

# **HS-6237/HS-6637**

**BX Celeron™/Coppermine™**

**Industrial Single Board Computer**

- Half Size • All in one • CRT/Panel •
- 133MHz FSB • LAN • PC/104 • IrDA • USB •
- DOC • WDT • H/W Monitor •
- PCI-ISA/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:

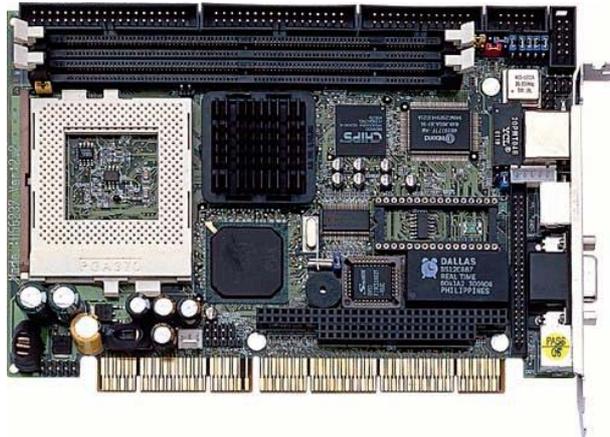
- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- 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-6237/HS-6637 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-6237/HS-6637 is a 100MHz(ver 2.0)/133MHz(ver 3.0) FSB Intel® BX chipset-based board designed for PCI-ISA/ISA Bus Celeron™/Coppermine™ compatibility. These features combine and make the HS-6237/ HS-6637 an ideal all-in-one industrial single board computer. Additional features include an enhanced I/O with CRT/Panel and LAN interface.

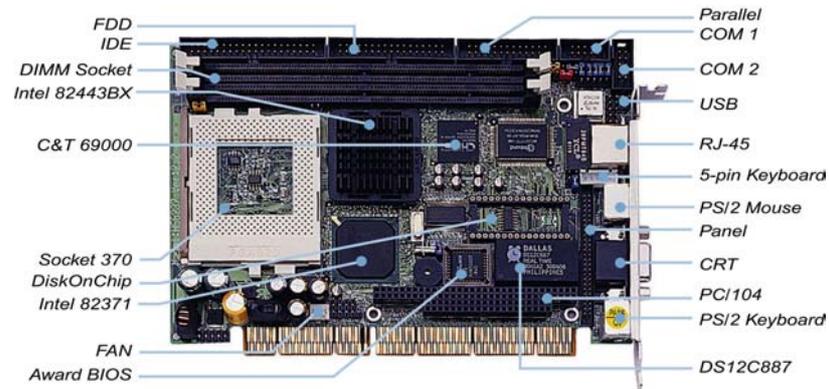
The onboard ATA/33 for mode 3 to IDE drive interface architecture supports a maximum data transfer rate of 33.3 MB/sec to a single IDE drive connection. Designed with the Intel® 82443BX/82371EB core logic chipset, the board supports all Celeron™/Coppermine™ CPU series operating at 300MHz to 850MHz(ver 2.0)/1GHz(ver 3.0). The C&T 69000 CRT/Panel display controller offers an on-chip 2MB memory that supports up to 1280 x 1024 x 256 colors display resolution.

For suitable installation 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 512MB(ver 2.0)/256MB(ver 3.0).

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 Based Ethernet use.

To ensure the reliability in an unmanned or standalone system, the Watchdog Timer (WDT) onboard HS-6237/HS-6637 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



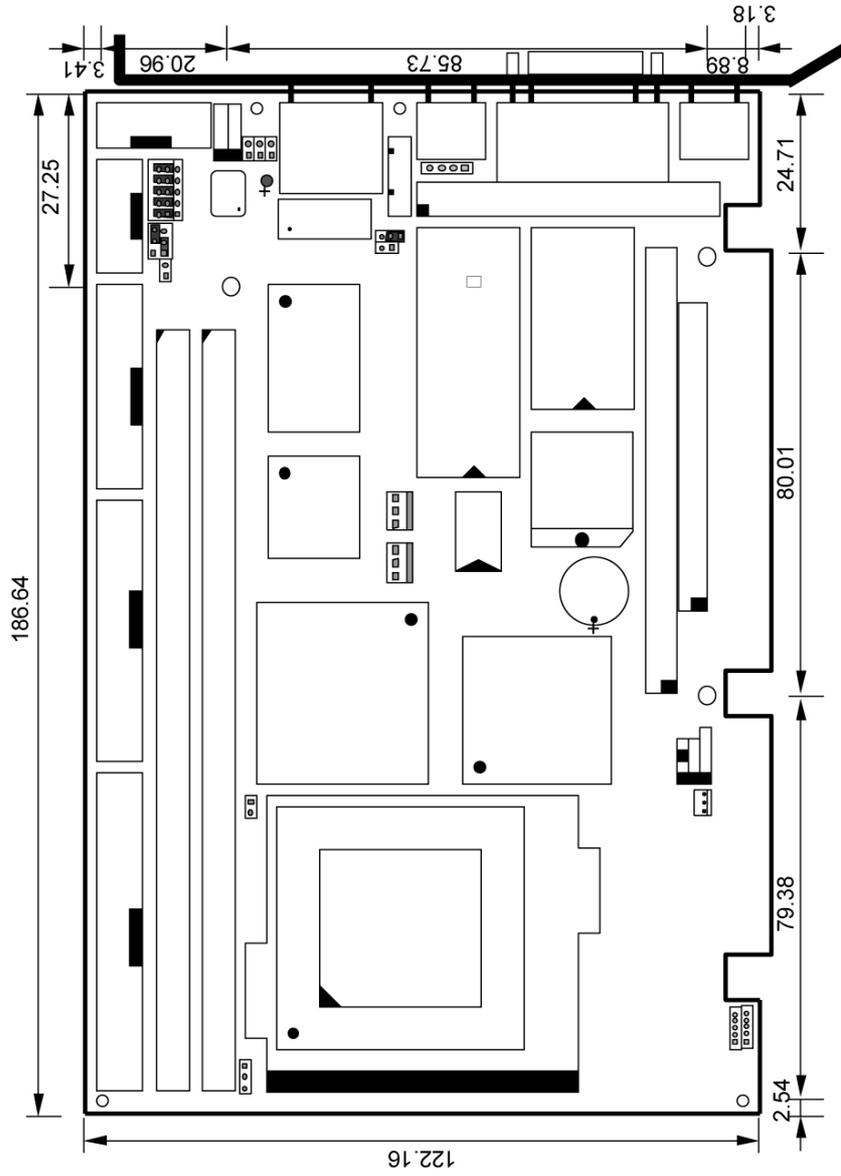
The HS-6237/HS-6637 comes with the following features:

- Socket 370 for Intel® Celeron™/Coppermine™ 300MHz~850MHz(ver 2.0)/1GHz(ver 3.0) CPU
- Intel® 82443BX/82371EB system chipset
- 100MHz FSB (ver 2.0) providing up to 133MHz FSB (ver 3.0)
- Two DIMM sockets with a max. capacity of 512MB(ver 2.0)/256MB(ver 3.0)
- Winbond W83977 super I/O chipset
- Two RS-232 serial ports
- PC/104 Bus connector
- C&T 69000 CRT/Panel display controller
- Intel® 82558 10/100 Based LAN
- DiskOnChip socket supporting memory sizes of up to 288MB
- Two USB connectors
- Supports CPU Temperature Alarm function (ver 2.0)
- Supports Hardware Monitor function (ver 3.0)

## 1.2 Specifications

- **CPU:** Socket 370 for Intel® Celeron™/Coppermine™ 300MHz~852MHz(ver 2.0)/1GHz(ver 3.0) CPU
- **Bus Interface:** HS-6237 is PCI-ISA Bus, HS-6637 is ISA Bus
- **System Clock Rate:** 100MHz FSB (ver 2.0) providing up to 133MHz FSB (ver 3.0)
- **Memory:** Two DIMM sockets supporting up to 512MB(ver 2.0)/256MB (ver 3.0)
- **Chipset:** Intel® 82443BX/82371EB
- **I/O Chipset:** Winbond W83977
- **VGA:** C&T 69000 with 2MB memory supporting CRT/Panel displays up to 1280 x 1024 at 256 colors
- **IDE:** Two IDE disk drives supporting ATA/33 and with a transfer rate up to 33MB/sec.
- **FDD:** Supports up to two floppy disk drives
- **Parallel:** One enhanced bi-directional parallel port supporting SPP/EPP/ECP
- **LAN:** Intel® 82558 10/100 Based LAN
- **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:** Two USB connectors
- **Keyboard:** PS/2 6-pin Mini DIN or 5-pin connector
- **Mouse:** PS/2 6-pin 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:** DS12C887 or equivalent device
- **DMA Channels:** 7
- **Interrupt Level:** 15
- **Extra Power Connectors:** One 10-pin +5V/+12V connector
- **Maximum Power Consumption:** +5V@5A, +12V@120mA
- **Operating Temperature:** 0~60°C
- **CPU Temperature Alarm:** Beeping alarm when CPU's temperature exceeds heating limits (ver 2.0)
- **Hardware Monitor:** Winbond W83783S (ver 3.0)
- **Board Size:** 18.6 x 12.2 cm

### 1.3 Board Dimensions



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# Chapter 2

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## Unpacking

### 2.1 Opening the Delivery Package

The HS-6237/HS-6637 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-6237/HS-6637 delivery package contains the following items:

- ◆ HS-6237/HS-6637 Board x 1
- ◆ IDE flat cable with bracket x 1
- ◆ FDD flat cable x 1
- ◆ Printer cable with bracket x 1
- ◆ Two RS-232 COM Port cable with bracket x 1
- ◆ 8-pin USB port split type cable with bracket x 1
- ◆ PS/2 to standard type keyboard transfer cable x 1
- ◆ Utility CD Disk x 1
- ◆ User's Manual x 1
- ◆ Jumper Bag x 1

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

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## Hardware Installation

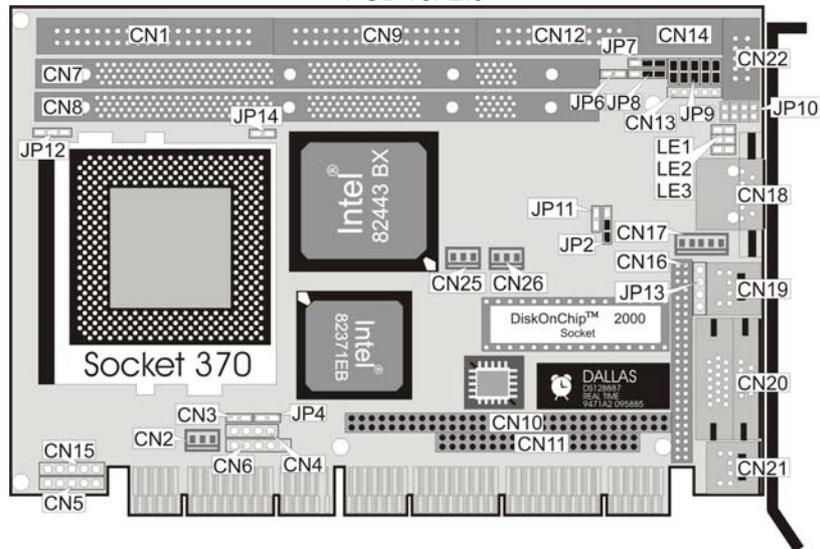
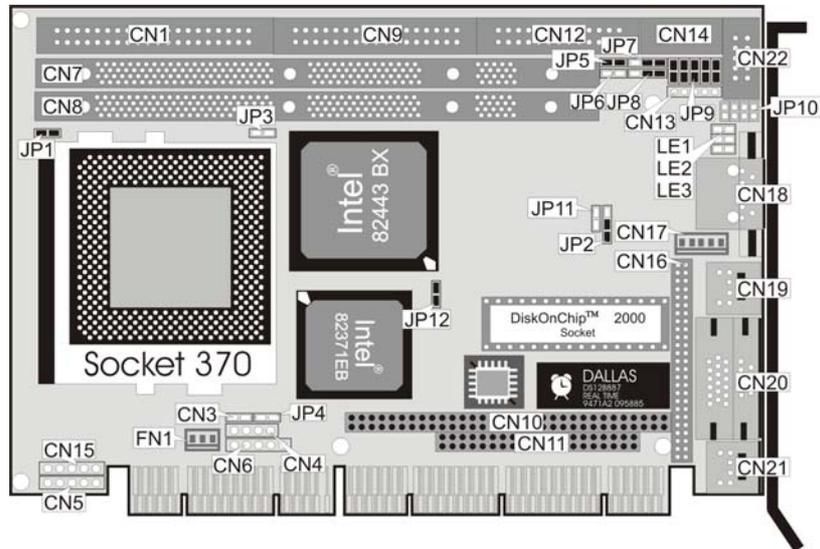
This chapter provides the information on how to install the hardware using the HS-6237/HS-6637. This chapter also contains information related to jumper settings of switch, watchdog timer, and the DiskOnChip™ address selection etc.

