HS-4700

PGA 478 Pentium® 4

Industrial Embedded Engine Board

• All-in-One • CRT/Panel • PCI Slot •

• ATA/33/66/100 • Dual LAN • Audio • 4COM •

• IrDA • USB • H/W Monitor •

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Edition 1.2, October 19, 2004

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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-4700 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.*

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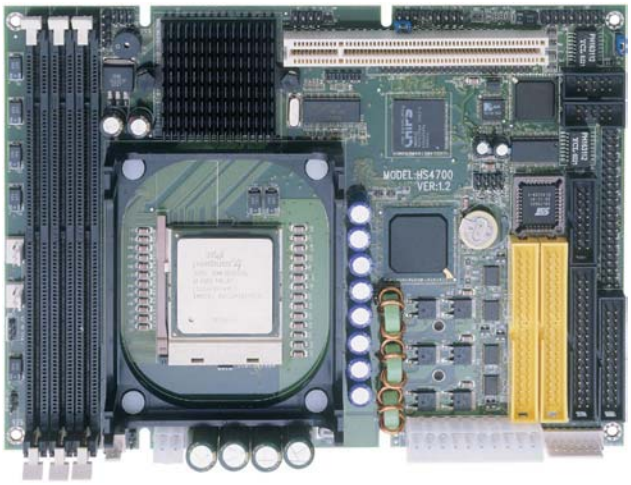
Chapter 1

General Description



The HS-4700 is an Intel® 82845 chipset-based board designed for PCI Bus PGA 478 Intel® Pentium® 4 1.2~2.2GHz(400MHz FSB) CPU compatibility. These features combine and make the HS-4700 an ideal all-in-one industrial single board computer. Additional features include an enhanced I/O with CRT/Panel, Dual LAN, Audio and 4COM ports interface.

Its onboard ATA/33/66/100 to IDE drive interface architecture allows the HS-4700 to support data transfers of 33, 66 or 100MB/sec. to each IDE drive connection. Designed with the Intel® 82845 core logic chipset, the board supports all PGA 478 Pentium® 4 CPU series operating at 1.2GHz to 2.2GHz(400MHz FSB). The CRT/Panel display controller is C&T 69030 with 4MB memory supporting up to 1600 x 1200 at 64K colors.

System memory is also sufficient with the three DIMM sockets that can support up to 1.5GB.

Additional onboard connectors include an advanced USB and IrDA ports providing faster data transmission, and two internal 5x2 connectors for 10/100 Base-TX Ethernet use.

1.1 Major Features

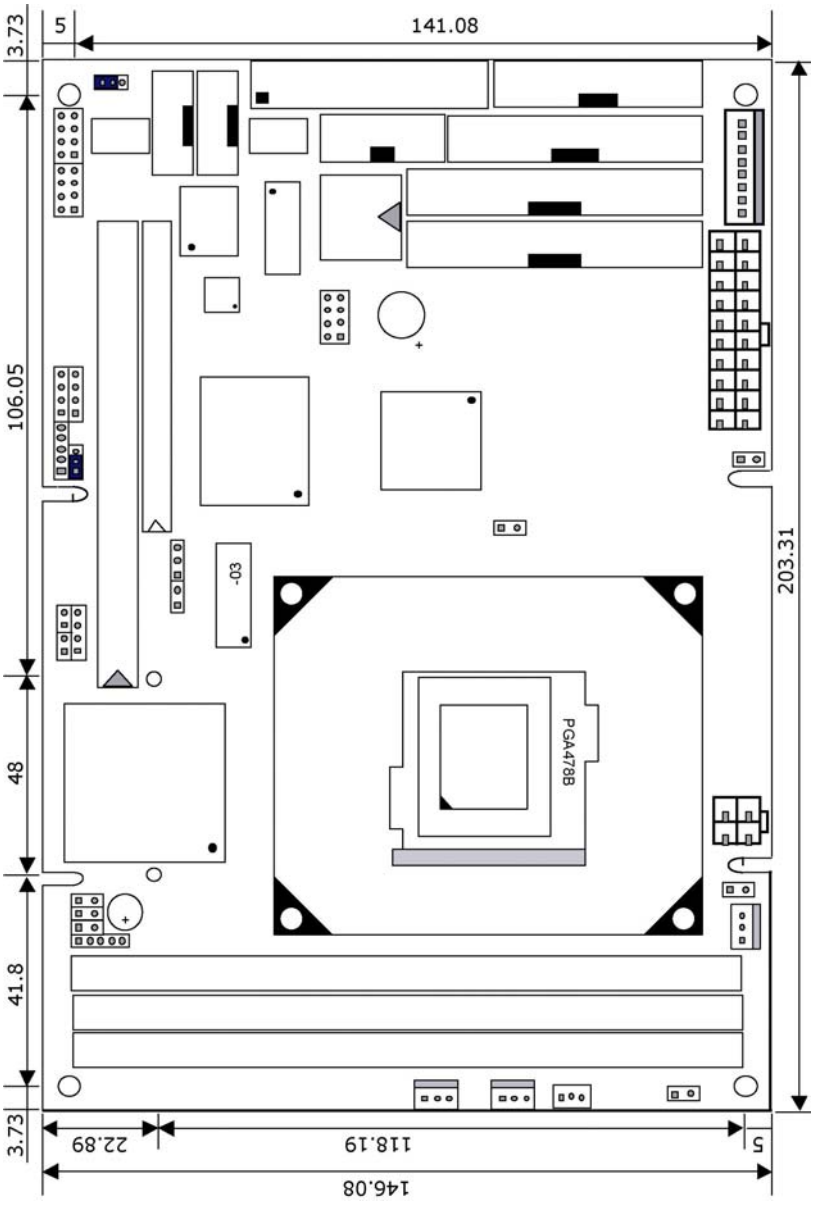
The HS-4700 comes with the following features:

- PGA 478 for Intel® Pentium® 4 1.2~2.2GHz(400MHz FSB) CPU
- Intel® 82845/82801BA system chipset
- Three DIMM sockets with a max. capacity of 1.5GB
- Winbond W83627 super I/O chipset
- Fast PCI ATA/33/66/100 IDE controller
- Four RS-232 serial ports
- C&T 69030 CRT/Panel display controller
- Intel® 82559 and Intel® 82562 10/100 Based LAN
- AC97 3D audio controller
- Supports ATX power function
- Supports Hardware Monitor function

1.2 Specifications

- **CPU:** PGA 478 for Intel® Pentium® 4 1.2~2.2GHz(400MHz FSB) CPU
- **Bus Interface:** PCI Bus
- **Memory:** Three DIMM sockets supporting up to 1.5GB
- **Chipset:** Intel® 82845/82801BA
- **I/O Chipset:** Winbond W83627 x 2
- **VGA:** C&T 69030 with 4MB memory supporting CRT/Panel displays up to 1600 x 1200 at 64K colors
- **IDE:** Four IDE disk drives supporting ATA/33/66/100 and with transfer rates of up to 33/66/100MB/sec.
- **FDD:** Supports up to two floppy disk drives
- **Parallel:** One enhanced bi-directional parallel port supporting SPP/ECP/EPP
- **LAN:** Intel® 82559 and one Intel® 82562 10/100 Based LAN
- **Audio:** AC97 3D audio controller
- **Serial Port:** 16C550 UART-compatible RS-232 x 4 serial ports with 16-byte FIFO
- **IrDA:** One IrDA TX/RX header
- **USB:** Two USB connectors (USB 1.1)
- **Keyboard/Mouse:** 8-pin connector supporting standard PC/AT keyboard and PS/2 mouse
- **BIOS:** AMI PnP Flash BIOS
- **CMOS:** Battery backup
- **Power Connector:** One 4-pin and one 20-pin ATX power connector
- **Operating Temperature:** 0~60°C
- **Hardware Monitor:** Winbond W83627
- **Board Size:** 20.3 x 16.1 cm

1.3 Board Dimensions



Chapter 2

Unpacking

2.1 Opening the Delivery Package

The HS-4700 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, and keyboard controller chip to ensure that they are firmly seated. The HS-4700 delivery package contains the following items:

- **HS-4700 Board x 1**
- **Utility CD Disk x 1**
- **ATA/100 IDE flat cable x 2**
- **FDD flat cable x 1**
- **Parallel flat cable x 1**
- **VGA cable +DB15 x 1**
- **10-pin LAN cable + RJ-45 connector x 2**
- **8-pin USB split type cable with bracket x 1**
- **MIC/Audio 8-pin cable + 2 phone jacks x 1**
- **4-in-1 COM Port cable + DB9 connectors x 1**
- **PS/2 K/B & Mouse split-type cable x 1**
- **Jumper Bag x 1**
- **User's Manual**

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

Chapter 3

Hardware Installation

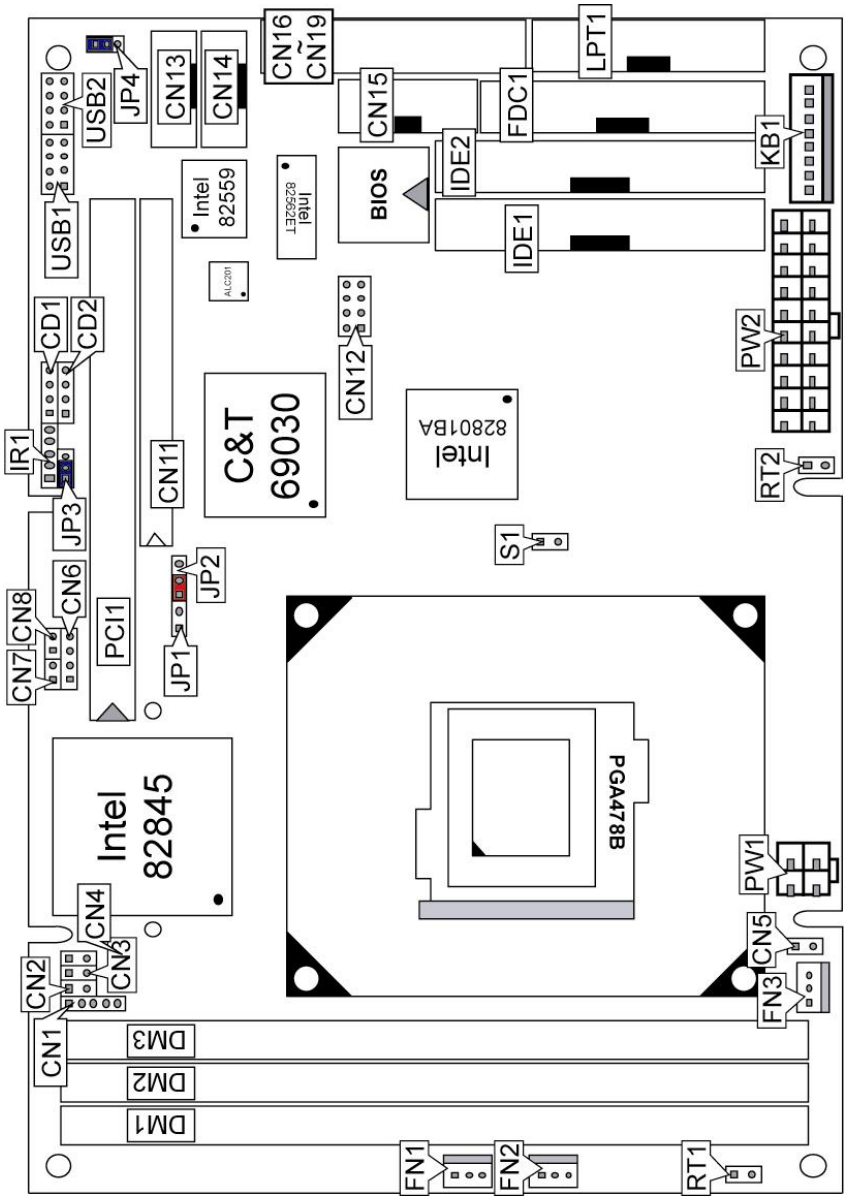
This chapter provides the information on how to install the hardware using the HS-4700.

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. (Set JP3 1-2)
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.
4. Make sure your power supply is using for P4 only. One of 4-pin connector is for +12V lead which should connect to PW1 and 20-pin ATX connector to PW2.

3.2 Board Layout



3.3 Jumper List

Jumper	Default Setting	Setting
JP1	Panel Voltage +12V In Enabled/Disabled: *Enabled*	Short
JP2	Panel Voltage Select: *+3.3V*	Short 1-2
JP3	Clear CMOS: *Normal Operation*	Short 2-3
JP4	LAN2 Enabled/Disabled Select: *Enabled*	Short 1-2

3.4 Connector List

Connector	Definition
CD1	CD Analog Input Connector
CD2	Line In Analog Input Connector
CN1	Keylock Connector
CN2	SMI Signal Input Connector
CN3	2-pin ATX Power On/Off Switch
CN4	HDD LED Connector
CN6	External Speaker Connector
CN7	Reset Connector
CN8	Green LED Connector
CN11	50-pin Panel Connector
CN12	MIC In/Audio Out Connector
CN13	LAN2 Connector
CN14	LAN1 Connector
CN15	CRT Connector
CN16	COM1 Connector
CN17	COM2 Connector
CN18	COM3 Connector
CN19	COM4 Connector
DM1, DM2, DM3	168-pin DIMM Sockets
PW1	4-pin ATX Power Connector
PW2	20-pin ATX Power Connector
PCI1	PCI Connector
IR1	IrDA Connector
FDC1	Floppy Connector
FN1, FN2, FN3	Fan Connectors
IDE1, IDE2	IDE Connectors
KB1	KB/Mouse Connector
LPT1	Parallel Connector
USB1, USB2	USB Connectors
S1	Chassis Open Switch Connector

3.5 Configuring the CPU

The HS-4700 offers the convenience in CPU installation with its auto-detect feature. After installing a new microprocessor onboard, the HS-4700 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

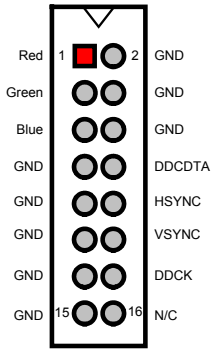
The HS-4700 provides three DIMM sockets at locations *DM1*, *DM2* and *DM3*. The maximum capacity of the onboard memory is 1.5GB.

3.7 VGA Controller

The onboard C&T 69030 with 4MB memory supporting CRT/Panel displays up to 1600 x 1200 at 64K colors. The HS-4700 provides two connection methods of CRT and Panel device. *CN15* offers an internal CRT connector, and *CN11* offers a 50-pin Panel connector.

