Contents

Item Checkup

- Mainboard

- Support CD

- Bundled Bonus Pack CD

- Bundled Bonus Pack Manual

- User Manual (Mainboard)

- Multi-lingual Quick Installation Guide

- Thermal Sensor Cable (Optional)

- ATA66/100 IDE Cable

- FDD Cable

Chapter 1 Specification

Introduction

This series of mainboards features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge VIA Apollo P4X266E plus South Bridge VT8235, by which the whole system performance can be upgraded to 533 MHz system bus.

The Intel P4 processor is a rapid execution engine providing 4X100/4X133MHz quadpumped system bus to allow 3.2GB data transfer rates possible, while VIA Apollo P4X266E plus VT8235 supports Intel P4 processor to implement the 4X133 Front Side Bus, AGP 4X external bus, the LPC Super I/O, the DDR266 SDRAM and UATA 133/100/66 data transfer rate. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:
1-1 Mainboard Components Locations
1-2 Mainboard Specifications
1-3 Mainboard Specification Table
1-4 Chipset Diagram

1-1 85DRV5 / 85DRV5-L Components and Options

PHY LAN Controller

for 85DRV5-L only

RJ45

PS/2 Mouse (on top)

PS/2 K/B¤ (underside)

RJ 45 (on top)

RT1

FAN2

USB0 (middle)

USB1 (underside)

COM1

LPT1

COM2

FAN1

+12 Power Connector

Main Power Connector

mPGA478B

1

VIA P4x266E

DIMM 1
DIMM 2

DIMM 3

DDR 266/200

LINE OUT

LINE IN

GAME/MIDI PORT

MIC

SW1

Peripheral Power Connector

AGP 4X/2X

FAN4

VIA VT6103

PHY (LAN Controller)

PCI 1

IDE2

IDE1

FDC1

CD1

PCI 2

AC'97 Codec

Audio Codec

PCI 3

VIA VT8235

JP1

PCI 4

JBAT1

PCI 5

Li Battery

RT2

FAN3

IT8705F LPC I/O

JP2

PCI 6

FLASH BIOS

AUDIO1

WOL1

JUSB2

JUSB1

SCR1

Optional 6-channel Audio-Out Connector

1-2 Mainboard Specifications

1-2.1 CPU Socket

CPU Socket 478B on board, supporting Intel® Pentium 4 processors in 478-pin package for :

-- 533/400MHz System Bus;
-- Hyper-pipelined technology;
-- Advanced dynamic execution;
-- Advanced transfer cache;

1-2.2 System Chipsets

• North Bridge VIA P4X266E for managing and supporting 4X133/ 4X100MHz system Bus, DDR 266/200 SDRAM memory interface, Hub interface and AGP4X/2X interface.
• South Bridge VIA VT8235 working with North Bridge supporting the 4X V-Link, LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, LAN interface, USB V2.0 interface as well as the AC'97 6-channel Audio interface

1-2.3 Memory

3 DDR DIMM 184-pin slots on board for DDR 266/200 SDRAMs :
• Supporting unregistered, non-ECC DDR 266/200 SDRAM up to 3 GBs; DIMM voltage adjustable in BIOS Setup
• Supporting installation of mixed volumes yet same type of DDR SDRAM modules

1-2.4 AMI BIOS

• Supporting Plug & Play V1.0
• Flash Memory for easy upgrade
• Supporting BIOS Writing Protection and Year 2000 compliant
• Supporting BIOS Setup (See Chapter 4 BIOS Setup)

1-2.5 Accelerated Graphics Port (AGP) Interface

AGP Controller embedded on board, supporting:
• 1.5V (4X) and 3.3V (2X) power modes in 1 AGP Slot supported
• 4x AD and SBA signaling, AGP pipelined split-transaction longburst transfers up to 1GB/sec.
• AGP Voltage adjustable in BIOS Setup

1-2.6 Advanced System Power Management:

• ACPI 1.0 compliant (Advanced Configuration and Power Interface)
• APM V1.2 compliant (Legacy Power Management)
• ACPI POS (Power On Suspend)
• PS/2 Keyboard & Mouse Power On/Wake Up
• Supporting Ring Power Up Control for Wake-on-LAN (via Connector WOL1 to add-on PCI LAN card)
• Real Time Clock (RTC) with date alarm, month alarm, and century field

1-2.7 Multi-I/O Functions :

• PCI EIDE Controller, supporting:
   -- 2x Ultra ATA133/100 / 66 IDE connectors supporting up to 4 IDE devices
• Dedicated IR Functions:
   -- 1x5 Pin-header dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR
• Multi-mode parallel data transfer:
   -- Standard mode, high speed mode ECP and enhanced mode EPP
• Floppy Disk connector:
   -- One FDD connector supporting 2 floppy drives with drive swap support
• Universal Serial Bus Transfer Mode:
   -- USB V2.0 compliant, 480 Mb/s USB Bus, supporting Win98 and up operating system; USB drivers provided in Support CD for user's installation
   -- 2 built-in USB connectors and 2 USB pin-headers which require 2 optional USB cables to provide 4 more optional USB ports
• PS/2 Keyboard and PS/2 Mouse
• UARTs (Universal Asynchronous Receiver / Transmitter):
   -- Two complete serial ports (COM1 & COM2) on board

1-2.8 Expansion Slots

• 6 PCI bus Master slots
• 1 AGP 4X/2X slot
• 3 DDR DIMM slots

1-2.9 AC'97 Audio Codec on board

AC'97 Audio Codec 2.2 compliant on board
• Supporting up to 6 channels of PCM audio output
• 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Woofer for complete surrround sound effect
• AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

1-2.10 LAN on board (85DRV5-L only)

Fast Ethernet Controller integrated in VT8235 and PHY VIA VT6103:
• Supporting 10/100Mb Fast Ethernet Base-T LAN
• LAN Driver enclosed in Support CD for user's installation.

1-2.11 Hardware Monitor on board

• Hardware Monitor integrated in Super I/O IT8705F, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
• Utility Software SmartGuardian for displaying Monitoring status is enclosed in Support CD for user's installation.

1-2.12 6-channel Sound Output Support (optional)

• This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, an Audio-out card will be enclosed in package to provide 3 additional audio-out ports for the 6-channel sound.

1-2.13 Form Factor

• ATX form factor, ATX power supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector and one Peripheral Power Connector
• Mainboard size: 305mm x 220mm

1-3 Mainboard Specification Table

SL-85DRV5 / 85DRV5-L Specifications and Features	
CPU	Socket 478B for Intel Pentium 4 CPUs
North Bridge	VIA P4X266E, supporting 533/400MHz FSB
South Bridge	VIA VT8235
BIOS	AMI BIOS
Memory	Supporting DDR 266/200 SDRM, up to 3GB in 3 DDR DIMM slots
I/O Chip	IT8705F
AGP interface	AGP4X/2X mode
Audio	AC'97 Audio V2.2 compliant, 6-channel interface
IDE Interface	2 UATA 66/100/133 IDE ports
Networking	VIA LAN Controller, 1xRJ45 (85DRV5-L only)
PCI Slots	6 PCI Master slots on board
I/O Connectors	6xUSB ports (V2.0), 1xFDD port, 2xCOM ports, 1xLPT, 1xIrDA, 1xPS/2 K/B, 1xPS/2 Mouse,
VGA Display	VGA not integrated on board
Other Features	BIOS Writing Protection; Hardware Monitoring in IT8705F Keyboard / Mouse Power On/Wake Up; ATX 2.03 Power Supply; ATX form factor

Optional Feature	85DRV5	85DRV5-L
LAN On Board	No	Yes

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1-4 Chipset System Block Diagram
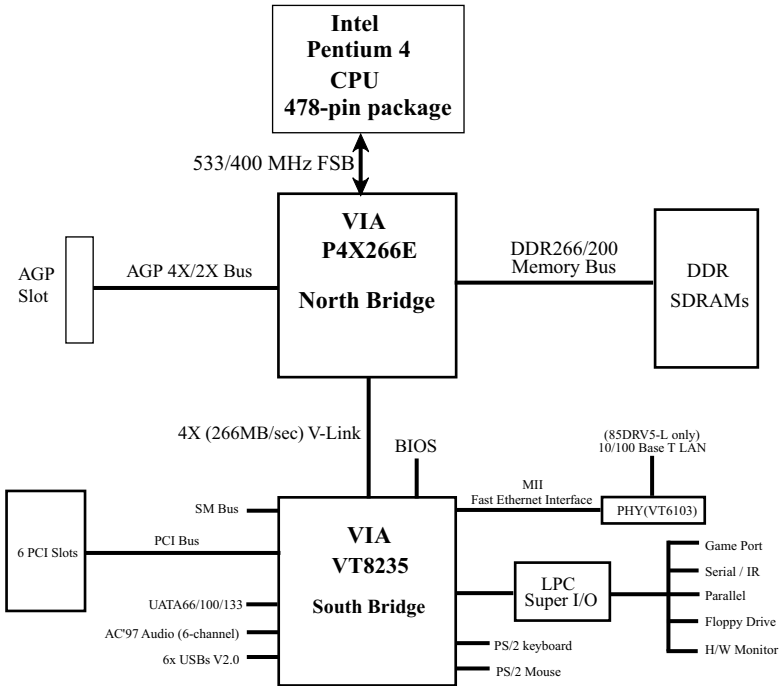
Intel Pentium 4 + VIA P4X266E + VIA VT8235 Diagram

Chapter 2 Hardware Setup
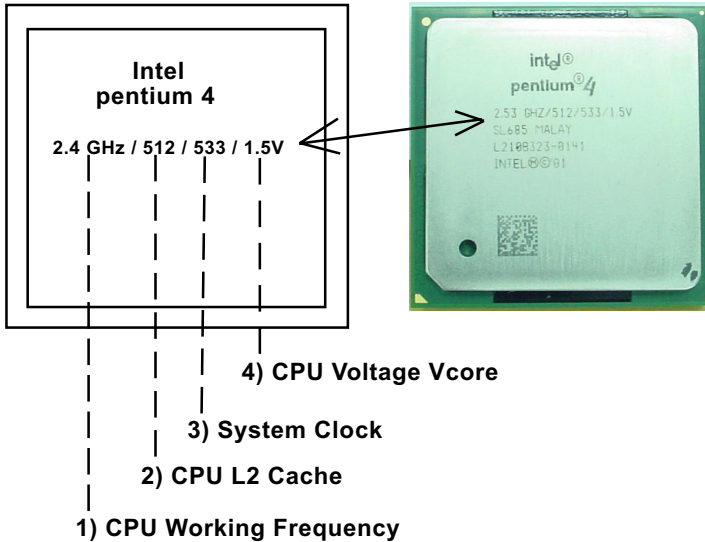
To Get Things Ready for Hardware Setup !