### 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 Board Layout



### 3.3 Jumper List

Jumper	Definition		Page
	PCB v2.x	PCB v3.x	
<b>JP1</b>	Bus Clock Frequency Setting: <i>Short</i>	----	12
<b>JP2</b>	VGA Enabled/Disabled Select by Hardware: <i>Enabled</i>		13
<b>JP4</b>	Reset Connector		24
<b>JP5</b>	Bus Clock Frequency Setting: <i>Short</i>	----	12
<b>JP6</b>	Clear CMOS: <i>Normal Operating</i>		21
<b>JP7</b>	Watchdog Timer Active Type Setting: <i>Reset</i>		25
<b>JP8</b>	Panel Voltage Select: 3.3V		13
<b>JP9(1-4)</b>	DiskOnChip Address Select: <i>D000</i>		13
<b>JP9(5-10)</b>	Watchdog Timer Out Period Select: <i>1sec.</i>		25
<b>JP10</b>	USB Connector		21
<b>JP11</b>	LAN Enabled/Disabled Select by Hardware: <i>Enabled</i>		20
<b>JP12</b>	CPU Temperature Alarm Enabled/Disabled Select: <i>Enabled</i>	I <sup>2</sup> C Connector	12/13
<b>JP13</b>	----	DVI Input Connector	21
<b>JP14</b>	----	Thermal Input Connector	25

### 3.4 Connector List

Connector	Definition	Page
<b>CN1</b>	IDE Connector	16
<b>CN2</b>	Fan Power Connector	22
<b>CN3</b>	HDD LED	24
<b>CN4</b>	Speaker Connector	24
<b>CN5</b>	5-pin Power Connector	22
<b>CN6</b>	Power LED & Keylock Connector	24
<b>CN7 &amp; CN8</b>	DIMM 1 & DIMM 2	12
<b>CN9</b>	Floppy Connector	17
<b>CN10</b>	PC/104 64-pin Connector	27
<b>CN11</b>	PC/104 40-pin Connector	27
<b>CN12</b>	Parallel Connector	19
<b>CN13</b>	IrDA Connector	20
<b>CN14 &amp; CN22</b>	COM1/COM2 Connector (5x2 Header)	18
<b>CN15</b>	5-pin Power Connector	22
<b>CN16</b>	50-pin Panel Connector	13
<b>CN17</b>	5-pin Keyboard Connector	23
<b>CN18</b>	RJ-45 Connector	20

...More on next page...

Connector	Definition	Page
<b>CN19</b>	PS/2 6-pin Mini Din Mouse Connector	23
<b>CN20</b>	15-pin CRT Connector	13
<b>CN21</b>	PS/2 6-pin Mini Din Keyboard Connector	23
<b>CN23 &amp; CN24</b>	COM1/COM2 Connector (DB9)	18
<b>CN25 &amp; CN26</b>	Fan Power Connector	22
<b>FN1</b>	Fan Power Connector	22

### 3.5 Configuring the CPU

The HS-6237/HS-6637 v2.x provides all necessary by jumper setting in using bus clock frequency as the system bys clocking with *JP1* and *JP5*.

- **JP1, JP5: Bus Clock Frequency Setting (v2.x only)**

Options	JP1	JP5
<b>66MHz (default)</b>	Short	Short
<b>100MHz</b>	Open	Open

The HS-6237/HS-6637 v3.x offers the convenience in CPU installation with its auto-detect feature. After installing a new microprocessor onboard, the HS-6237/HS-6637 automatically identifies the frequency and clock speed of the installed microprocessor chip, thereby eliminating the need for user to do additional CPU configuration or hardware settings related to it.

### 3.6 System Memory

The HS-6237/HS-6637 provides two DIMM sockets at locations *CN7* and *CN8*. The maximum capacity of the onboard memory is 512MB(ver 2.0)/256MB(ver 3.0).

### 3.7 CPU Temperature Alarm (only for PCB v2.x)

The HS-6237/HS-6637 provides a select for hardware temperature alarm. If the CPU's temperature reached  $60^{\circ}\text{C}\pm 10\%$ , the warning "beep" will be come out. And it will stop as the CPU's temperature going down below  $60^{\circ}\text{C}\pm 10\%$  again.

- **JP12: CPU Temperature Alarm Enabled/Disabled Select**

Options	Setting
<b>Enabled (default)</b>	Short
<b>Disabled</b>	Open

## 3.8 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-6237/HS-6637 is the DiskOnChip™ module socket. *JP9 (1-4)* assigns the starting memory address of the installed module. If you have another memory device that has a similar memory capacity with that of the DOC in your system, please set both at different memory address mapping to avoid the mapping area conflicts. Failing to do so will not make the HS-6237/HS-6637 and the additional memory device function properly.

- **JP9(1-4): DiskOnChip™ Address Select**

Address	PINS 1-2	PINS 3-4
D000 (default)	Short	Short
D800	Open	Short

## 3.9 VGA Controller

The HS-6237/HS-6637 has an onboard jumper that selects the working voltage of the flat panel connected to the system. *JP8* offers two voltage settings for the user.

- **JP8: Panel Voltage Select**

Options	Settings
5V	Short 1-2
3.3V (default)	Short 2-3

**WARNING:** Please contact the supplier of your panel and make sure of the correct voltage it uses. Incorrect settings on *JP8* may cause internal damage to your panel.

The HS-6237/HS-6637 has a built-in C&T 69000 CRT/Panel display controller. The controller uses 2MB memory to support resolutions up to 1280 x 1024 at 256 colors. *JP2* selects the operating mode of the VGA.

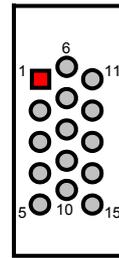
- **JP2: VGA Enabled/Disabled Select by Hardware**

Options	Settings
Enabled (default)	Short 1-2
Disabled	Short 2-3

The HS-6237/HS-6637 provides two connection methods of a VGA device. CN20 offers a single standard CRT connector (DB15) while CN16 is the 50-pin panel connector onboard reserved for flat panel installation.

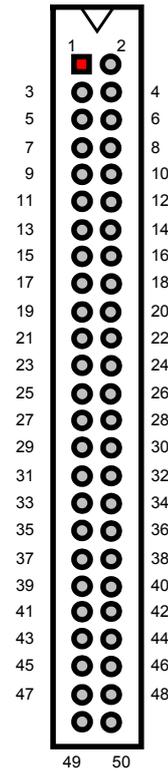
● **CN20: 15-pin CRT Connector**

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



● **CN16: 50-pin Panel Connector**

PIN	Description	PIN	Description
1	+12V	2	+12V
3	GND	4	GND
5	3.3V / 5V <sup>Note</sup>	6	ENAVDD
7	ENAVEE	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	P24	34	P25
35	SHFCLK	36	FLM
37	M	38	LP
39	GND	40	ENABKL
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35

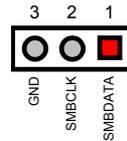


**NOTE:** Please set the proper voltage of your panel using JP8 before proceeding on installing it.

An Inter-IC connector, on JP12 (v3.x only) onboard, also offers the flexibility of installing an I<sup>2</sup>C digital signal-based device.

● **JP12: I<sup>2</sup>C Connector**

PIN	Description
1	SMBDATA
2	SMBCLK
3	GND



**3.9.1 Flat Panel Display Interface**

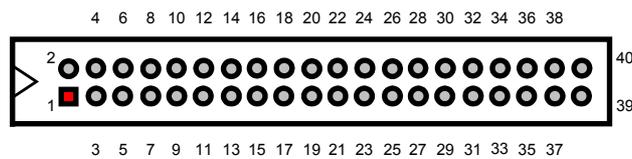
HS-6237		Mono				Color									
HS-6637		SS	DD		TFT			STN-HR	STN-SS		STN-DD				
PIN#	Name	8-bit	16-bit	9/12/16-bit	18-bit	18/24-bit	36-bit	18/24-bit	8-bit (4bP)	16-bit (4bP)	8-bit (4bP)	16-bit (4bP)	24-bit		
9	P0	D0	UD3	UD7	B0	B0	FB0	FB0	R1	R1	UR1	UR0	UR0		
10	P1	D1	UD2	UD6	B1	B1	FB1	FB1	B1	G1	UG1	UG0	UG0		
11	P2	D2	UD1	UD5	B2	B0	B2	FB2	G2	B1	UB1	UB0	UB0		
12	P3	D3	UD0	UD4	B3	B1	B3	FB3	R3	R2	UR2	UR1	LR0		
13	P4	D4	LD3	UD3	B4	B2	B4	FB4	B3	G2	LR1	UR0	LG0		
14	P5	D5	LD2	UD2	G0	B3	B5	FB5	G4	B2	LG1	LG0	LB0		
15	P6	D6	LD1	UD1	G1	B4	B6	SB0	R5	R3	LB1	LB0	UR1		
16	P7	D7	LD0	UD0	G2	B5	B7	SB1	B5	G3	LR2	LR1	UG1		
17	P8			LD7	G3	G0	SB2	FG0		B3		UG1	UB1		
18	P9			LD6	G4	G1	SB3	FG1		R4		UB1	LR1		
19	P10			LD5	G5	G2	SB4	FG2		G4		UR2	LG1		
20	P11			LD4	R0	G1	G3	SB5		B4		UG2	LB1		
21	P12			LD3	R1	G2	G4	FG0		R5		LG1	UR2		
22	P13			LD2	R2	G3	G5	FG1		G5		LB1	UG2		
23	P14			LD1	R3	G4	G6	FG2		B5		LR2	UB2		
24	P15			LD0	R4	G5	G7	FG3		R6		LG2	LR2		
25	P16						R0	FG4					LG2		
26	P17						R1	FG5					LB2		
27	P18					R0	R2	SG0					UR3		
28	P19					R1	R3	SG1					UG3		
29	P20					R2	R4	SG2					UB3		
30	P21					R3	R5	SG3					UR3		
31	P22					R4	R6	SG4					LG3		
32	P23					R5	R7	SG5					LB3		
33	P24							FR0							
34	P25							FR1							
41	P26							FR2							
42	P27							FR3							
43	P28							FR4							
44	P29							FR5							
45	P30							SR0							
46	P31							SR1							
47	P32							SR2							
48	P33							SR3							
49	P34							SR4							
50	P35							SR5							
35	SHFCLK: Pixel clock .Shift Clock														
36	FLM.VSYNC: First line marker														
37	M: Panel AC driver control														
38	LP,DE,HSYNC: Latch pulse														
40	ENABKL: Power sequencing control for enabling the backlight,(high active)														

### 3.10 PCI E-IDE Drive Connector

CN1 is a standard 40-pin connector daisy-chain driver connector serves the PCI E-IDE drive provisions onboard the HS-6237/HS-6637. A maximum of two IDE drives can connect to the HS-6237/HS-6637 via CN1.

- **CN1: IDE Connector**

PIN	Description	PIN	Description
1	RESET	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	N/C
21	RPDDREQ#	22	GND
23	RPDIOW#	24	GND
25	RPDIOR#	26	GND
27	PIORDY	28	PRIPD1#
29	RPDACK#	30	GND
31	IRQ14	32	N/C
33	RPDA1#	34	PATA66
35	RPDA0#	36	RPDA2#
37	RPCS1#	38	RPCS3#
39	HDD ACTIVE	40	GND

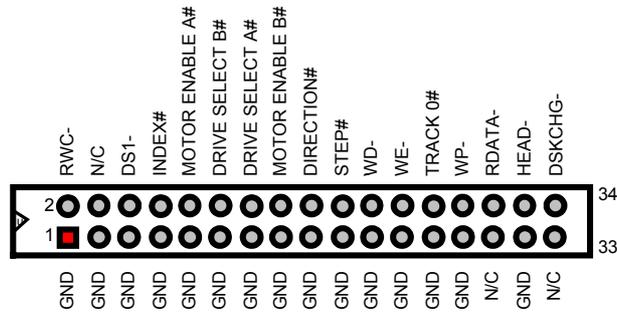


### 3.11 Floppy Disk Drive Connector

The HS-6237/HS-6637 uses a standard 34-pin header connector, CN9, for floppy disk drive connection. A total of two FDD drives may be connected to CN9 at any given time.

- **CN9: Floppy Connector**

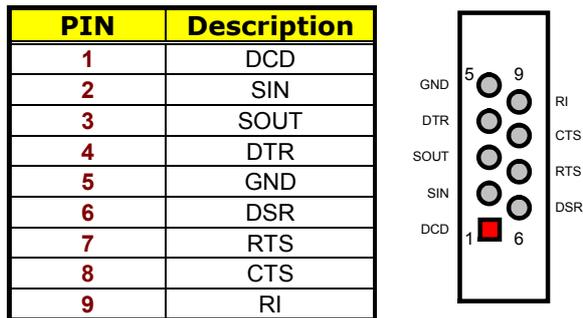
PIN	Description	PIN	Description
1	GND	2	RWC-
3	GND	4	N/C
5	GND	6	DS1-
7	GND	8	Index#
9	GND	10	Motor Enable A#
11	GND	12	Drive Select B#
13	GND	14	Drive Select A#
15	GND	16	Motor Enable B#
17	GND	18	Direction#
19	GND	20	Step#
21	GND	22	WD-
23	GND	24	WE-
25	GND	26	Track 0#
27	GND	28	WP-
29	N/C	30	RDATA-
31	GND	32	HEAD-
33	N/C	34	DSKCHG-



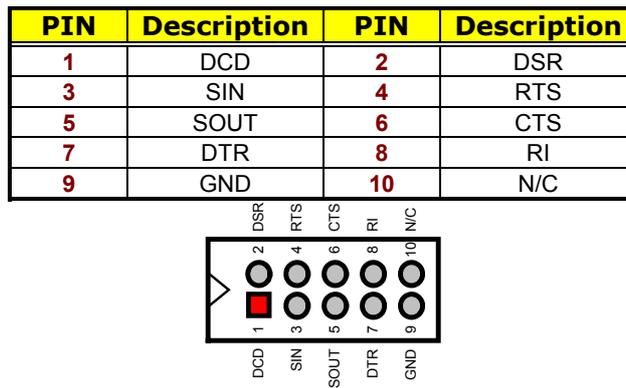
### 3.12 Serial Port Connectors

The HS-6237/HS-6637 offers two NS16C550 compatible UARTs with Read/Receive 16byte FIFO serial ports and two internal 10-pin headers.