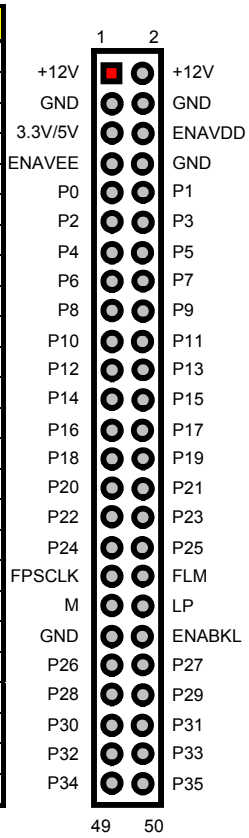
- **CN15: CRT Connector**

PIN	Description	PIN	Description
1	Red	2	GND
3	Green	4	GND
5	Blue	6	GND
7	GND	8	DDCDTA
9	GND	10	HSYNC
11	GND	12	VSYNC
13	GND	14	DDCK
15	GND	16	N/C



- **CN11: 50-pin Panel Connector**

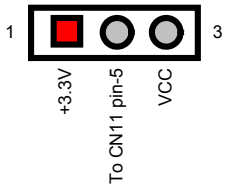
PIN.	Description	PIN	Description
1	+12V	2	+12V
3	GND	4	GND
5	3.3V / 5V Note	6	ENAVDD
7	ENAVEE	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	P24	34	P25
35	FPSCLK	36	FLM
37	M	38	LP
39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



Jumper *JP2* offers two voltage settings and *JP1* is +12V in for the user.

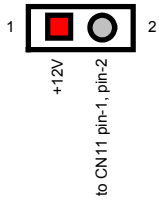
- **JP2: Panel Voltage Select**

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



- **JP1: Panel Voltage +12V In Enabled/Disabled Select**

Options	Settings
* Enabled	Short
Disabled	Open



3.8 SMI Signal Input Switch

HS-4700 has an SMI connector at location *CN2*. If there is an external SMI Signal Input Switch, this input switch will be able to receive signals.

- **CN2: SMI Signal Input Switch**

PIN	Description
1	EXT_SMI
2	GND

3.9 PCI E-IDE Drive Connector

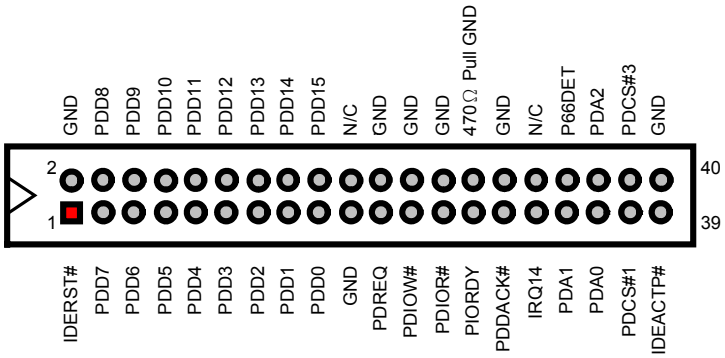
IDE1 and *IDE2* are standard 40-pin connector daisy-chain driver connector serves the PCI E-IDE drive provisions onboard the HS-4700. A maximum of four ATA/33/66/100 IDE drives can connect to the HS-4700 via *IDE1* and *IDE2*.

- **IDE1: Primary IDE Connector**

PIN	Description	PIN	Description
1	IDERST#	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	N/C
21	PDREQ	22	GND
23	PDIOW#	24	GND
25	PDIOR#	26	GND

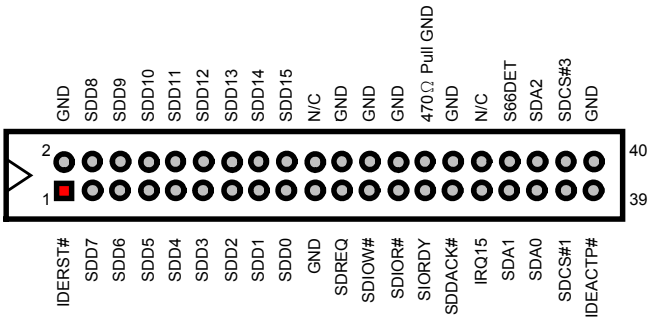
• • • More On Next Page • • •

PIN	Description	PIN	Description
27	PIORDY	28	470Ω Pull GND
29	PDDACK#	30	GND
31	IRQ14	32	N/C
33	PDA1	34	P66DET
35	PDA0	36	PDA2
37	PDCS#1	38	PDCS#3
39	IDEACTP#	40	GND



- **IDE2: Secondary IDE Connector**

PIN	Description	PIN	Description
1	IDERST#	2	GND
3	SDD7	4	SDD8
5	SDD6	6	SDD9
7	SDD5	8	SDD10
9	SDD4	10	SDD11
11	SDD3	12	SDD12
13	SDD2	14	SDD13
15	SDD1	16	SDD14
17	SDD0	18	SDD15
19	GND	20	N/C
21	SDREQ	22	GND
23	SDIOW#	24	GND
25	SDIOR#	26	GND
27	SIORDY	28	470Ω Pull GND
29	SDDACK#	30	GND
31	IRQ15	32	N/C
33	SDA1	34	S66DET
35	SDA0	36	SDA2
37	SDCS#1	38	SDCS#3
39	IDEACTP#	40	GND

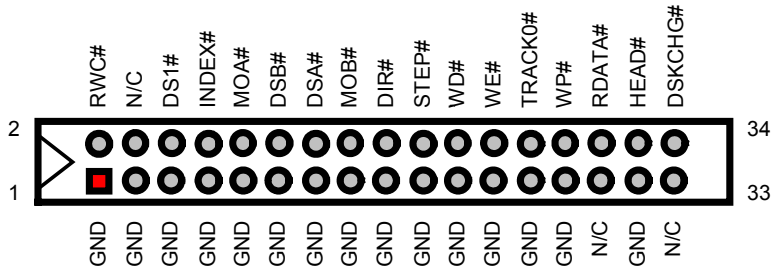


3.10 Floppy Disk Drive Connector

The HS-4700 uses a standard 34-pin header connector, *FDC1*, for floppy disk drive connection. A total of two FDD drives may be connected to *FDC* at any given time.

- **FDC1: FDD 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	MOA#
11	GND	12	DSB#
13	GND	14	DSA#
15	GND	16	MOB#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WD#
23	GND	24	WE#
25	GND	26	TRACK0#
27	GND	28	WP#
29	N/C	30	RDATA#
31	GND	32	HEAD#
33	N/C	34	DSKCHG#

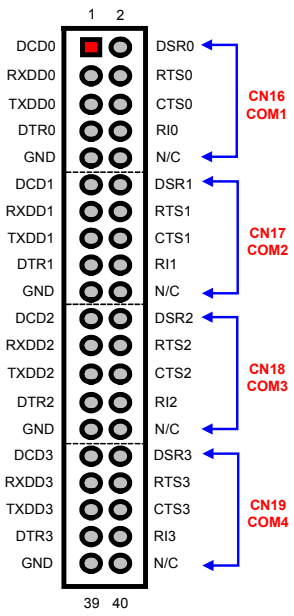


3.11 Serial Port Connectors

The HS-4700 offers two NS16C550 compatible UARTs with Read/Receive 16-byte FIFO serial ports and four internal 10-pin headers.

- **CN16~CN19: COM1~COM4 Connectors (5x2 Header)**

PIN	Description	PIN	Description
1	DCD0	2	DSR0
3	RXDD0	4	RTS0
5	TXDD0	6	CTS0
7	DTR0	8	RI0
9	GND	10	N/C
11	DCD1	12	DSR1
13	RXDD1	14	RTS1
15	TXDD1	16	CTS1
17	DTR1	18	RI1
19	GND	20	N/C
21	DCD2	22	DSR2
23	RXDD2	24	RTS2
25	TXDD2	26	CTS2
27	DTR2	28	RI2
29	GND	30	N/C
31	DCD3	32	DSR3
33	RXDD3	34	RTS3
35	TXDD3	36	CTS3
37	DTR3	38	RI3
39	GND	40	N/C

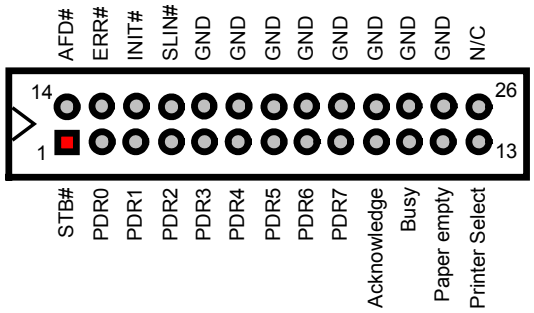


3.12 Parallel Connector

LPT1 is a standard 26-pin flat cable connector deigned to accommodate parallel port connection onboard the HS-4700.

- **LPT1: Parallel Connector**

PIN	Description	PIN	Description
1	STB#	14	AFD#
2	PDR0	15	ERR#
3	PDR1	16	INIT#
4	PDR2	17	SLIN#
5	PDR3	18	GND
6	PDR4	19	GND
7	PDR5	20	GND
8	PDR6	21	GND
9	PDR7	22	GND
10	Acknowledge	23	GND
11	Busy	24	GND
12	Paper Empty	25	GND
13	Printer Select	26	N/C

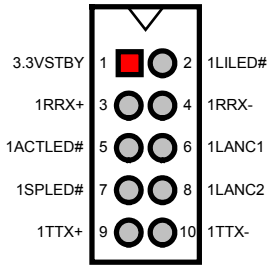


3.13 Ethernet Connector

The HS-4700 provides two 10-pin internal 10/100 Based LAN interface connector. Please refer to the following for its pin information. LAN1 is Intel® 82562 and LAN2 is Intel® 82559 chipset.

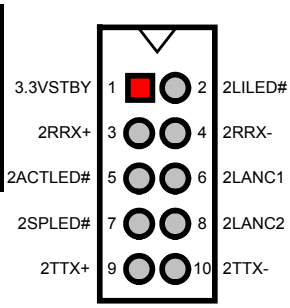
- **CN14: LAN1 Connector (Intel 82562)**

PIN	Description	PIN	Description
1	3.3VSTBY	2	1LILED#
3	1RRX+	4	1RRX-
5	1ACTLED#	6	1LANC1
7	1SPLED#	8	1LANC2
9	1TTX+	10	1TTX-



- **CN13: LAN2 Connector (Intel 82559)**

PIN	Description	PIN	Description
1	3.3VSTBY	2	2LILED#
3	2RRX+	4	2RRX-
5	2ACTLED#	6	2LANC1
7	2SPLED#	8	2LANC2
9	2TTX+	10	2TTX-



- **JP4: LAN2 Enable/Disable Select**

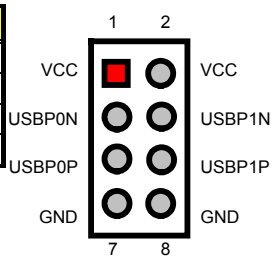
Options	Settings
* Enable	Short 1-2
Disable	Short 2-3

3.14 USB Connector

The HS-4700 provides four USB ports, at locations *USB1* and *USB2*, for four USB connections to the HS-4700.

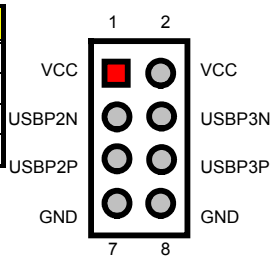
- **USB1: USB Connector**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	USBP0N	4	USBP1N
5	USBP0P	6	USBP1P
7	GND	8	GND



- **USB2: USB Connector**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	USBP2N	4	USBP3N
5	USBP2P	6	USBP3P
7	GND	8	GND

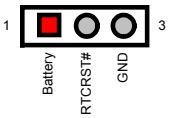


3.15 CMOS Data Clear

The HS-4700 has a Clear CMOS jumper on *JP3*.

- **JP3: Clear CMOS**

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



IMPORTANT: *Before you turn on the power of your system, please set JP3 to short 1-2 for normal operation.*

3.16 Power and Fan Connectors

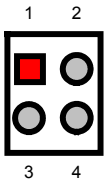
HS-4700 provides one 4-pin and one 20-pin ATX power connectors at *PW1* and *PW2*.

HS-4700 must using P4 power supply. One of 4-pin connector is for +12V lead which should connect to *PW1*.

20-pin ATX Power Connector can connect to Backplane or to *PW2*.

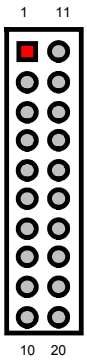
- **PW1: 4-pin ATX Power In Connector**

PIN	Description	PIN	Description
1	GND	2	GND
3	+12V	4	+12V



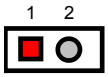
- **PW2: 20-pin ATX Power In Connector**

PIN	Description	PIN	Description
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWROK	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V



- **CN3: 2-pin ATX Power On/Off Switch**

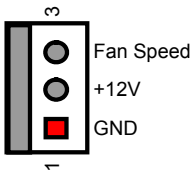
PIN	Description
1	5VSTBY
2	Power On/Off



Connector *FN1*, *FN2* and *FN3* onboard HS-4700 are 3-pin PWR, CPU, and Chassis fan connectors. If chassis is open, S1 switch should be closed.

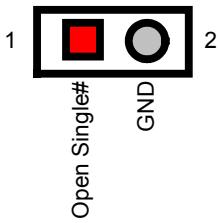
- **FN1, FN2 and FN3: PWR/CPU/Chassis Fan Connectors**

PIN	Description
1	GND
2	+12V
3	Fan Speed



- **S1: Chassis Open Switch Connector**

PIN	Description
1	Open Single#
2	GND

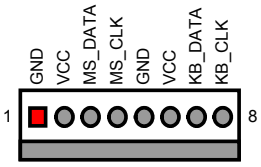


3.17 Keyboard/Mouse Connectors

The HS-4700 offers one possibility for keyboard/mouse connection is via *KB1*.

- **KB1: 8-pin Keyboard/Mouse Connector**

PIN	Description
1	GND
2	VCC
3	MS_DATA
4	MS_CLK
5	GND
6	VCC
7	KB_DATA
8	KB_CLK



3.18 System Front Panel Connectors

The HS-4700 has one LED at location *CN4* that indicates the HDD status.

- **CN4: HDD LED Connector**

PIN	Description
1	150Ω Pull +5V
2	HDD ACTIVE#

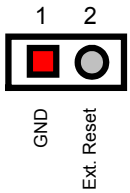
CN1 and *CN7* are the Keylock and Reset Button connectors onboard. The *CN8* is Green function LED indicates.

- **CN1: Keylock Connector**

PIN	Description
1	220Ω Pull +5V
2	N/C
3	GND
4	Keylock#
5	GND

- **CN7: Reset Button Connector**

PIN	Description
1	GND
2	External Reset



- **CN8: Green LED Connector**

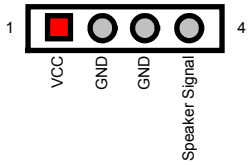
PIN	Description
1	150Ω Pull +5V
2	ACTIVE#

3.19 External Speaker

Aside from the buzzer at location *BZ1* onboard, the HS-4700 also offers a connector (*CN6*) for an external speaker connection. The table below lists the pin assignments of *CN6*.

