HS-6253

VIA C3 800MHz Embedded CPU
Industrial Single Board Computer

• Half Size • All-in-One • CRT/Panel • 133MHz FSB •
• ATA/33/66/100 • Dual LAN • Audio •
• RS-232/422/485 • 4COM • PC/104 •
• IrDA • USB • DOC • WDT • H/W Monitor •
• PCI-ISA Bus Industrial Single Board computer •

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Safety Instructions

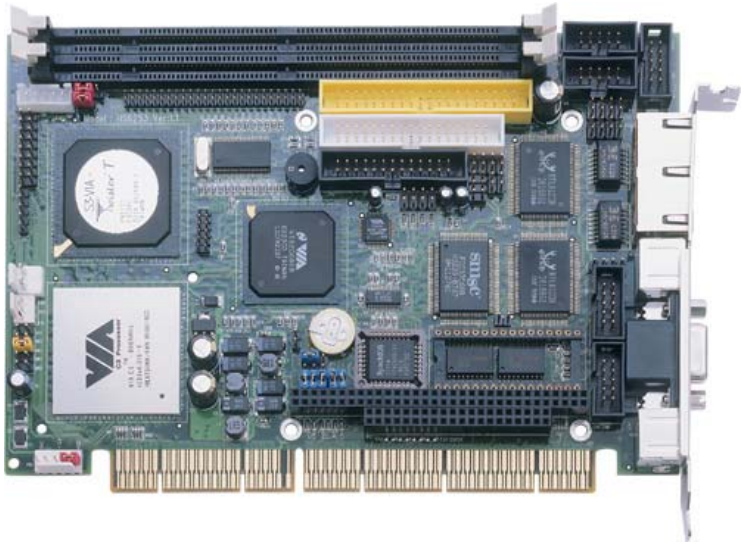
Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components. Fasten the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please wear and connect the strap before handle the HS-6253 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-6253 is a 133MHz FSB VIA VT8606 chipset-based board designed for PCI-ISA Bus VIA C3 800MHz Embedded CPU. These features combine and make the HS-6253 an ideal all-in-one industrial single board computer. Additional features include an enhanced I/O with CRT/Panel, Dual LAN, Audio, and 4 COM ports interfaces.

Its onboard ATA/33/66/100 to IDE drive interface architecture allows the HS-6253 to support data transfers of 33, 66 or 100MB/sec. to one IDE drive connection. Designed with the VIA VT8606 core logic chipset, the board supports VIA C3 800MHz Embedded CPU. The 8606 integrated S3 3D supporting AGP Bus

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 1GB.

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

To ensure the reliability in an unmanned or standalone system, the Watchdog Timer (WDT) onboard HS-6253 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

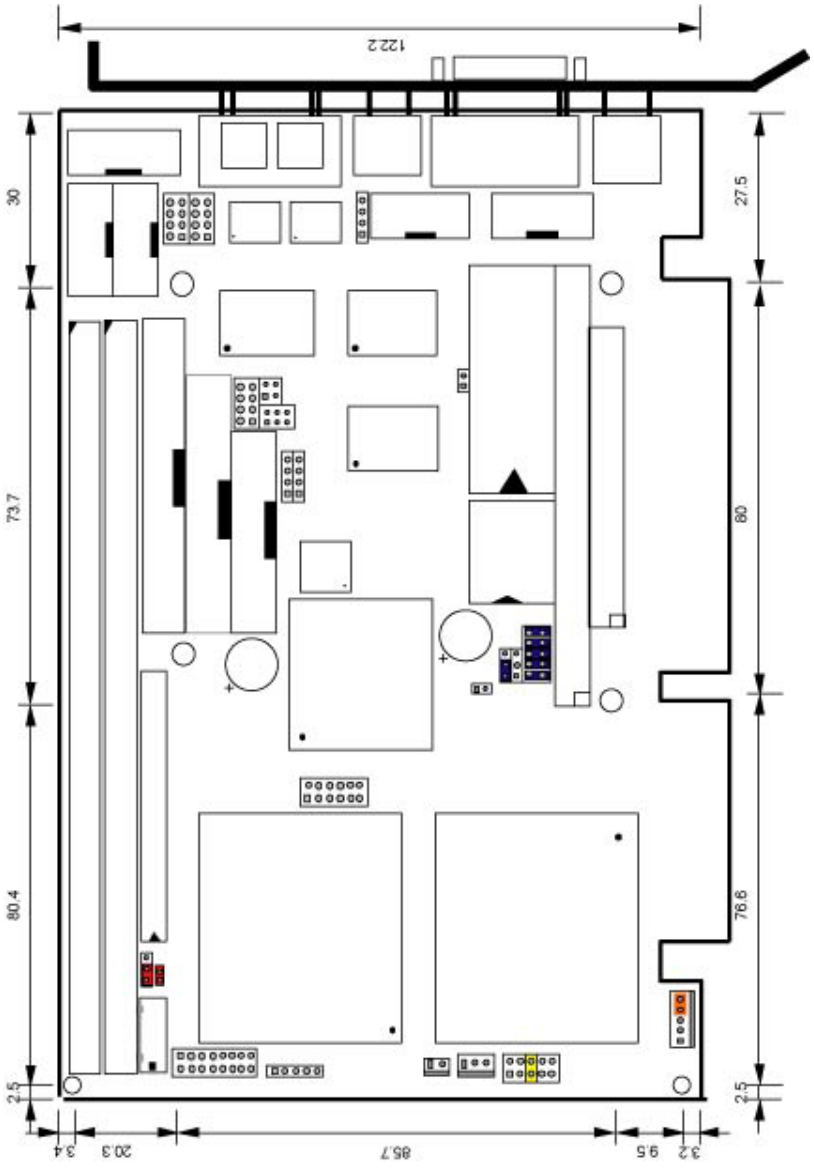
The HS-6253 comes with the following features:

- VIA C3 800MHz Embedded CPU
- VIA VT8606/VT82C686B system chipset
- Supports 66/100/133MHz FSB
- Two DIMM sockets with a max. capacity of 1GB
- SMC 37C669, VIA VT82C686B super I/O chipset
- Fast PCI ATA/33/66/100 IDE controller
- Three RS-232 and one RS-232/422/485 serial ports
- PC/104 Bus connector
- VIA VT8606 CRT/Panel display controller
- Dual RealTek RTL8100 10/100 Based LAN
- AC97 3D audio controller
- DiskOnChip™ socket supporting memory size of up to 288MB
- Four USB connectors
- Supports Hardware Monitor function
- Supports Single +5V power in

1.2 Specifications

- **CPU:** VIA C3 800MHz embedded CPU
- **Bus Interface:** PCI-ISA Bus
- **Memory:** Two DIMM sockets supporting up to 1GB
- **Chipset:** VIA VT8606/VT82C686B
- **I/O Chipset:** SMC 37C669, VIA VT82C686B
- **VGA:** VIA VT8606 integrated S3 3D supporting AGP Bus
- **IDE:** Two 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:** Dual RealTek RTL8100 10/100 Based LAN
- **Audio:** AC97 3D audio controller supporting speaker out
- **Serial Port:** 16C550 UART-compatible RS-232/422/485 x 1 and RS-232 x 3 serial ports with 16-byte FIFO
- **PC/104:** PC/104 connector for 16-bit ISA Bus
- **IrDA:** One IrDA TX/RX header
- **USB:** Four USB connectors
- **Keyboard:** PS/2 6-pin Mini DIN or 5-pin connector
- **Mouse:** PS/2 6-pin Mini DIN or 4-pin connector
- **DiskOnChip™:** DiskOnChip™ socket supporting memory sizes of up to 288MB
- **BIOS:** AMI PnP Flash BIOS
- **Watchdog Timer:** Sets 1, 2, 10, 20, 110, 220 seconds, activity trigger with Reset or NMI
- **CMOS:** Battery backup
- **DMA Channels:** 7
- **Interrupt Levels:** 15
- **Operating Temperature:** 0~60°C
- **Hardware Monitor:** VIA VT82C686B
- **Board Size:** 18.5 x 12.2 cm

1.3 Board Dimensions



Chapter 2

Unpacking

2.1 Opening the Delivery Package

The HS-6253 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-6253 delivery package contains the following items:

- **HS-6253 Board x 1**
- **Utility CD Disk x 1**
- **ATA/100 IDE flat cable x 1**
- **FDD flat cable x 1**
- **Printer cable with bracket x 1**
- **RS-232 COM Port cables with bracket x 2**
- **8-pin USB split type cable with bracket x 1**
- **MIC/Audio 8-pin cable + 2 phone jacks 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

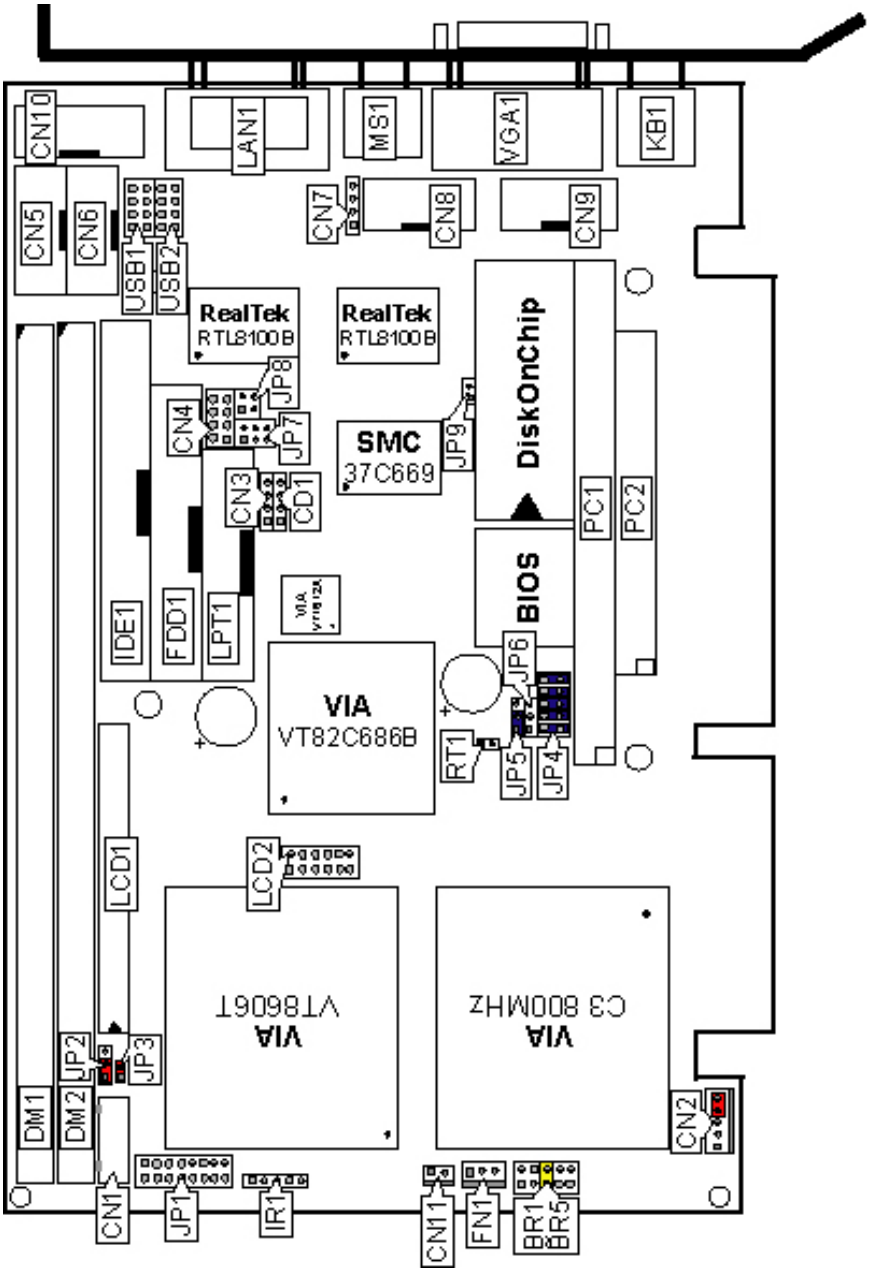
This chapter provides the information on how to install the hardware using the HS-6253. This chapter also contains information related to jumper settings of switch, watchdog timer, and the DiskOnChip™ address selection etc.

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	Default Setting	Setting
JP2	Panel Voltage: *+3.3V*	Short 1-2
JP3	Panel Voltage +12V In: *+12V*	Short
JP4(1-4)	DOC Address Select: *D000*	Short 1-2, 3-4
JP4(5-10)	WDT Timer Select: *1sec.*	Short 5-6, 7-8, 9-10
JP5	Clear CMOS: *Normal Operation*	Short 1-2
JP6	WDT Active Type Setting: *Reset*	Short 2-3
JP7	RS-422/485 Transceiver Enabled/Disabled Select: *Disabled*	Open
JP8	RS-422/485 Receiver Enabled/Disabled Select: *Disabled*	Open
JP9	COM2 Use RS-232 or RS-422/485: *RS-232*	Open

3.4 Connector List

Connector	Definition
CD1	CD-ROM Line In Connector
CN1	5-pin Keyboard Connector
CN2	5-pin ATX Power In Connector
CN3	Line In Connector
CN4	Audio Out/Line In Connector
CN5	COM 3 Connector
CN6	COM 4 Connector
CN7	4-pin Mouse Connector
CN8	COM 2 Connector
CN9	COM 1 Connector
CN10	RS-422/485 Connector
CN11	2-pin Power In Connector
COM1	COM 1 Connector (DB9)
DM1 & 2	168-pin DIMM Sockets
FDD1	Floppy Connector
FN1	Fan Connector (Supports +5V Fan only)
IDE1	IDE Connector
IR1	IrDA Connector
JP1(1-3-5-7)	Speaker Connector
JP1(2-4)	Power LED
JP1(6-8)	EXT SMI Connector
JP1(9-11)	Reset Switch
JP1(10-12)	Power Button
JP1(13-15)	HDD LED

. . . More on next page . . .

Connector	Definition
JP1(14-16)	SLP Button
KB1	6-pin Mini DIN Keyboard Connector
LAN1A & 1B	Dual RJ-45 Connector
LCD1	Panel Connector
LCD2	LVDS Interface Connector
LPT1	Parallel Connector
MS1	6-pin Mini DIM Mouse Connector
PC1	PC/104 64-pin Connector
PC2	PC/104 40-pin Connector
RT1	Power Temperature Sensing
U6	DiskOnChip™ Socket
USB1 & 2	USB Connectors
VGA1	VGA Connector

3.5 Configuring the CPU

The HS-6253 embedded with a VIA C3 800MHz CPU. User don't need to adjust the frequently and check speed of VIA C3 800MH CPU.

