

# **Gene-6310**

All-in-One SubCompact Board  
VIA Eden Series CPU with LAN,  
Audio, TV-Out, LVDS & 2 COM  
Ports

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If you think you have received a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, AAEON products used, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Please prepare your manual, product, and other helpful information before calling your dealer to describe your problem.
3. If your product is diagnosed as defective, please manage to obtain an RMA (return material authorization) number from your dealer. This allows us to deal with your return quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card, and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without the proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it out after paying to your dealer for it.

## Packing List

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

- **1 GENE-6310 All-in-One Single Board Computer**
- **1 Hard disk drive (IDE) interface cable (44 pin, pitch 2.0mm)**
- **1 Floppy disk drive interface cable (34 pin, pitch 2.0mm)**
- **1 6-pin mini-DIN dual outlet adapter for keyboard and PS/2**
- **1 Parallel port (26-25 pin, pitch 2.0mm) mouse & serial port (10-9 pin, pitch 2.0mm) adapter kit**
- **1 USB cable with bracket (pitch 2.00mm)**
- **1 Audio 14-pin (pitch 2.00mm) and 3 RCA jack cables with 4-pin CDIN Connector (pitch 2.54mm)**
- **1 TV-Out 8-pin (pitch 2.0mm) cable with a RCA Jack & S-terminal**
- **1 bag of screws and miscellaneous parts**
- **1 Quick Installation Guide**
- **1 CD-ROM contains the followings:**
  - **User Manual (this manual in PDF file)**
  - **Ethernet drivers and utilities**
  - **VGA drivers and utilities**
  - **Audio drivers and utilities**
  - **Lastest BIOS (as of the CD-ROM was made)**

If any of these items were missing or damaged, please contact your distributor or sales representative immediately.

## Notice

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Dear Customer,

Thank you for purchasing the GENE-6310 board. This user manual is designed to help you to get the most out of the GENE-6310, please read it thoroughly before you install and use the board. The product that you have purchased comes with a two-year limited warranty, but AAEON will not be responsible for misuse of the product. Therefore, we strongly suggest you to read the manual carefully before using the product.

To get the latest version of the user manual, please visit our web site at:

**<http://www.aaeon.com.tw>**

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## ***General Information***

This chapter provides background information on the mainboard.

Sections include:

**Board specifications**

**Layout and dimensions**

# Introduction

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The GENE-6310 is an all-in-one VIA Eden Series processor based single board computer (SBC) with an Integrated AGP 4X 2D/3D Graphics Accelerator, an audio controller, a 10/100 Base-T Ethernet Controller, Dual channel LVDS interface, and PC/104 plus expansion capability. This compact (only 5.75" x 4") unit offers all the functions of a single board computer, but still fits in the space of a FDD drive.

Onboard features include two serial ports (one RS-232, one RS-232/422/485), one multi-mode parallel (ECP/EPP/SPP) port, pin header for 4 USB (Universal Serial Bus) ports, a floppy drive controller, and a keyboard/PS/2 mouse interface. The built-in high speed PCI-EIDE controller supports Ultra DMA-33 master mode. Up to two IDE devices can be connected, including large hard disks, CD-ROM drives, and tape backup drives, etc.

The GENE-6310 also features power management to minimize power consumption. It complies with the APM standard and supports three types of power saving features: Doze mode, Standby mode, and Suspend mode. In addition, the board's watchdog timer can be programmed to reset the system or generate an interrupt in case the system stops due to a program bug or SMI.

## Highly integrated multi-media SBC

The GENE-6310 is a highly integrated multi-media SBC that combines audio, video, and network functions on a FDD drive size single computer board. It provides an AC-97 audio interface 2.0 version and up to 1600 x 1200 resolution @ 16bpp colors(CRT) with UMA 32MB SDRAM display memory. Major onboard devices adopt PCI technology to achieve outstanding computing performance when used with VIA Eden (Pentium III level) processors, making the GENE-6310 one of the world's smallest and most powerful all-in-one multimedia boards.

## LVDS Introduction

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Low Voltage Differential Signaling is a low noise, low power, low amplitude method for high-speed (gigabits per second) data transmission over copper wire.

LVDS differs from normal input/output (I/O) in a few ways: Normal digital I/O works with 5 volts as a high (binary 1) and 0 volts as a low (binary 0). When you use a LVDS, you add a third option (-5 volts), which provides an extra level with which to encode and results in a higher maximum data transfer rate.

A higher data transfer rate means fewer wires are required, as in UW (Ultra Wide) and UW-2/3 SCSI harddrive, which use only 68 wires. These devices require a high transfer rate over short distance. Using standard I/O transfer, SCSI hard drives would require a lot more than 68 wires. Low voltage means that the standard 5 volts is replaced by either 3.3 volts or 1.5 volts. LVDS uses a dual wire system, running 180 degrees of each other. This enables noise to travel at the same level, which in turn can get filtered more easily and effectively.

With standard I/O signaling, data storage is contingent upon the actual voltage level. Voltage level can be affected by wire length (longer wires increase resistance, which lowers voltage). But with LVDS, data storage is distinguished only by positive and negative voltage values, not the voltage level. Therefore, data can travel over greater length of wire while maintaining a clear and consistent data stream.

## Features

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- 3.5" FDD SubCompact Form Factor
- Supports VIA Eden CPU (400-667MHz) and VIA Ezra CPU (800MHz)
- Integrated AGP 4X 2D/3D Graphics Accelerator
- Supports CRT and 36-bit TFT/DSTN panels
- Supports NTSC/PAL TV output
- Integrated AC-97 2.0 SoundBlaster compatible audio codec
- Supports Compact Flash Storage
- Dual channel LVDS interface onboard
- Supports One 10/100Base-T Fast Ethernet
- Supports Ultra DMA/33 mode
- 2 COMs / 1 Parallel / 4 USBs / 1 IrDA Port
- 5 volt only operation

# Specifications

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## Standard SBC Functions

**CPU :**VIA Eden EBGA mobile processor

**BIOS:**Award 2MB Flash BIOS

**Chipset:**VT8606 (66/100/133FSB)/VT82C686B

**Memory:**Onboard one 144-pin SODIMM socket supports up to 512MB SDRAM

**Enhanced IDE:**Supports two IDE devices. BIOS auto detect. Supports PIO mode 5 and Bus Master. Also supports Multi-word DMA and Ultra DMA/33.

**FDD interface:**Supports up to two floppy disk drives, 5.25" (360KB and 1.2MB) and/or 3.5" (720KB, 1.44MB, and 2.88MB)

**Parallel port:**Configured to LPT1, LPT2, LPT3 or disabled. Supports SPP, ECP, and EPP.

**Serial port:**One RS-232 and one RS-232/422/485 serial ports. Ports can be configured as COM1, COM2, or disabled individually, (16C550 equivalent)

**IR interface:** Supports one IrDA Tx/Rx header

**KB/Mouse connector:** One 6-pin mini DIN connector supports PC/AT keyboard and PS/2 mouse.

**USB connectors:** Four USB ports on board

**Battery:** Lithium battery for data retention

**Watchdog Timer:**Can generate a system reset, IRQ, or NMI. Supports Win95, Win 98, Win2000, Win3.1. Software selectable time-out interval (1 sec. ~ 255sec., 1 sec./step)

**DMA:**7 DMA channels

**Interrupt:**15 interrupt levels

**Power management:**Supports AT power supply. Supports PC99 I/O peripheral devices support power saving and doze modes

## ❁ Flat Panel/CRT Interface

**Chipset:** VT8606

**Display memory:** Shared memory up to 32MB

**Display type:** Supports non-interlaced CRT, 2 channel LVDS, and up to 36-bit TFT LCD displays. Can display both CRT and flat panel simultaneously, such as CRT with TTL or CRT with LVDS at the same time.

**Resolution:** Up to 1600x1200 @ 16bpp colors for CRT

## ❁ RCA TV-Out Connector

**Chipset:** VIA 1621 digital TV encoder

**Interface:** Onboard pin header supports NTSC/PAL composite output

## ❁ Audio Interface

**Chipset:** VT82C686B

**Interface:** Onboard pin header supports LineIn, LineOut, MICIN, and CDIN.

## ❁ Ethernet Interface

**Chipset:** Realtek RTL8139 C

**Ethernet interface:** Onboard One 10/100 Base-T RJ-45 connector

### **SSD Interface**

One socket supports Compact Flash Disk (Type II)

### **Expansion Interface**

**PC/104+ connector:**One 120-pin (PCI Interface) connector for PC/104 plus module expansion

### **Mechanical and Environmental**

**Power supply voltage:**+5V (4.75V to 5.25V)

**Operating temperature:**32 to 140 °F (0 to 60 °C)

**Board size:**5.75" (L) x 4" (W) (146 mm x 101.6 mm)

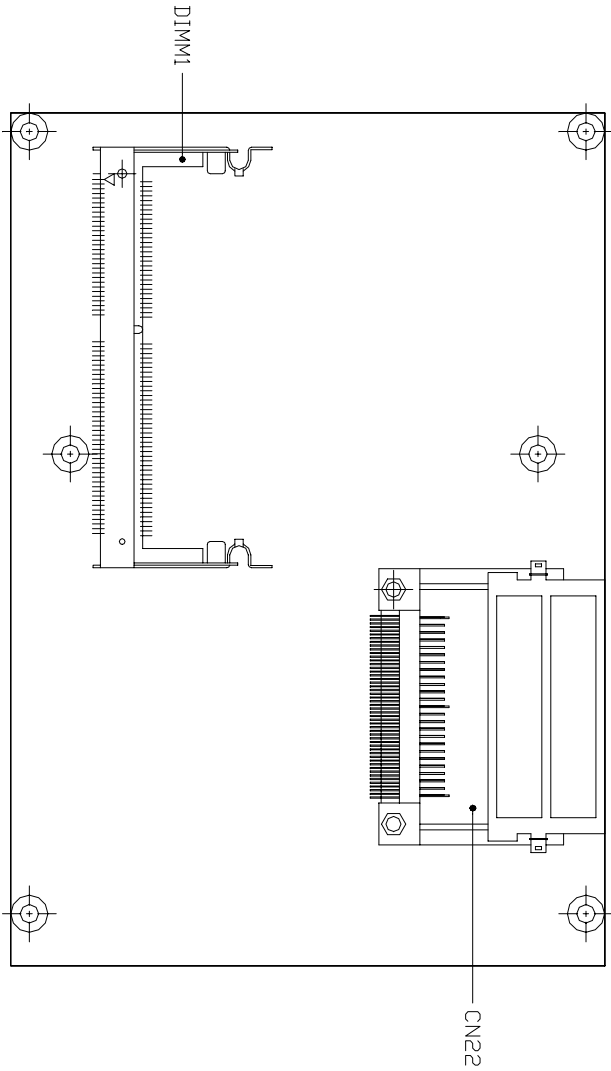
**Weight:**0.88 lb. (0.4 Kg)