- **CN23, CN24: COM1/COM2 Connector (DB9)**



- **CN14, CN22: COM1/COM2 Connector (5x2 Header)**

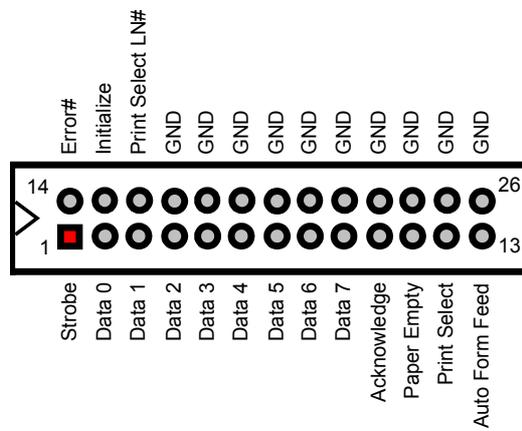


### 3.13 Parallel Connector

CN12 is a standard 26-pin flat cable connector designed to accommodate parallel port connection onboard the HS-6237/HS-6637.

- **CN12: Parallel Connector**

PIN	Description	PIN	Description
1	Strobe	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	Acknowledge
11	Busy	12	Paper Empty
13	Printer Select	14	Auto Form Feed
15	ERROR#	16	Initialize
17	Printer Select LN#	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND	26	GND

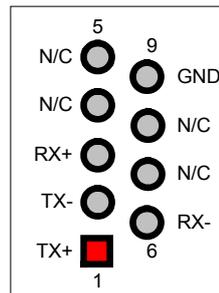


### 3.14 Ethernet Connector

The HS-6237/HS-6637 provides one external RJ-45 10/100 Based LAN interface connector. Please refer to the following detail of pin information.

- **CN18: RJ-45 Connector**

PIN	Description
1	TX+
2	TX-
3	RX+
4	N/C
5	N/C
6	RX-
7	N/C
8	N/C
9	GND



Aside from the RJ-45 provision onboard the HS-6237/HS-6637, the board also features three LED indicators, LE1, LE2 and LE3 that display the running conditions of the LAN.

- LE1: 10T speed running
- LE2: 100T speed running
- LE3: LAN active

- **JP11: LAN Enabled/Disabled by Hardware**

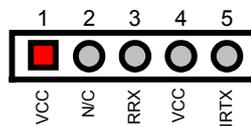
Options	Settings
Disabled	Short
Enabled (default)	Open

### 3.15 IrDA Connector

CN13 is a 5-pin internal IR communication connector for connection of an IrDA device.

- **CN13: IrDA Connector**

PIN	Description
1	VCC
2	FIRRX
3	IRRX
4	GND
5	IRTX

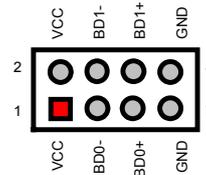


### 3.16 USB Connector

The HS-6237/HS-6637 provides one 8-pin connector for USB0 and USB1 port connections at location *JP10*.

- **JP10: USB Connector**

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-6237/HS-6637 has a Clear CMOS jumper on *JP6*. This Jumper is no function. Because onboard battery is DALLAS 12C887 which doesn't support hardware clear CMOS.

- **JP6: Clear CMOS**

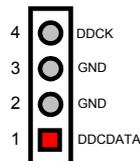
Options	Settings
Normal Operating (default)	Open
Clear CMOS	Short

### 3.18 DVI Connector (only for PCB v3.x)

The HS-6237/6637 also offers a Digital Video Interactive (DVI) connector on *JP13*. This connector that allows you to attach a DVI display and enables you to store and display moving video images like those on television.

- **JP13: DVI Connector**

PIN	Description
1	DDCDATA
2	GND
3	GND
4	DDCK

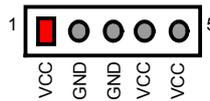


### 3.19 Power and Fan Connectors

HS-6237/HS-6637 provides two 5-pin power connectors at *CN5* and *CN15*. If you need to use the board on a non-backplane system, power supply connections to both *CN5* and *CN15* is a must. If a backplane is attached to the HS-6237/HS-6637, power supply connection to only *CN15* is possible provided that you do not use a CPU with high clock rating. To guarantee worry-free power installation, we highly recommend you to always connect power signals to both *CN5* and *CN15*

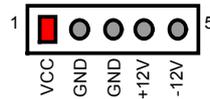
- **CN5: 5-pin Power Connector**

PIN	Description	PIN	Description
1	VCC	2	GND
3	GND	4	VCC
5	VCC		



- **CN15: 5-pin Power Connector**

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



Connector *CN2*, *CN25* and *CN26* onboard HS-6237/HS-6637 v3.x are 3-pin fan power connectors.

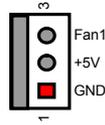
- **CN2, CN25, CN26: Fan1~Fan3 Power Connector (v3.x only)**

PIN	Description
1	GND
2	+12V
3	Fan1/Fan2/Fan3

Connector *FN1* onboard HS-6237/HS-6637 v2.x is a 3-pin fan power connector.

- **Fan1: CPU Fan Connector (v2.x only)**

PIN	Description
1	GND
2	+12V
3	Fan1

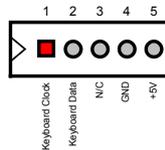


## 3.20 Keyboard Connectors

The HS-6237/HS-6637 offers two possibilities for keyboard connections. The connections are via *CN21* for an external PS/2 type keyboard or via *CN17* for an internal 5-pin cable converter to an AT keyboard.

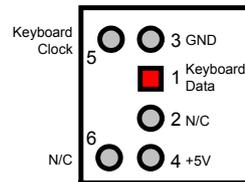
- **CN17: 5-pin Keyboard Connector**

PIN	Description
1	Keyboard Clock
2	Keyboard Data
3	N/C
4	GND
5	+5V



- **CN21: PS/2 6-pin Mini DIN Keyboard Connector**

PIN	Description
1	Keyboard Data
2	N/C
3	GND
4	+5V
5	Keyboard Clock
6	N/C

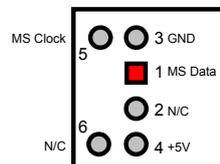


## 3.21 PS/2 Mouse Connector

*CN19* is a 6-pin mini DIN connector for connections to an external PS/2 mouse connector.

- **CN19: PS/2 6-pin Mini Din Mouse Connector**

PIN	Description
1	MS Data
2	N/C
3	GND
4	+5V
5	MS CLK
6	N/C

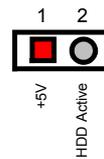


## 3.22 System Front Panel Connectors

The HS-6237/HS-6637 has one LED at location *D1* that indicates the power-on status. This visual feature of the IDE LED may also be connected to an external IDE LED via connector *CN3*.

- **CN3: HDD LED**

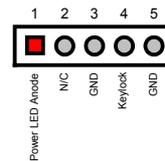
PIN	Description
1	+5V
2	HDD ACTIVE



*CN6* and *JP4* are the Keylock and Reset Button connectors onboard.

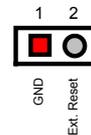
- **CN6: Power LED & Keylock Connector**

PIN	Description
1	Power LED Anode
2	N/C
3	GND
4	Keylock
5	GND



- **JP4: Reset Connector**

PIN	Description
1	GND
2	External Reset

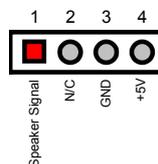


## 3.23 External Speaker

Aside from the buzzer at location *BZ1* onboard, the HS-6237/HS-6637 also offers a connector (*CN4*) for an external speaker connection. The table below lists the pin assignments of *CN4*.

- **CN4: Speaker Connector**

PIN	Description
1	Speaker Signal
2	N/C
3	GND
4	+5V

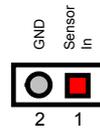


### 3.24 Thermal Input Connector (only for PCB v3.x)

In relevance to the Hardware Monitoring feature provided by the onboard Winbond W83783, the board allows the installation of a thermal sensor via connector *JP14*. The thermal connector monitors and displays the current system temperature from the Chipset Features Setup screen on your BIOS utility program. The value displayed are read-only figures and may not be altered.

- **JP14: Thermal Input Connector**

PIN	Description
1	Sensor In
2	GND



### 3.25 Watchdog Timer

There are three access cycles of Watchdog 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 *JP7* is used to select the function of Watchdog Timer.

- **JP7: Watchdog Timer Active Type Setting**

Options	Settings
Active NMI	Short 1-2
System Reset (default)	Short 2-3
Disabled Watchdog Timer	Open

● **JP9 (5-10): WDT Timeout Period Select**

Period	PINS 5-6	PINS 7-8	PINS 9-10
<b>1 sec (default)</b>	Short	Short	Short
<b>2 sec</b>	Open	Short	Short
<b>10 sec</b>	Short	Open	Short
<b>20 sec</b>	Open	Open	Short
<b>110 sec</b>	Short	Short	Open
<b>220 sec</b>	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. There are three I/O ports that control the Watchdog Timer.