3.6 System Memory

The HS-6253 provides two DIMM sockets at locations *DM1* and *DM2*. The maximum capacity of the onboard memory is 1GB.

3.7 DiskOnChip™ Address Setting

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

The U6 location onboard the HS-6253 is the DiskOnChip™ module socket. Jumper *JP4(1-2)* 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-6253 and the additional memory device function properly.

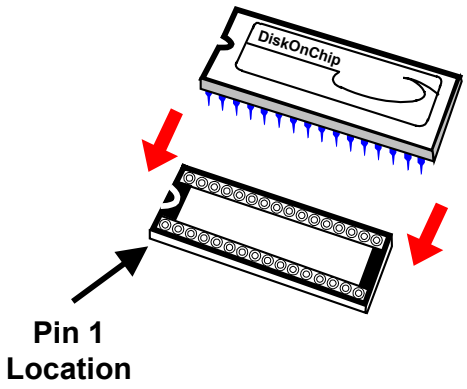
- **JP4(1-4): DiskOnChip™ Address Select**

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

3.7.1 Installing DiskOnChip™ Modules

When installing a DiskOnChip™ module onto your board, please take note of the following:

1. Orient yourself properly with the location of the DiskOnChip™ socket. Try to locate the pin 1 location on your socket. Pin numbers are usually printed on either the component side or the solder side of your board.
2. Locate the Pin 1 location on your DiskOnChip™ module. More often than not, Pin 1 can be found on the lower right corner of the chip. Please refer to the diagram for the exact location.
3. Once you have figured out where the pin 1 locations are on both chip and socket, align the module's pins on an upright angle against the socket. Using both thumbs, gently press the module into the socket until all the pins are secured to their designations.



4. The installation is now complete and your module is now ready for use.

NOTE: *If you encounter difficulty installing your DiskOnChip™ module, please consult a qualified technician or engineer to perform the installation.*

3.7.2 Removing DiskOnChip™ Modules

When removing a DiskOnChip™ module from its socket, please take note of the following:

1. Loosen the contact of the module from its socket using a screwdriver.
2. Insert the screwdriver's flat head into a gap on either end of the socket. Do not insert the screwdriver head on either side where the pins are located. Doing so might damage the pins in the process.
3. Slowly lift the screwdriver handle upwards. This will disengage the module from its socket.

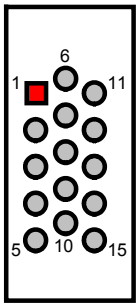
NOTE: *If you encounter difficulty removing your DiskOnChip™ module, please consult a qualified technician or engineer to remove it for you.*

3.8 VGA Controller

The HS-6253 provides three connection methods of a VGA device. *VGA1* offers a single standard CRT connector (DB15) while *LCD1* is the 50-pin panel connector and *LCD2* is the LVDS interface connector onboard reserved for flat panel installation.

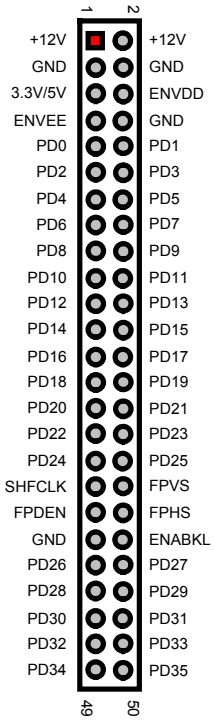
- **VGA1: 15-pin CRT Connector (DB15)**

PIN	Description	PIN	Description
1	Red	2	Green
3	Blue	4	N/C
5	GND	6	GND
7	GND	8	GND
9	N/C	10	GND
11	N/C	12	SDA2
13	HSYNC	14	VSYNC
15	SCL2		



- **LCD1: 50-pin Panel Connector**

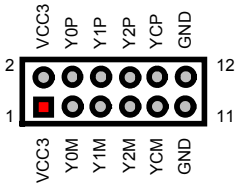
PIN.	Description	PIN	Description
1	+12V	2	+12V
3	GND	4	GND
5	3.3V / 5V Note	6	ENVDD
7	ENVEE	8	GND
9	PD0	10	PD1
11	PD2	12	PD3
13	PD4	14	PD5
15	PD6	16	PD7
17	PD8	18	PD9
19	PD10	20	PD11
21	PD12	22	PD13
23	PD14	24	PD15
25	PD16	26	PD17
27	PD18	28	PD19
29	PD20	30	PD21
31	PD22	32	PD23
33	PD24	34	PD25
35	SHFCLK	36	FPVS
37	FPDEN	38	FPHS
39	GND	40	ENABKL
41	PD26	42	PD27
43	PD28	44	PD29
45	PD30	46	PD31
47	PD32	48	PD33
49	PD34	50	PD35



NOTE: *Please set the proper voltage of your panel using JP2 before proceeding on installing it.*

- **LCD2: LVDS Interface Connector**

PIN	Description	PIN	Description
1	VCC3	2	VCC3
3	Y0M	4	Y0P
5	Y1M	6	Y1P
7	Y2M	8	Y2P
9	YCM	10	YCP
11	GND	12	GND

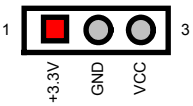


NOTE: ***Please set the proper voltage of your panel using JP2 and JP3 before proceeding on installing it.***

The HS-6253 has an onboard jumper that selects the working voltage of the flat panel connected to the system. Jumper *JP2* offers two voltage settings and *JP3* is +12V out for the user.

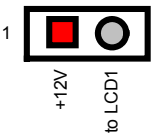
- **JP2: Panel Voltage Select**

Options	Settings
* 3.3 V	Short 1-2
5 V	Short 2-3



- **JP3: Panel Voltage +12V In**

PIN	Description
1	+12V In
2	to LCD1



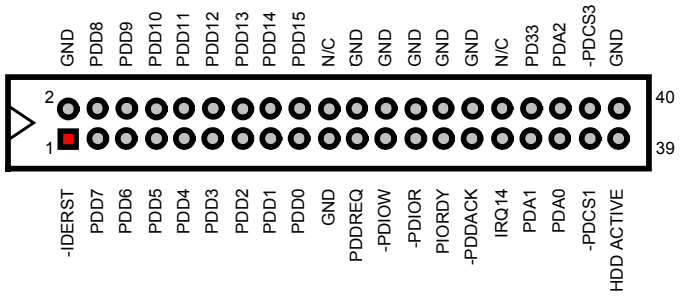
WARNING: **Please contact the supplier of your panel and make sure of the correct voltage it uses. Incorrect settings on *JP2* and *JP3* may cause internal damage to your panel.**

3.9 PCI E-IDE Drive Connector

IDE1 is a standard 40-pin connector daisy-chain driver connector serves the PCI E-IDE drive provisions onboard the HS-6253. A maximum of two ATA/33/66/100 IDE drives can connect to the HS-6253 via *IDE1*.

- **IDE1: 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	PDDREQ	22	GND
23	-PDIOW	24	GND
25	-PDIOR	26	GND
27	PIORDY	28	GND
29	-PDDACK	30	GND
31	IRQ14	32	N/C
33	PDA1	34	PD33
35	PDA0	36	PDA2
37	-PDCS1	38	-PDCS3
39	HDD ACTIVE	40	GND

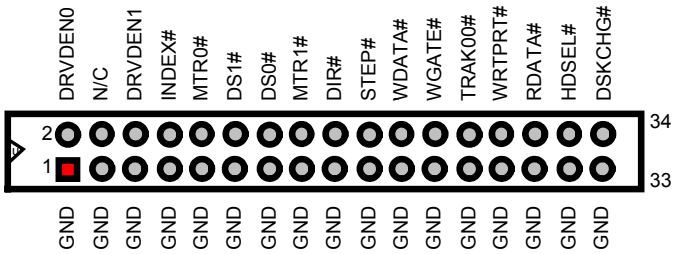


3.10 Floppy Disk Drive Connector

The HS-6253 uses a standard 34-pin header connector, *FDD1*, for floppy disk drive connection. A total of two FDD drives may be connected to *FDD1* at any given time.

- **FDD1: FDD Connector**

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

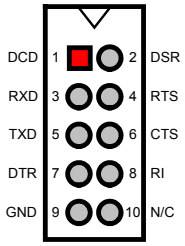


3.11 Serial Port Connectors

The HS-6253 offers two NS16C550 compatible UARTs with Read/Receive 16-byte FIFO serial ports and two internal 10-pin headers.

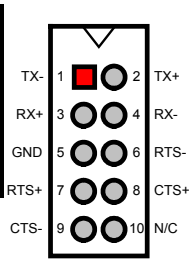
- **CN9, CN8, CN5 and CN6: COM1/COM2/COM3/COM4 Connectors (5x2 Header)**

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



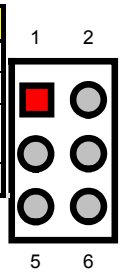
- **CN10: RS-422/485 Connector (5x2 Header)**

PIN	Description	PIN	Description
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	RTS-
7	RTS+	8	CTS+
9	CTS-	10	N/C



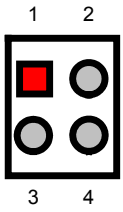
- **JP7: RS-422/485 Transceiver Enabled/Disabled Select**

Options	Settings
Always Enable	Short 1-2
Enable by "-RTS" signal	Short 3-4
Enable by writing the REG:2 EFH BIT0=1	Short 5-6
* Always Disabled	OPEN



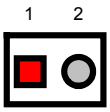
- **JP8: RS-422/485 Receiver Enabled/Disabled Select**

Options	Settings
Always Enable	Short 1-2
02Efh BIT1 Enabled/Disabled	Short 3-4
* Always Disabled	Open



- **JP9: COM2 use RS-232 or RS-422/485 Selection**

Serial Port Setting	JP9
* RS-232	OPEN
RS-422/485	SHORT



3.12 Parallel Connector

LPT1 is a standard 26-pin flat cable connector deigned to accommodate parallel port connection onboard the HS-6253.

- **LPT1: Parallel Connector**

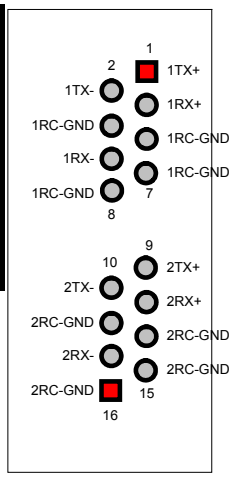
PIN	Description	PIN	Description
1	Strobe	14	Auto Form Feed
2	DATA 0	15	ERROR#
3	DATA 1	16	Initialize
4	DATA 2	17	Printer Select LN#
5	DATA 3	18	GND
6	DATA 4	19	GND
7	DATA 5	20	GND
8	DATA 6	21	GND
9	DATA 7	22	GND
10	Acknowledge	23	GND
11	Busy	24	GND
12	Paper Empty	25	GND
13	Printer Select	26	N/C

3.13 Ethernet Connector

The HS-6253 provides one external dual RJ-45 interface connector. Please refer to the following for its pin information.

- **LAN1A & 1B: Dual RJ-45 Connector**

PIN	Description	PIN	Description
1	1TX+	9	2TX+
2	1TX-	10	2TX-
3	1RX+	11	2RX+
4	1RC-GND	12	2RC-GND
5	1RC-GND	13	2RC-GND
6	1RX-	14	2RX-
7	1RC-GND	15	2RC-GND
8	1RC-GND	16	2RC-GND

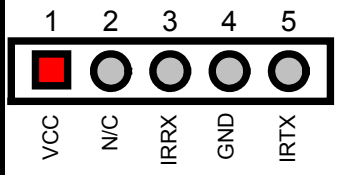


3.14 IrDA Connector

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

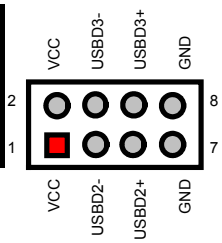


3.15 USB Connector

The HS-6253 provides two 8-pin connectors, at locations USB1 and USB2, for four USB connections to the HS-6253.

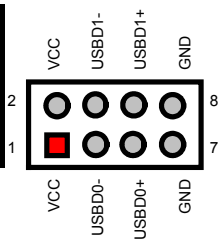
- **USB1: USB Connector**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	USBD2-	4	USBD3-
5	USBD2+	6	USBD3+
7	GND	8	GND



- **USB2: USB Connector**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	USBD0-	4	USBD1-
5	USBD0+	6	USBD1+
7	GND	8	GND

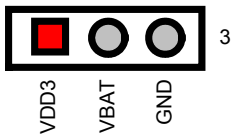


3.16 CMOS Data Clear

The HS-6253 has a Clear CMOS jumper on *JP5*.

- **JP5: Clear CMOS**

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



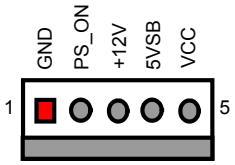
IMPORTANT: *Before you turn on the power of your system, please set JP5 to Short 1-2 for normal operation.*

3.17 Power and Fan Connectors

HS-6253 provides one 5-pin power connectors at *CN2.* If you need to use the board on a non-backplane system, power supply connections to both *CN2* is a must. To guarantee worry-free power installation, we highly recommend you to always connect power signals to *CN2.*

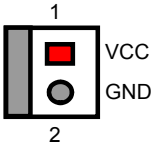
- **CN2: 5-pin ATX Power In Connector (For ATX function)**

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



- **CN11: 2-pin Power In Connector (For Single +5V function)**

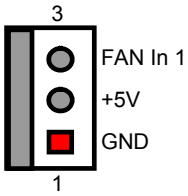
PIN	Description
1	VCC
2	GND



Connector *FN1* onboard HS-6253 is a 3-pin fan power output connector. And HS-6253 supports +5V Fan only.

- **FN1: Fan Connector**

PIN	Description
1	GND
2	+5V
3	FAN In 1

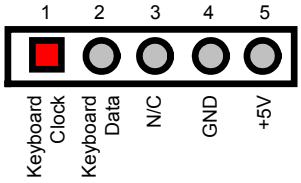


3.18 Keyboard Connectors

The HS-6253 offers two possibilities for keyboard connections. The connections are via *KB1* for an external PS/2 type keyboard or via *CN1* for an internal 5-pin cable converter to an AT keyboard.

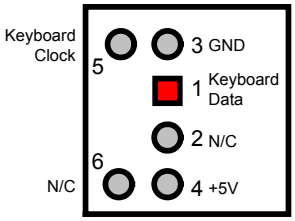
- **CN1: 5-pin Keyboard Connector**

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



- **KB1: 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

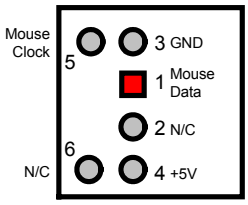


3.19 PS/2 Mouse Connector

MS1 is a 6-pin mini DIN connector for connections to an external PS/2 mouse connector or via *CN7* for an internal 4-pin cable to mouse.