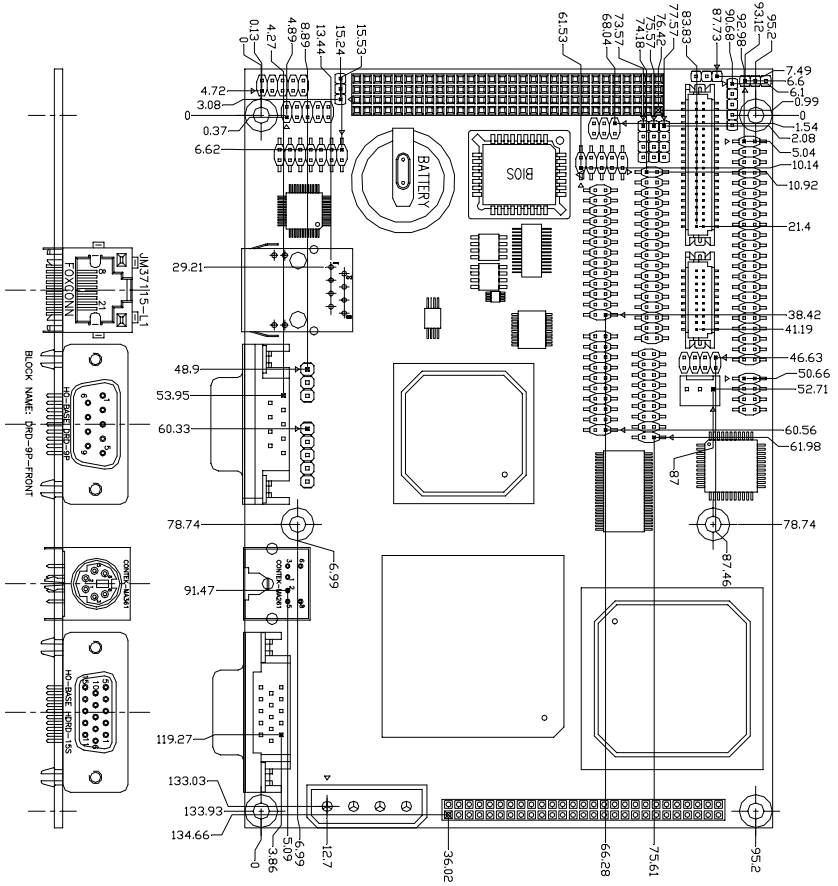


# Board Layout (Reverse Side)

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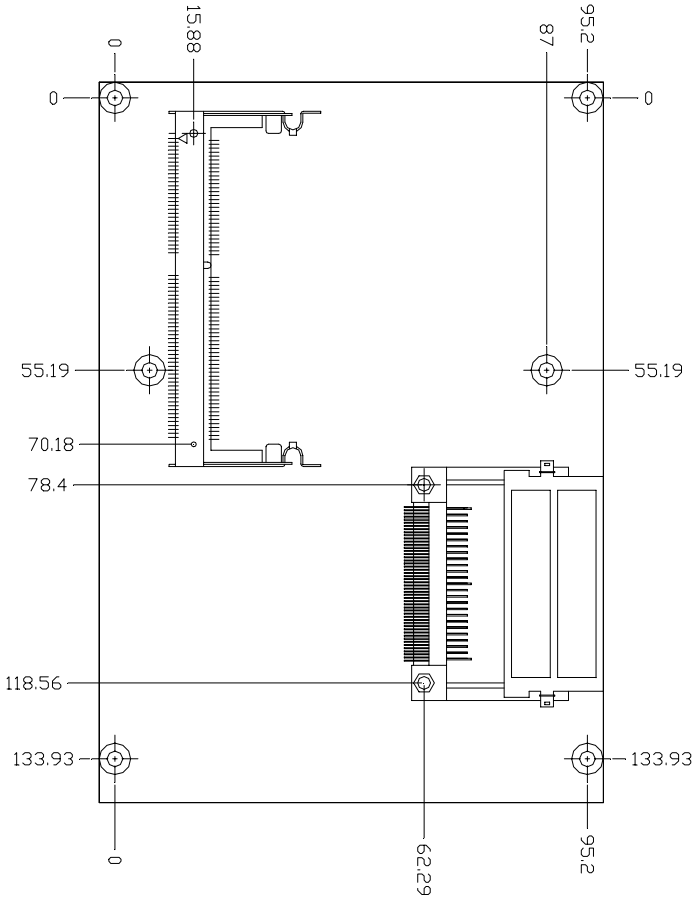


# Board Dimensions



# Board Dimensions (Reverse Side)

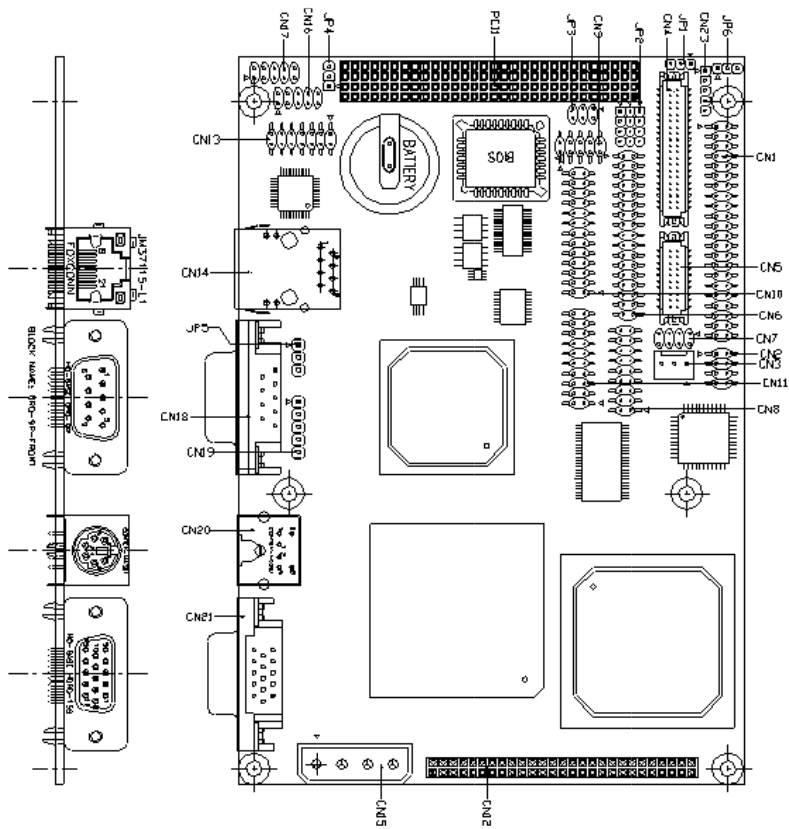
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## ***Installation***

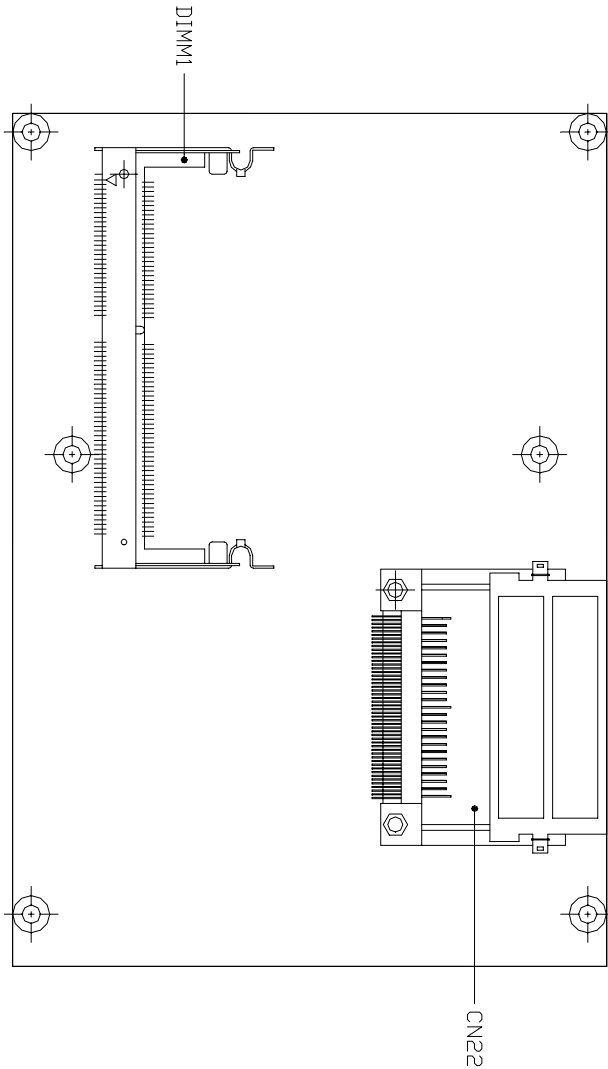
This chapter describes how to set up the main board hardware, including instructions on setting jumpers and connecting peripherals, switches, and indicators. Be sure to read all the safety precautions before you begin the installation procedure.

# Locating Jumpers & Connectors



## Locating Jumpers & Connectors (Reverse side)

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# Jumpers and Connectors

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Connectors on the board link themselves to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your applications.

The following tables list the function of each jumper and connector.

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<b>Jumpers</b>	
<b>Label</b>	<b>Function</b>
JP1	LCD Voltage Select
JP2	RS-232/422/485 Select
JP3	RS-232/422/485 Select
JP4	PC/104+power I/O
JP5	Clear CMOS
JP6	Shift Clock Setting

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## Connectors




<b>Label</b>	<b>Function</b>
CN1	IDE Connector
CN2	TV-OUT Connector
CN3	FAN Connector
CN4	TTL LCD Connector
CN5	TTL LCD Connector
CN6	FDD Connector
CN7	Front Panel Connector
CN8	LVDS Channel2 Connector
CN9	Serial Port Connector (COM2)
CN10	Parallel Port Connector
CN11	LVDS Channel1 Connector
CN13	Audio Connector
CN14	RJ-45 Ethernet Connector
CN15	Power Connector
CN16	USB Connector
CN17	USB Connector
CN18	Serial Port Connector (COM1)
CN19	IrDA Connector
CN20	PS/2 Keyboard and Mouse Connector
CN21	VGA Connector
CN22	Compact Flash Socket
CN23	PME# Connector for PCM-3794
DIMM1	SODIMM Socket
PCI1	PC/104+ Connector

## LCD Voltage Select (JP1)





JP1	5V	3.3V
	1 	1 <input type="radio"/>
	2 	2 
	3 <input type="radio"/>	3 <input type="radio"/>

## RS232,RS422 & RS485 Select (JP2 & JP3)

JP2	RS232	RS422	RS485
1	 <input type="radio"/>	1 <input type="radio"/> 	1 <input type="radio"/> 
4	 <input type="radio"/>	4 <input type="radio"/> 	4 <input type="radio"/> 
7	 <input type="radio"/>	7 <input type="radio"/> 	7 <input type="radio"/> 
10	 <input type="radio"/>	10 <input type="radio"/> 	10 <input type="radio"/> 

JP3	RS232	RS422	RS485
1		1 <input type="radio"/> <input type="radio"/>	1 <input type="radio"/> <input type="radio"/>
3	<input type="radio"/> <input type="radio"/>	3 	3 <input type="radio"/> <input type="radio"/>
5	<input type="radio"/> <input type="radio"/>	5 <input type="radio"/> <input type="radio"/>	5 





## PC104+ Power I/O (JP4)

JP4	5V	3.3V
	1 	1 <input type="radio"/>
	2 	2 
	3 <input type="radio"/>	3 

## Clear CMOS (JP5)

You can use JP5 pin 1~3 to clear the CMOS data if necessary. To reset the CMOS data, set JP5 to 2-3 for just a few seconds, and then move the jumper cap back to 1-2.

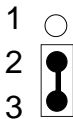
Clear CMOS (J5) Pin 1~3

	Protect*	Clear CMOS
JP5	1 	1 <input type="radio"/>
	2 	2 
	3 <input type="radio"/>	3 

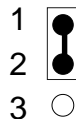
\*default

## LCD Shift Clock Select (JP6)

Shift Clock -



Shift Clock



## IDE Hard Drive Connector (CN1)

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You can attach one or two Enhanced Integrated Device Electronics hard disk drives to the Gene-6310 internal controller. The Gene-6310 IDE controller uses a PCI local-bus interface. This advanced interface supports faster data transfer.

### Connecting the hard drive

Connecting drives is done in a daisy-chain fashion and requires one of two cables, depending on the drive size.

Wire number 1 on the cable is normally red or blue, and the other wires are usually gray.

1. Connect one end of the cable to CN1, and make sure the red (or blue) wire corresponds to pin 1 on the connector, which is labeled on the board (on the right side).
2. Plug the other end of the cable to the Enhanced IDE hard drive, with pin 1 on the cable corresponding to pin 1 on the hard drives. (see your hard drive's documentation for the location of the connector).

