

HS-6250

**Celeron™ / Coppermine™ / Tualatin™
Industrial Single Board Computer**

- Half Size • All-in-One • CRT • 133MHz FSB •
- ATA/33/66/100 • LAN • Audio • PC/104 •
- IrDA • USB • DOC • WDT •
- PCI-ISA Bus Industrial Single Board Computer •

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Safety Instructions

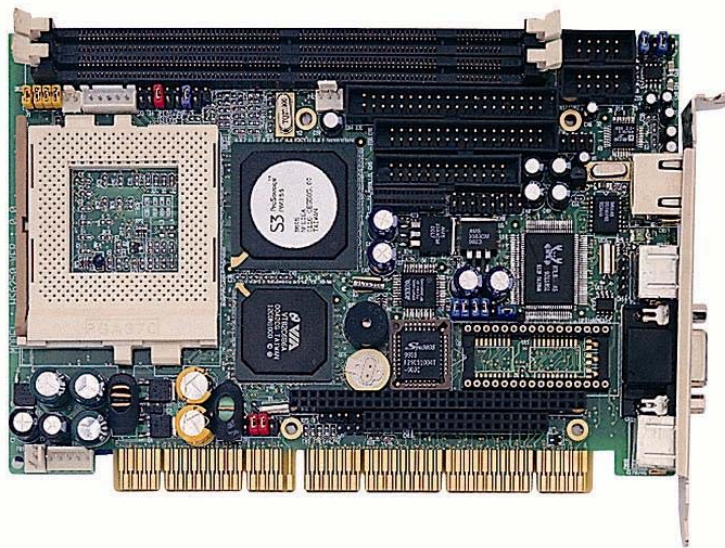
Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components. Fasten the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please wear and connect the strap before handle the HS-6250 to ensure harmlessly discharge any static electricity through the strap.
- Please use an anti-static pad when putting down any components or parts or tools outside the computer. You may also use an anti-static bag instead of the pad. Please inquire from your local supplier for additional assistance in finding the necessary anti-static gadgets.

NOTE: *DO NOT TOUCH THE BOARD OR ANY OTHER SENSITIVE COMPONENTS WITHOUT ALL NECESSARY ANTI-STATIC PROTECTION.*

Chapter 1

General Description



The HS-6250 is a 133MHz FSB, VIA VT8605 chipset-based, PCI-ISA Bus Celeron™/Coppermine™/Tualatin™ CPU SBC. With features such as enhanced I/O effects with CRT, LAN and audio interface all combined, the HS-6250 is an ideal all-in-one Industrial Single Board Computer for the demanding embedded applications.

Its onboard ATA/33/66/100 to IDE drive interface architecture allows the HS-6250 to support data transfers of 33, 66 or 100MB/sec to a single IDE drive connection. Its VIA VT8605 chipset design makes it possible for the board to support Celeron™/Coppermine™/Tualatin™ up to 1.4GHz.

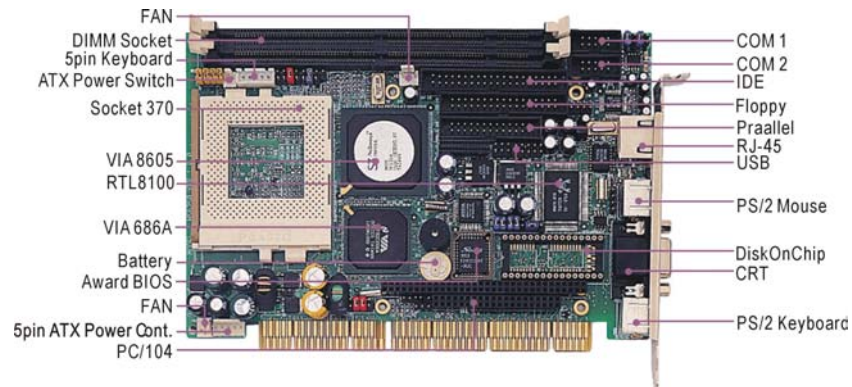
The on-chip Savage 4 CRT display controller supports 2D/3D/Video accelerator. The panel display support of HS-6250 is an optional feature requiring a LCD convert card available from BOSER.

For suitable plug into any size system with 8/16/32-bit ISA and/or PCI slots operation, the board's advanced PCI-ISA bus add-on feature allows user to easily obtain both ISA's 16-bit and PCI's 32-bit full set signals from a half size PCI-ISA slot. System memory is also sufficient with the two DIMM sockets that can support up to 1GB.

Additional onboard connectors include an advanced USB and IrDA ports providing faster data transmission, a DOS-compatible DiskOnChip™ socket with a maximum capacity of 288MB, and one external RJ-45 connector for 10/100 Base-TX Ethernet use.

To ensure the reliability in an unmanned or standalone system, the Watchdog Timer (WDT) onboard HS-6250 is designed with pure hardware that does not need the arithmetical functions of a real-time clock chip. If any program causes unexpected halts to the system, the onboard Watchdog Timer (WDT) will automatically reset the CPU or generate an interrupt to resolve such condition.

1.1 Major Features



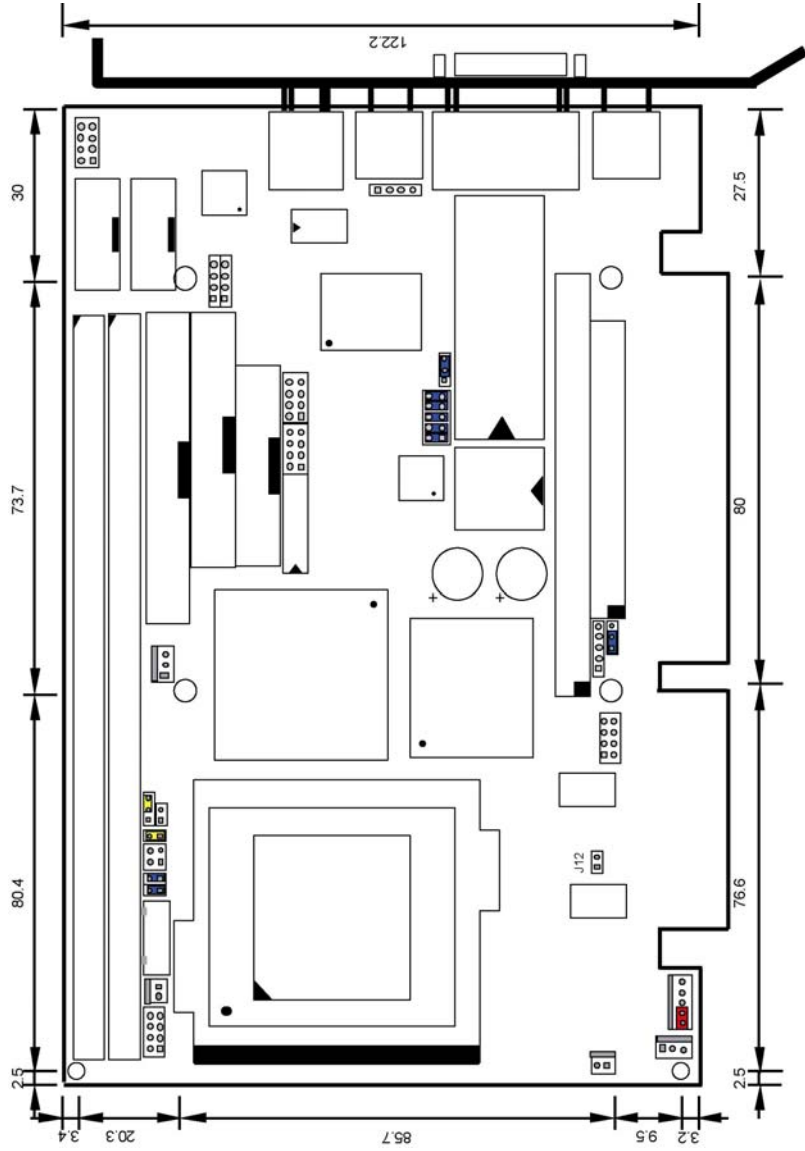
The HS-6250 comes with the following features:

- Socket 370 for Intel® Celeron™/Coppermine™/Tualatin™ up to 1.4GHz CPU
- VIA VT8605 system chipset
- Supports 66/100/133MHz FSB
- Two DIMM sockets with a max. capacity of 1GB
- Fast PCI ATA/33/66/100 controller
- Two RS-232 serial ports
- PC/104 bus connector
- VIA VT8605 CRT display controller
- RealTek RTL8100 10/100 Based LAN
- AC97 3D audio controller
- DiskOnChip™ socket supporting memory sizes of up to 288MB
- Supports four USB connectors
- Supports digital RGB interface

1.2 Specifications

- **CPU:** Socket 370 for Intel® Celeron™/Coppermine™/Tualtain™ up to 1.4GHz CPU
- **Bus Interface:** PCI-ISA Bus
- **Memory:** Two DIMM sockets supporting up to 1GB
- **Chipset:** VIA VT8605
- **I/O Chipset:** VIA VT82C686B
- **VGA:** VIA VT8605 integrated Savage 4 2D/3D/Video accelerator
- **Panel Display:** Digital RGT interface (optional)
- **IDE:** Two IDE disk drives supporting ATA/33/66/100 and with transfer rates of up to 33/66/100MB/sec.
- **Floppy:** Support up to two floppy disk drives
- **Parallel Port:** One enhanced bi-directional parallel port supporting SPP/ECP/EPP
- **LAN:** RealTek RTL8100 10/100 Based LAN
- **Audio:** AC97 3D audio controller supporting speaker out
- **Serial Port:** 16C550 UART-compatible RS-232 x 2 serial ports with 16-byte FIFO
- **PC/104:** PC/104 connector for 16-bit ISA Bus
- **IrDA:** One IrDA TX/RX header
- **USB:** Four USB connectors
- **Keyboard:** PS/2 6pin Mini Din or 5pin connector
- **Mouse:** PS/2 6pin Mini Din
- **DiskOnChip™ :** DiskOnChip™ socket supporting memory sizes of up to 288MB
- **BIOS:** Award PnP Flash BIOS
- **Watchdog Timer:** Sets 1, 2, 10, 20, 110, 220 seconds activity trigger with Reset or NMI
- **CMOS:** Battery backup
- **DMA Channels:** 7
- **Interrupt Levels:** 15
- **Maximum Power Consumption:** +5V@7.5A(1GHz), +12V@120mA
- **Operating Temperature:** 0~60 °C
- **Board Size:** 18.5 x 12.2 cm

1.3 Board Dimensions



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Chapter 2

Unpacking

2.1 Opening the Delivery Package

The HS-6250 is packed in an anti-static bag. The board has components that are easily damaged by static electricity. Do not remove the anti-static wrapping until proper precautions have been taken. Safety Instructions in front of this manual describe anti-static precautions and procedures.

2.2 Inspection

After unpacking the board, place it on a raised surface and carefully inspect the board for any damage that might have occurred during shipment. Ground the board and exercise extreme care to prevent damage to the board from static electricity.

Integrated circuits will sometimes come out of their sockets during shipment. Examine all integrated circuits, particularly the BIOS, processor, memory modules, ROM-Disk, and keyboard controller chip to ensure that they are firmly seated. The HS-6250 delivery package contains the following items:

- HS-6250 Board x 1
- Utility CD Disk x 1
- ATA/100 IDE flat cable x 1
- FDD flat cable x 1
- Printer cable with bracket x 1
- RS-232 COM Port cable with bracket x 1
- 8-pin USB split type cable with bracket x 1
- MIC/Audio 8-pin cable + 2 phone jacks with bracket x 1
- 5-pin ATX power cable x 1
- Jumper Bag x 1
- User's Manual

It is recommended that you keep all the parts of the delivery package intact and store them in a safe/dry place for any unforeseen event requiring the return shipment of the product. In case you discover any missing and/or damaged items from the list of items, please contact your dealer immediately.

Chapter 3

Hardware Installation

This chapter provides the information on how to install the hardware using the HS-6250. This chapter also contains information related to jumper settings of switch, watchdog timer, and the DiskOnChip™ address selection etc.

Please be advised that we have upgrade HS-6250 v1.2 to support Tualatin™ CPU by selecting J12. Please refer Jumper Setting P.12.

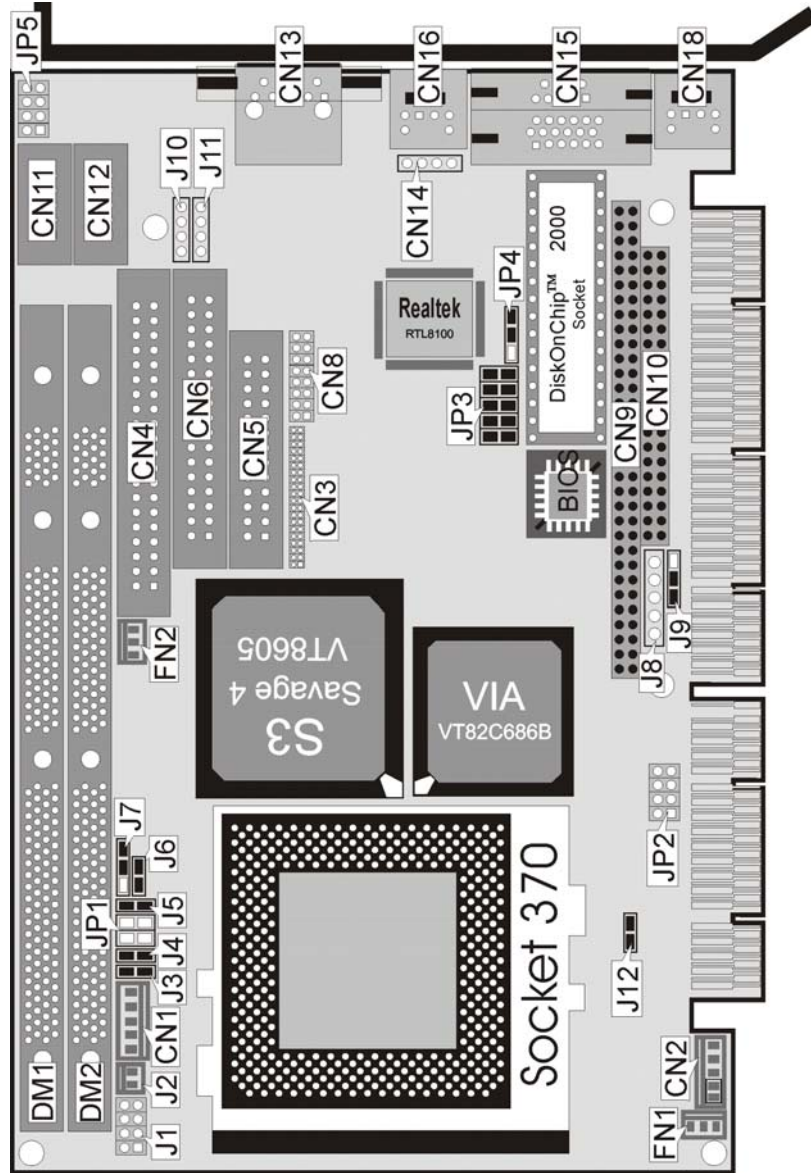
Please set CN2 as short 1-2 when using an AT power supply.

3.1 Before Installation

After confirming your package contents, you are now ready to install your hardware. The following are important reminders and steps to take before you begin with your installation process.

1. Make sure that all jumper settings match their default settings and CMOS setup correctly. Refer to the sections on this chapter for the default settings of each jumper.
2. Go through the connections of all external devices and make sure that they are installed properly and configured correctly within the CMOS setup. Refer to the sections on this chapter for the detailed information on the connectors.
3. Keep the manual and diskette in good condition for future reference and use.

