EBC5852-C8

User's Manual

Revision 1.2

CONTENTS

SECTION 1

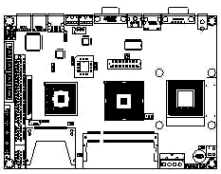
INTRODUCTION

1.1 Unpacking EBC5852-C8

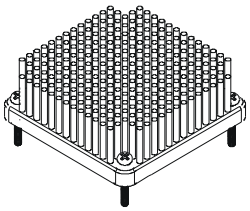
1. Take out the EBC5852-C8 unit from the carton box, check if the unit is properly secure in the plastic bag.

2. Check the contents of the carton box:

◆ Embedded board



◆ Heat sink



◆ Driver CD

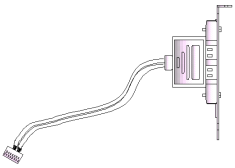
◆ Installation guide

◆ ATA-66/100 HDD ribbon cable

◆ K/B & M/S Y type cable

3. Optional Kits

◆ USB cable (1 Set)
(for USB2.0)



◆ Line_out cable (1 Set)

1.2 Description

The EBC5852-C8 combines the high performance and exceptional value of the Intel® 852GM chipset with a full-featured board. This Intel® 852GM chipset supports a Celeron® M 800MHz processor running at an FSB of 400 MHz. The DDR SDRAM interface supports up to 1GB of RAM, and has an integrated LVDS & VGA function. It features one onboard Intel® 82562GT (10/100) and a Realtek® 8110S (10/100/1000) Ethernet controller, Realtek® ALC655 audio, two SATA connectors (1.5 Gbps), one IDE channel interface (ATA 33/66/100), one CF socket (through IDE bus), two COM ports, and six USB2.0 ports (two on the rear panel and four internal). The EBC5852-C8 is highly suitable for POS PC, Panel PC, KIOSK and thin client applications.

The 82801DB I/O Controller Hub (ICH4) employs the Intel® Accelerated Hub Architecture to make a direct connection from the graphics and memory to the I/O devices to meet performance, stability and reliability requirements.

1.3 Features

1.3.1 Graphic & Ethernet

The EBC5852-C8 is based on the Intel® 852GM chipset, which offers integrated LVDS, Graphic, and Ethernet functions. The features of system are as below:

- Enhanced integrated LVDS & graphics:
  - 400 MHz FSB support
  - 18 bit dual channels LVDS, resolution up to 1600 x 1200 UXGA
  - Onboard LVDS interface & VGA connectors
- Build-in Ethernet:
  - 1x onboard Intel® 82562GT Ethernet controller (10/100)
  - 1x Realtek® 8110S Gigabit Ethernet controller (10/100/1000)
- Memory:
  - DDR SDRAM 200/266
  - 1x 200-pins SO-DIMM socket
  - 1.0GB Max.
- IO Connectivity - ICH4:
  - 6 Hi-Speed USB2.0 ports
  - Realtek® ALC655 Audio Codec

1.3.2 Ultra ATA/66/100

The ICH4 provides two channel Ultra ATA/66/100 Bus Master IDE controller, that support Ultra ATA/66/100 protocols, perfect for demanding applications such as real-time video, multimedia, and high performance operating system. A special 80-conductor IDE cable is required for Ultra ATA/66/100 functionality. This cable is, of course, backwards compatible with ATA/33.

1.3.3 SATA150

The SiI3512E is a single-chip PCI to 2-port Serial ATA host controller. It provides two Serial ATA channels with 1.5 Gbps (150 MB/s) bandwidth. The SiI3512E is compliant with Serial ATA 1.0 specification, and supports ATAPI devices such as CD-ROM, CD-RW, DVD-ROM, DVD+R, etc.

1.3.4 Hardware Monitoring

Hardware monitoring allows you to monitor various aspects of your systems operations and status. The features include CPU temperature, voltage and RPM of fan.

1.3.5 I/O Shield Connector

The board is equipped with an I/O panel. Please use the appropriate I/O shield (figure 1).

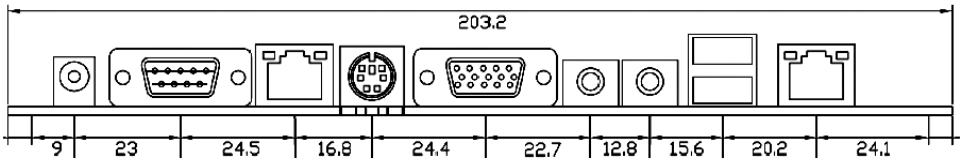


Figure 1: I/O back panel layout

1.3.6 EBC5852-C8 **Overview**

Function / Model	EBC5852-C8	
◆ Processor	Onboard	
◆ Chipset	Intel® 852GM	
◆ LVDS function	1	
◆ VGA function	1	
◆ Ethernet function	1	
◆ Audio function	1	
◆ 40-pins EIDE interface	1	
◆ SATA interface	2	
◆ PCI slot	1	
◆ Serial ports	2	
◆ USB 2.0 ports (four for optional USB cable)	6	
◆ Type II CF socket (optional)	1	
◆ LAN extend to front panel LED pin-header	2	
◆ Audio line-out pin-header	1	

1.3.7 System Block Diagram

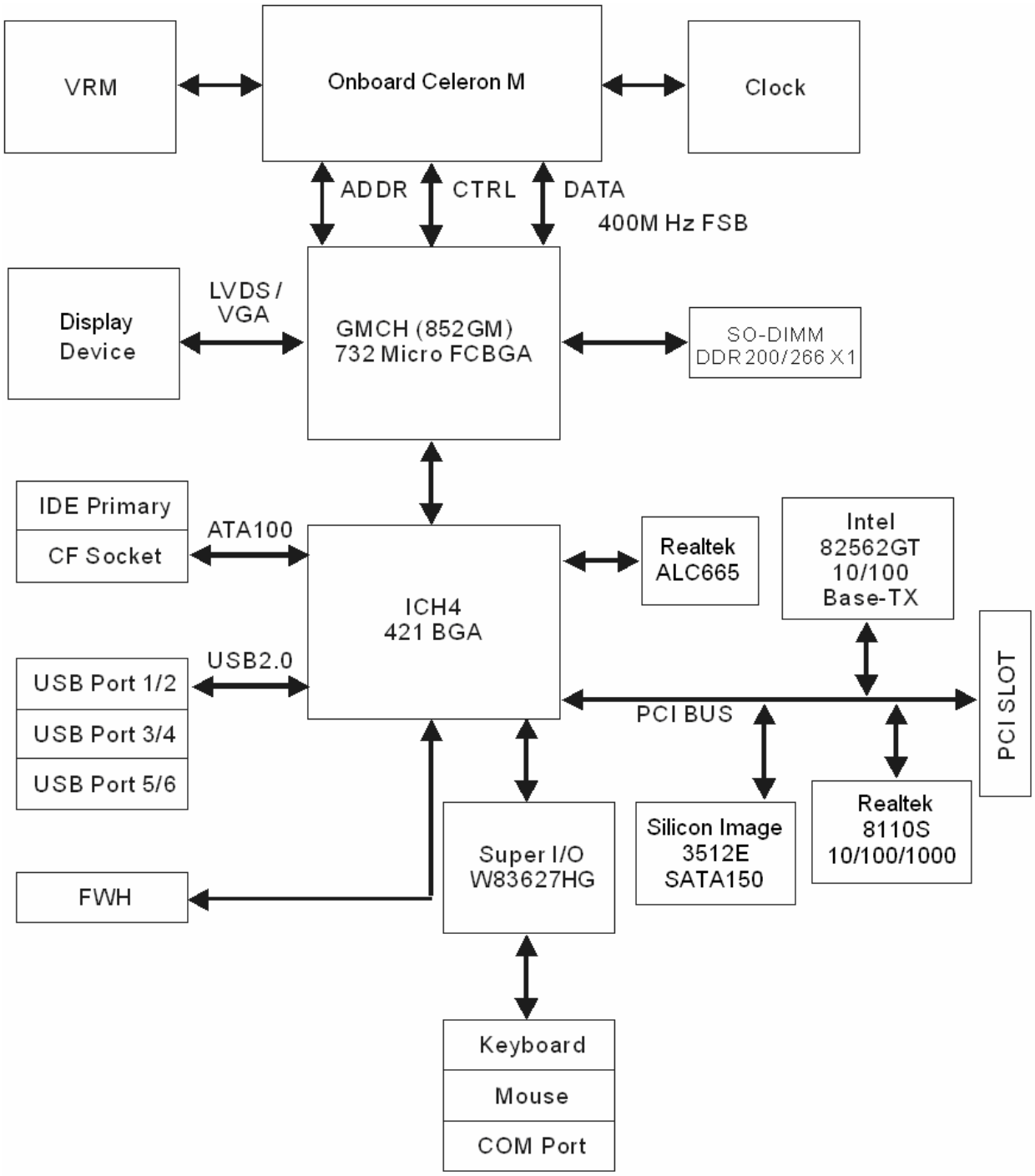


Figure 2: System Block Diagram

1.4 Specifications

- **Processor:**
  - Onboard 800MHz Celeron® M with 0-L2 cache processor
  - System bus frequency at 400 MHz FSB

- **Chipset:**
  - Intel® 852GM + ICH4

- **DRAM Module:**
  - 1 x 200-pins SO-DIMM socket, for DDR 200/266 Memory
  - Support DDR SDRAM up to 1GB (Max.)