Connect a second drive as described above.

Unlike floppy drives, IDE hard drives can connect to either end of the cable. If you install two drives, you will need to set one as the master and the other as the slave by using jumpers on the drives. If you install just one drive, set it as the master.

## IDE Hard Drive Connector (CN1)

Pin	Signal	Pin	Signal
1	IDE RESET	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	SIGNAL GND	20	NC
21	DREQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO CHANNEL READY	28	ALE
29	DACK#	30	GND
31	IRQ14	32	IOCS16
33	ADDR 1	34	NC
35	ADDR 0	36	ADDR 2
37	HARD DISK SELECT 0	38	HARD DISK SELECT 1
39	IDE ACTIVE	40	MGND
41	VCC	42	MVCC
43	GND	44	NC

## TV-Output Connector (CN2)

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The Gene-6310 has an 8-pin connector for supporting TV output function. The pin definition is listed below.

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### TV-Out Connector (CN2)

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Pin	Signal	Pin	Signal
1	LUMF	2	Composite
3	GND	4	GND
5	CHROMF	6	NC
7	GND	8	NC

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## FAN Connector (CN3)

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### FAN Connector (CN3)

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Pin	Signal
1	GND
2	FAN VCC
3	FAN Sensor

---



## TTL LCD Connector (CN4,CN5)

**TTL LCD Connector (CN4)**

Pin	Signal	Pin	Signal
1	5V	2	5V
3	GND	4	GND
5	3.3V	6	3.3V
7	ENABKL	8	GND
9	NC	10	NC
11	BLUE0	12	BLUE1
13	BLUE2	14	BLUE3
15	BLUE4	16	BLUE5
17	NC	18	NC
19	GREEN0	20	GREEN1
21	GREEN2	22	GREEN3
23	GREEN4	24	GREEN5
25	NC	26	NC
27	RED0	28	RED1
29	RED2	30	RED3
31	RED4	32	RED5
33	GND	34	GND
35	SHIFT CLK	36	FLM
37	DE	38	LP
39	NC	40	ENVEE

**TTL LCD Connector (CN5)**

Pin	Signal	Pin	Signal
1	GND	2	GND
3	BLUE10	4	BLUE11
5	BLUE12	6	BLUE13
7	BLUE14	8	BLUE15
9	GREEN10	10	GREEN11
11	GREEN12	12	GREEN13
13	GREEN14	14	GREEN15
15	RED10	16	RED11
17	RED12	18	RED13
19	RED14	20	RED15

## Floppy Drive Connector (CN6)

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### Floppy Drive Connector (CN6)

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Pin	Signal	Pin	Signal
1	GND	2	DENSITY SELECT0
3	GND	4	N.C.
5	GND	6	DENSITY SELECT1
7	GND	8	INDEX
9	GND	10	MOTOR A
11	GND	12	DRIVE SELECT B
13	GND	14	DRIVE SELECT A
15	GND	16	MOTOR B
17	GND	18	DIRECTION
19	GND	20	STEP
21	GND	22	WRITE DATA
23	GND	24	WRITE GATE
25	GND	26	TRACK 0
27	GND	28	WRITE PROTECT
29	GND	30	READ DATA
31	GND	32	HEAD
33	GND	34	DISK CHANGE

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## Front Panel Connector (CN7)

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1  ○ 2 HDDLED#/VCC

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3 ○ ○ 4 GND/PWR\_LED

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5 ○ ○ 6 ESMI#/GND (ESMI means the "external SMI")

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7 ○ ○ 8 RESETIN/GND (RESETIN means the "resetting")

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## LVDS Channel 1 Connector (CN11)

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### LVDS 1 Connector (CN11)

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Pin	Signal	Pin	Signal
1	+TXOUT1	2	-TXOUT1
3	GND	4	GND
5	+TXCLK	6	+TXCLK
7	GND	8	PPVCC
9	PPVCC	10	PPVCC
11	+TXOUT2	12	-TXOUT2
13	GND	14	GND
15	+TXOUT0	16	-TXOUT0
17	NC	18	NC
19	ENVDD	20	NC

## LVDS Channel 2 Connector (CN8)

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### LVDS 2 Connector (CN8)

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Pin	Signal	Pin	Signal
1	+TXOUT1	2	-TXOUT1
3	GND	4	GND
5	+TXCLK	6	+TXCLK
7	GND	8	PPVCC
9	PPVCC	10	PPVCC
11	+TXOUT2	12	-TXOUT2
13	GND	14	GND
15	+TXOUT0	16	-TXOUT0
17	NC	18	NC

## Serial Port / COM 2 (CN9)

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The Gene-6310 offers two serial ports, one RS-232 and one RS-232/422/485. These ports allow you to connect them to serial devices (mouse, printers, etc.).

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### COM2 (CN9)

PIN	Signal	PIN	Signal
1	CM2-1	2	CM2-2
3	CM2-3	4	CM2-4
5	GND	6	SDSRB2X
7	SRTSB2X	8	SCTSB2X
9	SRIB2X	10	N.C.

## Parallel Port Connector (CN10)

---

---

### Parallel Port Connector

Pin	Signal	Pin	Signal
1	STROBE	14	AFD
2	PTD0	15	ERROR
3	PTD1	16	INIT
4	PTD2	17	SLIN
5	PTD3	18	GND
6	PTD4	19	GND
7	PTD5	20	GND
8	PTD6	21	GND
9	PTD7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT	26	N.C.

---

## Audio Connector (CN13)

---

The Gene-6310 provides all major audio signals on a 14-pin flat-cable connector, CN13.

It offers the Mic-In, Line-In, and Audio-Out signal pins as shown in the following table.

---

### Audio Connector (CN13)

---

Pin	Signal	Pin	Signal
1	MIC In	2	MIC_Vcc
3	GND	4	CD_GND
5	Line In Left	6	CD_Left
7	Line In Right	8	CD_GND
9	GND	10	CD_Right
11	Audio Out Left	12	Audio Out Right
13	GND	14	GND

---

## 100Base-T Ethernet Connector (CN14)

---

This 100Base-T Ethernet connector is a standard RJ-45 connector. The onboard RTL8139C fast Ethernet controller supports 10Mb/s and 100 Mb/s N-way auto-negotiation operation.

---

### 100Base-Tx Ethernet connector (CN14)

---

Pin	Signal	Pin	Signal
1	TX+	9	N.C.
2	TX-	10	N.C.
3	RX+	11	GND
4	N.C.	12	GND
5	N.C.	13	ACTIVE LED
6	RX-	14	LINK LED
7	N.C.	15	+3.3 V
8	N.C.	16	SPEED LED

---

## Power Connector (CN15)

---

In single board computer (non-passive backplane) applications, you will need to connect the power to the Gene-6310 board using CN15. This connector is fully compatible with the standard PC power supply connector. Please check the following table for its pin assignment:

---

### Power Connector (CN15)

---

Pin	Signal
1	Vcc
2	GND
3	GND
4	+12V

---

## USB Connector (CN16, CN17)

---

The Gene-6310 has 4 USB (Universal Serial Bus) ports that provide complete functions to plug, play, hot attach, or detach for up to 127 external devices. The USB interfaces comply with USB specification Rev. 1.1 and can be disabled in the system BIOS setup.

---

### USB Connector (CN16, CN17)

---

Pin	Function	Pin	Function
1	D0VDD	2	GND
3	D0-	4	GND
5	D0+	6	D1+
7	GND	8	D1-
9	GND	10	D1VDD

---

## Serial Port / COM 1 (CN18)

---

The Gene-6310 offers two serial ports, one RS-232 and one RS-232C/422/485. These ports allow you to connect them to serial devices (mouse, printers, etc.).

---

### COM1 (CN18)

---

Pin	Signal	Pin	Signal
1	NDCD1	2	NRXD1
3	NTXD1	4	NDTR1
5	GND	6	NR11
7	NRTS1	8	NCTS1
9	NDSR1	10	N.C.

---

## IrDA Connector (CN19)

---

The IrDA connector (CN19) can be configured to support wireless infrared module. With this module and applications such as laplink or Win95/98 Direct Cable connection, user can transfer files to or from laptops, notebooks, PDA, and printers that also equip IrDa function. This connector supports HPSIR (115.2Kbps, 2 meters), ASK-IR (56Kbps), and Fast IR (4Mbps, 2 meters).

Install infrared module onto IrDA connector and enable infrared function from BIOS setup; moreover, make sure to have correct orientation when you plug onto IrDA connector (CN19).

---

### IrDA Connector (CN19)

---

Pin	Signal
1	Vcc
2	N.C.
3	IrRx
4	GND
5	IrTx

---

## PS/2 Keyboard and Mouse Connector (CN20)

---

The Gene-6310 provides a keyboard connector which supports both a keyboard and a PS/2 style mouse. In most cases, especially in embedded applications, a keyboard is not used. The standard PC/AT BIOS will report an error or fail during power-on-self-test (POST) after a reset if the keyboard is not present. The mainboard BIOS Advanced Setup Menu can let you select "Present" or "Absent" under the "System Keyboard" section, allowing no-keyboard operation in the applications of embedded system and won't cause the system halting under POST.

---

### PS/2 Keyboard and Mouse Connector (CN20)

---

Pin	Signal
1	KB DATA
2	MS DATA
3	GND
4	Vcc
5	KB CLOCK
6	MS CLOCK
7	N.C.
8	N.C.

---



## VGA Connector (CN21)

---

The Gene-6310 can drive conventional CRT displays and is capable of driving a wide range of flat panel displays, including electroluminescent (EL), gas plasma, passive LCD, and active LCD displays. In other words, the board has two connectors to support these displays, one for standard CRT VGA monitor and the other for any one of the flat panel displays.

---

### VGA Connector (CN20)

---

<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	Red	9	VGA VCC
2	Green	10	GND
3	Blue	11	NC
4	NC	12	SDA
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	SCL
8	GND		

---

## Compact Flash Connector (CN22)

Compact Flash Connector (CN22)			
Pin	Signal	Pin	Signal
1	GND	26	GND
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CS#1	32	CS#3
8	GND	33	GND
9	GND	34	IO READ
10	GND	35	IO WRITE
11	GND	36	+5V
12	GND	37	IRQ15
13	+5V	38	+5V
14	GND	39	CSEL
15	GND	40	N.C.
16	GND	41	IDERESET
17	GND	42	IOREADY
18	ADDR2	43	N.C.
19	ADDR1	44	+5V
20	ADDR0	45	DASP
21	DATA0	46	DIAG
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	N.C.	49	DATA10
25	GND	50	GND

## **PME# Connector (CN23)**

---

This connector can show the power management events of PCM-3794 (PC/104+ expansion interface, made by AAEON) which is connected to Gene-6310 to provide the function of "Hot Swap".

---

### **PME# Connector for PCM-3794 (CN23)**

---

<b>Pin</b>	<b>Signal</b>
1	N.C.
2	GND
3	PME#
4	SMBDATA
5	SMBCLK

---

# CHAPTER 3

## ***Award BIOS Setup***

This chapter describes how to configure the BIOS for the system.

## Starting Setup

---

The Award BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration information in CMOS RAM and begins the process of checking out the system and configuring it through the power-on self test (POST).

When these preliminaries are finished, the BIOS seeks an operating system on one of the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands control of system operations to it.