3.2 HS-6250 Board Layout



3.3 HS-6250 Jumper List

Jumper	Definition	Setting
JP1	Bus Clock Select	Auto
JP2	Clock Ratio Select	Auto
JP3 (1-4)	DiskOnChip™ Address Select: <i>D000</i>	Short 1-2, 3-4
JP3 (5-10)	Watchdog Timer Period Select: <i>1sec.</i>	Short 5-6, 7-8, 9-10
JP4	Watchdog Timer Active Type Select: <i>Reset</i>	Short 2-3
J5	Bus Clock Select via CPU: <i>Auto Setting</i>	Short
J7	Bus Clock Select via CPU: <i>Auto Setting</i>	Short 2-3
J9	Clear CMOS: <i>Normal Operation</i>	Short 1-2
J12	Coppermine or Tualatin Select: <i>Coppermine</i>	Open

3.4 HS-6250 Connector List

Connector	Definition	Page
JP5	MIC In/Audio Out Connector	19
CN1	5-pin Keyboard Connector	22
CN2	5-pin ATX Power Connector	21
CN3	30-pin Panel Connector	14
CN4	IDE Connector	15
CN5	Parallel Connector	18
CN6	FDD Connector	16
CN7, CN8	USB Connectors	20
CN9, CN10	PC104 64-pin/40-pin Connectors	26
CN11	COM1 Connector (5x2 Header)	17
CN12	COM2 Connector (5x2 Header)	17
CN13	RJ-45 Connector	18
CN14	4-pin Mouse Connector	23
CN15	CRT Connector (DB15)	14
CN16	6-pin Mini DIN PS/2 Mouse Connector	23
CN17	COM1 (DB9) Connector	17
CN18	6-pin Mini DIN PS/2 Keyboard Connector	22
J1	Front Panel Signal Connector	21
J2	2-pin ATX Power Switch	21
J3, J4, J6	Factory Default	--
J8	IrDA Connector	20
J10	CD-ROM Analog Input Connector	19
J11	LINE In Connector	19
FN1, FN2	3-pin Fan Connectors	21

3.5 Configuring the CPU

The HS-6250 provides all necessary by jumper setting in using Bus Clock frequency as the system bus clocking with *JP1* and Clock Ratio select with *JP2*. And user also can set Bus Clock by CPU with *J5* and *J7*.

- **JP1: Bus Clock Select**

Bus Clock	PINS 1-2	PINS 3-4
66MHz	Short	Short
100MHz	Open	Short
133MHz	Open	Open

- **JP2: Clock Ratio Select**

Clock Ratio	PINS 1-2	PINS 3-4	PINS 5-6	PINS 7-8
2x	Short	Short	Short	Short
2.5x	Short	Short	Open	Short
3x	Short	Open	Short	Short
3.5x	Short	Open	Open	Short
4x	Open	Short	Short	Short
4.5x	Open	Short	Open	Short
5x	Open	Open	Short	Short
5.5x	Open	Open	Open	Short
6x	Short	Short	Short	Open
6.5x	Short	Short	Open	Open
7x	Short	Open	Short	Open

- **J5, J7: Bus Clock Select by CPU**

J7	J5	Description
Short 1-2	Open	Manual Setting
Short 2-3	Short	* Auto Setting (default)

- **J12: Coppermine or Tualatin CPU Select**

J12	Description
Short	Tualatin
Open	* Coppermine

3.6 System Memory

The HS-6250 provides two DIMM sockets. The maximum capacity of the onboard memory is 1GB. Please be advised you must use the memory that can support 133MHz FSB to support 133MHz processor in system.

3.7 DiskOnChip™ Address Setting

The DiskOnChip™ function allows the system to boot or operate without a FDD or a HDD. DiskOnChip™ modules may be formatted as drive C or A. With DiskOnChip™, user may also execute DOS commands such as FORMAT, SYS, COPY, XCOPY, DISCOPY and DISKCOMP etc.

The U9 location onboard the HS-6250 is the DiskOnChip™ module socket. Jumper *JP3 (1-4)* assigns the address setting of the installed module. If you have additional memory devices in the system, please set both at different memory address mapping to avoid the mapping area conflicts.

- **JP3(1-4): DiskOnChip™ Address Select**

Address	PINS 1-2	PINS 3-4
* D000	Short	Short
D800	Open	Short

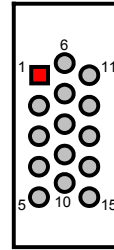
3.8 VGA Controller

The HS-6250 deploys the VIA VT8605 Savage 4 CRT display controller that supports 2D/3D/Video accelerator. HS-6250 also features an optional Panel display.

NOTE: *The optional Panel display support requires the use of an additional LCD convert card. Please contact your dealer for more information.*

- **CN15: CRT Connector (DB15)**

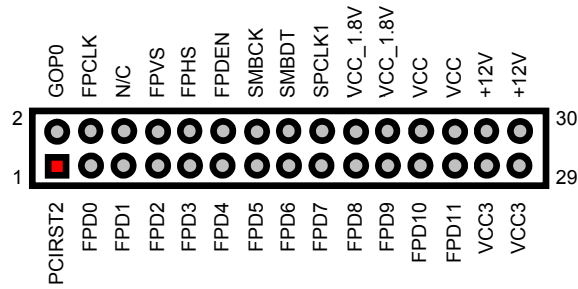
PIN	Description	PIN	Description
1	Red	2	Green
3	Blue	4	N/C
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	N/C	12	SDATA
13	HSYNC	14	VSYNC
15	SCLK		



The HS-6250 provides another 30-pin Panel connection as following CN3 pin information.

- **CN3: 30-pin Panel Connector**

PIN	Description	PIN	Description
1	PCIRST2	2	GPO0
3	FPD0	4	FPCLK
5	FPD1	6	N/C
7	FPD2	8	FPVS
9	FPD3	10	FPHS
11	FPD4	12	FPDEN
13	FPD5	14	SMBCK
15	FPD6	16	SMBDT
17	FPD7	18	SPCLK1
19	FPD8	20	VCC_1.8V
21	FPD9	22	VCC_1.8V
23	FPD10	24	VCC
25	FPD11	26	VCC
27	VCC3	28	+12V
29	VCC3	30	+12V

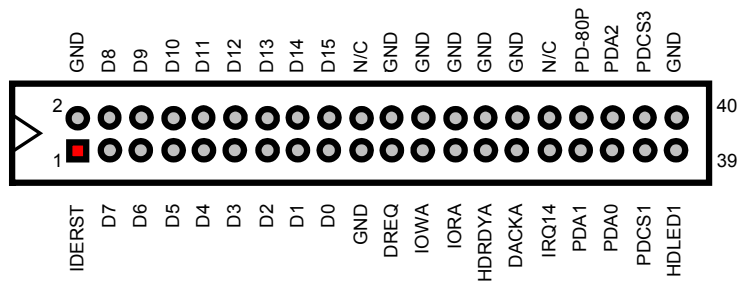


3.9 PCI E-IDE Drive Connector

CN4 is a standard 40-pin connector daisy-chain driver connector serves the PCI E-IDE drive provisions onboard the HS-6250. A maximum of two IDE drives can connect to CN4.

- **CN4: IDE Connector**

PIN	Description	PIN	Description
1	IDERST	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	N/C
21	DREQA	22	GND
23	IOWA-	24	GND
25	IORA-	26	GND
27	HDRDYA	28	GND
29	DACKA	30	GND
31	IRQ14	32	N/C
33	PDA1	34	PD-80P
35	PDA0	36	PDA2
37	PDCS1-	38	PDCS3-
39	HDLED1-	40	GND

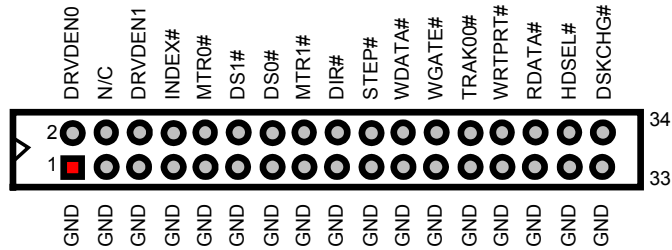


3.10 Floppy Disk Drive Connector

The HS-6250 uses a standard 34-pin header connector, CN6, for floppy disk drive connection. A total of two FDD drives may be connected to CN6 at any given time.

- **CN6: FDD Connector**

PIN	Description	PIN	Description
1	GND	2	DRVDEN0
3	GND	4	N/C
5	GND	6	DRVDEN1
7	GND	8	INDEX#
9	GND	10	MTR0#
11	GND	12	DS1#
13	GND	14	DS0#
15	GND	16	MTR1#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TRAK00#
27	GND	28	WRTPRT#
29	GND	30	RDATA#
31	GND	32	HDSEL#
33	GND	34	DSKCHG#

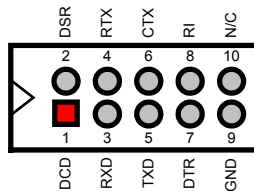


3.11 Serial Port Connectors

The HS-6250 offers two NS16C550 compatible UARTs with Read/Receive 16byte FIFO serial ports with two internal 10pin header.

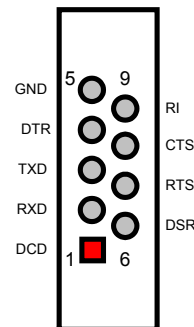
- **CN11, CN12: COM1/COM2 (5x2 Header)**

PIN	Description	PIN	Description
1	DCD	2	DSR
3	RXD	4	RTX
5	TXD	6	CTX
7	DTR	8	RI
9	GND	10	N/C



- **CN17: COM1 (DB9 only for HS-6250V)**

PIN	Description
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI



3.12 Parallel Connector

CN5 is a standard 26-pin flat cable connector designed to accommodate parallel port connection onboard the HS-6250.

- **CN5: Parallel Connector**

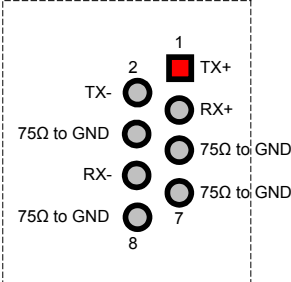
PIN	Description	PIN	Description
1	STBJ	14	AFDJ
2	PD0	15	ERRJ
3	PD1	16	INITJ
4	PD2	17	SLINJ
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	ACKJ	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	GND

3.13 Ethernet Connector

The HS-6250 provides one external RJ-45 10/100 Base-TX LAN interface connector. Please refer to the following detail of pin information.

- **CN13: RJ45 Connector**

PIN	Description
1	TX+
2	TX-
3	RX+
4	75Ω to GND
5	75Ω to GND
6	RX-
7	75Ω to GND
8	75Ω to GND

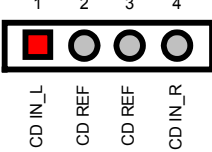


3.14 Audio Connector

The HS-6250 has an onboard AC97 3D audio interface. The following tables list the pin assignments of the CD-ROM Analog Input, the Line In and the MIC In / Audio Out connectors.

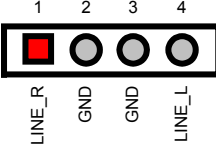
- **J10: CD-ROM Analog Input Connector**

PIN	Description
1	CD IN_L
2	CD REF
3	CD REF
4	CD IN_R



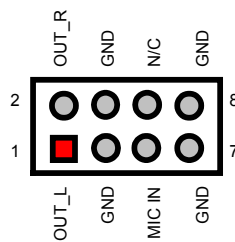
- **J11: Line In Connector**

PIN	Description
1	LINE_R
2	GND
3	GND
4	LINE_L



- **JP5: MIC In / Audio Out Connector**

PIN	Description	PIN	Description
1	OUT_L	2	OUT_R
3	GND	4	GND
5	MIC IN	6	N/C
7	GND	8	GND

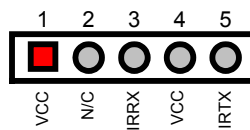


3.15 IrDA Connector

J8 is a 5-pin internal IR communication connector for connection of an IrDA device.

- **J8: IrDA Connector**

PIN	Description
1	VCC
2	N/C
3	IRRX
4	GND
5	IRTX

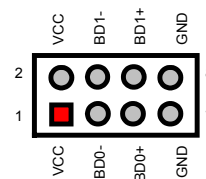


3.16 USB Connector

The HS-6250 provides two 8-pin connectors for USB0 & USB1 ports at locations CN7 and CN8.

- **CN7, CN8: USB Connectors**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	BD0-	4	BD1-
5	BD0+	6	BD1+
7	GND	8	GND

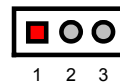


3.17 CMOS Data Clear

The HS-6250 provides a setting for the selection of the Clear CMOS by J9 setting as following:

- **J9: Clear CMOS**

Options	Settings
* Normal Operation	Short 1-2
Clear CMOS	Short 2-3



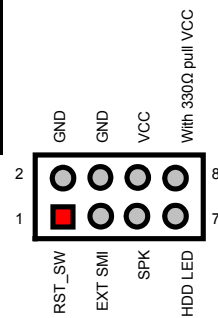
IMPORTANT: Before you turn on the power of your system, please set J9 to Short 1-2 for normal operation.

3.18 Front Panel Connector

The front panel connector, *J1*, provides a multi port connection to various functions/indicators like reset button, external system monitoring indicator, speaker, and IDE-LED.

- **J1: Front Panel Signal**

PIN	Description	PIN	Description
1	RST_SW	2	GND
3	EXT SMI	4	GND
5	SPK	6	VCC
7	HDD LED	8	With 330Ω pull VCC



3.19 Power and Fan Connectors

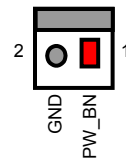
HS-6250 provides a 2-pin ATX Power Switch at *J2*, a 5-pin ATX Power Connector at *CN2*, and two FAN connectors at locations *FN1* and *FN2*.

If you need to use an ATX power, simply connect *CN2* to BOSER's PCI-ISA Bus backplane via the 5-pin ATX power control cable included inside the delivery package.

WARNING: Please set *CN2* as Short 1-2 when using an AT power supply.

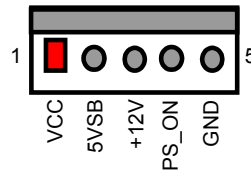
- **J2: 2-pin ATX Power Switch**

PIN	Description
1	PW_BN
2	GND



- **CN2: 5-pin ATX Power Connector**

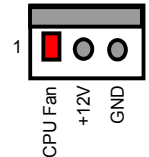
PIN	Description
1	VCC
2	5VSB
3	+12V
4	PS_ON
5	GND



NOTE: When using an AT power supply, you must short pins 1 (Vcc signal) and 2 (+5Vsb signal) of CN2.

- **FN1, FN2: 3-pin FAN Connector**

PIN	Description
1	CPU FAN
2	+12V
3	GND

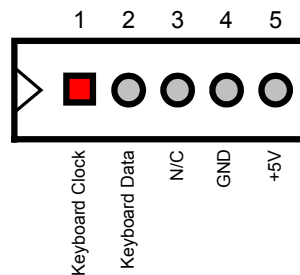


3.20 Keyboard Connectors

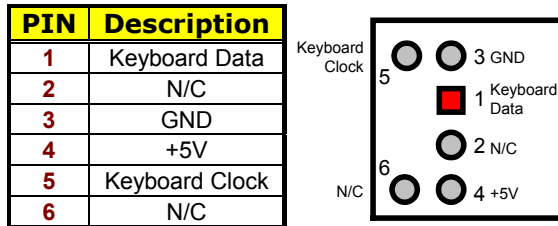
The HS-6250 offers two possibilities for keyboard connections. The connections are via CN18 for an external PS/2 type keyboard or via CN1 for an internal 5-pin cable converter to an AT keyboard.

