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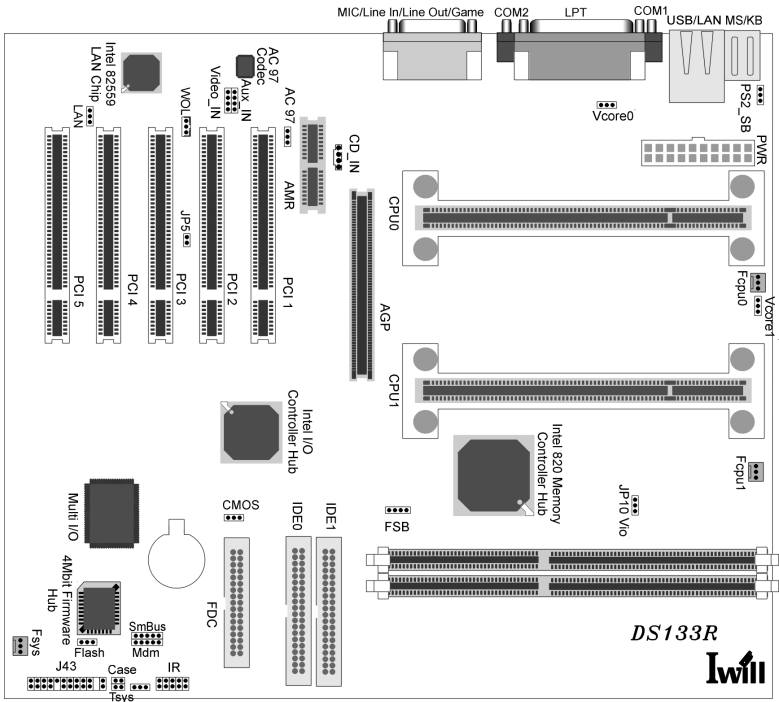
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Chapter 1

Quick Installation

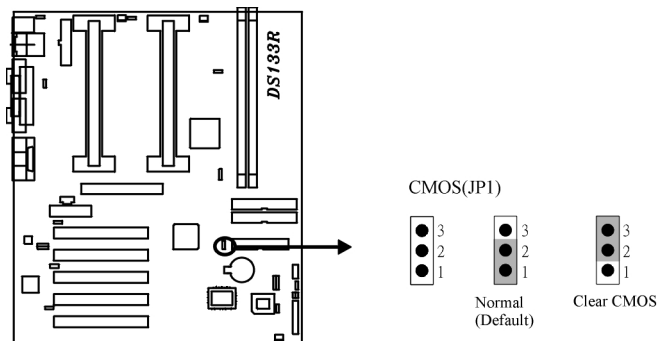
Several easy installation steps will be described in this chapter to help the experienced users with quick installation. If you are a beginner, or need to know more about this product, please refer to Hardware Setup.

1.1 Layout



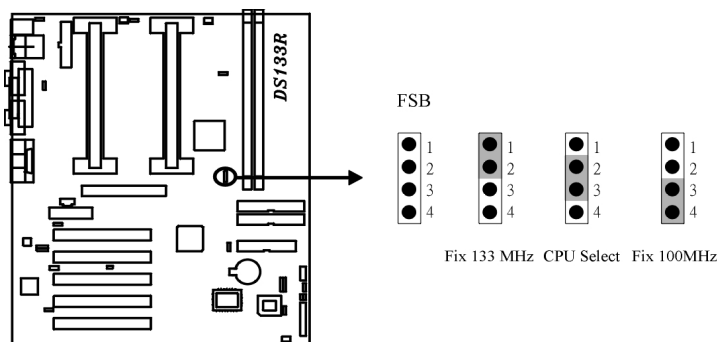
1.2 Jumpers

1.2.1 JP1 (CMOS) Clear CMOS jumper



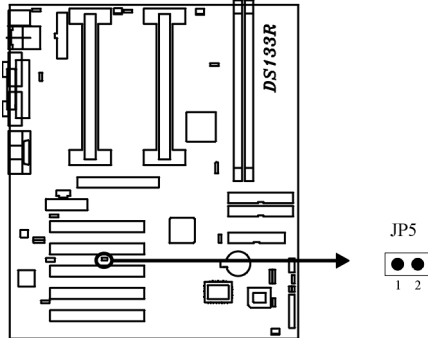
1.2.2 JP3 CPU FSB select jumper (FSB)