During POST, you can start the Setup program in one of two ways:

1. By pressing Del immediately after switching the system on, or
2. By pressing Del or pressing Ctrl-Alt-Esc when the following message appears briefly at the bottom of the screen during POST:

TO ENTER SETUP BEFORE BOOT PRESS DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the RESET button on the system case. You may also restart by simultaneously pressing Ctr-Alt-Del. If you do not press the keys at the correct time and the system does not boot, an error message appears and you are again asked to

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

# Setup Keys

---

These keys help you navigate in Award BIOS:

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc	Main Menu: Quit and not save changes into CMOS RAM Other pages: Exit current page and return to Main Menu
PgUP/+	Increase the numeric value or make changes
PgDn/-	Decrease the numeric value or make changes
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2	Item Help
F3	Reserved
F4	Reserved
F5	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6	Load the default CMOS RAM value from BIOS default table, only for Option Page Setup Menu
F7	Load the default
F8	Reserved
F9	Reserved
F10	Save all the CMOS changes, only for Main Menu

## Getting Help

---

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

### In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the **Award BIOS** supports an override to the CMOS settings that resets your system to its default configuration.

You can invoke this override by immediately pressing Insert; when you restart your computer. You can restart by either using the ON/OFF switch, the RESET button or by pressing Ctrl-Alt-Delete.

The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset screen without a good reason. The Chipset defaults have been carefully chosen by Award Software or your system manufacturer for the best performance and reliability. Even a seemingly small change to the Chipset setup may cause the system to become unstable.

# Main Setup Menu

---



## Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

## Advanced BIOS Features

Use this menu to set the advanced features available on your system.

## Advanced Chipset Features

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

## Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

## Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring, KB wake up, etc.)



## **PnP/PCI Configuration**

This entry appears if your system supports PnP/PCI.

## **PC Health Status**

This menu allows you to set the shutdown temperature for your system.

## **Frequency/Voltage Control**

Use this menu to specify your settings for frequency/ voltage control.

## **Load Fail-Safe Defaults**

Use this menu to load the BIOS default values for the minimal/ stable performance for your system to operate.

## **Load Optimized Defaults**

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

## **Set Supervisor Password**

Use this menu to set Supervisor Passwords.

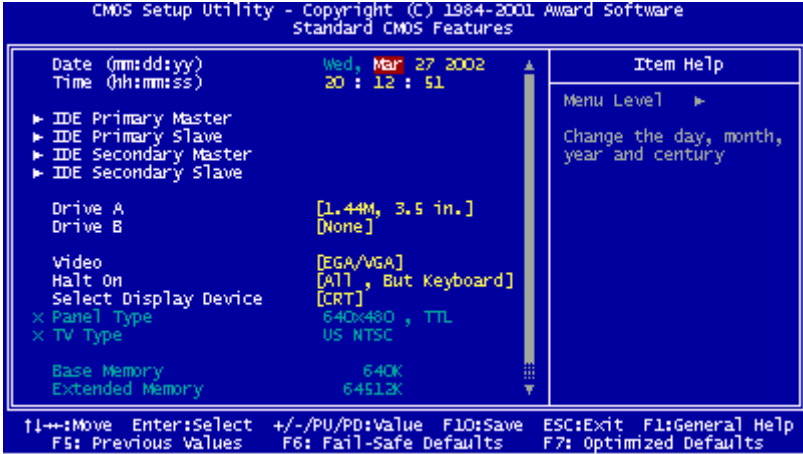
## **Save and Exit Setup**

Save CMOS value changes to CMOS and exit setup.

## **Exit Without Saving**

Abandon all CMOS value changes and exit setup.

# Standard CMOS Features



This standard setup menu allows users to configure system components such as the date, time, hard disk drive, floppy drive, display, and memory. Online help for each field can be accessed by pressing F1.

## Date and Time Configuration

The BIOS determines the day of the week from the other date information. This field is for information only.

Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp/- or PgDn/+ key to increment the setting, or type the desired value into the field.

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00 hours. Press the left or right arrow key to move to the desired field. Press the PgUp/- or PgDn/+ key to increment the setting, or type the desired value into the field.

## HARD DISKS

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

*NOTE: We recommend that you select type AUTO for all drives.*

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1. **NONE**- No drive type to be selected
2. **Manual**-This will allow you to manually set the drive type you are using in your system. (See Below)

### **ACCESS Mode:** Auto, Large, CHS or LBA

- **Auto:** The BIOS automatically determines the optimal mode.
- **CHS:** This allows the user to enter their own hardware values
- **Large:** For drives that do not support LBA and have more than 1024 cylinders.
- **LBA** (Logical Block Addressing): During drive access, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

Here is a brief explanation of drive specifications:

**Type:** The BIOS contains a table of predefined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any predefined type are classified as type USER.

**Size:** Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

**Cyls:** Number of cylinders

**Head:** Number of heads

**Precomp:** Write precompensation cylinder

**Landz:** Landing zone

**Sector:** Number of sectors

## Drive A

## Drive B

Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 mega byte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 mega byte capacity

## Video

Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in Setup.

EGA/VGA Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA, or PGA monitor adapters.

CGA 40 Color Graphics Adapter, power up in 40 column mode

CGA 80 Color Graphics Adapter, power up in 80 column mode

MONO Monochrome adapter, includes high resolution monochrome adapters

## Halt On

During the power-on-self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process.

**The choices: All,But Keyboard; All,But Diskette; All,But Disk/Key; All Errors; No Errors.**

## Select Display Device

GENE-6310 can be used with various visual display peripherals. It can also display the same image on a CRT and LCD monitor simultaneously. This function allows the end user to select the type of visual display peripheral they are incorporating with the GENE-6310 single board computer.

**The choices: LCD, CRT, LCD+CRT, TV, and CRT+TV**

## Panel Type

GENE-6310 can be used with various display panels. Please select the type of panel you are incorporating with our single board computer. Consult your panel manual for detail information.

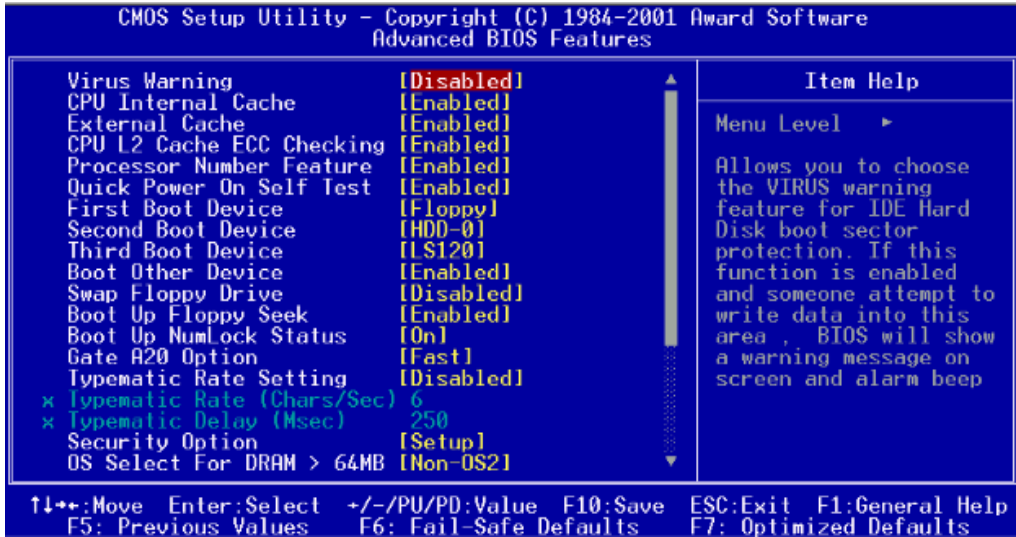
**The choices: 640x480 TTL, 800x600 TTL, 1024x768 TTL, 1024x768 1ch LVDS.**

## TV Type

Phase Alternation Line (PAL) is the analog television display standard that is used in Europe and certain other parts of the world. PAL is one of the three major TV standards together with the American National Television Systems Committee (NTSC) color television system and the French Sequential Couleur avec Memoire (SECAM). NTSC is also used in Japan. SECAM is used in countries of the former Soviet Union.

**The choices: US NTSC, PAL, Disable**

# Advanced BIOS Features



The displayed configuration is based on the manufacturer's SETUP DEFAULTS settings.

## Virus Warning

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

*NOTE: Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you first disable the virus warning.*

**The choices: Enabled, Disabled.**

## **CPU Internal Cache/External Cache**

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. The External Cache field may not appear if your system does not have external cache memory.

**The choices: Enabled, Disabled.**

## **CPU L2 Cache ECC Checking**

When you select Enabled, memory checking is enable when the external cache contains ECC SRAMs.

**The choices: Enabled, Disabled.**

## **Processor Number Feature**

This option is for Pentium III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the serial number.

**The choices: Enabled, Disabled.**

## **Quick Power On Self Test**

Select Enabled to reduce the amount of time required to run the power-on-self-test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work.

**The choices: Enabled, Disabled.**

## **First/Second/Third Boot Device**

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

**The choices: Floppy, LS120, HDD0, HDD1, HDD2, HDD3, SCSI, CDROM, LAN, Disabled.**



## Boot Other Device

If your boot device is not included in the following choices Floppy, LS120, HDD0, HDD1, HDD2, SCSI, CDROM, you may **set First/Second/Third Boot devices to Disable** and **enable the BOOT Other Device function**. The system will automatically boot the other device.

**The choices: Enabled, Disabled.**

## Swap Floppy Drive

This field is effective only in systems with two floppy drives. Selecting enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

**The choices: Enabled, Disabled.**

## Boot Up Floppy Seek

When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 720 KB, 1.2 MB, and 1.44 MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to Disabled to save time.

**The choices: Enabled, Disabled.**

## Boot Up NumLock Status

Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.

**The choices: On, Off.**

## Gate A20 Option

Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

**The choices: Fast, Normal.**

## Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

**The choices:** Enabled/Disabled

## Typematic Rate

When the typematic rate setting is enabled, you can select a typematic rate ( the rate at which character repeats when yu hold down a key) of 6, 8, 10, 12, 15, 20, 24, 30.

## Typematic Delay

When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.

## Security Option

If you have set a password, select whether the password is required every time the System boots, or only when you enter Setup.

**The choices:** Setup, Sysytem.

## OS Select For DRAM>64MB

Select the operating system that is running with greater than 64MB or RAM on the system.

**The choices:** Non-OS2, OS2.

## Report No FDD For WIN 95

Report no FDD for Win 95 or not.

**The choices:** Yes, No.

## Shadow

Software that resides in a read only memory (ROM) chip on a device is called firmware. The Award BIOS permits shadowing of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals such as, for example, a SCSI adaptor.

Shadowing copies firmware from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM bus. Firmware not shadowed must be read by the system through the 8-bit X-bus. Shadowing improves the performance of the system BIOS and similar ROM firmware for expansion peripherals, but it also reduces the amount of high memory (640 KB to 1 MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardwire shadowing of the system BIOS and eliminate a System BIOS Shadow option.

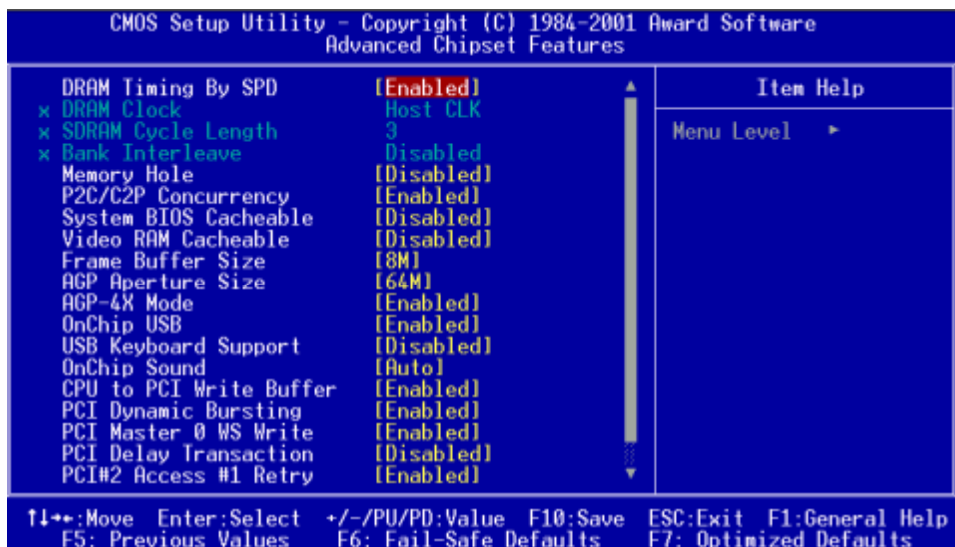
Video BIOS shadows into memory are C0000-C7FFF. The remaining areas shown on the BIOS Features Setup screen may be occupied by other expansion card firmware. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

**The choices: Enabled, Disabled.**

## Small Logo (EPA) Show

**The choices: Enabled, Disabled.**

## Advanced Chipset Features



### DRAM Timing By SPD

This item allows you to select the value in this field, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs.