- **CN1: 5-pin Keyboard Connector**

PIN	Description
1	Keyboard Clock
2	Keyboard Data
3	NC
4	GND
5	+5V



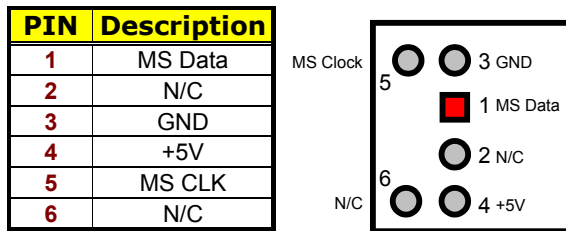
- **CN18: PS/2 6-pin Mini DIN Keyboard Connector**



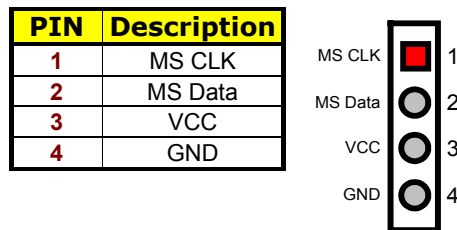
3.21 PS/2 Mouse Connectors

The HS-6250 provides an external PS/2 mouse connector at *CN16* and an additional 4-pin connector at *CN14* for an AT mouse.

- **CN16: PS/2 6-pin Mini Din Mouse Connector**



- **CN14: 4-pin Mouse Connector**



3.22 Watchdog Timer

There are three access cycles of Watch-Dog Timer as Enable, Refresh and Disable are the three access cycles of Watchdog Timer. The Enable cycle proceeds via READ PORT 443H whereas the Disable cycle proceeds via READ PORT 045H. A continued Enable cycle after a first Enable cycle means Refresh.

Once the Enable cycle is active, a Refresh cycle is requested before the time-out period. This restarts counting of the WDT period. When the time counting goes over the period preset of WDT, it will assume that the program operation is abnormal. A System Reset signal to re-start or a NMI cycle to the CPU transpires when such error happens. Jumper *JP3* is used to select the function of Watchdog Timer.

- **JP4: Watchdog Timer Active Type Setting**

JP4	Description
Short 1-2	Active NMI
* Short 2-3	System Reset
Open	Disabled Watchdog Timer

- **JP3 (5-10): WDT Timeout Period Select**

Period	PINS 5-6	PINS 7-8	PINS 9-10
*1 sec	Short	Short	Short
2 sec	Open	Short	Short
10 sec	Short	Open	Short
20 sec	Open	Open	Short
110 sec	Short	Short	Open
220 sec	Open	Short	Open

The Watchdog Timer is disabled after the system Power-On. It can be enabled via an Enable cycle and reading the control port (443H), or via a Refresh cycle and reading the control port (443H), or via a Disable cycle and reading the disable control port (045H).

After an Enable cycle of WDT, user must immediately execute a Refresh cycle to WDT before its period setting comes to an end every 1, 2, 10, 20, 110 or 220 seconds. If the Refresh cycle does not activate before WDT period cycle, the onboard WDT architecture will issue a Reset or NMI cycle to the system. The Watchdog Timer controls three I/O ports.

443H	I/O Read	The Enable cycle
443H	I/O Read	The Refresh cycle
045H	I/O Read	The Disable cycle

The following sample program shows how to Enable, Disable and Refresh the Watchdog Timer :

```

WDT_EN_RF      EQU      0433H
WDT_DIS        EQU      0045H

WT_Enable      PUSH     AX           ; keep AX DX
                PUSH     DX
                MOV      DX,WDT_EN_RF ; enable the WDT
                IN       AL,DX
                POP      DX           ; get back AX, DX
                POP      AX
                RET

WT_Refresh     PUSH     AX           ; keep AX, DX
                PUSH     DX
                MOV      DX,WDT_ET_R ; refresh the WDT
                IN       AL,DX
                POP      DX           ; get back AX, DX
                POP      AX
                RET

WT_DISABLE     PUSH     AX
                PUSH     DX
                MOV      DX,WDT_DIS  ; disable the WDT
                IN       AL,DX
                POP      DX           ; get back AX, DX
                POP      AX
                RET

```

3.23 PC/104 Connectors

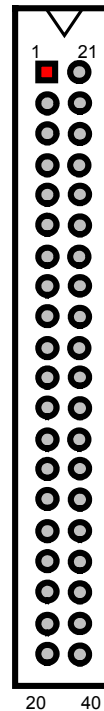
The PC/104 expansion bus offers provisions to connect all types of PC/104 modules. With the PC/104 bus being known as the new generation of industrial embedded 16bit PC standard bus, thousands of PC/104 modules from multiple vendors can be easily installed onboard. The detailed pin assignment of the PC/104 expansion bus connectors CN9 and CN10 are listed on the following tables:

NOTE : *The PC/104 connector allows direct plugging or stack-through piling of PC/104 modules without requiring the PC/104 mounting kit.*

● **CN10: 40-pin PC/104 Expansion Slot**

Pin	Description	Pin	Description
1	GND	21	GND
2	MEMCS16*	22	SBHE
3	IOSC16*	23	SA23
4	IRQ10	24	SA22
5	IRQ11	25	SA21
6	MS Data	26	SA20
7	IRQ15	27	SA19
8	IRQ14	28	SA18
9	DACK0	29	SA17
10	DREQ0	30	MEMR*
11	DACK5	31	MEMW*
12	DREQ5	32	SD8
13	DACK6	33	SD9
14	DREQ6	34	SD10
15	DACK7	35	SD11
16	DREQ7	36	SD12
17	VCC	37	SD13
18	MASTER	38	SD14
19	GND	39	SD15
20	GND	40	N/C

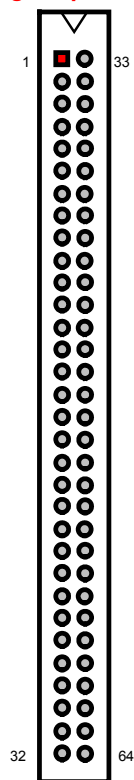
Connector diagram rotated 90 degrees clockwise from original position



● CN9: 64-pin PC/104 Expansion Slot

Pin	Description	Pin	Description
1	IDCHK	33	GND
2	SD7	34	RSTDRV
3	SD6	35	VCC
4	SD5	36	IRQ9
5	SD4	37	-5V
6	SD3	38	DREQ2
7	SD2	39	-12V
8	SD1	40	NOWSJ
9	SD0	41	+12V
10	IOCHRDY	42	GND
11	AEN	43	SMEMW
12	SA19	44	SMEMR
13	SA18	45	IOW
14	SA17	46	IOR
15	SA16	47	DACK3
16	SA15	48	DREQ3
17	SA14	49	DACK1
18	SA13	50	DREQ1
19	SA12	51	REFRESH
20	SA11	52	SYSCLK
21	SA10	53	IRQ7
22	SA9	54	SLPBTN
23	SA8	55	IRQ5
24	SA7	56	IRQ4
25	SA6	57	IRQ3
26	SA5	58	DACK2*
27	SA4	59	TC
28	SA3	60	BALE
29	SA2	61	VCC
30	SA1	62	OSC
31	SA0	63	GND
32	GND	64	GND

Connector diagram rotated 90 degrees clockwise from original position



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Chapter 4

Award BIOS Setup

The HS-6250 uses Award PCI/ISA BIOS for the system configuration. The Award BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options that could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

4.1 Starting Setup

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

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

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

Press DEL to enter SETUP.

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

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

4.2 Using Setup

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

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 key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4.2.1 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.

4.3 Main Menu

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

CMOS Setup Utility – Copyright © 1984-2001 Award Software	
▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc : Quit F9 : Menu in BIOS ↑↓→← : Select Item	
F10 : Save & Exit Setup	

NOTE: *A brief description of the highlighted choice appears at the bottom of the screen.*

- **Standard CMOS Features**
This setup page includes all the items in a standard, AT-compatible BIOS.
- **Advanced BIOS Features**
This setup page includes all the items of Award special enhanced features.
- **Advanced Chipset Features**
This setup page includes all the items of chipset special features.
- **Integrated Peripherals**
This section page includes all the items of IDE hard drive and Programmed Input / Output features.
- **Power Management Setup**
This entry only appears if your system supports Power Management, "Green PC", standards.
- **PNP/PCI Configurations**
This entry appears if your system supports PNP/PCI.

- **PC Health Status**
This menu contains the system's auto-detect functions for CPU Vcore, CPU voltage, and CPU temperature.
- **Frequency/Voltage Control**
This menu specifies your settings for frequency/voltage control.
- **Load Fail-Safe Defaults**
The BIOS defaults have been set by the manufacturer and represent settings that provide the minimum requirements for your system to operate.
- **Load Optimized Defaults**
The chipset defaults are settings that provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.
- **Set Supervisor / User Password**
Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- **Save & Exit Setup**
Save CMOS value changes to CMOS and exit setup.
- **Exit Without Saving**
Abandon all CMOS value changes and exit setup.

4.4 Standard CMOS Features

The Standard Setup is used for the basic hardware system configuration. The main function is for Data/Time and Floppy/Hard Disk Drive settings. Please refer to the following screen for the setup. When the IDE hard disk drive you are using is larger than 528MB, you must set the HDD mode to **LBA** mode. Please use the IDE Setup Utility in BIOS SETUP to install the HDD correctly.

CMOS Setup Utility – Copyright © 1984-2001 Award Software Standard CMOS Features

Date (mm:dd:yy)	Wed, Oct 31 2001	Item Help
Time (hh:mm:ss)	10 : 32 :57	Menu Level ▶
▶ IDE Primary Master	[None]	Change the day, month, year and century
▶ IDE Primary Slave	[None]	
Drive A	[1.44M, 3.5in.]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	
↑↓→←: Select Item + / - /PU/PD: Value F10: Save ESC: Quit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

- **Date:**
The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
date	The date, from 1 to 31 (or the maximum allowed in the month)
month	The month, Jan through Dec.
year	The year, from 1900 through 2099

- **Time:**
The time format is <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- **IDE Primary Master/ Slave:**

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type user is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type "User" to define your own drive type manually.

If you select Type "User", you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be included in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be "Type 1".

If the controller of HDD interface is SCSI, the selection shall be "None".

If you select Type "Auto", BIOS will Auto-Detect the HDD & CD-ROM Drive at the POST stage and showing the IDE for HDD & CD-ROM Drive.

If a hard disk has not been installed select NONE and press <Enter>.

TYPE	drive type
CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precompensation
LANDZONE	landing zone
SECTORS	number of sectors
MODE	mode type

- **Drive A Type / Drive B Type:**

The category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

None	No floppy 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 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

- **Video:**

The category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type 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:** The category determines whether the computer will stop if an error is detected during power up.

No errors	The system boot will not be stopped for any error that may be detected.
All errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

- **Memory:**

The category is display-only that is determined by POST (Power On Self Test) of the BIOS.

- **Base Memory:** The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with *640K or more memory installed on the motherboard*.
- **Extended Memory:** The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

- Total Memory:** This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs. The BIOS is the most frequent user of this RAM area since this is where it shadows RAM

4.5 Advanced BIOS Features

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

CMOS Setup Utility— Copyright ©1984-2001 Award Software Advanced BIOS Features

Virus Warning	[Disabled]	Item Help
CPU Internal Cache	[Enabled]	Menu Level ▶
External Cache	[Enabled]	
CPU L2 Cache ECC Checking	[Enabled]	
Processor Number Feature	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	
Third Boot Device	[LS-120]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
Typematic Rate(Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	[Setup]	
OS Select For DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
C8000-CBFFF Shadow	[Disabled]	
CC000-CFFFF Shadow	[Disabled]	
D000-D3FFF Shadow	[Disabled]	
D4000-D7FFF Shadow	[Disabled]	
D8000-DBFFF Shadow	[Disabled]	
DC000-DFFFF Shadow	[Disabled]	
Small Logo (EPA) Show	[Enabled]	

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

- **Virus Warning:**

When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the following error message will appear. Afterwards, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

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

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.

NOTE: *Many disk diagnostic programs that attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you first disable Virus Protection beforehand.*

- **CPU Internal Cache/External Cache:**

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is enable.

Enabled	Enable cache
Disabled	Disable cache

- **CPU L2 Cache ECC Checking:**

This item allows you to enable/disable CPU L2 Cache ECC checking. The available choices are Enabled, Disabled.

- **Processor Number Feature:**

This option allows the system to automatically detect and display the Pentium III microprocessor installed. When enabled, this option is only available when using Pentium III chips.

- **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

- **First/Second/Third/Other Boot Device:**

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The available choices are Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled.

- **Swap Floppy Drive:**

This item allows you to determine whether enable the swap floppy drive or not. The available choices are Enabled/Disabled.

- **Boot Up Floppy Seek:**

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS cannot tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

- **Boot Up NumLock Status:**

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

On	Keypad is number keys
Off	Keypad is arrow keys

- **Gate A20 Option:**

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20.

Normal	keyboard
Fast	chipset

- **Typematic Rate Setting:**

This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys.

Enabled	Enable typematic rate
Disabled	Disable typematic rate

- **Typematic Rate (Chars/Sec):**

When the typematic rate is enabled, this selection allows you select the rate at which the keys are accelerated.

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

- **Typematic Delay (Msec):**

When the typematic rate is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

- **Security Option:**

This category allows you to limit access to the system and Setup, or just to 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.*

- **OS Select For DRAM > 64MB:**

This item allows you to access the memory that over 64MB in OS/2. The available choices are Non-OS2, OS2.

- **Video BIOS Shadow:**

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

Enabled	Video shadow is enabled
Disabled	Video shadow is disabled

- **C8000 - CBFFF Shadow/DC000 - DFFFF Shadow:**
These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be support of on-board SCSI.

Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

- **Small Logo (EPA) Show:**
This item launches the EPA logo on your display during the boot up process.

Enabled	Activates the Energy logo during boot up process
Disabled	De-activates the Energy logo during boot up process

4.6 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 the access to the system memory resources, such as DRAM and the external cache. It also coordinates the communications between the conventional ISA and PCI buses. It must be stated that these items should never be altered. The default settings have been chosen because they provide the best operating conditions for your system. You might consider and make any changes only if you discover that the data has been lost while using your system.

CMOS Setup Utility – Copyright ©1984-2001 Award Software Advanced Chipset Features

DRAM Timing By SPD	[Enabled]	Item Help
DRAM Clock	Host CLK	Menu Level ▶
SDRAM Cycle Length	3	
Bank Interleave	Disabled	
Memory Hole	[Disabled]	
System BIOS Cacheable	[Enabled]	
Video RAM Cacheable	[Enabled]	
Frame Buffer Size	[8M]	
AGP Aperture Size	[8M]	
AGP-4X Mode	[Enabled]	
AGP Driving Control	[Auto]	
AGP Driving Value	DA	
OnChip USB	[Enabled]	
USB Keyboard Support	[Disabled]	
CPU to PCI Write Buffer	[Enabled]	
PCI Dynamic Bursting	[Enabled]	
PCI Master 0 WS Write	[Enabled]	
PCI Delay Transaction	[Disabled]	
PCI#2 Access #1 Retry	[Enabled]	
AGP Master 1 WS Write	[Disabled]	
AGP Master 1 WS Read	[Disabled]	
↑↓→←: Select Item + / - /PU/PD: Value F10: Save ESC: Quit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

- **DRAM Timing By SPD:**
When this item is Enabled, the BIOS automatically sets the DRAM Clock, SDRAM Cycle Length and Bank Interleave settings. If Disabled, user can set DRAM timings of the system manually. DRAM Timing by SPD overrides the manual settings and sets/reads data of DRAM Clock, SDRAM Cycle Length and Bank Interleave from the SPD chip on the memory module.

- **DRAM Clock:**
This item sets the CPU Host Clock that matches your DRAM modules. The available choices are Host Clock, H-Clk-33M and H-Clk+33M.