- **CN6: External Speaker Connector**

PIN	Description
1	VCC
2	GND
3	GND
4	Speaker Signal

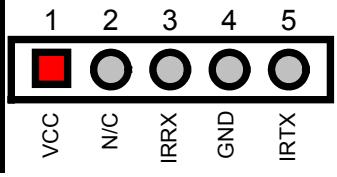


3.20 IrDA Connector

IR1 is a 5-pin internal IR communication connector for connection of an IrDA device.

- **IR1: IrDA Connector**

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

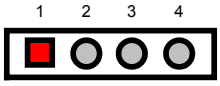


3.21 Audio Connectors

The HS-4700 has an onboard AC97 3D audio interface. The following tables list the pin assignments of the CD-ROM Analog Input, the Line_ In analog Input and the MIC In / Audio Out connectors.

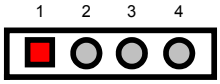
- **CD1: CD Analog Input Connector**

PIN	Description
1	CD_INR
2	CD_REF
3	CD_REF
4	CD_INL



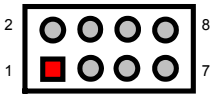
- **CD2: Line In Analog Input Connector**

PIN	Description
1	LINE_IN_R
2	GND
3	GND
4	LINE_IN_L



- **CN12: Mic In / Audio Out Connector**

PIN	Description	PIN	Description
1	AOUT_L	2	AOUT_R
3	GND	4	GND
5	MIC_IN	6	N/C
7	GND	8	GND



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Chapter 4

AMI BIOS Setup

The HS-4700 uses AMI BIOS for the system configuration. The AMI 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 AMI 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.

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

4.2.1 Getting Help

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

4.3 Main Menu

Once you enter the AMI 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.

AMIBIOS HIFLEX SETUP UTILITY – VERSION x.xx **(C)2001 American Megatrends, Inc. All Rights Reserved**
Standard CMOS Setup Advanced CMOS Setup Advanced Chipset Setup Power Management Setup PCI / Plug and Play Setup Peripheral Setup Hardware Monitor Setup Setup Hdd Security Password Auto-Detect Hard Disks Change User Password Change Supervisor Password Auto Configuration with Optimal Settings Auto Configuration with Fail Safe Settings Save Settings and Exit Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc. ESC:Exit ↑↓:Sel F2/F3: Color F10: Save & Exit

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

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.

```
          AMIBIOS SETUP – STANDARD CMOS SETUP
      (C)2001 American Megatrends, Inc. All Rights Reserved

Date  (mm/dd/yyyy)  : Mon Oct 07, 2002          Base Memory: 0 KB
Time  (hh/mm/ss)    : 11:13:43                  Extd Memory: 0 MB

Floppy Drive A:        1.44MB, 3.5"
Floppy Drive B:        Not Installed

                                                    LBA  Blk  PIO  32Bit
              Type      Size      Cyln Head WPcom Sec  Mode Mode Mode Mode
Pri Master  : Auto
Pri Slave   : Auto
Sec Master  : Auto
Sec Slave   : Auto

Boot Sector Virus Protection:    Disabled

Month:  Jan - Dec                                ESC:Exit      ↑↓:Sel
  Day:  01 - 31                                  PgUp/PgDn: Modify
 Year:  1980 - 2099                              F1:Help   F2/F3:Color
```

4.5 Advanced CMOS 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.

AMIBIOS SETUP – STANDARD CMOS SETUP
(C)2001 American Megatrends, Inc. All Rights Reserved

Quick Boot	Disabled	▲	Available Options:
Pri Master ARMD Emulated as	Auto		▸ Disabled
Pri Slave ARMD Emulated as	Auto		Enabled
Sec Master ARMD Emulated as	Auto		
Sec Slave ARMD Emulated as	Auto		
1st Boot Device	Floppy		
2nd Boot Device	IDE-0		
3rd Boot Device	CD-ROM		
Try Other Boot Devices	Yes		
S.M.A.R.T. for hard Disks	Disabled		
BootUp Num-Lock	ON		
Floppy Drive Swap	Disabled		
Floppy Drive Seek	Disabled		
PS/2 Mouse Support	Enabled		
Primary Display	VGA/EGA		
Password Check	Setup		
Boot To OS/2	No		
CPU MicroCode Updation	Enabled		
L1 Cache	Enabled		
L2 Cache	Enabled		
System BIOS Cacheable	Enabled		
C000,32k Shadow	Disabled		
C800,16k Shadow	Disabled		
CC00,16k Shadow	Disabled		
D000,16k Shadow	Disabled		
D400,16k Shadow	Disabled		ESC:Exit ↑↓:Sel
D800,16k Shadow	Disabled		PgUp/PgDn: Modify
DC00,16k Shadow	Disabled	▼	F1:Help F2/F3:Color

4.6 Advanced Chipset 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.

AMIBIOS SETUP – ADVANCED CHIPSET SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
******** DRAM Timing ********		Available Options:
SDRAM Frequency	Auto	▸ 100Mhz
Configure SDRAM Timing by SPD	Enabled	133Mhz
SDRAM CAS# Latency	3 Clocks	Auto
SDRAM RAS# Precharge	3 Clocks	
SDRAM RAS# to CAS# Delay	3 Clocks	
SDRAM Precharge Delay	7 Clocks	
SDRAM Idle Timer	Infinite	
SDRAM Read Thermal Management	Disabled	
DRAM Integrity Mode	Disabled	
Memory Hole	Disabled	
AGP Aperture Size	64MB	
USB Controller	All USB Port	
USB Device Legacy Support	Disabled	ESC:Exit ↑↓:Sel
Port 64/60 Emulation	Disabled	PgUp/PgDn: Modify
		F1:Help F2/F3:Color

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.

AMIBIOS SETUP – POWER MANAGEMENT SETUP
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Keyboard PowerOn Function	Disabled	Available Options:
Specific Key for PowerOn	N/A	▸ No
Mouse PowerOn Function	Disabled	Yes
ACPI Aware O/S	Yes	
ACPI Standby State	Auto	
USB Device Wakeup From S3	Disabled	
Re-Call VGA BIOS at S3 Resuming	Enabled	
Power Management / APM	Enabled	
Video Power Down Mode	Disabled	
Hard Disk Power Down Mode	Disabled	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Throttle Slow Clock Ratio	50.0%	
FDC / LPT / COM Ports	Ignore	
MIDI Ports	Ignore	
Primary Master IDE	Monitor	
Primary Slave IDE	Ignore	
Secondary Master IDE	Monitor	
Secondary Slave IDE	Ignore	
System Thermal	Disabled	
Thermal Active Temperature	65°C / 149°F	
Thermal slow Clock Ratio	50.0%	
Power Button Function	On/Off	
Restore on AC / Power Loss	Last State	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On PME#	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	ESC:Exit ↑↓:Sel
RTC Alarm Minute	30	PgUp/PgDn: Modify
RTC Alarm Second	30	F1:Help F2/F3:Color

4.8 PCI / Plug and Play 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.

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP
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Plug and Play Aware O/S	No	Available Options:
Clear NVRAM	No	▸ No
PCT Latency Timer (PCI Clocks)	32	Yes
Primary Graphics Adapter	PCI	
Allocate IRQ to PCI VGA	No	
PCI IDE BusMaster	Enabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	Disabled	
OffBoard PCI IDE Secondary IRQ	Disabled	
		ESC:Exit ↑↓:Sel
		PgUp/PgDn: Modify
		F1:Help F2/F3:Color

4.9 Peripheral Setup

The IDE hard drive controllers can support up to four 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).

AMIBIOS SETUP – PERIPHERAL SETUP
(C)2001 American Megatrends, Inc. All Rights Reserved

OnBoard IDE	Both	Available Options:
OnBoard LAN	Enabled	▸ Disabled
OnBoard AC'97 Audio	Auto	Primary
LCD CRT Selection	CRT Only	Secondary
LCD Type	Type 6	Both
OnBoard FDC	Enabled	
OnBoard Serial Port A	3F8/COM1	
OnBoard Serial Port B	2F8/COM2	
Serial Port B Mode	Normal	
IR Duplex Mode	Half Duplex	
IR Pin Select	IRRX/IRTX	
OnBoard Serial Port C	3E8/COM3	
Serial Port C IRQ	10	
OnBoard Serial Port D	2E8/COM4	
Serial Port D IRQ	11	
OnBoard Prarllel Port	378	
Parallel Port Mode	ECP	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	3	ESC:Exit ↑↓:Sel
OnBoard Midi Port	Disabled	PgUp/PgDn: Modify
Mide IRQ Select	5	F1:Help F2/F3:Color

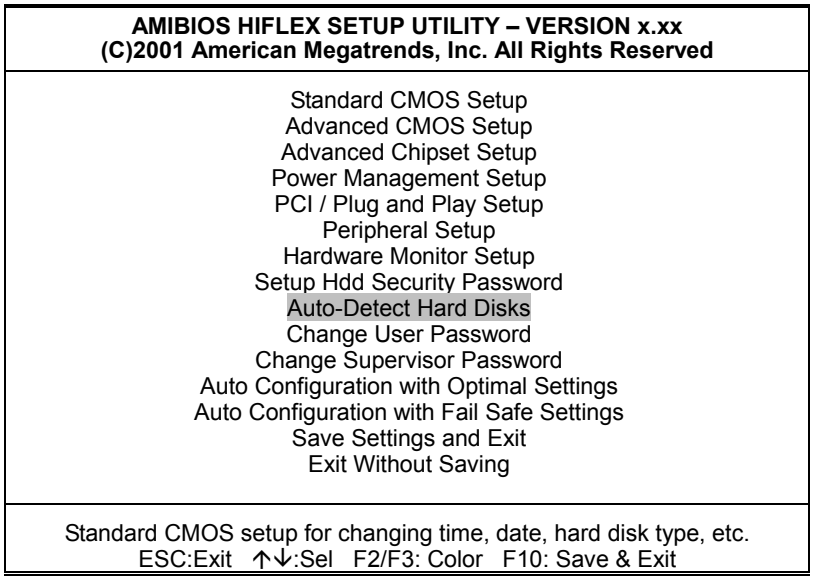
4.10 Hardware Monitor Setup

AMIBIOS SETUP – HARDWARE MONITOR SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
CPU Ratio Selection	8.0x	
*** System Hardware Monitor ***		
Chassis Intrusion	Disabled	
Current CPU Temperature		
Current System Temperature		
Current CPU Fan Speed		
Current Chassis Fan Speed		
Current Power Fan speed		
Vcore		
Vtt		
Vio		
+ 5.000V		
+12.000V		
-12.000V		
- 5.000V		
Battery		
+5V SB		
		ESC:Exit ↑↓:Sel PgUp/PgDn: Modify F1:Help F2/F3:Color

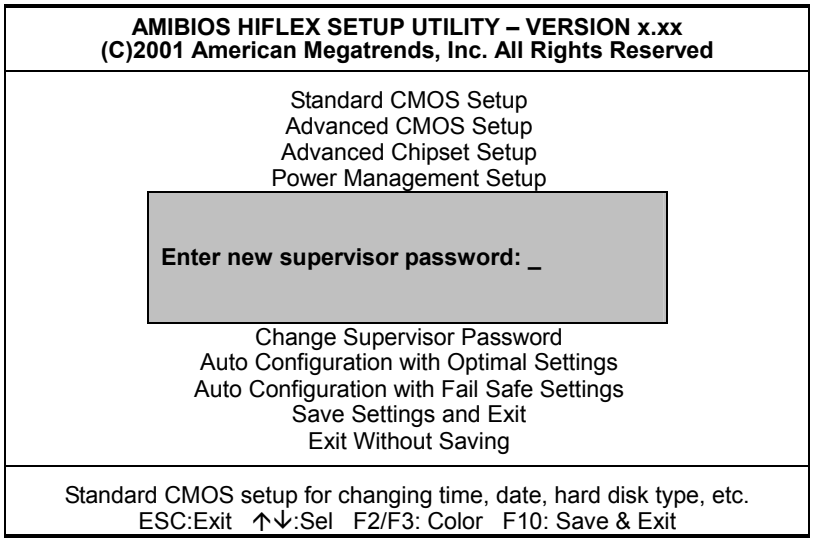
4.11 Auto-Detect Hard Disks

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.



4.12 Change Supervisor/User Password



You can set either supervisor or user password, or both of then. 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.

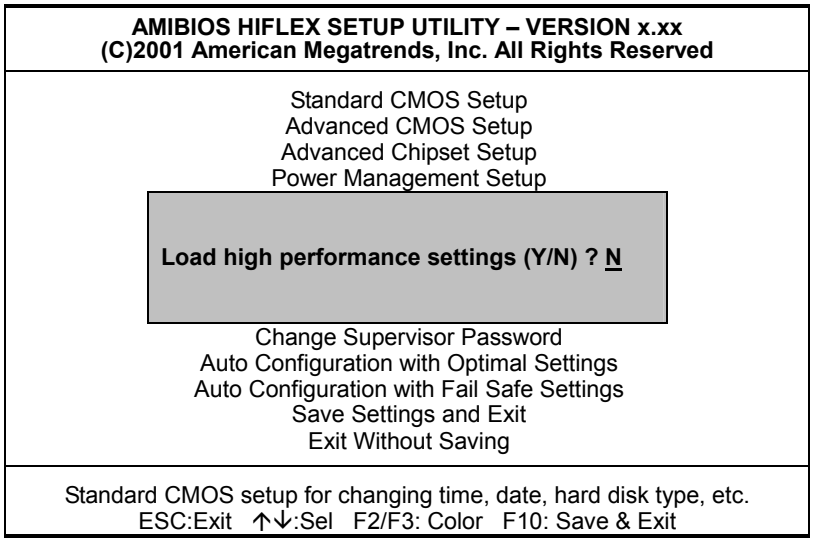
When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

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.

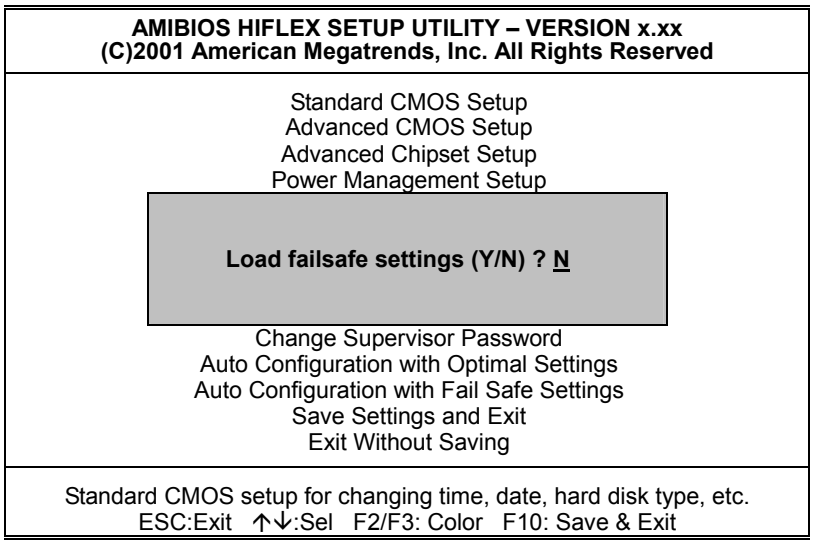
4.13 Auto Configuration with Optimal Settings

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.