**The choices:** Enabled, Disabled.

### DRAM Clock

This item allows you to control the DRAM speed.

**The choice:** Host Clock, HCLK-33M, HCLK+33M.

### SDRAM Cycle Length

This field sets the CAS latency timing.

**The choices:** 3, 2.

## **Bank Interleave**

**The choices: 2 Bank, 4 Bank, Disabled.**

## **Memory Hole**

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory.

**The choices: 15M-16 M, Disabled.**

## **P2C/C2P Concurrency**

This item allows yo to enable/disable the PCI to CPU, CPU to PCI concurrency.

**The choices: Enabled, Disabled.**

## **System BIOS Cacheable**

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

**The choices: Enabled, Disabled.**

## **Video RAM Cacheable**

**The choices: Enabled, Disabled.**

## **Frame Buffer Size**

**The choices: 2M, 4M, 8M, 16M, 32M.**

## **AGP Aperture Size**

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

**The choices: 4M, 8M, 16M, 32M, 64M, 128M.**

## **AGP-4X Mode**

Enable 4X mode will enhance your system performance.

**The choices: Enabled, Disabled.**

## **OnChip USB**

Select enabled if your system contains a Universal Serial Bus controller and you have a USB keyboard. If you disable this function you will not be able to access the USB Keyboard Support below.

**The choices: Enabled, Disabled.**

## **USB Keyboard Support**

Select enabled if your system contains a Universal Serial Bus controller and you have a USB keyboard.

**The choices: Enabled, Disabled.**

## **OnChip Sound**

This item allows you to control the onboard VIA 1611 audio.

**The choices: Auto, Disabled.**

## **CPU to PCI Write Buffer**

When this field is enabled, writes from the CPU to the PCI bus are buffered, to compensate for the speed differences between the CPU and PCI bus. When disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.

**The choices: Enabled, Disabled.**

## **PCI Dynamic Bursting**

When enabled, every write transaction goes to the write buffer. Burstable transactions then burst on the PCI bus and nonburstable transactions do not.

**The choices: Enabled, Disabled.**

## **PCI Master 0 WS Write**

When enabled, writes to the PCI bus are executed with zero wait states.

**The choices: Enabled, Disabled.**

## **PCI Delay 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 2.1.

**The choices: Enabled, Disabled.**

## **PCI#2 Access #1 Retry**

When disabled, PCI#2 will be connected until access finishes (default). When enabled, PCI#2 will be disconnected if max retries are attempted without success.

**The choices: Enabled, Disabled.**

## **AGP Master 1 WS Write**

System will run single wait state delay before write data from buffer, if user set to disable system will run twice wait states system can stable.

**The choices: Enabled, Disabled.**

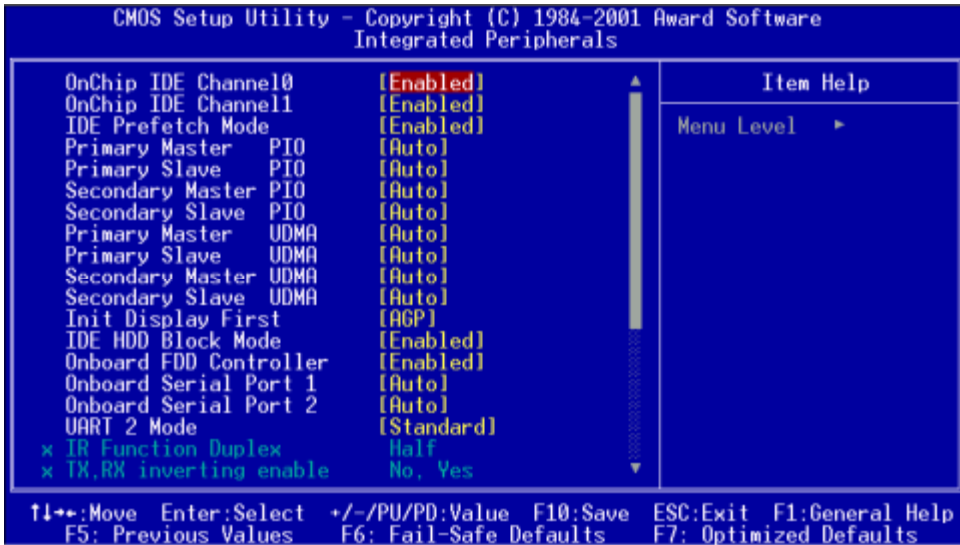
## **AGP Master 1 WS Read**

System will run single wait state delay before read data from buffer, if user set to disable system will run twice wait states so system can stable.

**The choices: Enabled, Disabled.**



# Integrated Peripherals



## On-Chip IDE Channel 0

The system chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface. **The choices: Enabled, Disabled.**

## On-Chip IDE Channel 1

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the secondary IDE interface. Select Disabled to deactivate this interface.

**The choices: Enabled, Disabled.**

## IDE Prefetch Mode

The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and or secondary add in IDE interface, set this field to Disabled if the interface does not support prefetching.

**The choices: Enabled, Disabled.**

## **Primary/Secondary Master/Slave PIO**

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

**The choices: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.**

## **Primary/Secondary Master/Slave UDMA**

Ultra DMA33/66 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 IDE Cable both support Ultra DMA 33/66 select Auto to enable BIOS support.

**The choices: Auto, Disable.**

## **Init Display First**

This item allows you to active PCI slot or onboard first.

**The choices: PCI Slot, AGP.**

## **IDE HDD Block Mode**

Select Enabled only if your hard drives support block mode.

**The choices: Enabled, Disabled.**

## Onboard FDD 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 an add-in FDC or the system has no floppy drive, select Disabled in this field. **The choices: Enabled, Disabled.**

## Onboard Serial Port (1, 2)

Normally, the main board I/O chips will occupy a certain portion of memory space. For each I/O device the computer provides an I/O address. The more devices attached the more address needed to organize the memory storage areas. If all the I/O devices were run through the same address, your devices would come to a near halt. By providing the end user with four serial ports this allows devices to run more efficiently if needed. Also the corresponding interrupt needs to be selected.

Selections of logical COM port addresses are as follows. ( 3F8/IRQ4, 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3)

**The choices: Enabled, Disabled.**

## UART 2 Mode

Select an operating mode for the second serial port:

<b>Normal</b>	RS-232C serial port
<b>Standard</b>	RS-232C serial port
<b>IrDA 1.0</b>	Infrared port compliant with IrDA 1.0 specification
<b>IrDA SIR</b>	IrDA-compliant serial infrared port
<b>IrDAMIR</b>	1 MB/sec infrared port
<b>IrDA FIR</b>	Fast infrared standard
<b>FIR</b>	Fast Infrared standard
<b>MIR 0.57M</b>	0.57-MB/sec infrared port
<b>MIR 1.15M</b>	1.15-MB/sec infrared port
<b>Sharp IR</b>	4-MB/sec data transmission

<b>HPSIR</b>	IrDA-compliant serial infrared port
<b>ASKIR</b>	Amplitude shift keyed infrared port

## **IR Function Duplex**

Select the value required by the IR device connected to the IR port. Full duplex mode permits simultaneous two direction transmission. Half duplex mode permits transmission in one direction only at a time.

**The choices: Full, Half.**

## **TX, RX inverting enable**

Consult your IR peripheral documentation to select the correct setting . **The choices: Yes/No, Yes/Yes, No/Yes, No/No.**

## **Onboard Parallel Port**

Select a logical LPT port address and corresponding interrupt for the physical parallel port

**The choices: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, disabled**

## **Onboard Parallel Mode**

Two bidirectional parallel ports.

Supports Normal, ECP, EPP, ECP + EPP.

**The choices: Normal, EPP, ECP, ECP/EPP .**

## **ECP Mode Use DMA**

Select a DMA channel for the port.

**The choices: 3,1.**

## **Parallel Port EPP Type**

Select EPP port type 1.7 or 1.9. **The choices: EPP1.9, EPP1.7.**

## **Onboard Legacy Audio**

Onboard Legacy Audio can be set as enabled or disabled. However disabling the Legacy Audio will render the functions listed below useless. **The choices: Enabled, Disabled.**

## **Sound Blaster**

The on board Sound Blaster can be configured as enable or disable. **The choices: Enabled, Disabled.**

## **SB I/O Base Address**

Select a base I/O address for the Sound Blaster interface.

**The choices: 220H, 240H, 260H, 280H.**

## **SB IRQ Select**

Select a IRQ to use for the on board sound blaster.

**The choices: IRQ 5, IRQ 7, IRQ 9, IRQ 10.**

## **SB DMA Select**

Select a DMA address to use for the on board sound blaster.

**The choices: DMA0, DMA1, DMA2, DMA3.**

## **MPU-401**

Select enabled to configure the MPU-401 interface.

**The choices: Enabled, Disabled.**

## **MPU-401 I/O Address**

Select a base I/O address for the MPU-401 interface. **The choices: 330/333H, 300/303H, 310/313H, 320/323H.**

# Power Management Setup

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software  
Power Management Setup

▶ Power Management	[Press Enter]	Item Help
PM Control by APM	[Yes]	
Video Off Option	[Suspend -> Off]	Menu Level ▶
Video Off Method	[V/H SYNC+Blank]	

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

## 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

### Maximum Saving

1. HDD - 1~15 minutes or Disable
2. Doze Mode - 1 Minute
3. Suspend Mode - 1 Minute

### **Minimum Saving**

1. HDD - 1~15 minutes or Disable
2. Doze Mode - 1 Hour
3. Suspend Mode - 1 Hour

### **User Define**

1. HDD - 1~15 minutes or Disable
2. Doze Mode - 1 min, 2 min, 4 min, 6 min, 8 min, 10 min, 20 min, 30 min, 40 min, 1 hour.
3. Suspend Mode - 1 min, 2 min, 4 min, 6 min, 8 min, 10 min, 20 min, 30 min, 40 min, 1 hour.

## **PM Control by APM**

If advanced power management is installed on your system, selecting Yes gives better power savings.

**The choices: Yes, No.**

## **Video Off Option**

Select the power saving modes during which the monitor goes blank.

<b>Always on</b>	Monitor remains on during power saving modes.
<b>Suspend-Off</b>	Monitor blanked when system enters suspension mode.
<b>Suspend, standby-Off</b>	Off monitor blanked when system enters either suspend or standby mode.
<b>All Modes-Off</b>	Monitor blanked when system enters any power saving mode.

## 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



# PnP/PCI Configurations

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software PnP/PCI Configurations		
PNP OS Installed	[No]	Item Help
Reset Configuration Data	[Disabled]	
Resources Controlled By	[Auto(ESCD)]	Menu Level ▶  Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices.
x IRQ Resources	Press Enter	
x DMA Resources	Press Enter	
PCI/VGA Palette Snoop	[Disabled]	
Assign IRQ For VGA	[Enabled]	
Assign IRQ For USB	[Enabled]	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

## PNP OS Installed

Select Yes if the system operating environment is Plug and Play aware, for example Windows 95.

Select No if you need the BIOS to configure non-boot devices.