Host Clock	With CPU clock at 100MHz and memory onboard is also 100MHz
H-Clk-33M	With CPU clock at 133MHz and memory onboard is also 100MHz
H-Clk+33M	With CPU clock at 100MHz and memory onboard is also 133MHz

NOTE: *It is highly recommended that you set the DRAM Timing By SPD item into Enabled when using any of the following CPU and DRAM combinations.*

- CPU clock at 66MHz and memory at 66MHz, or 100MHz, or 133MHz.
- Memory at 66MHz and CPU clock at 100MHz or 133MHz
- **SDRAM Cycle Length:**
This field sets the CAS latency timing. The available choices are 2, 3.
- **Bank Interleave:**
This item allows you to set how many banks of SDRAM support in your board. The available choices are 2 Bank, 4 Bank, Disabled.
- **Memory Hole:**
In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported
Disabled	Memory hole not supported

- **System BIOS Cacheable:**
Select Enabled allows caching of the system BIOS ROM at F000h-FFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Enabled	BIOS access cached
Disabled	BIOS access not cached

- **Video RAM Cacheable:**
Select Enabled allows caching of the video RAM , resulting in better system performance. However, if any program writes to this memory area, a system error may result.
- **Frame Buffer Size:**
Specify the size of system memory to allocate for video memory, from 1 MB to 8 MB. The available choices are 1MB, 2MB, 4MB, 8MB.
- **AGP Aperture Size:**
Select the size of the 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. See www.agpforum.org for APG information. The available choices are 16 MB, 32 MB, 64 MB, 128 MB, 256MB.
- **AGP- 4X Mode:**
This item allows you to enable / disable the AGP-4X Mode. The available choices are Enabled, Disabled.
- **AGD Driving Control:**
This item allows you to adjust the AGP driving force. Choose Manual to key in an AGP Driving Value from the next selection. This field is recommended to be in Auto to avoid system errors. The available choices are Auto, and Manual.
- **AGP Driving Value:**
This item allows you to adjust the AGP driving force. The available choices range from Min=0000 to Max=00FF.
- **OnChip USB:**
This should be enabled if your system has a USB installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature. The available choices are Enabled, Disabled.
- **USB Keyboard Support:**
Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The available choices are Enabled, Disabled.

- **CPU to PCI Writer 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 the 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 available choices are 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 don't. The available choices are *Enabled*, *Disabled*.
- **PCI Master 0 WS Write:**
When *Enabled*, writes to the PCI bus are executed with zero wait states. The available choices are *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 available choices are Enabled, Disabled.
- **PCI #2 Access #1 Retry:**
This item allows you enable/disable the PCI #2 Access #1 Retry. The available choices are Enabled, Disabled.
- **AGP Master 1 WS Write:**
This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability. The available choices are Enabled, Disabled.
- **AGP Master 1 WS Read:**
This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability. The available choices are Enabled, Disabled.

4.7 Integrated Peripherals

The IDE hard drive controllers can support up to two separate hard drives. These drives have a master/slave relationship that is determined by the cabling configuration used to attach them to the controller. Your system supports two IDE controllers--a primary and a secondary--so you can install up to four separate hard disks.

PIO means Programmed Input/Output. Rather than having the BIOS issue a series of commands to affect the transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by them. This is much simpler and more efficient (also faster).

CMOS Setup Utility— Copyright ©1984-2001 Award Software Integrated Peripherals

OnChip IDE Channel0	[Enabled]	Item Help
IDE Prefetch Mode	[Enabled]	Menu Level ▶
Primary Master PIO	[Auto]	
Primary Slave PIO	[Auto]	
Primary Master UDMA	[Auto]	
Primary Slave UDMA	[Auto]	
Init Display First	[[Onboard]	
IDE HDD Block Mode	[Enabled]	
Onboard FDD Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART 2 Mode	[Standard]	
IR Function Duplex	Half	
TX, RX inverting enable	No, Yes	
Onboard Parallel Port	[378/IRQ7]	
Onboard Parallel Mode	[Normal]	
ECP Mode Use DMA	[3]	
Parallel Port EPP Type	[EPP1.9]	
↑↓→←: Select Item + / - /PU/PD: Value F10: Save ESC: Quit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

- OnChip IDE Channel0:**
 The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary IDE interface. Select Disabled to deactivate this interface. The available choices are 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 available choices are Enabled, Disabled.
- **Primary 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 available choices are Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.
- **Primary 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 available choices are Auto, Mode 0, Mode 1, Mode 2.
- **Init Display First:**
This item allows you to decide to active whether PCI Slot or on-chip VGA first The available choices are PCI Slot, Onboard .
- **IDE HDD Block Mode:**
This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

Enabled	IDE controller uses block mode
Disabled	IDE controller uses standard mode
- **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 and-in FDC or the system has no floppy drive, select Disabled in this field. The available choices are Enabled, Disabled.
- **Onboard Serial Port 1/2:**
This item allows you to determine access onboard serial port 1/2 controller with which I/O address. The available choices are 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.
- **UART 2 Mode:**
This item allows you to determine which Infra Red (IR) function of onboard I/O chip. The available choices are Standard, ASKIR, HPSIR.

- **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 available choices are Half, Full.
- **TX, RX inverting enable:**
This item allows you to determine the inverting of TX & RX. The available choices are "Yes, No", "No, No", "No, Yes", "Yes, Yes"
- **Onboard Parallel Port:**
Select a logical LPT port name and matching address for the physical parallel (printer) port. The available choices are 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled.
- **Onboard Parallel Mode:**
Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP or ECP mode. The available choices are SPP, ECP+EPP1.7, EPP1.7+SPP, EPP1.9+SPP, ECP, ECP+EPP1.9, and Normal.
- **ECP Mode Use DMA:**
Select a DMA channel for the port. The available choices are 3, 1.
- **Parallel Port EPP Mode Type:**
This item allows you to determine the IR transfer mode of onboard I/O chip. The available choices are EPP1.9, EPP1.7.

4.8 Power Management Setup

The Power Management Setup allows user to configure the system for saving energy in a most effective way while operating in a manner consistent with his own style of computer use.

CMOS Setup Utility – Copyright ©1984-2001 Award Software Power Management Setup

ACPI function	[Disabled]	Item Help
Power Management	[Press Enter]	Menu Level ▶
ACPI Suspend Type	[S1(POS)]	
PM Control by APM	[Yes]	
Video Off Option	[Suspend → Off]	
Video Off Method	[V/H SYNC+Blank]	
MODEM Use IRQ	[3]	
Soft-Off by PWRBTN	[Instant-Off]	
Wake Up Events	[Press Enter]	
↑↓→←: Select Item +/-/PU/PD: Value F10: Save ESC: Quit 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 available choices are Enabled, Disabled.

NOTE: *When using an ATX power supply on your system, the ACPI function should be set as Enabled. ACPI function should be disabled (default setting) when using an AT power supply.*

- **Power Management:**

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

- Doze Mode
- Standby Mode
- Suspend Mode
- HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No power management. Disables all four modes
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	Allows you to set each mode individually. When not disabled, each range is from 1 min. to 1 hr. except for HDD Power Down that ranges from 1 min. to 15 min. and disable.

- **ACPI Suspend Type:**

This item lets you set the ACPI Suspend mode that your system will follow. There are 2 choices available, S1 (POS) and S3 (STR). When the ACPI function is Enabled, both options are user-definable. S1 (POS) is the default setting that sets the system to a power on suspend mode. S3 (STR) is suspend to RAM that stores the data into memory until an active signal triggers the system to wake up. Normally, the S3 (STR) setting takes a longer period for the system to wake up compared to S1 (POS).

- **PM Control by APM:**

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If the Max. Power Saving is not enabled, this will be preset to *No*.

- **Video Off Option:**

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.
Susp,Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the 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.

- **MODEM Use IRQ:**

This item determines the IRQ in which the MODEM can be used. The available choices are 3, 4, 5, 7, 9, 10, 11, NA.

- **Soft-Off by PWR-BTTN:**

When Enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity. The available choices are Instant-Off, Delay 4 Sec.

- **Wake Up Events:**

When you press the Enter key on this item. It will list the I/O events whose occurrence prevent the system from entering a power saving mode or awaken the system from such a mode. In effect, the system remains alert for anything that occurs to a device that is configured as On, even when the system is in a power down mode.

- **VGA:**

When Enabled, this will allow the VGA signal to awaken the system.

- **LPT & COM:**

When set as On, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

- **HDD & FDD:**

When this is set to On, any activity from the hard drive or the floppy drive can wake the system.

- **PCI Master:**

If this is set as On, the active signal from any device or board connected/assigned to the PCI Master slot awakens the system.

- **Modem Ring Resume:**

An input signal on the serial Ring Indicator (RI, or an incoming call on the modem, awakens the system from a soft off state.

- **RTC Alarm Resume:**

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

■ **Primary INTR::**

When On, user can define the IRQ Activity Monitoring from the devices listed on its IRQ table.

■ **IRQ Activity Monitoring::**

When On, activity will neither prevent the system from going into a power management mode nor awaken it.

- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT 2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT 1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

4.9 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or **Personal Computer Interconnect**, is a system that 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.

**CMOS Setup Utility – Copyright ©1984-2001 Award Software
PnP/PCI Configurations**

PNP OS Installed Reset Configuration Data Resources Controlled By IRQ Resources DMA Resources PCI/VGA Palette Snoop Assign IRQ For VGA Assign IRQ For USB	[Yes] [Disabled] [Auto, ESCD] [Press Enter] [Press Enter] [Disabled] [Enabled] [Enabled]	Item Help 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
↑↓→←: Select Item +/-/PU/PD: Value F10: Save ESC: Quit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

- **PNP OS Installed:**
This item allows you to determine install PnP OS or not. The available choices are Yes or Not.
- **Reset Configuration Data:**
This item allows you to determine reset the configuration data or not. The available choices are *Enabled* and *Disabled*.
- **Resources Controlled by:**
The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows® 95. The available choices are *Auto* and *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 system DMA channel a type, depending on the type of device using the DM channel.
- **PCI/VGA Palette Snoop:**
It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not.

Enabled	When PCI/VGA working with MPEG ISA/VESA VGA Card
Disabled	When PCI/VGA not working with MPEG ISA/VESA VGA Card

- **Assign IRQ For VGA/USB:**
This option turns on or off the IRQ assignment for both VGA and USB ports.

4.10 PC Health Status

CMOS Setup Utility— Copyright ©1984-2001 Award Software
PC Health Status

Current System Temp. Current CPUFAN1 Speed Current CPUFAN2 Speed Vcore 2.5V 3.3V 5V 12V	Item Help Menu Level ▶
↑↓→←: Select Item +/- /PU/PD: Value F10: Save ESC: Quit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults	

- **Current System Temp:**
This field displays the *current* system temperature, if your computer contains a monitoring system. The available choices are Enabled and Disabled.
- **Current CPUFAN1/2 Speed:**
These fields display the *current* speed of up to three CPU fans, if your computer contains a monitoring system.
- **Vcore/2.5V/+3.3V/+5V/+12V:**
Once the hardware monitoring IC detects the current voltages of voltage regulators and power supply unit, it shows the values on these for read-only purposes.

4.11 Frequency/Voltage Control

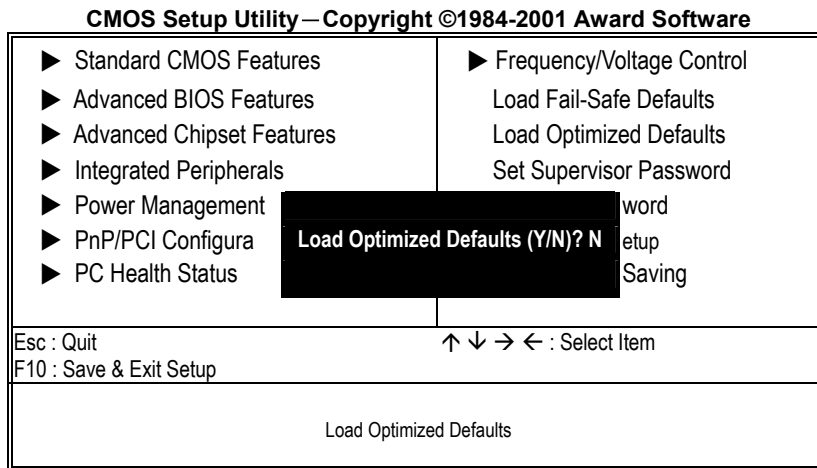
CMOS Setup Utility – Copyright ©1984-2001 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	[Enabled]	Item Help
CPU Clock/Spread Spectrum	[Default]	Menu Level ▶
↑↓→←: Select Item +/-/PU/PD: Value F10: Save ESC: Quit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

- **Auto Detect DIMM/PCI Clk:**
This item allows you to enable/disable auto detect DIMM/PCI Clock. The available choices are Enabled, Disabled.
- **Spread Spectrum:**
When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling this option changes the extreme values from spikes to flat curves, thus reducing EMI. The available choices are Enabled, Disabled.

4.13 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to the figure below. This option allows you to load/restore the default values to your system configuration, optimizing and enabling all high performance features. Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.



4.14 Set Supervisor/User Password

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<ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Advanced Chipset Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configuration Setup ▶ 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 Interrupt Setup Outgoing Mailbox Outgoing Mailbox Setup Outgoing Mailbox Setup Outgoing Mailbox Setup
Enter Password :	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	
Change / Set / Disable Password	

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

- **supervisor password:** can enter and change the options of the setup menus.
- **user password:** just can only enter but do not have the right to change the options of the setup menus.

When you select this 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.

4.15 Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

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.

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<ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Advanced Chipset Features ▶ Integrated Peripherals ▶ Power Management ▶ PnP/PCI Configura ▶ PC Health Status 	<ul style="list-style-type: none"> ▶ Frequency/Voltage Control Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password word etup Saving
SAVE to CMOS and EXIT (Y/N)? N	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	
Save Data to CMOS	

4.16 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.

CMOS Setup Utility – Copyright ©1984-2001 Award Software

<ul style="list-style-type: none">▶ Standard CMOS Features▶ Advanced BIOS Features▶ Advanced Chipset Features▶ Integrated Peripherals▶ Power Management▶ PnP/PCI Configura▶ PC Health Status	<ul style="list-style-type: none">▶ Frequency/Voltage ControlLoad Fail-Safe DefaultsLoad Optimized DefaultsSet Supervisor Password
Quit Without Saving (Y/N)? N: <input type="checkbox"/>	
Esc : Quit	
F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item	
Abandon all Data	

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Chapter 5

Software Utilities

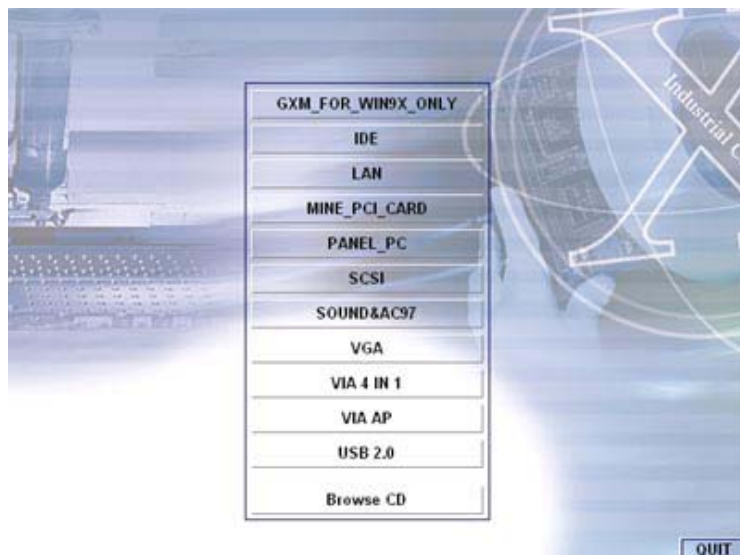
This chapter contains the detailed information of IDE, VGA, Audio and LAN driver installation procedures.