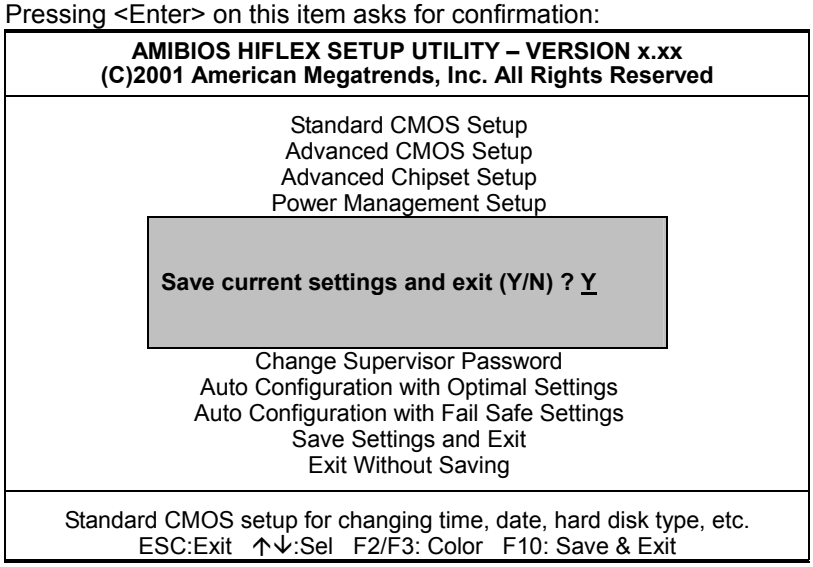
4.14 Auto Configuration with Fail Safe Settings

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



4.15 Save Settings and Exit

Pressing <Enter> on this item asks for confirmation:



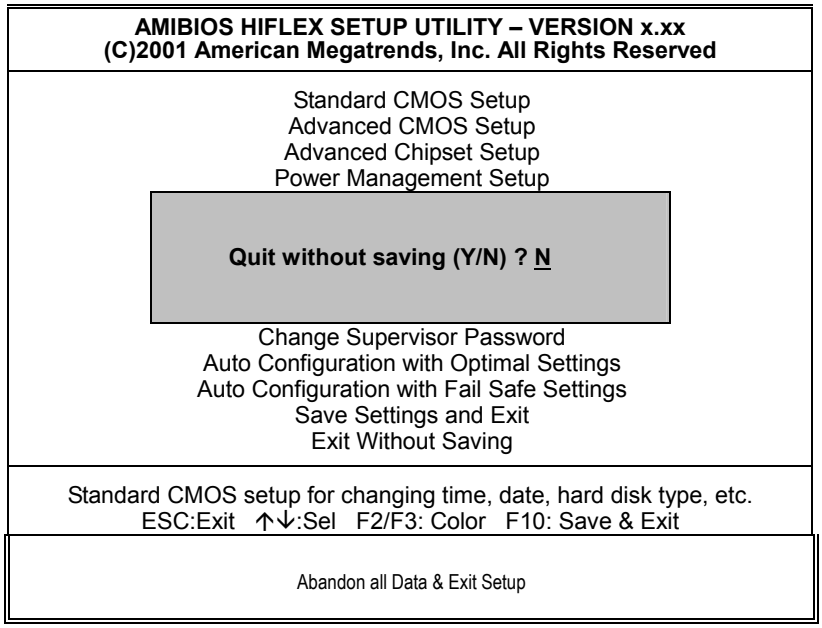
Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

4.16 Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.



Chapter 5

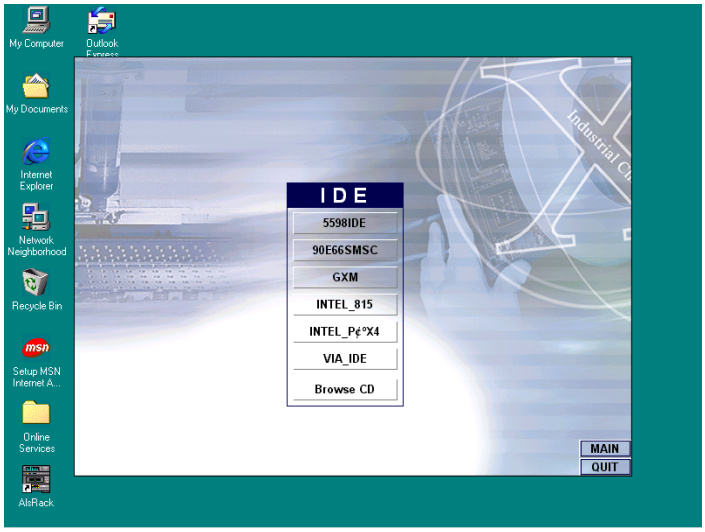
Software Utilities

This chapter contains the detailed information of IDE, VGA, LAN and Audio driver installation procedures. The utility disk that came with the delivery package contains an auto-run program that invokes the installation programs for the IDE, VGA, LAN and Audio drivers. The following sections describe the installation procedures of each driver based on Win 95/98, Win 2000 and Win NT operating systems. It is recommended that you install the drivers matching the sections listed in this chapter.

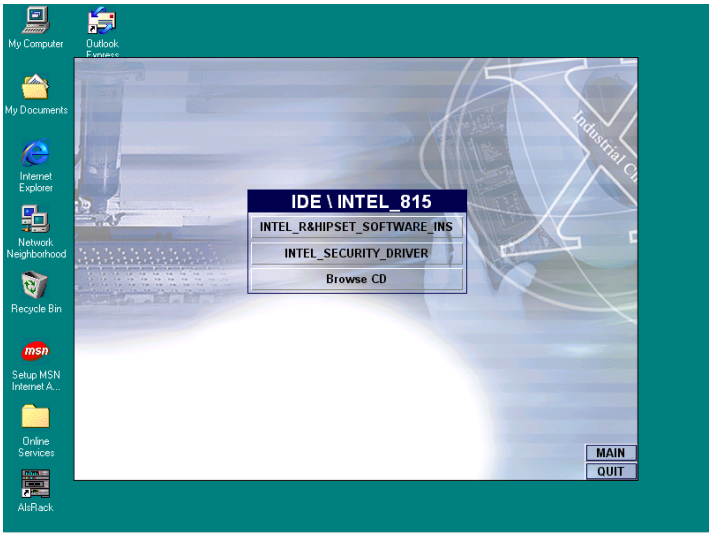
5.1 IDE Driver Installation

5.1.1 Installing Intel 815 Chipset Software

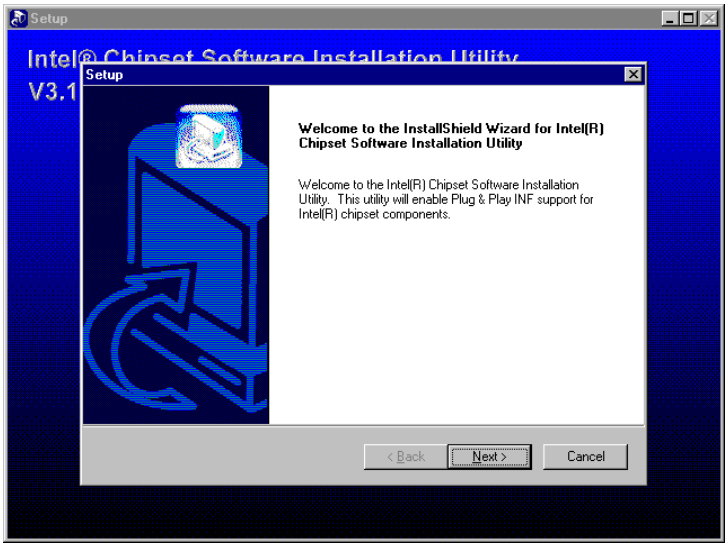
1. Insert Utility CD Disk to your CD ROM drive. The main menu will pop up as shown below. Select on the **IDE** button to launch the installation program.
2. Click on the **INTEL_815** button to continue.



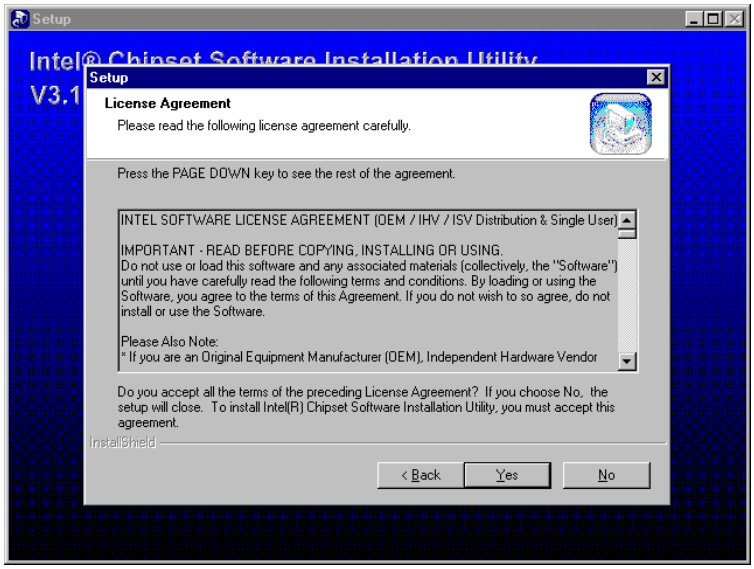
3. When the **IDE \ INTEL_815** box appears on your screen, click on the **INTEL_R&HIPSET_SOFTWARE_INS** to install the IDE plug and play information files into your system.



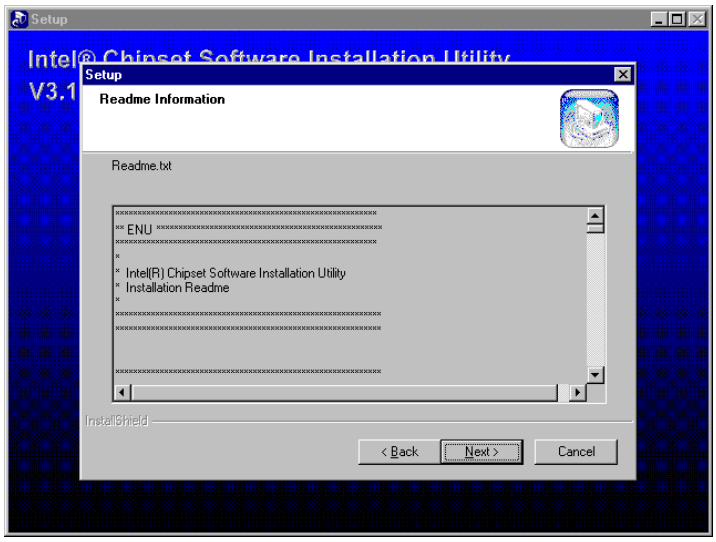
4. Immediately after clicking the IDE button in Step 1, the program launches the InstallShield Wizard that will assist you in the installation process. Click on the **Next >** button to proceed.



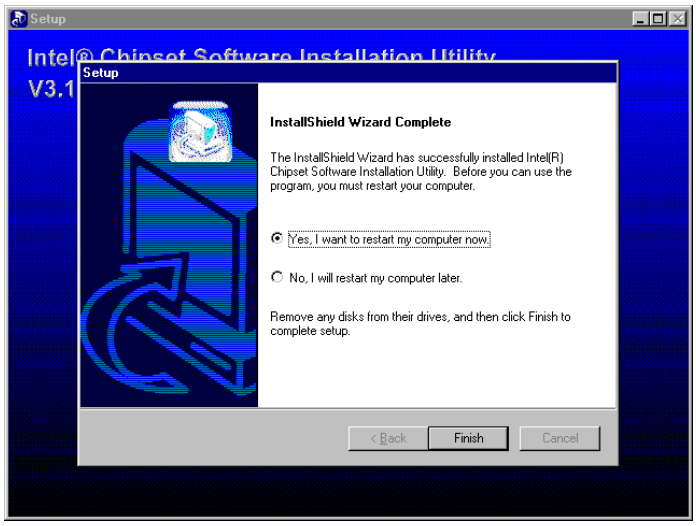
5. The Intel OEM Software License Agreement dialog box then appears on the screen. Choose **Yes** to proceed.



6. When the Readme Information dialog box pops up, just click on the **Next** button to proceed.



7. Once the Install Shield Wizard finishes updating your system, it will prompt you to restart the computer. Tick on the **Yes, I want to restart my computer now** followed by a click on the **Finish** button to reboot. Only after your computer boots will the new settings take effect.



5.1.2 Installing Intel Security Driver

1. Following Steps 1 ~ 3 of the Intel 815 chipset software (from the preceding section), click on the **INTEL_SECURITY_ DRIVER** button. When the dialog box below appears, make sure you close all other Windows applications then click on the **Next >** button to proceed.

2. The Intel OEM Software License Agreement dialog box then appears on the screen. Choose **Yes** to proceed.

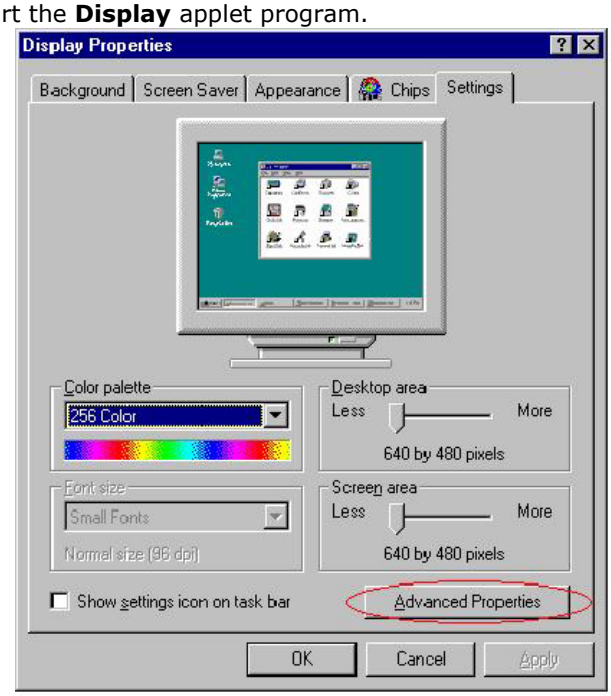
3. When the **Release Notes** box pops on the screen, read through any important information listed before clicking the **Next >** button.

4. Setup will then prompt you to specify the path where you would like the Security driver installed. Select the **Next >** button after you have made your path/installation choice.

5. Once the setup program finishes copying files into your system, it will prompt you to restart the computer. Tick on the **Yes, I want to restart my computer now** followed by a click on the **Finish** button to reboot. Only after your computer boots will the new settings take effect.