**The choices: No, Yes.**

## 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 can not boot.

**The choices: Enabled, Disabled**

## **Resources Controlled By**

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

## **IRQ Resources**

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

## **DMA Resources**

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

## **PCI/VGA Palette Snoop**

Leave this field at Disabled. **The choices: Enabled, Disabled.**

## **Assign IRQ for VGA**

**The choices: Enabled, Disabled.**

## **Assign IRQ for USB**

**The choices: Enabled, Disabled.**

## PC Health Status

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software PC Health Status	
Current CPU Temp. Current CPUFAN Speed Vcore 2.5V 3.3V 5V 12V	Item Help Menu Level ▶

### PC Health Status

Your system does not allow you to alter any of the setting in this menu. The system engineer has already designated the correct setting for Gene-6310.

## Frequency/Voltage Control

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software Frequency/Voltage Control	
Auto Detect DIMM/PCI Clk [Enabled] Spread Spectrum Modulated [Disabled]	Item Help Menu Level ▶

### Auto Detect DIMM/PCI CLK

This item allows you to enable/disable auto detect DIMM/PCI clock.

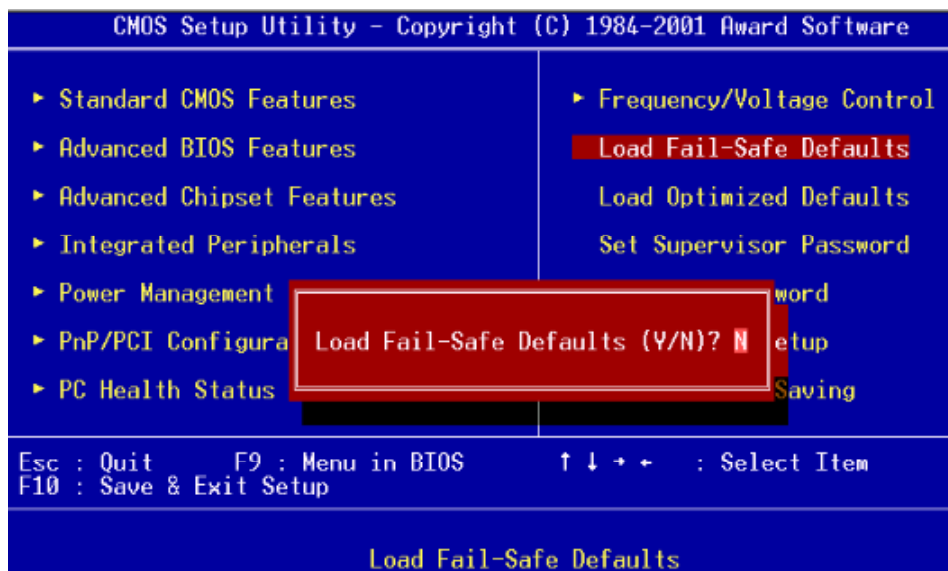
**The choices: Enabled, Disabled.**

### Spread Spectrum Modulated

This allows you to enable/disable the spread spectrum modulate. When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme pulse spikes to flat curves thus reducing EMI.

**The choices: . 25%, . 50%, Disabled.**

## Load Fail-Safe Defaults



### Load Fail-Safe Defaults

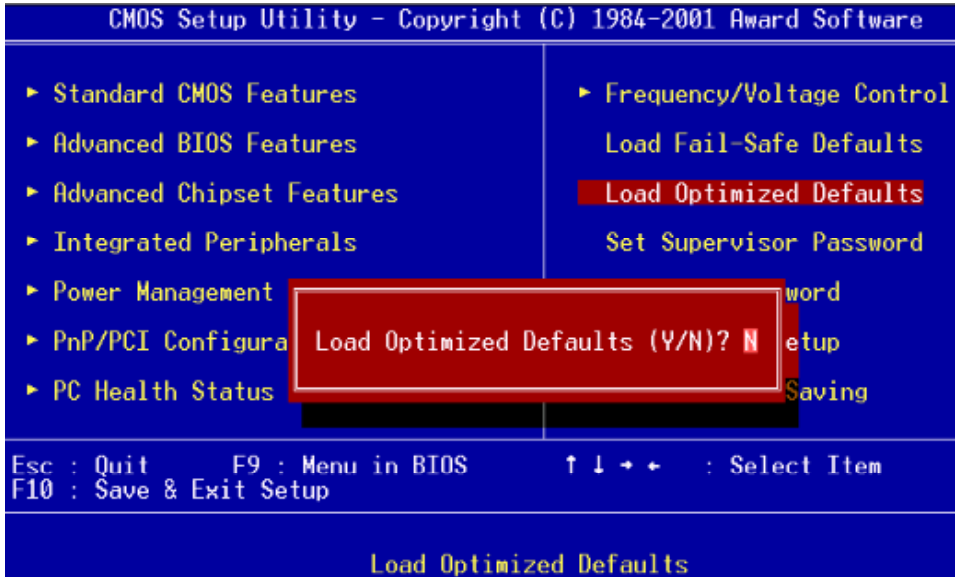
When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Default (Y/N)?

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

## Load Optimized Default

---



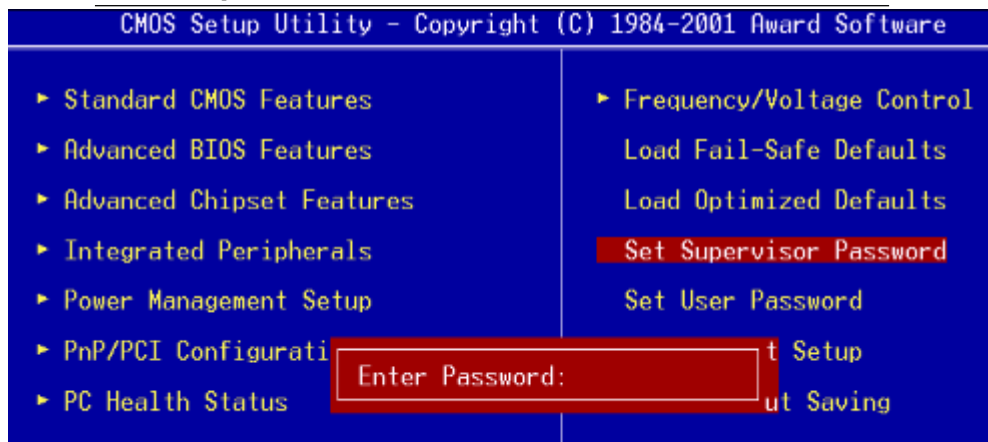
### Load Optimized Default

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

Load Optimized Defaults (Y/N)?

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

## Set Supervisor Password



When you select this function, a message appears at the center of the screen:

**ENTER PASSWORD:**

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory.

Now the message changes:

**CONFIRM PASSWORD:**

Again, type the password and press Enter.

To abort the process at any time, press Esc.

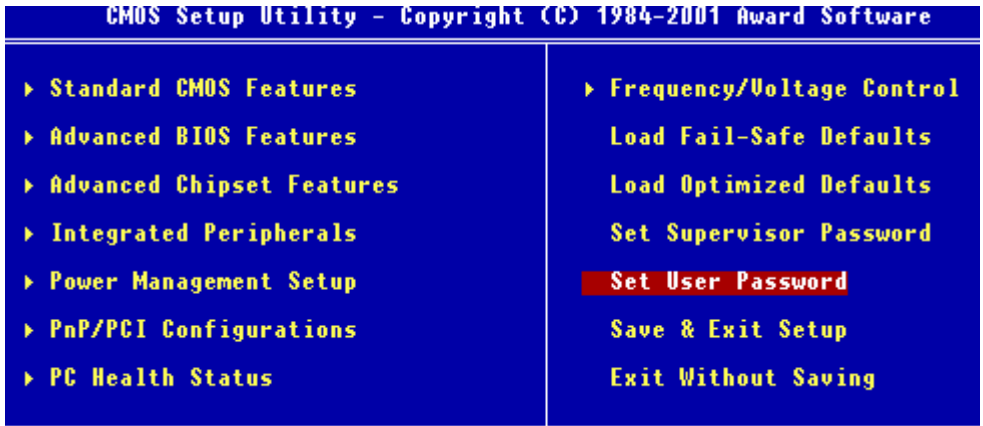
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

**System** Enter a password each time the system boots and when ever you enter Setup.

**Setup** Enter a password when ever you enter Setup.

***NOTE:** To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.*

## Set User Password



When you select this function, a message appears at the center of the screen:

**ENTER PASSWORD:**

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory.

Now the message changes:

**CONFIRM PASSWORD:**

Again, type the password and press Enter.

To abort the process at any time, press Esc.

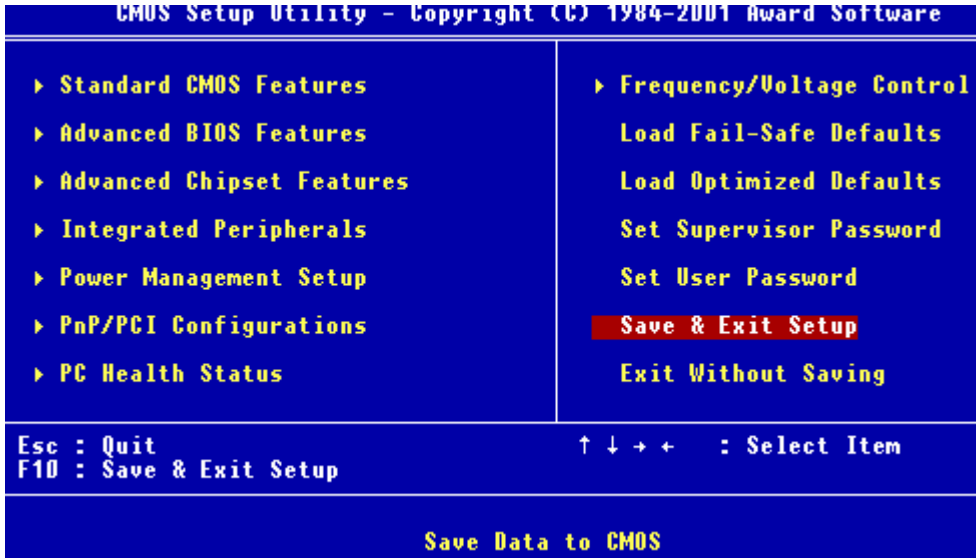
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

**System** Enter a password each time the system boots and when ever you enter Setup.

**Setup** Enter a password when ever you enter Setup.

**NOTE:** To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.

## Save to CMOS and EXIT



## Save to CMOS and EXIT

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and Exit (Y/N)?

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



### Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit Without Saving (Y/N)?

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.

# CHAPTER 4

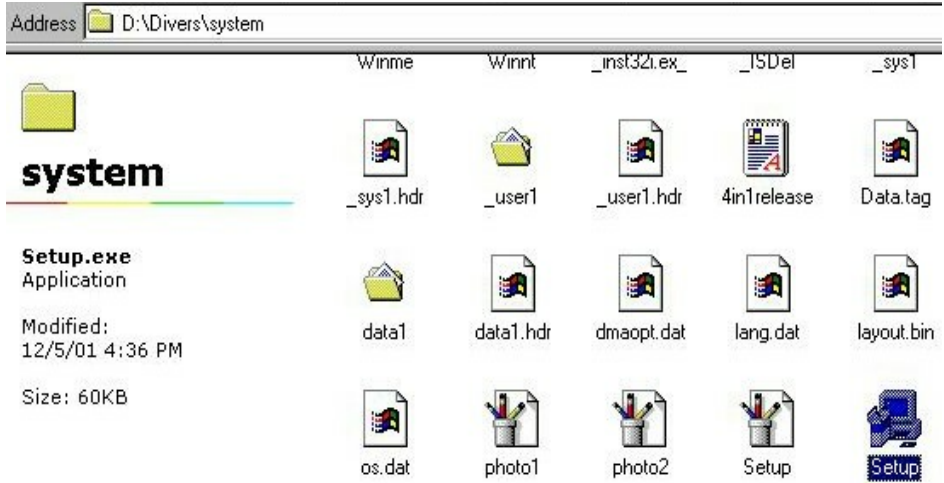
## ***Drivers Installation***

This Gene-6310 is equipped with an audio, VGA and LAN interface. This chapter provides instructions for installing the software drivers on these peripherals.

