

AX-915GV

Series

(Motherboard)

INSTALLATION GUIDE

Installation Guide Revision A0

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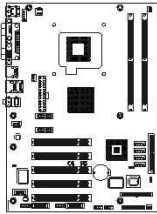
SECTION 1

INTRODUCTION

1.1 Unpacking AX-915GV Series

1. Take out the AX-915GV series unit from the carton box, check if the unit is properly secure in the plastic bag.
2. Check the contents of the carton box: (Sketch map)

◆ Motherboard



◆ Installation Guide



◆ ATA-66/100 HDD ribbon cable



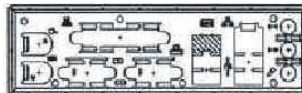
◆ Floppy ribbon cable



◆ Driver CD

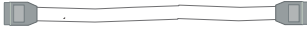


◆ I/O Shield



Introduction

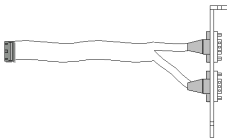
- ◆ S-ATA cable (2 Sets)



- ◆ Extend to front panel cable (for K/B & M/S)

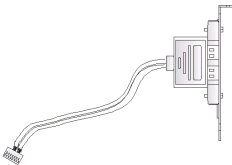


- ◆ COM3 ribbon cable (1 Set) (for RS-232/422/485)

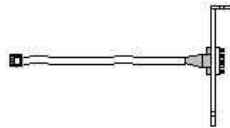


3. Optional Kits

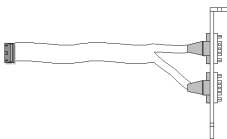
- ◆ USB cable (for USB2.0)



- ◆ COM2 ribbon cable (for RS-232)



- ◆ COM4 ribbon cable (for RS-232/422/485)



- ◆ S-ATA cable



1.2 Description

The AX-915GV Series combines the high performance and exceptional value of Intel® 915GV chipset with a full-featured board. The Intel® advanced 915GV chipset support regular socket LGA775-pins Intel® Pentium® 4 / Celeron® D processors of 2.4GHz and up to 3.4GHz, that memory base on the FSB 533/800MHz operation supports dual channel DDR2 400/533 SDRAM interface. In the meantime, the 915GV chipset integrated the graphic function. The AX-915GV system memory size can be up to 2GB DDR2 memory, onboard Intel® 82562 Ethernet controller (support 10/100 Base-TX Ethernet), Audio and with 4 COM ports, besides the AX-915GV add one 6-pins connector that can extend to front of chassis for KB & MS.

The 82801FB I/O Controller Hub (ICH6) employs the Intel® Accelerated Hub Architecture to make a direct connection from the graphics and memory to the integrated Ethernet controller, such as the IDE & S-ATA controllers (ATA/33 or ATA/66 or ATA/100), eight USB ports that are supported USB 1.1/2.0 standard meets the performance, stability and reliability requirements.

1.3 Features

1.3.1 Chipsets Features

The AX-915GV is base on the Intel® 915GV chipset, offers users the integration graphic, Ethernet, Audio function. The features of chipset are as below:

- ◆ Enhanced integrated graphics & system performance:
 - Support 533/800 FSB
- ◆ Memory:
 - DDR2 400/533 SDRAM
 - Dual channel up to 2.0GB Max. Memory
 - 2 x DDR2 DIMM sockets

- ◆ IO Connectivity – ICH6:
 - 8 Hi-Speed USB2.0 ports
 - AC'97 Codec
 - 4 Serial ATA ports
 - PCI-Express by 1 & PCI slots

1.3.2 Ultra ATA/66/100

The ICH6 provides one channel Ultra ATA/66/100 Bus Master IDE controller, that support Ultra ATA/66/100 protocols, perfect for such demanding applications as real-time video, multimedia, and high performance operating system. A new IDE cable is required for Ultra ATA/66/100. This cable is an 80-conductor cable; however the connectors are, of course, backwards compatible with ATA/33.

1.3.3 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.

1.3.4 I/O Shield Connector

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

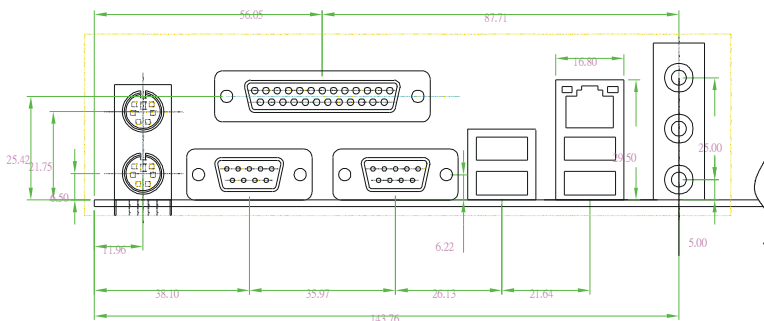


Figure 1: I/O back panel layout

1.3.5 Power-On/Off (Remote)

The board has a single 24-pins connector for ATX power supplies. For ATX power supplies that support the Remote On/Off feature, this should be connected to the systems front panel for system Power On/Off button. The systems power On/Off button should be a momentary button that is normally open.

1.3.6 AX-915GV Series Overview

| Function / Model | AX-915GV |
|----------------------------|--------------|
| ◆ Chipset | Intel® 915GV |
| ◆ Graphic function | Yes |
| ◆ Ethernet function | Yes |
| ◆ Audio function | Yes |
| ◆ EIDE interface | 1 |
| ◆ Floppy interface | 1 |
| ◆ Parallel port | 1 |
| ◆ PCI-E by 1 slots | 2 |
| ◆ PCI slots | 5 |
| ◆ Serial ports | 4 |
| ◆ USB 2.0 ports | 8 |
| ◆ Fan connectors | 3 |
| ◆ External KB/MS connector | 1 |

1.3.7 System Block Diagram

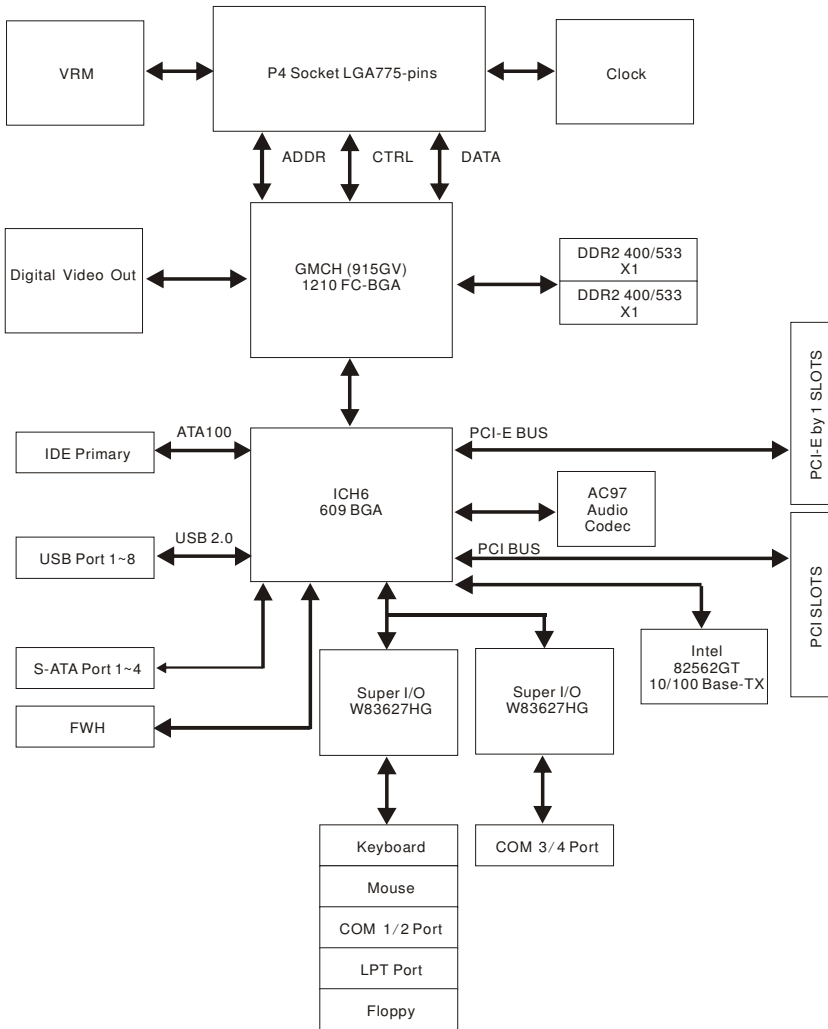


Figure 2: System Block Diagram

1.4 Specifications

◆ Processor:

- Intel® Pentium® 4/Celeron® D processor with socket LGA775-pins package, processor operating at 2.4GHz and up to 3.4GHz
- System bus frequency at 533/800 MHz FSB

◆ Chipset:

- Intel® 82915GV + ICH6 AGPset

◆ DRAM Module:

- Dual channel two 240-pins socket
- For DDR2 400/533 unbuffer non-ECC SDRAM memory
- Support DDR2 SDRAM up to 2GB (Max.)