1. We recommend to install your CPU before any other components. For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. Improper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable on board, please follow the instructions described in the User Manual for proper setup. Incorrect setting will cause damage to your CPU.

The following topics are included in this chapter:

2-1 Pentium 4 CPU Installation
2-2 Pentium 4 CPU Fan Installation
2-3 Memory Installation
2-4 AGP4X/2X Card Installation
2-5 IDE Connector Installation
2-6 Floppy Drive Connector (FDC) Installation
2-7 ATX 2.03 Power Supply Installation
2-8 Jumper and Switch Settings
2-9 Other Connectors Configuration
2-10 IRQ Description

2-1 Pentium 4 CPU and Installation

2-1.1 To Identify a Pentium 4 CPU

Intel pentium 4

2.4 GHz / 512 / 533 / 1.5V

4) CPU Voltage Vcore

3) System Clock

2) CPU L2 Cache

1) CPU Working Frequency

On the heatsink side of a Pentium 4 CPU, there printed is a line of figures to identify its specifications. The line consists of 4 parts:

1) CPU Working Frequency: This part depicts the working frequency of the CPU. For example:
   2.4 GHz depicts that this CPU is locked to 2.4 GHz working frequency (multiplier 18 x 133MHz CPU clock);
   2A GHz depicts that this CPU is an A version, locked to 2.0 GHz working frequency (multiplier 20 x 100MHz CPU clock);

2) CPU L2 Cache: This part depicts the L2 Cache size. For Example:
   512 stands for 512 MB L2 Cache; 256 stands for 256 MB L2 Cache;

3) System Clock: This part depicts the System Clock (Front Side Bus) to be provided by the CPU. For example:
   533 stands for a 533MHz system bus provided by this 133MHz CPU times 4;
   400 stands for a 400 system clock provided by a 100 MHz CPU x 4;
   (Note: P4 CPU is a quadpumped CPU. The system bus is provided by the CPU clock x 4. Therefore, user can figure out the P4 CPU clock from the System Clock devided by 4.)

4) CPU Voltage Vcore: This part depicts the CPU Voltage. For example:
   1.5V stands for a CPU of 1.5Vcore.

2-1.2 CPU Installation with Socket 478B

This series is built with CPU Socket 478B (478-pin) supporting the Intel Pentium 4 CPU:
• Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478.
• After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandem with this CPU. This CPU Fan installation is described in next section.

1. First pull sideways the lever of Socket 478, and then turn it up 90^0 so as to raise the upper layer of the socket from the lower platform.
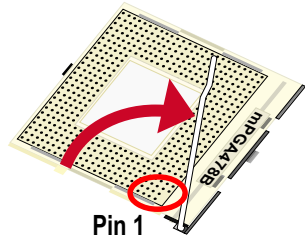
Pin 1

2. Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the right. Adjust the position of CPU until you can feel all CPU pins get into the socket with ease.
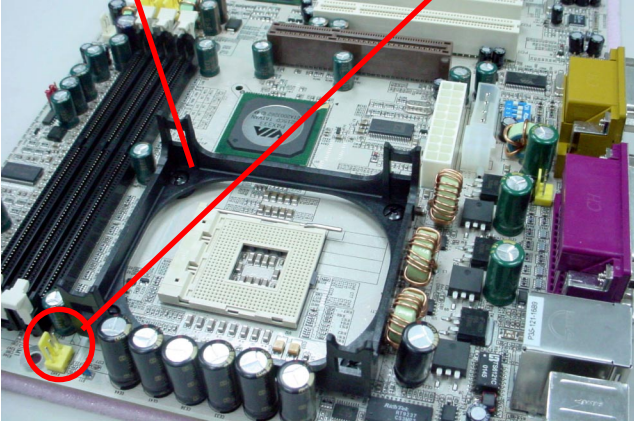
Pin 1
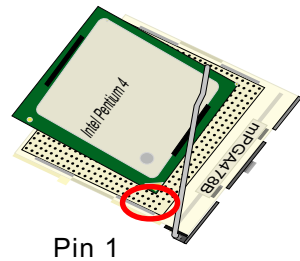
3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.
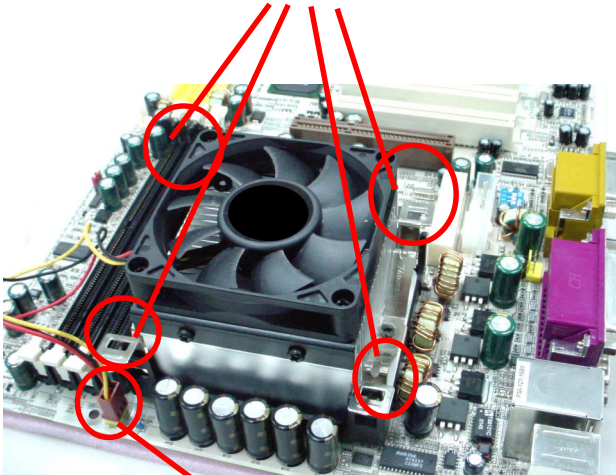
Pin 1
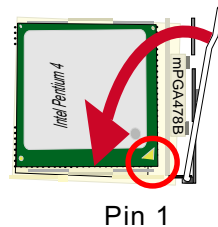
2-2 Pentium 4 CPU Fan Installation

Pentium 4 Fanbase   CPU Fan Connector

Press down 4 corners to lock fan to fanbase

Connect Fan Connector to CPU FAN connector

2-3 Memory Installation

How to tackle the memory Modules:
- Make sure to unplug your power supply before adding or removing memory module. Failure to do so may cause severe damage to both your mainboard and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM into a slot improperly will damage the memory module and slot itself.
- Make sure you have the right type of memory module for your mainboard.

2-3.1 To Install DDR SDRAM Module

- This series supports up to 3GB unbuffered DDR 266/200 SDRAM, with 3 DDR DIMM slots on board. <u>Do not insert other type of modules into these slots.</u>

- DDR DIMM slot has 184-pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the slot. If any one of the latches has not turned up completely, you should unplug the module and press it down a bit more firmly.

184-Pin DIMM Notch Key Definitions (2.5V)
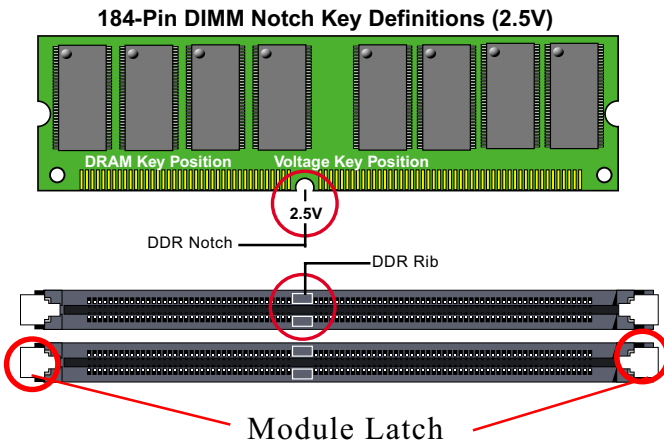
Module Latch