- **LVDS & VGA Function:**
  - Intel® 852GM chipset integrated LVDS & Graphic controller
  - Support 18-bit dual channels LVDS panel
  - Resolution up to 1600 x 1200 UXGA
  - Onboard one VGA connector

- **Ethernet Function:**
  - Intel® 82562GT Ethernet controller, for 10/100 Base-TX Ethernet
  - Realtek® 8110S Gigabit Ethernet controller, for 10/100/1000 Base-TX Ethernet

- **Expansion Slot:**
  - 1 x PCI Riser slot

- **Onboard I/O:**
  - On-Chip I/O integrated with K/B, Mouse and Serial controller

- **Onboard PCI / IDE:**
  - Intel® 82801DB (ICH4) Controller
  - ACPI Compliant Power Management
  - Two SATA150 connectors
  - One 40-pin 2.54 pitch connector for PIO/Ultra DMA-100 (Up to 2 devices)
  - One CF socket through Secondary IDE channel

- **Rear I/O Connectors:**
  - 1 x DC-IN power jack
  - 1 x D-Sub 9-pins COM1 serial port connector for RS-232
  - 2 x RJ-45 Ethernet connector
  - PS/2 type connector for keyboard or mouse
  - 1 x VGA connector
  - Audio for Line-Out, MIC phone jack
  - 2 x USB2.0 (USB 0/1) connectors

- **Internal I/O Connectors (pin-header):**
  - 1 x COM port connectors (all COM ports for RS-232)
  - 4 x USB2.0 connectors (USB cable with bracket by optional)
  - 2 x LAN LED pin-header (for front panel indication)

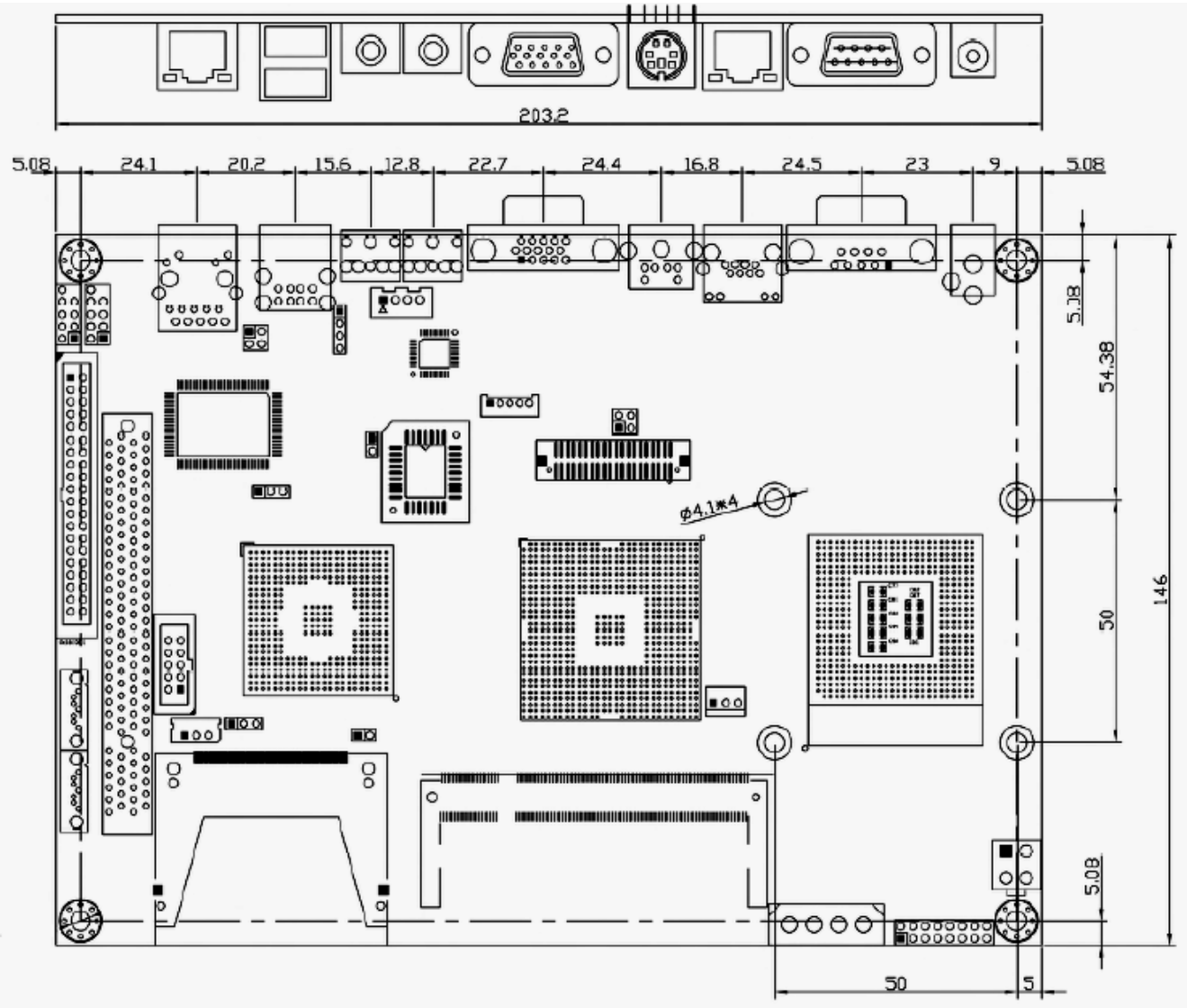
- **Power Connector:**
  - 4-pins output power connector, support +5V, +12V
  - 1 x DC-IN power jack for DC14V ~ 21V power adapter

- **BIOS:**
  - Award Plug & Play BIOS

- **Form Factor:**
  - 5.75” x 8.0” (146 x 203mm), 5 1/4” Size

- **Weight:**
  - 0.77lb (350g) --- EBC5852-C8

1.5 Mechanical Dimensions



SECTION 2

INSTALLATIONS

2.1 System Installation

2.1.1 Memory Module Installation

Figure 3 display the notch marks and what they should look like on your SO-DIMM memory module.

SO-DIMM has 200-pins and two notches that will match with the onboard SO-DIMM socket. Memory modules are installed by placing the chip firmly into the socket at a parallel angle and pressing straight down (figure 4) until it fits tightly into the SO-DIMM socket.

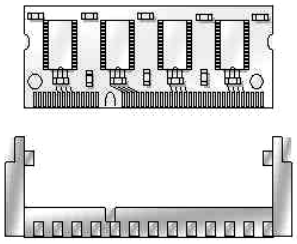


Figure 3: SO-DIMM Memory and 200-pins Socket

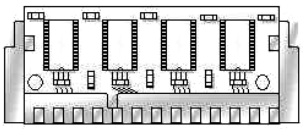


Figure 4: Memory Installation

Carefully follow the steps below in order to install the memory:

1. To avoid generating static electricity and damaging the memory, ground yourself by touching a grounded metal surface or using a ground scrap before you touch the memory.

2. Do not touch the connector of the SO-DIMM. Dirt residue may cause a malfunction.

3. Hold the memory with its notch to the front side of the EBC5852-C8 and insert it completely into the socket. A memory should be inserted into the inner socket first. Guiding the hole at each end of the SO-DIMM over the retaining post at each end of the memory socket.

4. If memory does not go in smoothly, do not force it. Pull it all the way out and try again.

5. Make sure the memory is properly installed and locked by the tabs on both sides of the socket.

Removing a Memory:

To remove the memory, use your fingers or a small screwdriver to carefully push away the plastic tabs that secure the memory at each end. Lift it out of the socket.

Make sure you store the memory in an anti-static bag.

2.1.2 Setting Jumpers

There are jumpers on the embedded board of the EBC5852-C8. You can set the jumpers to make the necessary operations.