◆ Ethernet Function:

- Intel® 82562 Ethernet controller
- For 10/100 Base-TX Ethernet
- Onboard one RJ-45 Ethernet connector

◆ Audio Function:

- Realtek® ALC655 AC'97 audio codec

◆ SATA Function:

- Four S-ATA ports, support data transfer rates up to 150MB/s

◆ External Connector:

- 1 x 6-pins extend to front of chassis for external KB / MS connector
- 1 x 10-pins COM2 serial port pin-header for RS-232
- 2 x 14-pins COM3 / 4 serial port pin-header for RS-232 / 422 / 485
- 1 x 4-pins Line_Out pin-header
- 2 x 10-pins USB ports pin-header

◆ Expansion Slot:

- 2 x PCI-E by 1 slots
- 5 x PCI slots

◆ Onboard I/O:

- On-Chip I/O integrated with K/B, M/S, FDD, Parallel and Serial, Fast IR and Power-On controllers

◆ **Onboard PCI / IDE:**

- Intel® ICH6 south bridge controller
- PCI rev2.2 Compliant
- ACPI Compliant Power Management
- PCI Bus IDE Port x 1

◆ **Rear I/O Connectors:**

- PS/2 mouse and PS/2 style keyboard
- D-Sub 25-pins printer port connector
- D-Sub 9-pins COM1 serial port connector for RS-232
- D-Sub 15-pins VGA connector
- 2 x USB2.0 connectors
- RJ-45 Ethernet and 2 x USB2.0 connectors
- Audio for Line-In, Line-Out, MIC phone jack

◆ **BIOS:**

- Award Plug & Play BIOS

◆ **Form Factor:**

- 12" x 8.7" (305 x 220mm) ATX Size

◆ **Weight:**

- 1.44lb (650g) --- AX-915GV series

SECTION 2

INSTALLATIONS

2.1 System Installation

2.1.1 CPU Installation

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

1. Check and confirm that you are going to install correctly CPU type and pin numbers (Figure 3).
2. Lift the releasing lever and cover of the socket LGA775.
3. Align the pin of the CPU against the pinholes of the socket LGA775. Be sure to pay attention to the orientation of the CPU.

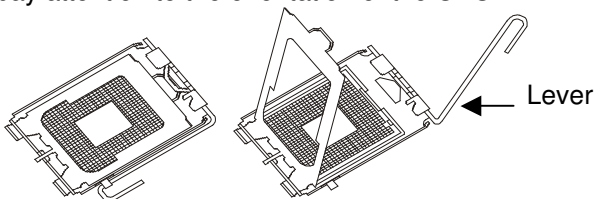


Figure 3: LGA775 CPU Socket

4. Push down the CPU into the LGA775 socket.

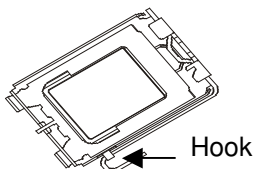


Figure 4: Push Down CPU

5. Push down the release lever and lock it against the key hook.
6. Hook the hole in ZIF clip for the CPU cooling fan onto the notch on the socket LGA775.
7. Place the CPU cooling fan atop the CPU surface.

Installations

8. Push down the opposite side of the ZIF clip and hook it.
9. Slide the head of the clip to left and lock it.
10. Connect the cooling fan cable to the socket. Be careful not to place the cable on the CPU cooling fan.

Removing a CPU:

1. Before removing the CPU, turn off the AX-915GV series power; then wait for about 20 minutes until the heat radiation plate of the cooling fan and the CPU cools down.
2. To remove the CPU, lift the releasing lever of the socket LGA775.

Note: The CPU and the heat radiation plate are hot. They may cause burns.

To remove the CPU, reverse the installation steps.

2.1.2 Heat Sink & Retention Module Installation

Make sure that good contact is made between the processors and the heat sinks & fan. Insufficient contact, incorrect types of heat sinks, fans, or thermal compound used or improper amount of thermal compound applied on the CPU die can cause the processors to overheat, which may crash the system.

2.1.3 DDR2 Memory Module Installation

Figure 5 display the notch marks and what they should look like on your DDR2 DIMM memory module.

DDR2 DIMMs have 240-pins and two notches, that will match with the onboard DIMM socket. DDR2 DIMM modules are installed by placing the chip firmly into the socket at a 90-degree angle and pressing straight down (figure 6) until it fits tightly into the DDR2 DIMM socket.

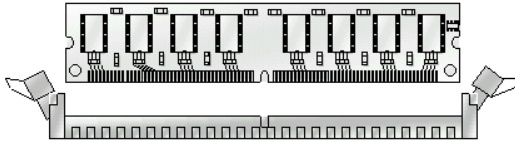


Figure 5: DDR2 DIMM Memory and 240-pins Socket

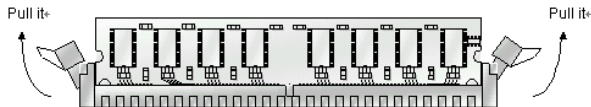


Figure 6: Memory Installation

Installations

Carefully follow the steps below in order to install the DDR2 DIMMs:

1. To avoid generating static electricity and damaging the DDR2 DIMM, ground yourself by touching a grounded metal surface or using a ground scrap before you touch the DDR2 DIMM.
2. Do not touch the connector of the DDR2 DIMM. Dirt residue may cause a malfunction.
3. Hold the DDR2 DIMM with its notch to the front side of the AX-915GV Series and insert it completely into the socket. A DDR2 DIMM should be inserted into the inner socket first. Guiding the hole at each end of the DDR2 DIMM over the retaining post at each end of the DDR2 DIMM socket.
4. If you install two DDR2 DIMMs, install the second DDR2 DIMM using the same procedure as above.
5. If DIMM does not go in smoothly, do not force it. Pull it all the way out and try again.
6. Make sure the DDR2 DIMM is properly installed and locked by the tabs on both sides of the socket.

Removing a DDR2 DIMM:

To remove the DDR2 DIMM, use your fingers or a small screwdriver to carefully push away the plastic tabs that secure the DDR2 DIMM at each end. Lift it out of the socket.

Make sure you store the DDR2 DIMM in an anti-static bag and must be populated the same size and manufactory of memory modules.

2.1.4 Setting Jumpers

There are jumpers on the system board of the AX-915GV Series. You can set the jumpers to make the necessary operations.