2-3.2 To Remove a DIMM

Power off system and press down the holding latches on both sides of
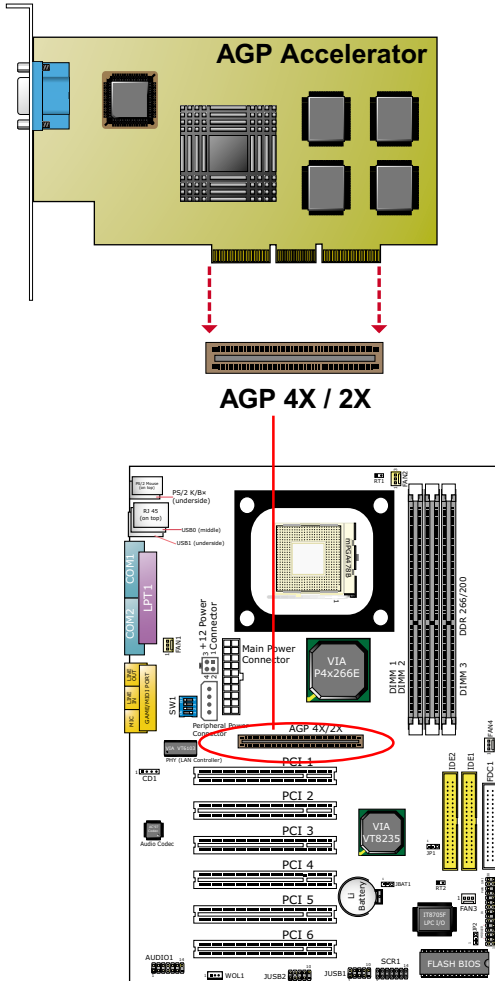slot to release the module from the DIMM slot.
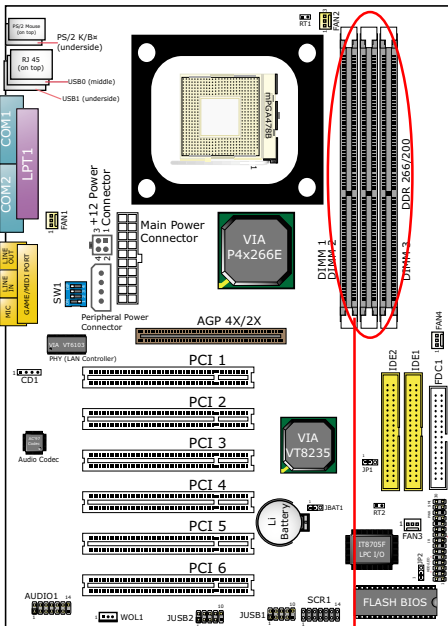
DDR DIMM Slots
(184-pin)

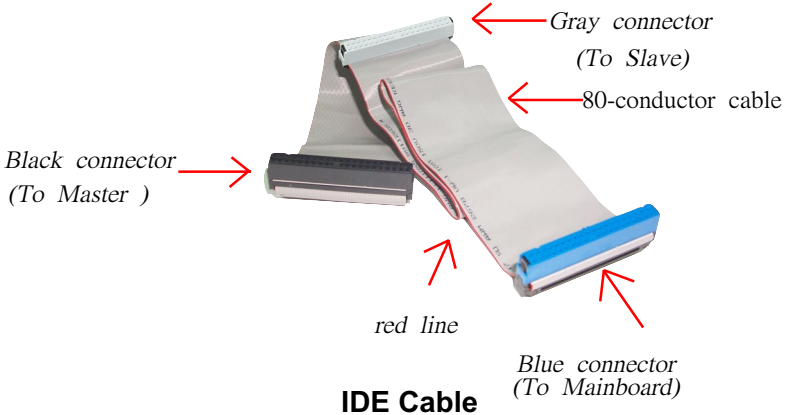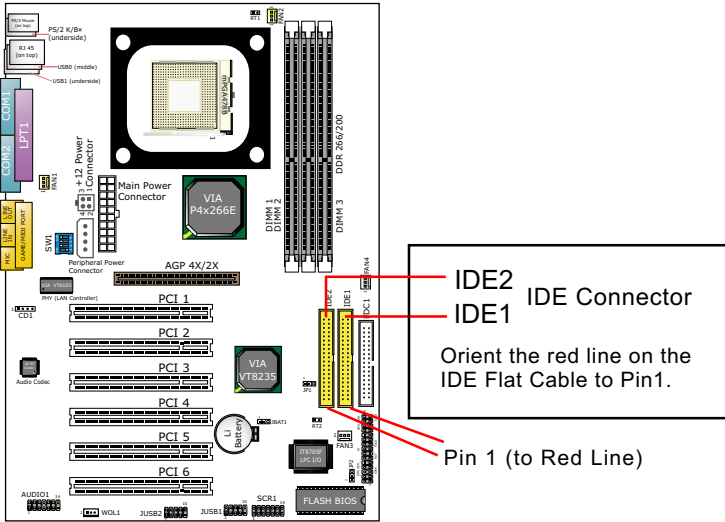## 2-4 AGP 4X/2X Card Installation

The AGP slot on board supports 1.5V AGP4X/2X card only.

An AGP 4X card will support a data transfer rate up to 1GB/sec., while an AGP 2X card will do up to 0.5GB/sec only.

AGP Accelerator

AGP 4X / 2X

2-5 IDE Connector Installation

To install IDE Connector, you may connect the blue connector of IDE cable to the primary (IDE1) or secondary(IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.

IDE2
IDE1 **IDE Connector**

Orient the red line on the IDE Flat Cable to Pin1.

Pin 1 (to Red Line)

Gray connector
(To Slave)
80-conductor cable

Black connector
(To Master)

red line

Blue connector
(To Mainboard)

IDE Cable

2-6 Flopy Drive Connector (FDC) Installation

To install FDC (Floppy Drive Connector), you should connect the end of FDC cable with single connector to the board , and connect the other end with two connectors to the floppy drives.

Floppy Drive Connector: FDC
Orient the red line of the Floppy Flat Cable to Pin1.

Pin 1 (to Red Line)

To 2nd Floppy Drive

Signal Swap End

To 1st Floppy Drive

red line   To mainboard

FDC Cable

2-7 ATX V 2.03 Power Supply Installation

+12V Power Connector

```
    3 1
+12V  ●●  GND
+12V  ●●  GND
    4 2
```

Main Power Connector (20-pin)

+12V			+5V
5SB			+5V
PWR OK			-5V
GND			GND
+5V			GND
GND			GND
+5V			PS ON#
GND			GND
+3.3V			-12V
+3.3V			+3.3V

Pin1   Pin11

Peripheral Power Connector

Pin 1 ⊙ +12V
       ⊙ GND
       ⊙ GND
Pin 4 ⊙ +5V
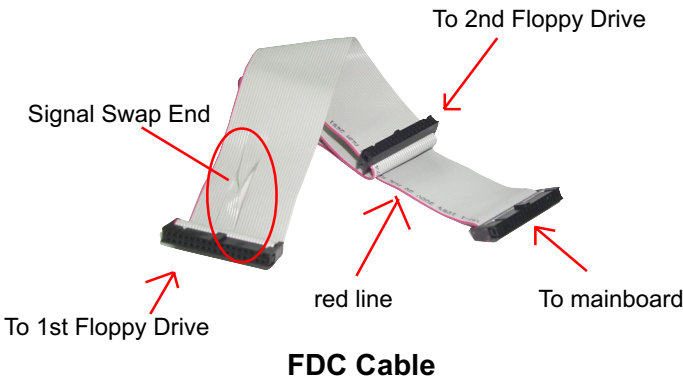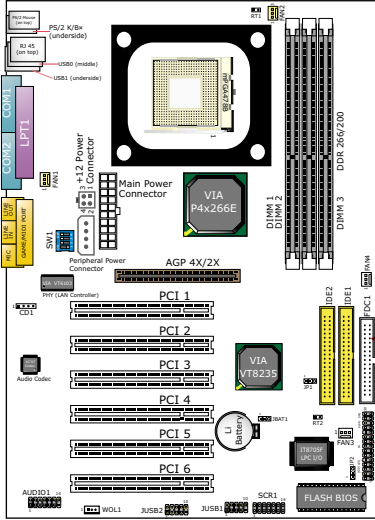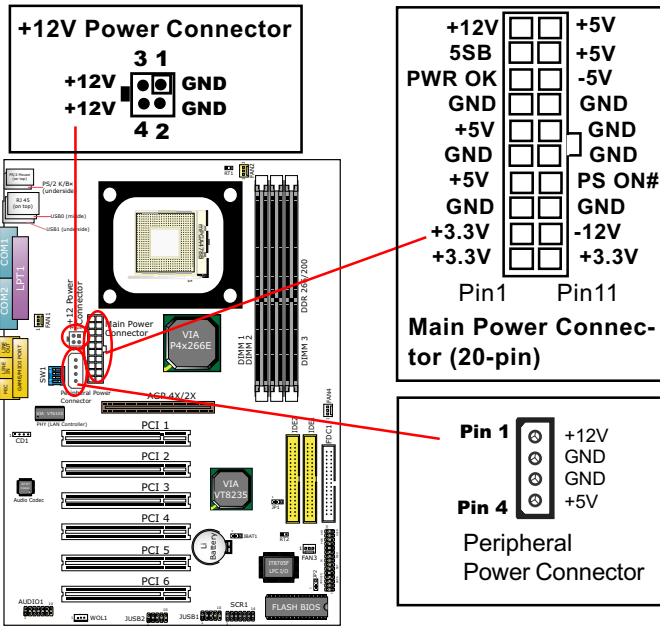
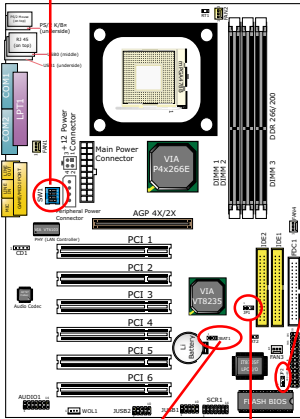ATX V2.03 power supply is strongly recommended for mainboard running with 2GMHz or higher CPU.

To set up Power Supply on this series:
1. Connect the on-board Main Power Connector (20-pin) to the Main Power Connector (20-pin) of an ATX Power Supply which can be either of the latest version 2.03 or of earlier ATX format.
2. If you use an ATX Power Supply Version 2.03 or later, you can now connect the on-board square-shaped +12V Connector to the square-shaped +12V Connector of your ATX Power Supply. In this case, it is not necessary for you to connect the on-board 4-pin Peripheral Power Connector to your Power Supply.
3. If you use an ATX power Supply of an older version than V2.03, you cannot find a square-shaped +12V Connector with your Power Supply; you must then connect the on-board 4-pin Peripheral Power Connector to the 4-pin Peripheral Power Connector of your Power Supply.