<b>443H</b>	I/O Read	The Enable cycle
<b>443H</b>	I/O Read	The Refresh cycle
<b>045H</b>	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_RF    ; 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

```

### 3.26 PC/104 Connectors

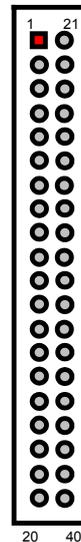
The PC/104 expansion bus offers provisions to connect all types of PC/104 modules. With the PC/104 bus being known as the new generation of industrial embedded 16-bit PC standard bus, thousands of PC/104 modules from multiple vendors can be easily installed onboard. The detailed pin assignment of the PC/104 expansion bus connectors *CN10* and *CN11* 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.*

- **CN11: PC/104 40-pin Connector**

PIN	Description	PIN	Description
1	GND	21	GND
2	MEMCS16*	22	SBHE*
3	IOSC16*	23	LA23
4	IRQ10	24	LA22
5	IRQ11	25	LA21
6	IRQ12	26	LA20
7	IRQ15	27	LA19
8	IRQ14	28	LA18
9	DACK0*	29	LA17
10	DRQ0	30	MEMR*
11	DACK5*	31	MEMW*
12	DRQ5	32	SD8
13	DACK6*	33	SD9
14	DRQ6	34	SD10
15	DACK7*	35	SD11
16	DRQ7	36	SD12
17	+5V	37	SD13
18	MASTER*	38	SD14
19	GND	39	SD15
20	GND	40	N/C

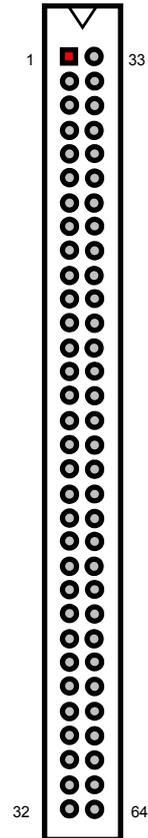
*Connector diagram rotated 90 degrees clockwise from original position*



● **CN10: PC/104 64-pin Connector**

<b>PIN</b>	<b>Description</b>	<b>PIN</b>	<b>Description</b>
1	IOCHK*	33	GND
2	SD7	34	RESETDRV
3	SD6	35	+5V
4	SD5	36	IRQ9
5	SD4	37	-5V
6	SD3	38	DRQ2
7	SD2	39	-12V
8	SD1	40	ZEROWS#
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	DRQ3
17	SA14	49	DACK1*
18	SA13	50	DRQ1
19	SA12	51	REFRESH*
20	SA11	52	SYSCLK
21	SA10	53	IRQ7
22	SA9	54	IRQ6
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	+5V
30	SA1	62	OSC1
31	SA0	63	GND
62	GND	64	GND

*Connector diagram rotated 90 degrees clockwise from original position*



# Chapter 4

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## Award BIOS Setup

The HS-6237/HS-6637 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 <Del> immediately after switching the system on, or
2. By pressing the <Del> 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.

<b>Up arrow</b>	Move to previous item
<b>Down arrow</b>	Move to next item
<b>Left arrow</b>	Move to the item in the left hand
<b>Right arrow</b>	Move to the item in the right hand
<b>Esc key</b>	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
<b>PgUp key</b>	Increase the numeric value or make changes
<b>PgDn key</b>	Decrease the numeric value or make changes
<b>+ key</b>	Increase the numeric value or make changes
<b>- key</b>	Decrease the numeric value or make changes
<b>F1 key</b>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<b>(Shift)F2 key</b>	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
<b>F3 key</b>	Calendar, only for Status Page Setup Menu
<b>F4 key</b>	Reserved
<b>F5 key</b>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<b>F6 key</b>	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
<b>F7 key</b>	Load the default
<b>F8 key</b>	Reserved
<b>F9 key</b>	Reserved
<b>F10 key</b>	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.

**ROM PCI/ISA BIOS (2A69KD2H)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.**

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANGEMENT SETUP	IDE HDD AUTO DETECTION
PCI CONFIGURATION SETUP	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit F10 : Save & Exit	↑↓→← : Select Item (Shift)F2 : Change Color

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

- **Standard CMOS Setup**  
This setup page includes all the items in a standard, AT-compatible BIOS.
- **BIOS Features Setup**  
This setup page includes all the items of Award special enhanced features.
- **Chipset Features Setup**  
This setup page includes all the items of chipset special features.
- **Power Management Setup**  
This entry only appears if your system supports Power Management, "Green PC", standards.
- **PCI Configuration Setup**  
This entry appears if your system supports PNP/PCI.
- **Load BIOS Defaults**  
The BIOS defaults have been set by the manufacturer and represent settings that provide the minimum requirements for your system to operate.

- **Load Setup 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.

- **Integrated Peripherals**

This section page includes all the items of IDE hard drive and Programmed Input / Output features.

- **Set Supervisor / User Password**

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

- **IDE HDD Auto Detection**

Automatically detect and configure hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk's parameters.

- **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 Setup

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.

**ROM PCI/ISA BIOS (2A69KD2H)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.**

Data (mm:dd:yy) : Fri, Dec 19 1998							
Time (hh:mm:ss) : 00:00:00							
		CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Driver C	: Auto ( 0Mb)	0	0	0	0	0	Auto
Driver D	: Auto ( 0Mb)	0	0	0	0	0	Auto
Drive A	: 1.44M , 3.5in.						
Drive B	: None						
LCD&CRT	: Auto						
Halt On	: All Errors						
				Base	Memory	:	640K
				Extended	Memory	:	15360K
				Other	Memory	:	384K
				Total	Memory	:	16384K
ESC : Quit		↑↓→← : Select Item			PU/PD/ + / - : Modify		
F1 : Help		(Shift) F2: Change Color					

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

<b>day</b>	The day, from Sun to Sat, determined by the BIOS and is display-only
<b>date</b>	The date, from 1 to 31 (or the maximum allowed in the month)
<b>month</b>	The month, Jan through Dec.
<b>year</b>	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.
- **Drive C/ Drive D::**  
The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types with 4 user-definable types 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>.

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

- **Drive A / Drive B:**

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

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

- **LCD&CRT:**

The category selects the type of video adapter used for the system monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

<b>BOTH</b>	Enables display of both CRT and LCD
<b>LCD</b>	Enables display of LCD displays only
<b>CRT</b>	Enables display of CRT displays only
<b>Auto</b>	Auto detects the installed display on the system

- **Halt On:** The category determines whether the computer will stop if an error is detected during power up.

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

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.

### ROM PCI/ISA BIOS (2A69KD2H) BIOS FEATURES SETUP AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS	Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF	Shadow	: Disabled
External Cache	: Enabled	CC000-CFFF	Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF	Shadow	: Disabled
Processor Number Feature	: Enabled	D4000-D7FFF	Shadow	: Disabled
Quick Power On Self Test	: Disabled	D8000-DBFFF	Shadow	: Disabled