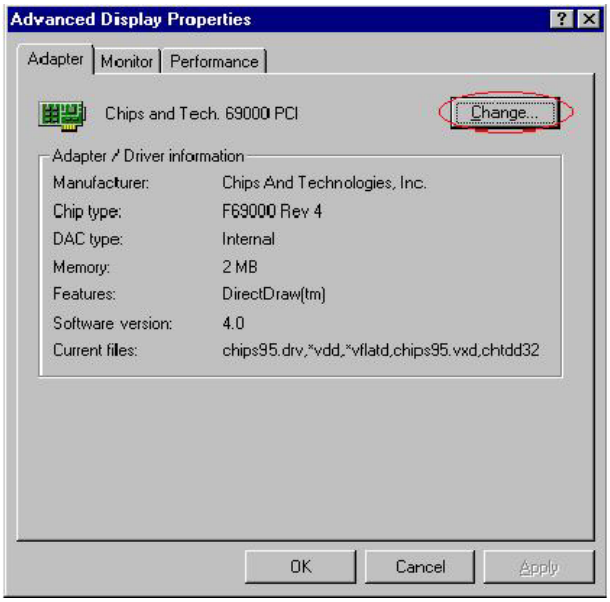
5.2 VGA Driver Installation for Win 95/98

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:

C&T69000 Rev 4

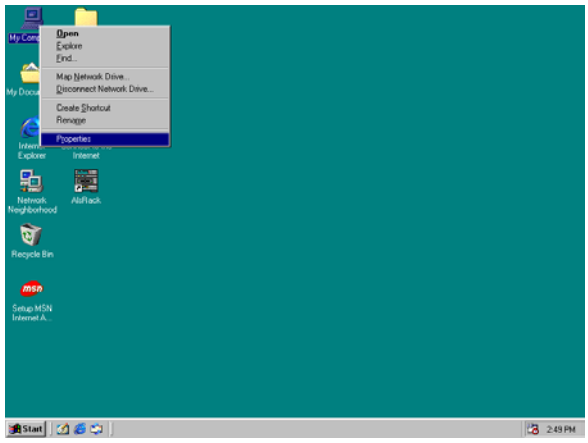
10. Continue choosing until asked to restart machine.
11. After the system has restarted, you can go back into the display applet and select alternate screen resolutions and color depths.

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

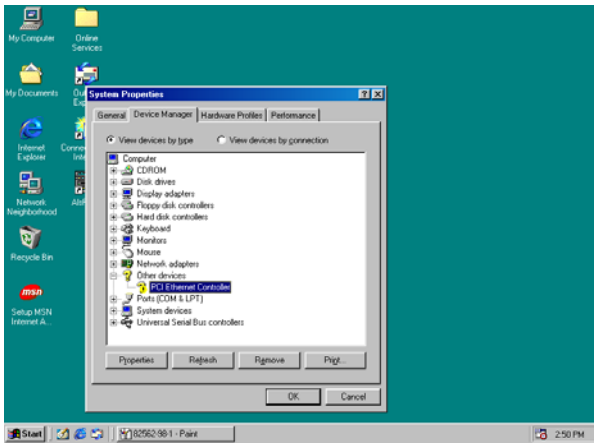
5.3 LAN Driver Installation

5.3.1 Win 95/98

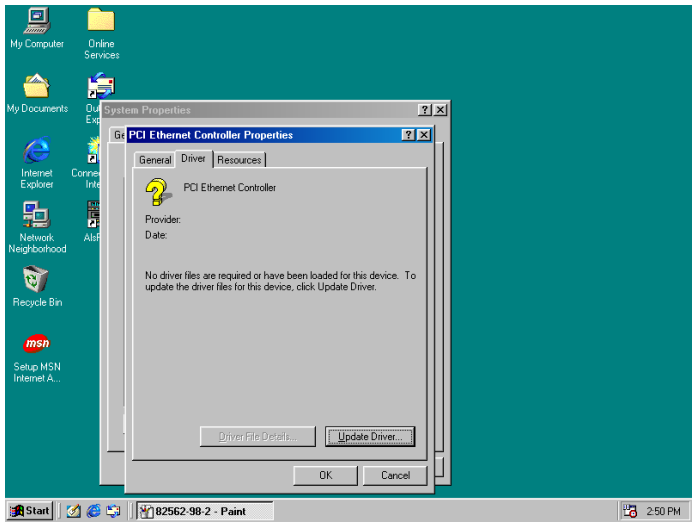
1. Right click on **My Computer** icon then scroll to the **Properties** item from the pop-up menu.

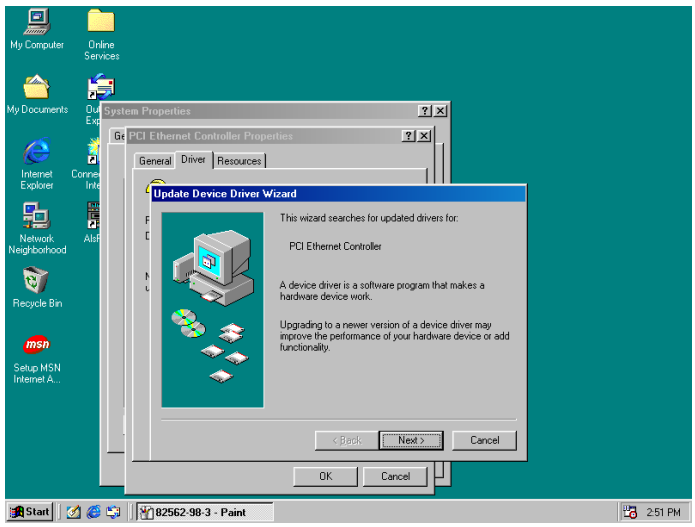


2. Select **Device Manager** from the top menu bar. A list of all devices installed appears, scroll down to the **Other devices** and then select on **PCI Ethernet Controller**. Select the Properties button to access the details of this *unknown* device. Refer to the following screen shot for an clearer explanation of this step.

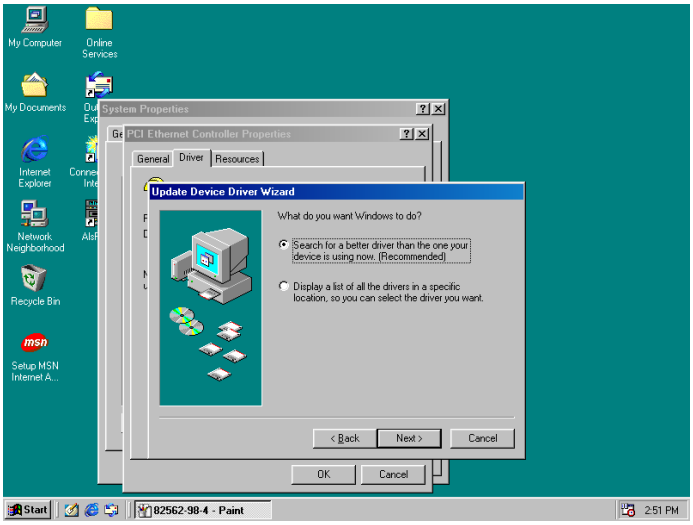


3. Once the **PCI Ethernet Controller Properties** screen pops on the screen, click on the **Update Driver …** button to launch the **Update Device Driver Wizard** screen.

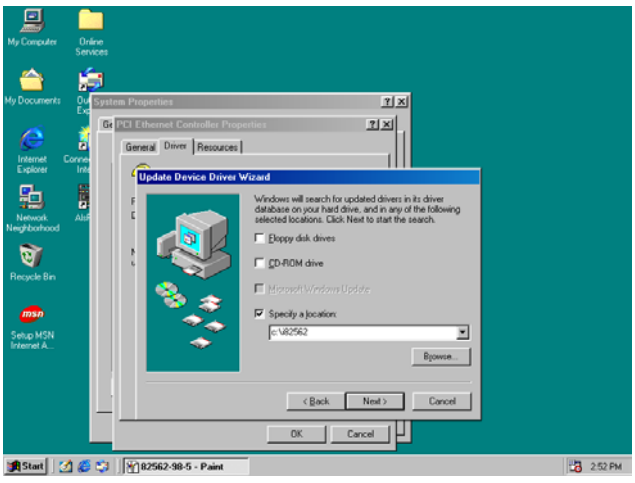


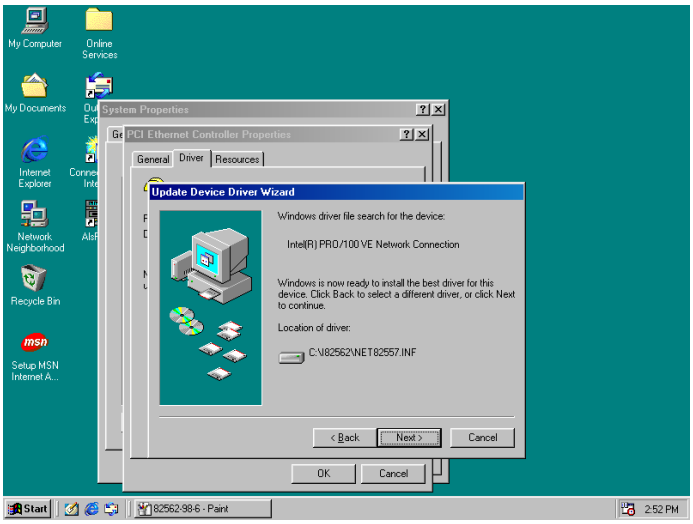


4. The succeeding screen then lets you choose whether to search for a better driver for the LAN or display the available list of drivers. Select **Search for a better driver than the one your device is using now** followed by a click on the **Next >** button.

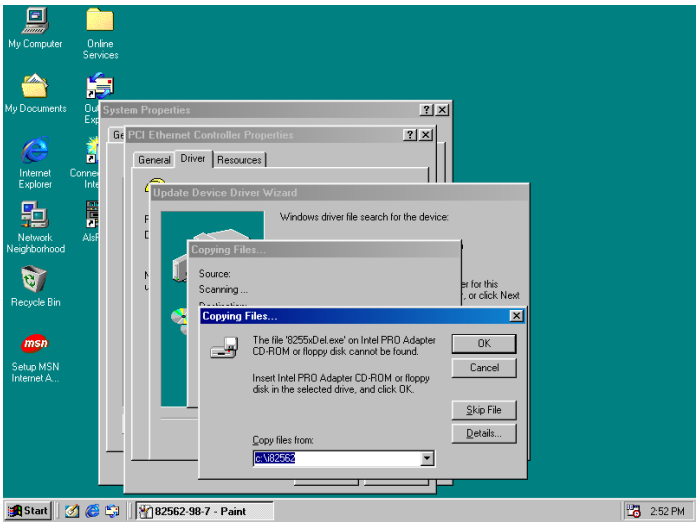


5. The wizard program will then require you to specify the location of the driver file. Tick on the **Specify a location:** and type or select the path where the driver files exist (c:\i82562). Click on the **Next >** button to proceed.

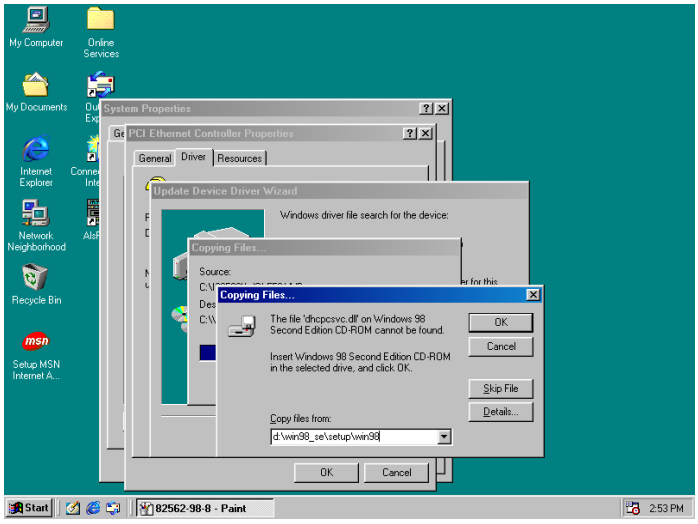




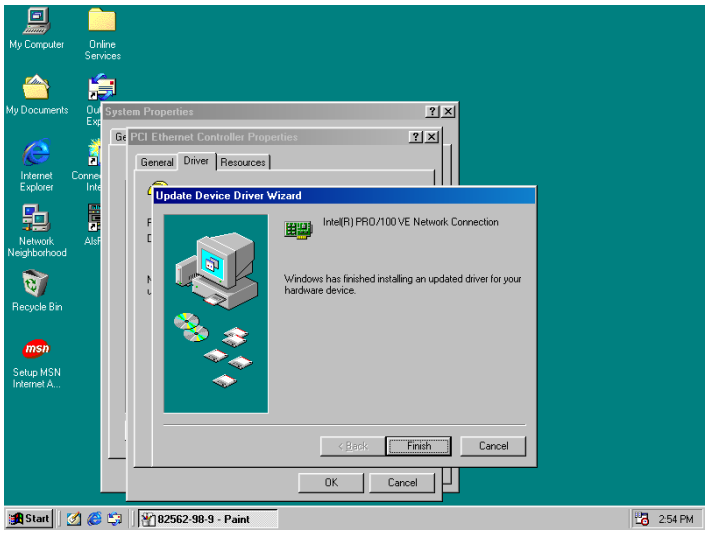
6. The program now starts copying the file(s) needed by your Win98. When the program fails to seek for 8255xDel.exe file from your specified location, it will prompt you to specify the path where the Intel Pro Adapter exists.



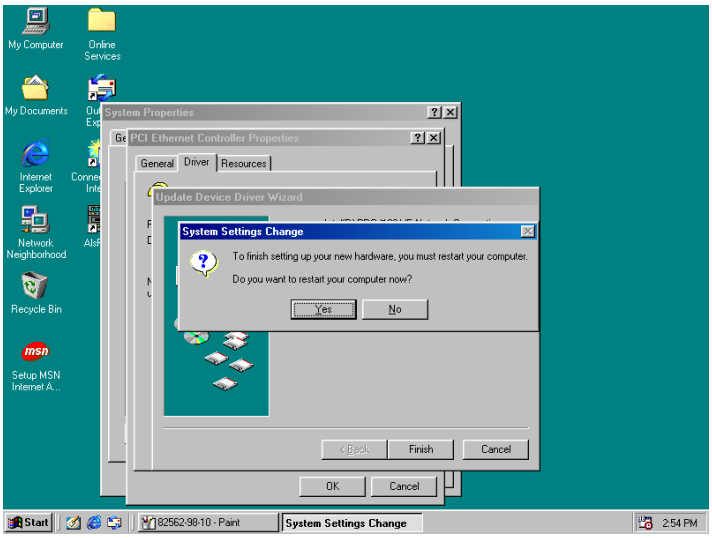
7. With the Utility CD Disk on your CD drive, key in *d:\win98_se\setup\win98* on the blank space below **Copy files from:** then press the **OK** button.



8. When the program finishes updating and copying files for the Intel Pro/100VE Network Connection, click on the **Finish** button to proceed.