This jumper allow the selection of the CPU's based external frequency. The CPU "External Frequency" multiplied by the "Frequency Multiple" equals the CPU's "Internal Frequency". Currently, most of the processors have the Frequency Multiple locked, so you only need to select the External Frequency. Most of the time, you can leave these jumpers on their default setting and the based external frequency will be determined by CPU automatically.



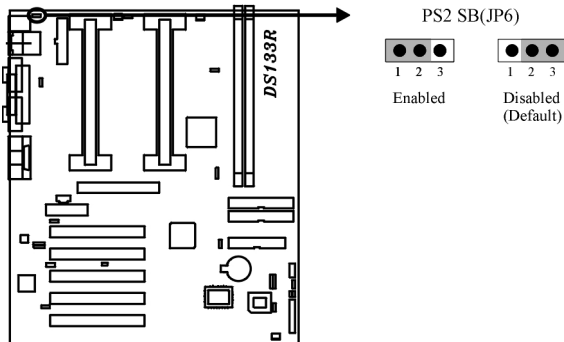
1.2.3 JP5 PCI compatibility jumper (JP5)

JP5 is designed to solve the compatibility problem for older PCI VGA cards. Using some older PCI VGA cards on PCI Rev2.1 compliant motherboards, particularly PCI 2.0 specification cards, may cause some of the screen's pixels to function improperly.



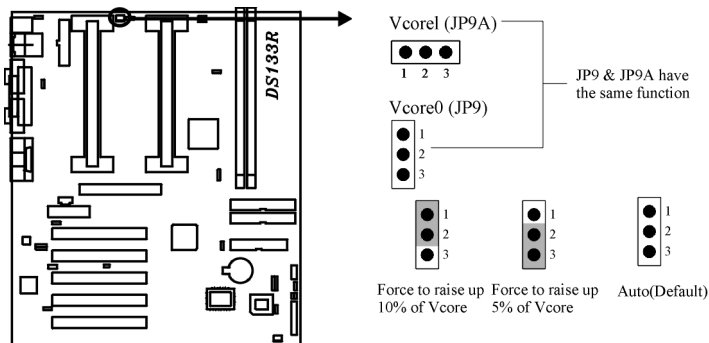
1.2.4 JP6 (PS2_SB) PS/2 power standby jumper

This jumper is used to select the power well of PS/2 ports. The feature "power on by keyboard / mouse" can be enabled or disabled by this jumper.



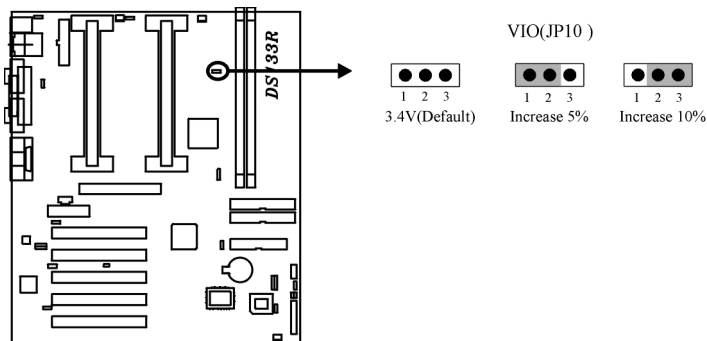
1.2.5 JP9&JP9A (Vcore0+ & Vcore1+) Vcore booster jumper

This jumper is used to select the CPU core voltage.