		DC000-DFFFF	Shadow	: Disabled
Boot Sequence	: A,C,SCSI			
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			
PS/2 mouse function control	: Enabled	ESC	: Quit	↑↓→←: Select Item
PCI/VGA Palette Snoop	: Disabled	F1	: Help	PU/PD+/-: Modify
OS Select For DRAM > 64MB	: Non-OS2	F5	: Old Values	(Shift) F2 : Color
		G6	: Load BIOS Defaults	
Report No FDD For WIN 95	: Yes	G7	: Load Setup 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.

<b>Enabled</b>	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.
<b>Disabled</b>	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.

<b>Enabled</b>	Enable cache
<b>Disabled</b>	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.

<b>Enabled</b>	Enable quick POST
<b>Disabled</b>	Normal POST

- **Boot Sequence:**

This category determines which drive to search first for the disk operating system (i.e., DOS). The available options are:

- |                |              |
|----------------|--------------|
| ■ A, C, SCSI   | ■ SCSI, C, A |
| ■ C, S, SCSI   | ■ C only     |
| ■ C, CD-ROM, A | ■ LS, C      |
| ■ CD-ROM, C, A | ■ Zip100, C  |
| ■ D, A, SCSI   | ■ USB-FDD, C |
| ■ E, A, SCSI   | ■ USB-Zip, C |
| ■ F, A, SCSI   | ■ USB-CD, C  |
| ■ SCSI, A, C   | ■ USB-HDD, C |

- **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 720K, 1.2M and 1.44M are all 80 tracks.

<b>Enabled</b>	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.
<b>Disabled</b>	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.

<b>On</b>	Keypad is number keys
<b>Off</b>	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.

<b>Normal</b>	keyboard
<b>Fast</b>	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.

<b>Enabled</b>	Enable typematic rate
<b>Disabled</b>	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.

<b>6</b>	6 characters per second
<b>8</b>	8 characters per second
<b>10</b>	10 characters per second
<b>12</b>	12 characters per second
<b>15</b>	15 characters per second
<b>20</b>	20 characters per second
<b>24</b>	24 characters per second
<b>30</b>	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.

<b>250</b>	250 msec
<b>500</b>	500 msec
<b>750</b>	750 msec
<b>1000</b>	1000 msec

- **Security Option:**

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

<b>System</b>	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
<b>Setup</b>	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.*

- **PS/2 Mouse Function Control:**

This lets you enable or disable the hardware PS/2 mouse function onboard.

- **PCI/VGA Palette Snoop:**

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not.

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

- **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.
- **Report No FDD For WIN 95:**  
Whether report no FDD for Win 95 or not. The available choices are Yes, No.
- **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.

<b>Enabled</b>	Video shadow is enabled
<b>Disabled</b>	Video shadow is disabled

- **C8000 - CBFFF Shadow/D0000 - 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.

<b>Enabled</b>	Optional shadow is enabled
<b>Disabled</b>	Optional shadow is disabled

## 4.6 Chipset Features Setup

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and 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.

**ROM PCI/ISA BIOS (2A69KD2H)  
CHIPSET FEATURES SETUP  
AWARD SOFTWARE, INC.**

Auto Configuration	: Enabled	Auto Detect DIMM/PCI Clk	: Enabled
EDO DRAM Speed Selection	: 60ns	Spread Spectrum	: Disabled
EDO CASx# MA Wait State	: 2	CPU Host Clock (CPU/PCI)	
EDO RASx# Wait State	: 2	CPU Warning Temperature	
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge Time	: 3		
SDRAM CAS Latency Time	: 3		
SDRAM Precharge Control	: Enabled		
DRAM Data Integrity Mode	: Non-ECC		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
Video RAM Cacheable	: Enabled		
8 Bit I/O Recovery	: 1		
16 Bit I/O Recovery	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC : Quit	↑↓→←: Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/-: Modify
AGP Aperture Size	: 64M	F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

For PCB v2.x only

**ROM PCI/ISA BIOS (2A69KD2H)  
CHIPSET FEATURES SETUP  
AWARD SOFTWARE, INC.**

Auto Configuration	: Enabled	Auto Detect DIMM/PCI Clk	: Enabled
EDO DRAM Speed Selection	: 60ns	Spread Spectrum	: Disabled
EDO CASx# MA Wait State	: 2	CPU Host Clock (CPU/PCI)	
EDO RASx# Wait State	: 2	CPU Warning Temperature	
SDRAM RAS-to-CAS Delay	: 3	Current System Temp.	
SDRAM RAS Precharge Time	: 3	Current CPU1 Temperature	
SDRAM CAS Latency Time	: 3	Current CPUFAN1 Speed	
SDRAM Precharge Control	: Enabled	Current CPUFAN2 Speed	
DRAM Data Integrity Mode	: Non-ECC	Current CPUFAN3 Speed	
System BIOS Cacheable	: Enabled	Vcore : +3.3V	:
Video BIOS Cacheable	: Enabled	+5V : +12V	:
Video RAM Cacheable	: Enabled	-12V : :	:
8 Bit I/O Recovery	: 1	Shutdown Temperature	: Disabled
16 Bit I/O Recovery	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC : Quit	↑↓→←: Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/-: Modify
AGP Aperture Size	: 64M	F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

For PCB v3.x only

- **Auto Configuration:**  
Auto Configuration selects predetermined optimal values of chipset parameters. When Disabled, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled. The available choices are Enabled, Disabled.
- **EDO DRAM Speed Selection:**  
The DRAM timing is controlled by the DRAM Timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.
 

<b>50ns</b>	DRAM Timing Type
<b>60ns</b>	DRAM Timing Type
- **EDO CASx# MA Wait State:**  
You could select the timing control type of EDO DRAM CAS MA (memory address bus). The available choices are 1, 2.
- **EDO RASx# Wait State:**  
You could select the timing control type of EDO DRAM RAS MA (memory address bus). The available choices are 1, 2.
- **SDRAM RAS to CAS Delay:**  
You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The available choices are 2, 3.
- **SDRAM RAS Precharge Time:**  
Defines the length of time for Row Address Strobe is allowed to precharge. The available choices are 2, 3.
- **SDRAM CAS Latency Time:**  
You can select CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The available choices are 2, 3.
- **SDRAM Precharge Control:**  
When enabled, all CPU cycles to SDRAM results in an All Banks Precharge Command on the SDRAM Interface.
- **DRAM Data Integrity Mode:**  
Select Parity or ECC (error-correcting code), according to the type of installed DRAM. The available choices are Non-ECC, ECC.

- **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.

<b>Enabled</b>	BIOS access cached
<b>Disabled</b>	BIOS access not cached

- **Video BIOS Cacheable:**

Select Enabled allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

<b>Enabled</b>	Video BIOS access cached
<b>Disabled</b>	Video 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.

- **8 Bit I/O Recovery Time:**

