <p>Mode 3 []</p> <p>Mode 4 []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">IDE Primary Slave PIO</p> <p>Auto [<input checked="" type="checkbox"/>]</p> <p>Mode 0 []</p> <p>Mode 1 []</p> <p>Mode 2 []</p> <p>Mode 3 []</p> <p>Mode 4 []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>IDE Primary Master/Slave UDMA</p> <p>UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.</p> | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">IDE Primary Master UDMA</p> <p>Disabled []</p> <p>Auto [<input checked="" type="checkbox"/>]</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">IDE Primary Slave UDMA</p> <p>Disabled []</p> <p>Auto [<input checked="" type="checkbox"/>]</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |

On Chip Serial ATA Setting

Table 8.10. On Chip Serial ATA setting Selections

| Description | Choice | | | | | | | | | | | | |
|---|---|---------------------------------|--|-----------|-------------|--------------------------------|-----------|---------------|-------------|--------------------------------|-----------|--------------------------------|--|
| <p>SATA Mode</p> <p>Allow you setting the SATA hard disk mode to IDE, RAID or AHCI mode.</p> | <table border="1"> <tr> <td colspan="2">SATA Mode</td> </tr> <tr> <td>IDE</td> <td>..... [■]</td> </tr> <tr> <td>RAID</td> <td>..... []</td> </tr> <tr> <td>AHCI</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | SATA Mode | | IDE | [■] | RAID | [] | AHCI | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| SATA Mode | | | | | | | | | | | | | |
| IDE | [■] | | | | | | | | | | | | |
| RAID | [] | | | | | | | | | | | | |
| AHCI | [] | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| <p>On-Chip Serial ATA</p> <p>Disabled: Disabled SATA Controller. Combined Mode: PATA and SATA are combined. Maximum of 4 IDE devices can use 2 for SATA 2 for PATA. Enhanced Mode: Enable both SATA and PATA. Maximum of 4 IDE devices are supported. SATA Only: SATA is operating in legacy mode.</p> | <table border="1"> <tr> <td colspan="2">On-Chip Serial ATA</td> </tr> <tr> <td>Disabled</td> <td>..... []</td> </tr> <tr> <td>Combined Mode</td> <td>..... []</td> </tr> <tr> <td>Enhanced Mode</td> <td>..... [■]</td> </tr> <tr> <td>SATA Only</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | On-Chip Serial ATA | | Disabled | [] | Combined Mode | [] | Enhanced Mode | [■] | SATA Only | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| On-Chip Serial ATA | | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | |
| Combined Mode | [] | | | | | | | | | | | | |
| Enhanced Mode | [■] | | | | | | | | | | | | |
| SATA Only | [] | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| <p>SATA PORT Speed Settings</p> <p>Disable the SATA Port Speed setting or force to GEN I / GEN II.</p> | <table border="1"> <tr> <td colspan="2">SATA PORT Speed Settings</td> </tr> <tr> <td>Disabled</td> <td>..... [■]</td> </tr> <tr> <td>Force GEN I</td> <td>..... []</td> </tr> <tr> <td>Force GEN II</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | SATA PORT Speed Settings | | Disabled | [■] | Force GEN I | [] | Force GEN II | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| SATA PORT Speed Settings | | | | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | | | |
| Force GEN I | [] | | | | | | | | | | | | |
| Force GEN II | [] | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| <p>PATA IDE Mode</p> <p>The fix setting of the PATA IDE Mode is secondary.</p> | <table border="1"> <tr> <td colspan="2">PATA IDE Mode</td> </tr> <tr> <td>Secondary</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | PATA IDE Mode | | Secondary | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | |
| PATA IDE Mode | | | | | | | | | | | | | |
| Secondary | [■] | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |

| Description | Choice | | | |
|---|---|-------------------------|---------------------------------|---------------------------------------|
| <p>SATA Port</p> <p>Sets the Serial ATA channel to primary only. Note:The item is show only</p> | <table border="1"> <tr> <td data-bbox="538 167 906 215"> <p>SATA Port</p> </td> </tr> <tr> <td data-bbox="538 215 906 395"> <p>P0, P2 is Primary</p> </td> </tr> <tr> <td data-bbox="538 395 906 427"> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </td> </tr> </table> | <p>SATA Port</p> | <p>P0, P2 is Primary</p> | <p>↑↓:Move ENTER:Accept ESC:Abort</p> |
| <p>SATA Port</p> | | | | |
| <p>P0, P2 is Primary</p> | | | | |
| <p>↑↓:Move ENTER:Accept ESC:Abort</p> | | | | |

Onboard Device

Phoenix - AwardBIOS CMOS Setup Utility
Onboard Device

| | | |
|----------------------|------------|--------------|
| USB Controller | [Enabled] | Item Help |
| USB 2.0 Controller | [Enabled] | |
| USB Keyboard Support | [Disabled] | |
| AC97 Audio | [Enabled] | |
| Onboard LAN | [Enabled] | |
| | | Menu Level ► |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.10. Onboard Device

Table 8.11. On board device Selections

| Description | Choice | | |
|--|---|---|---------------------------------------|
| <p>USB Controller</p> <p>Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.</p> | <table border="1"> <tr> <td> <p>USB Controller</p> <p>Enabled [■]</p> <p>Disabled []</p> </td> </tr> <tr> <td> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </td> </tr> </table> | <p>USB Controller</p> <p>Enabled [■]</p> <p>Disabled []</p> | <p>↑↓:Move ENTER:Accept ESC:Abort</p> |
| <p>USB Controller</p> <p>Enabled [■]</p> <p>Disabled []</p> | | | |
| <p>↑↓:Move ENTER:Accept ESC:Abort</p> | | | |

| Description | Choice |
|---|---|
| <p>USB 2.0 Controller</p> <p>You can disable this function if you are not using onboard USB 2.0 feature.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>USB 2.0 Controller</p> <p>Enabled [■]</p> <p>Disabled []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>USB Keyboard Support</p> <p>Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>USB Keyboard Support</p> <p>Disabled [■]</p> <p>Enabled []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>AC97 Audio</p> <p>Select Enabled to use the audio capabilities of your system. Most of the following fields do not appear when this field is Disabled.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>AC97 Audio</p> <p>Enabled [■]</p> <p>Disabled []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Onboard LAN</p> <p>Select Enabled to active the onboard 10/100/1000 LAN controller, select Disabled to turn-off the onboard 10/100/1000 LAN controller when you do not want to use this function.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>Onboard LAN</p> <p>Enabled [■]</p> <p>Disabled []</p> <p style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</p> </div> |

Super IO Device

Phoenix - AwardBIOS CMOS Setup Utility
SuperIO Device

| | | |
|-----------------------|------------|--------------|
| Onboard Serial Port 1 | [3F8/IRQ4] | Item Help |
| Onboard Serial Port 2 | [2F8/IRQ3] | |
| | | Menu Level ► |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.11. SuperIO Device