5.1 IDE, VGA and Audio Driver Installation

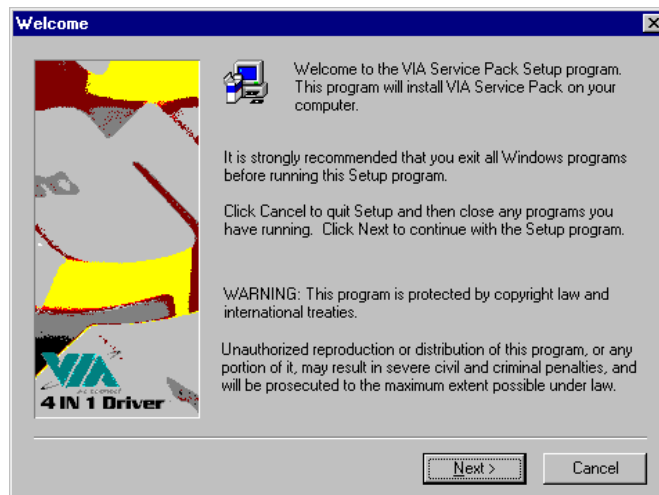
The utility disk that came with the delivery package contains an auto-run program that invokes the installation programs for the IDE, VGA and Audio drivers. The following describes the installation procedures of each driver.

5.1.1 VIA VT82C686B AGP Bus Driver Installation

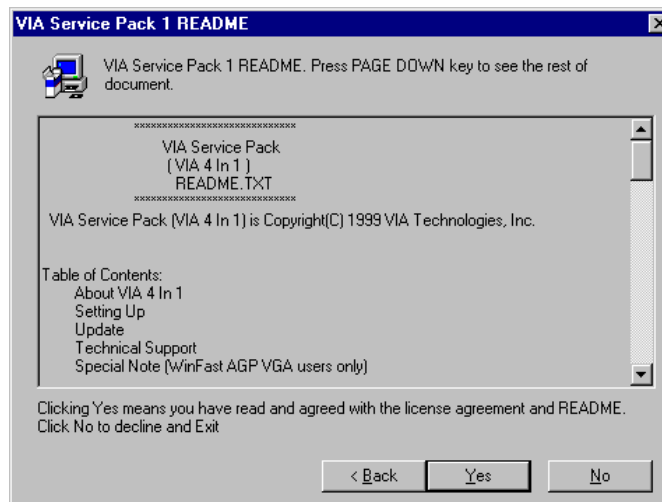
1. Insert Utility CD Disk to your CD ROM. The main menu will pop up as shown below.



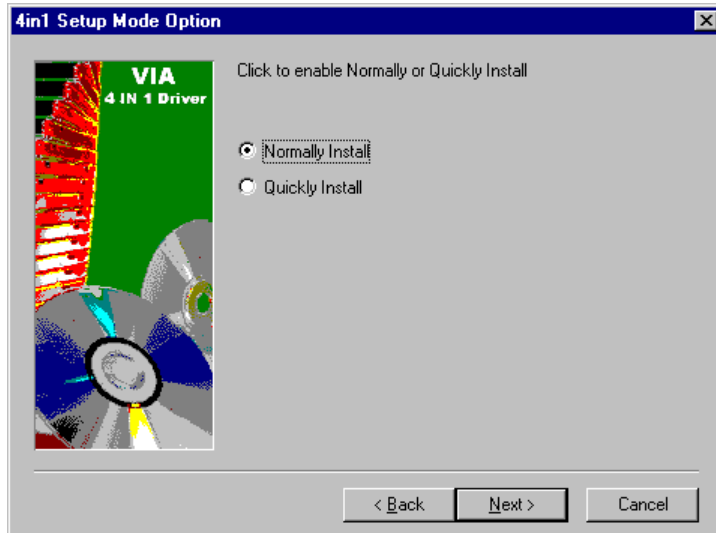
2. Press "VIA 4 IN 1" and to go Setup.
3. Once the Welcome screen appears on the screen, make sure to close any applications running and then click on the Next button.



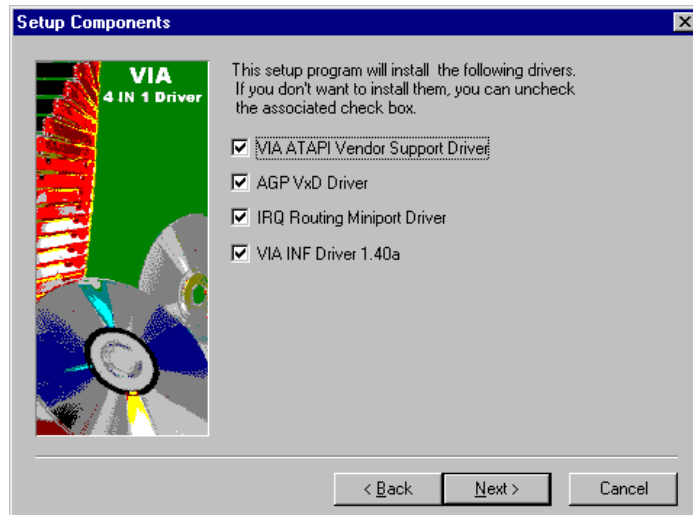
4. When the Readme window pops on the screen, you may read the whole document including the license agreement or just press Yes to skip through and continue installation.



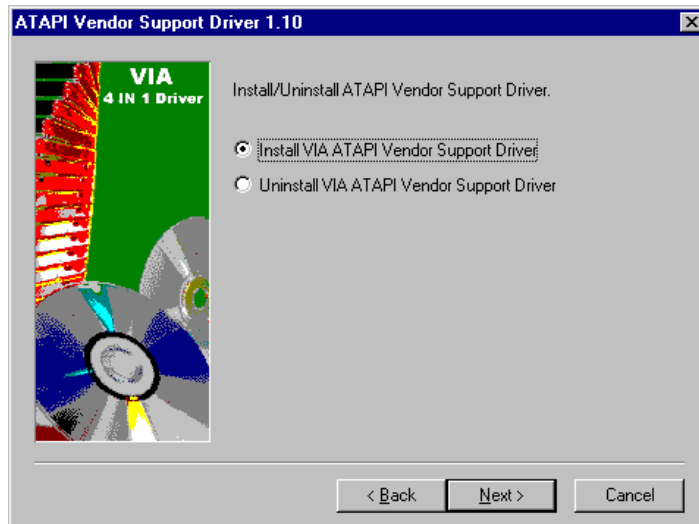
5. The 4 in 1 Setup dialog is now displayed. Select on Normally Install and then click on Next.



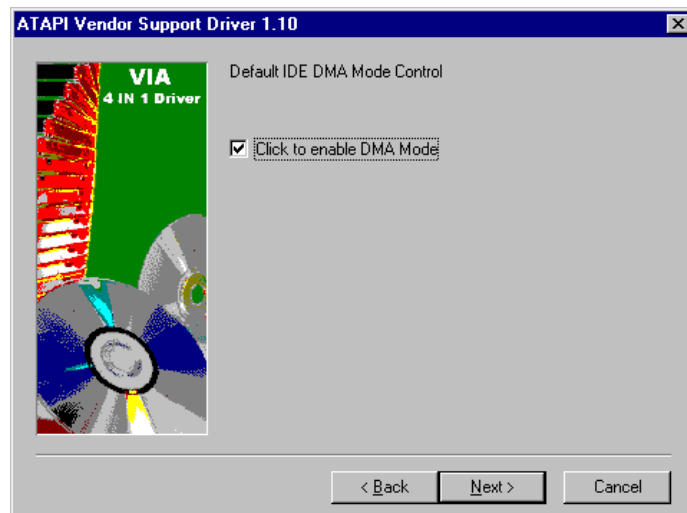
6. The next window lists all components detected in your system and asks you to select the ones requiring drivers. Tick on all items then proceed by clicking on the Next button below the screen.



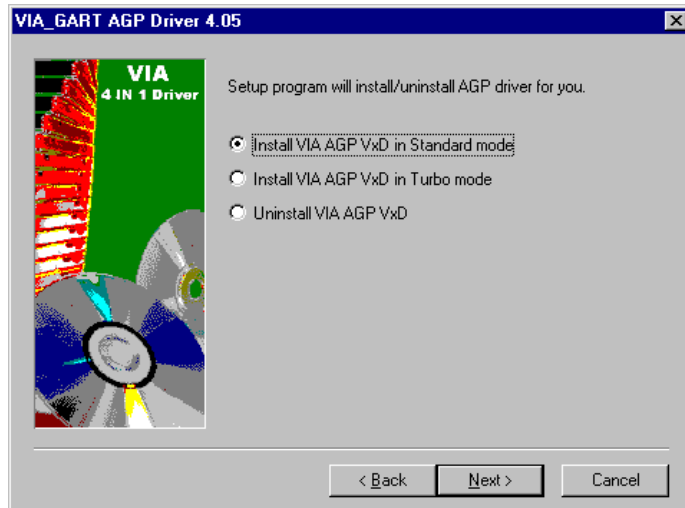
7. The program starts to install the ATAPI driver when you click the Next button on the screen below.



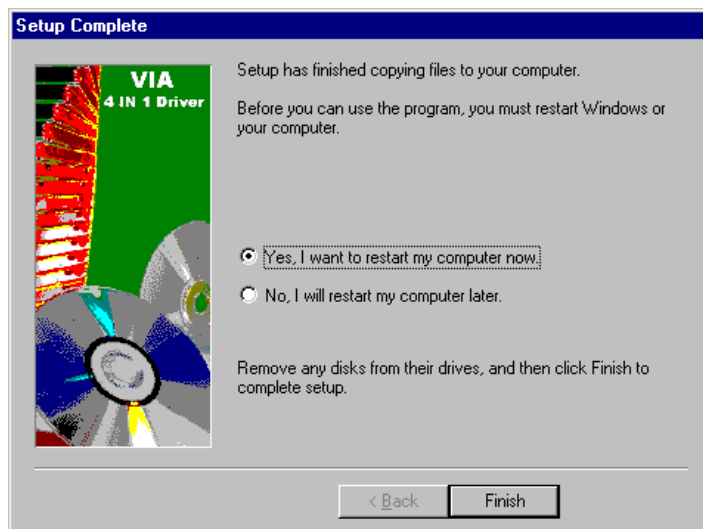
8. When the ATAPI driver is completely installed. The utility then displays your DMA mode status and allows you to enable it. Tick on the box and press on the Next button to continue.



9. The following screen then gives you the choice of installing the AGP driver in standard or turbo mode. Select on the Standard Mode and then click on Next to proceed.



10. Installation of the AGP driver is now complete. Once the screen below appears, select on restarting your computer to activate all drivers/settings completed.

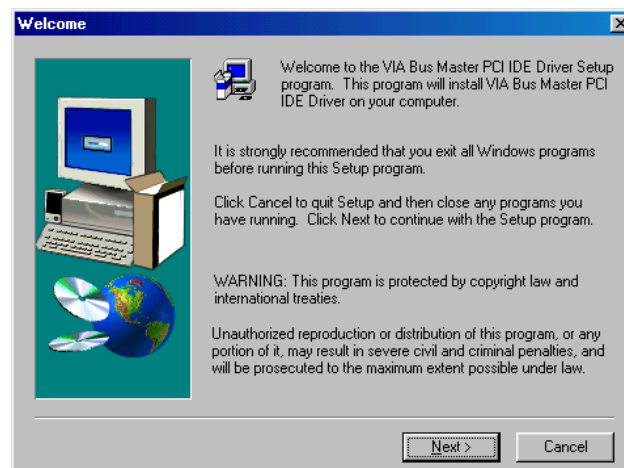


5.1.2 VIA IDE Tool Installation

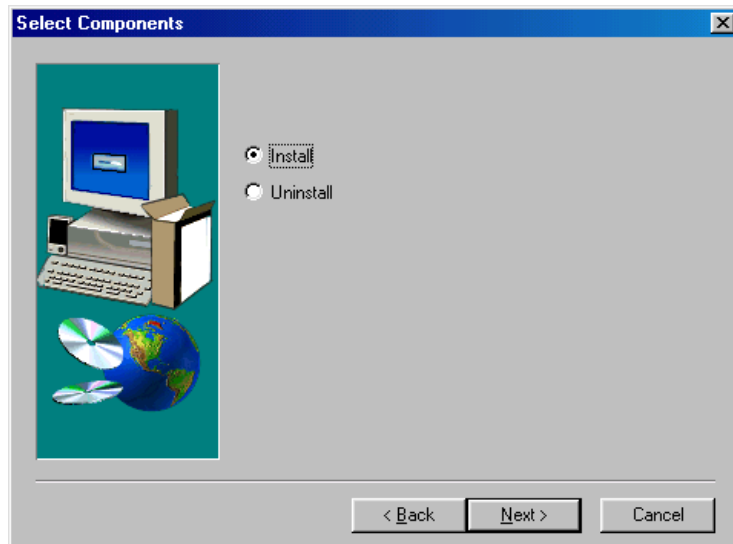
1. With the Utility CD Disk still in your CD ROM drive, open the File Manager and then select the CD-ROM drive. As soon as the system reads the disk, the following screen will appear on your display. Click on VIA_IDE from the main menu to start installing the VIA ID Tool.



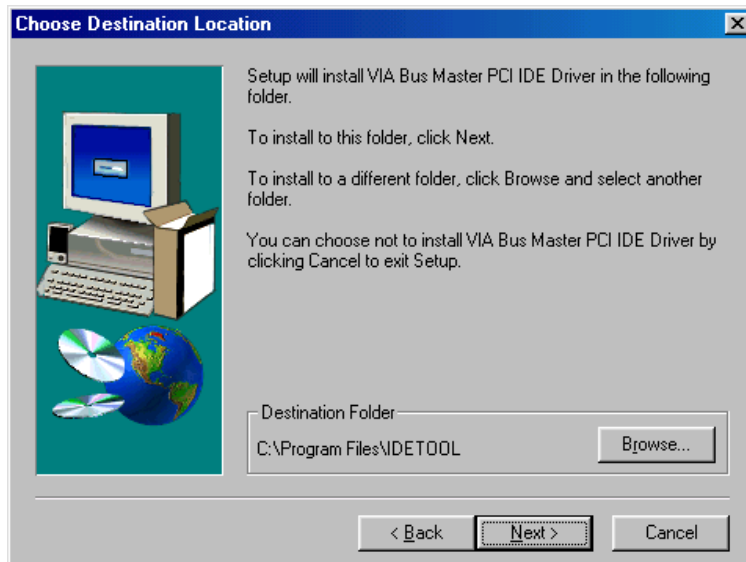
2. Once the Welcome screen appears on the screen, make sure to close applications that are running and then click the Next button.



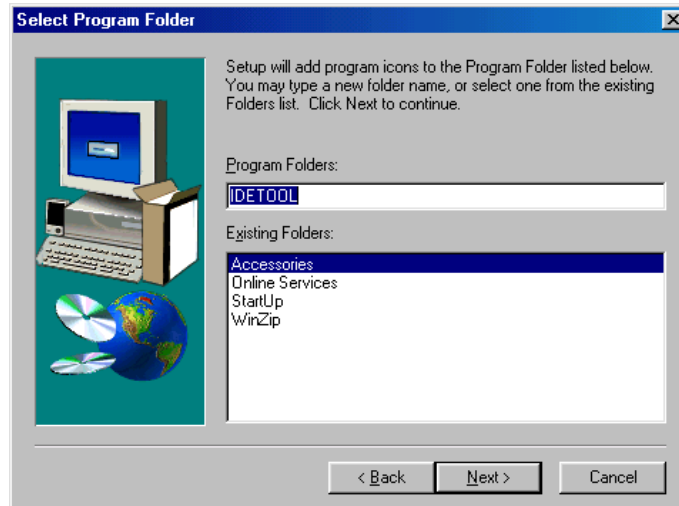
3. The Select Components dialog box is now displayed. Select on Install and then click on Next.