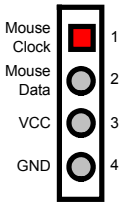
- **MS1: PS/2 6-pin Mini Din Mouse Connector**

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



- **CN7: 4-pin Mouse Connector**

PIN	Description
1	Mouse Clock
2	Mouse Data
3	VCC
4	GND



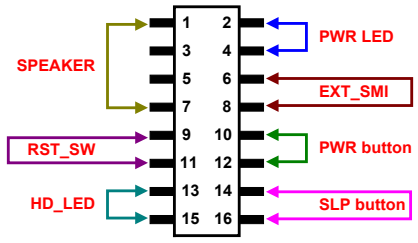
3.20 System Front Panel Connectors

The HS-6253 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, Speaker, Reset Switch, Power LED, EXT SMI, Power Button, and SLP Button via connector *JP1(13-15)*, *JP1(1-3-5-7)*, *JP1(9-11)*, *JP1(2-4)*, *JP1(6-8)*, *JP1(10-12)*, *JP1(14-16)*.

- **JP1: System Front Panel Connector**

PIN	Description	PIN	Description
1	+5V	2	330Ω Pull +5V
3	GND	4	GND
5	N/C	6	EXT SMI
7	Speaker	8	GND
9	GND	10	PW Bottom
11	Reset	12	GND
13	330Ω Pull +5V	14	SLP Bottom
15	HDD LED	16	GND

Connector JP1 Orientation

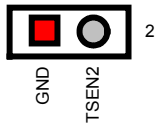


3.21 Thernal Sensor

In relevance to the Hardware Monitoring feature provided by the onboard VIA VT82C686B, the board allows the installation of a thermal sensor via connector *RT1*. 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.

- **RT1: Thernal Sensor**

PIN	Description
1	GND
2	TSEN2



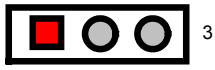
3.22 Watchdog Timer

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

Once the Enable cycle is active, a Refresh cycle is requested before the time-out period. This restarts counting of the WDT period. When the time counting goes over the period preset of WDT, it will assume that the program operation is abnormal. A System Reset signal to re-start or a NMI cycle to the CPU transpires when such error happens. Jumper *JP6* is used to select the function of Watchdog Timer.

- **JP6: Watchdog Timer Active Type Setting**

Options	Settings
Active NMI	Short 1-2
* System Reset	Short 2-3
Disabled Watchdog Timer	Open



- **JP4(5-10): WDT Timeout Period Select**

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

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

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

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

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

```
WDT_EN_RF       EQU     0433H
WDT_DIS         EQU     0045H

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

WT_Refresh      PUSH    AX              ; keep AX, DX
                PUSH    DX
                MOV     DX,WDT_ET_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
```

3.23 PC/104 Connectors

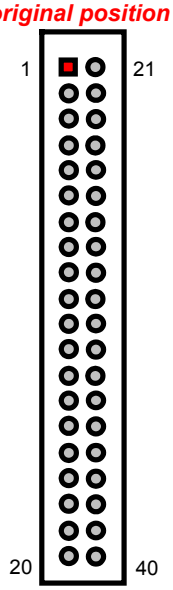
The PC/104 expansion bus offers provisions to connect all types of PC/104 modules. With the PC/104 bus being known as the new generation of industrial embedded 16-bit PC standard bus, thousands of PC/104 modules from multiple venders can be easily installed onboard. The detailed pin assignment of the PC/104 expansion bus connectors *PC1* and *PC2* 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.*

- **PC2: 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	DREQ0	30	MEMR-
11	DACK5-	31	MEMW-
12	DREQ5	32	SD8
13	DACK6-	33	SD9
14	DREQ6	34	SD10
15	DACK7-	35	SD11
16	DREQ7	36	SD12
17	+5V	37	SD13
18	MASTER-	38	SD14
19	GND	39	SD15
20	GND	40	N/C

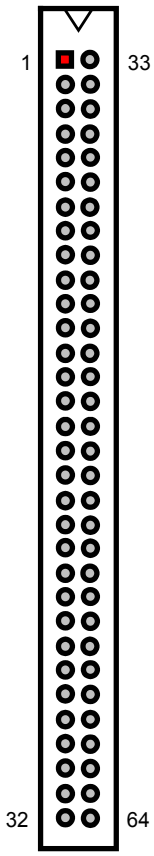
Connector diagram rotated 90 degrees clockwise from original position



- **PC1: PC/104 64-pin Connector**

PIN	Description	PIN	Description
1	IOCHECK-	33	GND
2	SD7	34	RESETDRV
3	SD6	35	+5V
4	SD5	36	IRQ9
5	SD4	37	-5V
6	SD3	38	DREQ2
7	SD2	39	-12V
8	SD1	40	OWS-
9	SD0	41	+12V
10	IOCHRDY	42	GND
11	AEN	43	SMEMW-
12	SA19	44	SMEMR-
13	SA18	45	IOW-
14	SA17	46	IOR-
15	SA16	47	DACK3-
16	SA15	48	DREQ3
17	SA14	49	DACK1-
18	SA13	50	DREQ1
19	SA12	51	REFRESH-
20	SA11	52	SYSCLK
21	SA10	53	IRQ7
22	SA9	54	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	OSC
31	SA0	63	N/C
32	GND	64	GND

Connector diagram rotated 90 degrees clockwise from original position

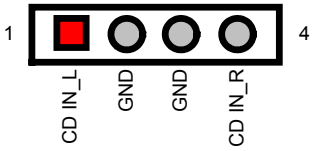


3.24 Audio Connectors

The HS-6253 has an onboard AC97 3D audio interface. The following tables list the pin assignments of the CD-ROM Analog Input, the Line In and the MIC In / Line Out connectors.

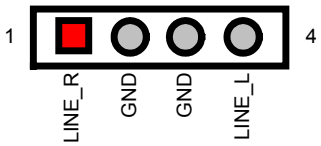
- **CD1: CD-ROM Line In Connector**

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



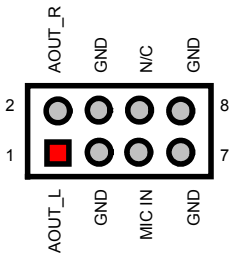
- **CN3: Line In Connector**

PIN	Description
1	LINE_R
2	GND
3	GND
4	LINE_L



- **CN4: MIC In / Line 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



Chapter 4

AMI BIOS Setup

The HS-6253 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.

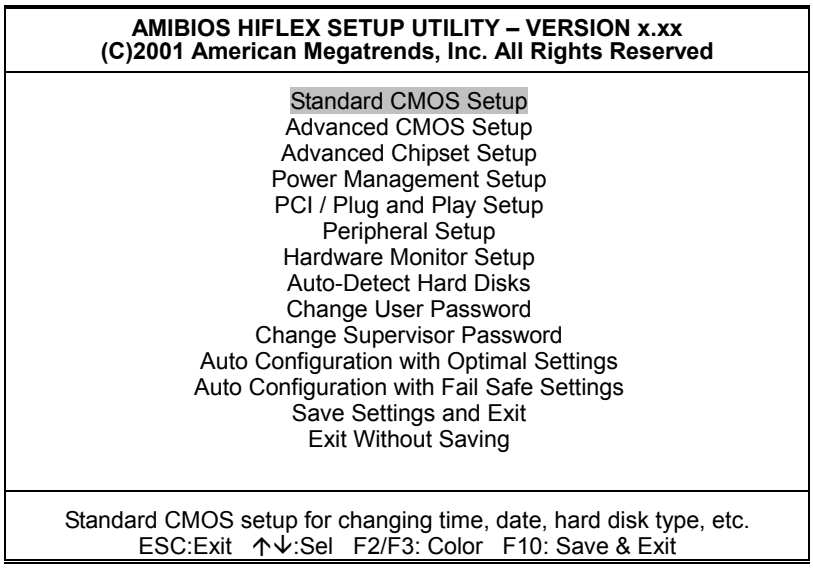
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
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.



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) : Thu Jan 03, 2002                    Base Memory : 0 KB
Time (hh/mm/ss)   : 19:04:12                            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 - 30                                       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
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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	Off		
Floppy Drive Swap	Disabled		
Floppy Drive Seek	Disabled		
PS/2 Mouse Support	Disabled		
Primary Display	Absent		
Password Check	Setup		
Boot To OS/2	No		
L1 Cache	Enabled		
L2 Cache	Enabled		
System BIOS Cacheable	Enabled		
C000,32k Shadow	Cache		
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:
Configure SDRAM Timing by SPD	Enabled	▸ Disabled
DRAM Frequency	100MHz	Enabled
SDRAM CAS# Latency	3	
DRAM Bank Interleave	Disabled	
Memory Hole	Disabled	
AGP Mode	4x	
AGP Fast Write	Disabled	
AGP Comp. Driving	Manual	
Manual AGP Comp. Driving	CB	
AGP Aperture Size	256MB	
AGP Master 1 W/S Write	Disabled	
AGP Master 1 W/S Read	Disabled	
Search for MDA Resources	No	
PCI Delay Transaction	Disabled	
ISA Bus Clock	PCI CLK/4	
USB Controller	Disabled	
USB Device Legacy Support	Disabled	ESC:Exit ↑↓:Sel
Port 64/60 Emulation	Disabled	PgUp/PgDn: Modify
ATX Power Supply	Disabled	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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ACPI Aware O/S	No	▲
ACPI Standby State	S1/POS	
USB Device Wakeup From S3-S5	Disabled	
Re-Call VGA BIOS at S3 Resuming	Disabled	
Power Management / APM	Disabled	
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	Reserved	
Display Activity	Ignore	
IRQ3	Ignore	
IRQ4	Ignore	
IRQ5	Ignore	
IRQ7	Ignore	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ12	Ignore	
IRQ13	Ignore	
IRQ14	Ignore	
IRQ15	Ignore	
System Thermal	Disabled	
Thermal Active Temperature	40°C / 104°F	
Thermal Slow Clock Ratio	Reserved	
Power Button Function	On / Off	
Restore on AC / Power Loss	Power Off	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On PME#	Disabled	
Resume On KBC	Disabled	
Wake-Up Key	N/A	
Wake-Up Password	N/A	
Resume On PS/2 Mouse	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	Every Day	
RTC Alarm Hour	00	
RTC Alarm Minute	00	
RTC Alarm Second	00	▼

Available Options:
▸ No
Yes

ESC:Exit ↑↓:Sel
PgUp/PgDn: Modify
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 (C)2001 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options:
Clear NVRAM	No	▸ No
OnChip VGA Frame Buffer Size	None	
PCI Latency Timer (PCI Clocks)	32	Yes
Primary Graphics Adapter	PCI	
Boot Screen Select	Auto	
LCD Panel Type	640 x 480	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	ESC:Exit ↑↓:Sel
IRQ14	PCI/PnP	PgUp/PgDn: Modify
IRQ15	PCI/PnP	F1:Help F2/F3:Color

4.9 Peripheral Setup

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).

AMIBIOS SETUP – PERIPHERAL SETUP **(C)2001 American Megatrends, Inc. All Rights Reserved**		
OnBoard FDC	Auto	Available Options:
OnBoard Serial Port 1	3F8/IRQ3	▸ Disabled
OnBoard Serial Port 2	2F8/IRQ4	Primary
Serial Port2 Mode	Normal	Secondary
Duplex Mode	N/A	Both
OnBoard Prarllel Port	378	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port DMA Channel	N/A	
Parallel Port IRQ	IRQ7	
OnBoard Secondary IDE	Reserved	
OnBoard Serial Port3	3E8	
Serial Port3 IRQ	IRQ10	
OnBoard Serial Port4	2E8	
Serial Port4 Mode	Normal	
Serial Port4 IRQ	IRQ11	
Receiver Polarity	Non-Inverted	
Transmitter Polarity	Non-Inverted	
OnBoard IDE	Reserved	
OnBoard AC'97 Audio	Enabled	
OnBoard Legacy Audio	Disabled	
MPU-401	Disabled	
MPU-401 I/O Address	300h-303h	ESC:Exit ↑↓:Sel
Game Port (200h-207h)	Disabled	PgUp/PgDn: Modify
		F1:Help F2/F3:Color

4.10 Hardware Monitor Setup

AMIBIOS SETUP – HARDWARE MONITOR SETUP
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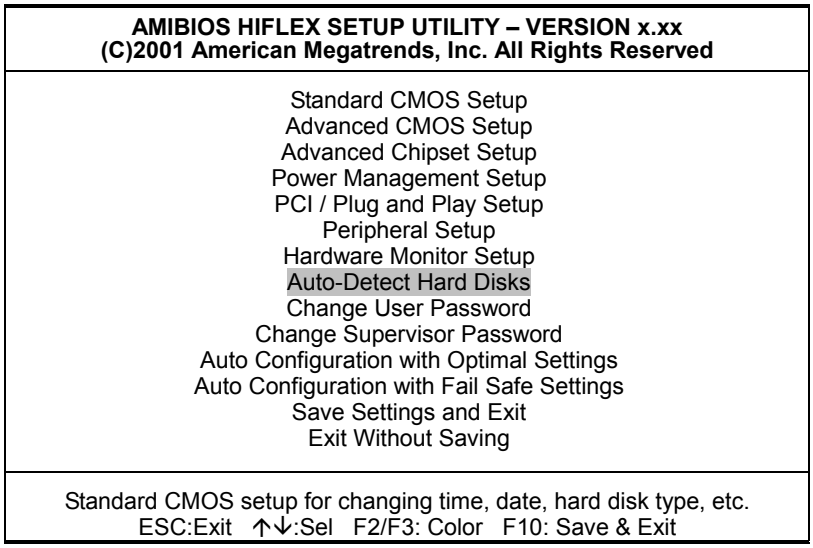
*** System Hardware Monitor ***		Available Options:
Chassis Intrusion	Disabled	▸ Disabled
TSENS1 Temperature		Enabled
TSENS2 Temperature		Reset
TSENS3 Temperature		
CPU Fan Speed		
Chassis Fan Speed		
Vcore		
+ 2.500V		
+3.300V		
+5.000V		
+12.000V		
		ESC:Exit ↑↓:Sel
		PgUp/PgDn: Modify
		F1:Help F2/F3:Color

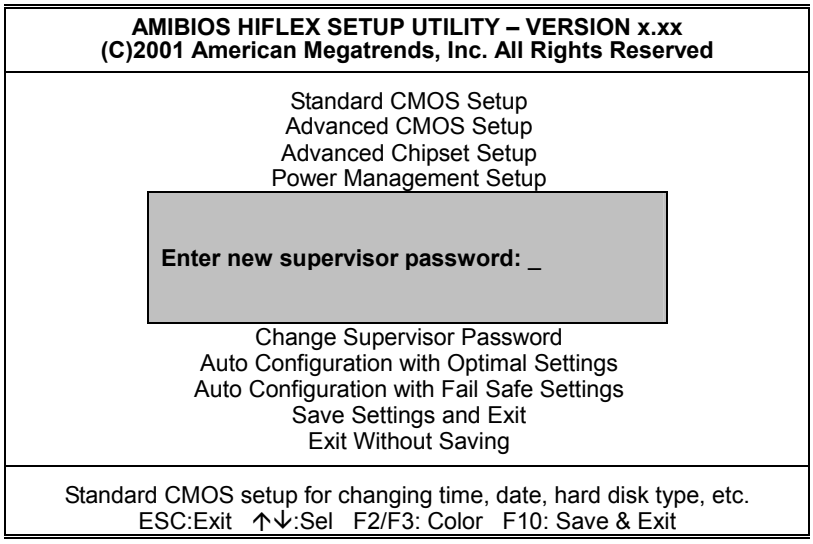
4.11 Auto-Detect Hard Disks

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.