Table 8.12. Super I/O device Selections

| Description | Choice | | | | | | | | | | | | | | | | |
|---|---|------------------------------|--|----------|-----------|----------|-------------|----------|-------------|----------|-----------|----------|-----------|------|-----------|--------------------------------------|--|
| Onboard Serial Port 1 Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports. | <table border="1"> <tr><td colspan="2">Onboard Serial Port 1</td></tr> <tr><td>Disabled</td><td>..... []</td></tr> <tr><td>3F8/IRQ4</td><td>..... [■]</td></tr> <tr><td>2F8/IRQ3</td><td>..... []</td></tr> <tr><td>3E8/IRQ4</td><td>..... []</td></tr> <tr><td>2E8/IRQ3</td><td>..... []</td></tr> <tr><td>Auto</td><td>..... []</td></tr> <tr><td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td></tr> </table> | Onboard Serial Port 1 | | Disabled | [] | 3F8/IRQ4 | [■] | 2F8/IRQ3 | [] | 3E8/IRQ4 | [] | 2E8/IRQ3 | [] | Auto | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Onboard Serial Port 1 | | | | | | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | | | | | |
| 3F8/IRQ4 | [■] | | | | | | | | | | | | | | | | |
| 2F8/IRQ3 | [] | | | | | | | | | | | | | | | | |
| 3E8/IRQ4 | [] | | | | | | | | | | | | | | | | |
| 2E8/IRQ3 | [] | | | | | | | | | | | | | | | | |
| Auto | [] | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | |
| Onboard Serial Port 2 Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports. | <table border="1"> <tr><td colspan="2">Onboard Serial Port 2</td></tr> <tr><td>Disabled</td><td>..... []</td></tr> <tr><td>3F8/IRQ4</td><td>..... []</td></tr> <tr><td>2F8/IRQ3</td><td>..... [■]</td></tr> <tr><td>3E8/IRQ4</td><td>..... []</td></tr> <tr><td>2E8/IRQ3</td><td>..... []</td></tr> <tr><td>Auto</td><td>..... []</td></tr> <tr><td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td></tr> </table> | Onboard Serial Port 2 | | Disabled | [] | 3F8/IRQ4 | [] | 2F8/IRQ3 | [■] | 3E8/IRQ4 | [] | 2E8/IRQ3 | [] | Auto | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Onboard Serial Port 2 | | | | | | | | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | | | | | | | |
| 3F8/IRQ4 | [] | | | | | | | | | | | | | | | | |
| 2F8/IRQ3 | [■] | | | | | | | | | | | | | | | | |
| 3E8/IRQ4 | [] | | | | | | | | | | | | | | | | |
| 2E8/IRQ3 | [] | | | | | | | | | | | | | | | | |
| Auto | [] | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | |

Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

Phoenix - AwardBIOS CMOS Setup Utility Power Management Setup

| | | |
|----------------------------------|---------------|--------------|
| Power-Supply Type | [ATX] | Item Help |
| ACPI Function | [Enabled] | |
| ACPI Suspend Type | S1(P0S) | Menu Level ► |
| Power Management | [User Define] | |
| Video Off Method | [DPMS] | |
| Video Off In Suspend | [Yes] | |
| Suspend Type | [Stop Grant] | |
| MODEM Use IRQ | [3] | |
| Suspend Mode | [Disabled] | |
| HDD Power Down | [Disabled] | |
| Soft-Off by PWR-BTTN | [Instant-Off] | |
| PWRON After PWR-Fail | [Former-Sts] | |
| PCI Express WAKE | [Disabled] | |
| PCI Express PME | [Disabled] | |
| Wake-Up by PCI card | [Disabled] | |
| Power On by Ring | [Disabled] | |
| Resume by Alarm | [Disabled] | |
| x Date(of Month) Alarm | 0 | |
| x Time(hh:mm:ss) Alarm | 0 : 0 : 0 | |
| ** Reload Global Timer Events ** | | |
| Primary IDE 0 | [Disabled] | |
| Primary IDE 1 | [Disabled] | |
| FDD, COM Port | [Disabled] | |
| PCI PIRQ[A-D]# | [Disabled] | |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.12. Power Management Setup

Table 8.13. Power Management setup Selections

| Description | Choice | | |
|---|--|---|--------------------------------|
| Power Supply Type This item sets the power supply type that you used. | <table border="1"> <tr> <td> Power-Supply Type AT [] ATX [■] </td> </tr> <tr> <td>↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | Power-Supply Type AT [] ATX [■] | ↑↓:Move ENTER:Accept ESC:Abort |
| Power-Supply Type AT [] ATX [■] | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | |

| Description | Choice | | | | | | | | | | |
|--|--|--------------------------|--|-------------|-------------|--------------------------------|-------------|--------------------------------|-------------|--------------------------------|--|
| <p>ACPI Function</p> <p>When set to 'Enabled', turns on the ACPI Function. The default setting is 'Enabled'.</p> | <table border="1"> <tr> <td colspan="2" style="text-align: center;">ACPI Function</td> </tr> <tr> <td>Enabled</td> <td style="text-align: right;">..... [■]</td> </tr> <tr> <td>Disabled</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | ACPI Function | | Enabled | [■] | Disabled | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| ACPI Function | | | | | | | | | | | |
| Enabled | [■] | | | | | | | | | | |
| Disabled | [] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>Note: ACPI (Advanced Configuration and Power Interface) is a power management specification that makes hardware status information available to the operating system. ACPI enables a computer to turn its peripherals on and off for improved power management. It also allows the computer to be turned on and off by external devices, so that mouse or keyboard activity wakes up the computer.</p> | | | | | | | | | | | |
| <p>ACPI Suspend Type</p> <p>The fix setting of the ACPI Suspend mode is S1(POS).</p> | <table border="1"> <tr> <td colspan="2" style="text-align: center;">ACPI Suspend Type</td> </tr> <tr> <td>S1(POS)</td> <td style="text-align: right;">..... [■]</td> </tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | ACPI Suspend Type | | S1(POS) | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | |
| ACPI Suspend Type | | | | | | | | | | | |
| S1(POS) | [■] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>Power management</p> <p>This setting controls the System Doze Mode, Standby Mode, and Suspend Mode Timer features.</p> | <table border="1"> <tr> <td colspan="2" style="text-align: center;">Power Management</td> </tr> <tr> <td>User Define</td> <td style="text-align: right;">..... [■]</td> </tr> <tr> <td>Min Saving</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td>Max Saving</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | Power Management | | User Define | [■] | Min Saving | [] | Max Saving | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Power Management | | | | | | | | | | | |
| User Define | [■] | | | | | | | | | | |
| Min Saving | [] | | | | | | | | | | |
| Max Saving | [] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>This category allows you to select the type (or degree) of power saving and is directly related to the following mode HDD Power Down</p> <p>User Define: 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.</p> <p>Min Saving: Minimum power management. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.</p> <p>Max Saving: Maximum power management – Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.</p> | | | | | | | | | | | |