2-8 Jumper and Switch Settings

The following diagrams show the locations and settings of switch and jumper blocks on the mainboard.

SW1

Overclock Select

Off On On On (Default)

On   Off

CPU clock (MHz)	S1	S2	S3	S4
100 (default)	off	on	on	on
103	off	on	off	on
107	on	off	off	on
110	off	off	off	on
133	on	off	on	on

Jp2
Flash ROM Write Protection
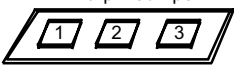
1-2 closed (default)
Enabled

2-3 closed
Disabled

JBAT1: Clear CMOS	**Jp1:** CPU Clock Select	**SW1:** Overclock setting to Boot System
1 **1-2 closed (default)** **To hold data**	1 **1-2 closed (default)** **CPU Auto-detect of** **100 / 133MHz**	**100/103/107/111SW1 setting for 100MHz CPU to boot system;** **133MHz SW1 setting for 133MHz CPU to boot system;**
1 **2-3 closed** **To clear CMOS**	1 **Jumper open** **100MHz selected**	**100/103/107/111 to boot system**
	1 **2-3 closed** **133MHz selected**	**133MHz SW1 setting to boot system**

How to tackle the Jumpers:

A 3-pin Jumper

1   2   3

If a pin-header (of 2 or more pins) is designed in such a way that its pins can be closed or linked together to set up a specific function, this header is called a jumper in this manual.

A 2-pin Jumper cap to link two header-pins together.

- A Jumper is usually but not necessarily given a "JpX" legend.
- In the Jumper setting diagram, the jumper pins covered with black marks stand for closed pins with jumper cap.

Jp X

1 3
Jumper with Pin 2-3 closed

1 3
Jumper with all pins open

1 3
Jumper with Pin 1-2 closed

- Do not remove any jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, the mainboard will be damaged.

2-8.1 JBAT1: Clear CMOS

When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:

1. Power off system;
2. Set JBAT1 to Pin 2-3 closed.
3. After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default. Remember never clear CMOS when system power is on.

JBAT1 Clear CMOS
1
1-2 closed (default) To hold data
1
2-3 closed To clear CMOS

2-8.2 Jp1 and SW1: CPU Clock/Overclock Select

Jp1 and SW1 are designed for CPU clock select and 100MHz CPU overclocking. With Jp1, user can choose the way for a 100MHz CPU to run an overclock on board.   SW1 is designed to match and meet the setting of Jp1. Before setting Jp1 and SW1, user should read the CPU Identification and find out the default CPU clock on the CPU.

1. If Jp1 is set to 1-2 closed, the auto-detect mode will recognize the CPU clock automatically and send the signal to system chips. If a 100MHz CPU is used, SW1 should be set to default or 103/107/111 mode. If a 133MHz CPU is used, SW1 should be set to 133MHz mode to boot system.
2. If Jp1 is set to 1-2-3 all open, CPU is set to 100MHz, indicating that 133MHz overclock is not desired. Set SW1 to 100/103/107/111 mode to boot system.
3. If Jp1 is set to 2-3 closed, CPU is set to 133MHz, indicating that 133MHz overclock is desired. Set SW1 to 133MHz mode to boot system. If overclocking fails, system will not boot. Then you must clear CMOS and reset Jp1 and SW1 to default settings for booting system.

Jp1: → CPU Clock Select	SW1: Overclock setting to Boot System
1 [⊂●○] 1-2 closed (default) CPU Auto-detect of 100 / 133MHz	100/103/107/111SW1 setting for 100MHz CPU to boot system; 133MHz SW1 setting for 133MHz CPU to boot system;
1 [○○○] Jumper open 100MHz selected	100/103/107/111 to boot system
1 [○●○] 2-3 closed 133MHz selected	133MHz SW1 setting to boot system

SW1   Overclock Select
Off On On On (Default)
On   Off

CPU clock (MHz)	S1	S2	S3	S4
100 (default)	off	on	on	on
103	off	on	off	on
107	on	off	off	on
110	off	off	off	on
133	on	off	on	on

Further Notes on CPU Overclocking:

1. If you have successfully booted system, with or without CPU overclock, you still can try another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose "Frequency/Voltage Control" menu, and take the "Use Linear" option of the "Use CPU Linear Frequency". Then configure the "CPU Clock" item to raise your CPU clock.

2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 and then restart your system. And remember to reconfigure whatever should be reconfigured.

3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the PC case and simultaneously press down the "Insert" key on the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup instantly and choose "Load Optimized Defaults" to restore default BIOS .

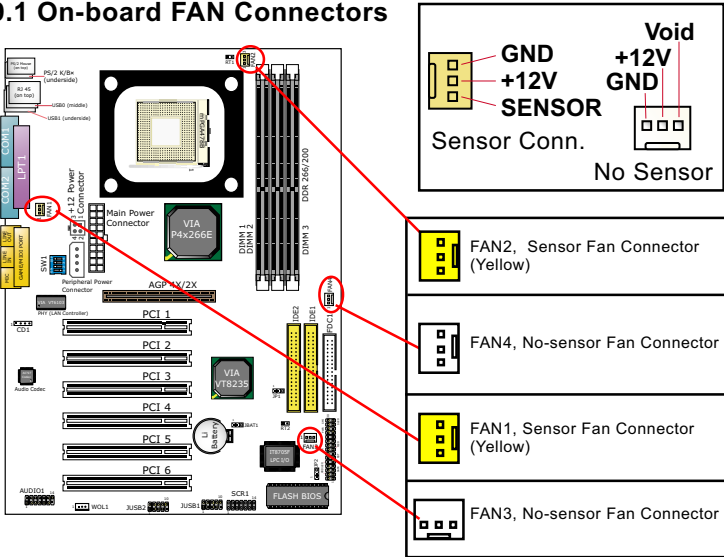### 2-8.3 Jp2: Flash ROM Write Protection

Jp2 is designed to support the "Flash ROM write Protection" function when you boot your system. Setting Jp2 1-2 closed will protect your Flash ROM from virus attack every time you boot your system.

Jp2 Flash ROM Write Protection
1-2 closed (default) Enabled
2-3 closed Disabled
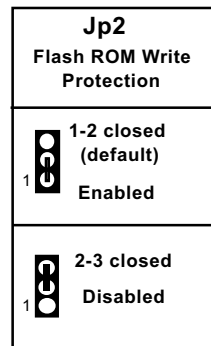
2-9 Other Connectors Configuration

This section lists out all connectors configurations for users' reference.

2-9.1 On-board FAN Connectors

GND
+12V
SENSOR

Sensor Conn.

Void
+12V
GND

No Sensor

FAN2, Sensor Fan Connector (Yellow)

FAN4, No-sensor Fan Connector

FAN1, Sensor Fan Connector (Yellow)

FAN3, No-sensor Fan Connector

Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. When connecting the wire to any Fan Connector, user should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. A Hardware Monitor chipset is on board, with which user can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, user can read the fan speed from the "Hardware Monitor Status" in CMOS BIOS.

A running fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it with the monitoring program.
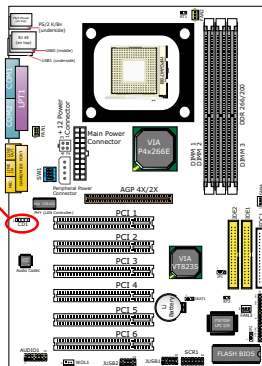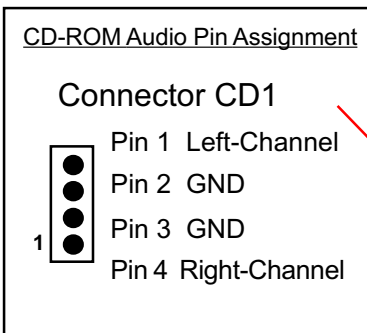
2-9.2 Connector WOL1: Wake On LAN

1. This connector connects to a LAN card with a Ring signal output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.
2. This feature requires that Resume On Ring feature is enabled in the BIOS setting "Power Management Setup" and that your system must be on ATX power supply with at least 720mA / +5V standby power.

WOL 1

GND

+5V Standby   **Ring**

Connect the Wake On LAN signal from LAN card to WOL1
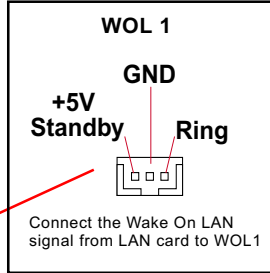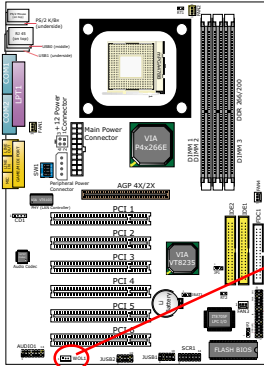
2-9.3 CD-ROM Audio Connector (CD1)

CD-In1 is audio connector connecting CD-ROM audio to mainboard.