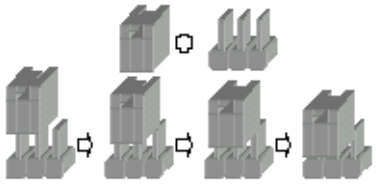


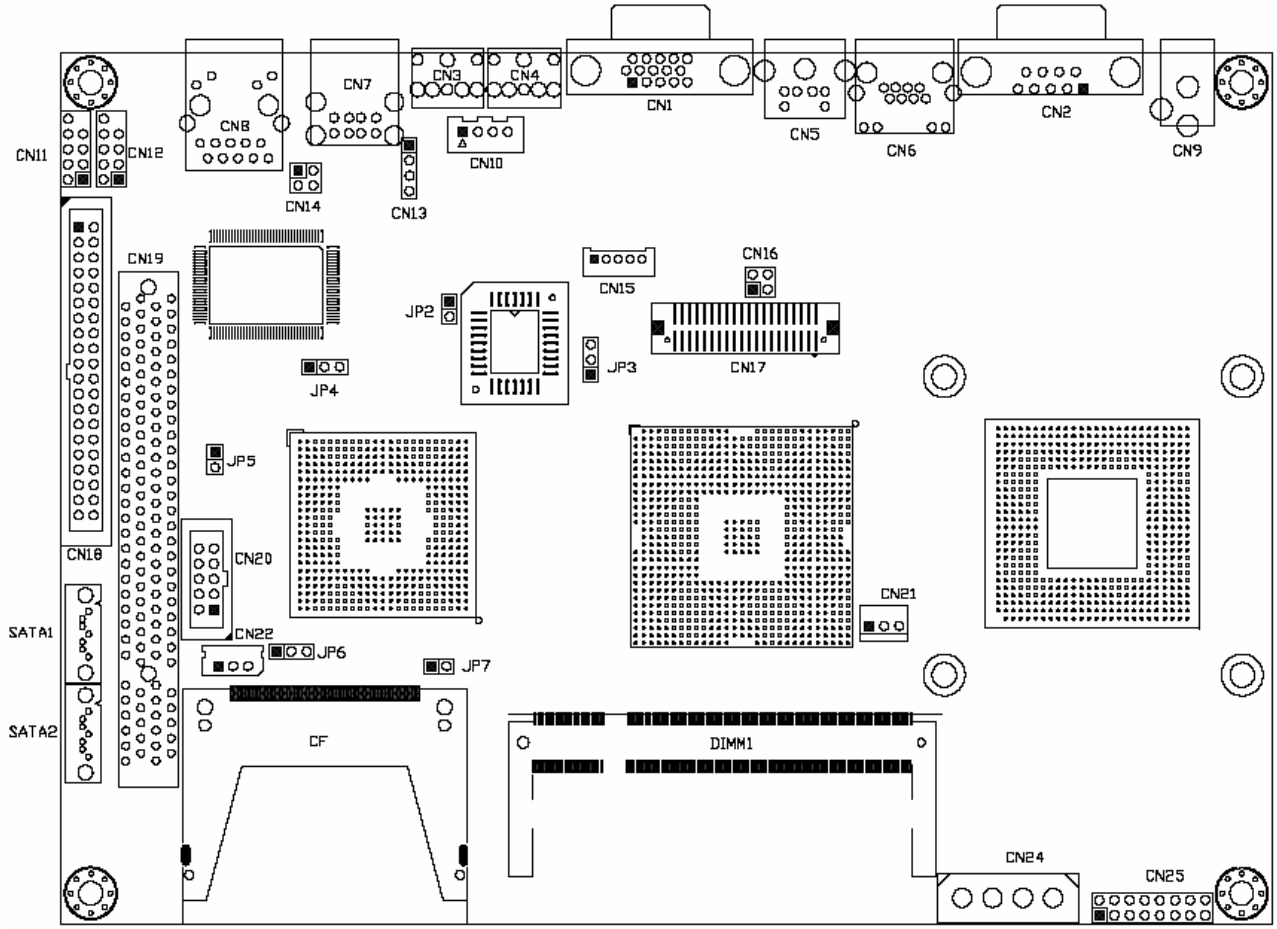
Figure 5: Jumper Connector

For any three-pin jumpers (Figure 5), the jumper setting is 1-2 when the jumper connects pins 1 and 2. The setting is 2-3 when pins 2 and 3 are connected and so on. You see one of the lines surrounding jumpers is thick, which indicates pin NO.1.

To move a jumper from one position to another, use needle-nose pliers or tweezers to pull the pin cap off the pins and move it to the desired position.

2.2 Board Layout

Jumper & Connector Location



2.3 Jumper Setting

Table for Jumper Location Description:

Use the information in the following table to change the jumpers.

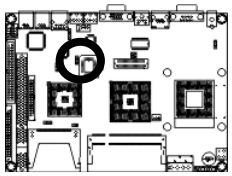
Jumpers	Functions
JP2	BIOS write protection setting select
JP3	LVDS voltage setting select
JP4	Watchdog timer setting select
JP5	Chassis Intrusion detection
JP6	Clear CMOS setting select
JP7	Auto power on setting select

In order to set up the correct configuration, here is the description about how to set the jumpers to enable/disable or change functions. All jumpers' location please refers to jumper location diagram.