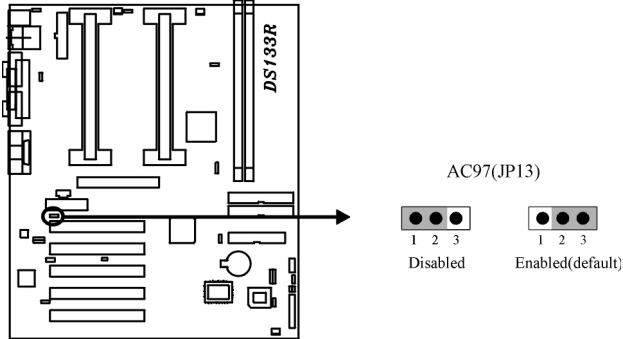
1.2.6 JP10 (VIO) VIO select jumper

This jumper is used to select the VIO voltage.



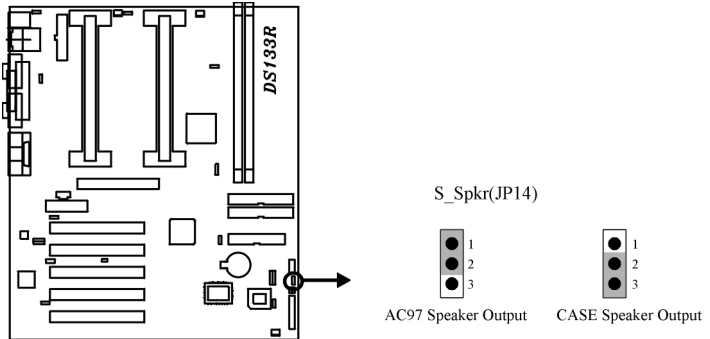
1.2.7 JP13 (AC 97) AC97 Codec Enabled / Disabled jumper

This jumper is used to enable / disable the onboard audio CODEC.



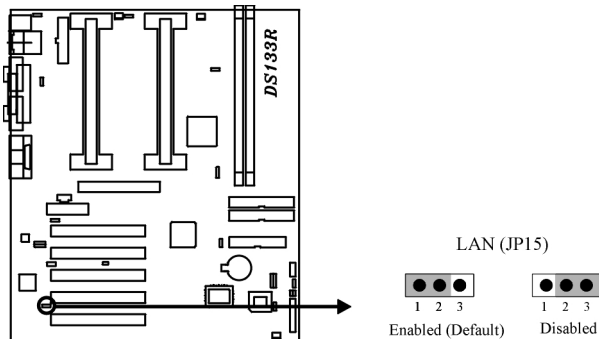
1.2.8 JP14 Speaker Souce Select jump(S-sprkr)

This jumper is used to select the Speaker source protected mode.



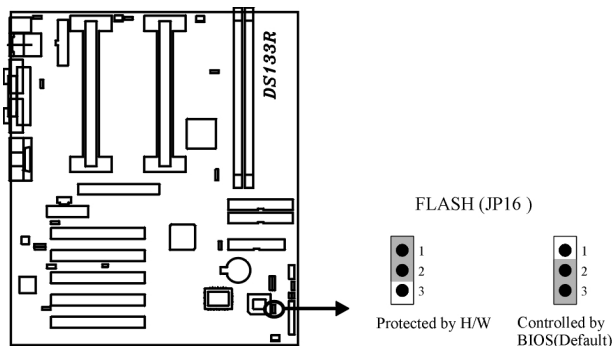
1.2.9 JP15 LAN Enabled / Disabled jumper (LAN)

This jumper is used to enable / disable the onboard LAN chip.



1.2.10 JP16 Flash protect jumper (FLASH)

This jumper is used to select the Flash ROM protected mode.