CD-ROM Audio Pin Assignment

Connector CD1

Pin 1 Left-Channel

Pin 2 GND

Pin 3 GND

Pin 4 Right-Channel

1

2-9.4 PS/2 Mouse And PS/2 Keyboard

PS/2 Mouse Connector
(on top, green)

6 Void — 5 Mouse Clock
4 VCC — 3 GND
2 Void — 1 Mouse Data

6 Void — 5 Keyboard Clock
4 VCC — 3 GND
2 Void — 1 Keyboard Data
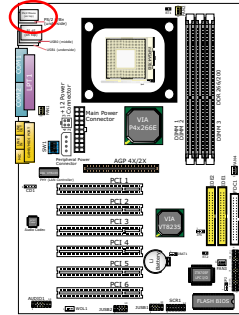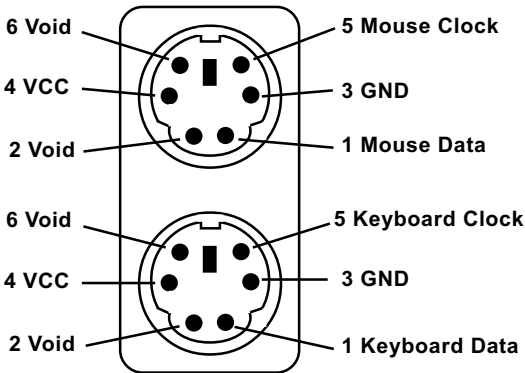
PS/2 Keyboard Connector
(underside, purple)

2-9.5 Chassis Panel Connectors

A.   B.   C.   D.

E.   F.   G.   H.   I.   J.   K.
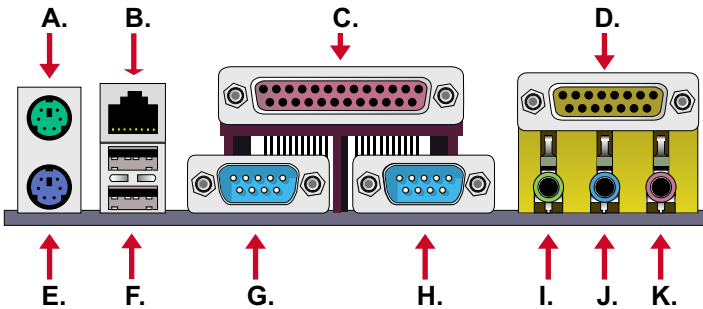
A : PS/2 Mouse Port
B : RJ45 (85DRV5-L only)
C : LPT1 Port
D : Game/MIDI Port
E : PS/2 Keyboard Port
F : USB 1 Port (Bottom)
F : USB 0 (Middle)
G : COM1 Port

H : COM2 Port
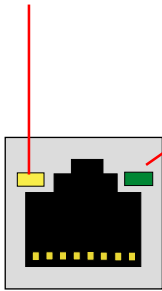I : Line Out /
    Front Speaker Out
J : Line In /
    Rear Speaker Out
K : Microphone In /
    Center Subwoofer Out

31

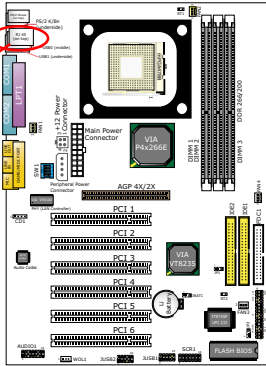## 2-9.6 RJ45: LAN Connector (85DRV5-L only)

One RJ45 connector is on board for network connection.

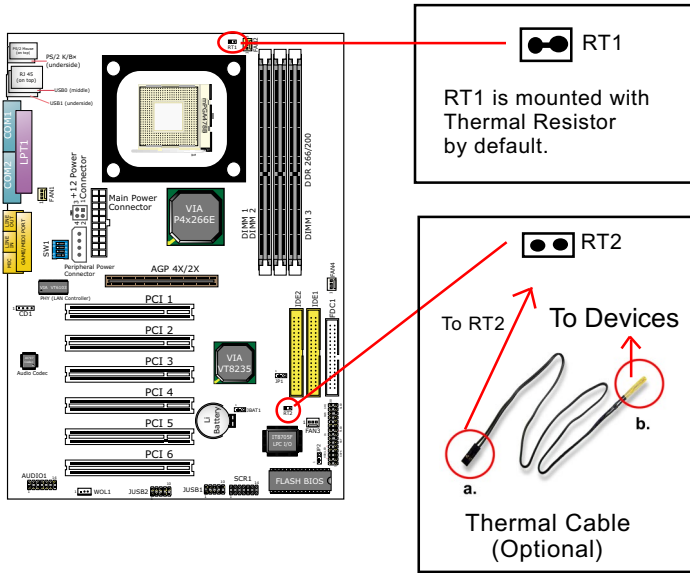Yellow LED "On" to indicate Network hub is in connection with the system.

Green LED blinks to indicate that data transmission is undergoing in 10/100 Base T mode.

RJ45 Connector

2-9.7 Thermal Sensor Connectors RT1 and RT2

RT1

RT1 is mounted with
Thermal Resistor
by default.

RT2

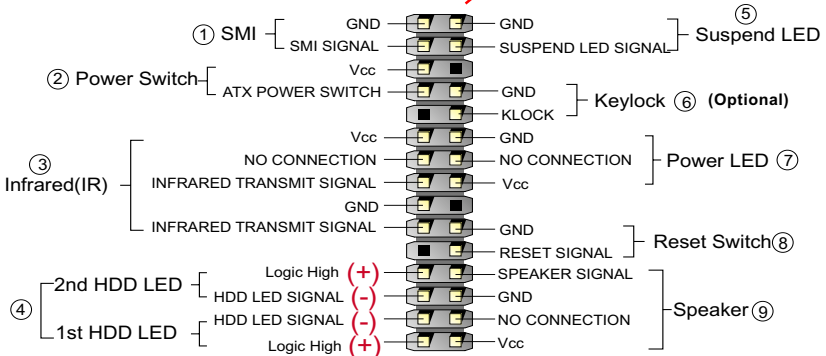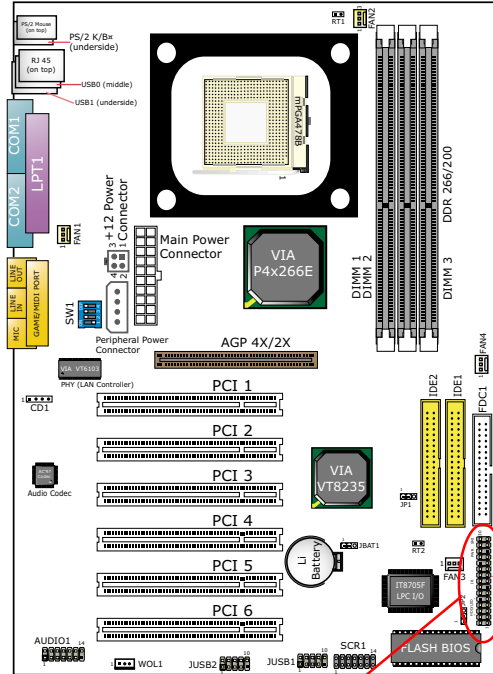To RT2   To Devices

Thermal Cable
(Optional)

1. Connector RT1: A thermal resistor is mounted by default to connector RT1 so as to detect the temperature of the CPU. What RT1 does is to transmit the thermal signal to BIOS or Hardware Monitor.

2. Connector RT2: A thermal cable is needed to connect RT2 to on-board devices such as HDD, Graphics card etc., so as to detect the temperature generated therein. Please connect the end (a) of the thermal cable to RT2, and tape another end (b) of thermal cable on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware Monitor utility.**

2-9.8 Complex Pin-header

This complex Pin-header consists of the following connectors for various supports:

① SMI	GND — GND	⑤ Suspend LED
	SMI SIGNAL — SUSPEND LED SIGNAL	
② Power Switch	Vcc	
	ATX POWER SWITCH — GND	Keylock ⑥ **(Optional)**
	KLOCK	
③ Infrared(IR)	Vcc — GND	Power LED ⑦
	NO CONNECTION — NO CONNECTION	
	INFRARED TRANSMIT SIGNAL — Vcc	
	GND	
	INFRARED TRANSMIT SIGNAL — GND	Reset Switch⑧
	— RESET SIGNAL	
	Logic High (+) — SPEAKER SIGNAL	
④ 2nd HDD LED	HDD LED SIGNAL (−) — GND	
	HDD LED SIGNAL (−) — NO CONNECTION	Speaker⑨
1st HDD LED	Logic High (+) — Vcc	

(1) SMI Connector (Optional):
   Connection: Connected to the case-mounted Suspend Switch.
   Function: Manually selecting system into the Suspend
   Mode or "Green Mode" by System mangement interrupt.

(2) Power Switch Connector:
   Connection: Connected to a momentary button or switch.
   Function: Manually switching the system between "On" and
   "Soft Off". Pressing the momentary button for more than 4
   seconds will also turn the system off.

(3) IR Connector (Infrared Connector):
   Connection: Connected to Connector IR on board.
   Function: Supporting wireless transmitting and receiving module
   on board.

(4) 1st HDD LED Connector/2nd HDD LED Connector:
   Connection: Connected to HDD LED.
   Function: To supply power to HDD LED.

(5) Suspend LED Connector:
   Connection: Connected to Suspend Indicator.
   Function: To supply power to "Suspend Indicator".

(6) keylock Connector (Optional):
   Connection: Connected to keyboard.
   Function: To lock keyboard and disable keyboard function.

(7) Power LED Connector:
   Connection: Connected to System Power LED.
   Function: To supply power to "System Power LED".

(8) Reset Switch Connector:
   Connection: Connected to case-mounted "Reset Switch".
   Function: To supply power to "Reset Switch" and support
   system reboot function.

(9) Speaker Connector:
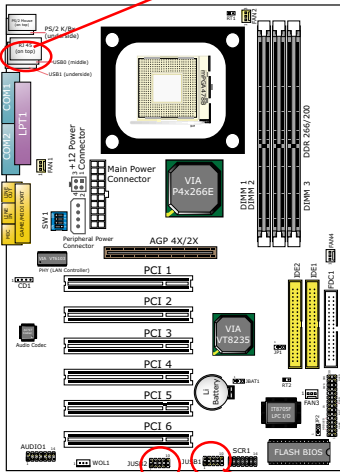   Connection: Connected to the case-mounted Speaker.
   Function: To supply power to the case-mounted Speaker.