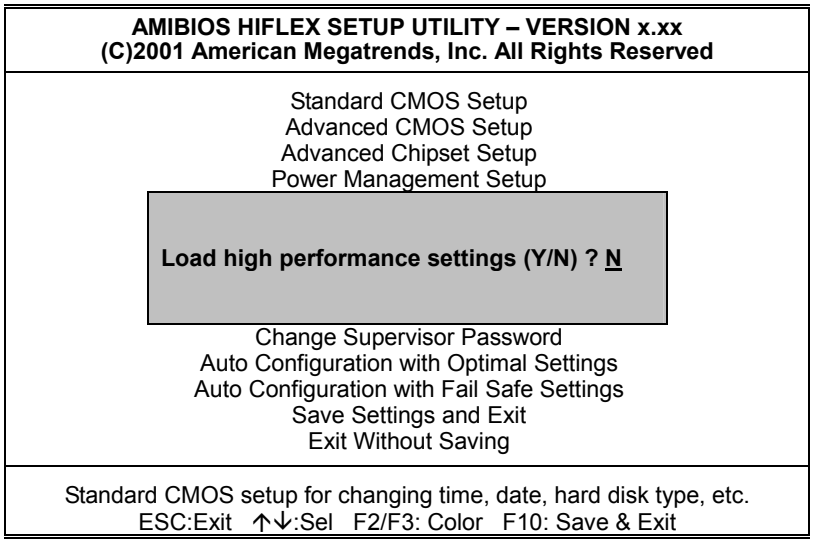
When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

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.

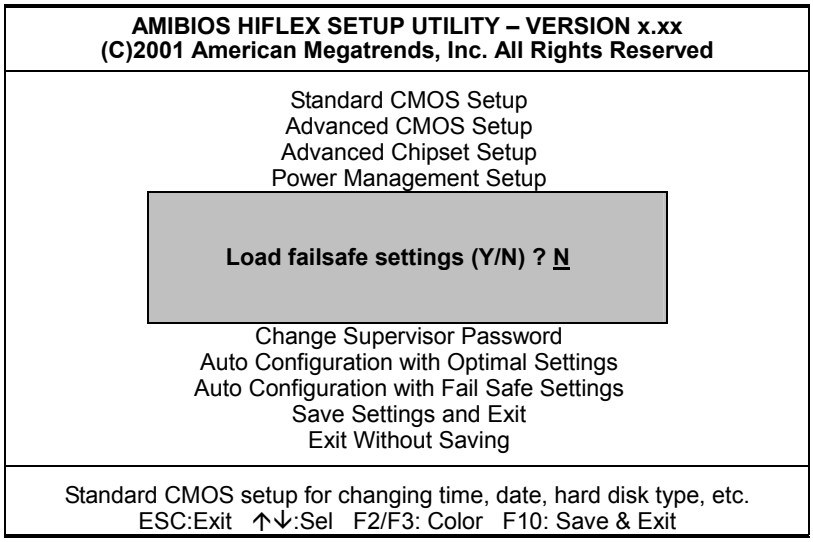
4.13 Auto Configuration with Optimal Settings

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.



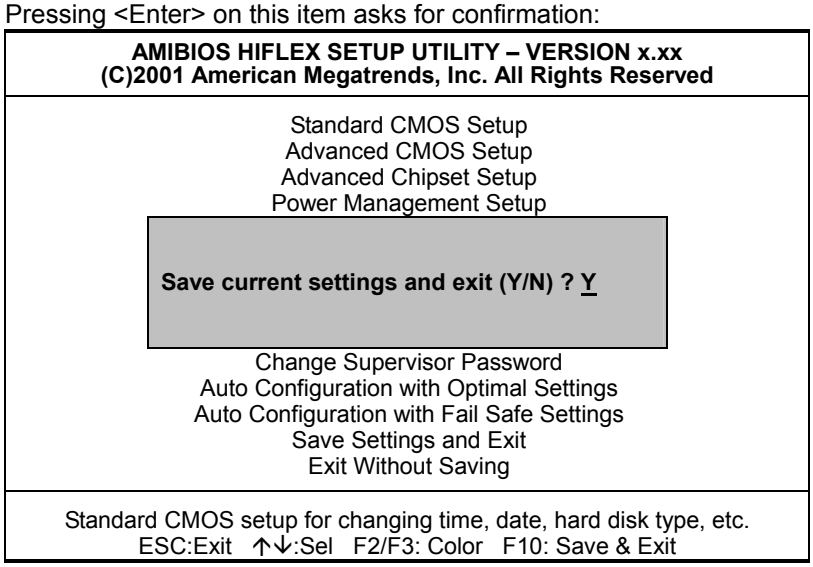
4.14 Auto Configuration with Fail Safe Settings

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:



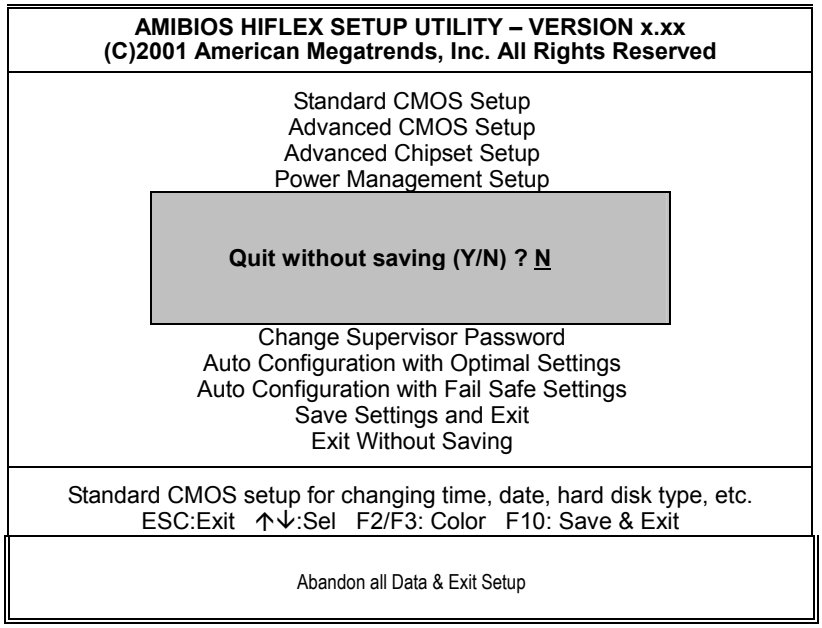
Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted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

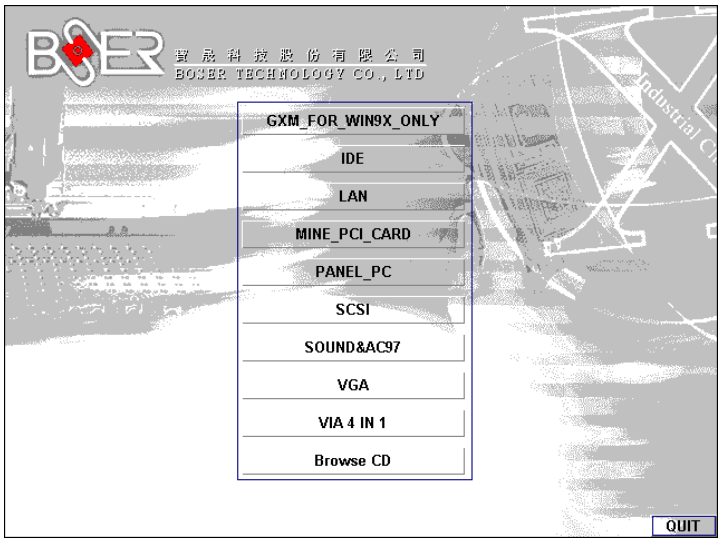
This chapter contains the detailed information of IDE, VGA, Audio and LAN driver installation procedures.

5.1 IDE and Audio Driver Installation

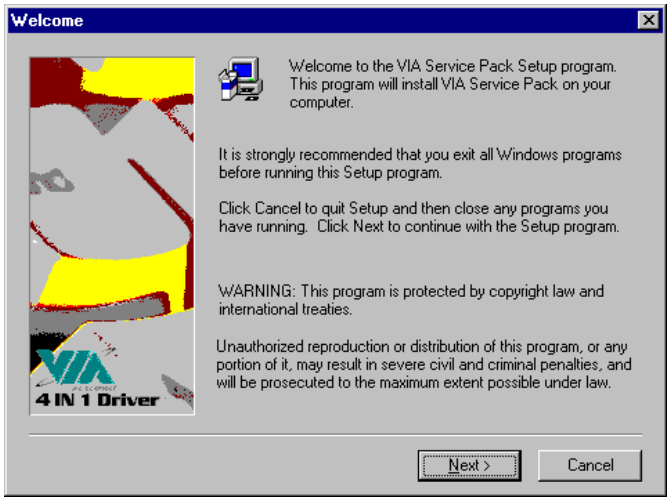
The utility disk that came with the delivery package contains an auto-run program that invokes the installation programs for the IDE, VGA and Audio drivers. The following describes the installation procedures of each driver.

5.1.1 VIA VT82C686B AGP Bus Driver Installation

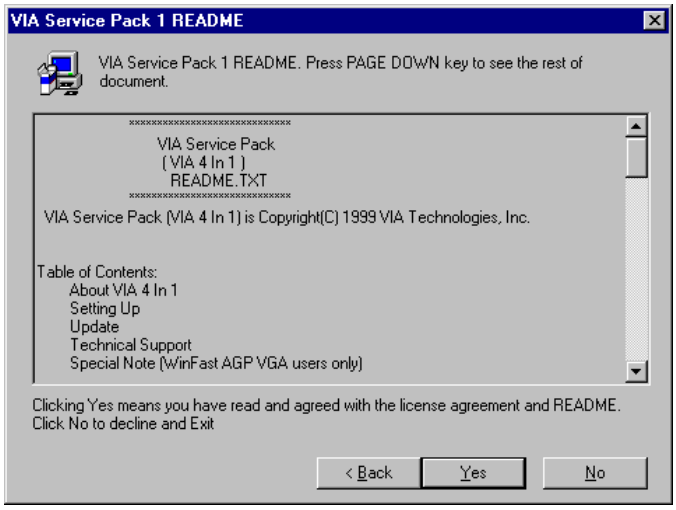
1. Insert Utility CD Disk to your CD ROM. The main menu will pop up as shown below.



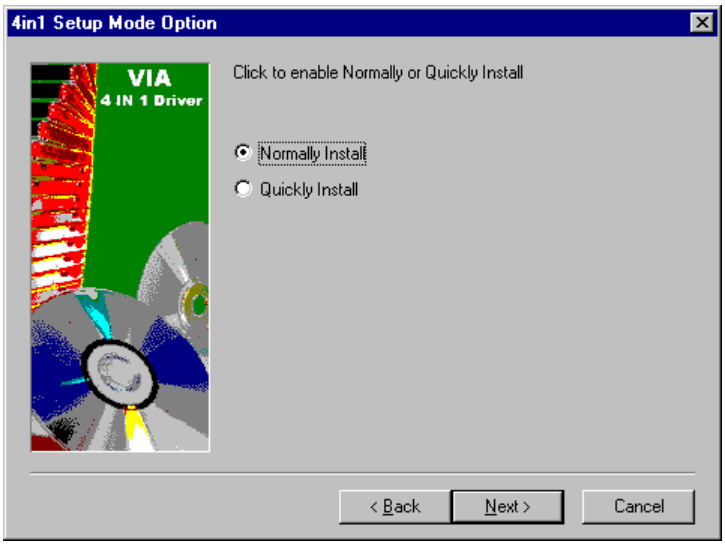
2. Press “VIA 4 IN 1” and to go Setup.
3. Once the Welcome screen appears on the screen, make sure to close any applications running and then click on the Next button.



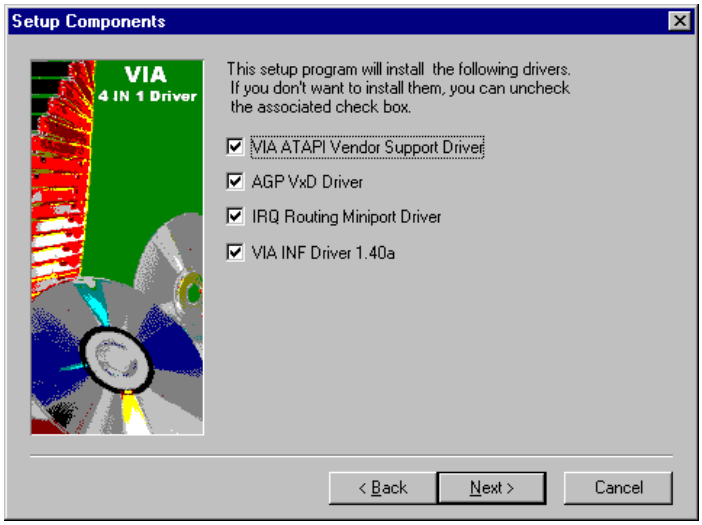
4. When the Readme window pops on the screen, you may read the whole document including the license agreement or just press Yes to skip through and continue installation.