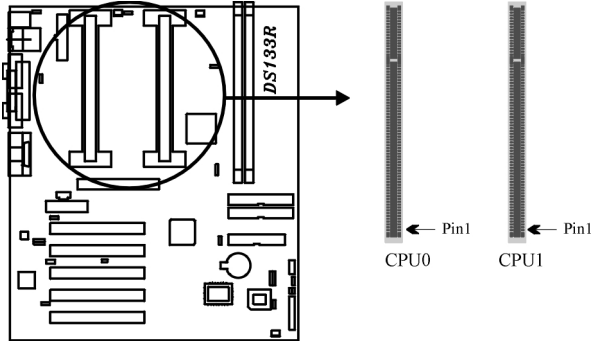


Do not leave JP16 without any cap.

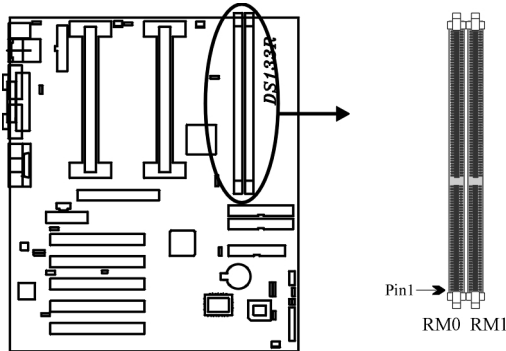
1.3 Expansion Slots / Sockets

1.3.1 J1&J2 (Slot1) Processor connector

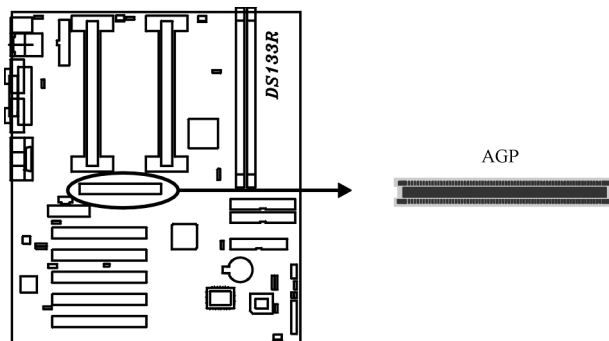
Slot1 is Single Edge Contact (SEC) CPU slot. The slot1 connectors located on J1&J2.



1.3.2 J3-J4(RM0—RM1) 184-Pin RIMM Sockets

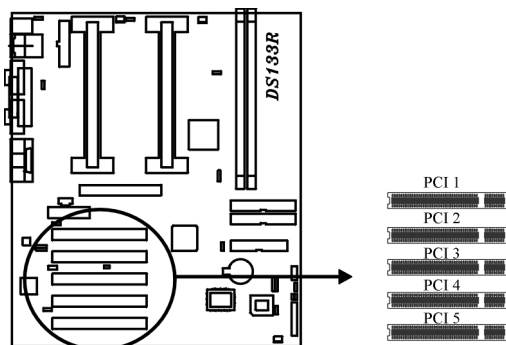


1.3.3 J11 (AGP) AGP Slot

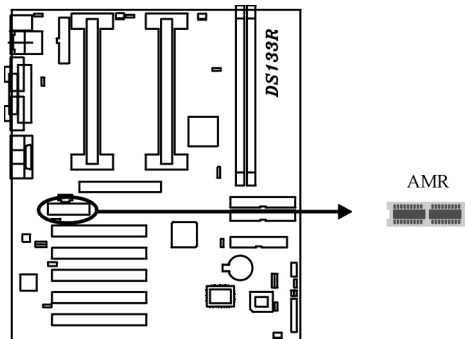


1.3.4 J12-J16 (PCI 1—PCI 5) PCI expansion slots

The connectors are Bus Master PCI Expansion Slots.