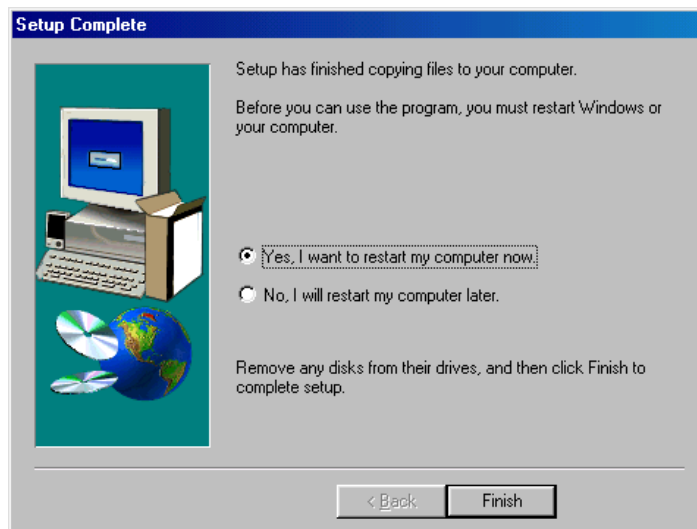
4. Choose the folder to where the program will install the driver. Select the default folder (C:\Program Files\IDETOOL) and then click on Next to proceed.



5. The program will now create an icon for the IDETOOL. Simply press Next to continue with the installation.



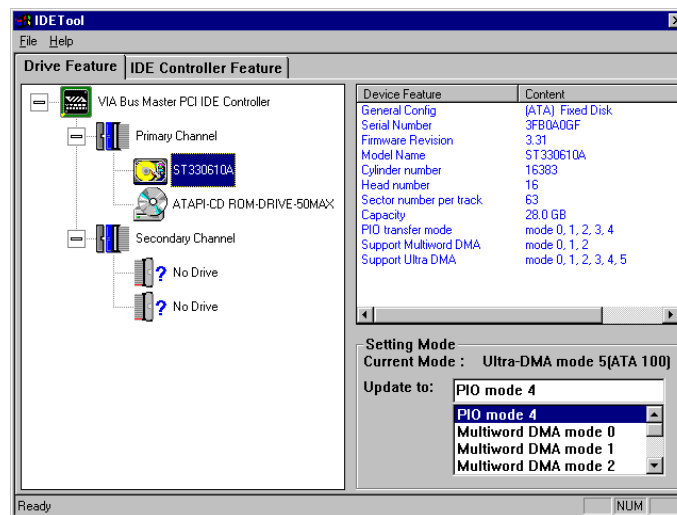
6. The program now installs and transfers the files to your system. After it finishes, you will be prompted to restart your system. We recommend you to reboot your computer to allow the new settings to take effect. Click on the Finish button to reboot.



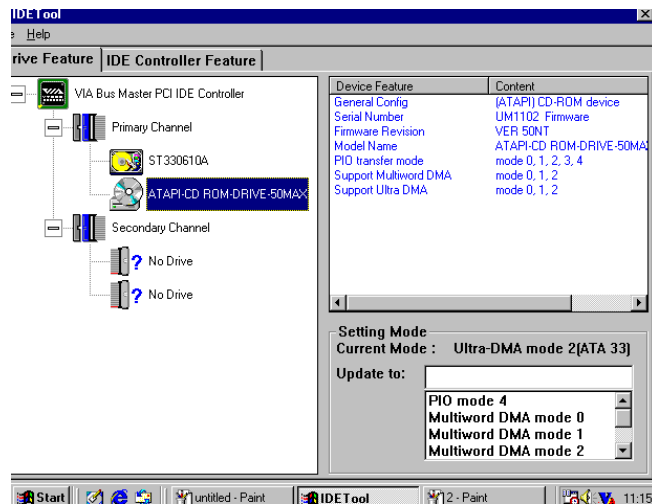
7. Once the system enters the main Windows screen, it will display a new icon along the right hand task bar. This icon represents the IDE Tool quick launch program.



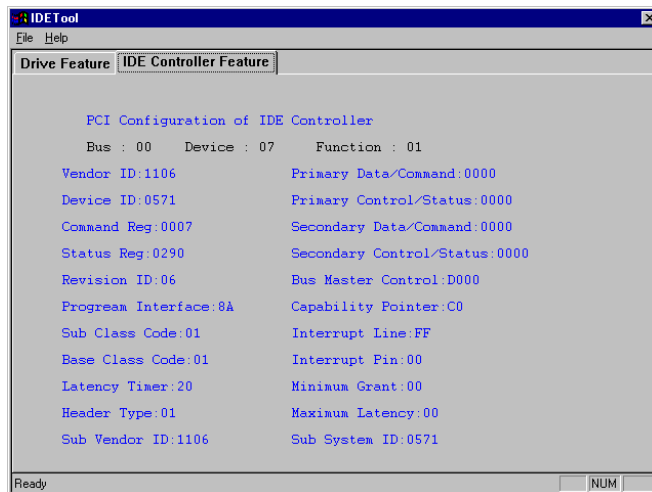
8. Double-clicking on this new task bar icon will launch the IDE Tool's Drive Feature dialog box, as shown below.



- The Drive Feature dialog box has 2 columns of information. The left column lets you to view the hardware installed on your system. When you select any hardware, the right column displays the device's information and specifications. You may also update the settings of your devices from the right column.

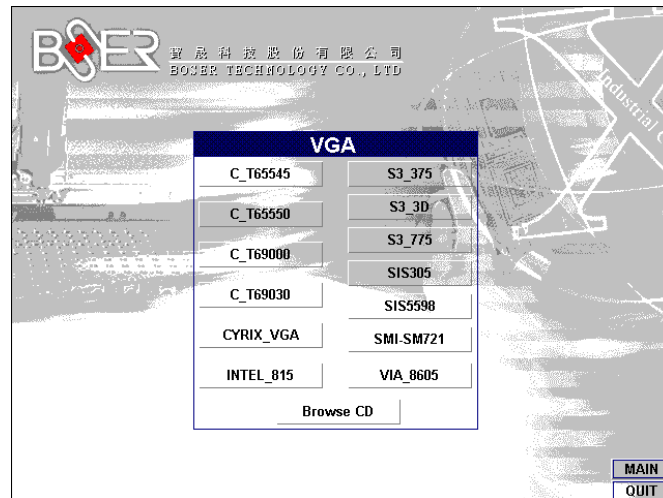


- Once you select the IDE Controller Feature from the IDE Tool dialog box, a list of read-only information related to the system's IDE controller is shown.

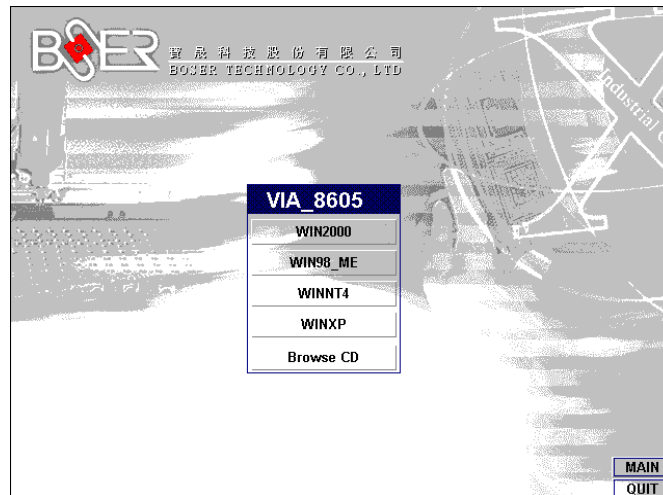


5.1.3 VGA Driver Installation

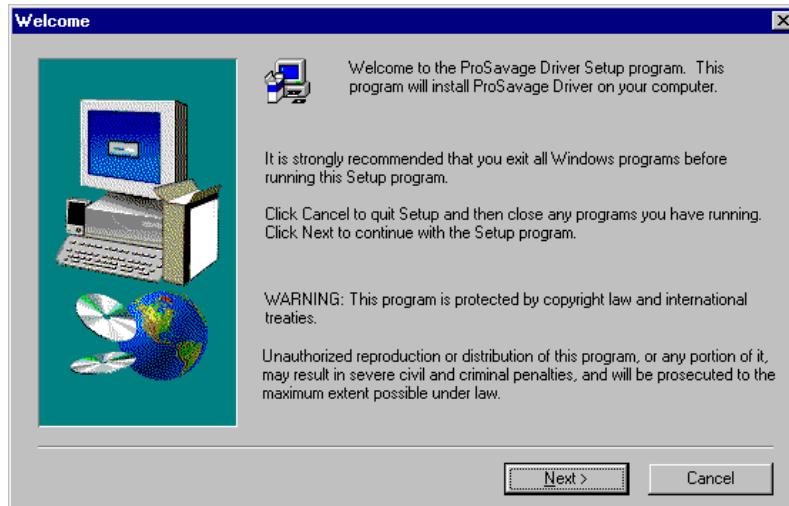
1. With the Utility CD Disk still in your CD ROM drive, open the File Manager and then select the CD-ROM drive. As soon as the system reads the disk, the VGA Menu screen below will appear on your display. Click on VIA_8605 from the main menu.



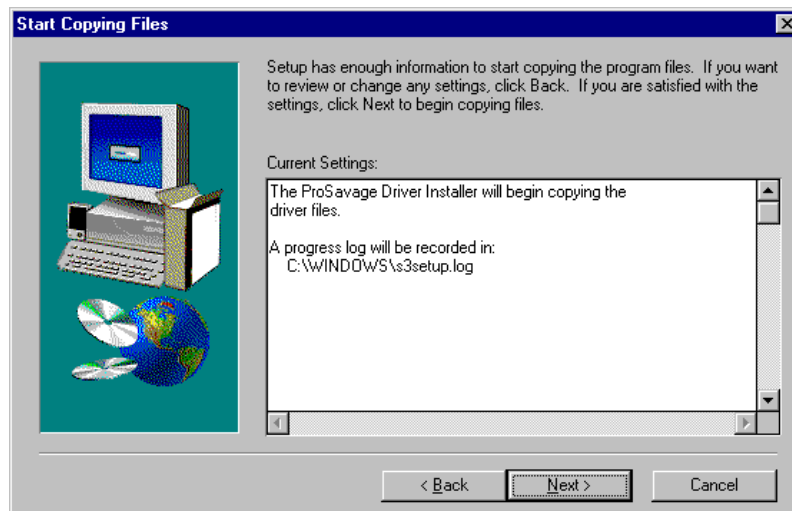
2. Select the operating system of your computer to proceed with the installation process.



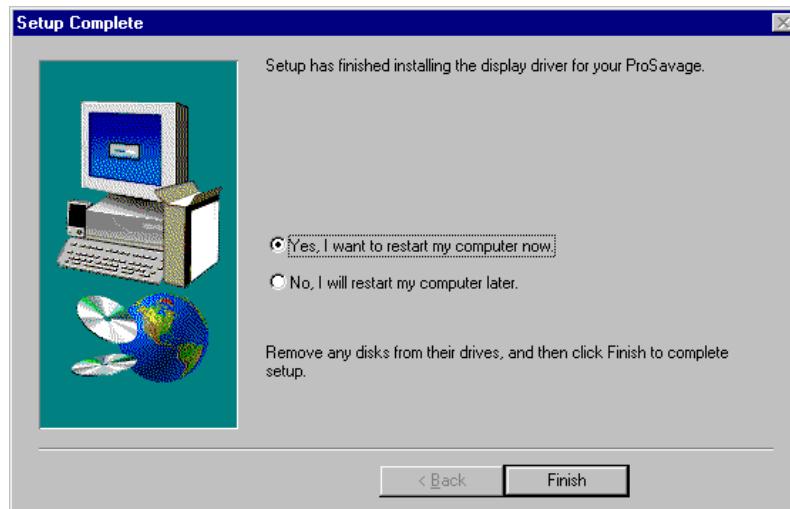
3. Once the Welcome screen appears on the screen, make sure to close applications that are running and then click the Next button.



4. When the display below appears on your screen, Setup is already ready to install and copy the related files onto your hard drive. Click on the Next button to proceed.



5. After the installation finishes, you will be prompted to restart your system. We recommend you to reboot your computer to allow the new settings to take effect. Click on the Finish button to reboot.

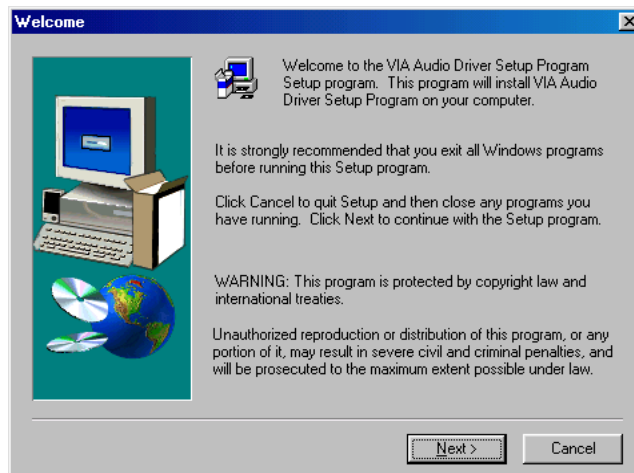


5.1.4 Audio Driver Installation

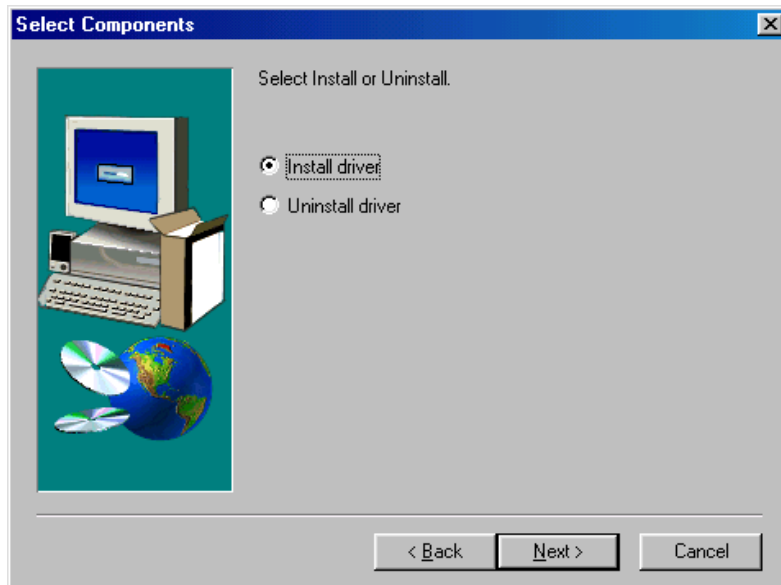
1. With the Utility CD Disk still in your CD ROM drive, open the File Manager and then select the CD-ROM drive. As soon as the system reads the disk, the VGA Menu screen below will appear on your display. Click on VIA_AC97 from the main menu.



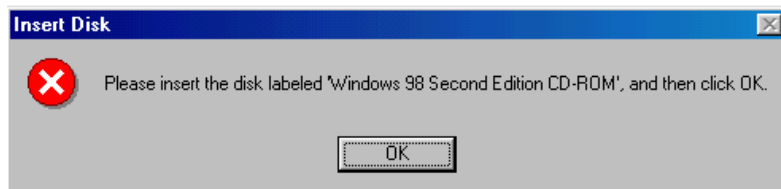
2. Once the Welcome screen appears on the screen, make sure to close applications that are running and then click the Next button.