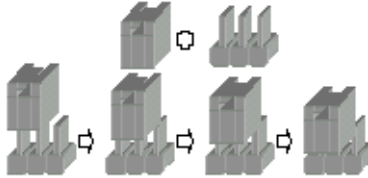
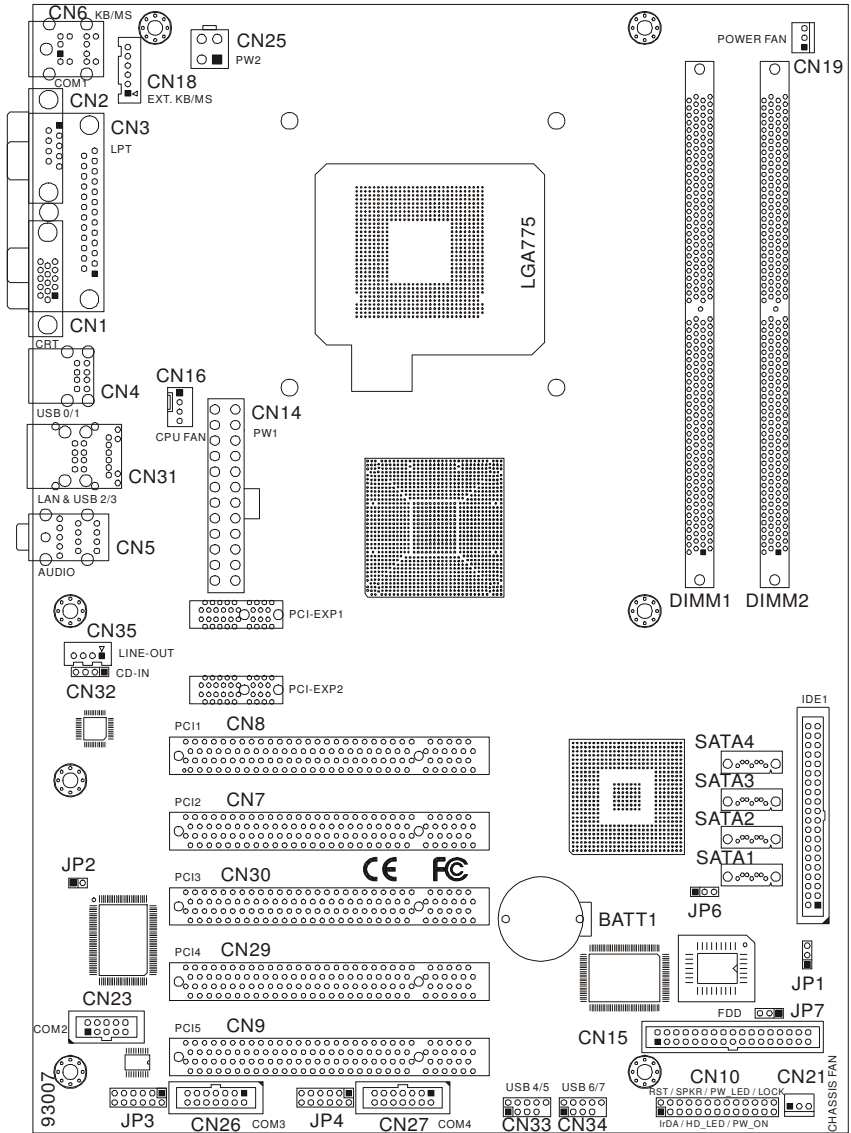


Figure 7: Jumper Connector

For any three-pins jumpers (Figure 7), the jumper setting is 1-2 when the jumper connects pin 1 and 2. The setting is 2-3 when pin 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.

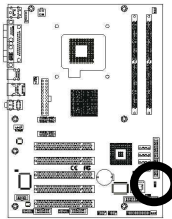
| Jumpers | Functions |
|---------|--------------------------------------|
| JP1 | Watchdog timer setting select |
| JP2 | Auto power on setting select |
| JP3 | COM3 port setting select |
| JP4 | COM4 port setting select |
| JP6 | Clear CMOS setting select |
| JP7 | BIOS write protection setting select |

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 refer to jumper location diagram.

◆ Watchdog timer setting select: JP1

| Function | JP1 |
|------------------------|-----|
| NMI | 1-2 |
| Reset System (Default) | 2-3 |

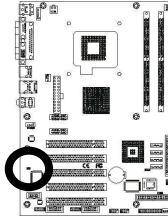
● Location:



◆ **Auto power on setting select: JP2**

| Function | JP2 |
|------------------|-----|
| Auto Power On | On |
| Normal (Default) | Off |

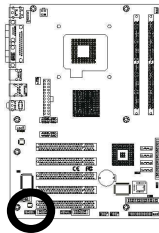
● **Location:**



◆ **COM3 port setting select: JP3**

| Function | JP3 | | | | | |
|------------------|------------|------------|-----|-----|------|-------|
| | 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 |
| RS-232 (Default) | Off | Off | Off | Off | Off | On |
| RS-422 | On (Term.) | On (Term.) | Off | On | On | Off |
| RS-485 | On (Term.) | On (Term.) | On | Off | On | Off |

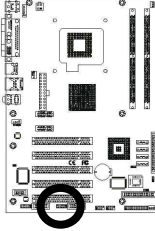
● **Location:**



◆ COM4 port setting select: JP4

| Function | JP4 | | | | | |
|------------------|------------|------------|-----|-----|------|-------|
| | 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 |
| RS-232 (Default) | Off | Off | Off | Off | Off | On |
| RS-422 | On (Term.) | On (Term.) | Off | On | On | Off |
| RS-485 | On (Term.) | On (Term.) | On | Off | On | Off |

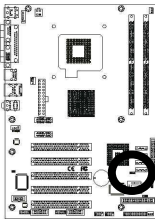
● Location:



◆ Clear CMOS setting select: JP6

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

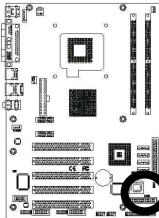
● Location:



◆ BIOS write protection setting select: JP7

| Function | JP7 |
|---------------------------------|-----|
| BIOS write protection (Default) | 1-2 |
| Normal | 2-3 |

● Location:



2.4 Connector's Description

Connector Location

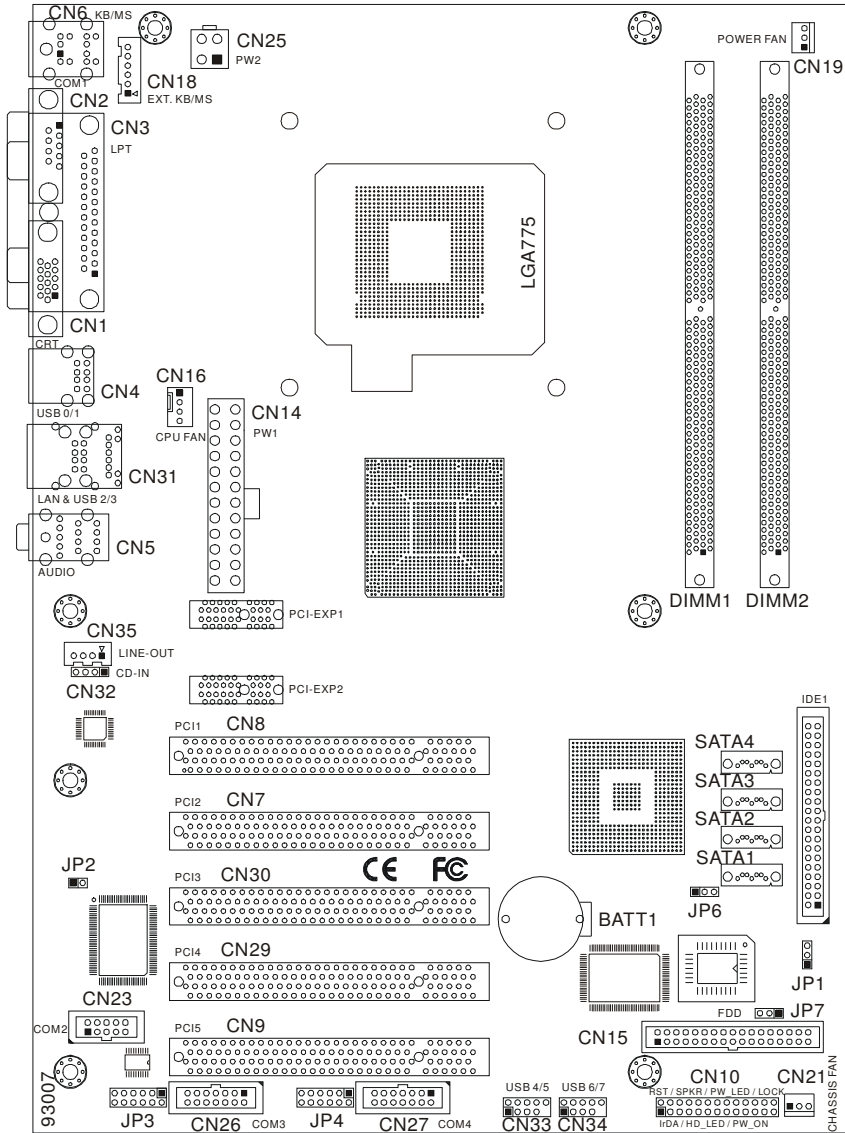


Table for Connector's Location Description:

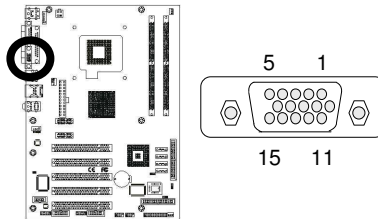
Use the information in the following table to change the connector.

| Connectors | Functions |
|-------------------|--|
| CN1 | CRT VGA port connector |
| CN2 | COM1 RS-232 serial port connector |
| CN3 | Parallel port connector |
| CN4 | USB 0/1 connector |
| CN5 | Audio port phone jack |
| CN6 | PS/2 keyboard & mouse connectors |
| CN10 | System panel indicate pin-header |
| CN14 | ATX-24pins power connector |
| CN15 | Floppy disk connector |
| CN16 | CPU fan power connector |
| CN18 | External K/B & M/S pin-header |
| CN19 | Power fan power connector |
| CN21 | Chassis fan power connector |
| CN23 | COM2 RS-232 serial port pin-header |
| CN25 | ATX12V-4pins power connector |
| CN26 | COM3 RS-232/422/485 serial port pin-header |
| CN27 | COM4 RS-232/422/485 serial port pin-header |
| CN31 | Ethernet RJ-45 & USB 2/3 connectors |
| CN32 | CD_ In pin-header |
| CN33 | USB 4/5 pin-header |
| CN34 | USB 6/7 pin-header |
| CN35 | Line_ out pin-header |
| IDE1 | Primary IDE connector |
| SATA1 / 2 / 3 / 4 | SATA1 / 2 / 3 / 4 connectors |

◆ **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 | DData |
| 13 | HSync | 14 | VSync |
| 15 | DCIk | | |

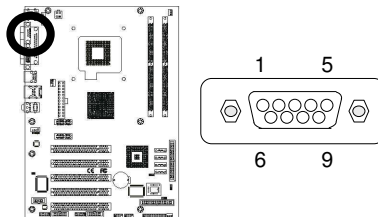
● **Figure:**



◆ **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 | | |

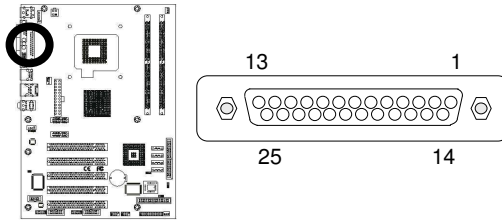
● **Figure:**



◆ Parallel port connector (D-Sub 25-pins female): CN3

| Pin # | Assignment | Pin # | Assignment |
|-------|-----------------------|-------|------------|
| 1 | Line Printer Strobe | 14 | Auto Feed |
| 2 | PD 0, Parallel Data 0 | 15 | Error |
| 3 | PD 1, Parallel Data 1 | 16 | Initialize |
| 4 | PD 2, Parallel Data 2 | 17 | Select |
| 5 | PD 3, Parallel Data 3 | 18 | Ground |
| 6 | PD 4, Parallel Data 4 | 19 | Ground |
| 7 | PD 5, Parallel Data 5 | 20 | Ground |
| 8 | PD 6, Parallel Data 6 | 21 | Ground |
| 9 | PD 7, Parallel Data 7 | 22 | Ground |
| 10 | ACK, Acknowledge | 23 | Ground |
| 11 | Busy | 24 | Ground |
| 12 | Paper Empty | 25 | Ground |
| 13 | Select | 26 | --- |

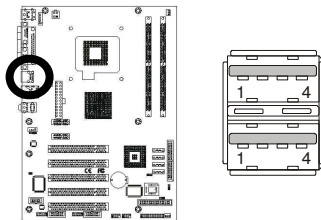
● Figure:



◆ USB 0/1 connector: CN4

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1a | VCC | 1b | VCC |
| 2a | USB0 - | 2b | USB1 - |
| 3a | USB0 + | 3b | USB1 + |
| 4a | Ground | 4b | Ground |

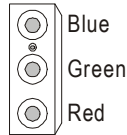
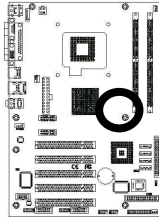
● Figure:



◆ **Audio port phone jack: CN5**

| Pin # | Assignment |
|-------|------------|
| Blue | Line-In |
| Green | Line-Out |
| Red | Mic-In |

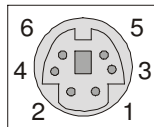
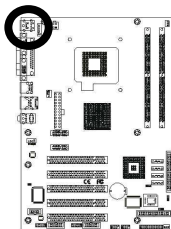
● **Figure:**



◆ **PS/2 keyboard connector (purple Mini Din): CN6**

| Pin # | Assignment | Pin # | Assignment |
|-------|----------------|-------|------------|
| 1 | Keyboard data | 2 | NC |
| 3 | Ground | 4 | +5V |
| 5 | Keyboard clock | 6 | NC |

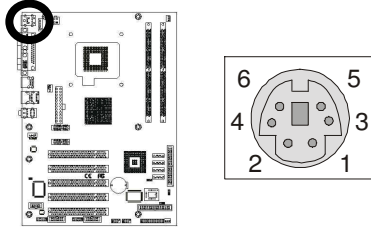
● **Figure:**



◆ PS/2 mouse connector (green Mini Din): CN6

| Pin # | Assignment | Pin # | Assignment |
|-------|-------------|-------|------------|
| 1 | Mouse data | 2 | NC |
| 3 | Ground | 4 | +5V |
| 5 | Mouse clock | 6 | NC |

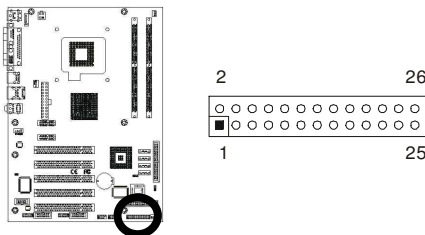
• Figure:



◆ System panel indicate pin-header: CN10

| Pin # | Assignment | Pin # | Assignment |
|----------------|------------|----------------|------------|
| IR | | RESET | |
| 1 | +5V | 2 | RESET+ |
| 3 | FIRTX | 4 | RESET- |
| 5 | IRRX | SPEAKER | |
| 7 | Ground | 8 | SPEAKER |
| 9 | IRTX | 10 | NC (Buzz) |
| HDD LED | | 12 | Ground |
| 13 | HDLED+ | 14 | +5V |
| 15 | HDLED- | PWR LED | |
| TB LED | | 18 | PWLED+ |
| 17 | TBLED+ | 20 | NC |
| 19 | TBLED- | 22 | PWLED- |
| PWR ON | | KEYLOCK | |
| 23 | PWRBT+ | 24 | KBLOCK |
| 25 | PWRBT- | 26 | Ground |

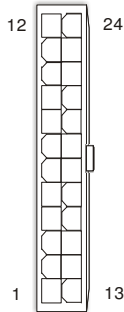
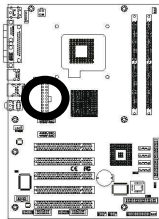
• Figure:



◆ ATX-24pins power connector: CN14

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1 | +3.3V | 13 | +3.3V |
| 2 | +3.3V | 14 | -12V |
| 3 | Ground | 15 | Ground |
| 4 | +5V | 16 | PS-ON |
| 5 | Ground | 17 | Ground |
| 6 | +5V | 18 | Ground |
| 7 | Ground | 19 | Ground |
| 8 | PWRGD | 20 | -5V |
| 9 | 5VSB | 21 | +5V |
| 10 | +12V | 22 | +5V |
| 11 | +12V | 23 | +5V |
| 12 | 3.3V | 24 | Ground |

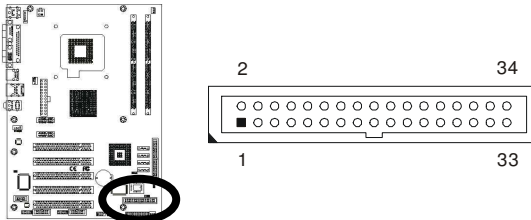
● Figure:



◆ Floppy disk connector (34-pins 2.54mm pitch with housing): CN15

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|-------------------------|
| 1 | Ground | 2 | Drive Density Selection |
| 3 | Ground | 4 | NC |
| 5 | Ground | 6 | DSI |
| 7 | Ground | 8 | Index |
| 9 | Ground | 10 | Motor Enable 0 |
| 11 | Ground | 12 | DSB |
| 13 | Ground | 14 | Drive Select 0 |
| 15 | Ground | 16 | Motor Enable 1 |
| 17 | Ground | 18 | Direction |
| 19 | Ground | 20 | Step |
| 21 | Ground | 22 | Write Data |
| 23 | Ground | 24 | Write Gate |
| 25 | Ground | 26 | Track 00 |
| 27 | Ground | 28 | Write Protect |
| 29 | NC | 30 | Read Data |
| 31 | Ground | 32 | Side 1 Select |
| 33 | NC | 34 | Diskette Change |

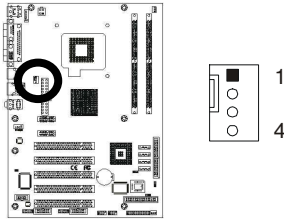
• Figure:



◆ CPU fan power connector: CN16

| Pin # | Assignment |
|-------|-------------------|
| 1 | Ground |
| 2 | +12V |
| 3 | Fan Status Signal |
| 4 | Fanpwm |

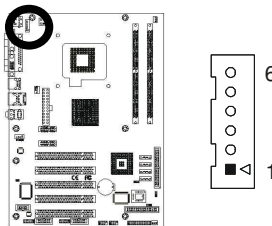
• Figure:



◆ External K/B & M/S pin-header (6-pins wafer): CN18

| Pin # | Assignment |
|-------|------------|
| 1 | MS Clock |
| 2 | MS Data |
| 3 | KB Clock |
| 4 | KB Data |
| 5 | Ground |
| 6 | VCC |

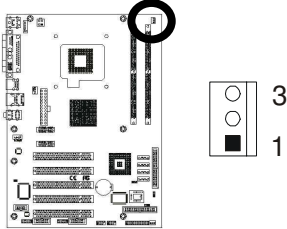
• Figure:



◆ Power fan power connector: CN19

| Pin # | Assignment |
|-------|-------------------|
| 1 | Ground |
| 2 | +12V |
| 3 | Fan Status Signal |

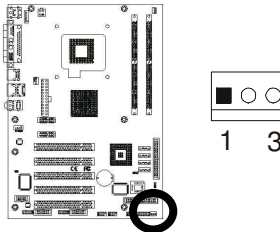
• Figure:



◆ Chassis fan power connector: CN21

| Pin # | Assignment |
|-------|-------------------|
| 1 | Ground |
| 2 | +12V |
| 3 | Fan Status Signal |

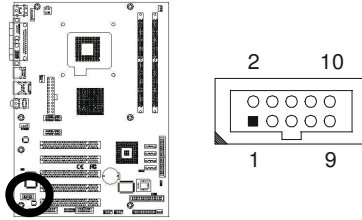
• Figure:



◆ **COM2 RS-232 serial port pin-header (10-pins): CN23**

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

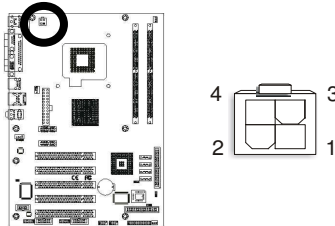
● **Figure:**



◆ **ATX12V-4pins power connector: CN25**

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1 | Ground | 3 | +12V |
| 2 | Ground | 4 | +12V |

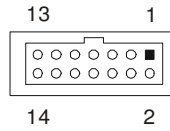
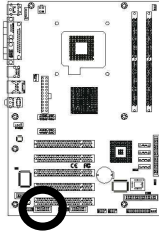
● **Figure:**



◆ **COM3 RS-232/422/485 serial port pin-header (14-pins): CN26**

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1 | DCD | 2 | DSR |
| 3 | RXD | 4 | RTS |
| 5 | TXD | 6 | CTS |
| 7 | DTR | 8 | RI |
| 9 | Ground | 10 | Ground |
| 11 | TXD+ | 12 | TXD- |
| 13 | RXD+ | 14 | RXD- |

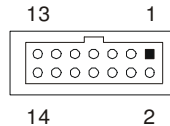
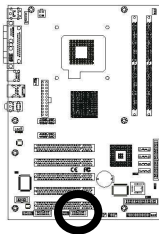
● **COM3 Figure:**



◆ **COM4 RS-232/422/485 serial port pin-header (14-pins): CN27**

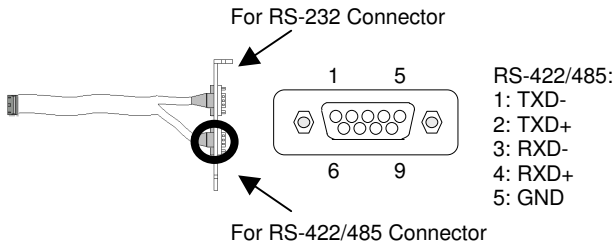
| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1 | DCD | 2 | DSR |
| 3 | RXD | 4 | RTS |
| 5 | TXD | 6 | CTS |
| 7 | DTR | 8 | RI |
| 9 | Ground | 10 | Ground |
| 11 | TXD+ | 12 | TXD- |
| 13 | RXD+ | 14 | RXD- |

● **COM4 Figure:**



Note: How to connect RS485 device with COM port ribbon cable?

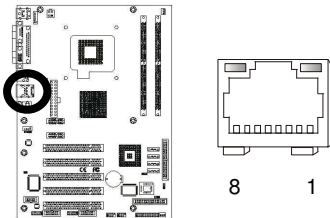
Our Board encloses a COM port ribbon cable for internal connection. RS422/485 device must connect to downside D-Sub with 5-pin cable and signal indication as below.