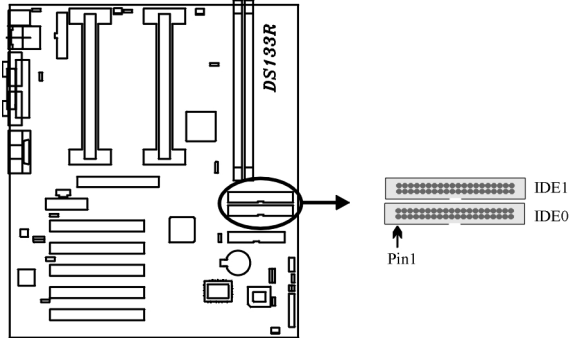


1.3.5 J27 (AMR) AMR Slot



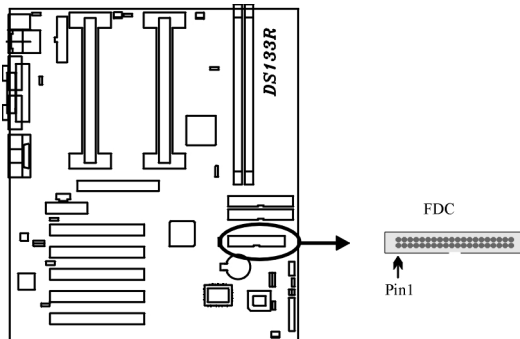
1.4 Connectors

1.4.1 J28 (IDE0) Primary ATA/66 IDE channels

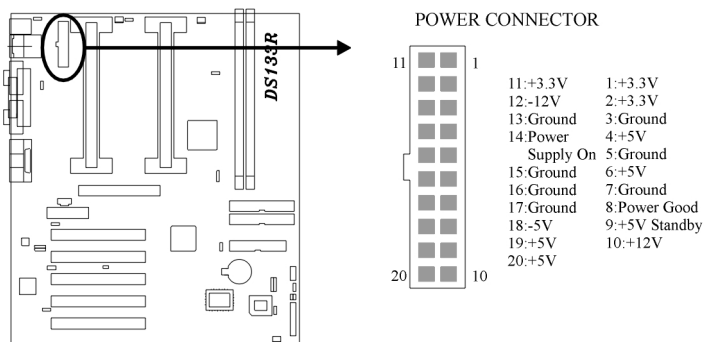


1.4.2 J29 (IDE1) Secondary ATA/66 IDE channels

1.4.3 J30 (FDC) Floppy connector

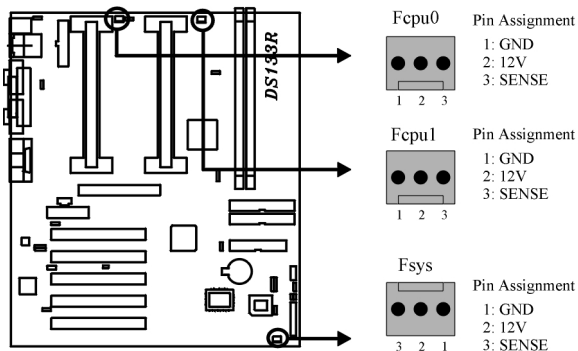


1.4.4 J37 ATX power connector

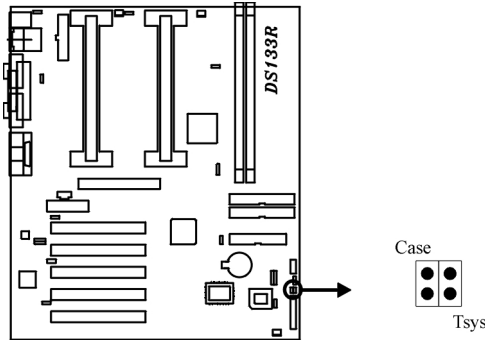


1.4.5 J39 (Fcpu0) & J40 (Fcpu1) & J41 (Fsys)

There are three fan connectors on this motherboard. The J39&J40 (Fcpu0 & Fcpu1) is designed to support CPU fan; the J41 (FSYS) is for system fan used .