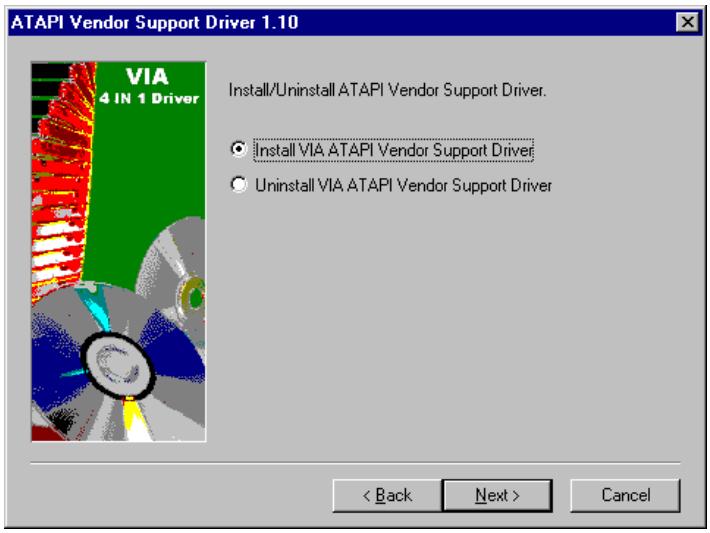
5. The 4 in 1 Setup dialog is now displayed. Select on Normally Install and then click on Next.



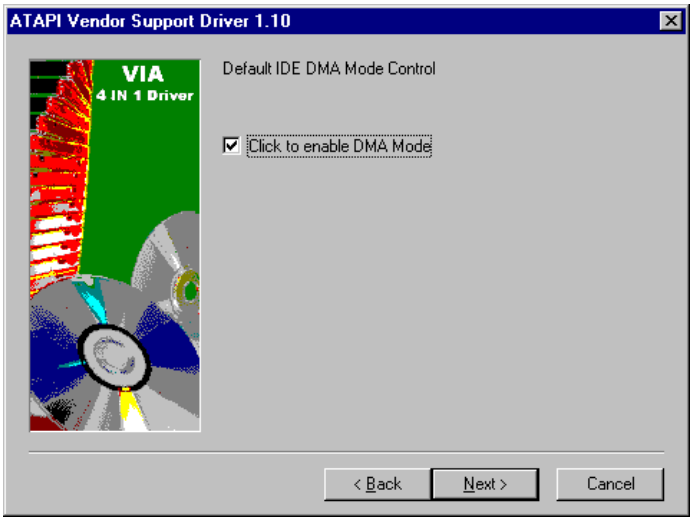
6. The next window lists all components detected in your system and asks you to select the ones requiring drivers. Tick on all items then proceed by clicking on the Next button below the screen.



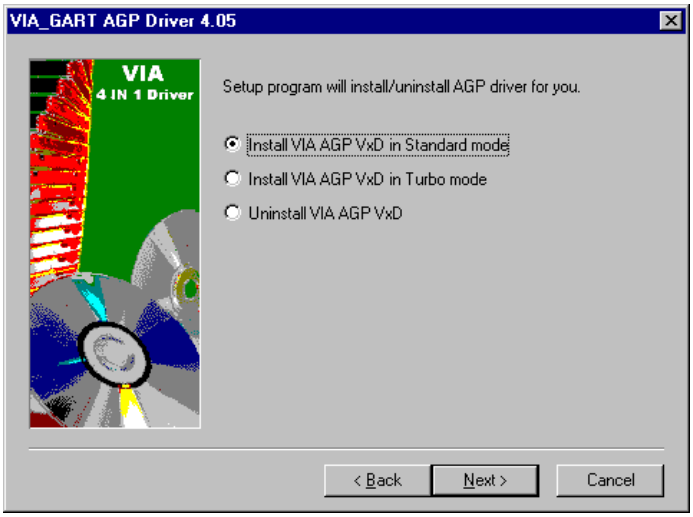
7. The program starts to install the ATAPI driver when you click the Next button on the screen below.



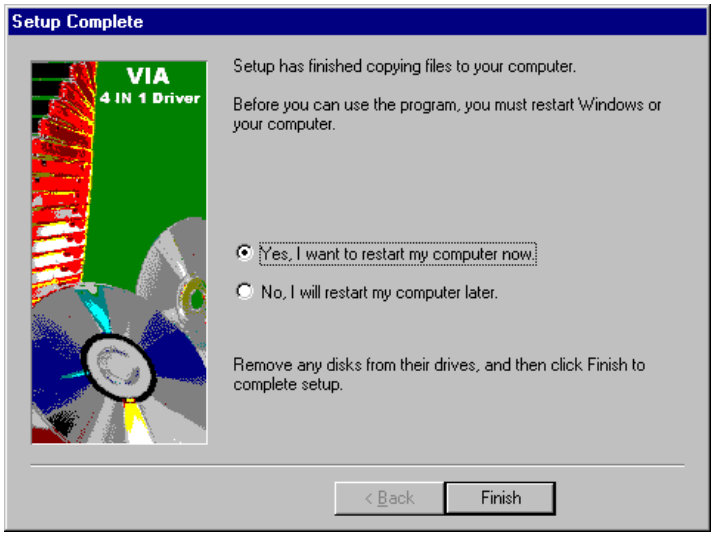
8. When the ATAPI driver is completely installed. The utility then displays your DMA mode status and allows you to enable it. Tick on the box and press on the Next button to continue.



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

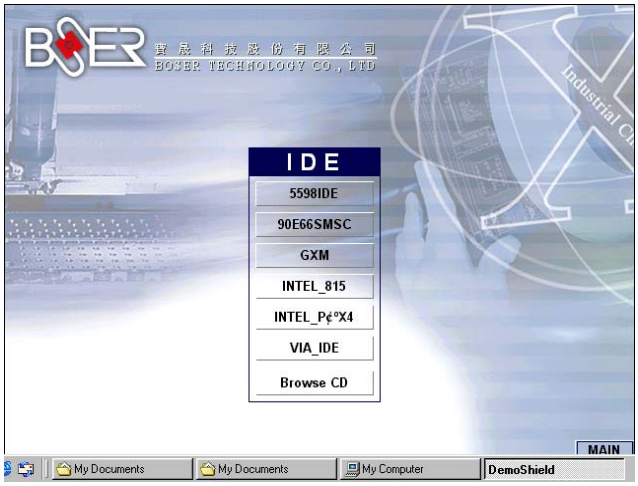


10. Installation of the AGP driver is now complete. Once the screen below appears, select on restarting your computer to activate all drivers/settings completed.

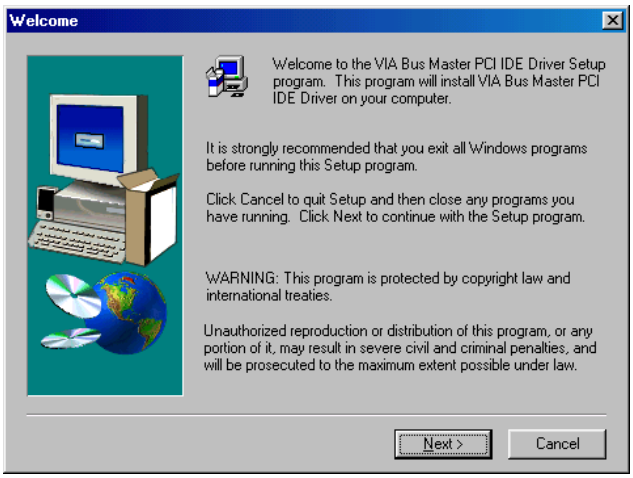


5.1.2 VIA IDE Tool Installation

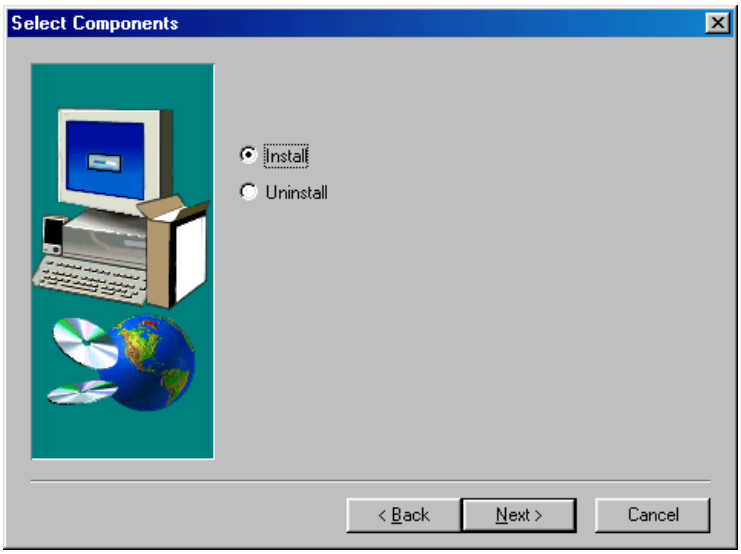
1. With the Utility CD Disk still in your CD ROM drive, open the File Manager and then select the CD-ROM drive. As soon as the system reads the disk, the following screen will appear on your display. Click on VIA_IDE from the main menu to start installing the VIA ID Tool.



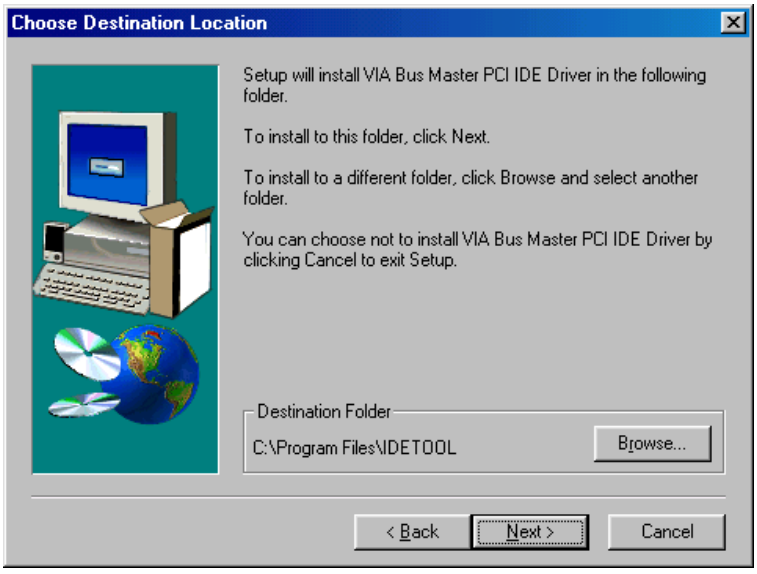
2. Once the Welcome screen appears on the screen, make sure to close applications that are running and then click the Next button.



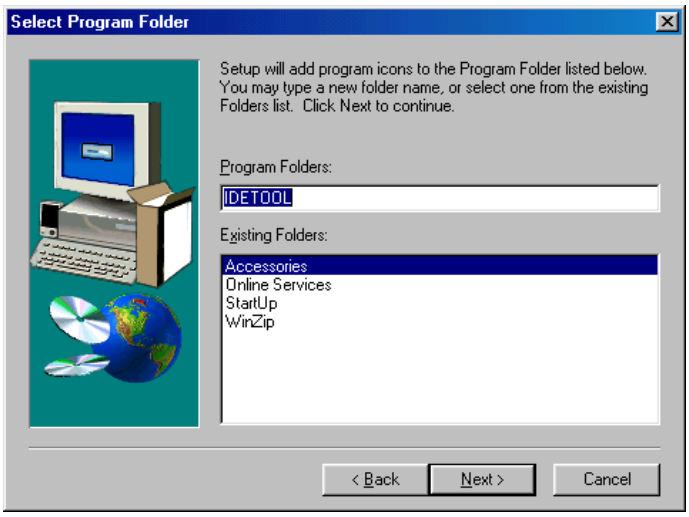
3. The Select Components dialog box is now displayed. Select on Install and then click on Next.



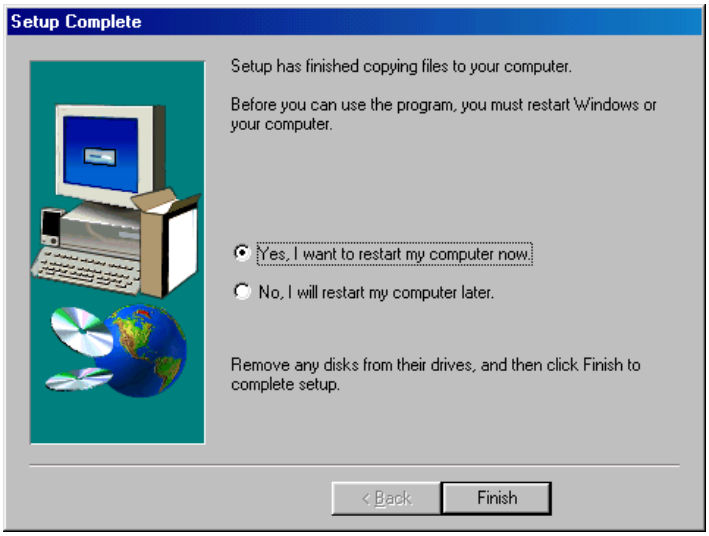
4. Choose the folder to where the program will install the driver. Select the default folder (C:\Program Files\IDETOOL) and then click on Next to proceed.



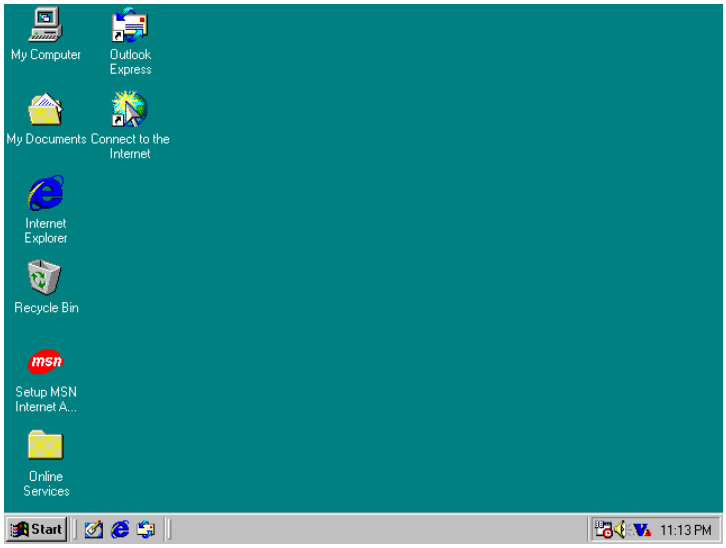
5. The program will now create an icon for the IDETOOL. Simply press Next to continue with the installation.