# System Driver Installation for Windows OS

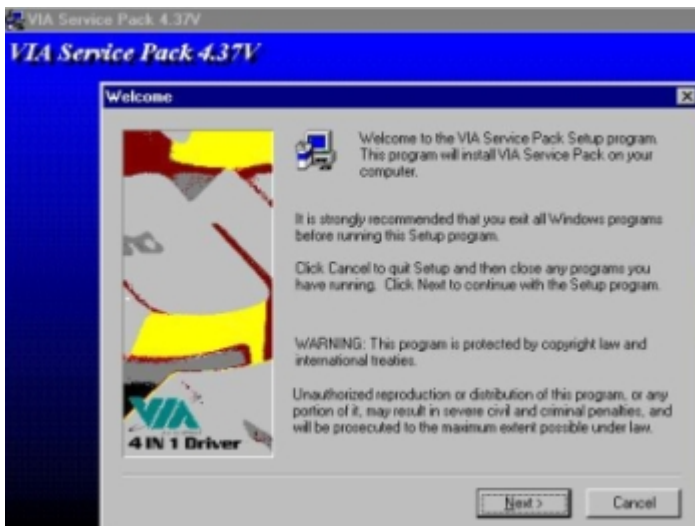
**\*The system driver installation procedure must be performed first. \***

1. Insert the **Gene-6310 CD Diskette** into the CD ROM Drive.
2. Select the **Drivers/system** file to click the Setup icon.

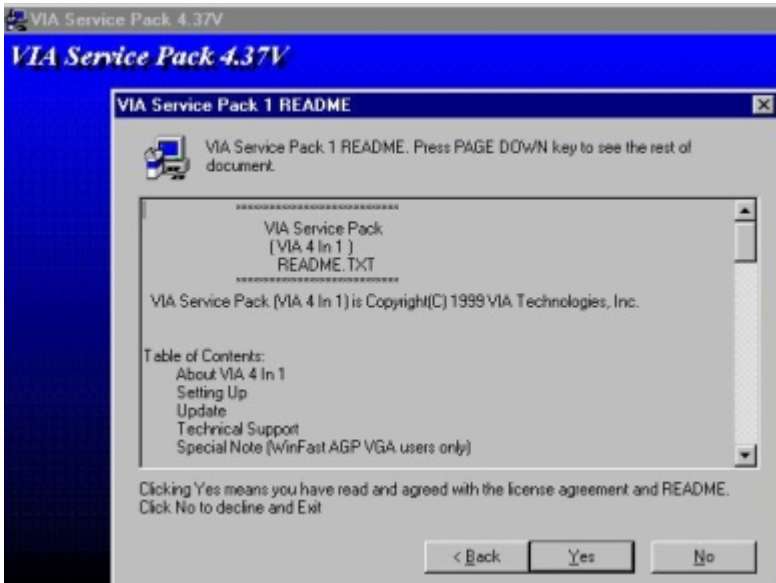


A driver installation box will appear,

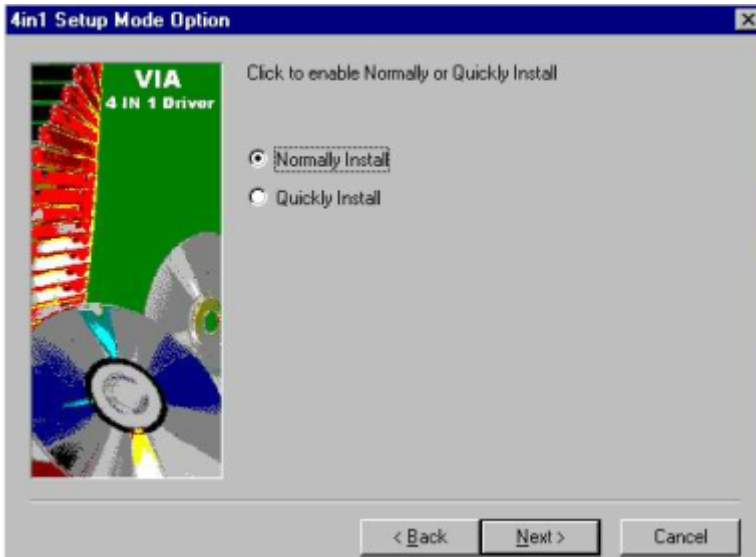
3. Click **Next**.



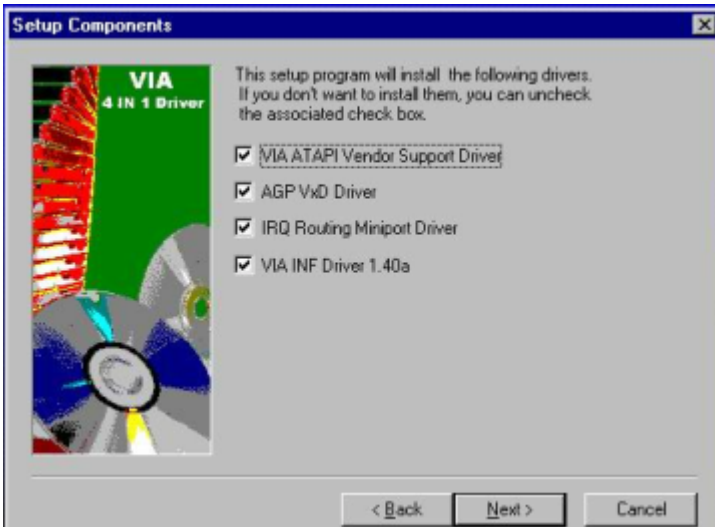
4. Click **Yes**.



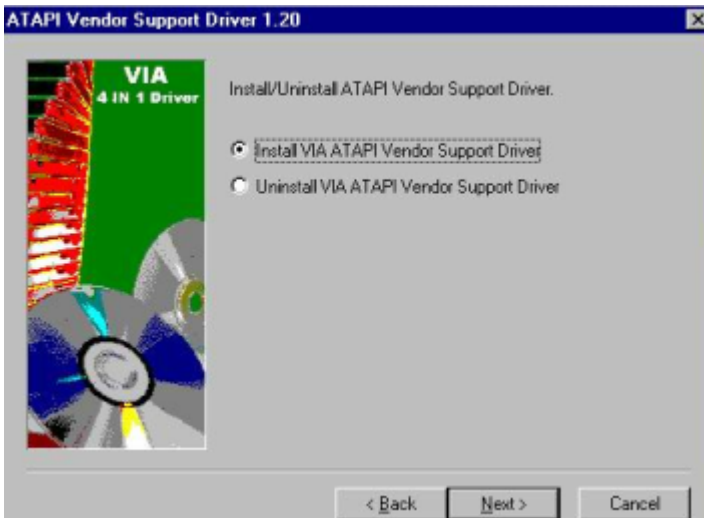
5. Select **Normally Install**, and then click **Next**



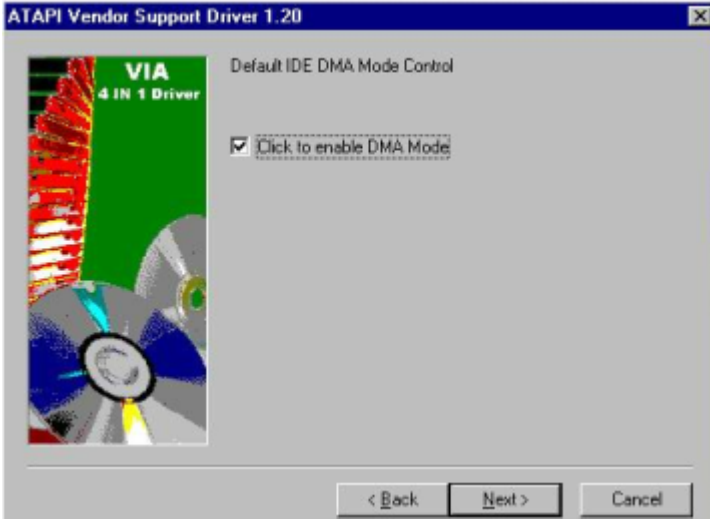
6. Remain the default setting, and then click **Next**.



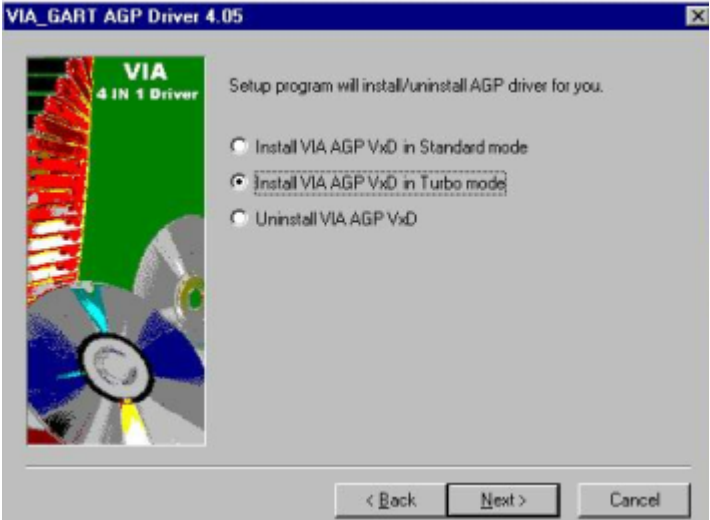
7. Still click **Next**.



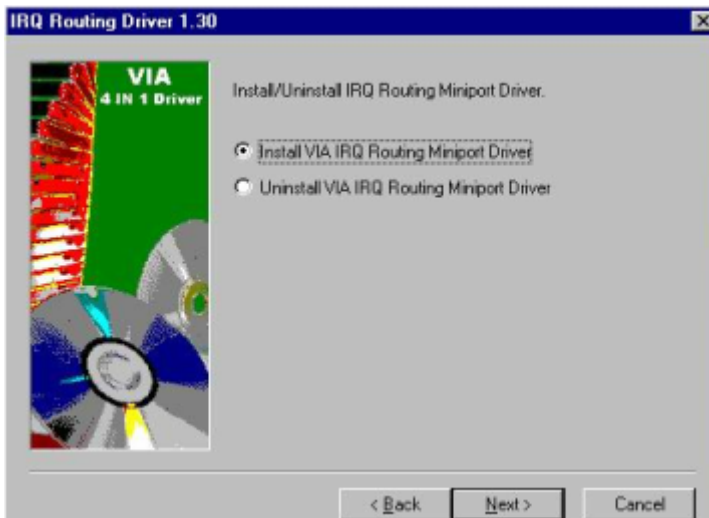
8. As the following picture, click **Next**.



9. Select **Install VIA AGP VxD in Turbo Mode**, and click **Next**.



10. Click **Next**.



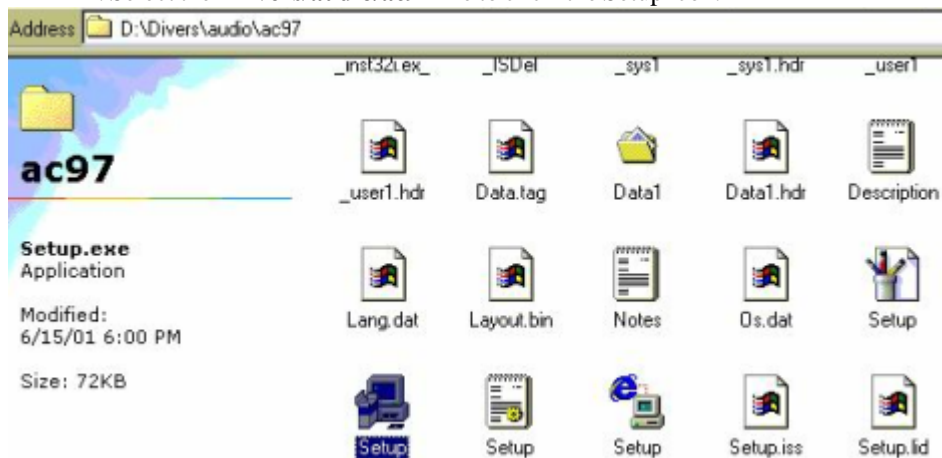
11. Click **Finish**.