| Description | Choice | | | | | | | | | | | | | | | | | | | | |
|---|---|----------------------|--|--------------|-------------|----------------|-------------|--------------------------------|-------------|--------------------------------|-----------|---|-----------|---|-----------|----|-----------|----|-----------|--------------------------------|--|
| <p>Video Off Method</p> <p>This determines the manner in which the monitor is blanked.</p> | <table border="1"> <thead> <tr> <th colspan="2">Video Off Method</th> </tr> </thead> <tbody> <tr> <td>Blank Screen</td> <td>..... []</td> </tr> <tr> <td>V/H SYNC+Blank</td> <td>..... []</td> </tr> <tr> <td>DPMS</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Video Off Method | | Blank Screen | [] | V/H SYNC+Blank | [] | DPMS | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| Video Off Method | | | | | | | | | | | | | | | | | | | | | |
| Blank Screen | [] | | | | | | | | | | | | | | | | | | | | |
| V/H SYNC+Blank | [] | | | | | | | | | | | | | | | | | | | | |
| DPMS | [■] | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | |
| Blank Screen | This option only writes blanks to the video buffer. | | | | | | | | | | | | | | | | | | | | |
| V/H SYNC+Blank | This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer. | | | | | | | | | | | | | | | | | | | | |
| DPMS | Initial display power management signaling. | | | | | | | | | | | | | | | | | | | | |
| <p>Video Off In Suspend</p> <p>This determines the manner in which the monitor is blanked.</p> | <table border="1"> <thead> <tr> <th colspan="2">Video Off In Suspend</th> </tr> </thead> <tbody> <tr> <td>No</td> <td>..... []</td> </tr> <tr> <td>Yes</td> <td>..... [■]</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Video Off In Suspend | | No | [] | Yes | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| Video Off In Suspend | | | | | | | | | | | | | | | | | | | | | |
| No | [] | | | | | | | | | | | | | | | | | | | | |
| Yes | [■] | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | |
| <p>Suspend Type</p> <p>Enables you to select the Suspend type. Options are "Stop Grant" and "PwrOn Suspend".</p> | <table border="1"> <thead> <tr> <th colspan="2">Suspend Type</th> </tr> </thead> <tbody> <tr> <td>Stop Grant</td> <td>..... [■]</td> </tr> <tr> <td>PwrOn Suspend</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Suspend Type | | Stop Grant | [■] | PwrOn Suspend | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| Suspend Type | | | | | | | | | | | | | | | | | | | | | |
| Stop Grant | [■] | | | | | | | | | | | | | | | | | | | | |
| PwrOn Suspend | [] | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | |
| <p>MODEM Use IRQ</p> <p>If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to a Keyboard computer Wake On Modem connector for this feature to work.</p> | <table border="1"> <thead> <tr> <th colspan="2">MODEM Use IRQ</th> </tr> </thead> <tbody> <tr> <td>NA</td> <td>..... []</td> </tr> <tr> <td>3</td> <td>..... [■]</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | MODEM Use IRQ | | NA | [] | 3 | [■] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| MODEM Use IRQ | | | | | | | | | | | | | | | | | | | | | |
| NA | [] | | | | | | | | | | | | | | | | | | | | |
| 3 | [■] | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | |

| Description | Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|----------------------|--|-------------|-------------|-------------|-----------|--------------------------------|-----------|-------|-----------|-------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------------------------------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------------------------------|--|
| <p>Suspend Mode</p> <p>The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected.</p> | <table border="1"> <thead> <tr> <th colspan="2">Suspend Mode</th> </tr> </thead> <tbody> <tr> <td>Disabled</td> <td>..... [■]</td> </tr> <tr> <td>1 Min</td> <td>..... []</td> </tr> <tr> <td>2 Min</td> <td>..... []</td> </tr> <tr> <td>4 Min</td> <td>..... []</td> </tr> <tr> <td>8 Min</td> <td>..... []</td> </tr> <tr> <td>12 Min</td> <td>..... []</td> </tr> <tr> <td>20 Min</td> <td>..... []</td> </tr> <tr> <td>30 Min</td> <td>..... []</td> </tr> <tr> <td>40 Min</td> <td>..... []</td> </tr> <tr> <td>1 Hour</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Suspend Mode | | Disabled | [■] | 1 Min | [] | 2 Min | [] | 4 Min | [] | 8 Min | [] | 12 Min | [] | 20 Min | [] | 30 Min | [] | 40 Min | [] | 1 Hour | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | |
| Suspend Mode | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Hour | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>HDD Power Down</p> <p>When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.</p> | <table border="1"> <thead> <tr> <th colspan="2">HDD Power Down</th> </tr> </thead> <tbody> <tr> <td>Disabled</td> <td>..... [■]</td> </tr> <tr> <td>1 Min</td> <td>..... []</td> </tr> <tr> <td>2 Min</td> <td>..... []</td> </tr> <tr> <td>3 Min</td> <td>..... []</td> </tr> <tr> <td>4 Min</td> <td>..... []</td> </tr> <tr> <td>5 Min</td> <td>..... []</td> </tr> <tr> <td>6 Min</td> <td>..... []</td> </tr> <tr> <td>7 Min</td> <td>..... []</td> </tr> <tr> <td>8 Min</td> <td>..... []</td> </tr> <tr> <td>9 Min</td> <td>..... []</td> </tr> <tr> <td>10 Min</td> <td>..... []</td> </tr> <tr> <td>11 Min</td> <td>..... []</td> </tr> <tr> <td>12 Min</td> <td>..... []</td> </tr> <tr> <td>13 Min</td> <td>..... []</td> </tr> <tr> <td>14 Min</td> <td>..... []</td> </tr> <tr> <td>15 Min</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | HDD Power Down | | Disabled | [■] | 1 Min | [] | 2 Min | [] | 3 Min | [] | 4 Min | [] | 5 Min | [] | 6 Min | [] | 7 Min | [] | 8 Min | [] | 9 Min | [] | 10 Min | [] | 11 Min | [] | 12 Min | [] | 13 Min | [] | 14 Min | [] | 15 Min | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| HDD Power Down | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 Min | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Soft-Off by PWR-BTTN</p> <p>When enabled, turning 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.</p> | <table border="1"> <thead> <tr> <th colspan="2">Soft-Off by PWR-BTTN</th> </tr> </thead> <tbody> <tr> <td>Instant-Off</td> <td>..... [■]</td> </tr> <tr> <td>Delay 4 Sec</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Soft-Off by PWR-BTTN | | Instant-Off | [■] | Delay 4 Sec | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Soft-Off by PWR-BTTN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instant-Off | [■] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Delay 4 Sec | [] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Description | Choice | | | | | | | | | | |
|--|--|-----------------------------|--|-------------------|-------------|-----------------|-------------|---------------------------------|-----------|--------------------------------|--|
| <p>Power after PWR-Fail Select a Power On status by the BIOS setup when power fail</p> | <table border="1"> <tr> <td colspan="2" data-bbox="572 153 934 188">PWRON After PWR-Fail</td> </tr> <tr> <td data-bbox="572 188 759 217">Former-Sts</td> <td data-bbox="759 188 934 217">..... [■]</td> </tr> <tr> <td data-bbox="572 217 759 245">On</td> <td data-bbox="759 217 934 245">..... []</td> </tr> <tr> <td data-bbox="572 245 759 274">Off</td> <td data-bbox="759 245 934 274">..... []</td> </tr> <tr> <td colspan="2" data-bbox="572 376 934 405">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | PWRON After PWR-Fail | | Former-Sts | [■] | On | [] | Off | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| PWRON After PWR-Fail | | | | | | | | | | | |
| Former-Sts | [■] | | | | | | | | | | |
| On | [] | | | | | | | | | | |
| Off | [] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>PCI Express WAKE By default, this field is disabled. If set Enable to enable On board lan "WOL" function</p> | <table border="1"> <tr> <td colspan="2" data-bbox="572 424 934 459">PCI Express WAKE</td> </tr> <tr> <td data-bbox="572 459 759 488">Enabled</td> <td data-bbox="759 459 934 488">..... []</td> </tr> <tr> <td data-bbox="572 488 759 517">Disabled</td> <td data-bbox="759 488 934 517">..... [■]</td> </tr> <tr> <td colspan="2" data-bbox="572 619 934 647">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | PCI Express WAKE | | Enabled | [] | Disabled | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| PCI Express WAKE | | | | | | | | | | | |
| Enabled | [] | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>PCI Express PME By default, this field is disabled. For Add on PCI-E Card PME</p> | <table border="1"> <tr> <td colspan="2" data-bbox="572 663 934 699">PCI Express PME</td> </tr> <tr> <td data-bbox="572 699 759 727">Enabled</td> <td data-bbox="759 699 934 727">..... []</td> </tr> <tr> <td data-bbox="572 727 759 756">Disabled</td> <td data-bbox="759 727 934 756">..... [■]</td> </tr> <tr> <td colspan="2" data-bbox="572 884 934 912">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | PCI Express PME | | Enabled | [] | Disabled | [■] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| PCI Express PME | | | | | | | | | | | |
| Enabled | [] | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>Wake-Up by PCI card When Enabled, your can awakens the system from Suspend mode from LAN/ PCI card event.</p> | <table border="1"> <tr> <td colspan="2" data-bbox="572 928 934 963">Wake-Up by PCI card</td> </tr> <tr> <td data-bbox="572 963 759 992">Disabled</td> <td data-bbox="759 963 934 992">..... [■]</td> </tr> <tr> <td data-bbox="572 992 759 1021">Enabled</td> <td data-bbox="759 992 934 1021">..... []</td> </tr> <tr> <td colspan="2" data-bbox="572 1110 934 1139">↑↓ :Move ENTER:Accept ESC:Abort</td> </tr> </table> | Wake-Up by PCI card | | Disabled | [■] | Enabled | [] | ↑↓ :Move ENTER:Accept ESC:Abort | | | |
| Wake-Up by PCI card | | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | |
| Enabled | [] | | | | | | | | | | |
| ↑↓ :Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| <p>Power On by Ring When set to "Enabled," any activity on the Modem port will wake up the system from a power saving mode.</p> | <table border="1"> <tr> <td colspan="2" data-bbox="572 1155 934 1190">Power On by Ring</td> </tr> <tr> <td data-bbox="572 1190 759 1219">Disabled</td> <td data-bbox="759 1190 934 1219">..... [■]</td> </tr> <tr> <td data-bbox="572 1219 759 1248">Enabled</td> <td data-bbox="759 1219 934 1248">..... []</td> </tr> <tr> <td colspan="2" data-bbox="572 1353 934 1382">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | Power On by Ring | | Disabled | [■] | Enabled | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | |
| Power On by Ring | | | | | | | | | | | |
| Disabled | [■] | | | | | | | | | | |
| Enabled | [] | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |

| Description | Choice |
|--|--|
| <p>Resume by Alarm</p> <p>When Enabled, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.</p> | <div style="border: 1px solid black; padding: 5px;"> <p>Resume by Alarm</p> <hr/> <p>Disabled [<input type="checkbox"/>]</p> <p>Enabled [<input type="checkbox"/>]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <div style="border: 1px solid black; padding: 5px;"> <p>Date(of Month) Alarm</p> <hr/> <p>Min= 0 Max= 31</p> <p>Key in a DEC number :</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> | <div style="border: 1px solid black; padding: 5px;"> <p>Time(hh:mm:ss) Alarm</p> <hr/> <p>Min= 0 Max= 23</p> <p>Key in a DEC number :</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <p>Reload Global Timer Events: When Enabled, an event occurring on each listed device restarts the global timer for Standby mode.</p> | |
| <div style="border: 1px solid black; padding: 5px;"> <p>Primary IDE 0</p> <hr/> <p>Disabled [<input type="checkbox"/>]</p> <p>Enabled [<input type="checkbox"/>]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> | <div style="border: 1px solid black; padding: 5px;"> <p>Primary IDE 1</p> <hr/> <p>Disabled [<input type="checkbox"/>]</p> <p>Enabled [<input type="checkbox"/>]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |
| <div style="border: 1px solid black; padding: 5px;"> <p>FDD, COM Port</p> <hr/> <p>Disabled [<input type="checkbox"/>]</p> <p>Enabled [<input type="checkbox"/>]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> | <div style="border: 1px solid black; padding: 5px;"> <p>PCI PIRQ[A-D]#</p> <hr/> <p>Disabled [<input type="checkbox"/>]</p> <p>Enabled [<input type="checkbox"/>]</p> <hr/> <p>↑↓:Move ENTER:Accept ESC:Abort</p> </div> |

PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, 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.

Phoenix - AwardBIOS CMOS Setup Utility PnP/PCI Configurations

| | | Item Help |
|----------------------------------|--------------|--------------|
| Init Display First | [PCI Slot] | |
| Reset Configuration Data | [Disabled] | |
| Resources Controlled By | [Auto(ESCD)] | Menu Level ► |
| x IRQ Resources | Press Enter | |
| PCI/VGA Palette Snoop | [Disabled] | |
| INT Pin 1 Assignment | [Auto] | |
| INT Pin 2 Assignment | [Auto] | |
| INT Pin 3 Assignment | [Auto] | |
| INT Pin 4 Assignment | [Auto] | |
| INT Pin 5 Assignment | [Auto] | |
| INT Pin 6 Assignment | [Auto] | |
| INT Pin 7 Assignment | [Auto] | |
| INT Pin 8 Assignment | [Auto] | |
| ** PCI Express relative items ** | | |
| Maximum Payload Size | [128] | |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.13. PnP/PCI Configuration Setup