◆ Ethernet RJ-45 connector (RJ-45 phone jack): CN31

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

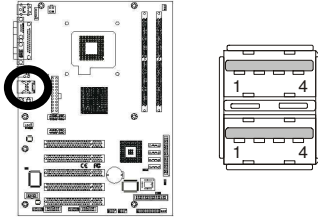
• Figure:



◆ USB 2/3 connector: CN31

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1a | VCC | 1b | VCC |
| 2a | USB2 - | 2b | USB3 - |
| 3a | USB2 + | 3b | USB3 + |
| 4a | Ground | 4b | Ground |

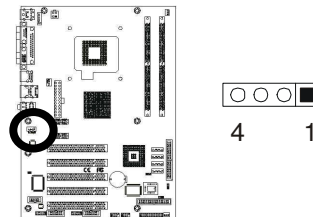
• Figure:



◆ CD_In pin-header (4-pins): CN32

| Pin # | Assignment |
|-------|-------------|
| 1 | Left CD_IN |
| 2 | Ground |
| 3 | Ground |
| 4 | Right CD_IN |

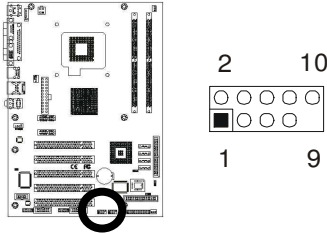
• Figure:



◆ USB 4/5 pin-header (10-pins): CN33

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

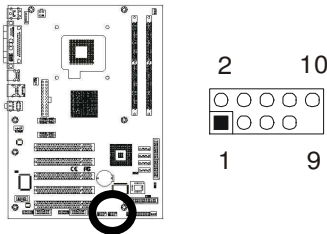
• Figure:



◆ USB 6/7 pin-header (10-pins): CN34

| Pin # | Assignment | Pin # | Assignment |
|-------|------------|-------|------------|
| 1 | VCC | 2 | VCC |
| 3 | USB6 - | 4 | USB7 - |
| 5 | USB6 + | 6 | USB7 + |
| 7 | Ground | 8 | Ground |
| 9 | --- | 10 | NC |

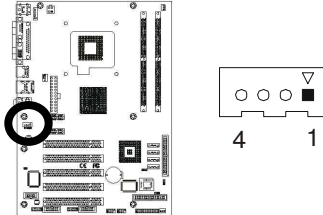
• Figure:



◆ **Line_Out pin-header (4-pins wafer): CN35**

| Pin # | Assignment |
|-------|------------|
| 1 | LOUT_L |
| 2 | AU_GND |
| 3 | VCC_5V |
| 4 | LOUT_R |

● **Figure:**

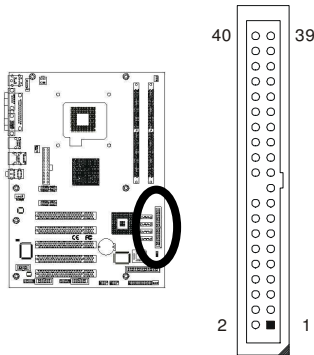


Note: *If users use the speaker only and the speaker have had power by itself, so the pin 3 of Line_Out cable must be connected “ground”.*

◆ **Primary IDE connector (40-pins 2.54mm pitch with housing): IDE1**

| 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 | No Connect |
| 33 | Address 1 | 34 | Ground |
| 35 | Address 0 | 36 | Address 2 |
| 37 | Chip Select 0 | 38 | Chip Select 1 |
| 39 | Activity | 40 | Ground |

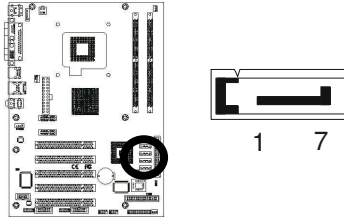
● **Figure:**



◆ SATA1 / 2 / 3 / 4 connector: SATA1 / 2 / 3 / 4

| Pin # | Assignment |
|-------|------------|
| 1 | Ground |
| 2 | SATA_TX+ |
| 3 | SATA_TX- |
| 4 | Ground |
| 5 | SATA_RX- |
| 6 | SATA_RX+ |
| 7 | Ground |

● Figure:



The graphic consists of three overlapping rectangular boxes, each containing the text 'SECTION 3'. The boxes are stacked and slightly offset to the right, creating a layered effect.

SECTION 3

AWARD BIOS SETUP

3.1 BIOS Instructions

Award's ROM BIOS provides a built-in Setup 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, this will cause data loss in the CMOS only. If this does happen you will need to 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.

| Phoenix - AwardBIOS CMOS Setup Utility | |
|---|--|
| <ul style="list-style-type: none"> ➤Standard CMOS Feature ➤Advanced BIOS Feature ➤Advanced Chipset Feature ➤Integrated Peripherals ➤Power Management Setup ➤PnP/PCI/PCI-E Configurations ➤PC Health Status | <ul style="list-style-type: none"> ➤Frequency/Voltage Control Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving |
| Esc: Quit | ↑ ↓ → ←: Select Item |
| F10: Save & Exit Setup | |
| Time, Date, Hard Disk Type.... | |

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 section 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 / PCI-E Configuration:

This entry appears if your system supports PnP / PCI / PCI-E. 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.

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 12 categories. Each category includes no, 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.

| Standard CMOS Features | | Item Help |
|---|------------------------|---|
| Date (mm:dd:yy): | Mon, Nov 7 2005 | |
| Time (hh:mm:ss): | 16:19:20 | |
| ➤ IDE Channel 0 Master | 13579 MB | Menu Level ➤ |
| ➤ IDE Channel 0 Slave | None | |
| ➤ IDE Channel 1 Master | None | Change the day, month, year and century |
| ➤ IDE Channel 1 Slave | None | |
| ➤ SATA Channel 1 | None | |
| ➤ SATA Channel 2 | None | |
| ➤ SATA Channel 3 | None | |
| ➤ SATA Channel 4 | None | |
| Drive A | 1.44M, 3.5 in. | |
| Drive B | None | |
| Video | EGA/VGA | |
| Halt On | All, Errors | |
| Based Memory | 640K | |
| Extended Memory | 523264K | |
| Total Memory | 524288K | |
| ↑↓→←Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults | | |

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 Channel 0 / 1 Master: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

IDE Channel 0 / 1 Slave: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

SATA Channel 1 / 2 / 3 / 4 : Options are in its sub menu (described in 3.4)
Press <Enter> to enter the sub menu of detailed options.

Drive A / Drive B: Options None 360K, 5.25 in/1.2M, 5.25 in/720K, 3.5 in/
1.44M, 3.5 in/2.88M, 3.5 in
Select the type of floppy disk drive installed in your system.

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:
Displays the amount of conventional memory detected during boot up.

Extended Memory:
Displays the amount of extended memory detected during boot up.

Total Memory:
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.

Phoenix - AwardBIOS CMOS Setup Utility
IDE Channel 0 Master

| | | |
|--|--------------|---|
| IDE HDD Auto-Detection | Press Enter | Item Help |
| IDE Channel 0 Master Access Mode | Auto Auto | Menu Level >> |
| Capacity | 13579 MB | To auto-detect the HDD's size, head... on this channel |
| Cylinder | 26310 | |
| Head | 16 | |
| Precomp | 0 | |
| Landing Zone | 26309 | |
| Sector | 63 | |
| ↑↓→← Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults | | |

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 Channel 0 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.

Award BIOS Setup

The following options are selectable only if the 'IDE Primary Master' item is set to "Manual".

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

| Item | Value | Item Help |
|---|-------------|--------------|
| ➤ CPU Feature | Press Enter | |
| Virus Warning | Disabled | |
| Hyper-Threading Technology | Enabled | |
| Quick Power On Self Test | Enabled | Menu Level ➤ |
| 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 | Steup | |
| APIC Mode | Enabled | |
| MPS Version Control For OS | 1.4 | |
| OS Select For DRAM > 64MB | Non-OS2 | |
| HDD S.M.A.R.T. Capability | Disabled | |
| Delay For HDD (Secs) | 0 | |
| ➤ Cache Setup | Press Enter | |
| ➤ Boot Seq & Floppy Setup | Press Enter | |
| ↑↓→←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

| Item | Value | Item Help |
|---|-------------------|---------------|
| Delay Prior to Thermal | 16 Min | |
| Thermal Management | Thermal Monitor 1 | |
| Limit CPUID MaxVal | Disabled | Menu Level ➤➤ |
| Execute Disable Bit | Enabled | |
| ↑↓→←Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults | | |

Delay Prior To Thermal:

Select this item for the delay prior to thermal time.

The Choice: 4, 8, 16, 32 Min.

Limit CPUID MaxVal:

This item allows you to limit CPUID Max value.

The choice: Enabled, Disabled.

Execute Disable Bit

This item allows you to execute disable bit.

The choice: Enabled, Disabled.