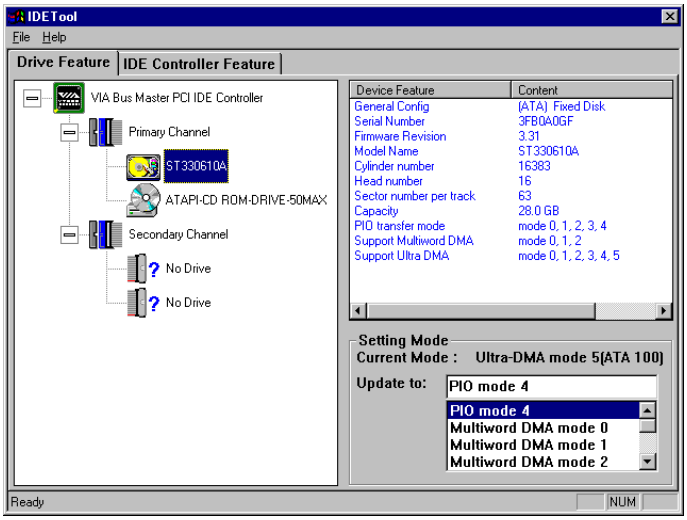
6. The program now installs and transfers the files to your system. After it finishes, you will be prompted to restart your system. We recommend you to reboot your computer to allow the new settings to take effect. Click on the Finish button to reboot.



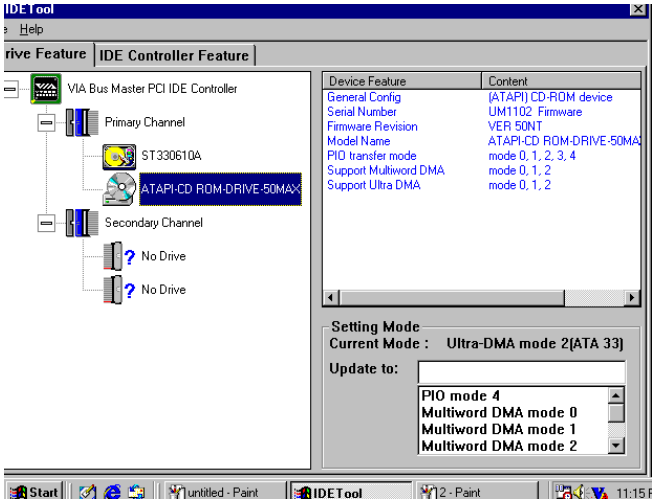
7. Once the system enters the main Windows screen, it will display a new icon along the right hand task bar. This icon represents the IDE Tool quick launch program.



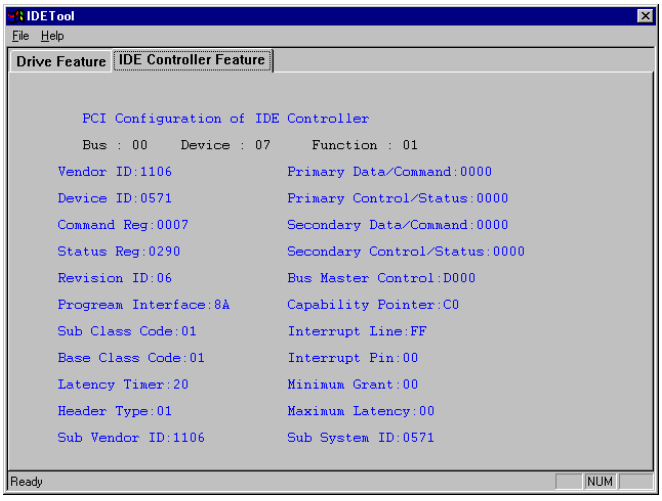
8. Double-clicking on this new task bar icon will launch the IDE Tool's Drive Feature dialog box, as shown below.



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

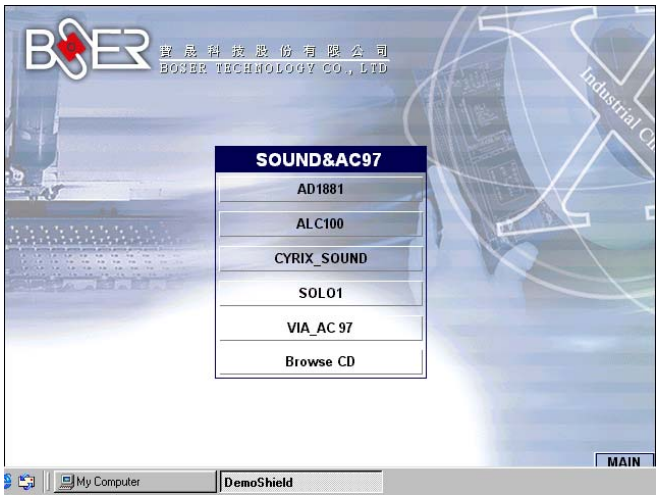


10. Once you select the IDE Controller Feature from the IDE Tool dialog box, a list of read-only information related to the system's IDE controller is shown.

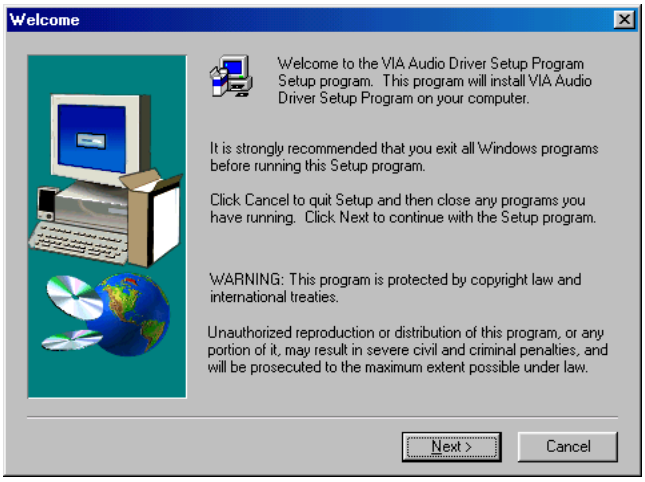


5.1.3 Audio Driver Installation

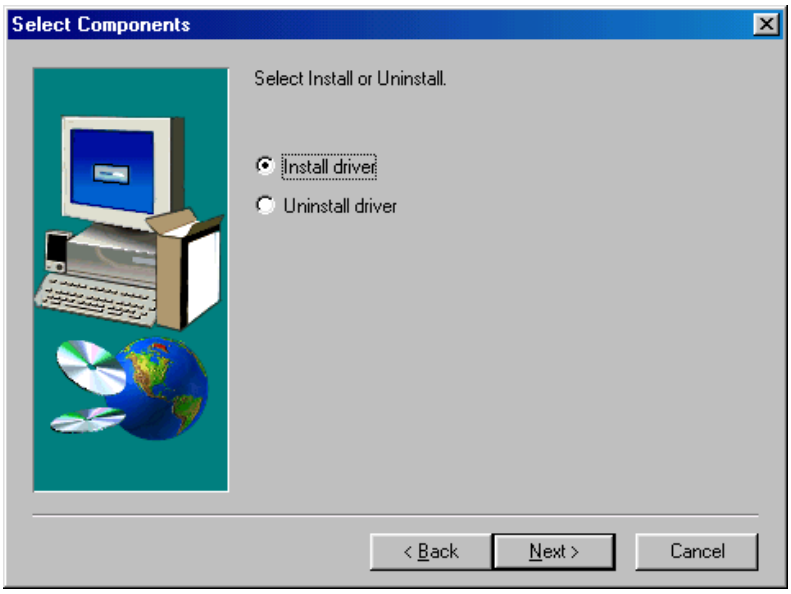
1. With the Utility CD Disk still in your CD ROM drive, open the File Manager and then select the CD-ROM drive. As soon as the system reads the disk, the VGA Menu screen below will appear on your display. Click on VIA_AC97 from the main menu.



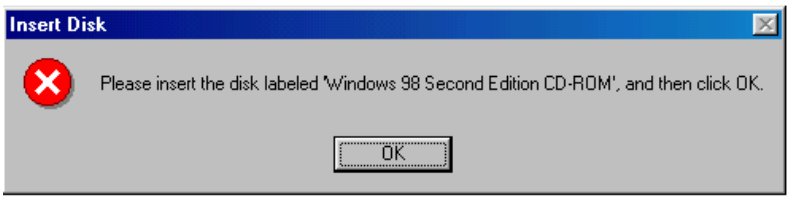
2. Once the Welcome screen appears on the screen, make sure to close applications that are running and then click the Next button.



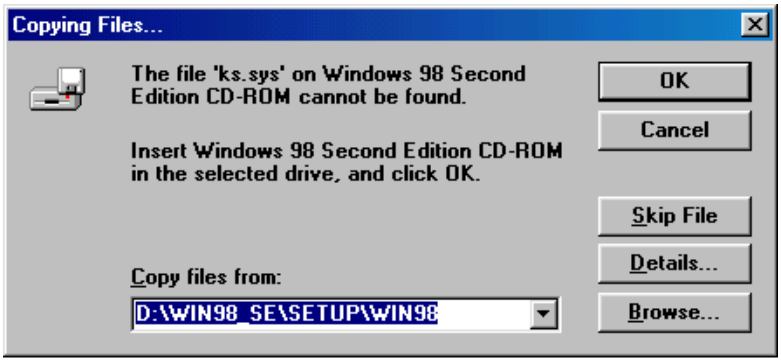
3. The Select Components dialog box is now displayed. Select on Install driver and then click on Next.



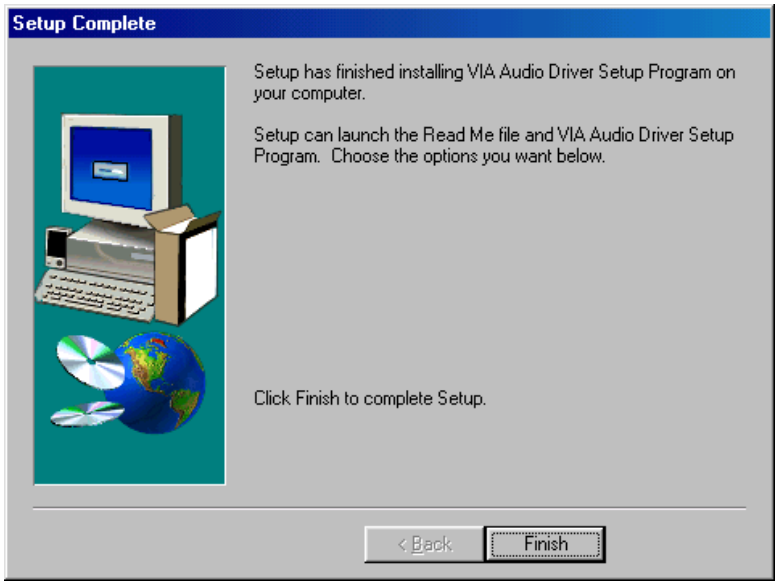
4. The program will now require the Windows installation disk for proper hardware installation. Insert the CD and then click on Next.



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

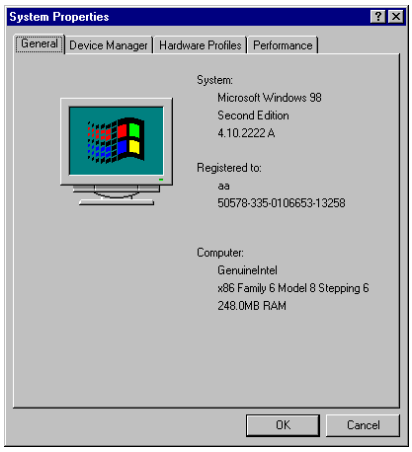


6. After the audio driver installation finishes, select the Finish button to complete the installation process.

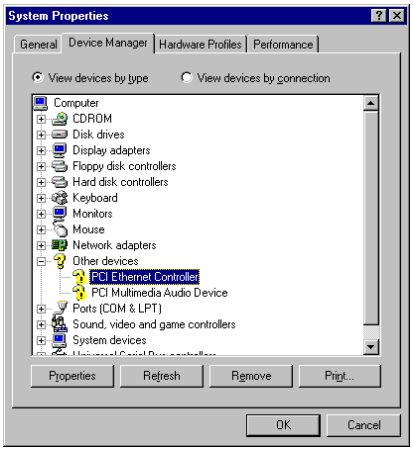


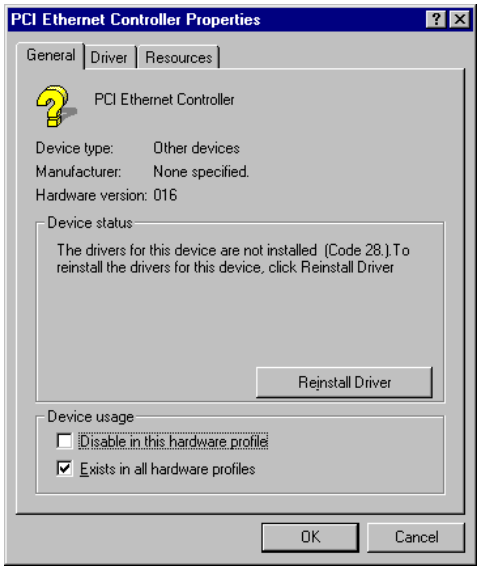
5.2 LAN Driver Installation for WIN95 & WIN98

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



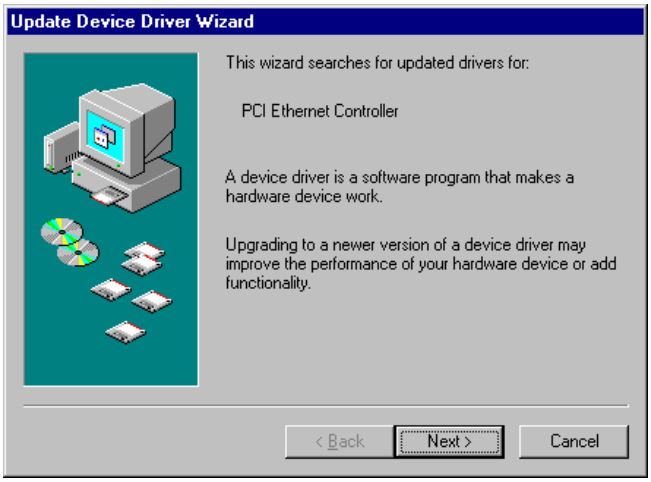
2. Select on Other Devices from the list of devices then double-click on PCI Ethernet Controller.





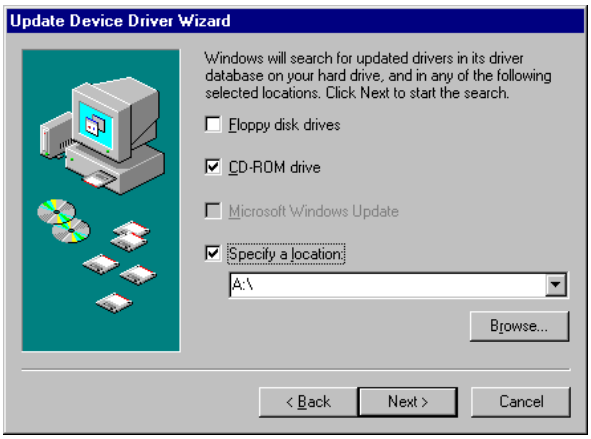
3. The PCI Ethernet Controller Properties screen then appears, allowing you to re-install the driver. Select Driver from the main menu to proceed.