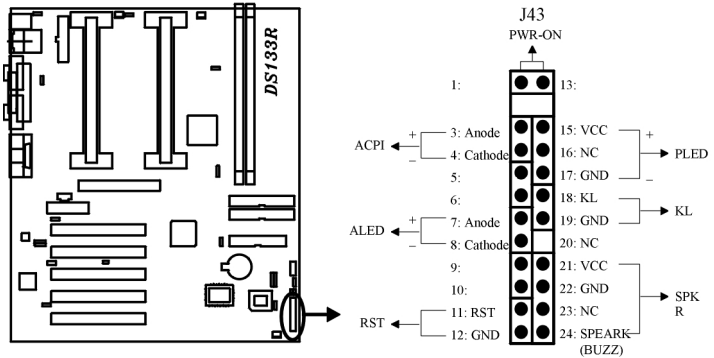
1.4.6 System temp. sensor header (Tsys) (J41A)



1.4.7 Chassis Intrusion Connector (CASE) (J42)

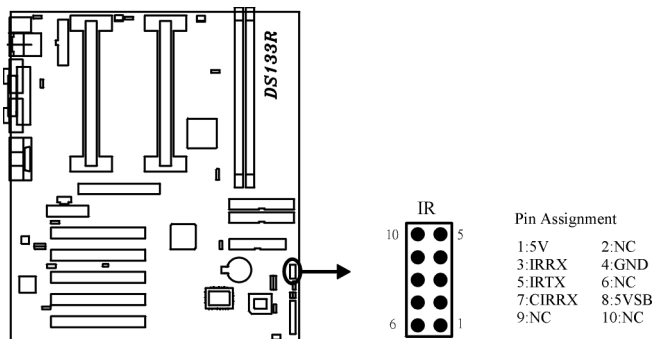
1.4.8 J43

This connector is composed of all the headers that may be connected to the front panel of the chassis.



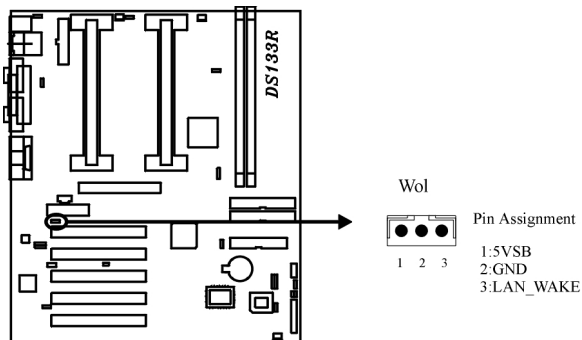
1.4.9 J45(IR)

This connector is designed for the FIR/CIR devices.



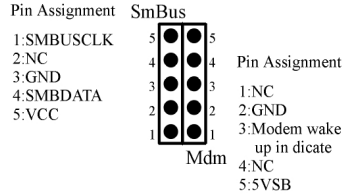
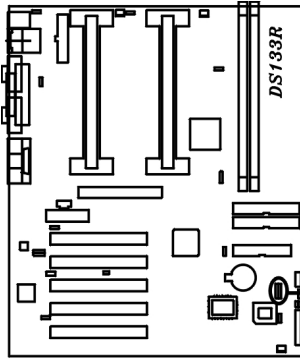
1.4.10 J46 (WOL)

This is the Wake-on-LAN connector. In order to wake up the system through a plug-in network card, the card must provide a high active wake signal.

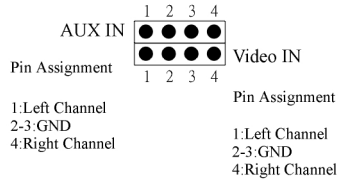
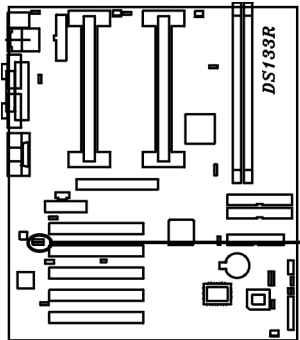