◆ **BIOS write protection setting select: JP2**

Function	JP2
BIOS write protection	On
Normal (Default)	Off

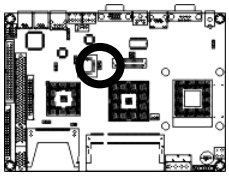
- **Location:**



◆ **LVDS voltage setting select: JP3**

Function	JP3
3.3V (Default)	1-2
5V	2-3

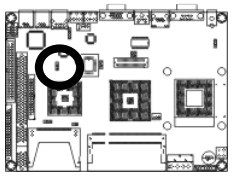
- **Location:**



◆ **Watchdog timer setting select: JP4**

Function	JP4
NMI	1-2
Reset System (Default)	2-3

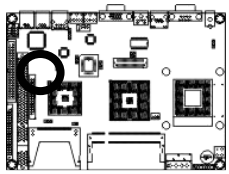
- **Location:**



◆ **Chassis Intrusion detection: JP5**

Function	JP5
Trigger chassis intrusion	On
Normal (Default)	Off

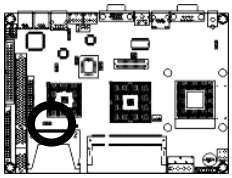
- **Location:**



◆ **Clear CMOS setting select: JP6**

Function	JP6
Normal (Default)	1-2
Clear CMOS	2-3

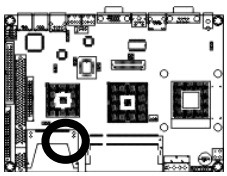
- **Location:**



◆ **Auto power on setting select: JP7**

Function	JP7
Auto power on	On
Normal (Default)	Off

- **Location:**



2.4 Connector's Description

Connector Location

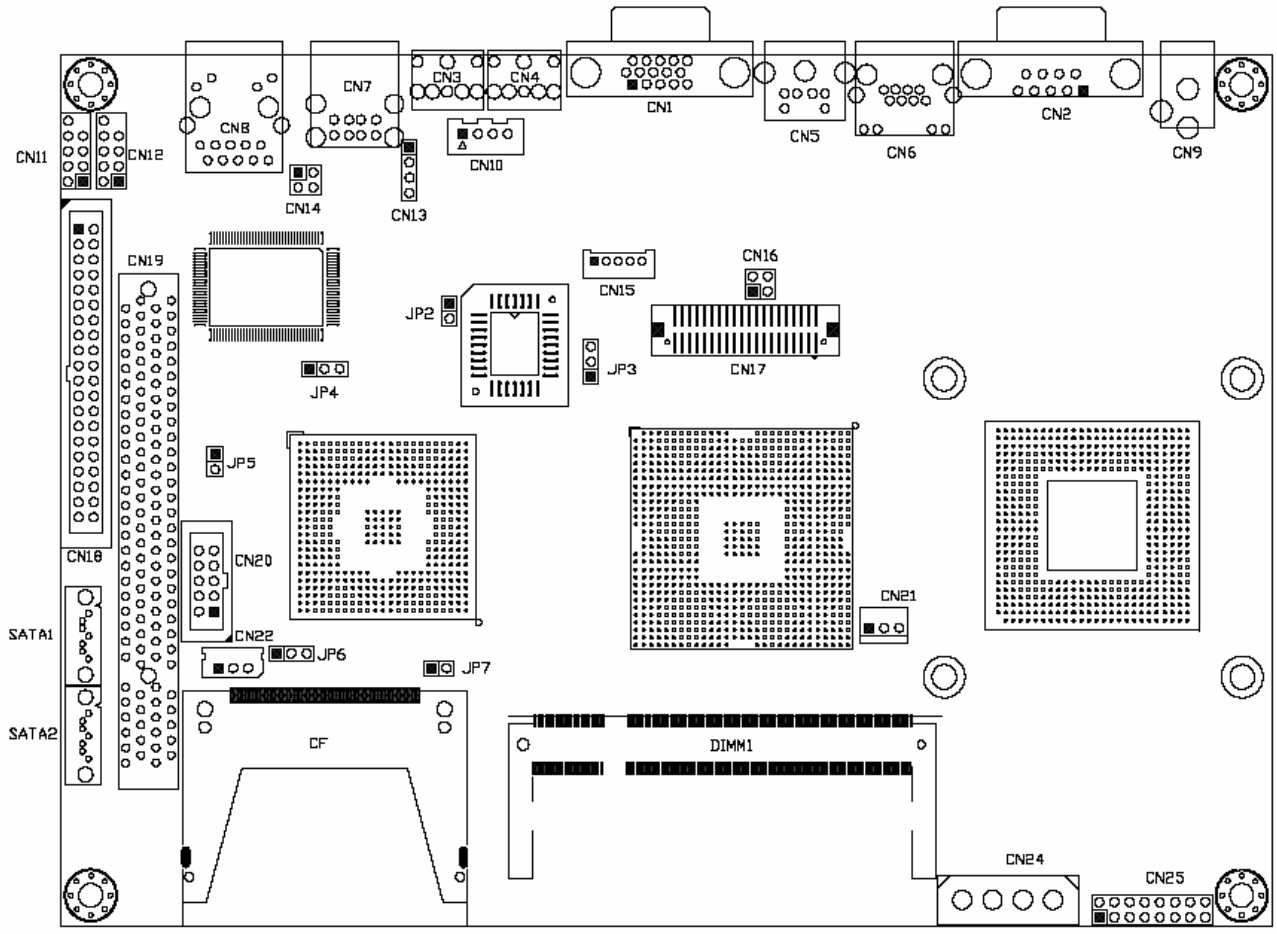


Table for Connector's Location Description:

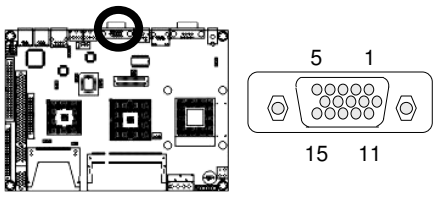
Use the information in the following table to change the connector.

Connectors	Functions
CN1	CRT VGA port connector
CN2	COM1 RS-232 serial port connector
CN3	Audio MIC_In phone jack
CN4	Audio Line_Out phone jack
CN5	PS/2 keyboard or mouse connector
CN6	Ethernet RJ-45 connector
CN7	USB 0/1 connectors
CN8	Ethernet RJ-45 connector
CN9	DC-In power jack
CN10	Audio Line_Out pin-header
CN11	USB 2/3 pin-header
CN12	USB 4/5 pin-header
CN13	CD-In pin-header
CN14	LAN1 LED pin-header
CN15	Inverter connector
CN16	LAN2 LED pin-header
CN17	LVDS panel interface
CN18	Primary IDE connector
CN20	COM2 serial port connector
CN21	CPU fan power connector
CN22	SMBUS connector
CN24	4-pins 12V/5V output power connector
CN25	System panel indicate pin-header

◆ **CRT VGA port connector (D-SUB 15-pins female): CN1**

Pin #	Assignment	Pin #	Assignment
1	Red	2	Green
3	Blue	4	NC
5	Ground	6	Ground
7	Ground	8	Ground
9	VCC	10	Ground
11	NC	12	DDData
13	Hsync	14	VSync
15	DDClk		

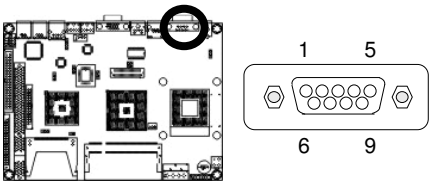
• **Figure:**



◆ **COM1 RS-232 serial port connector (D-Sub 9-pins male): CN2**

Pin #	Assignment	Pin #	Assignment
1	DCD (Data Carrier Detect)	6	DSR (Data Set Ready)
2	RXD (Receive Data)	7	RTS (Request to Send)
3	TXD (Transmit Data)	8	CTS (Clear to Send)
4	DTR (Data Terminal Ready)	9	RI (Ring Indicator)
5	Ground		

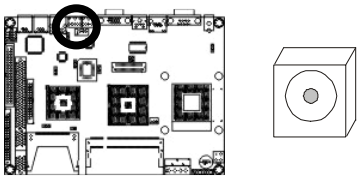
• **Figure:**



◆ **Audio MIC_In phone jack: CN3**

Pin #	Assignment
Red	MIC-In

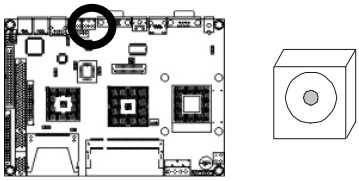
• **Figure:**



◆ **Audio Line_Out phone jack: CN4**

Pin #	Assignment
Green	Line-Out

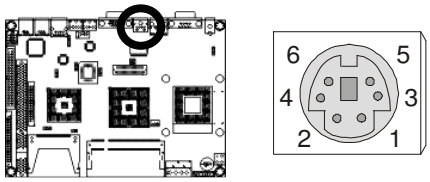
• **Figure:**



◆ **PS/2 keyboard or mouse connector (6-pins Mini Din): CN5**

Pin #	Assignment	Pin #	Assignment
1	Keyboard data	2	Mouse data
3	Ground	4	VCC
5	Keyboard clock	6	Mouse clock

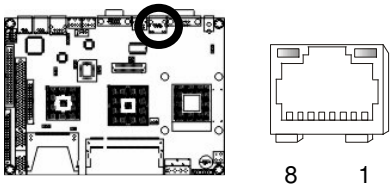
• **Figure:**



◆ **LAN1 RJ-45 connector (RJ-45 phone jack): CN6**

Pin #	Assignment	Pin #	Assignment
1	Transmit output (+)	5	NC
2	Transmit output (-)	6	Receive input (-)
3	Receive input (+)	7	NC
4	NC	8	NC

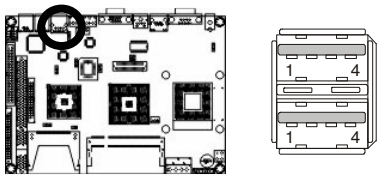
• **Figure:**



◆ **USB 0/1 connector: CN7**

Pin #	Assignment	Pin #	Assignment
1a	VCC	1b	VCC
2a	USB0 -	2b	USB1 -
3a	USB0 +	3b	USB1 +
4a	Signal ground	4b	Signal ground

• **Figure:**

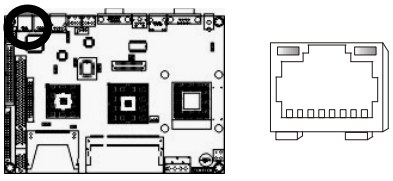


◆ **LAN2 RJ-45 connector (RJ-45 phone jack): CN8**

◆

Pin #	Assignment	Pin #	Assignment
1	Transmit output (+)	5	NC
2	Transmit output (-)	6	Receive input (-)
3	Receive input (+)	7	NC
4	NC	8	NC

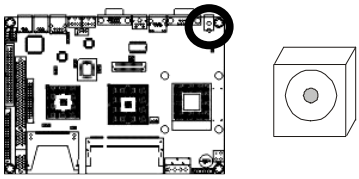
• **Figure:**



◆ **DC-In power jack: CN9**

Pin #	Assignment
1	VCC

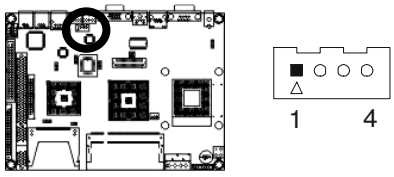
- **Figure:**



◆ **Audio Line_Out pin-header (4-pins wafer): CN10**

Pin #	Assignment
1	LOUT_L
2	AU_GND
3	VCC
4	LOUT_R

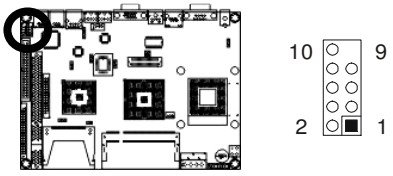
- **Figure:**



◆ **USB 2/3 pin-header (10-pins): CN11**

Pin #	Assignment	Pin #	Assignment
1	VCC	2	VCC
3	USB2 -	4	USB3 -
5	USB2 +	6	USB3 +
7	Ground	8	Ground
9	---	10	NC