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

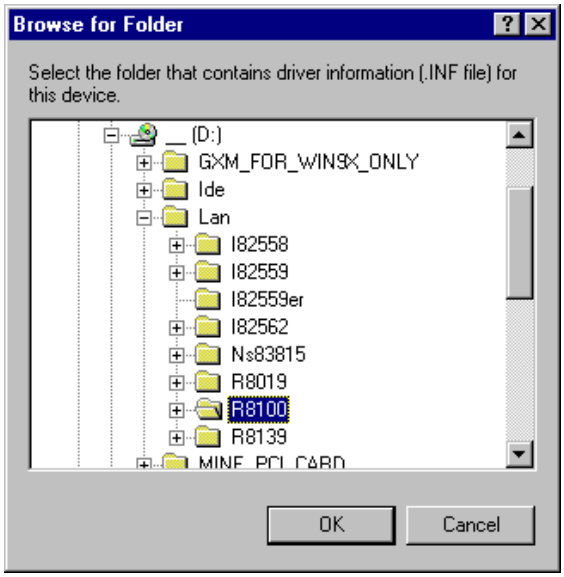


6. When the succeeding window asks you what you wish Windows to do, tick on the "Search for a better driver…." Click on the Next button to proceed.

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



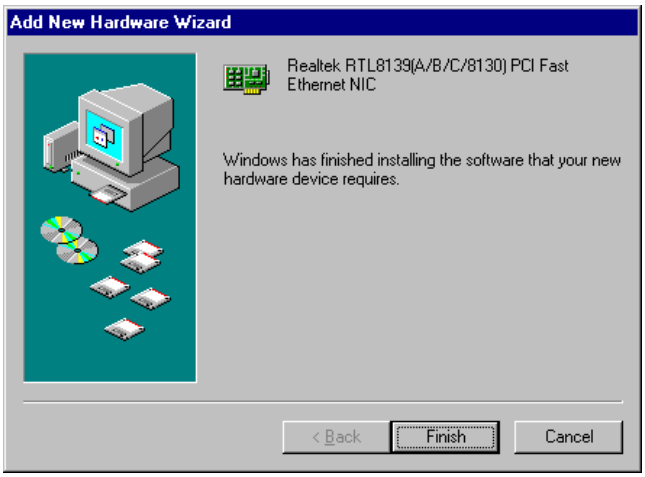
8. Press on the OK button as soon as you have located the path of your driver.



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

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

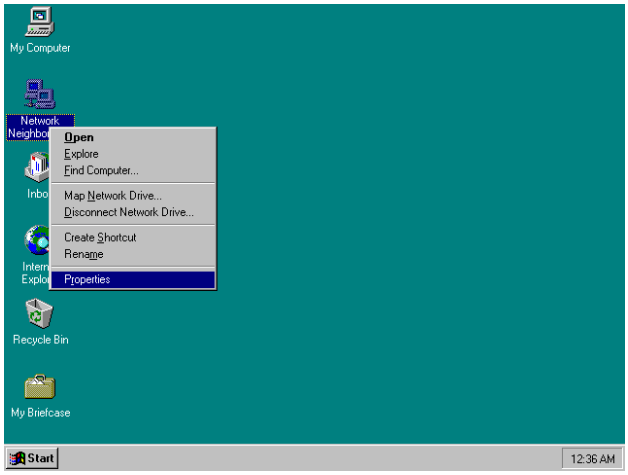
12. The program then copies the necessary files from your Windows installation disk to complete the driver setup process. Once the driver is completely installed, the following message appears on your display. Click on the Finish button to proceed.



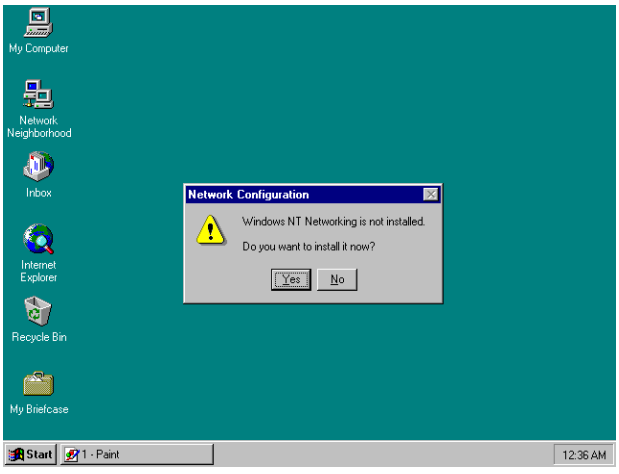
13. Restart your computer to make the new system settings take effect. Click on the Yes button when the screen below appears and your LAN Driver for Win95 and Win98 are now completely installed.

5.3 LAN Driver Installation for WIN NT4.0

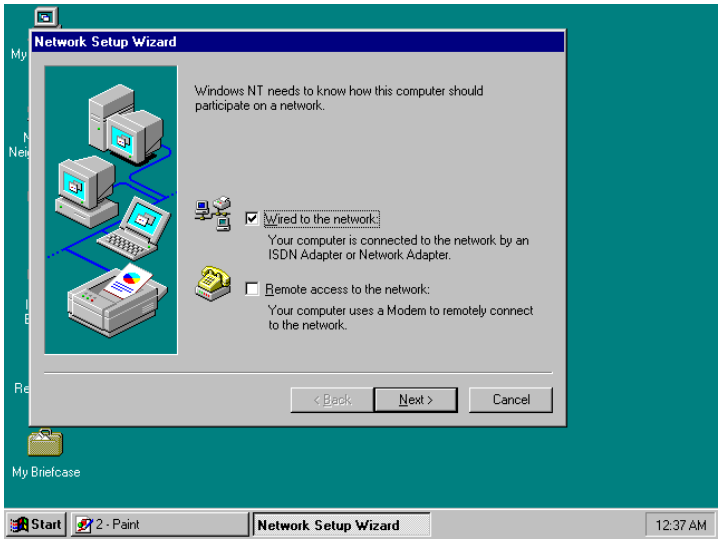
1. With the Utility CD Disk still in your CD ROM drive, right click on Network Neighborhood icon from the Windows menu. Select on Properties.



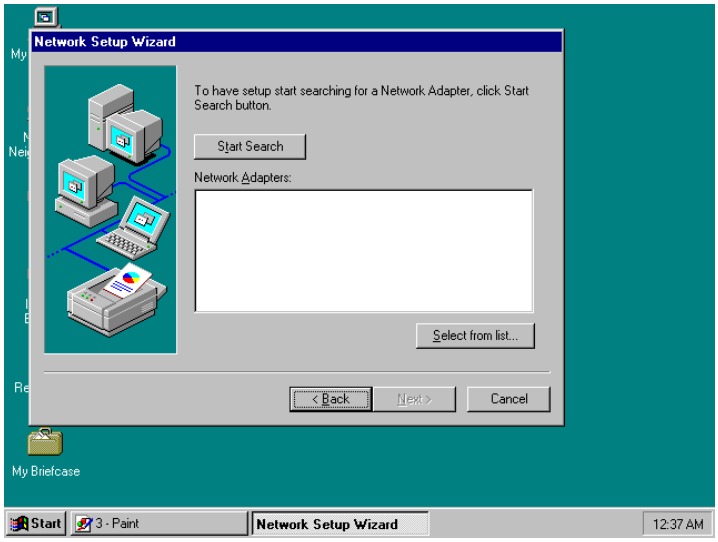
2. The system automatically detects the absence of Windows NT Networking. Click on the Yes button to start installation.



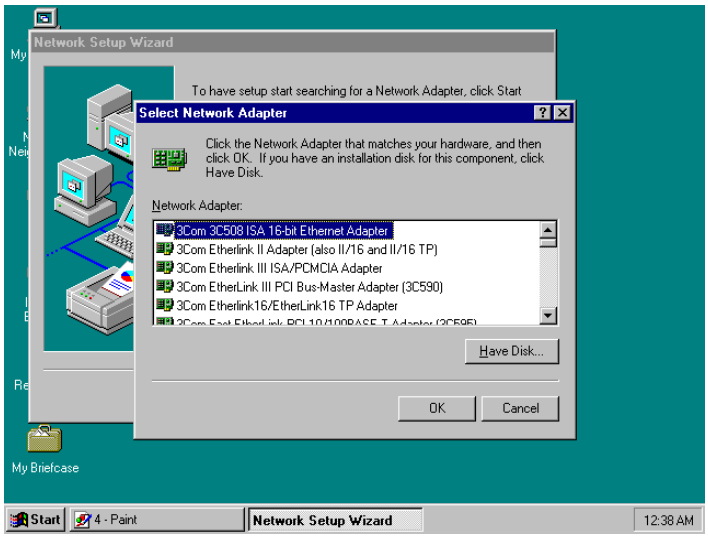
3. Tick on the "Wired to Network" once the following screen appears. Click on the Next to proceed.



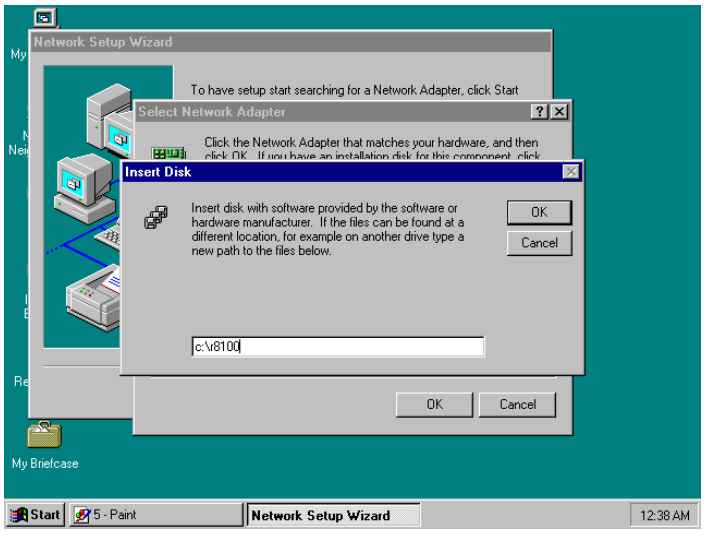
4. Click on the Start Search button for the program to locate the Network Adapter.



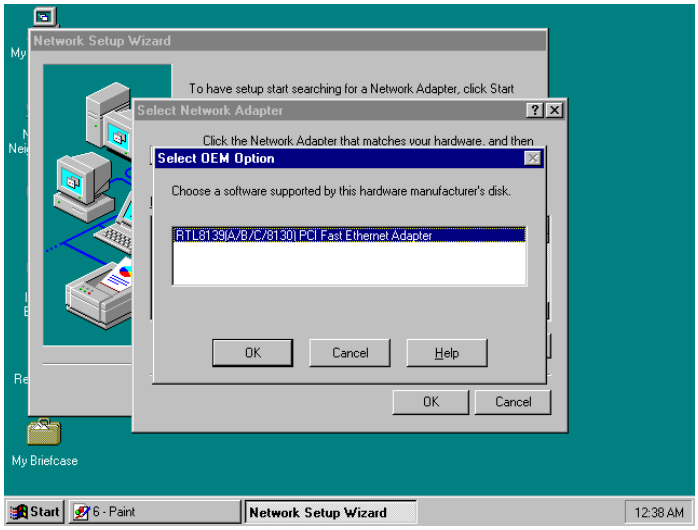
5. Once setup finishes the search, it will list a number of adapters for you to choose from. Press on the Have Disk button to assign the driver path location.



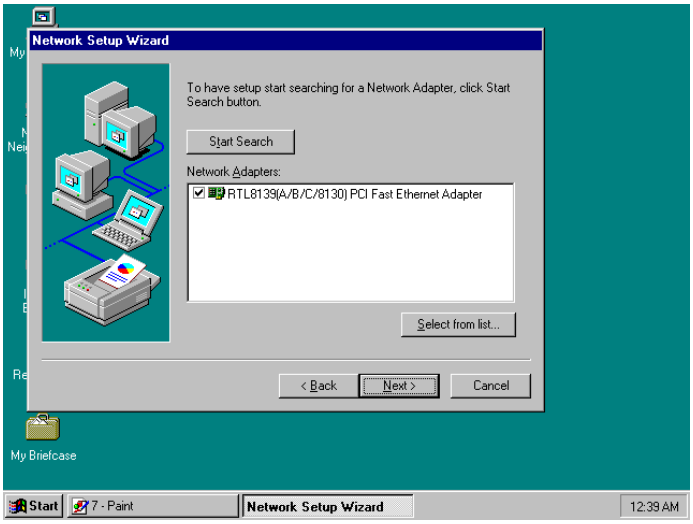
6. Setup now asks you for the location of the driver. When you have entered the new driver path, press on the OK button to continue.



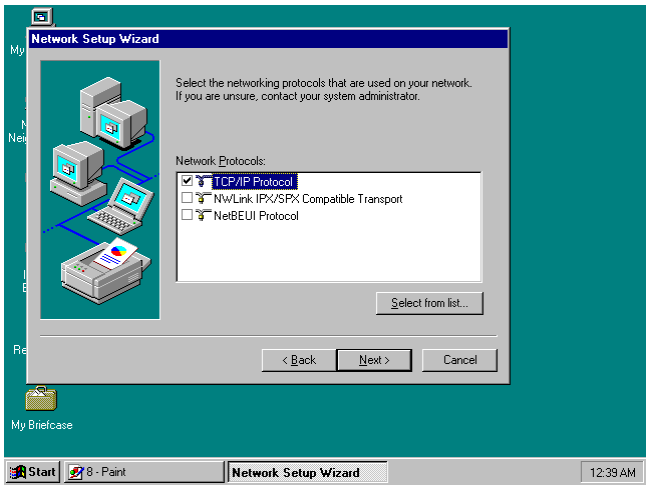
7. When Setup finds the information it needs about the new driver, it will display the device it found on the following screen. Press on the OK button to accept and proceed.