Installation process is complete and allows the system to reboot.

## Audio Driver Installation

1. Insert the **Gene-6310 CD Diskette** into the CD ROM Drive.
2. Select the **Drivers/audio/ac97** file to click the Setup icon.



A driver installation box will appear,

3. Click **Next**.





4. Select **Install Driver**, and then click **Next**.



5. Click **Finish**.



Installation process is complete and allows the system to reboot.

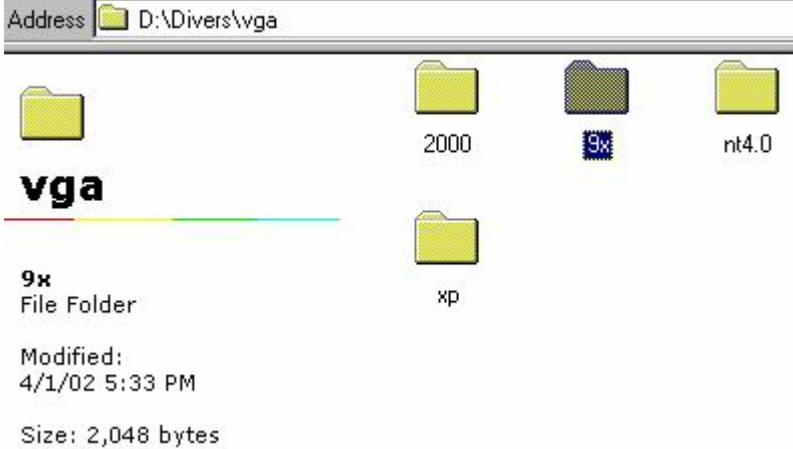
# VGA Driver Installation

---

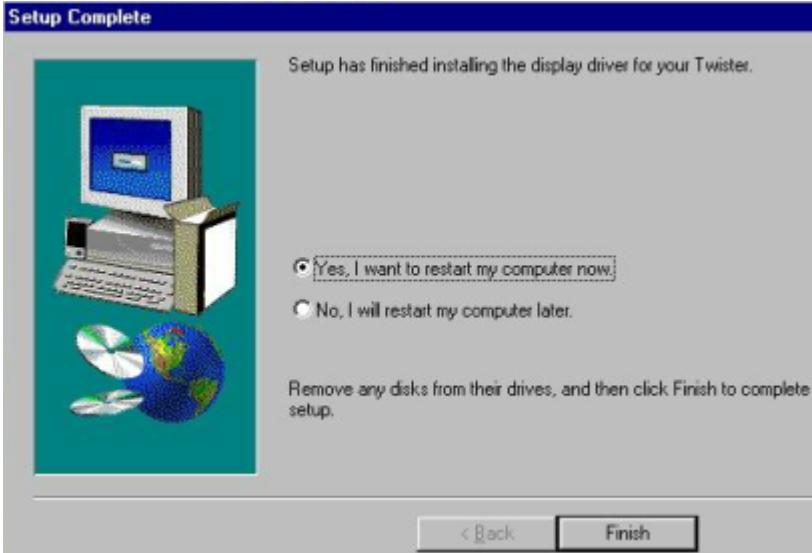
1. Insert the **Gene-6310 CD Diskette** into the CD ROM Drive.
2. Select the **Drivers/vga/9x** file to click on the set up icon.

*Notice: We take the VGA installation under Windows 98 for example here, please choose the file depending on your Windows OS.*

---



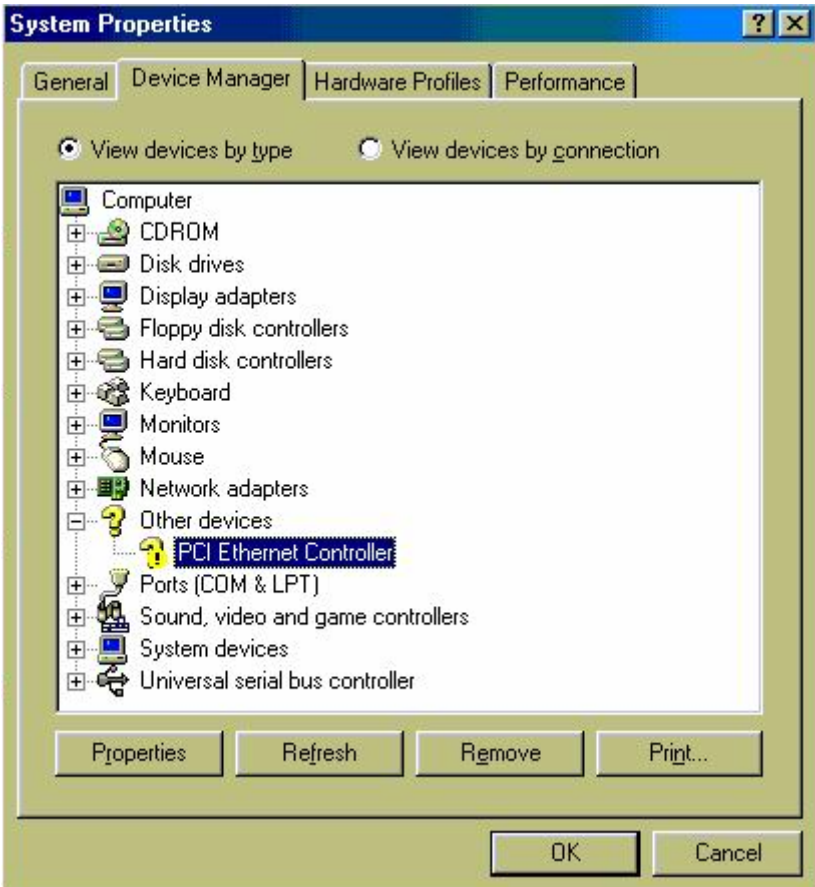
A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence.



3. At last, click **Finish**.  
Installation process is complete and allows the system to reboot.

# Ethernet Driver Installation

1. Insert the **Gene-6310 CD Diskette** into the CD ROM Drive.
2. Click the **Start** button.
3. Select the **Settings** item.
4. Click the **Control Panel** item.
5. Select the **Systems** icon to open the **System Properties** box.
6. Click the **Device Manager** tab.
7. Select the **Network adapters** item.

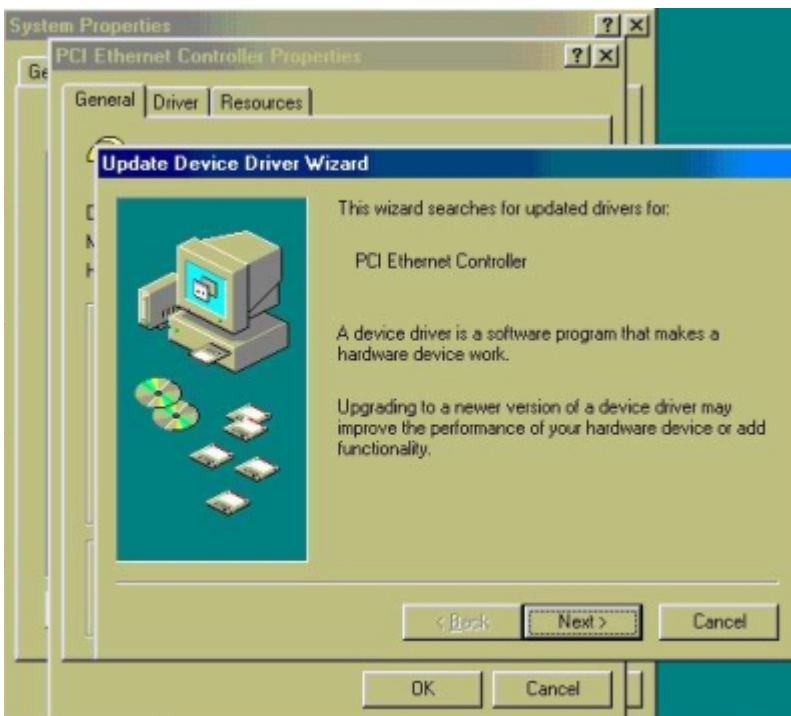


Another file will appear below this file, and then click on the file,

8. Click the **Driver** Tab.

9. Click the **Update Driver** Button.

The **Update Device Driver Wizard** will appear,



10. Click **Next**.



11. Select CD ROM drive, **D/Drivers/lan/Win98**, and click **Next**.  
*Notice: We take the LAN installation under Windows 98 for example here, please choose the file depending on your Windows OS.*



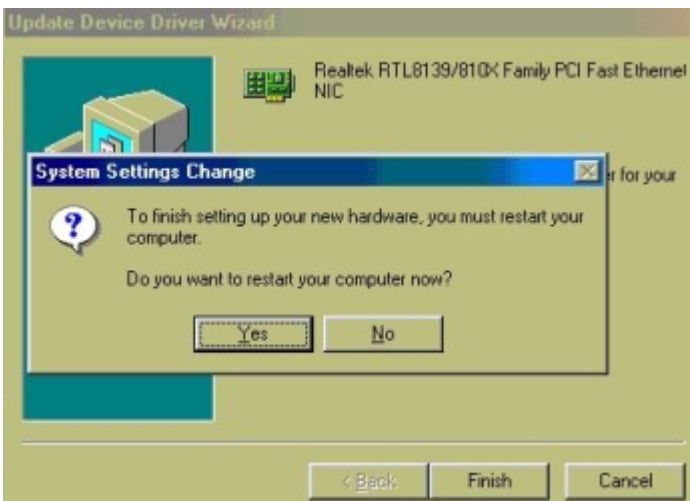
12. Click **Next**.



13. Click **Finish**.



Installation process is complete shutdown the computer and will allow the system to reboot



## ***Programming the Watchdog Timer***

The mainboard is equipped with a watchdog timer that resets the CPU or generates an interrupt if processing comes to a standstill for whatever reason. This feature ensures system reliability in industrial stand-alone and unmanned environments.



## Programming the watchdog timer

---

An on-board watchdog timer reduces the chance of disruptions which CPLD (compact programmable logical device) interference can cause. This is an invaluable protective device for standalone or unmanned applications. When the watchdog timer activates (CPU processing has come to a halt), it can reset the system, or generate an interrupt on IRQ10, IRQ11, IRQ15, and NMI. This can be set via I/O Port 444, the functions as following:

- 0 : RESET
- 1 : NMI
- 2 : IRQ10
- 3 : IRQ11
- 4 : IRQ15

If you decide to program the watchdog timer, you must write data to I/O port 443 (hex). The output data is a value timer. You can write from 01 (hex) to FF (hex) for input second data, and the related timer is 1 to 255 seconds.

After data entry, your program must refresh the watchdog timer by rewriting the I/O port 443 (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read a Hex value from I/O port 80 (hex) .

The following procedure is a sample program for the watchdog timer:

- Type C:\DOS\Debug <ENTER>
- To start watchdog timer and set function "Reset" type;  
o 444 0 <Enter>; out 444h data 0
- To input Watchdog timers time-out interval of 5 seconds type;  
o 443 05 <Enter>; out 443h data 05
- To disable the watchdog timer type;  
i 80 <Enter>

The time interval data of the watchdog timer is shown in binary code (8 bits).

Sample 2 : 5 seconds

0	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---