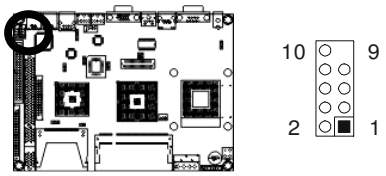
- **Figure:**



◆ **USB 4/5 pin-header (10-pins): CN12**

Pin #	Assignment	Pin #	Assignment
1	VCC	2	VCC
3	USB4 -	4	USB5 -
5	USB4 +	6	USB5 +
7	Ground	8	Ground
9	---	10	NC

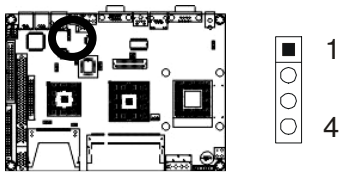
• **Figure:**



◆ **CD_In pin-header: CN13**

Pin #	Assignment
1	CD_IN_Left
2	CD_GND
3	CD_GND
4	CD_IN_Right

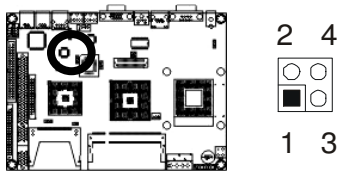
• **Figure:**



◆ **LAN1 LED pin-header: CN14**

Pin #	Assignment	Pin #	Assignment
1	LINK_LED	2	VCC_3V
3	ACT_LED	4	VCC_3V

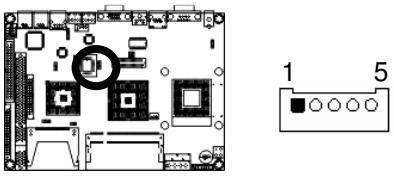
• **Figure:**



◆ **Inverter connector: CN15**

Pin #	Assignment
1	Ground
2	NC
3	LCD_BKL
4	Ground
5	+12V

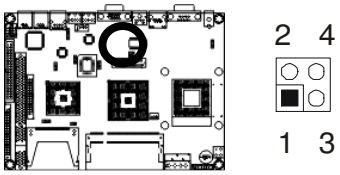
• **Figure:**



◆ **LAN2 LED pin-header: CN16**

Pin #	Assignment	Pin #	Assignment
1	LINK_LED	2	VCC_3V
3	ACT_LED	4	VCC_3V

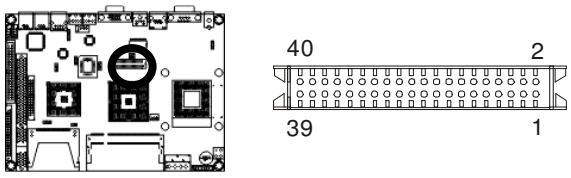
• **Figure:**



◆ **LVDS panel interface (40-pins male): CN17**

Pin #	Assignment	Pin #	Assignment
1	NC	2	NC
3	Ground	4	Ground
5	YAM0	6	YAM1
7	YAP0	8	YAP1
9	Ground	10	Ground
11	YAM2	12	CLKAM
13	YAP2	14	CLKAP
15	Ground	16	Ground
17	YAM3	18	YBM0
19	YAP3	20	YBP0
21	Ground	22	Ground
23	YBM1	24	YBM2
25	YBP1	26	YBP2
27	Ground	28	Ground
29	CLKBM	30	YBM3
31	CLKBP	32	YBP3
33	NC	34	+12V
35	NC	36	+12V
37	NC	38	VCC_LCD
39	BKL	40	VCC_LCD

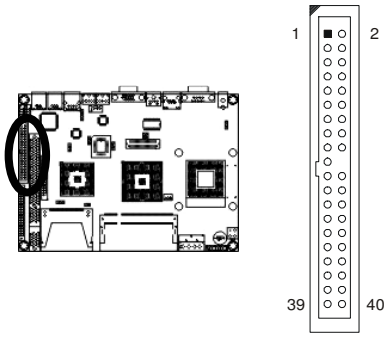
• **Figure:**



◆ **Primary IDE connector (40-pins 2.54mm pitch with housing): CN18**

Pin #	Assignment	Pin #	Assignment
1	Reset IDE	2	Ground
3	Host Data 7	4	Host Data 8
5	Host Data 6	6	Host Data 9
7	Host Data 5	8	Host Data 10
9	Host Data 4	10	Host Data 11
11	Host Data 3	12	Host Data 12
13	Host Data 2	14	Host Data 13
15	Host Data 1	16	Host Data 14
17	Host Data 0	18	Host Data 15
19	Ground	20	---
21	DRQ 0	22	Ground
23	Host IOW	24	Ground
25	Host IOR	26	Ground
27	IOCHRDY	28	Host ALE
29	DACK 0	30	Ground
31	IRQ 14	32	NC
33	Address 1	34	Ground
35	Address 0	36	Address 2
37	Chip Select 0	38	Chip Select 1
39	Activity	40	Ground

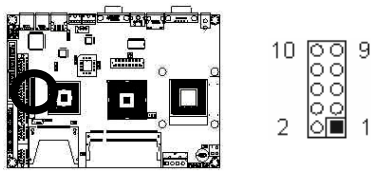
• **Figure:**



◆ **COM2 (10-pins 2.0mm pitch with housing): CN20**

Pin #	Assignment	Pin #	Assignment
1	COM2 DCD#	2	COM2 DSR#
3	COM2 RXD	4	COM2 RTS#
5	COM2 TXD	6	COM2 CTS#
7	COM2 DTR#	8	COM2 RI#
9	Ground	10	Ground

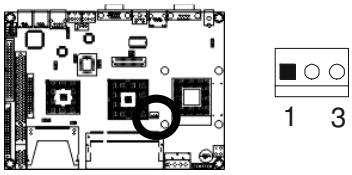
• **Figure:**



◆ **CPU fan power connector: CN21**

Pin #	Assignment
1	Ground
2	VCC
3	Fan Status Signal

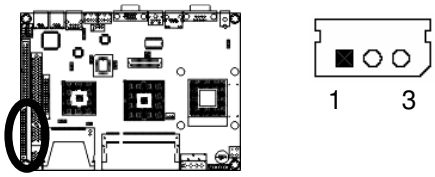
• **Figure:**



◆ **SMBus connector: CN22**

Pin #	Assignment
1	SMBData
2	SMBClock
3	Ground

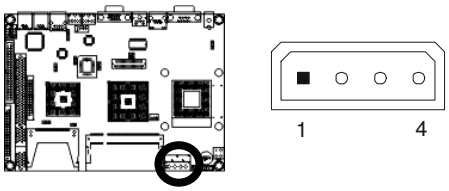
• **Figure:**



◆ **4-pins 12V/5V output power connector: CN24**

Pin #	Assignment
1	+12V
2	Ground
3	Ground
4	5V

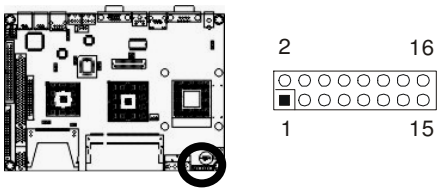
• **Figure:**



◆ **System panel indicate pin-header: CN25**

Pin #	Assignment	Pin #	Assignment
SPEAKER		**PWR LED**	
1	+5V	2	5V
3	NC	4	NC
5	BZ	6	Ground
7	SPKR	**KEYLOCK**	
HDD LED		8	KBLOCK
9	5V	10	Ground
11	HDLED-	12	NC
RESET		**PWR ON**	
13	RESET+	14	VCC
15	Ground	16	PWRBT-

• **Figure:**



AWARD BIOS SETUP

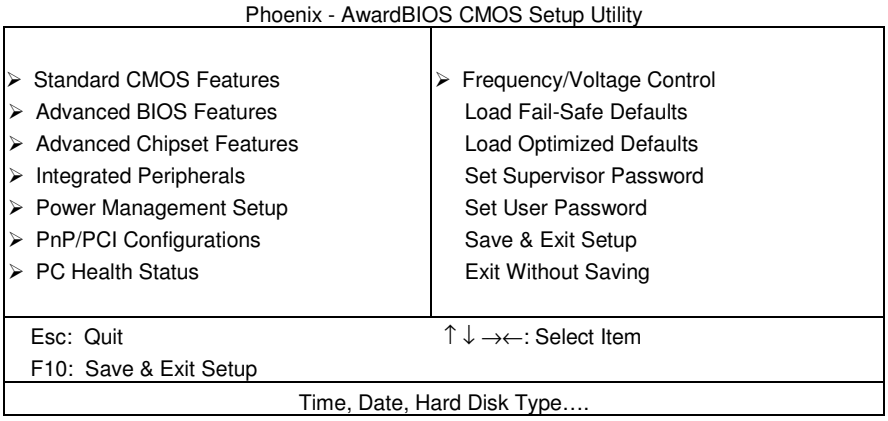
3.1 BIOS Instructions

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

It is possible for the CMOS battery to fail, but this will cause data loss in the CMOS only. If this does happen you will need to replace the battery and reconfigure your BIOS settings.