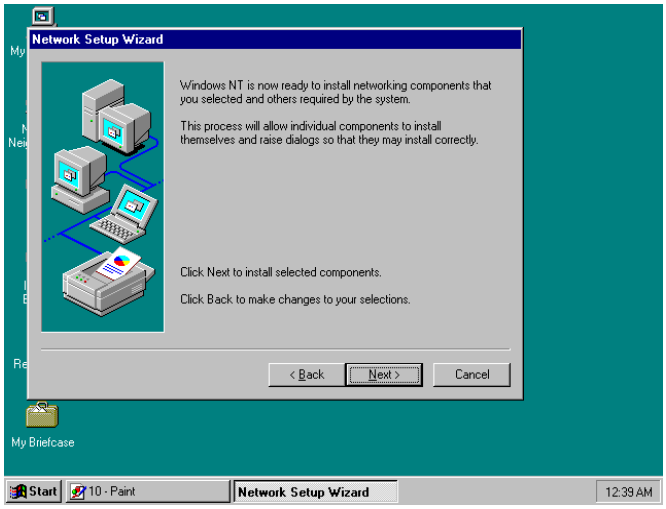
8. Setup then returns to Network Setup Wizard screen and displays your new Network Adapter. Click on Next to continue.



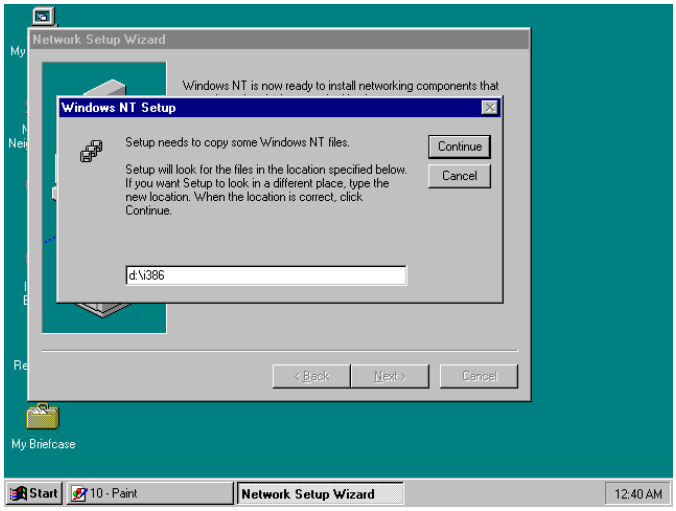
9. The Network Setup Wizard then allows you to set the Network Protocols on your network. Select the appropriate protocol and then click on Next to continue.



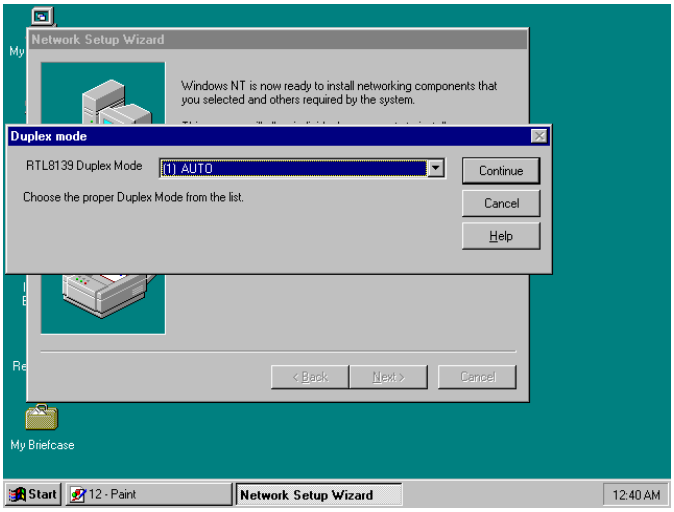
10. Before Setup starts installing the components found and the settings you made, it will give you the option to proceed or go back for changes from the following screen. Click on the Next button once you are sure of your devices.



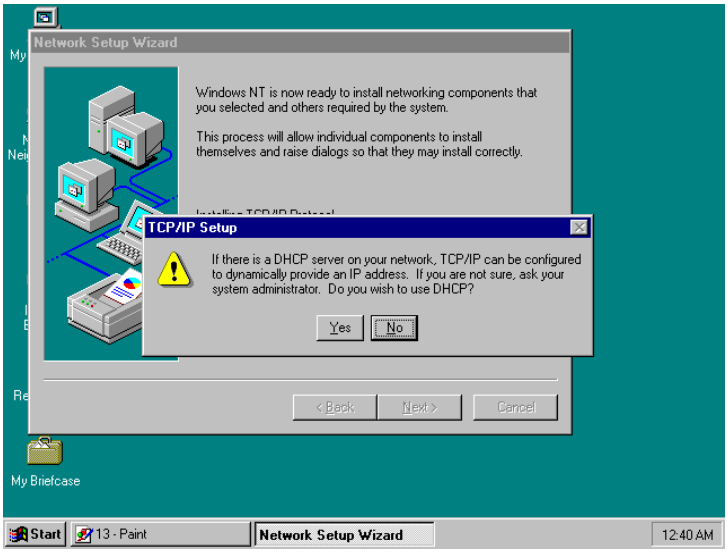
11. Windows NT Setup will then need to copy files necessary to update the system information. Specify the path then press Continue.



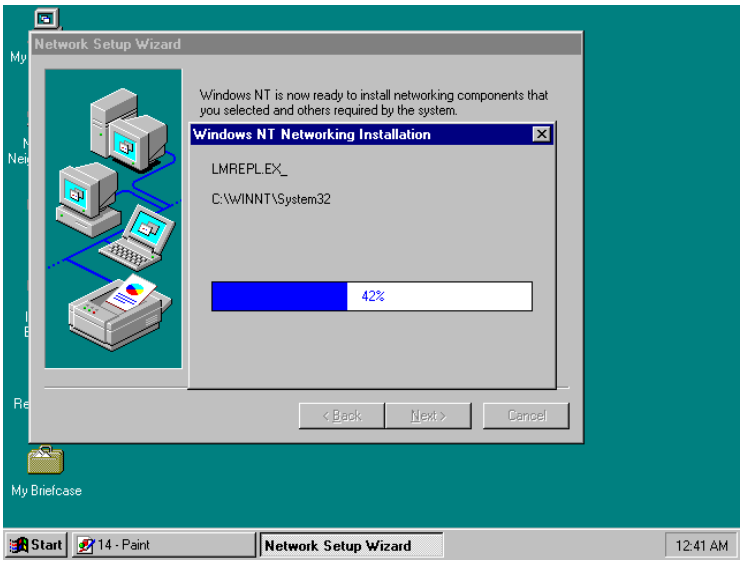
12. Once it finishes copying the files, Setup will now allow you to choose the Duplex Mode of your LAN controller. Press on the Continue button after making your selection.



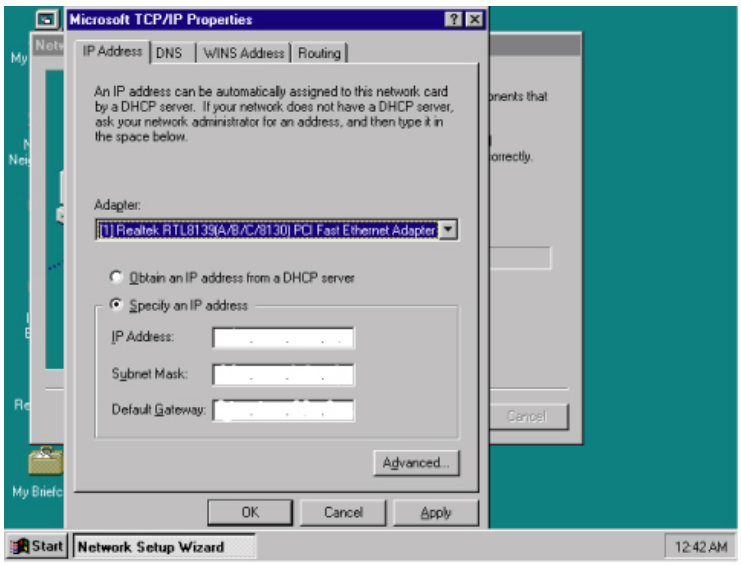
13. When Setup asks if you wish to change the TCP/IP settings of your system, select the appropriately. The default choice is No.



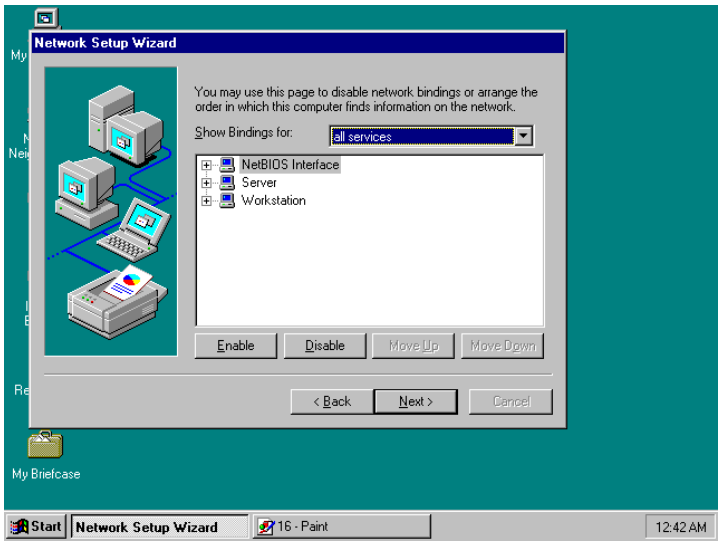
14. Setup then starts the Networking installation and copies the files.



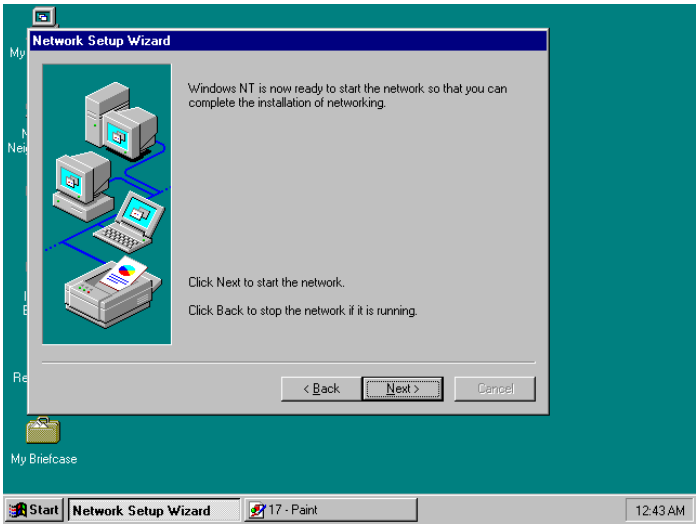
15. When Setup finishes copying, the TCP/IP properties of your system will then pop up on your screen like the one shown below. Make the necessary changes then click on OK to continue.



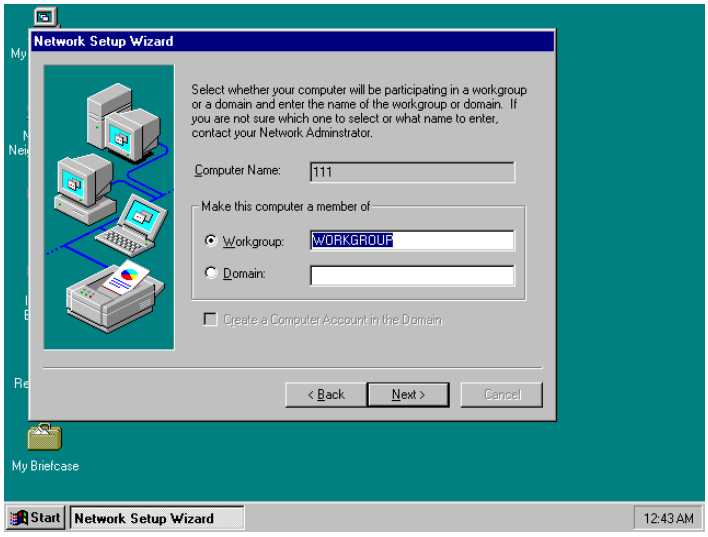
16. When the screen below appears, click on Next to continue.



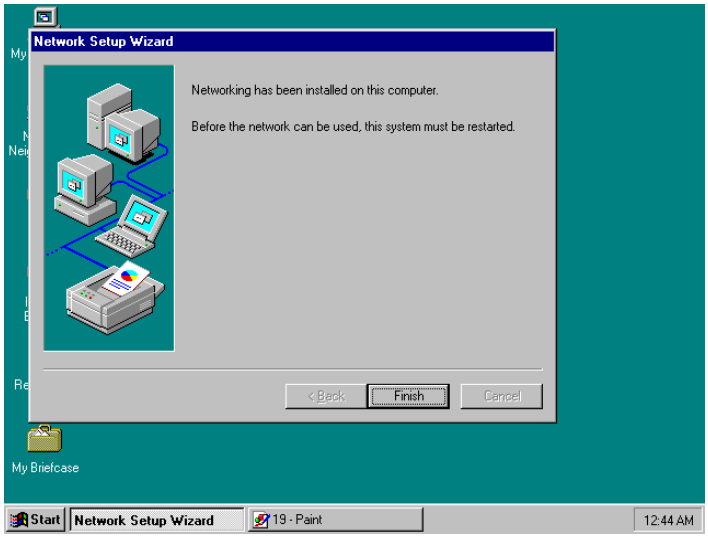
17. Setup then prompts you that it is ready to start the network. You may complete the installation thereafter. Click on Next to continue.



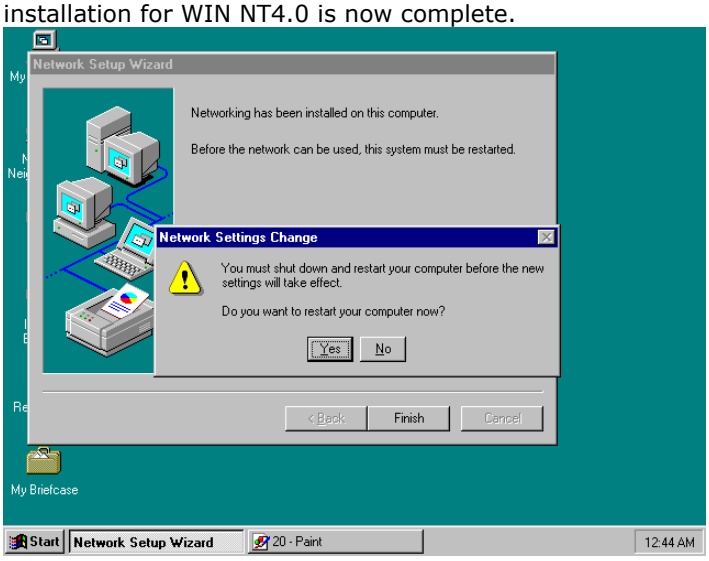
18. Assign the workgroup or domain setting of your computer. Click on Next to continue.



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



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



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