2-9.9 USB Ports and USB Pi-headers

This series provides two USB ports USB0 and USB1 on board supporting various USB devices. In addition, pin-headers JUSB1 and JUSB2 are added on board to provide expansion of 4 more optional USB ports by using two additional USB Cables. User can order the optional USB cables from your mainboard dealer or vender.
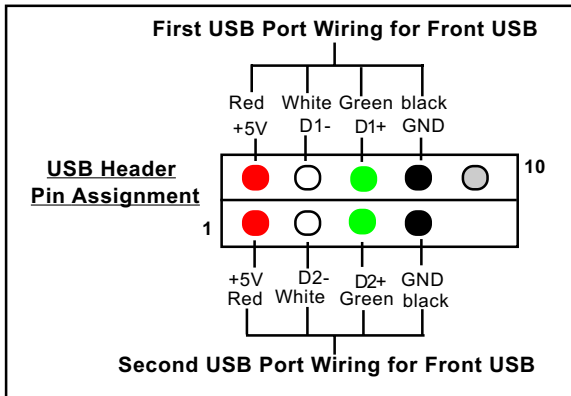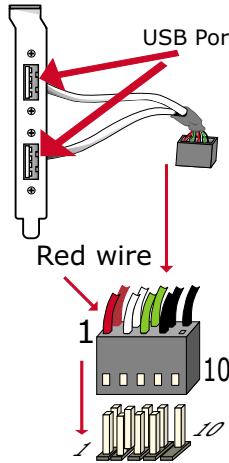
When plugging the USB cable to USB Header , user should make sure the red wire is connected to Pin 1.

USB Ports USB 0 & 1(underside)

USB Cable (Optional)

USB Port

Red wire

1

10

Pin-header JUSB2 / JUSB1

First USB Port Wiring for Front USB

Red   White Green black
+5V   D1-   D1+   GND

**USB Header
Pin Assignment**

10

1

+5V   D2-   D2+   GND
Red   White Green black

Second USB Port Wiring for Front USB

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2-9.10 Audio 1: 6-channel Sound Output Connector (optional)

This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.

6-channel Audio-out Pin Assignment

Pin 1 LFE-out	Pin 2 Gnd
Pin 3 Center-out	Pin 4 Gnd
Pin 5 Surround-out-R	Pin 6 Gnd
Pin 7 Surround-out-L	Pin 8 Gnd
Pin 9 Jack-detect	Pin10 (Void)
Pin11 SPDIFI	Pin12 Gnd
Pin13 SPDIFO	Pin14 Gnd

2-9.11 SCR1: Smart Card Reader Connector

The connector "SCR1" allows you to use Smart Card Reader. It is compliant with Personal Computer Smart Card (PC/SC) working group standard and Smart Card (ISO 7816) protocols.

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Chapter 3 Software Setup

Drivers, Utilities and Software Installation

Support CD:
This series will be shipped with a Support CD which contains those necessary driver files, Application Softwares and some helpful utilities. It is a user-friendly, auto-run CD which will open itself up in a CD-ROM automatically.

Contents of Support CD:
User can find in the Support CD the following drivers and utilities:
   1. VIA 4-in-1 Drivers
   2. AC'97 Audio Drivers
   3. VIA USB 2.0 Drivers
   4. Hardware Monitor Utility
   5. Other drivers (including VIA6183 LAN drivers)

   This chapter is devoted to describing the installations of all these essential drivers and utilities on Windows 9X, Windows ME , Windows 2000 and Windows XP. The installation procedures for all these operating systems are programed into an auto-run mode. What users have to do is follow the pop-up instructions. Please take the installation on Windows 98 as the general illustration hereby.
   The priority of driver installation should also be noted. Users are recommended to take the following installation order:

3-1 Open Support CD and choose your drivers
3-2 4-in-1 Drivers Installation
3-3 AC'97 Audio Drivers Installation
3-4 USB 2.0 Drivers Installation
3-5 Hardware Monitor Utility Installation
3-6 VIA6183 LAN Drivers Installation

3-1 Open Up Suport CD

1. Please put the Support CD enclosed in your mainboard package into the CD-ROM drive. In a few seconds, the Main Menu will automatically appear, displaying the contents to be installed for this series:
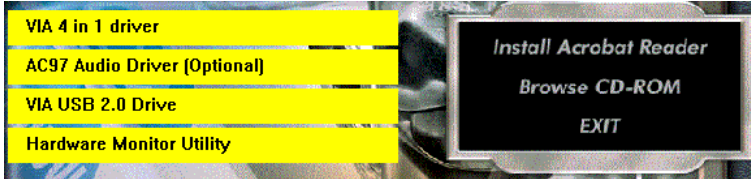
2. In case your system does not open the Support CD automatically, please click to the following path to enter the Main Installation Menu:

   D:\ Autorun.exe (assuming that your CD-ROM Drive is Drive D)

3. Users are recommended to install "VIA 4-in-1 Driver" as first installation priority to optimize the VIA system. After VIA 4-in-1, user can install either the next driver in the Main menu or choose randomly from the rest of the menu list.
   From next section, we provide detailed descriptions of all these installations with graphical illustrations.

3-2 Proceed to VIA 4-IN-1 Drivers Installation

1. Following the procedures of opening the Support CD, click to " VIA 4-in-1 Drivers" to proceed.

2. The VIA Service Pack InstallShield Wizard will pop up to guide you to the VIA Service pack installation. Click "Next" button to continue.


3. "VIA Service Pack README" screen will appear, please click the "Yes" button to agree with the Licence Agreement and continue.
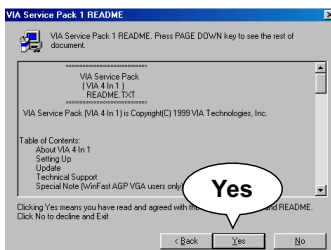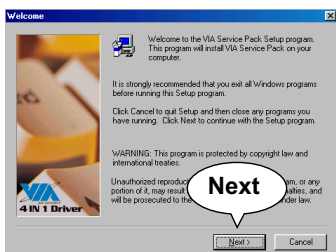

4. On the screen below, check "Normally Install" and click "Next" to continue. (If you check "Quickly Install", you will skip the detailed procedures of the VIA 4-in-1 Setup.)

5. Select the checkbox as below and click "Next" to continue:
☑ VIA ATAPI Vendor Support Driver
☑ AGP VxD Driver
☑ IRQ Routing Miniport Driver
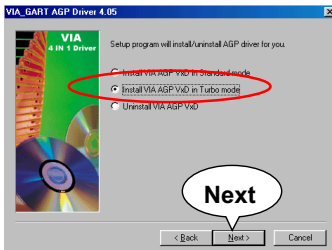☑ VIA Chipset Function's Registry
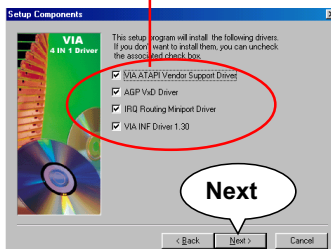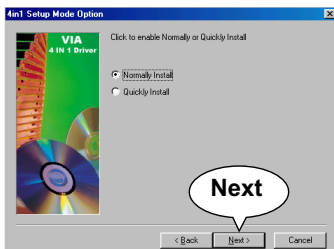
6. Select "Install VIA ATAPI Vendor Support Driver" checkbox, then click the "Next" button to continue.
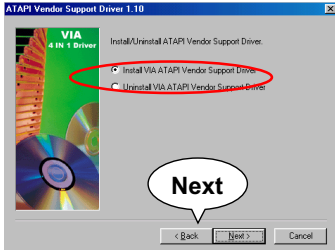
7. Click on "Click to enable DMA Mode" checkbox to enable DMA function, then click the "Next" button to continue.
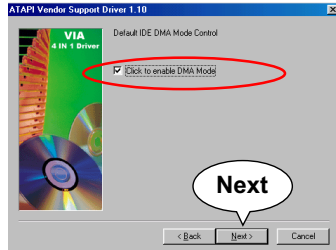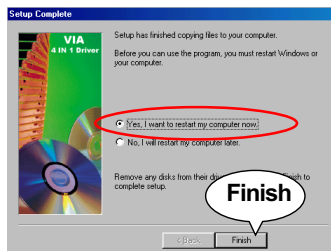

8. Select "Install VIA AGP VxD" in turbo mode and press "Next" button to continue.

9. Select "Install VIA IRQ Routing Miniport Driver" checkbox, then click the "Next" button to continue.
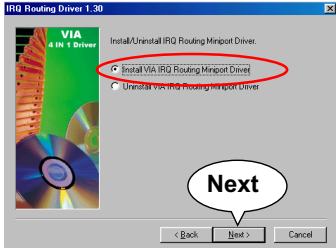
10. After all these setup procedures have finished, you should restart your computer by clicking on **"Finish"** so as to put VIA 4-in-1 drivers into effect and proceed to second driver installation.