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O. This item allows you to determine the recovery time allowed for 8-bit I/O. The available choices are from NA, 1 to 8 CPU clocks.

- **16 Bit I/O Recovery Time:**

This item allows you to determine the recovery time allowed for 16-bit I/O. The available choices are from NA, 1 to 4 CPU clocks.

- **Memory Hole At 15M-16M:**

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.

<b>Enabled</b>	Memory hole supported
<b>Disabled</b>	Memory hole not supported

- **Passive Release:**

When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM. The available choices are Enabled, Disabled.

- **Delayed Transaction:**  
The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The available choices are Enabled, Disabled.
- **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](http://www.agpforum.org) for APG information. The available choices are 16 MB, 32 MB, 64 MB, 128 MB, and 256MB.
- **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.
- **CPU Host Clock (CPU/PCI):**  
This option sets the timing combination of both CPU and PCI bus. The available choices are 66/133MHz, 100/33MHz, and 133/33MHz.
- **CPU Warning Temperature:**  
This option sets the temperature limit of the CPU, once reached, would yield a system alarm. Select the CPU warning temperature. If your CPU temperature is higher than the selected temperature, the BIOS will slow down your CPU process till the temperature is below the CPU warning temperature then the CPU will work normally. The available choices are 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, and 70°C/158°F.
- **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 CPUFAN1/2/3 Speed:**  
These fields display the *current* speed of up to three CPU fans, if your computer contains a monitoring system.

- **Vcore/+3.3V/+5V/+12V/-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.
- **Shutdown Temperature:**  
You may select the combination of lower and upper limits for the system shutdown temperature IF your computer contains an environmental monitoring system,. If the temperature extends beyond either limits, the system will automatically shut down. The available choices are Disabled, 60°C/100°F, 65°C/149°F, 70°C/158°F, and 75°C/167°F.

## 4.7 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.

### ROM PCI/ISA BIOS (2A69KD2H) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.

ACPI function	: Enabled	** Reload Global Timer Events **	
Power Management	: User Define	IRQ3 [3-7, 9-15], NMI	: Enabled
PM Control by APM	: Yes	Primary IDE0	: Disabled
Video Off Method	: V/H Sync + Blank	Primary IDE1	: Disabled
Video Off After	: Standby	Secondary IDE0	: Disabled
MODEM Use IRQ	: 3	Secondary IDE1	: Disabled
Doze Mode	: Disabled	Floppy Disk	: Disabled
Standby Mode	: Disabled	Serial Port	: Enabled
Suspend Mode	: Disabled	Parallel Port	: Disabled
HDD Power Down	: Disabled		
Throttle Duty Cycle	: 62.5%		
PCI/VGA Act-Monitor	: Disabled		
Power On by Ring	: Enabled		
IRQ8 Break Suspend	: Disabled		
		ESC	: Quit
		↑↓→←	: Select Item
		F1	: Help
		PU/PD/+/-	: Modify
		F5	: Old Values (Shift) F2 : Color
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

- **ACPI function:**  
This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). The available choices are Enabled, Disabled.

- **Power Management:**

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

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

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

<b>Disable (default)</b>	No power management. Disables all four modes
<b>Min. Power Saving</b>	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
<b>Max. Power Saving</b>	Maximum power management -- <b>ONLY AVAILABLE FOR SL CPU'S</b> . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
<b>User Defined</b>	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.

- **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 Method:**

This determines the manner in which the monitor is blanked.

<b>V/H SYNC+Blank</b>	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
<b>Blank Screen</b>	This option only writes blanks to the video buffer.
<b>DPMS</b>	Initial display power management signaling.

- **Video Off After:**

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

<b>N/A</b>	Monitor will remain on during power saving modes.
<b>Suspend</b>	Monitor blanked when the systems enters the Suspend mode.
<b>Standby</b>	Monitor blanked when the system enters Standby mode.
<b>Doze</b>	Monitor blanked when the system enters any power saving mode.

- **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.

#### 4.7.1 PM Timers

The following four modes are Green PC power saving functions that are only user configurable when *User Defined* Power Management has been selected. See above for available selections.

- **Doze Mode:**  
When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.
- **Standby Mode:**  
When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.
- **Suspend Mode:**  
When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.
- **HDD Power Down:**  
When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
- **Throttle Duty Cycle:**  
When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs. The available choices are 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, and 75.0%
- **PCI/VGA Act-Monitor:**  
When Enabled, any video activity restarts the global timer for Standby mode. The available choices are Enabled, Disabled.
- **Power On by Ring:**  
An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The available choices are Enabled, Disabled.
- **IRQ 8 Break Suspend:**  
You can Enable or Disable monitoring of IRQ8 so it does not awaken the system from Suspend mode. The available choices are Enabled, Disabled.

### 4.7.2 Reload Global Timer Events

When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.

- Parallel Port IRQ[3-7,9-15], NMI
- Floppy Disk
- Primary IDE 0/1
- Serial Port
- Secondary IDE 0/1
- Parallel Port

## 4.8 PCI Configuration Setup

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.

**ROM PCI/ISA BIOS (2A69KD2H)  
PCI CONFIGURATION SETUP  
AWARD SOFTWARE, INC.**

PnP OS Installed : Yes Resources Controlled by : Auto Reset Configuration Data : Disabled	Assign IRQ For VGA : Enabled SLOT 1 Use IRQ No : Auto SLOT 2 Use IRQ No : Auto SLOT 3 Use IRQ No : Auto SLOT 4 Use IRQ No : Auto Assign IRQ For USB : Enabled
ESC : Quit                    ↑↓→←: Select Item F1 : Help                    PU/PD/+: Modify F5 : Old Values            (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

- **PnP OS Installed:**  
This item allows you to determine install PnP OS or not. The available choices are Yes or Not.

- **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*.
- **Reset Configuration Data:**  
This item allows you to determine reset the configuration data or not. The available choices are *Enabled* and *Disabled*.