3.2 Main Menu

Once you enter the AwardBIOS™ 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.

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. See 3.3 for the details.

Advanced BIOS Features:
Use this menu to set the Advanced Features available on your system. See 3.5 for the details.

Advanced Chipset Features:
Use this menu to change the values in the chipset registers and optimize your system's performance. See 3.6 for the details.

Integrated Peripherals:
Use this menu to specify your settings for integrated peripherals. See 3.7 for the details.

Power Management Setup:
Use this menu to specify your settings for power management. See 3.8 for the details.

PnP/PCI Configuration:
This entry appears if your system supports PnP / PCI. See 3.9 for the details.

PC Health Status:
Use this menu to show your system temperature, speed and voltage status. See 3.10 for the details.

Frequency / Voltage Control:
Use this menu to specify your settings for frequency/voltage control. See 3.11 for the details.

Load Fail-Safe Defaults:
Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate. See 3.12 for the details.

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. See 3.13 for the details.

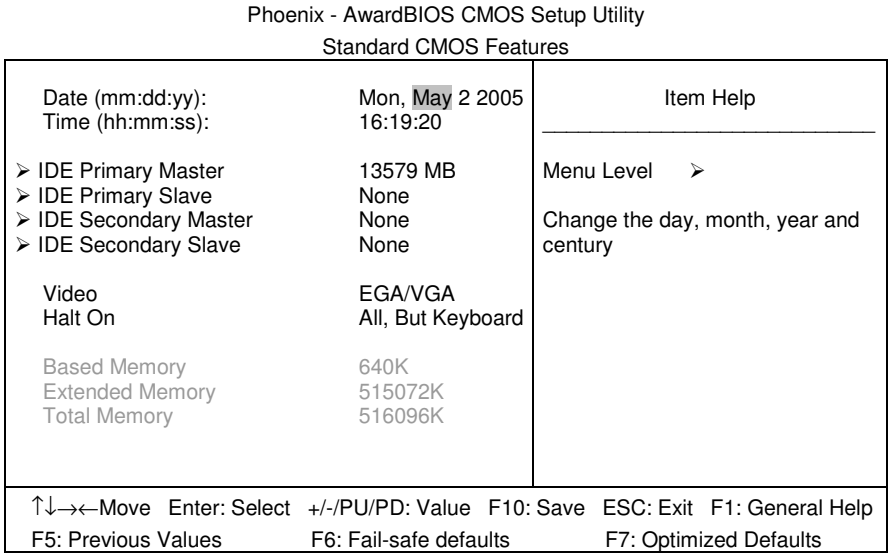
Set Supervisor / User Password:
Use this menu to set User and Supervisor Passwords. See 3.14 for the details.

Save & Exit Setup:
Save CMOS value changes to CMOS and exit setup. See 3.15 for the details.

Exit Without Save:
Abandon all CMOS value changes and exit setup. See 3.15 for the details.

3.3 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category may include some 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.



Date: Options Month/DD/YYYY
Set the system date. Note that the 'Day' automatically changes when you set the date.

Time: Options HH : MM : SS
Set the system time.

IDE Primary Master: Options are in its sub menu (described in 3.4)
Press <Enter> to enter the sub menu of detailed options.

IDE Primary Slave: Options are in its sub menu (described in 3.4)
Press <Enter> to enter the sub menu of detailed options.

IDE Secondary Master: Options are in its sub menu (described in 3.4)
Press <Enter> to enter the sub menu of detailed options.

IDE Secondary Slave: Options are in its sub menu (described in 3.4)
Press <Enter> to enter the sub menu of detailed options.

Video: Options EGA/VGA/CGA 40/CGA 80/MONO
Select the default video device.

Halt On: Options All Errors/No Errors/All, but Keyboard/All, but Diskette/
All, but Disk/Key
Select the situation in which you want the BIOS to stop the POST process and notify you.

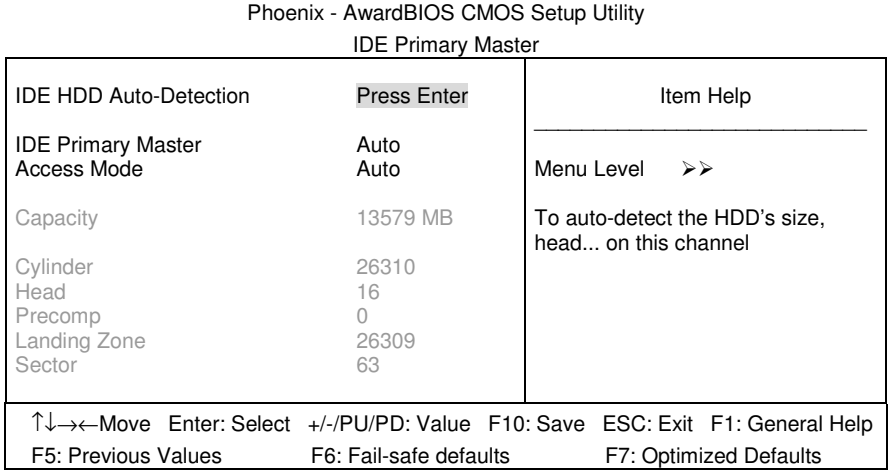
Base Memory: Option N/A
Displays the amount of conventional memory detected during boot up.

Extended Memory: Option N/A
Displays the amount of extended memory detected during boot up

Total Memory: Option N/A
Displays the total memory available in the system

3.4 IDE Adapters

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



IDE HDD Auto-Detection: Options 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 Primary Master: Options None, Auto and Manual
Selecting “Manual” lets you set the remaining 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!

Access Mode: Options CHS, LBA, Large and Auto
Choose the access mode for this hard disk

Capacity: Options 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.

The following options are selectable only if the ‘IDE Primary Master’ item is set to ‘Manual’ and Access Mode item is set to ‘CHS’.

Cylinder: Options Min = 0, Max = 65535
Set the number of cylinders for this hard disk.

Head: Options Min = 0, Max = 255
Set the number of read/write heads

Precomp: Options Min = 0, Max = 65535
**** **Warning**: Setting a value of 65535 means no hard disk

Landing zone: Options Min = 0, Max = 65535

Sector: Options Min = 0, Max = 255
Number of sectors per track

3.5 Advanced BIOS Features

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

➢ CPU Feature	Press Enter	Item Help
➢ Hard Disk Boot Priority	Press Enter	
Virus Warning	Disabled	
CPU L1 Cache	Enabled	Menu Level ➢
Quick Power On Self Test	Enabled	
USB Flash Disk Type	Auto	
First Boot Device	CDROM	
Second Boot Device	Hard Disk	
Third Boot Device	LAN	
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	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Full Screen LOGO Show	Disabled	

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

CPU Feature:

Phoenix - AwardBIOS CMOS Setup Utility
CPU Feature

Thermal Management	Thermal Monitor 1	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

Thermal Management:
It allows you to select the thermal Monitor.
The Choice: Thermal monitor1.

Hard Disk Boot Priority:
Press Enter and you can select boot priority by hard disk or add-in Card.

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

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.

CPU L1 Cache:
This controls the status of the processor's internal Level One cache. However, it depends on CPU chipset design.

The choice: Enabled, Disabled.

Quick Power On Self Test:
This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled---Enable quick POST

Disabled--- Normal POST

USB Flash Disk Type:
It allows you to select the type of USB flash disk.

The Choice: Auto, Floppy, HDD.

First / Second / Third Boot Device:
The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: USB-FDD, USB-ZIP, ZIP-100, USB-CDROM, Hard Disk, CDROM, LAN and Disabled.

Boot Other Device:
When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the first, second, and third boot devices.

The Choice: Enabled, Disabled.

Boot Up NumLock Status:
Select power on state for NumLock.

The choice: On, Off.

Gate A20 Option:
Select if chipset or keyboard controller should control GateA20.

Normal---A pin in the keyboard controller controls GateA20.

Fast---Lets chipset control GateA20.

Typematic Rate Setting:
Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The choice: Enabled, Disabled.

Typematic Rate (Chars/Sec):
Sets the number of times a second to repeat a keystroke when you hold the key down.
The choice: 6, 8, 10, 12, 15, 20, 24 and 30.

Typematic Delay (Msec):
Sets the delay time after the key is held down before it begins to repeat the keystroke.
The choice: 250, 500, 750 and 1000.