1.4.11 J47 (Mdm)

1.4.12 J48 (SMBUS)

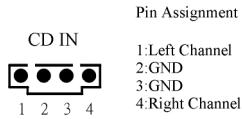
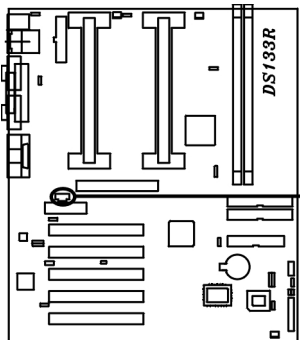


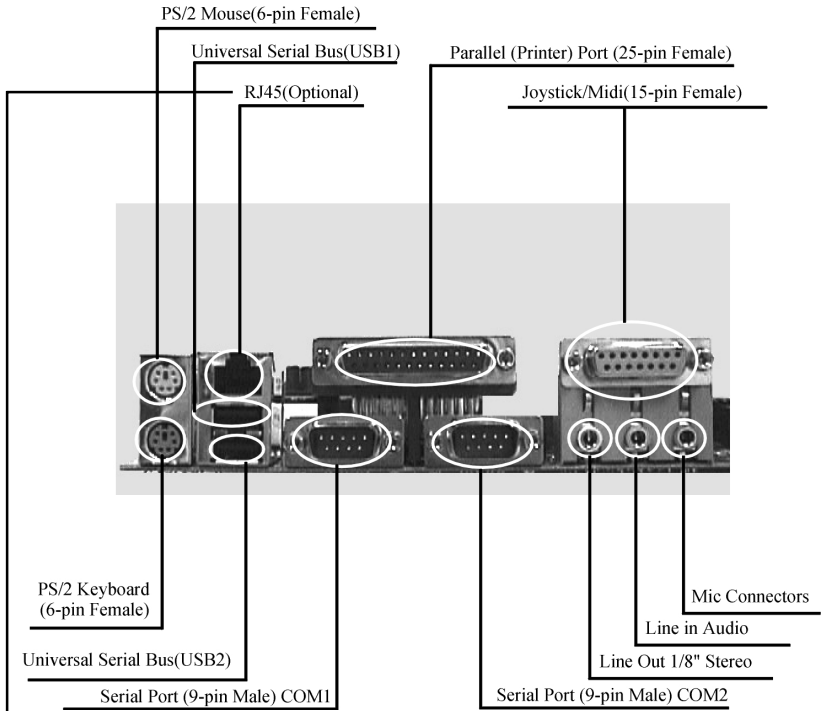
1.4.13 Aux_IN&Video_IN (J53)



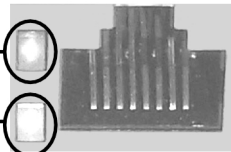
1.4.14 J54 (CD_IN)

The audio output can be transferred form CD-ROM to the audio system.