3-3 AC'97 Audio Driver Installation

Avance AC97 Audio Codec on board, AC'97 2.2 compatible, supporting:
• up to 6 channels of PCM audio output
• 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Woofer for complete surrround sound effect

### 3-3.1 Driver Installation for 2-channel/6-channel

1. Following the procedures of opening the Support CD, click to " AC'97 Audio Driver" to proceed.

2. Instantly, the "installShield Wizard" screen appears to guide you through the "Avance AC'97 Audio Setup"".
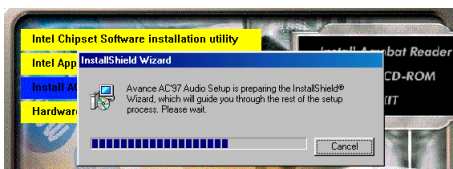
3. Instantly, the Setup program proceeds to install the softwares which include AC'97 driver and AVRack. (If you want to stop setup, click the "Cancel" button.)
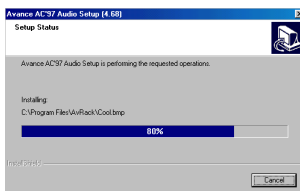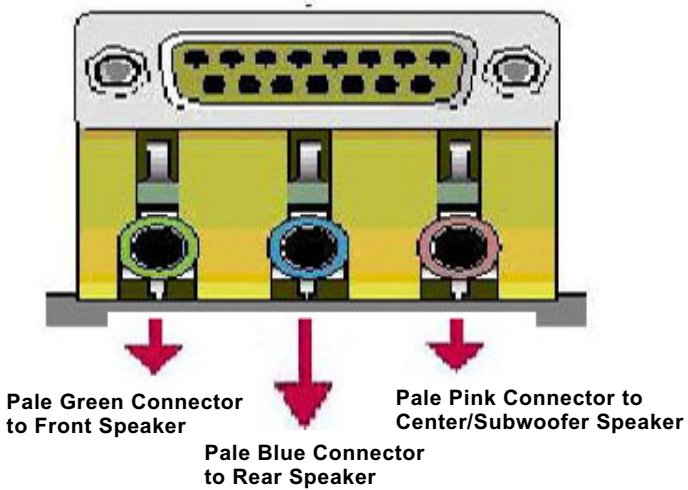

4. After the setup process is finished, please check the radial button "Yes, I want to restart my computer now." and click "OK" to restart your system.
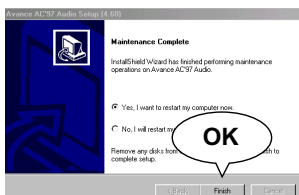
3-3.2 6-channel Verification

After installation of AC'97 6-channel Codec, you must configure the 5.1 Speaker connection to enable the 6-channel audio.

1. Connect your on-board Audio Connector to your 6-channel speakers as depicted in the figure below:

Pale Green Connector to Front Speaker

Pale Blue Connector to Rear Speaker

Pale Pink Connector to Center/Subwoofer Speaker

2. After Connection is done, start your Windows system and double click the Avance Sound Effect manager icon to enter 6-channel configuration:
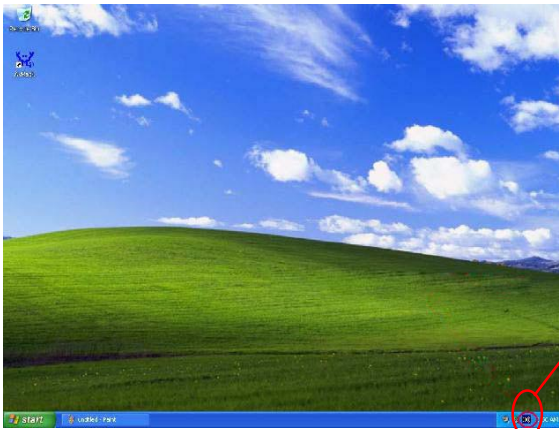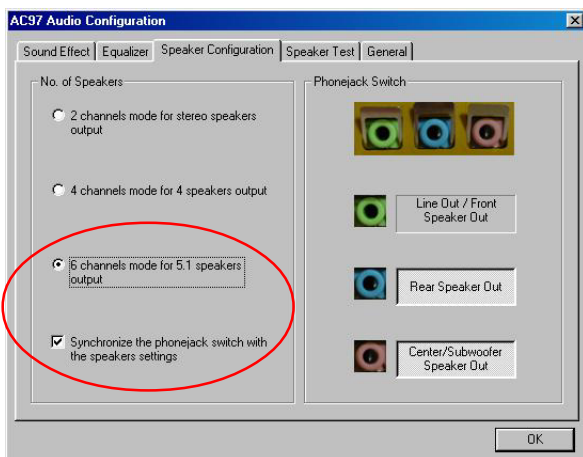

**Sound Effect Manager icon on Win XP**

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3. The AC'97 Audio Configuration" screen will pop out. Clikc the "Speaker Configuration" bar with your mouse.
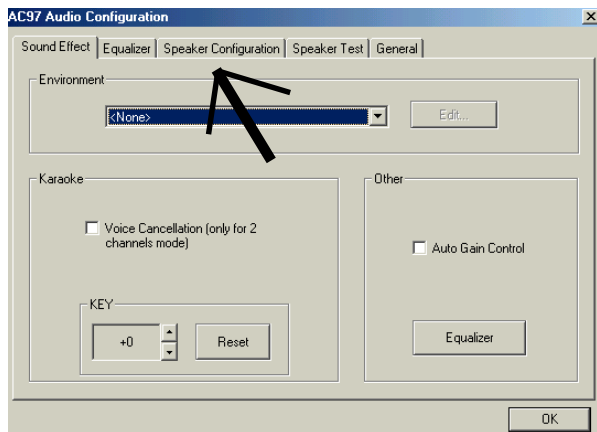
4. Instantly, the "Speaker Configuration" screen will pop out. Pick the items "6-channel mode for 5.1 speakers output" and " Synchronize the phonejack switch with the speakers settings" and then click "OK" to finish configuration.

5. At finishing the Speakers Configuration, you can also click the "Speaker Test" bar on the screen to test the 6-channel performance. The figure below is the "Speaker Test" screen with testing instructions enclosed on it. Follow the instructions to perform the Speakers Test.
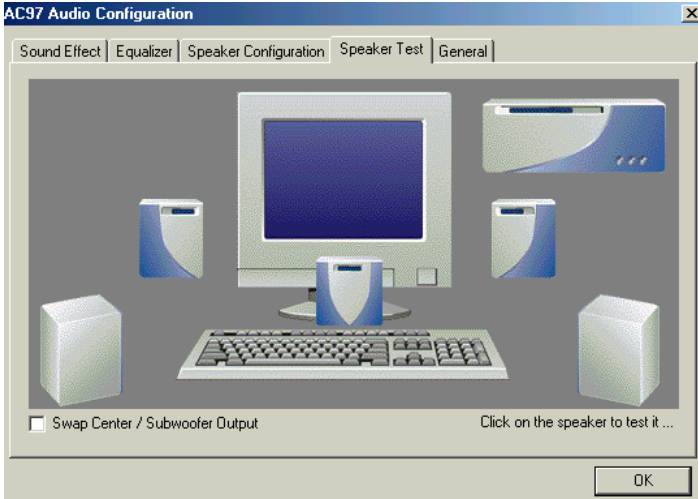
3-4 Install USB 2.0 Driver for Win98 / Me / 2000 / XP

VIA USB V2,0is already integrated on board. Its 480Mb/s transfer rate supports operating system Win98/Me/2000/XP. USB Driver installation procedures are of similar steps in these systems. Please take the following illustrations from Win XP as the USB driver installation guide:

1. Following the procedures of opening the Support CD, click to "Motherboard Drivers" and then choose "VIA USB 2.0 Driver" to proceed. Please notice that the USB card driver is different from the USB 2.0 driver typically for the on-board USB. Do not use the USB card driver here.

2. Instantly the "USB 2.0 Setup Program" will pop up on screen. Click "Next" to continue.
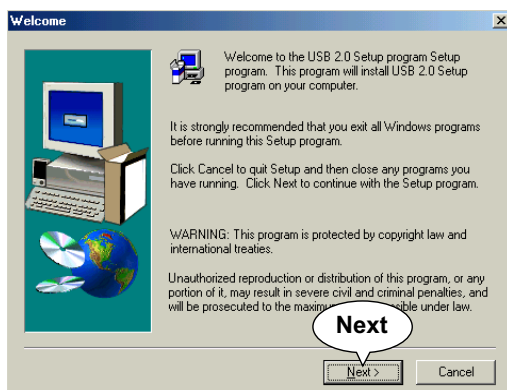
3. Instantly, next screen will pop up to prompt you to select component. Select "Install USB Driver" and click "Next" button to continue.
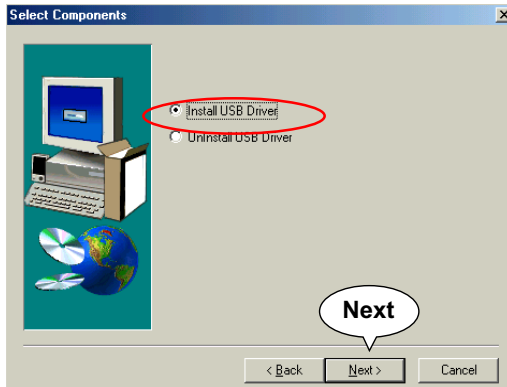
4. The USB 2.0 Setup Program will then guide you through the whole driver setup until the "Finish" screen appears to prompt you to restart your system. Please click "Finish" button to restart system to put the new driver into effect.
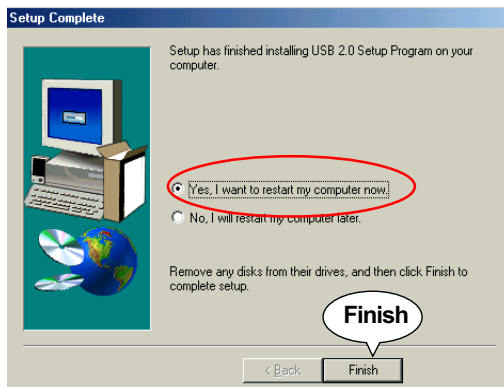
3-5 Install Hardware Monitor Utility

3-5.1 Installation

Hardware Monitor is built in chip IT8705F of this series. Its in-
stallation is programed to a fully automated mode on Windows 9X/
Me/NT4/2000/XP. User can follow the model installation below for
its installation on various Windows System.