Table 8.14. PCI PnP/PCI Configuration Setup Selections

| Description | Choices | | | | | | | | |
|---|---|--------------------|--|----------|--------------------|---------|-----------|--------------------------------|--|
| Init Display First Initialize the onboard video display before initializing any other display device on the system. Thus the onboard display becomes the primary display. | <table border="1"> <tr> <td colspan="2">Init Display First</td> </tr> <tr> <td>PCI Slot</td> <td>..... [I]</td> </tr> <tr> <td>Onboard</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </table> | Init Display First | | PCI Slot | [I] | Onboard | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Init Display First | | | | | | | | | |
| PCI Slot | [I] | | | | | | | | |
| Onboard | [] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |

| Description | Choices | | | | | | | | |
|--|--|--------------------------|--|------------|------------------------------------|---------|------------------------------------|--------------------------------|--|
| <p>Reset Configuration Data</p> <p>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 and the system reconfiguration has caused such a serious conflict that the operating system can not boot</p> | <table border="1"> <thead> <tr> <th colspan="2" data-bbox="639 151 1005 193">Reset Configuration Data</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 193 826 220">Disabled</td> <td data-bbox="826 193 1005 220">..... [<input type="checkbox"/>]</td> </tr> <tr> <td data-bbox="639 220 826 247">Enabled</td> <td data-bbox="826 220 1005 247">..... [<input type="checkbox"/>]</td> </tr> <tr> <td colspan="2" data-bbox="639 379 1005 406">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Reset Configuration Data | | Disabled | [<input type="checkbox"/>] | Enabled | [<input type="checkbox"/>] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Reset Configuration Data | | | | | | | | | |
| Disabled | [<input type="checkbox"/>] | | | | | | | | |
| Enabled | [<input type="checkbox"/>] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |
| <p>Resource Controlled by</p> <p>The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play – compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them</p> | <table border="1"> <thead> <tr> <th colspan="2" data-bbox="639 422 1005 464">Resources Controlled By</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 464 826 491">Auto(ESCD)</td> <td data-bbox="826 464 1005 491">..... [<input type="checkbox"/>]</td> </tr> <tr> <td data-bbox="639 491 826 518">Manual</td> <td data-bbox="826 491 1005 518">..... [<input type="checkbox"/>]</td> </tr> <tr> <td colspan="2" data-bbox="639 651 1005 678">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Resources Controlled By | | Auto(ESCD) | [<input type="checkbox"/>] | Manual | [<input type="checkbox"/>] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Resources Controlled By | | | | | | | | | |
| Auto(ESCD) | [<input type="checkbox"/>] | | | | | | | | |
| Manual | [<input type="checkbox"/>] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |

IRQ n Resources

Phoenix - AwardBIOS CMOS Setup Utility
 IRQ Resources

| | | |
|--------------------|--------------|---|
| IRQ-3 assigned to | [PCI Device] | Item Help |
| IRQ-4 assigned to | [PCI Device] | |
| IRQ-5 assigned to | [PCI Device] | Menu Level ► Legacy ISA for devices compliant with the original PC AT bus specifications, PCI/ISA Pnp for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture |
| IRQ-7 assigned to | [PCI Device] | |
| IRQ-9 assigned to | [PCI Device] | |
| IRQ-10 assigned to | [PCI Device] | |
| IRQ-11 assigned to | [PCI Device] | |
| IRQ-12 assigned to | [PCI Device] | |
| IRQ-14 assigned to | [PCI Device] | |
| IRQ-15 assigned to | [PCI Device] | |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.14. IRQ n Resources

When resources are controlled manually, assign each system interrupt as on of the following type, depending on the type of device using the interrupt.

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (Such as IRQ4 for serial port 1)

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

The Choice: Reserved and PCI device.

| Description | Choices | | | | | | |
|--|--|------------------------------|--|----------|---|---------|------------------------------------|
| <p>PCI/VGA Palette Snoop</p> <p>This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled. Leave this field at Disabled.</p> | <table border="1"> <tr> <td colspan="2">PCI/VGA Palette Snoop</td> </tr> <tr> <td>Disabled</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>Enabled</td> <td>..... [<input type="checkbox"/>]</td> </tr> </table> <p>↑↓:Move ENTER:Accept ESC:Abort</p> | PCI/VGA Palette Snoop | | Disabled | [<input checked="" type="checkbox"/>] | Enabled | [<input type="checkbox"/>] |
| PCI/VGA Palette Snoop | | | | | | | |
| Disabled | [<input checked="" type="checkbox"/>] | | | | | | |
| Enabled | [<input type="checkbox"/>] | | | | | | |