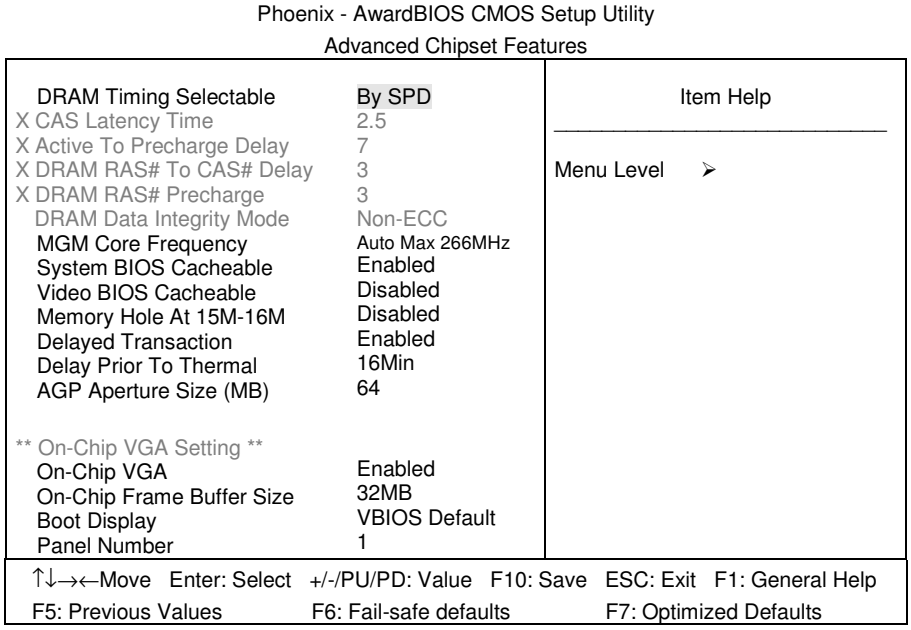
Security Option:
Select whether the password is required every time the system boots or only when you enter setup.
System---The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup---The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

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.

OS Select For DRAM > 64MB:
Select the operating system that is running with greater than 64MB of RAM on the system.
The choice: Non-OS2, OS2.

3.6 Advanced Chipset Features

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.



DRAM Timing Selectable:
Select the operating system that is selecting DRAM timing, so select SPD for setting SDRAM timing by SPD.

The choice: Manual, By SPD.

CAS Latency Time:
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The choice: 2, 2.5.

Active To Precharge Delay:
Select the operating system that is active to precharge delay.

The choice: 5, 6, 7.

DRAM RAS# To CAS# Delay:
This field let's 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.
The choice: 2, 3.

DRAM RAS# Precharge:
If an insufficient number of cycles are allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.
The choice: 2, 3.

DRAM Data Integrity Mode:
This item shows you the Dram have ECC function or not.
The choice: Non-ECC, ECC.

MGM Core Frequency:
This item allows you to determine the MGM core frequency.
The choice: Auto Max 266MHz, 400/266/133/200MHz,
400/200/100/200MHz, 400/200/100/133MHz,
400/266/133/267MHz, 400/333/166/250MHz,
Auto Max 400/333.

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

Video BIOS Cacheable:
Select "Enabled" allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result.
The choice: Enabled, Disabled.

Memory Hole At 15M-16M:
You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.
The choice: Enabled, Disabled.

Delayed Transaction:
The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select "Enabled" to support compliance with PCI specification version 2.2.
The choice: Enabled, Disabled.

Delay Prior To Thermal:
Select this item allows the delay prior to thermal time.
The choice: 4Min, 8Min, 16Min and 32Min.

AGP Aperture Size (MB):
This field determines the effective size of the Graphic Aperture used for a particular GMCH configuration. It can be updated by the GMCH-specific BIOS configuration sequence before the PCI standard bus enumeration sequence takes place. If it is not updated then a default value will select an aperture of maximum size. The choice: 4, 8, 16, 32, 64, 128 and 256.

****On-Chip VGA Setting****

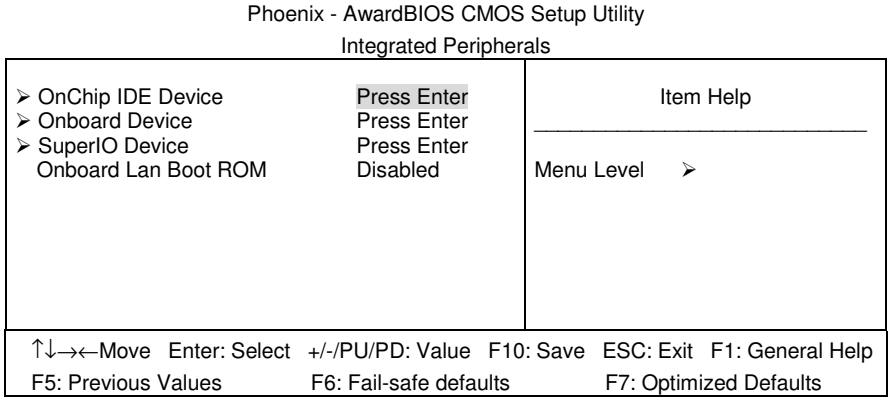
On-Chip VGA:
This item allows you to control the on-chip VGA.
The choice: Enabled, Disabled.

On-Chip Frame Buffer Size:
This item allows you to control the on-chip frame buffer size.
The choice: 1M, 4M, 8M, 16M and 32M.

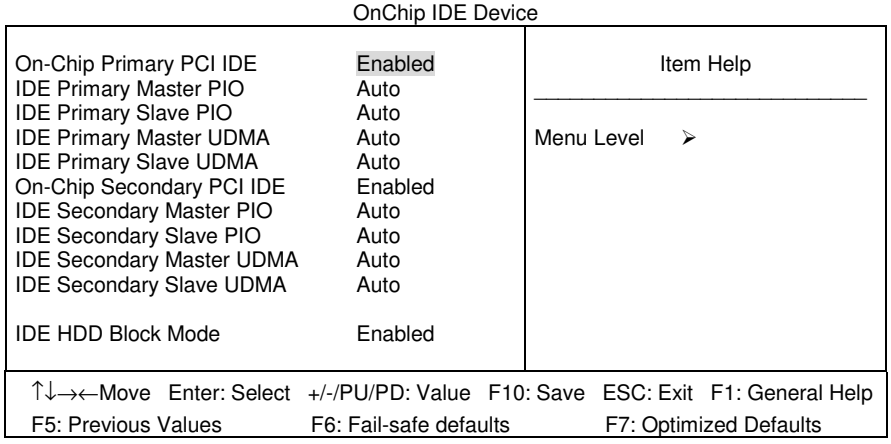
Boot Display:
This item allows you to select the boot display device.
The choice: VBIOS Default, CRT, LFP and CRT+LFP.

Panel Number:
This item allows you to select the panel resolution.
The choice: 1, 2, 3, 4. 5, 6, 7, 8.

3.7 Integrated Peripherals



OnChip IDE Device:



OnChip Primary/Secondary PCI IDE:
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select "Enabled" to activate each channel separately.

The choice: Enabled, Disabled.

IDE Primary/Secondary Master/Slave PIO:
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.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3 and Mode 4.

IDE Primary/Secondary Master/Slave UDMA:
Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select "Auto" to enable BIOS support.

The choice: Auto, Disabled.

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

Onboard Device:

Onboard Device

USB Controller	Enabled	Item Help
USB 2.0 Controller	Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	Menu Level ➢
AC97 Audio	Auto	
Init Display First	Onboard/AGP.	
On board IEEE 1394	Enabled	
On board Lan Controller	Enabled	

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

USB / USB 2.0 Controller:
Select "Enabled" if your system contains a Universal Serial Bus (USB) / USB 2.0 controller and you have USB peripherals.
The choice: Enabled, Disabled.

USB Keyboard Support:
Select "Enabled" if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.
The choice: Enabled, Disabled.

USB Mouse Support:
Select "Enabled" if your system contains a Universal Serial Bus (USB) controller and you have a USB mouse.
The choice: Enabled, Disabled.

AC97 Audio:
This item allows you to decide to auto or disable the chipset family to support AC97 Audio.
The choice: Auto, Disabled.

Init Display First:
This item allows you to decide to active whether PCI Slot or on-chip VGA first.
The choice: PCI Slot, Onboard/AGP.

Onboard SATA Device:
Select "Enabled" if your system has a SATA device installed on the system board and you wish to use it.
The choice: Enabled*, Disabled.

On board LAN Controller:
Select "Enabled" if your system has a LAN device installed on the system board and you wish to use it.
The choice: Enabled, Disabled.