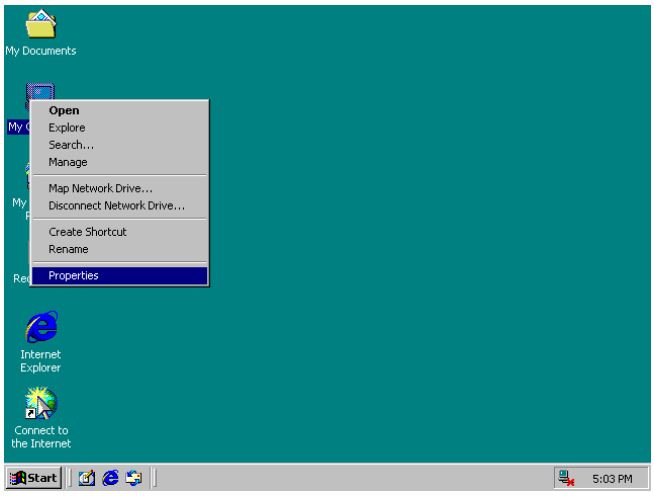


9. For the new hardware settings to take effect and to complete the installation process, you must restart your computer when the **System Settings Change** window below pops up. Click on the **Yes** button to complete the installation.

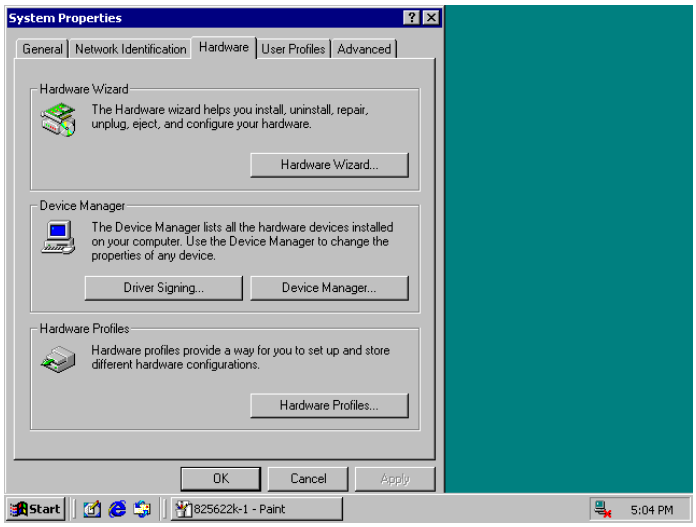


5.3.2 Win 2000

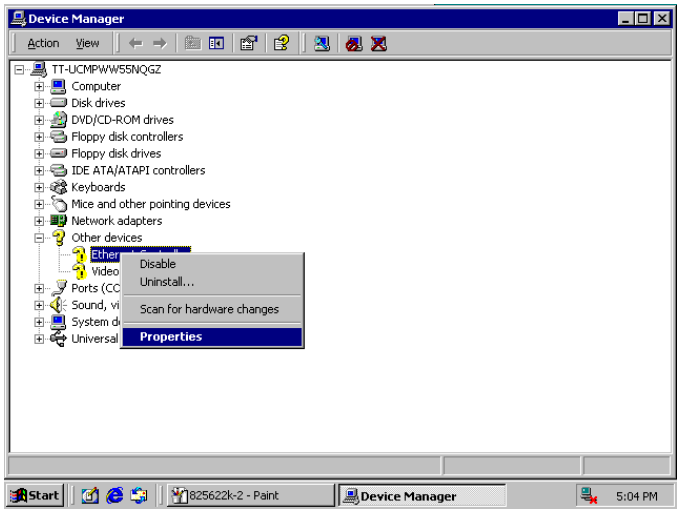
1. Right click on **My Computer** icon then scroll to the **Properties** item from the pop-up menu.



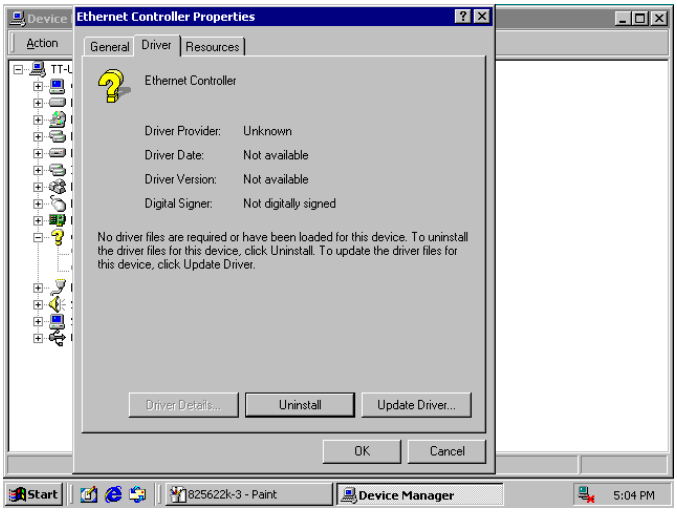
2. When the System Properties window pops up on the screen, click on the **Device Manager** button.



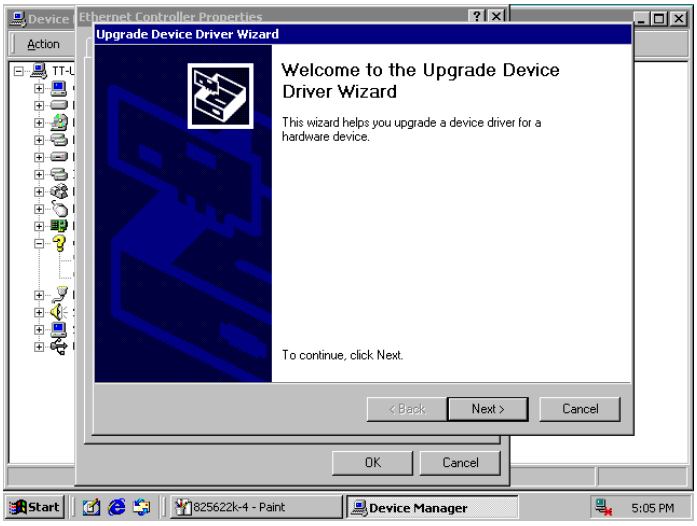
3. A list of all devices installed appears, scroll down to the **Other devices** and then right click on **Ethernet Controller** to select the Properties button Refer to the following screen shot for an clearer explanation of this step.



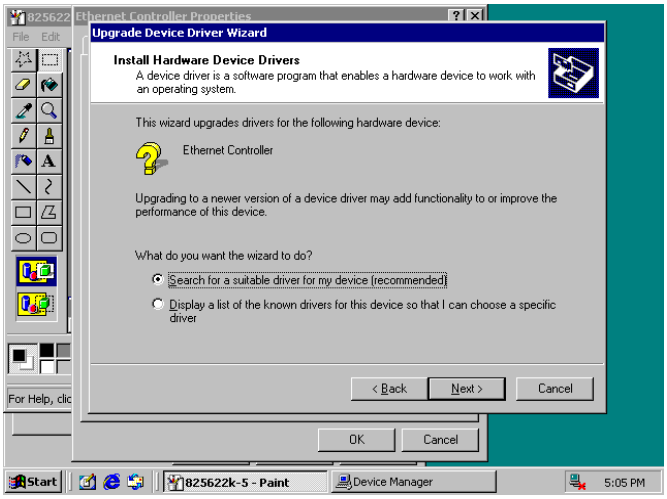
4. Once the **Ethernet Controller Properties** screen pops on the screen, click on the **Update Driver ...** button to launch the **Update Device Driver Wizard** screen. Once the **Upgrade Device Driver Wizard** screen pops on the screen, click **Update Driver ...** to launch the Win 2000 driver installation program.



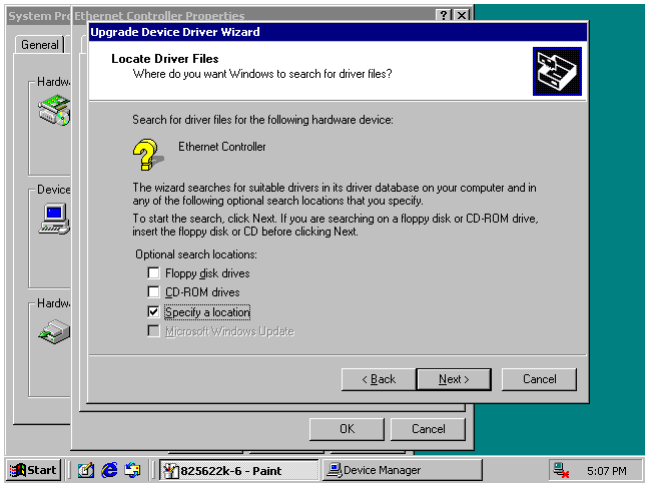
5. Click on **Next >** button to proceed with the installation.



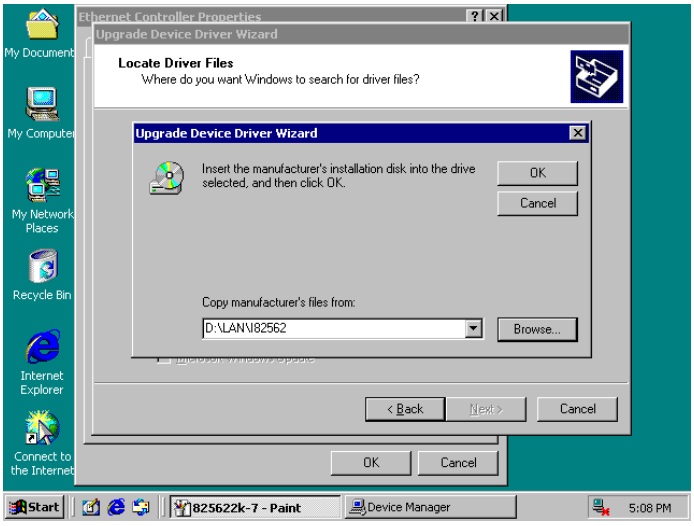
6. The wizard will then inform you the unknown device it detected from the system. Since the Win200 drivers list do not include Intel chip driver onboard HS-6238, tick **Search for a better driver than the one your device is using now** followed by a click on the **Next >** button to continue.



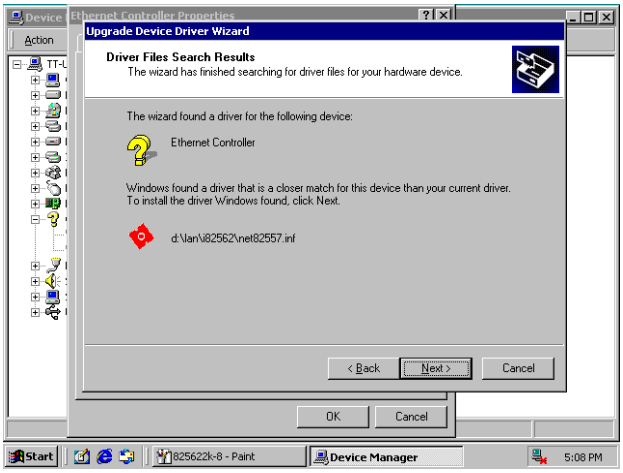
7. The wizard program will then prompt you to specify the location where it will start searching for the driver. Tick on the **Specify a location:** and then click on the **Next >** button to proceed.



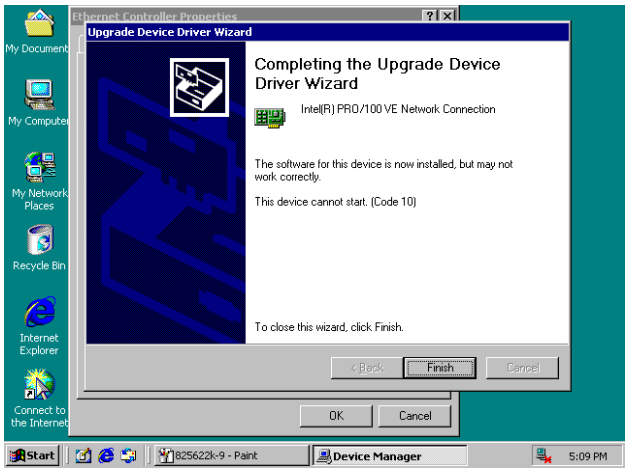
8. The wizard program will then require you to insert the manufacturer disk at your specified location (entered at the **Copy manufacturer's files from:** space) of the driver file. With your Utility CD disk inserted in the drive, type *d:lan\i82562* then click on the **OK** button to proceed.



9. The wizard program will start to scan and search for the driver(s) located at your specified location. After which, the wizard program will show the result of its search. When it finds a more suitable driver fitting your device, it will list the driver name and path. Just click on the **Next >** button to continue installing.



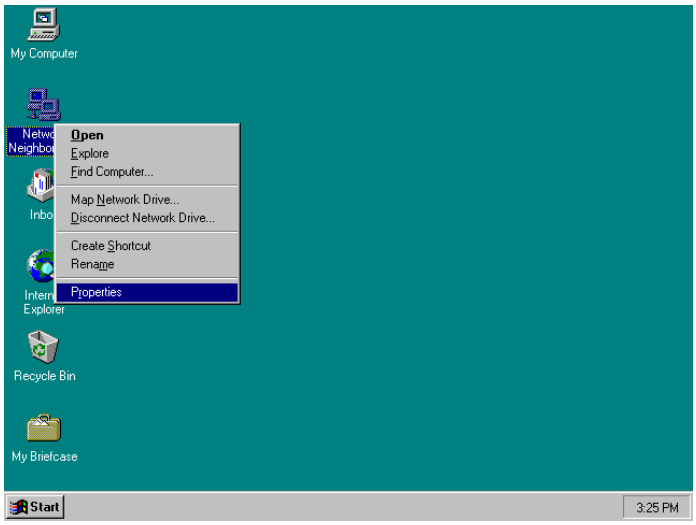
10. When the program finishes updating and copying files for the Intel Pro/100VE Network Connection, click **Finish** to proceed.



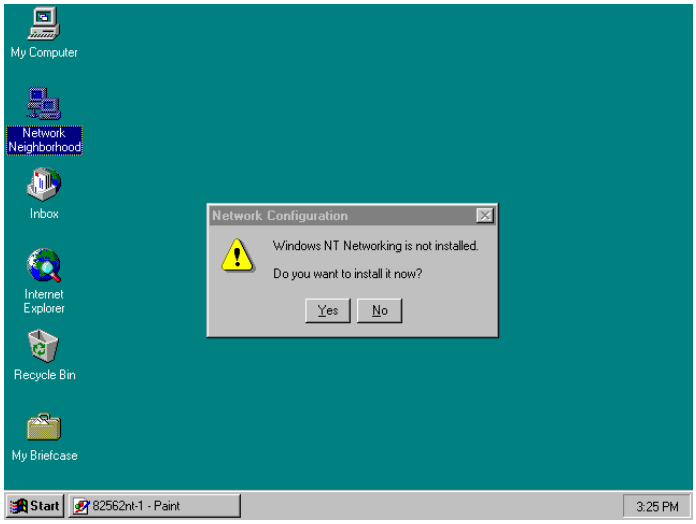
11. For the new hardware settings to take effect and to complete the installation process, you must restart your computer when the **System Settings Change** window below pops up. Click on the **Yes** button to complete the installation.