| Description | Choices | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|--|------|---|---|--------------|---|--------------|---|--------------|---|--------------|---|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|--------------------------------|--|
| <p>INT Pin 1 Assignment Devices(s) using this INT: Display Controller - Bus 0 Dev 2 Func 0 USB 1.0/1.1 UHCI Controller - Bus 0 Dev 29 Func 3</p> | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 1 Assignment</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 1 Assignment | | Auto | [<input checked="" type="checkbox"/>] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| INT Pin 1 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [<input checked="" type="checkbox"/>] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>INT Pin 2 Assignment Devices(s) using this INT: Multimedia Device - Bus 0 Dev30 Func 2</p> | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 2 Assignment</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 2 Assignment | | Auto | [<input checked="" type="checkbox"/>] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| INT Pin 2 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [<input checked="" type="checkbox"/>] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>INT Pin 3 Assignment Devices(s) using this INT: USB 1.0/1.1 UHCI Controller - Bus 0 Dev29 Func 2</p> | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 3 Assignment</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 3 Assignment | | Auto | [<input checked="" type="checkbox"/>] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| INT Pin 3 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [<input checked="" type="checkbox"/>] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Description | Choices | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|----------------------|--|------|---|---|--------------|---|--------------|---|--------------|---|--------------|---|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|-------------------------------|--|
| <p>INT Pin 4 Assignment Devices(s) using this INT: IDE Controller - Bus 0 Dev 31 Func 2 USB 1.0/1.1 UHCI Controller - Bus 0 Dev 29 Func 1 SMBus Controller - Bus 0 Dev 31 Func 3</p> | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 4 Assignment</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 4 Assignment | | Auto | [<input checked="" type="checkbox"/>] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓Move ENTER:Accept ESC:Abort | |
| INT Pin 4 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [<input checked="" type="checkbox"/>] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>INT Pin 5 Assignment Devices(s) using this INT: Network Controller - Bus 1 Dev 8 Func 0 Simple Communication Controller - Bus 0 Dev 30 Func 3</p> | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 5 Assignment</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 5 Assignment | | Auto | [<input checked="" type="checkbox"/>] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓Move ENTER:Accept ESC:Abort | |
| INT Pin 5 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [<input checked="" type="checkbox"/>] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>INT Pin 6 Assignment Devices(s) using this INT: - Reserved</p> | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 6 Assignment</th> </tr> </thead> <tbody> <tr> <td>Auto</td> <td>..... [<input checked="" type="checkbox"/>]</td> </tr> <tr> <td>3</td> <td>..... []</td> </tr> <tr> <td>4</td> <td>..... []</td> </tr> <tr> <td>5</td> <td>..... []</td> </tr> <tr> <td>7</td> <td>..... []</td> </tr> <tr> <td>9</td> <td>..... []</td> </tr> <tr> <td>10</td> <td>..... []</td> </tr> <tr> <td>11</td> <td>..... []</td> </tr> <tr> <td>12</td> <td>..... []</td> </tr> <tr> <td>14</td> <td>..... []</td> </tr> <tr> <td>15</td> <td>..... []</td> </tr> <tr> <td colspan="2">↑↓Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 6 Assignment | | Auto | [<input checked="" type="checkbox"/>] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓Move ENTER:Accept ESC:Abort | |
| INT Pin 6 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [<input checked="" type="checkbox"/>] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Description | Choices | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|--|------|------------|---|-----------|---|-----------|---|-----------|---|-----------|---|-----------|----|-----------|----|-----------|----|-----------|----|-----------|----|-----------|--------------------------------|--|
| <p>INT Pin 7 Assignment Devices(s) using this INT:</p> <ul style="list-style-type: none"> - Reserved | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 7 Assignment</th> </tr> </thead> <tbody> <tr><td>Auto</td><td>..... [█]</td></tr> <tr><td>3</td><td>..... []</td></tr> <tr><td>4</td><td>..... []</td></tr> <tr><td>5</td><td>..... []</td></tr> <tr><td>7</td><td>..... []</td></tr> <tr><td>9</td><td>..... []</td></tr> <tr><td>10</td><td>..... []</td></tr> <tr><td>11</td><td>..... []</td></tr> <tr><td>12</td><td>..... []</td></tr> <tr><td>14</td><td>..... []</td></tr> <tr><td>15</td><td>..... []</td></tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 7 Assignment | | Auto | [█] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| INT Pin 7 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [█] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>INT Pin 8 Assignment Devices(s) using this INT:</p> <ul style="list-style-type: none"> USB 1.0/1.1 UHCI Controller - Bus 0 Dev 29 Func 0 USB 2.0 EHCI Controller - Bus 0 Dev 29 Func 7 | <table border="1"> <thead> <tr> <th colspan="2">INT Pin 8 Assignment</th> </tr> </thead> <tbody> <tr><td>Auto</td><td>..... [█]</td></tr> <tr><td>3</td><td>..... []</td></tr> <tr><td>4</td><td>..... []</td></tr> <tr><td>5</td><td>..... []</td></tr> <tr><td>7</td><td>..... []</td></tr> <tr><td>9</td><td>..... []</td></tr> <tr><td>10</td><td>..... []</td></tr> <tr><td>11</td><td>..... []</td></tr> <tr><td>12</td><td>..... []</td></tr> <tr><td>14</td><td>..... []</td></tr> <tr><td>15</td><td>..... []</td></tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | INT Pin 8 Assignment | | Auto | [█] | 3 | [] | 4 | [] | 5 | [] | 7 | [] | 9 | [] | 10 | [] | 11 | [] | 12 | [] | 14 | [] | 15 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| INT Pin 8 Assignment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auto | [█] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | [] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PCI Express relative items

Table 8.15. PCI Express Relative Items Selections

| Description | Choices | | | | | | | | | | | | | | | | |
|--|---|----------------------|--|-----|------------|-----|-----------|-----|-----------|------|-----------|------|-----------|------|-----------|--------------------------------|--|
| <p>Maximum Payload Size Set maximum TLP payload size for the PCI Express Devices. The unit is byte.</p> | <table border="1"> <thead> <tr> <th colspan="2">Maximum Payload Size</th> </tr> </thead> <tbody> <tr><td>128</td><td>..... [█]</td></tr> <tr><td>256</td><td>..... []</td></tr> <tr><td>512</td><td>..... []</td></tr> <tr><td>1024</td><td>..... []</td></tr> <tr><td>2048</td><td>..... []</td></tr> <tr><td>4096</td><td>..... []</td></tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Maximum Payload Size | | 128 | [█] | 256 | [] | 512 | [] | 1024 | [] | 2048 | [] | 4096 | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Maximum Payload Size | | | | | | | | | | | | | | | | | |
| 128 | [█] | | | | | | | | | | | | | | | | |
| 256 | [] | | | | | | | | | | | | | | | | |
| 512 | [] | | | | | | | | | | | | | | | | |
| 1024 | [] | | | | | | | | | | | | | | | | |
| 2048 | [] | | | | | | | | | | | | | | | | |
| 4096 | [] | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | |

PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

| | | Item Help |
|----------------------|------------|--------------|
| CPU THRM-Thrttling | [50.0%] | |
| Smart Fan | [Disabled] | |
| Current CPU Temp. | 46°C/114°F | |
| Current System Temp. | 53°C/127°F | Menu Level ► |
| Current FAN1 Speed | 0 RPM | |
| Current FAN2 Speed | 0 RPM | |
| Vcore | 0.98V | |
| + 5V | 5.07V | |
| +1.05V | 1.07V | |
| + 1.8V | 1.81V | |
| + 1.5V | 1.513V | |
| + 3.3V | 3.29V | |
| 5VSB (V) | 5.07V | |

↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.15. PC Health Status

The BIOS shows the PC health status in this window.