SuperIO Device:

SuperIO Device

Onboard Serial Port 1	3E8	Item Help
Serial Port 1 Use IRQ	IRQ3	
Onboard Serial Port 2	2E8	
Serial Port 2 Use IRQ	IRQ4	Menu Level ➢
Onboard Serial Port 3	3F8	
Serial Port 3 Use IRQ	IRQ5	
Onboard Serial Port 4	2F8	
Serial Port 4 Use IRQ	IRQ7	
PWRON After PWR-Fail	Off	

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

Onboard Serial Port 1 / Port 2 / Port 3 / Port 4:
Select an address and corresponding interrupt for the first and second serial ports.
The choice: Disabled, 3F8, 2F8, 3E8, 2E8.

Serial Port 1 / 2 / 3 / 4 Use IRQ:
The choice: Disabled, IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11.

PWRON After PWR-Fail:
This item allows you to select if you want to power on the system after power failure.
The choice: Off, On and Former-Sts.

Onboard Lan Boot ROM:
Select “Enabled” for PXE boot.
The choice: Enabled, Disabled.

3.8 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

ACPI Function	Enabled	Item Help
Power Management	User Define	
Video Off Method	DPMS	
Video Off In Suspend	Yes	Menu Level ➢
Suspend Type	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
CPU THER-Throttling	50.0%	
Wake-Up by PCI card	Disabled	
Power On By Ring or WOL	Enabled	
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	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT 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

ACPI Function:
This item allows you to enable or disable the Advanced Configuration and Power Management (ACI).
The choice: Enabled, Disabled.

Power Management:
This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

This table describes each power management mode:

Min. Power Saving:
Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.

Max. Power Saving:
Maximum power management -- **ONLY AVAILABLE FOR SL CPU's**. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.

User Defined:
Allow you to set each mode individually. When not disabled, each of the ranges is from 1 min. to 1 hr. except for HDD Power Down, which ranges from 1 min. to 15 min.

Video Off Method:
This determines the manner in which the monitor is blanked.

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.

Blank Screen:
This option only writes blanks to the video buffer.

DPMS:
Initial display power management signaling.

Video Off In Suspend:
This determines the manner in which the monitor is blanked.
The choice: Yes, No.

Suspend Type:
This determines the CPU status during power saving mode.
The choice: PwrOn Suspend, Stop Grant.

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

Suspend Mode:
When "Enabled" and after the set time of system inactivity. All devices except the CPU will be shut off.
The choice: Disabled, 1, 2, 4, 8, 12, 20, 30, 40 Min and 1Hour.

HDD Power Down:
When "Enabled" and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
The choice: Disabled, 1~15Min.

Soft-Off by PWR-BTTN:
Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."
The choice: Delay 4 Sec, Instant-Off.

CPU THER-Throttling:
Select the CPU THRM-Throttling rate.
The choice: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0% and 87.5%.

Wake-Up by PCI Card:
An input signal from PME on the PCI card awakens the system from a soft off state.
The choice: Enabled, Disabled.

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

Resume by Alarm:
When “Enabled”, your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.
The choice: Enabled, Disabled.

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

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

3.9 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, 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

Reset Configuration Data	Disabled	Item Help
Resources Controlled By	Auto (ESCD)	
X IRQ Resources	Press Enter	Menu Level ➢
PCI/VGA Palette Snoop	Disabled	Default is 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 OS cannot boot

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

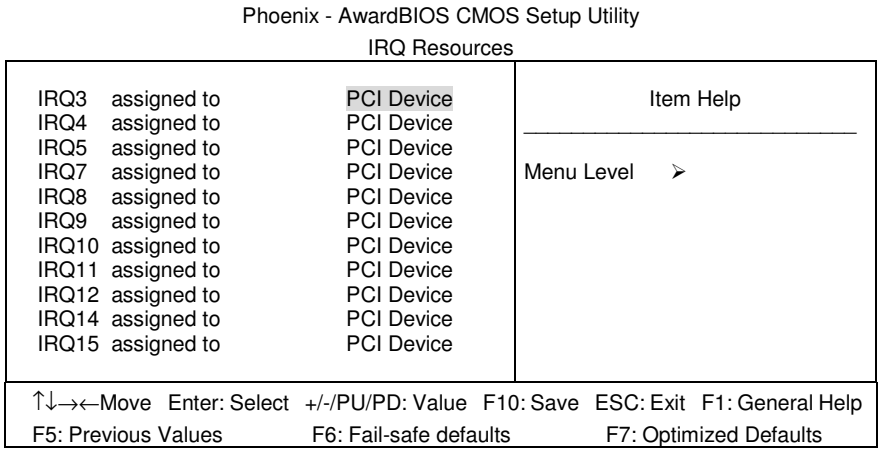
Reset Configuration Data:
Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The choice: Enabled, Disabled.

Resource controlled by:
The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to “Manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “➢”).

The choice: Auto (ESCD), Manual.

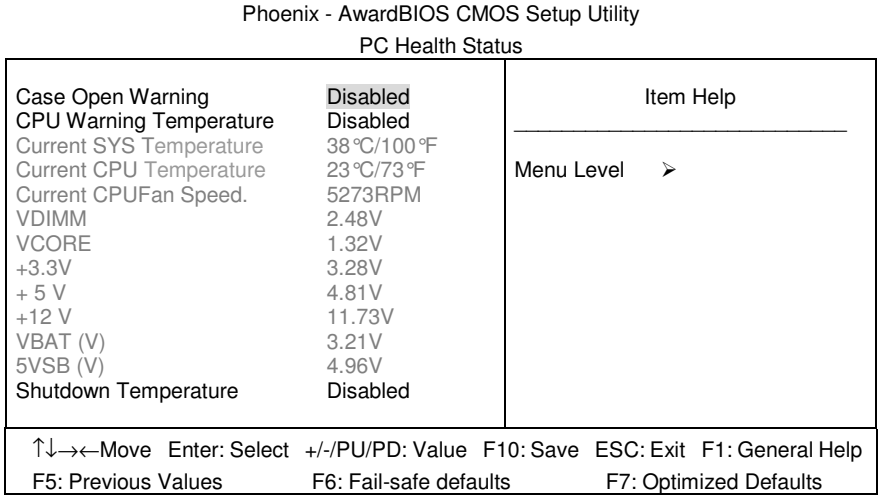
IRQ Resources:



IRQs:
When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

PCI/VGA Palette Snoop:
This item is designed to overcome problems that can be caused by some nonstandard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled. The choice: Enabled, Disabled.

3.10 PC Health Status



Case Open Warning:
Set this to Enabled for chassis intrusion detection.
The choice: Disabled*, Enabled.

CPU Warning Temperature:
This item will prevent CPU from overheating.
The choice: 50℃ / 122℉~70℃ / 158℉, Disabled.

Current SYS Temperature:
Show you the current system temperature.

Current CPU Temperature:
Show you the current CPU temperature.

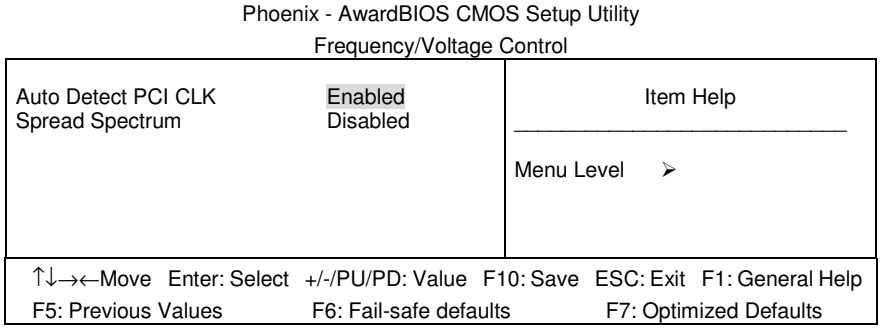
Current CPUFan Speed:
Show you the current CPU fan operating speed.

VDIMM / VCORE / VBAT (V):
Show you the voltage level of the DRAM / CPU (Vcore) / Battery.

+3.3V / +5V / +12V / 5VSB:
Show you the voltage of +3.3V/+5V/+12V.

Shutdown Temperature:
This item allows you to set up the CPU shutdown Temperature.
The choice: Disabled, 60℃ / 140℉, 65℃ / 149℉, 70℃ / 158℉ and 75℃ / 167℉.

3.11 Frequency/Voltage Control



Auto Detect PCI CLK:
When “Enabled”, this item will auto detect if the PCI slot have devices and will send clock signal to PCI devices. When disabled, it will send the clock signal to PCI slot.

The choice: Enabled, Disabled.

Spread Spectrum:
When you enabled spread spectrum, it can significantly reduce the EMI (ElectroMagnetic Interference) generated by the system.

The choice: Disabled, Enabled.

3.12 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.

3.13 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.

3.14 Supervisor/User Password Setting

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

Set Supervisor Password: can enter and change the options of the setup menus.

Set User Password: just can only enter but do not have the right to change the options of the setup menus. When you select this function, 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.

3.15 Exit Selecting

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.