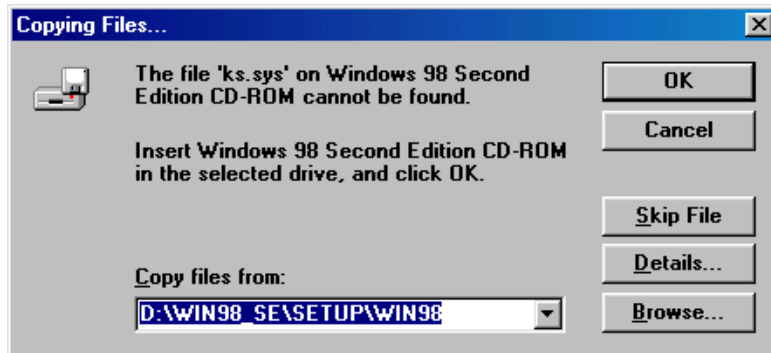
3. The Select Components dialog box is now displayed. Select on Install driver and then click on Next.



4. The program will now require the Windows installation disk for proper hardware installation. Insert the CD and then click on Next.



- When the display below appears on your screen, Setup is already installing and copying the related files onto your hard drive. Click on the Next button to proceed.

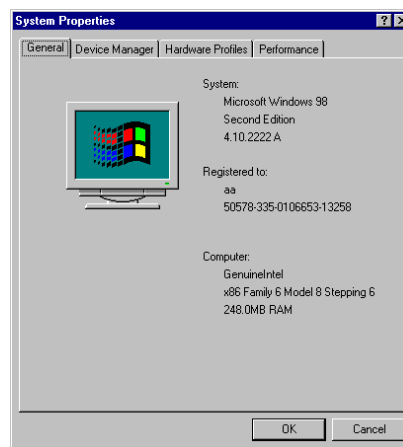


- After the audio driver installation finishes, select the Finish button to complete the installation process.

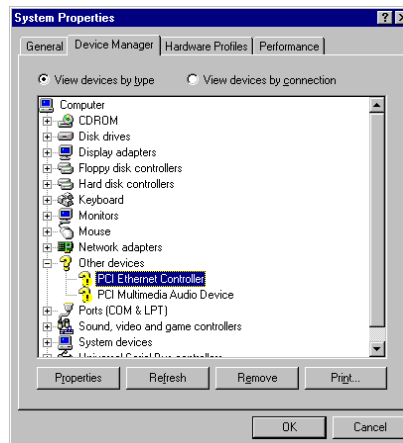


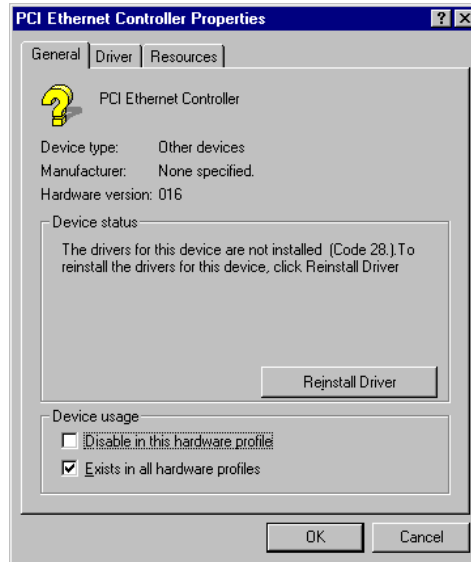
5.2 LAN Driver Installation for WIN95 & WIN98

1. With the Utility CD Disk still in your CD ROM drive, right click on My Computer icon from the Windows menu. Select on System Properties and then proceed to the Device Manager from the main menu.

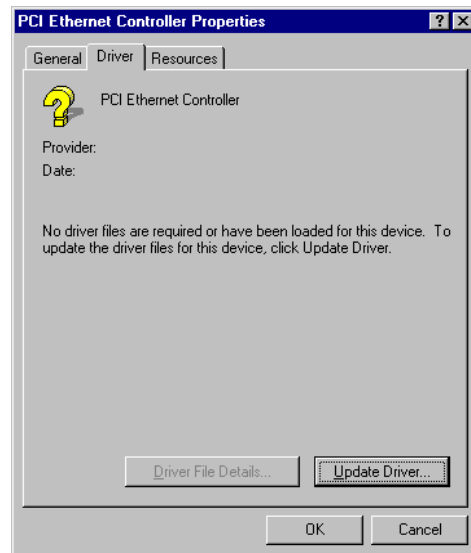


2. Select on Other Devices from the list of devices then double-click on PCI Ethernet Controller.





3. The PCI Ethernet Controller Properties screen then appears, allowing you to re-install the driver. Select Driver from the main menu to proceed.



4. The window then displays the current status of your LAN driver. Press on Update Driver button to continue.
5. The program will then launch the Update Device Driver Wizard window that will install your device driver. Click on the Next button to proceed to the next step.



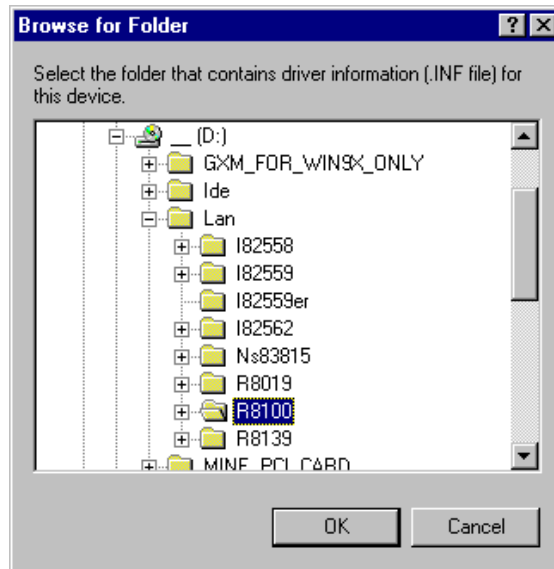
6. When the succeeding window asks you what you wish Windows to do, tick on the "Search for a better driver..." Click on the Next button to proceed.



7. The Update Device Driver Wizard will then ask you to specify, by ticking, the path of the new driver. Tick on the open boxes where you require the program to search for the device driver then click on the Browse button to manually specify the path.



8. Press on the OK button as soon as you have located the path of your driver.



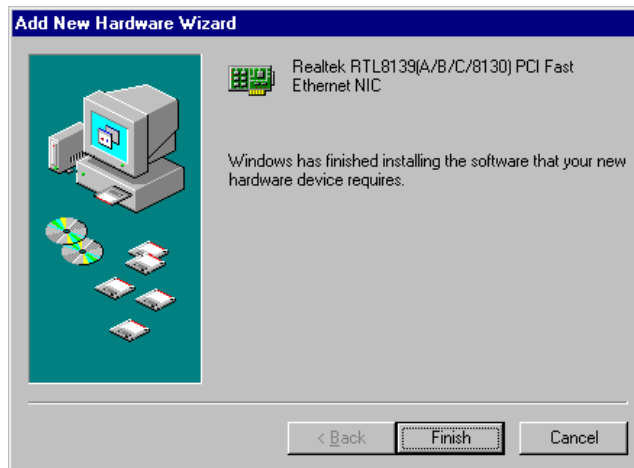
9. Once the program returns to the Add New Hardware Wizard screen, your specified location will appear. Press on the Next button to continue.



10. Once the program detects the device driver (*.inf) file from your specified location, it will automatically copy the files into your hard drive.
11. When copying of driver files finishes, the program will then ask you to insert your Windows.



12. The program then copies the necessary files from your Windows installation disk to complete the driver setup process. Once the driver is completely installed, the following message appears on your display. Click on the Finish button to proceed.

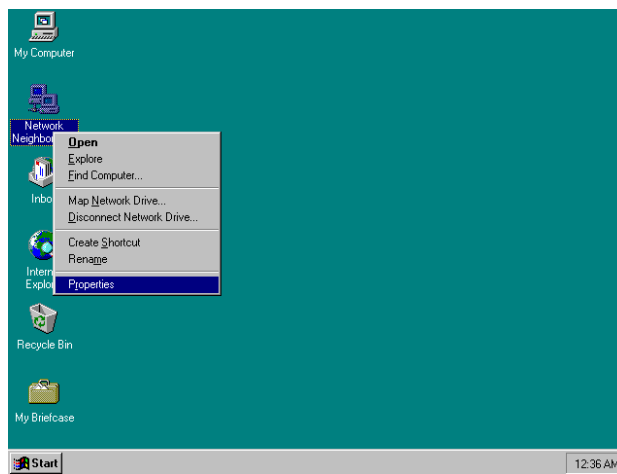


13. Restart your computer to make the new system settings take effect. Click on the Yes button when the screen below appears and your LAN Driver for Win95 and Win98 are now completely installed.

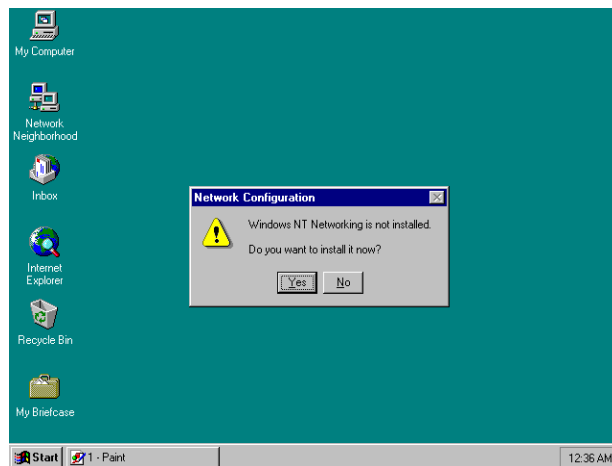


5.3 LAN Driver Installation for WIN NT4.0

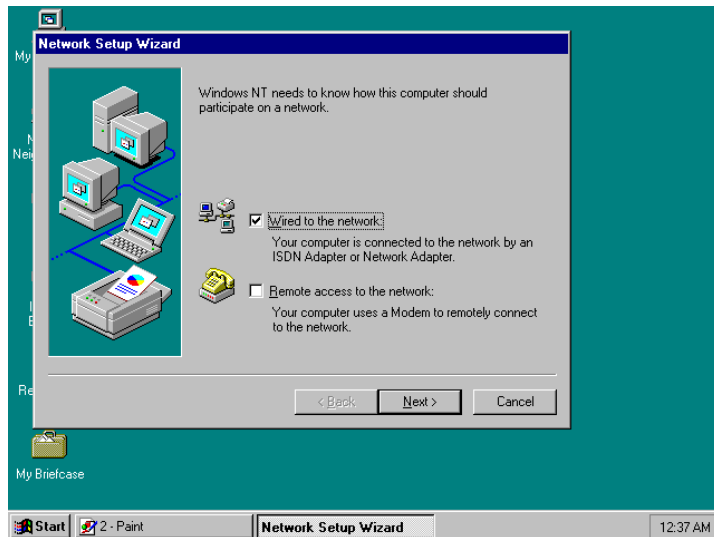
1. With the Utility CD Disk still in your CD ROM drive, right click on Network Neighborhood icon from the Windows menu. Select on Properties.



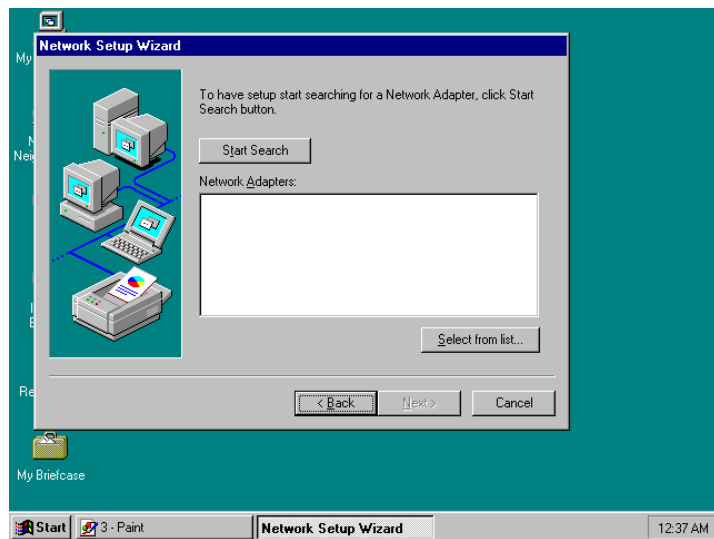
2. The system automatically detects the absence of Windows NT Networking. Click on the Yes button to start installation.



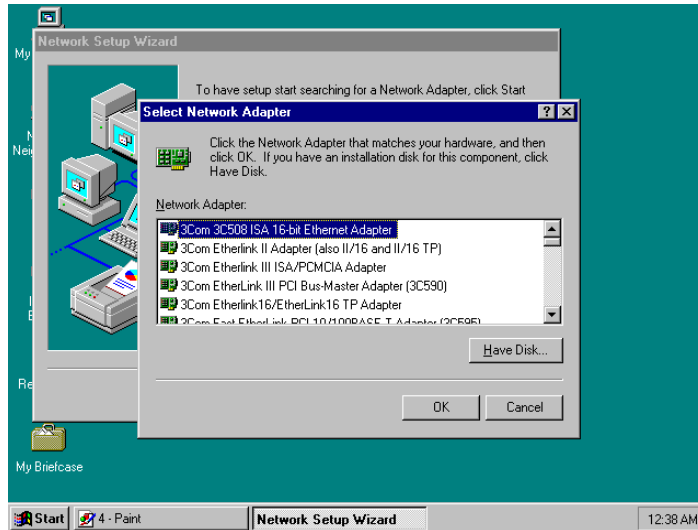
3. Tick on the "Wired to Network" once the following screen appears. Click on the Next to proceed.



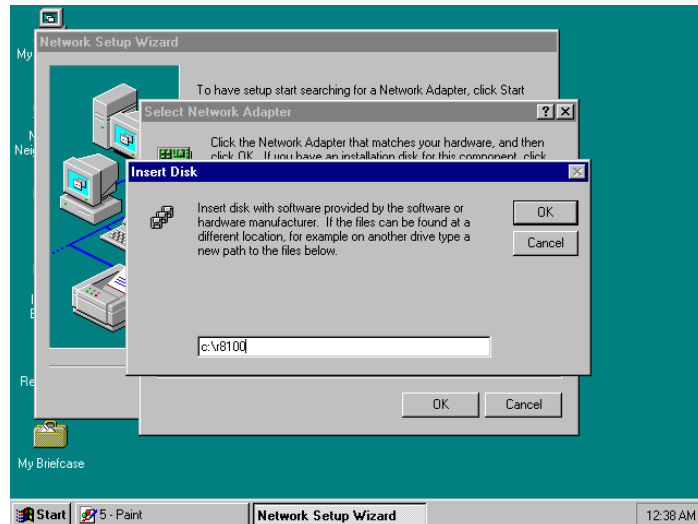
4. Click on the Start Search button for the program to locate the Network Adapter.



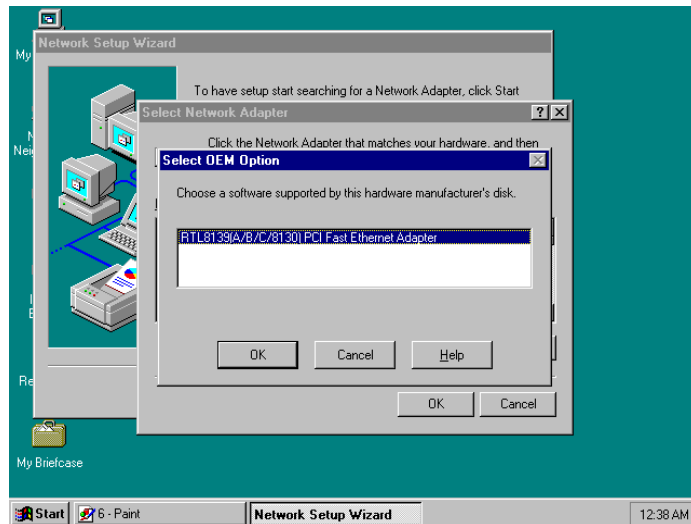
- Once setup finishes the search, it will list a number of adapters for you to choose from. Press on the Have Disk button to assign the driver path location.