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.

Hyper-Threading Technology:

This item allows you to enable or disable the CPU Hyper-Threading Technology.

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

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. Once the security is disabled, the system will boot and you can enter Setup freely.

APIC Mode:

This item allows you to enable or disable APIC Mode.

The choice: Enabled, Disabled.

MPS Version Control For OS:

Select the operating system that is Multi-Processors Version Control for OS.

The choice: 1.4, 1.1.

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.

HDD S.M.A.R.T. Capability:

This item allows you to enable or disable the HDD self-Monitoring, Analysis, and Reporting Technology system.

The choice: Enabled, Disabled.

Delay For HDD (Secs)

This item allows you to choose the delay time.

The choice: 0~15.

Cache Setup:

Phoenix - AwardBIOS CMOS Setup Utility

Cache Setup

| | | |
|---|---------|---------------|
| CPU L1 & L2 Cache | 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 | | |

CPU L1& L2 Cache:

These two categories speed up memory access. However, it depends on CPU and chipset designed.

The choice: Enabled, Disabled.

Boot Seq & Floppy Setup:

Phoenix - AwardBIOS CMOS Setup Utility

Boot Seq & Floppy Setup

| | | |
|---|---|--------------------------------|
| > Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Boot Other Device Swap Floppy Drive Boot Up Floppy Seek Report No FDD For WIN95 | Press Enabled Floppy Hard Disk LS120 Enabled Disabled Enabled No | 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 | | |

Hard Disk Boot Priority:

Press Enter and it shows Bootable add-in Card and SATA device No.

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: Floppy, LS/ZIP, HDD, 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.

Swap Floppy Drive:

This will swap your physical drive letters A & B if you are using two floppy disks.

The Choice: Enabled, Disabled.

Boot Up Floppy Seek:

Seeks disk drives during boot up. Disabling speeds boot up.

The choice: Enabled, Disabled.

Report No FDD For WIN95:

Whether report no FDD for Win 95 or not.

The choice: Yes, No.

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.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

| | |
|---|---|
| DRAM Timing Selectable By SPD X CAS Latency Time 4 X DRAM RAS# To CAS# Delay 4 X DRAM RAS# Precharge 4 X Precharge dealy (tRAS) 12 X System Memory Frequency 533MHz System BIOS Cacheable Enabled Video BIOS Cacheable Disabled Memory Hole At 15M-16M Disabled ➤ PCI Express Root Port Function 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 Auto | Item Help <hr style="width: 80%; margin: 0 auto;"/> 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 | |

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: Auto, 3, 4 and 5.

DRAM RAS# to CAS# Delay:

You can select RAS to CAS Delay time in HCLKs of 2/2, 3/3 or 4/4.

The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

The choice: Auto, 2, 3, 4, 5.

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: Auto, 2, 3, 4, 5.

Precharge delay (tRAS):

Select the operating system that is active to precharge delay.

The choice: 5~15.

System Memory Frequency:

You can use this item to select operating frequency for the system memory.

The choice: Auto, 333MHz, 400MHz, 533MHz.

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.

PCI Express Root Port Function:

Phoenix - AwardBIOS CMOS Setup Utility

PCI Express Root Port Function

| | | |
|--|-------|--------------|
| PCI Express Port 1 | Auto | Item Help |
| PCI Express Port 2 | Auto | |
| PCI-E Compliancy Mode | v1.0a | |
| | | 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 | | |

PCI Express Port 1 / 2 :

This item allows you to active PCI Express.

The choice: Auto, Enabled, Disabled.

PCI-E Compliancy Mode:

This item allows you to choose PCI-E Compliancy Mode.

The choice: v1.0a, v1.0.

PEG/Onchip VGA Control:

This item allows you to control the PEG or on-chip VGA.

The choice: Onchip VGA, PEG Port, Auto.

On-Chip Frame Buffer Size:

Select this item allows you to control the on-chip frame buffer size.

The choice: 1MB, 8MB.

DVMT Mode:

This item allows you to select the DVMT mode.

The choice: FIXED, DVMT, BOTH.

DVMT/FIXED Memory Size:

This item allows you to select the DVMT or FIXED memory size.

The choice: 64MB, 128MB.

Boot Display:

Select this item allows you to set the boot display device.

The choice: Auto, CRT, TV, EFP.

3.7 Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility

Integrated Peripherals

| | |
|--|-----------|
| <ul style="list-style-type: none"> ➤ OnChip IDE Device Press Enter ➤ Onboard Device Press Enter <ul style="list-style-type: none"> Onboard Lan Boot ROM Disabled ➤ Onboard I/O Chip Setup Press Enter <ul style="list-style-type: none"> Onboard Serial Port 3 3E8 Serial Port 3 Use IRQ IRQ10 Onboard Serial Port 4 2F8 Serial Port 4 Use IRQ IRQ11 | Item Help |
| <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> 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 | |

OnChip IDE Device:

OnChip IDE Device

| | |
|--|-----------|
| IDE HDD Block Mode Enabled IDE DMA transfer access Enabled 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 Secondary PCI IDE Enabled IDE Secondary Master PIO Auto IDE Secondary Slave PIO Auto IDE Secondary Master UDMA Auto IDE Secondary Slave UDMA Auto **On-Chip Serial ATA Setting** On-Chip Serial ATA Enhanced Mode X PATA IDE Mode Primary X SATA Port SATA2/4 is Secondary | Item Help |
| <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> Menu Level ➤ | |
| If you IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. | |
| ↑↓→←Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults | |

IDE HDD Block Mode:

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

The choice: Enabled, Disabled.

IDE DMA transfer access:

This item allows you to enable or disable IDE DMA transfer access.
The choice: Enabled, Disabled.

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.

On-Chip Serial ATA:

There are five Serial ATA fields let you set the Serial ATA.

The choice: Disabled---Disabled SATA Controller.

Auto---Auto arrange by BIOS.

SATA Only---SATA is operating in legacy mode.

Combined Mode---PATA and SATA are combined. Max. of 2 IDE drives in each channel.

Enhanced Mode---Enable both SATA and PATA. Max. of 6 IDE drives are supported.

Onboard Device:

Phoenix - AwardBIOS CMOS Setup Utility
Onboard Device

| | | Item Help |
|---|----------|--------------|
| USB Controller | Enabled | Menu Level > |
| USB 2.0 Controller | Enabled | |
| USB Keyboard Support | Disabled | |
| USB Mouse Support | Disabled | |
| Azalia/AC97 Audio Select | Auto | |
| ↑↓→←Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults | | |

USB Controller:

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

The choice: Enabled, Disabled.

USB 2.0 Controller:

Select "Enabled" if your system contains a Universal Serial Bus 2.0 (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.

Azalia/AC97 Audio Select

This item allows you to select the chipset family to support AC97 Audio.

The choice: Auto, Azalia, AC97 Audio and Modem, AC97 Audio only, AC97 Modem only, All disabled

Onboard Lan Boot ROM:

This item allows you to enable or disable the onboard LAN Boot ROM.
 The choice: Enabled, Disabled.

Onboard I/O Chip Setup:

Phoenix - AwardBIOS CMOS Setup Utility
 Onboard I/O Chip Setup

| | | |
|---|------------------|--------------|
| Power ON Function | BUTTON ON | Item Help |
| X KB Power ON Password | Enter | |
| X Hot Key Power ON | Ctrl-F1 | |
| Onboard FDC Controller | Enabled | Menu Level > |
| Onboard Serial Port 1 | 3F8/IRQ4 | |
| Onboard Serial Port 2 | 2F8/IRQ3 | |
| UART Mode Select | Normal | |
| X RxD, TxD Active | Hi, Lo | |
| X IR Transmission Delay | Enabled | |
| X UR2 Duplex Mode | Half | |
| X Use IR Pins | IR-Rx2Tx2 | |
| Onboard Parallel Port | 378/IRQ7 | |
| Parallel Port Mode | SPP | |
| X EPP Mode Select | EPP1.7 | |
| X ECP Mode Use DMA | 3 | |
| 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 | | |

Power On Function:

You can use this item to select operating Power On the system.
 The choice: Button Only, Hot Key, Mouse Left, Mouse Right, Any key, keyboard98, Password.