5.3.3 Win NT

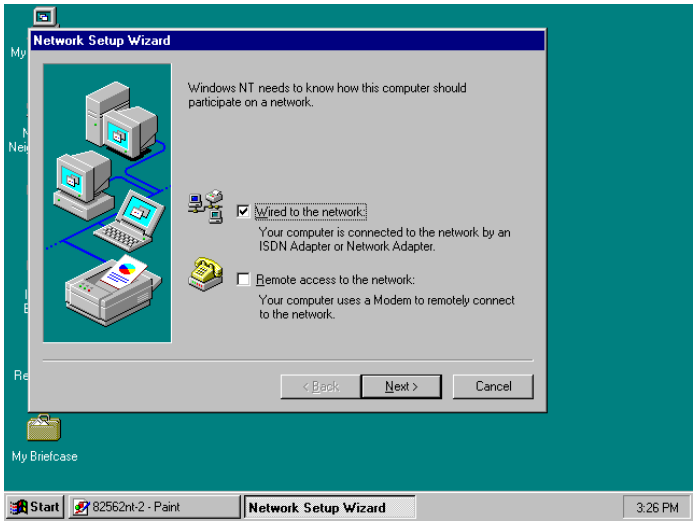
1. Right click on **Network Neighborhood** icon then scroll to the **Properties** item from the pop-up menu.



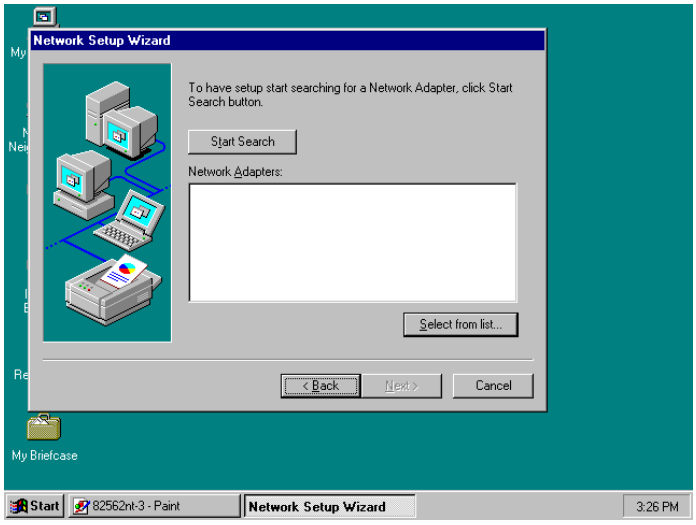
2. The Network Configuration dialog box then appears, notifying the user that there is no Windows NT Networking available. Click on the **Yes** button to start the installation process.



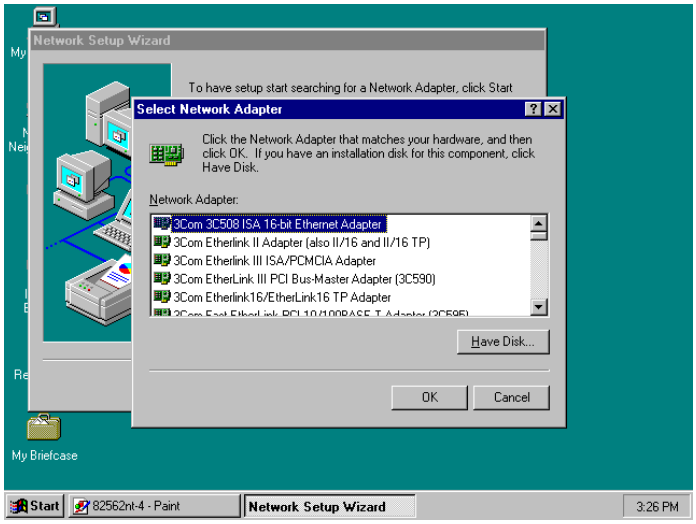
3. The Network Setup Wizard will then ask you to identify the network connection of your computer. Select **Wired to the network** and click on the **Next >** to continue.



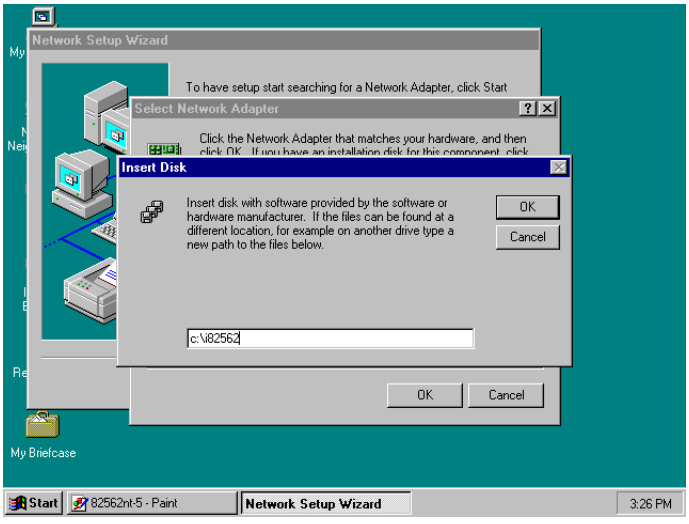
4. The succeeding screen then indicated that the wizard will initially search for Network Adapter from the available list of drivers. Select on **Start Search**.



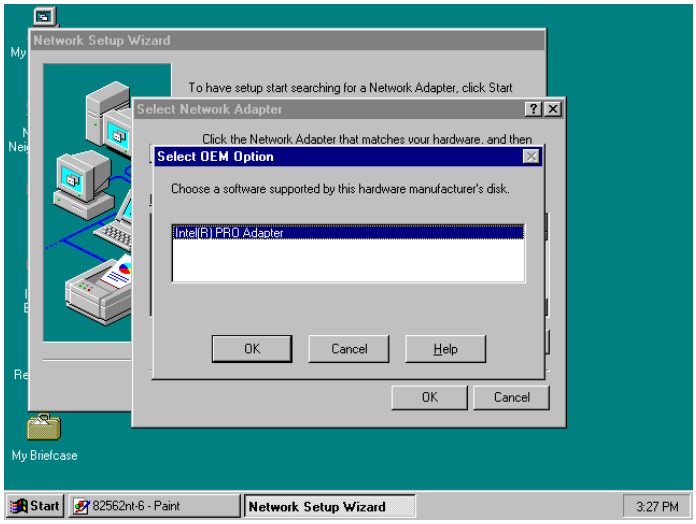
5. When it is done searching for available network drivers, the wizard will show a list and allow you to locate and choose the appropriate Network Adapter. Since the LAN device driver is in the Utility CD Disk, select on Have Disk … to proceed.



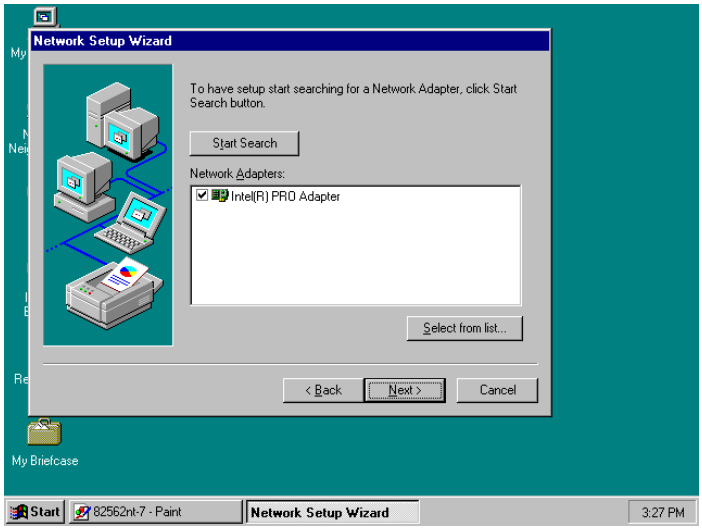
6. The wizard program will then require you to insert the manufacturer disk and specify the location of the driver file (i.e., c:\i82562). Click on the **OK** button to proceed.



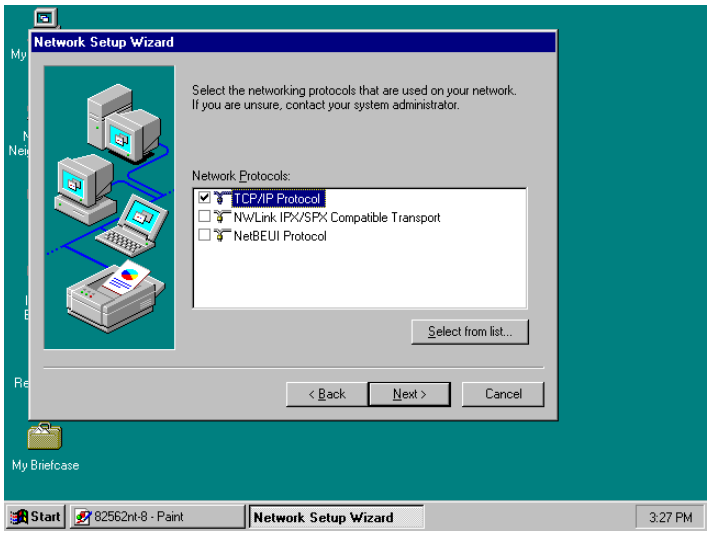
7. The Select OEM Option then appears, prompting you to select the software supported by the network hardware device you will install. Select Intel(R) PRO Adapter and click on the **OK** button to continue installing.



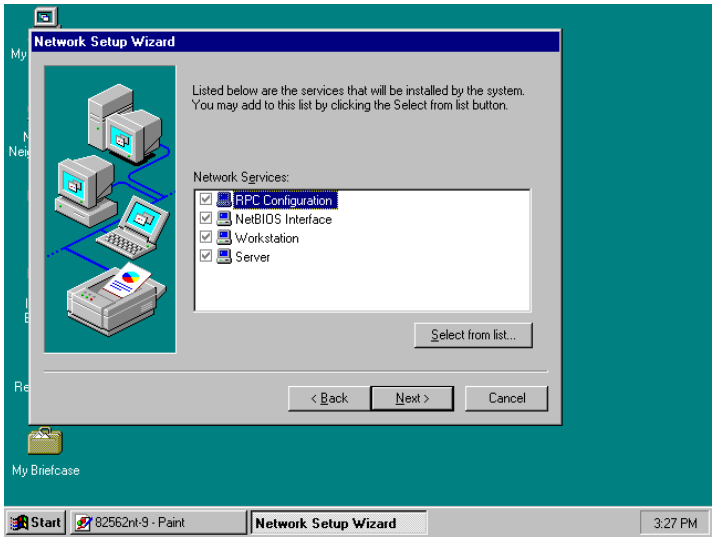
8. The wizard program now displays on the screen that it has detected the Intel() PRO Adapter. Click on the **Next >** button to continue installing.



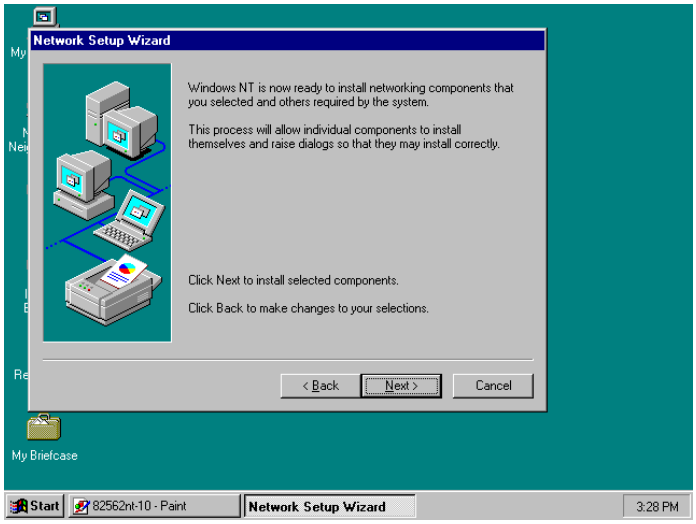
9. The wizard program now prompts you to specify the networking protocols used on your network structure. Tick on the TCP/IP Protocol and click on the **Next >** button to proceed.



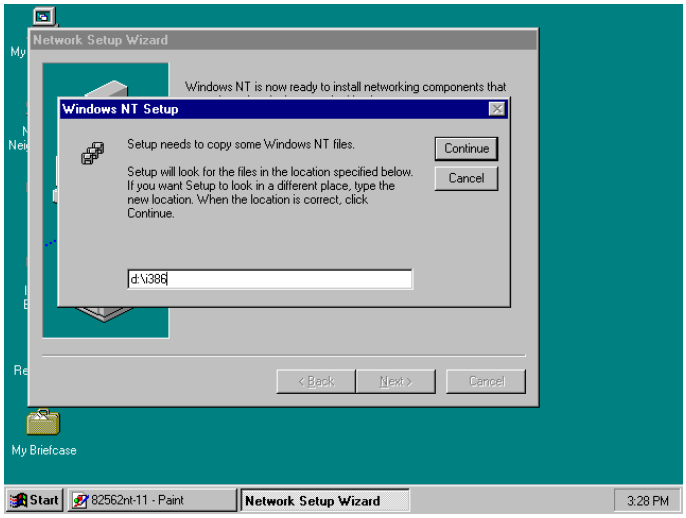
10. The next screen will allow you to customize the Network Services the wizard program intends to install. Tick services as needed and then click on the **Next >** button to continue.



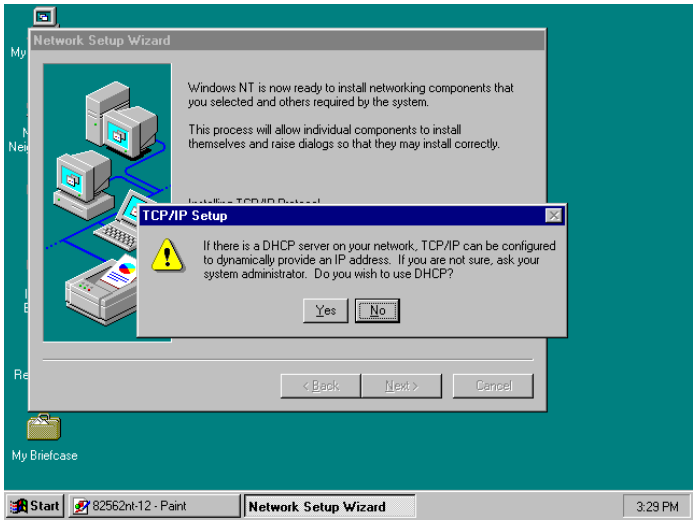
11. The Network Setup Wizard then prompts you that it is ready to install the network components based on your selection. You may start installing by clicking on he **Next >** button or make modifications on your choices using the **< Back** button.