- **Slot 1/2/3/4 Use IRQ No.:**  
When set as *Auto*, any peripheral cards attached on the backplane will have their IRQ settings auto-configured. For manual setting of IRQ addresses, the options available for all 4 PCI slots are 3, 4, 5, 7, 9, 10, 11 and 12.
- **Assign IRQ For VGA/USB:**  
This option turns on or off the IRQ assignment for both VGA and USB ports.

## 4.9 Load BIOS Defaults

When you press <Enter> on this item you will get a confirmation dialog box with a message shown below. This option allows you to load/restore the BIOS default values permanently stored in the BIOS ROM. Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

**ROM PCI/ISA BIOS (2A69KD2H)  
LOAD BIOS DEFAULTS  
AWARD SOFTWARE, INC.**

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PCI CONFIGURATION S	ETUP
LOAD BIOS DEFAULTS	SAVING
LOAD SETUP DEFAULTS	
<div style="background-color: black; color: white; padding: 5px; display: inline-block;">Load BIOS Defaults (Y/N)? N</div>	
Esc : Quit	
↑ ↓ → ← : Select Item	
F10 : Save & Exit Setup	
(Shift) F2 : Change Color	
Load BIOS Defaults except Standard CMOS Setup	



## 4.11 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).

### ROM PCI/ISA BIOS (2A69KD2H) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	LCD Panel Type	: Panel 5
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
On Chip Primary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
Init Display First	: PCI Slot		
KBC input clock	: 8M		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3		
UART Mode Select	: Normal		
Onboard Parallel Port	: 378/IRQ7	ESC	: Quit      ↑↓→←: Select Item
Onboard Parallel Mode	: SPP	F1	: Help      PU/PD/+/-: Modify
		F5	: Old Values (Shift) F2 : Color
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

- **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).

<b>Enabled</b>	IDE controller uses block mode
<b>Disabled</b>	IDE controller uses standard mode

- **Primary Master/Slave PIO:**  
The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-3) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 3 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, and Mode 3.
- **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, and Mode 3.
- **On-Chip Primary PCI IDE:**  
The integrated peripheral controller contains an IDE interface that supports a single IDE channels. Select Enabled to activate the channel.
- **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.
- **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 .
- **KBC Input Clock:**  
The input clock setting of your onboard keyboard controller is set from here.
- **Onboard FDC Controller:**  
Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field. The 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 Mode Select:**  
This option allows you to configure the infrared interface modes (IrDA, ASKIR (an IrDA-compliant serial infrared) port, and Normal) generated from the second serial port. Only when set to ASKIR mode will the options RxD, TxD Active and IR Transmission delay activate for configuration. Disabling the Onboard Serial Port 2 setting automatically removes the UART Mode Select option from the options list.
- **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.
- **Parallel Port 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.
- **LCD Panel Type:**  
This option allows you to select the panel display type and resolution installed on your system.

Panel#	Panel Type
0	1024*768 Dual Scan STN Color Panel
1	128*1024 TFT Color Panel
2	640*480 Dual Scan STN Color Panel
3	800*600 Dual Scan STN Color Panel
4	640*480 Sharp TFT Color Panel
5	640*480 18-bit TFT Color Panel
6	1024*768 TFT Color Panel
7	800*600 TFT Color Panel
8	800*600 TFT Color Panel (Large BIOS ONLY)
9	800*600 TFT Color Panel (Large BIOS ONLY)
10	800*600 Dual Scan STN Color Panel (Large BIOS ONLY)
11	800*600 Dual Scan STN Color Panel (Large BIOS ONLY)
12	1024*768 TFT Color Panel (Large BIOS ONLY)
13	1280*1024 Dual Scan STN Color Panel (Large BIOS ONLY)
14	1024*600 Dual Scan STN Color Panel (Large BIOS ONLY)
15	1024*600 TFT Color Panel (Large BIOS ONLY)

## 4.12 Supervisor/User Password Setting

ROM PCI/ISA BIOS (2A69KD2H)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	ETUP
LOAD BIOS DEFAULT	SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
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.

### 4.13 IDE HDD Auto Detection

This option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.

Up to four IDE drives can be detected, with parameters for each appearing in sequence inside a box. To accept the displayed entries, press the "Y" key; to skip to the next drive, press the "N" key. If you accept the values, the parameters will appear listed beside the drive letter on the screen.

**ROM PCI/ISA BIOS (2A69KD2H)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.**

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master:								
Select Primary Master Option (N=SKIP) : N								
OPTIONS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1 (Y)	0	0	0	0	0	0	0	NORMAL
NOTE: Some OSes (like SCO-UNIX) must use "NORMAL" for installation								

## 4.14 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.

**ROM PCI/ISA BIOS (2A69KD2H)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.**

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	ETUP
LOAD BIOS DEFAULT	SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	
↑ ↓ → ← : Select Item	
F10 : Save & Exit Setup	
(Shift) F2 : Change Color	
Saves all Data & Exit Setup	

## 4.15 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.

**ROM PCI/ISA BIOS (2A69KD2H)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.**

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	ETUP
LOAD BIOS DEFAULT	SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	
↑ ↓ → ← : Select Item	
F10 : Save & Exit Setup	
(Shift) F2 : Change Color	
Abandon all Data & Exit Setup	

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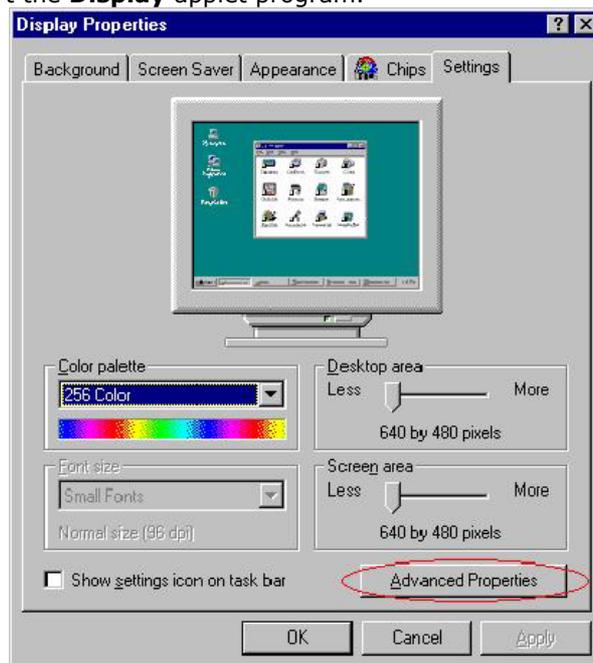
# Chapter 5

## Software Utilities

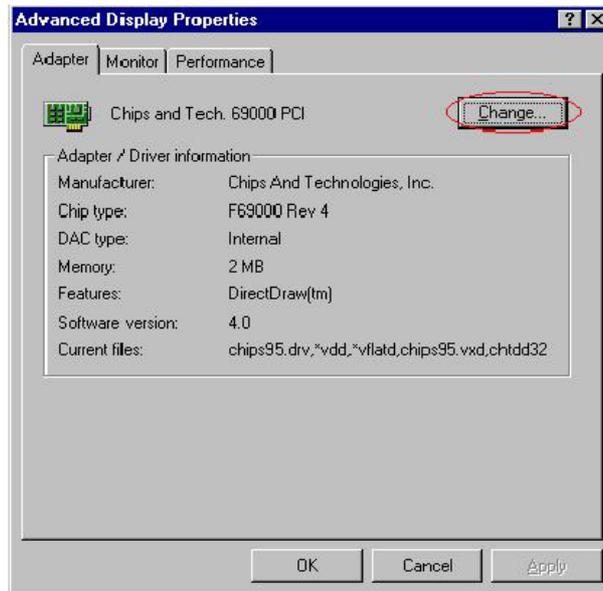
This chapter contains the detailed information of IDE, VGA, Audio and LAN driver installation procedures.

### 5.1 VGA Driver Installation for Win 95/98

1. Click **Start**, then **Setting**, then **Control Panel**.
2. Start the **Display** applet program.



3. Select the setting page, click on the **Advanced** properties button.
4. Press the **Change** button in the adapter area.



5. Click on **Next** to continue and then select
 

**Display a list of all drivers in a specific location, so you can select the drivers you want.**
6. Click on **Next**.
7. Select the **Specify a location** checkbox then **Browse**.
8. Specify the path to the new driver and then press the <ENTER> key (if in driver A: select a:\win95).
9. Once completed, the **Select** device dialog box will appear. Choose on:
 