KB Power ON Password:

You can use this item to limit operating KB Power On system.
 The choice: Enter.

Hot Key Power ON:

You can use this item to select operating Hot Key to Power On system.
 The choice: Ctrl-F1~Ctrl-F12.

Onboard FDC Controller:

Select “Enabled” if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2:

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled and Auto.

UART Mode Select:

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

The Choice: Normal, IrDA and ASKIR.

RxD, TxD Active:

This item allows you to determine the active of RxD, TxD.

The Choice: “Hi, Hi”, “Lo, Lo”, “Lo, Hi” and “Hi, Lo”.

IR Transmission Delay:

This item allows you to enable/disable IR transmission delay.

The choice: Enabled, Disabled.

UR2 Duplex Mode:

This item allows you to select the IR half/full duplex function.

The choice: Half, Full.

Use IR Pins:

This item allows you to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2.

The choice: IR-Rx2Tx2, RxD2 and TxD2.

Onboard Parallel Port:

This item allows you to determine access onboard parallel port controller with which I/O address.

The choice: 3BC/IRQ7, 378/IRQ7, 278/IRQ5 and Disabled.

Parallel Port Mode:

Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.

The choice: SPP, EPP, ECP and ECP+EPP, Normal.

EPP Mode Select:

Select EPP port type 1.7 or 1.9.

The choice: EPP1.7, 1.9.

ECP Mode Use DMA:

Select a DMA channel for the parallel port for use during ECP mode.

The choice: 3, 1.

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 Serial Port 3 / 4 :

Select an address for the third and fourth serial ports.

The choice: 3F8, 2F8, 3E8, 2E8, Disable.

Serial Port 3 / 4 Use IRQ:

Select a corresponding interrupt the third and fourth serial ports.

The choice: IRQ10, IRQ11, IRQ3, IRQ4.

3.8 Power Management Setup

The Power Management Setup allows you to configure your 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 THRM-Throttling | 50.0% | |
| 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 | |
| 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/disable the Advanced Configuration and Power Management (ACPI).

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

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. and disable.

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:

Select the Suspend Type.

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 THRM-Throttling:

Select the CPU THRM-Throttling rate.

The choice: 25.0%, 50.0%, 75.0%.

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:

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”, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

The choice: Enabled, Disabled.

Reload Global Timer 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/PCI-E Configurations

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

| Init Display First | PCI Slot | Item Help |
|---|-------------|--------------|
| Reset Configuration Data | Disabled | Menu Level > |
| Resources Controlled By | Auto (ESCD) | |
| 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 | 4096 | |
| ↑↓→←Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults | | |

Init Display First:

This item is used to select whether to initialize the PCI slot or on-chip VGA first when the system boots

The choice: PCI Slot, Onboard.

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.

Resources Controlled By:

It allows you 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.

The choice: Auto (ESCD), Manual.

IRQ Resources:

Phoenix - AwardBIOS CMOS Setup Utility

IRQ Resources

| | | |
|---|------------|-----------|
| IRQ3 assigned to | PCI Device | Item Help |
| IRQ4 assigned to | PCI Device | |
| IRQ5 assigned to | PCI Device | |
| IRQ7 assigned to | PCI Device | |
| IRQ9 assigned to | PCI Device | |
| IRQ10 assigned to | PCI Device | |
| IRQ11 assigned to | PCI Device | |
| IRQ12 assigned to | PCI Device | |
| IRQ14 assigned to | PCI Device | |
| IRQ15 assigned to | PCI Device | |
| 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 | | |

IRQs:

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

The choice: PCI Device, Reserved.

PCI/VGA Palette Snoop:

Leave this field at "Disabled".

The choice: Enabled, Disabled.

INT Pin 1~8 Assignment:

These items allow you to specify what IRQ will be assigned.

The choice: Auto,3, 4, 5, 7, 9, 10, 11, 12, 14, 15.

Maximum Payload Size:

Set maximum TLP payload size for the PCI Express devices. The unit is byte.

The choice: 128, 256, 512, 1024, 2048, 4096.

3.10 PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility

PC Health Status

| | | |
|--|--------------|--------------|
| CPU Warning Temperature | Disabled | Item Help |
| Current System Temp. | 33°C / 91°F | |
| Current CPU Temperature | 38°C / 100°F | |
| CPU FAN Tachometer | 4687RPM | Menu Level > |
| Power FAN Tachometer | 5152RPM | |
| CHASSIS FAN Tachometer | 4725RPM | |
| VCC_DDR | 1.80 V | |
| VCORE | 1.24 V | |
| VCC3V3 | 3.24 V | |
| + 5 V | 5.18 V | |
| +12 V | 12.25 V | |
| -12 V | -13.35 V | |
| VBAT(V) | 3.12 V | |
| 5VSB(V) | 5.06 V | |
| Shutdown Temperature | 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 Warning Temperature:

This item will prevent CPU from overheating.

The choice: 50°C /122°F ~70°C /158°F, Disabled.

Current System Temp.:

Show you the current system temperature.

Current CPU Temperature:

Show you the current CPU temperature.

CPU FAN Tachometer:

Show you the current CPU fan operating speed.

Power FAN Tachometer:

Show you the current Power fan operating speed.

Chassis FAN Tachometer:

Show you the current CPU fan operating speed.

VCC_DDR:

The voltage level of the DRAM.

VCORE:

The voltage level of CPU (Vcore).

+3.3V/+5V/+12V/-12V:

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

VBAT (V)

Show you the voltage level of the battery.

Shutdown Temperature:

This item allows you to set up the CPU shutdown Temperature.

The choice: Disabled, 60°C / 140°F, 65°C / 149°F, 70°C / 158°F and 75°C / 167°F.

3.11 Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility
Frequency/Voltage Control

| | | |
|---|----------|--------------|
| CPU Clock Ratio | 14 X | Item Help |
| Auto Detect PCI Clk | Disabled | |
| Spread Spectrum | Disabled | |
| | | 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 | | |

CPU Clock Ratio:

This item allows you to set up the CPU clock ratio, but this function depends on different CPU performance. It is only effective for those clock ratio haven't been locked.

Auto Detect PCI CLK:

When "Enabled", this item will auto detect if the PCI socket have devices and will send clock signal to PCI devices. When disabled, it will send the clock signal to all PCI socket.

The choice: Enabled, Disabled.

Spread Spectrum:

This item allows you to set the spread spectrum modulated.

The choice: Enabled, Disabled.

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 them. 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.

SECTION 4

APPENDIX

A.1 PCI Routing Table

| ITEM | AX-915GV PCI Routing Table | | | | | | |
|--------------------|----------------------------|------|------|-------|-------|-------|-------|
| | PCI Interrupt Source | | | | | | |
| | IDSEL | REQ | GNT | PIRQA | PIRQB | PIRQC | PIRQD |
| PCI Slot 1 | AD28 | REQ3 | GNT3 | INTG | INTH | INTB | INTC |
| PCI Slot 2 | AD29 | REQ2 | GNT2 | INTF | INTG | INTH | INTB |
| PCI Slot 3 | AD30 | REQ1 | GNT1 | INTE | INTF | INTG | INTH |
| PCI Slot 4 | AD31 | REQ0 | GNT0 | INTD | INTE | INTF | INTG |
| PCI Slot 5 | AD27 | REQ4 | GNT4 | INTH | INTB | INTC | INTD |
| AC97 ICH6 Audio | | | | INTA | | | |
| Onboard LAN | | | | INTA | | | |
| USB Controller 1 | | | | INTA | | | |
| USB Controller 2 | | | | | INTB | | |
| USB Controller 3 | | | | | | INTC | |
| USB Controller 4 | | | | | | | INTD |
| USB 2.0 Controller | | | | INTA | | | |