1. Following the procedures of opening the Support CD, click to "
   Hardware Monitor Utility" to proceed.

2. Instantly the " Smart Guardian Setup" screen appears to announce
   the setup of Hardware Monitor software "Smart Guardian".

3. Next, the Setup Program will
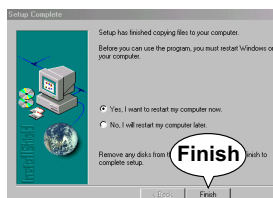   suggest to you the destination
   directory where the "Smart
   Guardian" will be installed. Select
   the Program folder and click "Next"
   to continue.
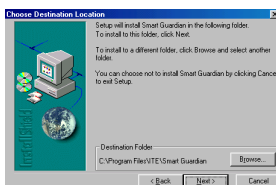
4. Instantly, Setup Program starts to
   copy files and install the software.
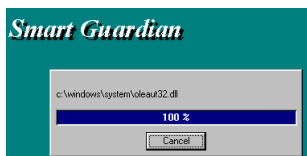
5. In one or two second, the "Setup
   complete" screen appears. Click
   "Finish" to restart your computer so
   that the Utility can be put into effect.

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3-5.2 Verification

1. After restarting your computer, click "Start" and choose the path \Programs \ITE Smart Accessories\ITE Smart Guardian to open the main window of the Hardware Doctor.
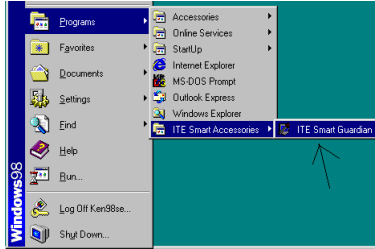
2. Instantly, the Smartguardian Main Panel appears, telling you the CPU current temperature, CPU current Voltage and Current fan speed.

3-6 Install VIA LAN Drivers (for 85DRV5-L only)

3-6-1. VIA6183 LAN driver on Windows 9X

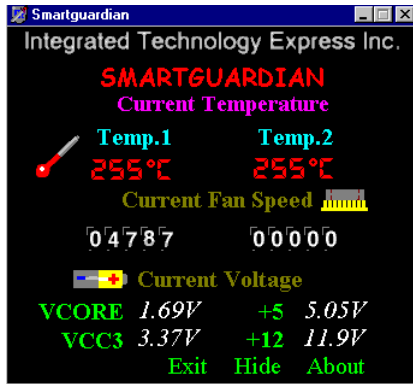The LAN driver contained in the Support CD is not included in the Autorun Menu. To install VIA LAN driver on Windows 9X, please follow the steps shown below:

1. On the "Start" screen of your system, please click to the following path:

    \My Computer\properties\Device manager

2. In the "Device manager" screen, you can see the item " PCI Ethernet Controller" with a yellow question mark on its left side, which indicates that the LAN controller is already detected by system but the driver for the on-board LAN Ethernet Controller is not installed yet. Please point to this item with your mouse and double click on it (or click the "Properties" button).

3. Instantly, the "PCI Ethernet Controller Properties" screen shows up. Please click the "General" bar to continue.

4. In the "General" screen, click "reinstall Driver" button to continue. Please note that the status of "Device Usage" should stay at "Exists in all hardware profiles".
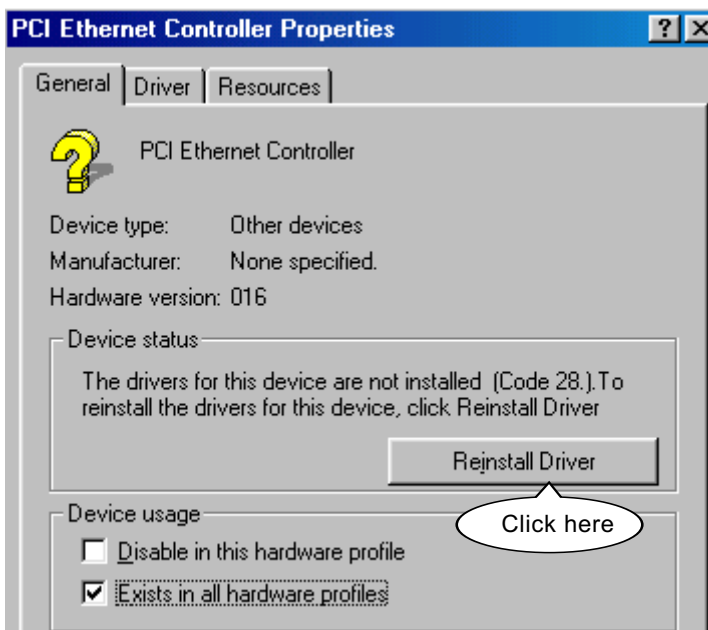
5. In the "Update device Driver Wizard" screen, click "Next" to continue until you see a dialog box asking you to "Specify a location" for the driver. You should **now** insert the Support CD into your CD-ROM.
6. As illustrated in the picture below, check the item "Specify a location" and click the "Browse" button to find out the correct path for the driver. Supposing your CD-ROM drive is Drive E, please type:
    E:\Driver\Network\VIA6183 into the blank bar. (If you are installing on Win 95OSR2, you should type W95OSR2 instead of Win98.) Then click the "Next" button to continue.

Enter the correct path for the location of LAN driver
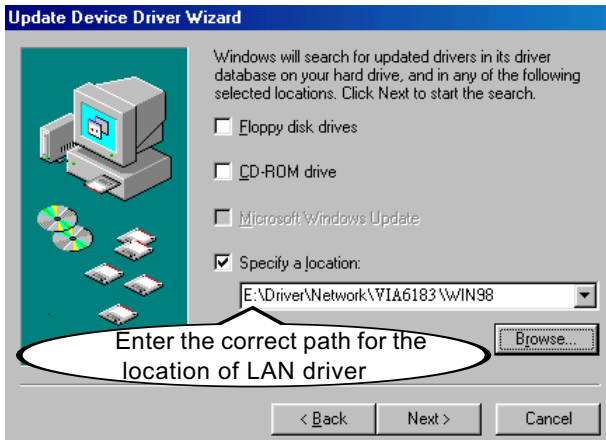
7. The Update Device Driver Wizard will then go on installing the driver, until the "Insert Disk" dialog box shows up. Please withdraw your Support CD and insert the Win 98 CD-ROM into the CD-ROM drive for updating system and click "OK" to continue.
8. The Update Device Driver Wizard will then proceed to update the system with the LAN driver. When the "Finish" screen shows up, click "Finish" to continue.
9. Final Dialog box will appear to remind you that you must restart your computer to finish updating the new hardware. Please click "Yes" to restart system and finish the LAN driver installation.

3-6-2. VIA6183 LAN driver on Windows NT4.0

1. When you newly install Win NT4, the Setup program will ask you whether your computer will participate on a network. please check "Do not connect this computer to a network at this time" and continue with your installation. That means, you are going to install the LAN Adapter and driver after you have finished system installation. By this way, you will set up your LAN Adapter and driver more surely.

2. If you have now installed Win NT4 in your computer, please boot your system and in the "Start" screen click the following path to install your computer networking:
   \Start\Settings\Control Panel\Network (double click)

3. Instantly, a dialog box pops up, asking you, "Windows NT Networking is not installed. Do you want to install it now?" Please click "Yes" to continue.

4. The Network Setup Wizard will then proceed to guide you to the installation of LAN Adapter and Driver, until the "Select Network Adapter" screen pops up, on which you should click "Have Disk" to install the on-board VIA LAN Controller.

5. Instantly, the "Insert Disk" dialog box pops up. You should **now** insert the Support CD into your CD-ROM drive, and then type to the white bar the correct path for the location of the LAN driver. Supposing your CD-ROM drive is drive D, please type the following path:
   D:\Driver\Network\VIA6183\Winnt4 and click "OK" button to continue.

6. Instantly, the Setup program detects the "VIA PCI 10/100MbFast Ethernet Adapter" and shows it on the "Select OEM Option" screen. Please click "OK" to continue.

7. The Setup program will then proceed to install the VIA PCI LAN Adapter and then other networking components such as TCP/IP protocol.

8. During the setup process, if "windows NT Setup" needs to copy some Windows files, you should then withdraw the Support CD and insert back the Win NT4 CD-ROM into your CD-ROM drive to continue.

9. After you have finished other networking components setup, you should restart your syustem to put all the new setups into effect.

10. To verify that the onboard VIA LAN Controller has been set up in system, please click "Start", then "Control Panel", then "Network".

11. In the "Network" screen, click the "Adapter" bar. You can now see the "VIA PCI 10/100Mb Fast Ethernet Adapter is already installed in system.

3-6-3. VIA6183 LAN driver on Win ME / 2000 / XP

1. When you newly install Windows ME , Windows 2000or windows XP, the system will detect the LAN Controller on board and configure it automatically into system. Therefore, user needs not bother to install the LAN controller into these operating systems.

2. To verify the existence of VIA6183 LAN Controller and Driver, please enter the "Control Panel" of your system and click "Network" to open the "Configuration" screen. You can then see the "VIA PCI 10/100MbFast Ethernet Adapter" is already installed in system.