Table 8.16. PC Health Status Selections

| Description | Choices | | | | | | | | | | | | | | | | | | |
|---|---|---------------------|--|----------|-------------|---------|-----------|--------------------------------|-----------|-------|-------------|-------|-----------|-------|-----------|-------|-----------|--------------------------------|--|
| <p>CPU THRM-Throttling</p> <p>This item sets the percentage of time that the CPU is idled if CPU throttling is initiated by excess heat.</p> | <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2" style="text-align: center;">CPU THRM-Throttling</th> </tr> </thead> <tbody> <tr> <td>87.5%</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td>75.0%</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td>62.5%</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td>50.0%</td> <td style="text-align: right;">..... [█]</td> </tr> <tr> <td>37.5%</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td>25.0%</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td>12.5%</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | CPU THRM-Throttling | | 87.5% | [] | 75.0% | [] | 62.5% | [] | 50.0% | [█] | 37.5% | [] | 25.0% | [] | 12.5% | [] | ↑↓:Move ENTER:Accept ESC:Abort | |
| CPU THRM-Throttling | | | | | | | | | | | | | | | | | | | |
| 87.5% | [] | | | | | | | | | | | | | | | | | | |
| 75.0% | [] | | | | | | | | | | | | | | | | | | |
| 62.5% | [] | | | | | | | | | | | | | | | | | | |
| 50.0% | [█] | | | | | | | | | | | | | | | | | | |
| 37.5% | [] | | | | | | | | | | | | | | | | | | |
| 25.0% | [] | | | | | | | | | | | | | | | | | | |
| 12.5% | [] | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | |
| <p>Smart Fan</p> <p>Disabled: Disable this function.</p> <p>Enabled: When this function is enabled, CPU fan will ran at different speed depending on CPU temperature. Users can adjust the fan speed with Easy Ture based on their requirements.</p> | <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2" style="text-align: center;">Smart Fan</th> </tr> </thead> <tbody> <tr> <td>Disabled</td> <td style="text-align: right;">..... [█]</td> </tr> <tr> <td>Enabled</td> <td style="text-align: right;">..... []</td> </tr> <tr> <td colspan="2" style="text-align: center;">↑↓:Move ENTER:Accept ESC:Abort</td> </tr> </tbody> </table> | Smart Fan | | Disabled | [█] | Enabled | [] | ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | |
| Smart Fan | | | | | | | | | | | | | | | | | | | |
| Disabled | [█] | | | | | | | | | | | | | | | | | | |
| Enabled | [] | | | | | | | | | | | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | | | | | | | | | | | |
| Current FAN1 Speed | This field displays the current FAN1 speed, if your computer contains a monitoring system. | | | | | | | | | | | | | | | | | | |
| Current FAN2 Speed | This field displays the current FAN2 speed, if your computer contains a monitoring system. | | | | | | | | | | | | | | | | | | |
| Current CPU Temp. | This field displays the current CPU temperature, if your computer contains a monitoring system. | | | | | | | | | | | | | | | | | | |
| Current System Temp. | This field displays the current system temperature, if your computer contains a monitoring system. | | | | | | | | | | | | | | | | | | |
| Vcore / +5V / +1.05V / + 1.8V / +1.5V / +3.3V / 5VSB | These fields display the current voltage of input lines, if your computer contains a monitoring system. | | | | | | | | | | | | | | | | | | |

Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility
 Frequency/Voltage Control

| | | |
|------------------------|------------------|------------------|
| Spread Spectrum | [Enabled] | Item Help |
| | | Menu Level ► |

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8.16. Frequency/Voltage Control

Table 8.17. Frequency/Voltage Control Selections

| Description | Choices | | | | | | | | |
|---|--|------------------------|--|-----------------|-----------|----------------|-----------|--------------------------------------|--|
| <p>Spread Spectrum</p> <p>When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device.</p> | <table border="1" style="margin: auto;"> <tr> <td colspan="2">Spread Spectrum</td> </tr> <tr> <td>Disabled</td> <td>..... []</td> </tr> <tr> <td>Enabled</td> <td>..... [■]</td> </tr> <tr> <td colspan="2" style="text-align: center;"> ↑↓:Move ENTER:Accept ESC:Abort </td> </tr> </table> | Spread Spectrum | | Disabled | [] | Enabled | [■] | ↑↓:Move ENTER:Accept ESC:Abort | |
| Spread Spectrum | | | | | | | | | |
| Disabled | [] | | | | | | | | |
| Enabled | [■] | | | | | | | | |
| ↑↓:Move ENTER:Accept ESC:Abort | | | | | | | | | |

Defaults Menu

Selecting “Defaults” from the main menu shows you two options which are described below

Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing ‘Y’ loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing ‘Y’ loads the default values that are factory settings for optimal performance system operations.

Supervisor /User Password Setting

You can set either supervisor or user password, or both of them. The differences between are:

SUPERVISOR PASSWORD: can enter and change the options of the setup menus.

USER PASSWORD: just can only enter but do not have the right to change the options of the setup menus. When you select this unction, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

Exit Selecting

Load Fail-Safe Defaults

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? **Y**

Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? **Y**

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

POST Messages

During the Power On Self-Test (POST), if the BIOS detects an error requiring you to do something to fix, it will either sound a beep code or display a message.

If a message is displayed, it will be accompanied by:

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

CMOS battery has failed

CMOS battery is no longer functional. It should be replaced.

CMOS checksum error

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISK BOOT failure**INSERT SYSTEM DISK AND PRESS ENTER**

No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.

Diskette drives or types mismatch error**RUN SETUP**

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

Display switch is set incorrectly

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

Display type has changed since last BOOT

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

EISA configuration checksum error***PLEASE RUN EISA CONFIGURATION UTILITY***

The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is in-stalled firmly in the slot.

EISA configuration is not complete***PLEASE RUN EISA CONFIGURATION UTILITY***

The slot configuration information stored in the EISA non-volatile memory is incomplete.

Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Error encountered initializing hard drive

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

Error initializing hard disk controller

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

Floppy disk controller error or no controller present

Cannot find or initialize the floppy drive controller. Make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

Invalid EISA configuration

PLEASE RUN EISA CONFIGURATION UTILITY

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Keyboard error or no keyboard present

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

Memory address error at ...

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

Memory parity error at ...

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

Memory size has changed since last BOOT

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

Memory verify error at ...

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

Offending address not found

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

Offending segment

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

Press a key to REBOOT

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

Press F1 to disable NMI, F1 to REBOOT

When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM parity error***CHECKING FOR SEGMENT ...***

Indicates a parity error in Random Access Memory.

Should be empty but EISA board found***PLEASE RUN EISA CONFIGURATION UTILITY***

A valid board ID was found in a slot that was configured as having no board ID.

Note, When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Should have EISA board but not found***PLEASE RUN EISA CONFIGURATION UTILITY***

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

Note, When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot not empty

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

Note, When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

System halted, (CTRL-ALT-DEL) to REBOOT ...

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

Wrong board in slot***PLEASE RUN EISA CONFIGURATION UTILITY***

The board ID does not match the ID stored in the EISA non-volatile memory.

Note, When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Floppy disk(s) fail (80)

Unable to reset floppy subsystem.

Floppy disk(s) fail (40)

Floppy Type mismatch.

Hard disk(s) fail (80)

HDD reset failed.

Hard disk(s) fail (40)

HDD controller diagnostics failed.

Hard disk(s) fail (20)

HDD initialization error.

Hard disk(s) fail (10)

Unable to recalibrate fixed disk.

Hard disk(s) fail (08)

Sector Verify failed.

Keyboard is locked out – Unlock the key

Unlock the key. BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

Keyboard error or no keyboard present

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

BIOS ROM checksum error – System halted

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail

BIOS reports the memory tests fail if the onboard memory is tested error.