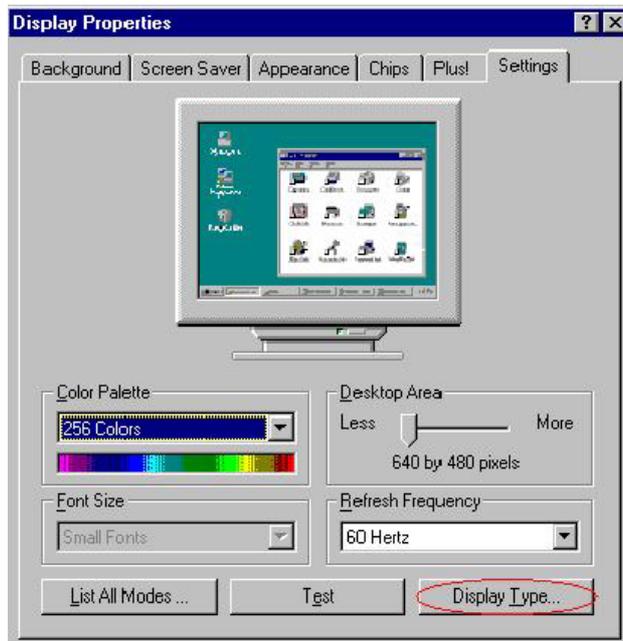
**Chips and Tech. 69000 PCI**
10. Continue choosing until asked to restart machine.

11. After the system has restarted, you can go back into the display applet and select alternate screen resolutions and color depths.

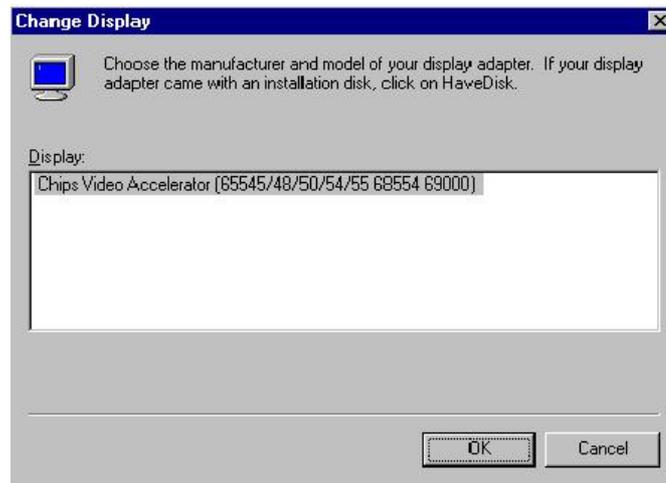
**NOTE:** *Installation procedure for Windows 98 is similar to Windows95.*

## 5.2 VGA Driver Installation for Win NT4.0

1. Click the Start button, then go to Settings and click on Control Panel.
2. Click on Display icon to start the Display Properties window.
3. Click on the Settings tab, and then click on Display Type.



4. In the **Change Display Type** window, click on **Have Disk**.

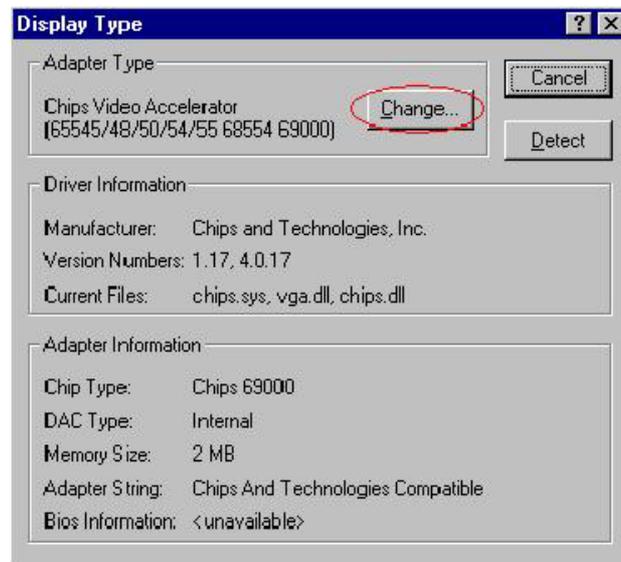


5. Specify the path to the new driver and press the <ENTER>key (if in driver A:, type a:\nt40). Select

**Chips Video Accelerator  
(65545/48/50/54/55/68554 69000)**

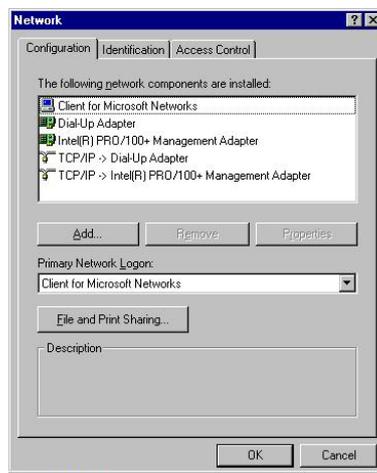
6. Click OK or press Enter.
7. You will then see warning panel about Third Party Drivers. Click on Yes to complete installation.
8. Once the installation is complete, the system must be shut down and restarted for the new driver to take effect.

9. After restarting, check on the VGA driver and make sure the properties of the driver look similar to the following figure.

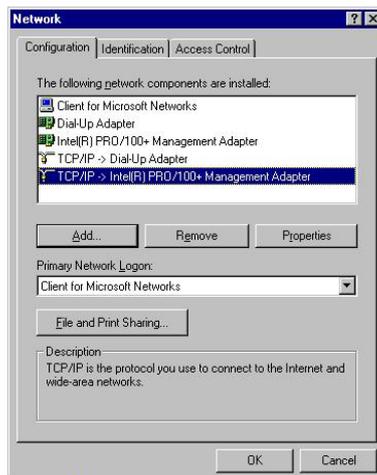


## 5.2 LAN Driver Installation for WIN95 & WIN98

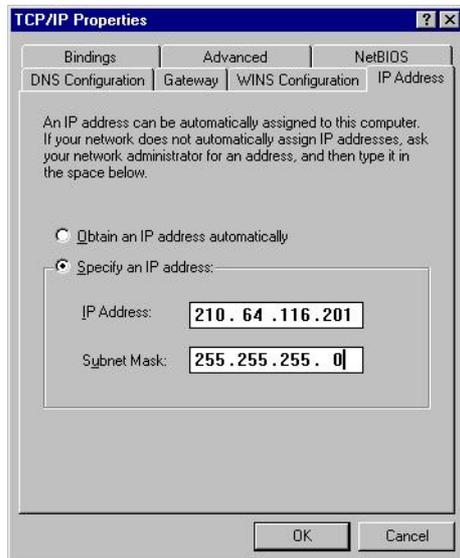
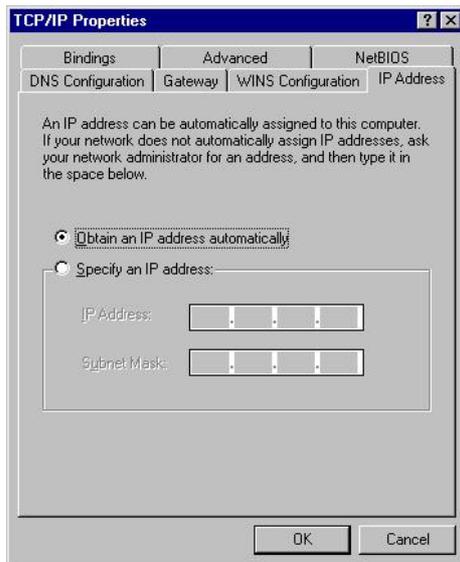
1. With the Utility CD Disk still in your CD ROM drive, right click on the Network Neighborhood icon and the pop-up screen will show you a list of the installed network components in your system.



2. Select on TCP/IP -> Intel® PRO/100 Management Adapter and then click on the Properties button.



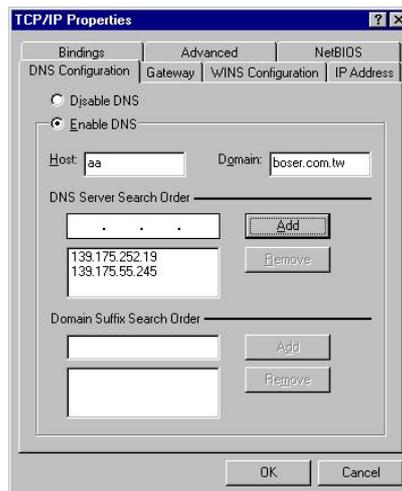
3. The TCP/IP Properties screen will then come up to your screen, allowing you to specify the IP address your network is connected to. Specify your IP address and then click on the OK button to proceed.



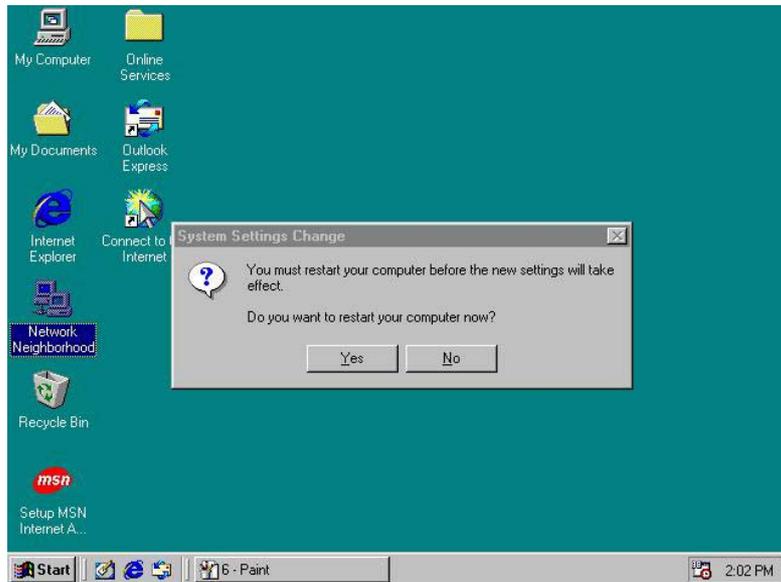
- The follow-up window will then ask you to confirm your new IP gateway to the system. Click on the Add button and then the window and you will see your new gateway in the installed gateway box.



- Within the same window, select DNS Configuration from the main menu. Enable the DNS and then input the Host and Domain name. Click on the OK button to proceed.

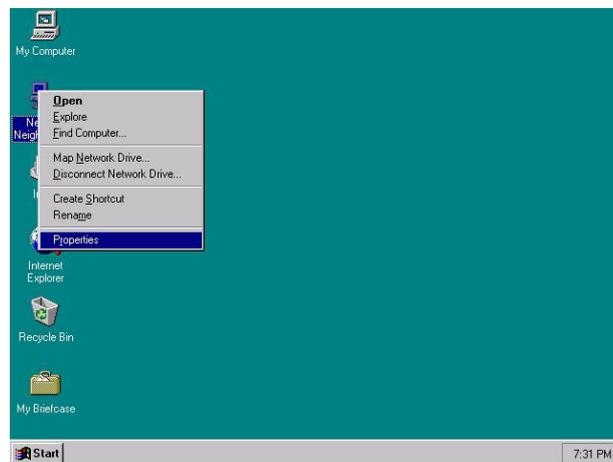


- The system will then close all the TCP/IP Properties windows and then display the System Settings Change screen. Restart your computer to make the new system settings take effect. Click on the Yes button when the screen below appears and your LAN Driver for Win95 and Win98 will thereafter be completely installed into your system.

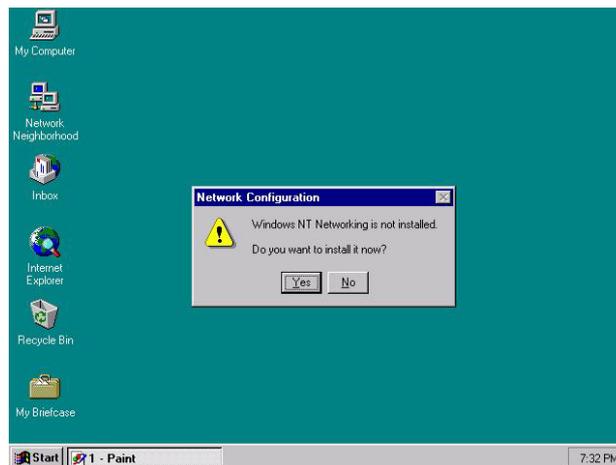


## 5.3 LAN Driver Installation for WIN NT4.0

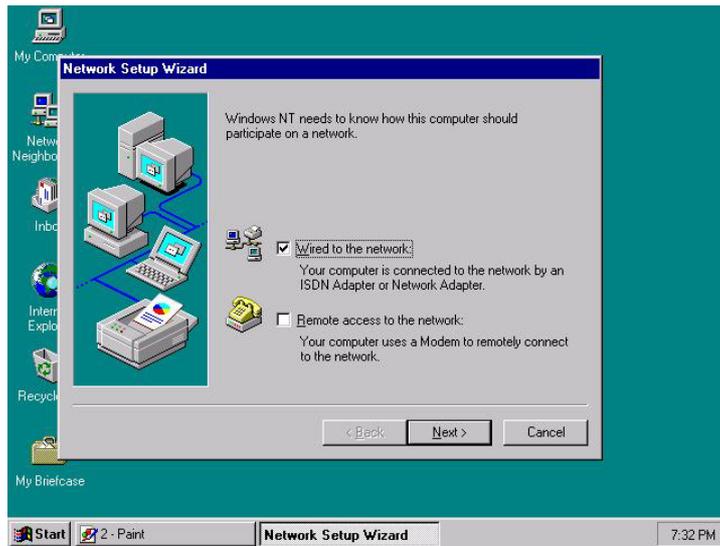
1. With the Utility CD Disk still in your CD ROM drive, right click on Network Neighborhood icon from the Windows menu. Select on Properties.



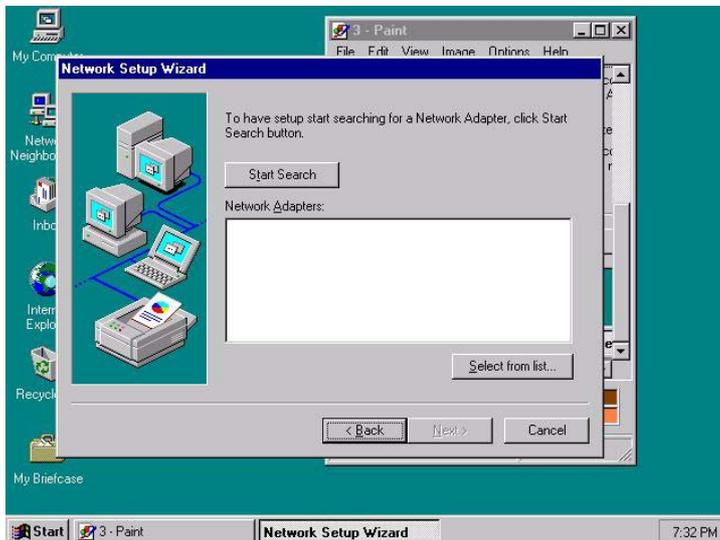
2. The system automatically prompts you with a warning message box indicating that there is no Windows NT Networking installed in your system. Click on the Yes button to start installation.



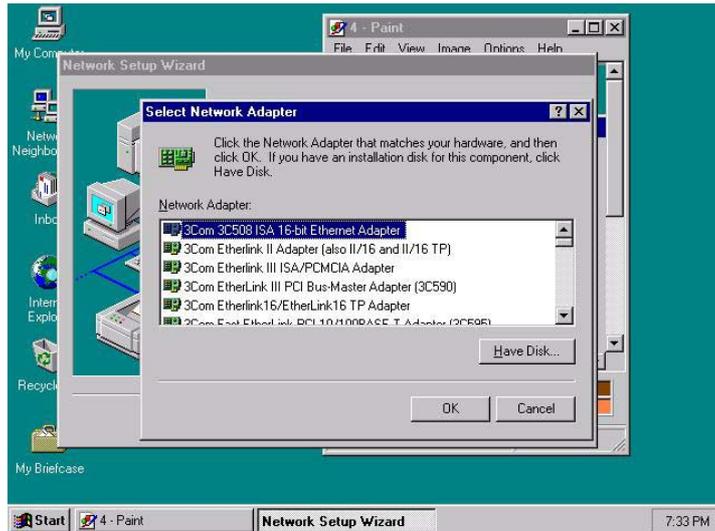
- When the Network Setup Wizard screen pops on your screen, tick on the "Wired to Network" once the following screen appears. Click on the Next to proceed.



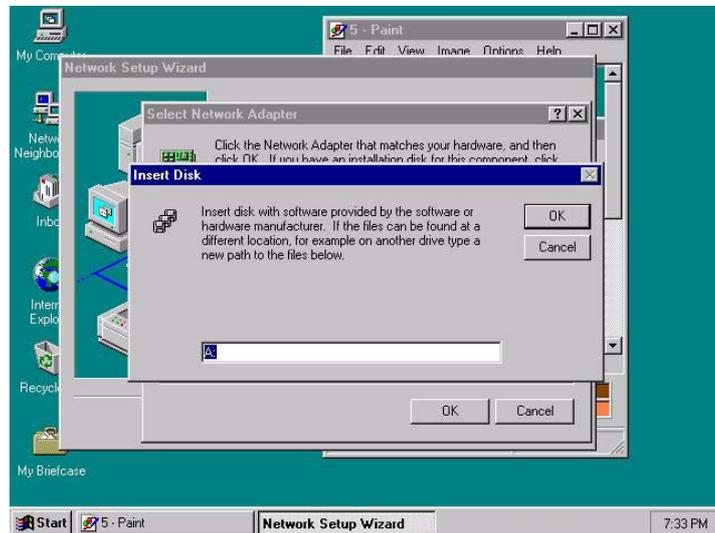
- Click on the Start Search button for the program to locate the Network Adapter.

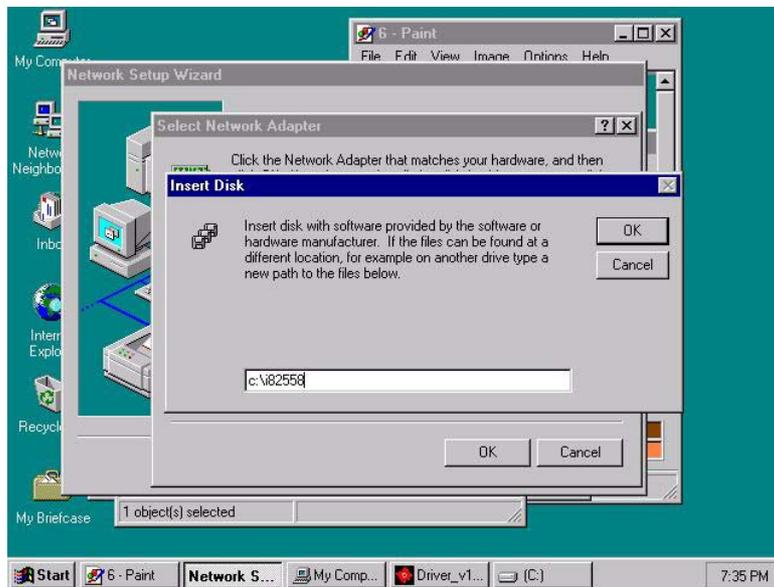


- Once setup finishes the search, it will list a number of adapters for you to choose from. Press on the Have Disk button to assign the driver path location.

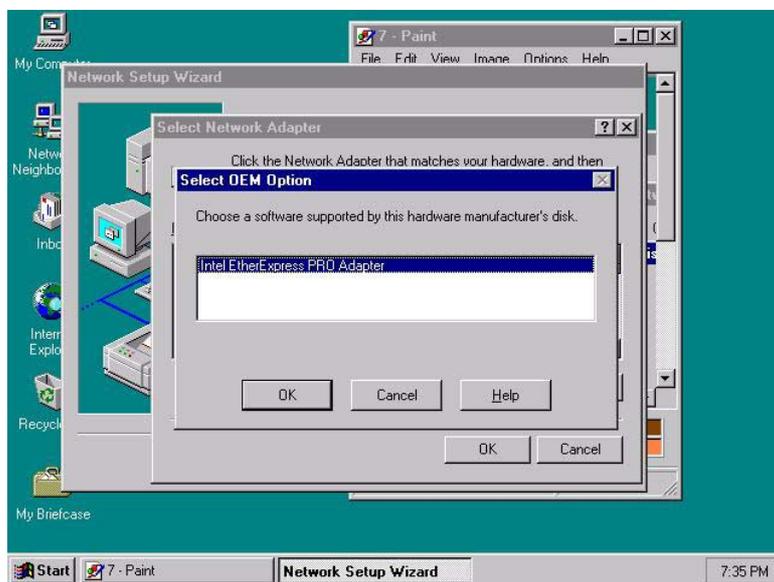


- Setup now asks you for the location of the driver. When you have entered the new driver path, press on the OK button to continue.

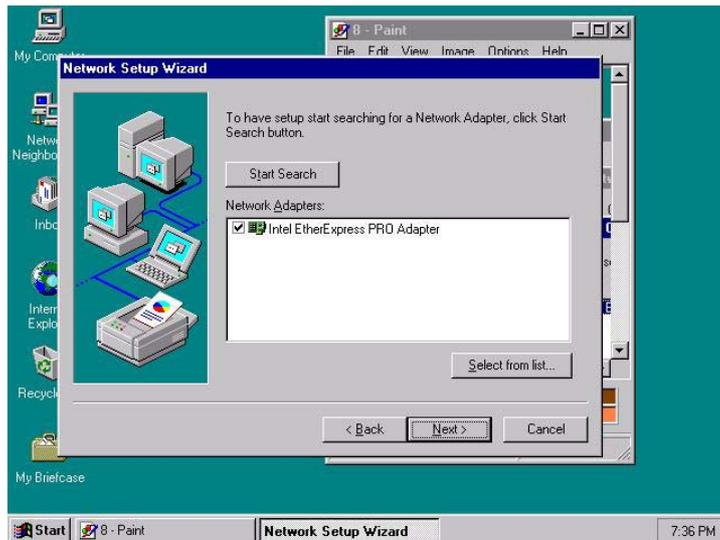




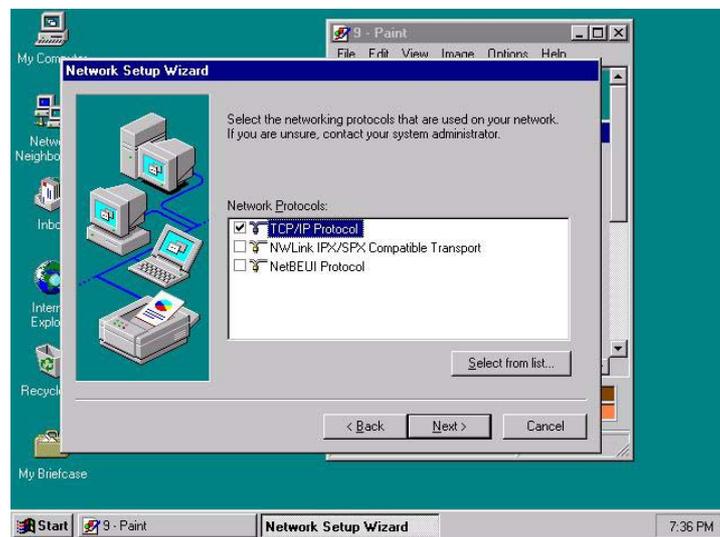
7. When Setup finds the information it needs about the new driver, it will display the device it found on the following screen. Press on the OK button to accept and proceed.



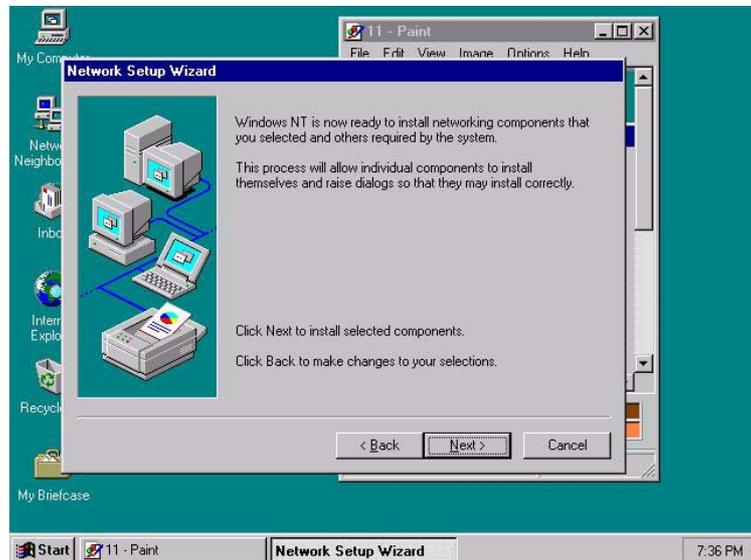
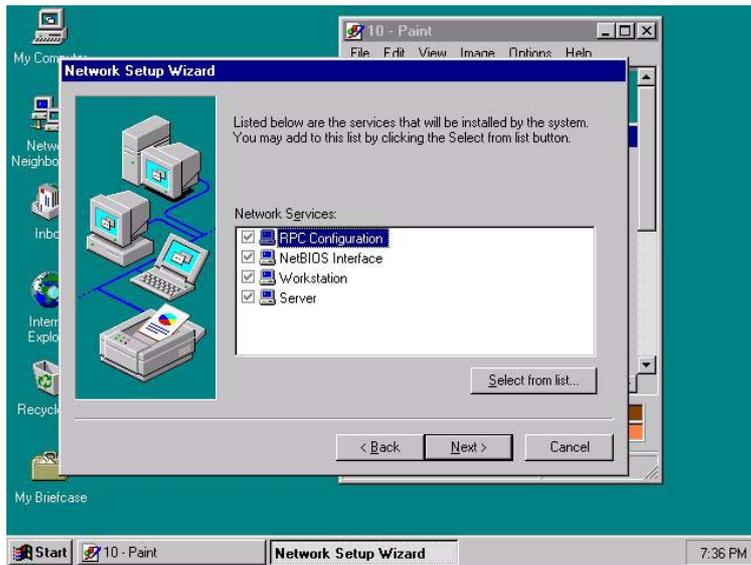
- Setup then returns to Network Setup Wizard screen and displays your new Network Adapter. Click on Next to continue.



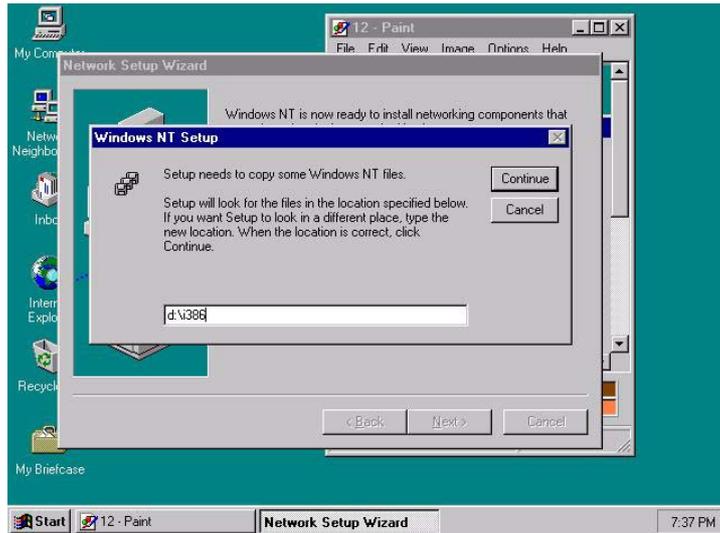
- The Network Setup Wizard then allows you to set the Network Protocols on your network. Select the appropriate protocol and then click on Next to continue.



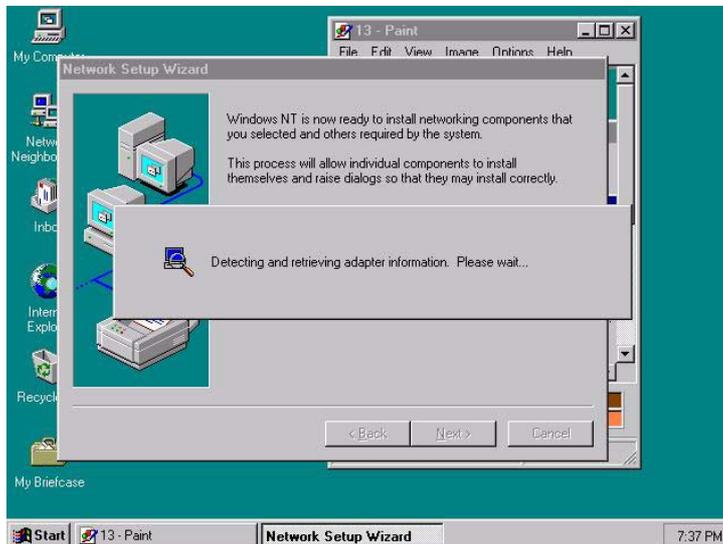
- Before Setup starts installing the components found and the settings you made, it will give you the option to proceed or go back for changes from the following screen. Click on the Next button once you are sure of your devices.



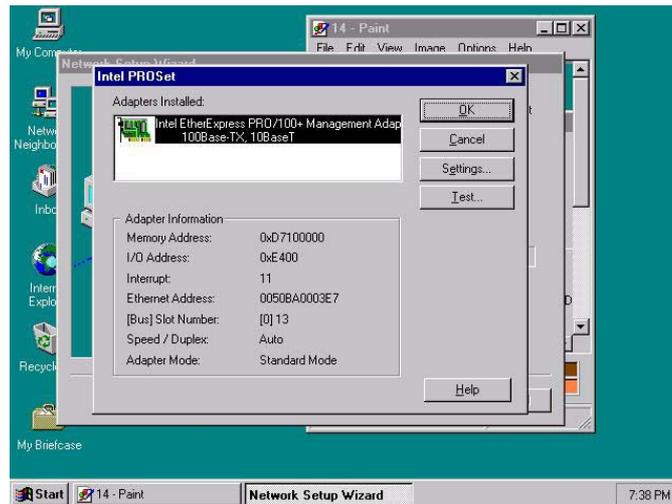
11. Windows NT Setup will then need to copy files necessary to update the system information. Specify the path then press Continue.



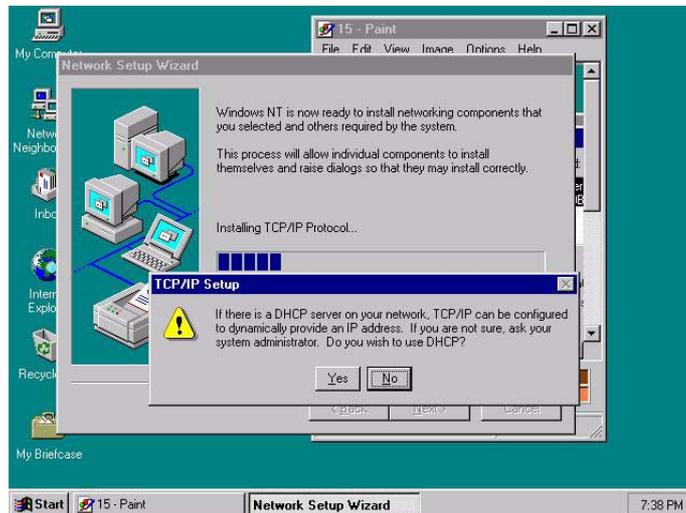
12. The system then starts to detect and retrieve the files related to your network adapter.



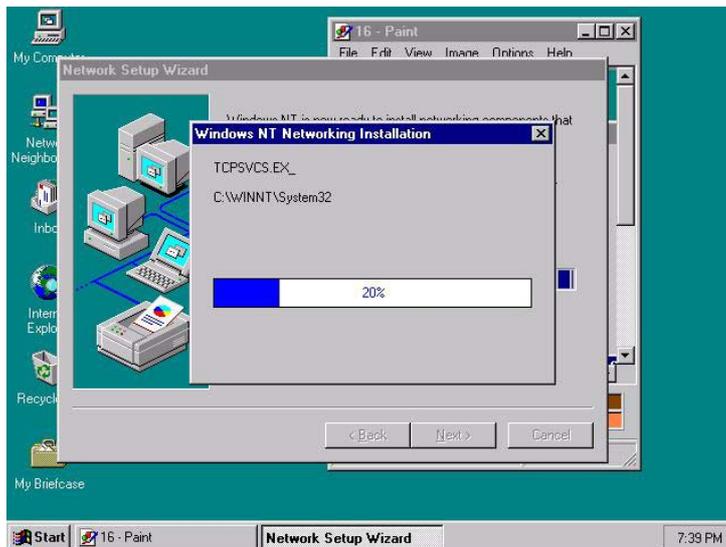
13. Once it finishes detecting the files, Setup will now display the adapter information from the screen below. Press OK when the information listed is correct. If not, then click on the Settings button to make alterations.



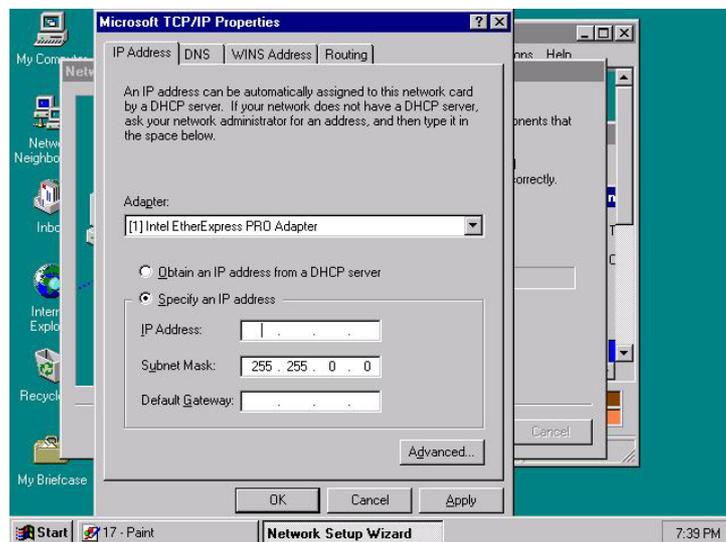
14. Pressing the OK button from the previous above will install the TCP/IP Protocol. When the DHCP server message prompts you to use DHCP, select the default choice No to proceed.

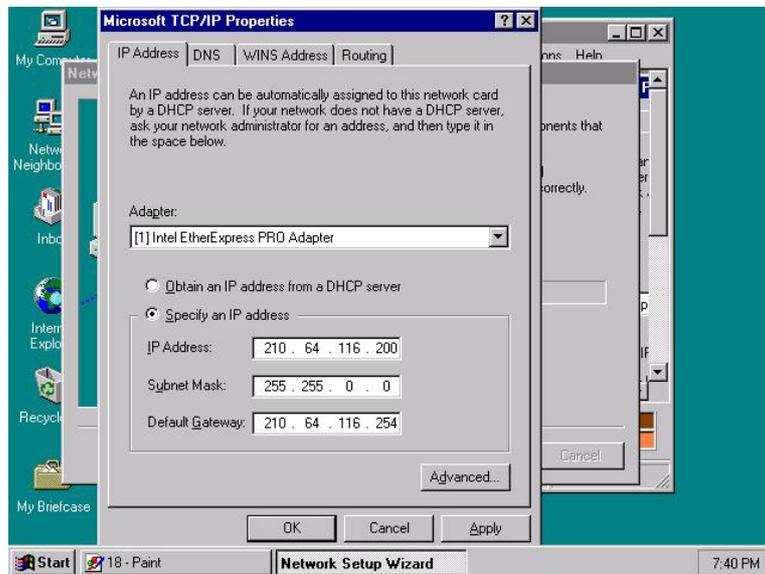


15. Setup then starts the Networking installation and copies the files.

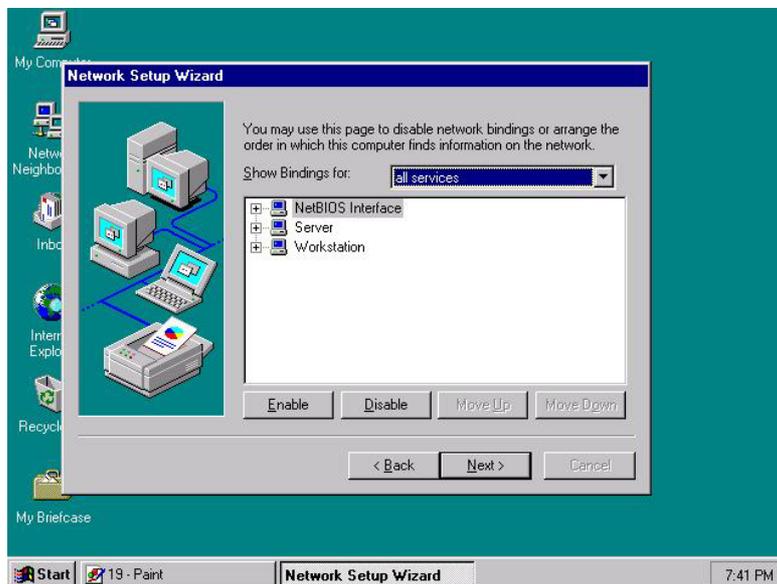


16. When Setup finishes copying, the TCP/IP properties of your system will then pop up on your screen like the one shown below. Fill in and specify your IP Address and Default Gateway then click on the OK button to proceed.

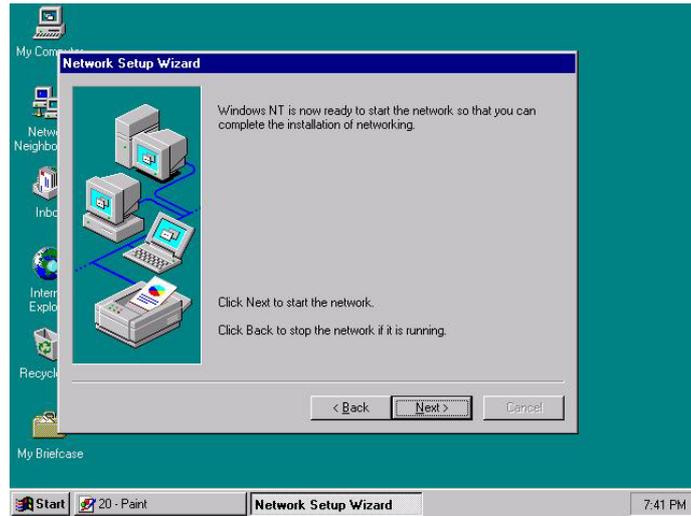




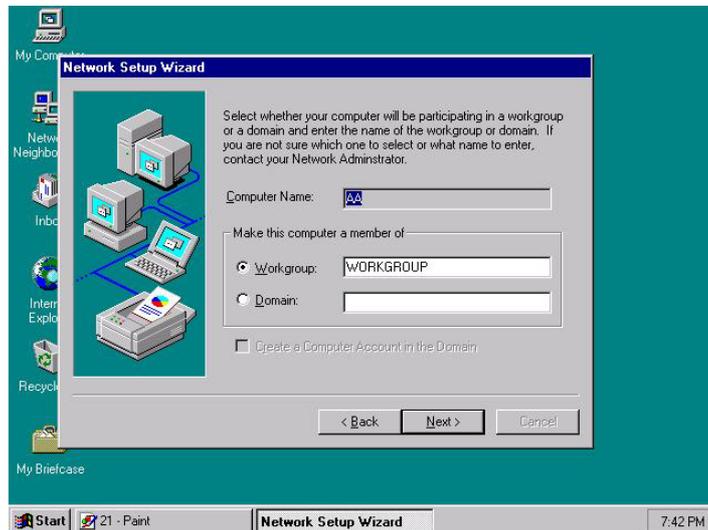
17. When the screen below appears, you can make changes to the network bindings or leave using the default settings. Click on Next to continue.



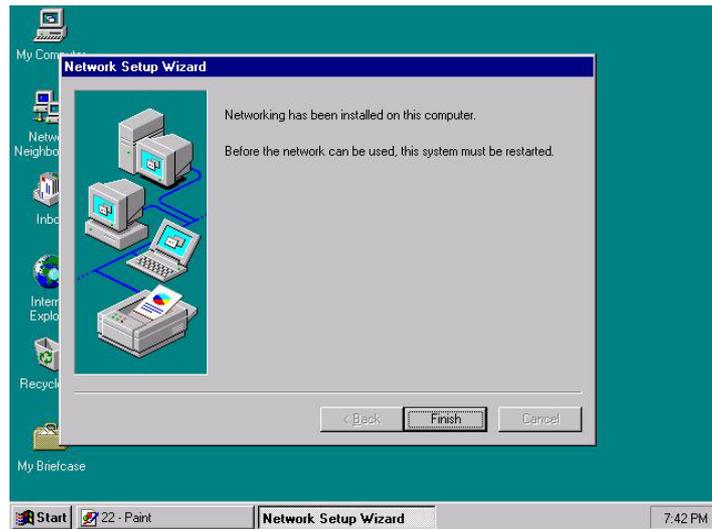
18. Setup then prompts you that it is ready to start the network. You may complete the installation thereafter. Click on Next to continue.



19. The final settings needed are the Domain and Workgroup assignments of your computer. Input the settings and click on Next to continue.



20. Once done with the Domain and Workgroup assignments, the system needs to restart your computer for all changes to take effect. Click on Finish to continue.



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