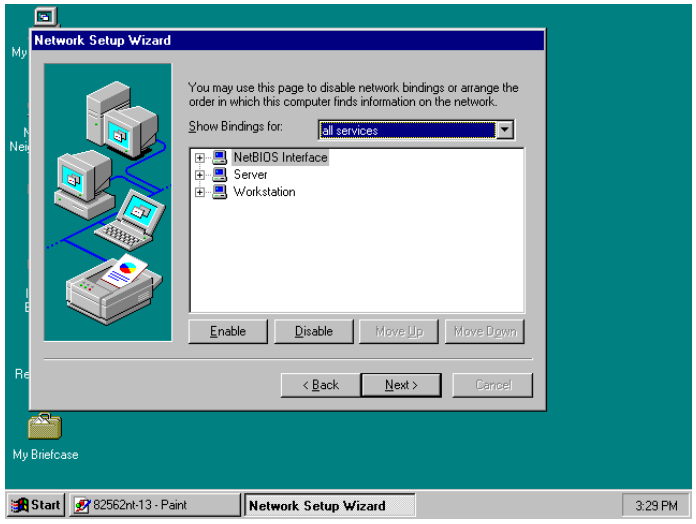
12. The Network Setup Wizard will then need to copy the drive file(s). Specify the path of your device driver(s) (i.e., d:\i386) and click the **Continue** button.



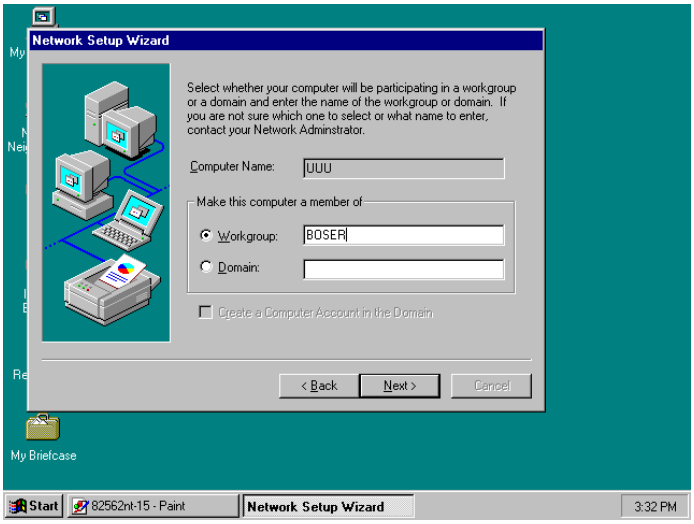
13. Choose the default entry, **No**, when the following screen pops on the screen.



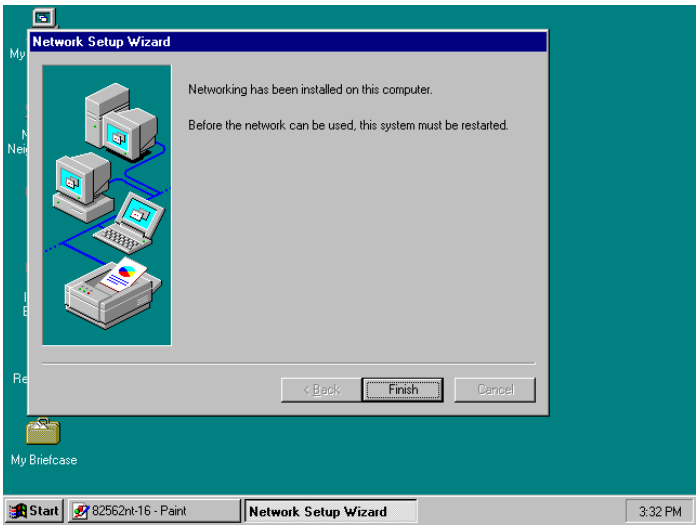
14. If you need to disable network bindings on the network services installed, select the service and then click on the **Disable** button. Otherwise, proceed by clicking on the **Next >** button.



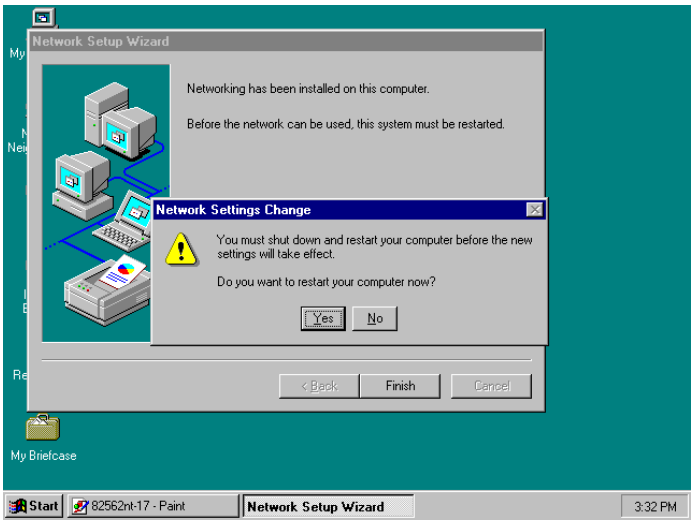
15. Specify the network participation type of your computer, either to a Workgroup or a Domain. Click on the **Next >** button after identifying the network group installed on your computer.



16. The wizard program then informs you that Networking is now installed on your system. You must restart your computer to make the setting changes take effect. Click on the **Finish** button to close the wizard program.



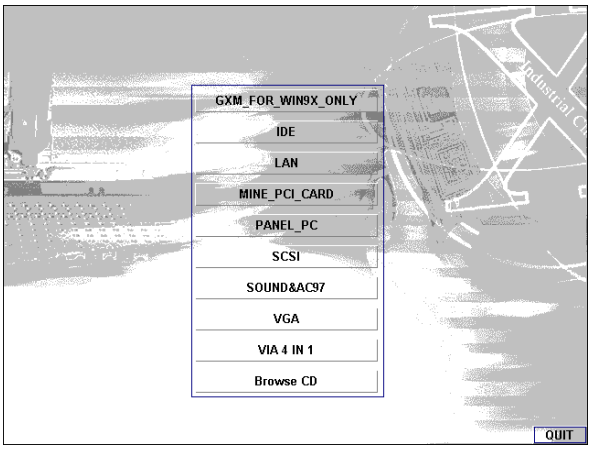
17. When the following dialog box pops on your screen, click on the **Yes** button to restart your computer and make the setting changes take effect.



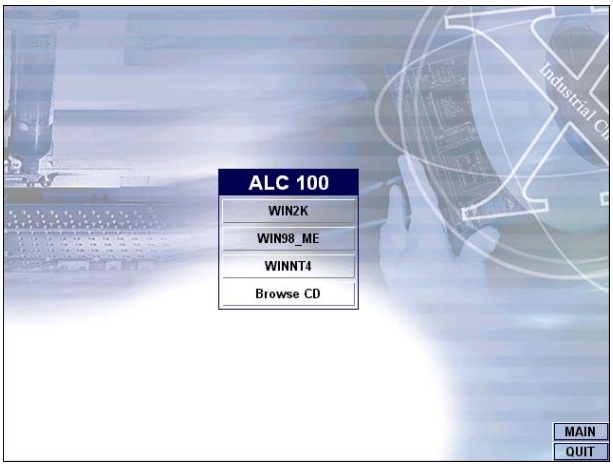
5.4 Audio Driver Installation

5.4.1 Win 95/98

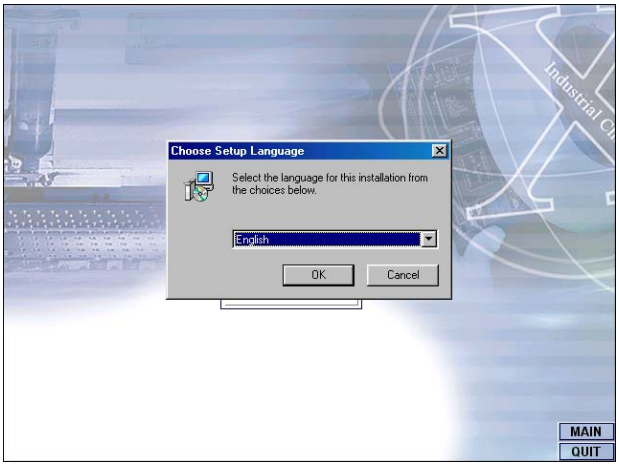
1. After loading the Utility CD-ROM, the program automatically runs the utility. Press **Enter** to proceed installing. When the main utilities window pops on the screen, select **SOUND&AC7**.



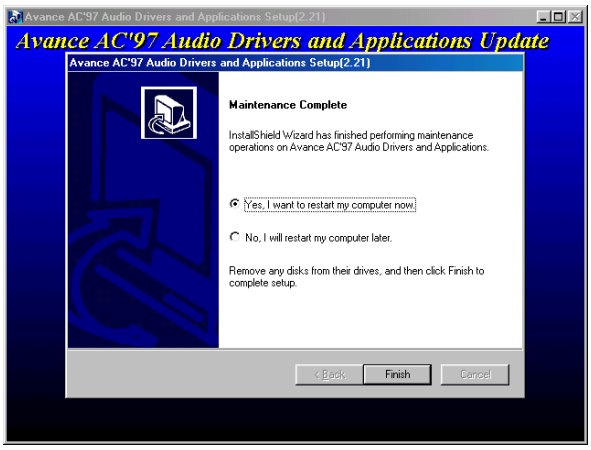
2. The succeeding screen will then show you the **SOUND&AC97** main menu. Select on **ALC 100** to continue installation. When the ALC100 dialog box appears, pick on **WIN98_ME** and it will take you to the ALC 100 menu. Refer to the following screen shots for a graphical description of this step.



3. Select the language you intend to use for the installation. The default is **English**. After making your choice, press on the **OK** button to proceed.

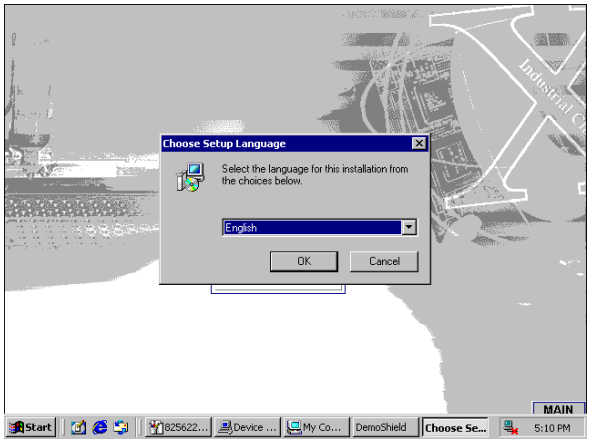


4. Once the InstallShield Wizard completes the operation and update of your AC'97 driver, it will ask you to remove disks from their drives, and prompt you to restart your system. Tick on the Yes, I want to restart my computer now. Afterwards, click on the **Finish** button to complete the installation process. The system changes you made will take effect after the system restarts.



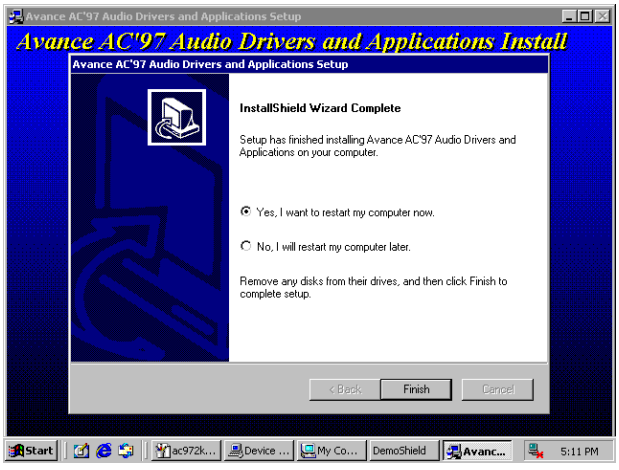
5.4.2 Win 2000

1. Following steps 1 and 2 of the Win95/98 AC97 installation, select **WIN2K** button when the ALC100 dialog box appears screen.
2. Select the language you intend to use for the installation. The default is **English**. After making your choice, press on the **OK** button to proceed.



3. Immediately after clicking on the **OK** button from the preceding step, the **Avance AC'97 Audio Drivers and Applications Setup** dialog box will appear on screen. Just click on the **Next >** button to continue.

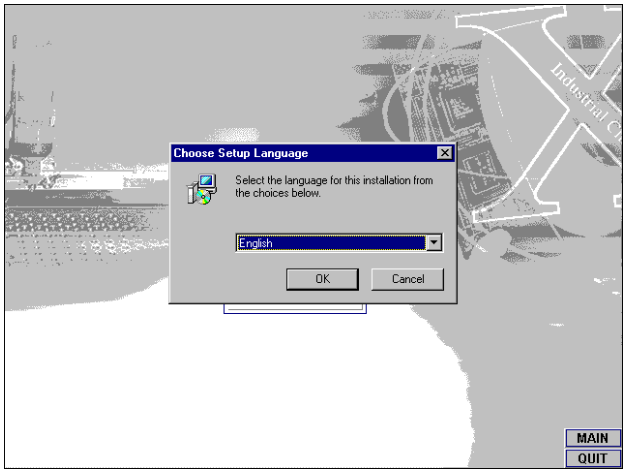
4. Once the InstallShield Wizard completes the operation and update of your AC'97 driver, it will ask you to remove any disks from their drives, and prompt you to restart your system. Tick on the **Yes**, I want to restart my computer now. Afterwards, click on the **Finish** button to complete the installation process. The system changes you made will take effect after the system restarts.



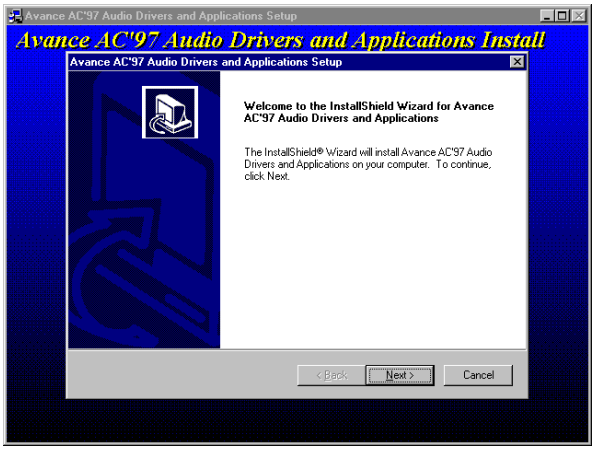
5.4.3 Win NT

1. Following steps 1 and 2 of the Win95/98 OR step 1 of Win 2000 AC97 installation, select **WINNT** button when the ALC100 dialog box appears screen.

2. Select the language you intend to use for the installation. The default is **English**. After making your choice, press on the **OK** button to proceed.



3. Immediately after clicking on the **OK** button from the preceding step, the **Avance AC'97 Audio Drivers and Applications Setup** dialog box will appear on screen. Just click on the **Next >** button to continue.



4. Once the InstallShield Wizard completes the operation and update of your AC'97 driver, it will ask you to remove any disks from their drives, and prompt you to restart your system. Tick on the **Yes**, I want to restart my computer now. Afterwards, click on the **Finish** button to complete the installation process. The system changes you made will take effect after the system restarts.