POST Codes

| POST (hex) | Description |
|------------|--|
| CFh | Test CMOS R/W functionality. |
| C0h | Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers |
| C1h | Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below) |
| C3h | Expand compressed BIOS code to DRAM |
| C5h | Call chipset hook to copy BIOS back to E000 & F000 shadow RAM. |
| 0h1 | Expand the Xgroup codes locating in physical address 1000:0 |
| 02h | Reserved |
| 03h | Initial Superio_Early_Init switch. |
| 04h | Reserved |
| 05h | 1. Blank out screen 2. Clear CMOS error flag |
| 06h | Reserved |
| 07h | Clear 8042 interface Initialize 8042 self-test |
| 08h | Test special keyboard controller for Winbond 977 series Super I/O chips. Enable keyboard interface. |
| 09h | Reserved |
| 0Ah | Disable PS/2 mouse interface (optional). Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). Reset keyboard for Winbond 977 series Super I/O chips. |
| 0Bh | Reserved |
| 0Ch | Reserved |
| 0Dh | Reserved |
| 0Eh | Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker. |
| 0Fh | Reserved |
| 10h | Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support. |
| 11h | Reserved |
| 12h | Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override. |
| 13h | Reserved |
| 14h | Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers. |
| 15h | Reserved |
| 16h | Initial Early_Init_Onboard_Generator switch. |
| 17h | Reserved |
| 18h | Detect CPU information including brand, SMI type (Cyrix or Intel®) and CPU level (586 or 686). |
| 19h | Reserved |
| 1Ah | Reserved |
| 1Bh | Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR. |
| 1Ch | Reserved |
| 1Dh | Initial EARLY_PM_INIT switch. |
| 1Eh | Reserved |

8. BIOS Setup

| POST (hex) | Description |
|---------------|--|
| 1Fh | Load keyboard matrix (notebook platform) |
| 20h | Reserved |
| 21h | HPM initialization (notebook platform) |
| 22h | Reserved |
| 23h | <p>Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead. Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information. Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. Early PCI initialization: -Enumerate PCI bus number -Assign memory & I/O resource -Search for a valid VGA device & VGA BIOS, and put it into C000:0.</p> |
| 24h | Reserved |
| 25h | Reserved |
| 26h | Reserved |
| 27h | Initialize INT 09 buffer |
| 28h | Reserved |
| 29h | <p>Program CPU internal MTRR (P6 & PID) for 0~640K memory address. Initialize the APIC for Pentium class CPU. Program early chipset according to CMOS setup. Example: onboard IDE controller. Measure CPU speed. Invoke video BIOS.</p> |
| 2Ah | Reserved |
| 2Bh | Reserved |
| 2Ch | Reserved |
| 2Dh | <p>Initialize multi-language Put information on screen display, including Award title, CPU type, CPU speed</p> |
| 2Eh | Reserved |
| 2Fh | Reserved |
| 30h | Reserved |
| 31h | Reserved |
| 32h | Reserved |
| 33h | Reset keyboard except Winbond 977 series Super I/O chips. |
| 34h | Reserved |
| 35h | Reserved |
| 36h | Reserved |
| 37h | Reserved |
| 38h | Reserved |
| 39h | Reserved |
| 3Ah | Reserved |
| 3Bh | Reserved |
| 3Ch | Test 8254 |
| 3Dh | Reserved |
| 3Eh | Test 8259 interrupt mask bits for channel 1. |
| 3Fh | Reserved |
| 40h | Test 8259 interrupt mask bits for channel 2. |
| 41h | Reserved |
| 42h | Reserved |

| POST (hex) | Description |
|---------------|--|
| 43h | Test 8259 functionality. |
| 44h | Reserved |
| 45h | Reserved |
| 46h | Reserved |
| 47h | Initialize EISA slot |
| 48h | Reserved |
| 49h | Calculate total memory by testing the last double word of each 64K page. Program writes allocation for AMD K5 CPU. |
| 4Ah | Reserved |
| 4Bh | Reserved |
| 4Ch | Reserved |
| 4Dh | Reserved |
| 4Eh | Program MTRR of M1 CPU Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. Initialize the APIC for P6 class CPU. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical. |
| 4Fh | Reserved |
| 50h | Initialize USB |
| 51h | Reserved |
| 52h | Test all memory (clear all extended memory to 0) |
| 53h | Reserved |
| 54h | Reserved |
| 55h | Display number of processors (multi-processor platform) |
| 56h | Reserved |
| 57h | Display PnP logo Early ISA PnP initialization -Assign CSN to every ISA PnP device. |
| 58h | Reserved |
| 59h | Initialize the combined Trend Anti-Virus code. |
| 5Ah | Reserved |
| 5Bh | (Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional) |
| 5Ch | Reserved |
| 5Dh | Initialize Init_Onboard_Super_IO switch. Initialize Init_Onboard_AUDIO switch. |
| 5Eh | Reserved |
| 5Fh | Reserved |
| 60h | Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility. |
| 61h | Reserved |
| 62h | Reserved |
| 63h | Reserved |
| 64h | Reserved |
| 65h | Initialize PS/2 Mouse |
| 66h | Reserved |
| 67h | Prepare memory size information for function call: INT 15h ax=E820h |
| 68h | Reserved |
| 69h | Turn on L2 cache |
| 6Ah | Reserved |
| 6Bh | Program chipset registers according to items described in Setup & Auto-configuration table. |

8. BIOS Setup

| POST (hex) | Description |
|------------|--|
| 6Ch | Reserved |
| 6Dh | Assign resources to all ISA PnP devices. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO". |
| 6Eh | Reserved |
| 6Fh | Initialize floppy controller Set up floppy related fields in 40:hardware. |
| 70h | Reserved |
| 71h | Reserved |
| 72h | Reserved |
| 73h | (Optional Feature) Enter AWDFLASH.EXE if : -AWDFLASH is found in floppy drive. -ALT+F2 is pressed |
| 74h | Reserved |
| 75h | Detect & install all IDE devices: HDD, LS120, ZIP, CDROM..... |
| 76h | Reserved |
| 77h | Detect serial ports & parallel ports. |
| 78h | Reserved |
| 79h | Reserved |
| 7Ah | Detect & install co-processor |
| 7Bh | Reserved |
| 7Ch | Reserved |
| 7Dh | Reserved |
| 7Eh | Reserved |
| 7Fh | Switch back to text mode if full screen logo is supported. -If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: ♦Clear EPA or customization logo. |
| 80h | Reserved |
| 81h | Reserved |
| 82h | Call chipset power management hook. Recover the text font used by EPA logo (not for full screen logo) If password is set, ask for password. |
| 83h | Save all data in stack back to CMOS |
| 84h | Initialize ISA PnP boot devices |
| 85h | USB final Initialization NET PC: Build SYSID structure Switch screen back to text mode Set up ACPI table at top of memory. Invoke ISA adapter ROMs Assign IRQs to PCI devices Initialize APM Clear noise of IRQs. |
| 86h | Reserved |
| 87h | Reserved |
| 88h | Reserved |
| 89h | Reserved |
| 90h | Reserved |
| 91h | Reserved |
| 92h | Reserved |
| 93h | Read HDD boot sector information for Trend Anti-Virus code |

| POST (hex) | Description |
|---------------|---|
| 94h | Enable L2 cache Program boot up speed Chipset final initialization. Power management final initialization Clear screen & display summary table Program K6 write allocation Program P6 class write combining |
| 95h | Program daylight saving Update keyboard LED & typematic rate |
| 96h | Build MP table Build & update ESCD Set CMOS century to 20h or 19h Load CMOS time into DOS timer tick Build MSIRQ routing table. |
| FFh | Boot attempt (INT 19h) |

SEH-9450-LAS

User's Manual

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