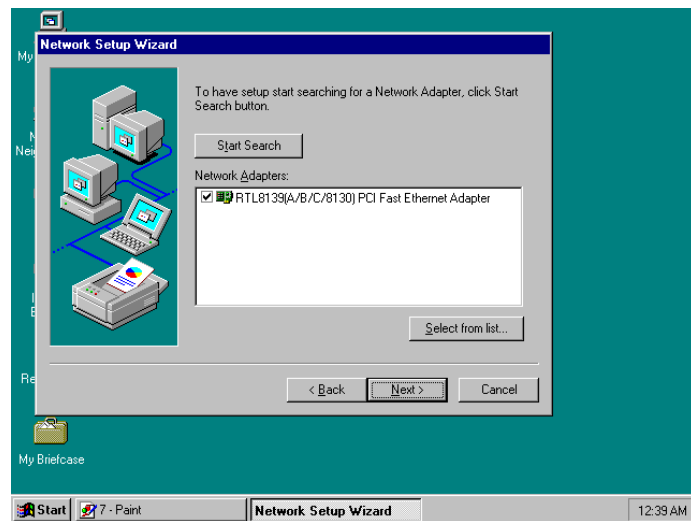
- Setup now asks you for the location of the driver. When you have entered the new driver path, press on the OK button to continue.



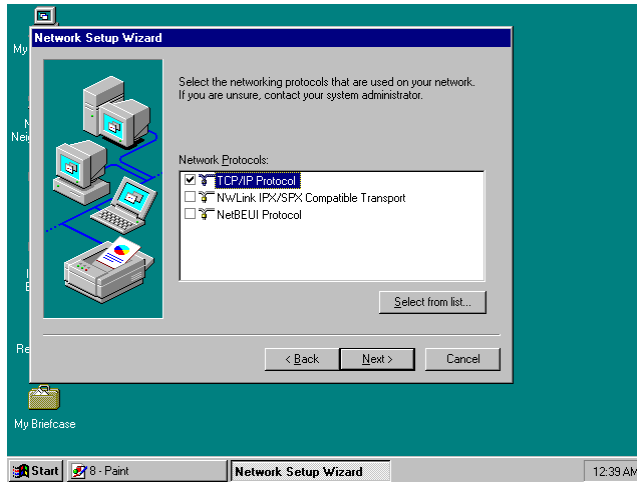
- When Setup finds the information it needs about the new driver, it will display the device it found on the following screen. Press on the OK button to accept and proceed.



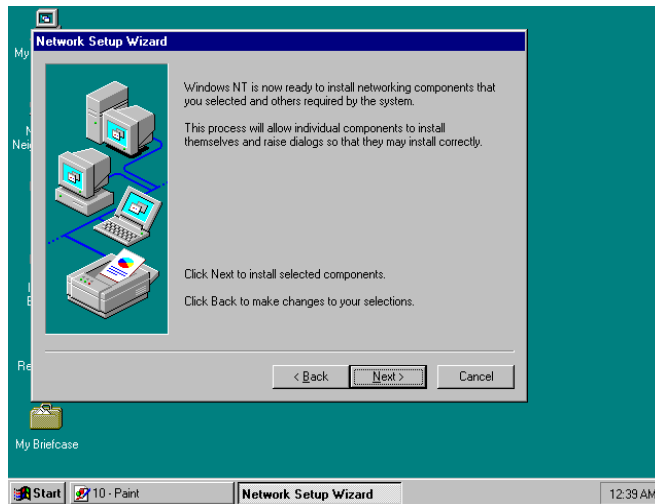
- Setup then returns to Network Setup Wizard screen and displays your new Network Adapter. Click on Next to continue.



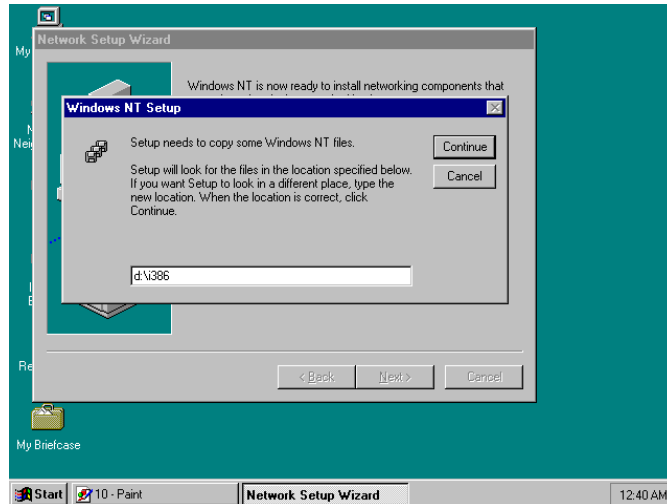
9. The Network Setup Wizard then allows you to set the Network Protocols on your network. Select the appropriate protocol and then click on Next to continue.



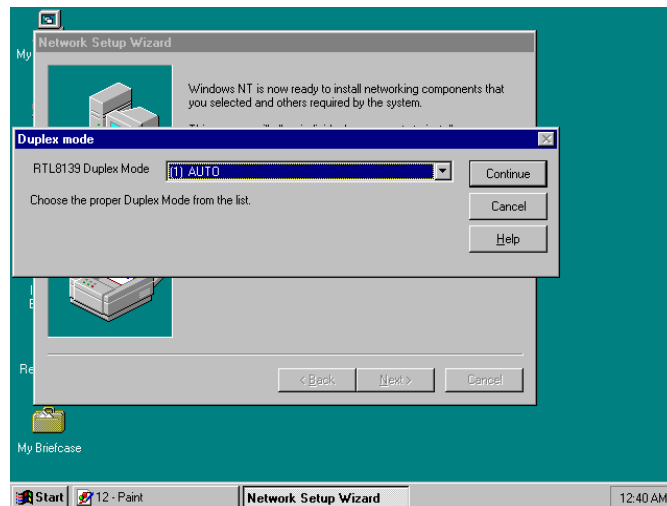
10. Before Setup starts installing the components found and the settings you made, it will give you the option to proceed or go back for changes from the following screen. Click on the Next button once you are sure of your devices.



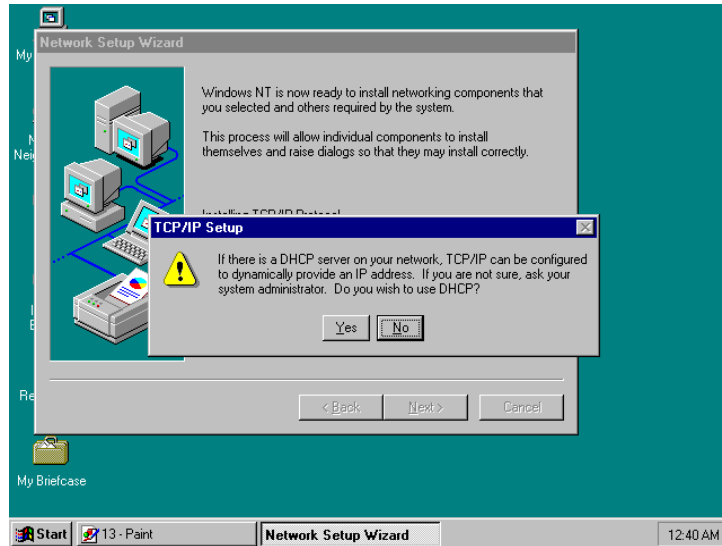
11. Windows NT Setup will then need to copy files necessary to update the system information. Specify the path then press Continue.



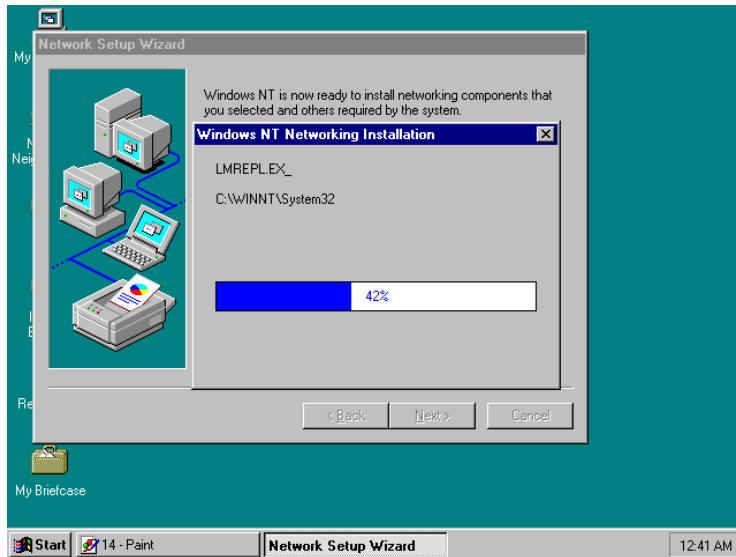
12. Once it finishes copying the files, Setup will now allow you to choose the Duplex Mode of your LAN controller. Press on the Continue button after making your selection.



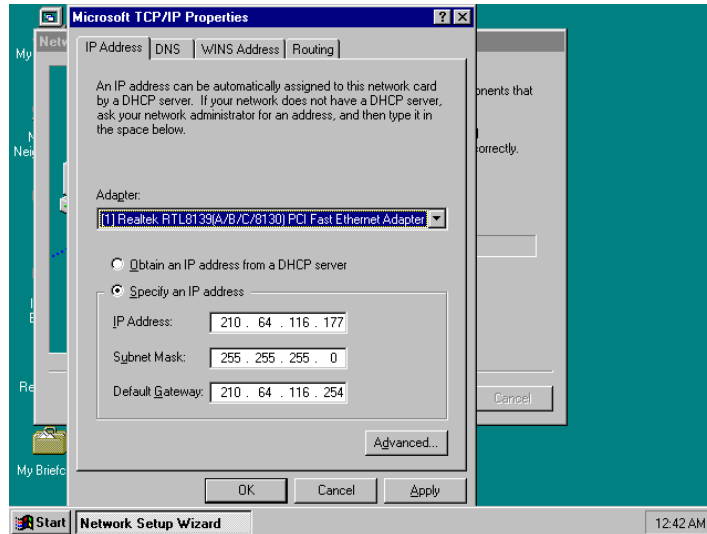
13. When Setup asks if you wish to change the TCP/IP settings of your system, select the appropriately. The default choice is No.



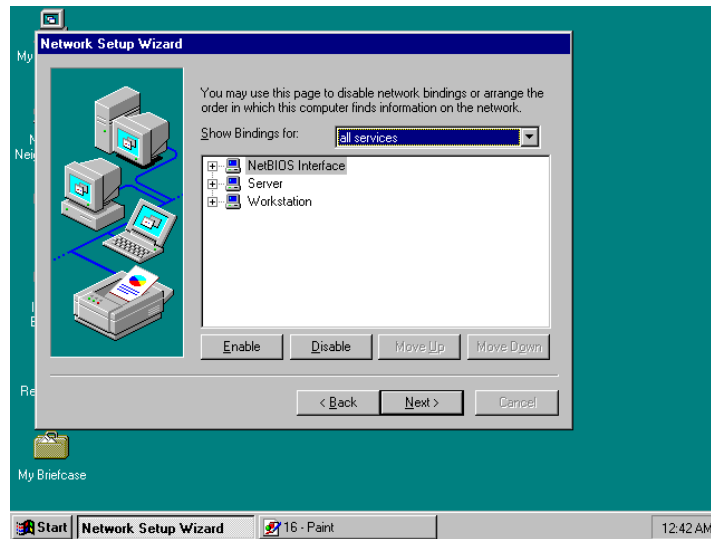
14. Setup then starts the Networking installation and copies the files.



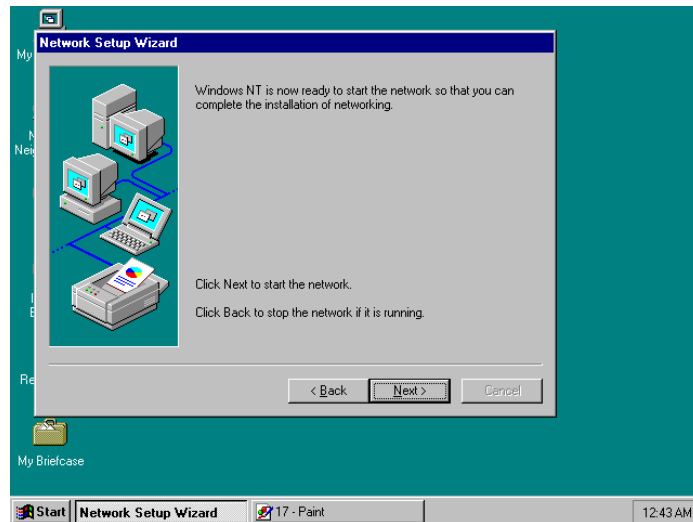
15. When Setup finishes copying, the TCP/IP properties of your system will then pop up on your screen like the one shown below. Make the necessary changes then click on OK to continue.



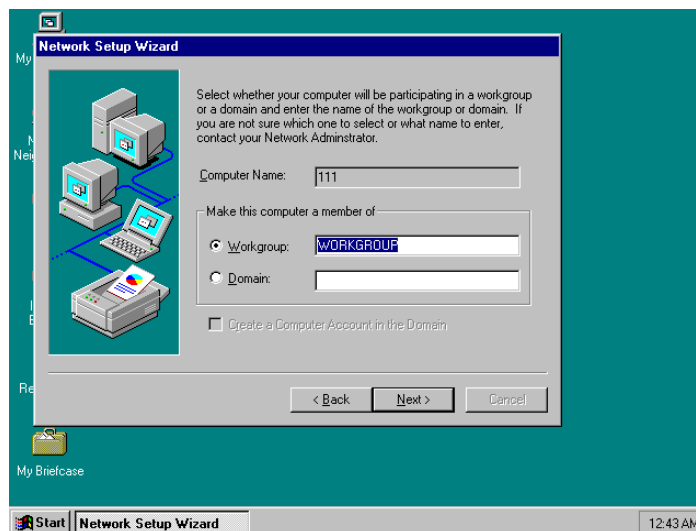
16. When the screen below appears, click on Next to continue.



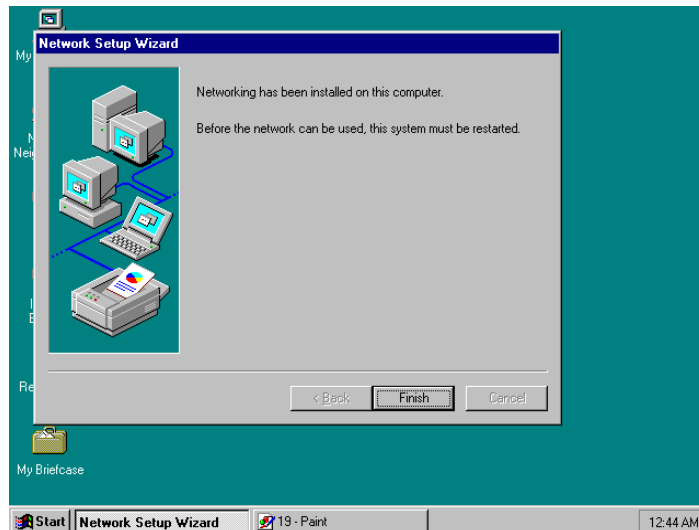
17. Setup then prompts you that it is ready to start the network. You may complete the installation thereafter. Click on Next to continue.



18. Assign the workgroup or domain setting of your computer. Click on Next to continue.



19. Restart your computer once the screen below appears. Click on Finish to continue.



20. Click on the Yes button to restart your computer. The LAN driver installation for WIN NT4.0 is now complete.