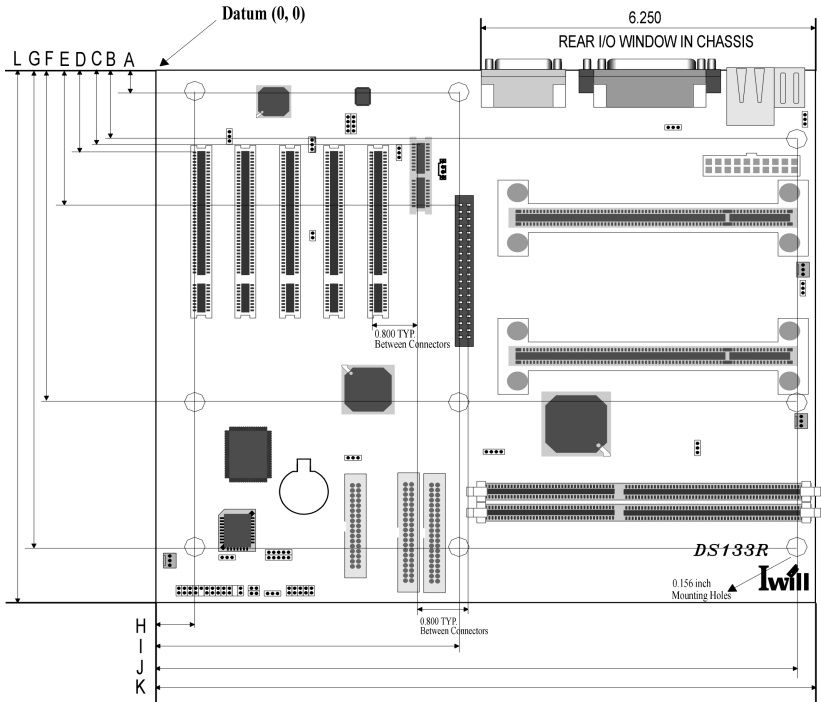


→ The upper light indicates the status of LAN.
 When light is on means LAN is connected.



→ The lower light indicates the status of data.
 When light is on means data is transmitting.

1.5 Form Factor



- | | |
|----------------|----------------|
| A: 0.400 inch | H: 0.650 inch |
| B: 1.300 inch | I: 5.550 inch |
| C: 1.460 inch | J: 11.750 inch |
| D: 1.625 inch | K: 12.000 inch |
| E: 2.630 inch | |
| F: 6.500 inch | |
| G: 9.350 inch | |
| L: 10.390 inch | |

Chapter 2

Overview

Thank you for purchasing the IWILL DS133R motherboard. This operation manual will instruct you how to configure and install the system properly. It contains an overview about the engineering design and features of this product. Also, this manual provides useful information for later upgrades or configuration changes. Keep this for your future reference.

About This Manual

This manual will introduce to the user how this product is installed. All useful information will be described in later chapters. Keep this manual for future upgrades or system configuration changes.

Chapter 1 Quick Installation	The quick reference for experienced user
Chapter 2 Overview	An overview of this motherboard
Chapter 3 Features	Information and specifications
Chapter 4 Hardware Setup	Information for setting up the motherboard
Chapter 5 BIOS Setup	Information for setting up the system BIOS
Chapter 6 Power Installer CD	Information for the Power Installer CD

Item Checklist

You should find the following components when opening the box:

- Iwill motherboard
- This operation manual
- One 40-pin/80-thread ATA/66 IDE cable with three heads
- One 34-pin Floppy cable with four heads
- One Continuity Module (C-RIMM)
- One Iwill Power Installer CD
- Bag of spare jumper caps
- One Standard ATX IO Shield(DS133R-N only)
- two in 1 Retention Kit

Optional

- Thermal Sensor for HDD
- Thermal Sensor for System
- Iwill SIDE-Pro66 PCI ATA/66 IDE controller
- Iwill SIDE-2930C PCI Fast SCSI controller
- Iwill SIDE-2930U+ PCI Ultra SCSI controller
- Iwill SIDE-2936UW PCI Ultra Wide SCSI controller
- Iwill SIDE-2935LVD PCI Ultra2 SCSI controller
- Iwill SIDE-DU280 PCI Dual channel Ultra2 SCSI controller
- Iwill SIDE-DU3160 PCI Dual channel Ultra160 SCSI controller
- MR card

Introduction

The DS133R motherboard is the most flexible platform in today's market based on the newest Intel® 820 chipset. A major advancement in chipset technology, 820 chipset support single Direct RAMBUS channel for up to 32DRDRAM devices.

This motherboard supports single and dual the Deschutes / Katmai / CuMine processors. It can support the processors that packed as a SEPP/SECC/SECC2 CPU package. In other words, no matter what kind of processors you have, the DS133R motherboard always provides you an adequate solution.

There are two RIMM sockets on the motherboard, using 256M/128M/64M technology maximum memory up to 1G/512MB/256MB. The 820 chipset support AGP 4X/2X/1X AGP mode. The original investment can be guaranteed by five bus-master PCI slots design. The PC99 compliant colorful connectors and the easy jumper setting provide the user more convenience. Besides that, the robust feature, well-prepared documents and the powerful software CD support make this motherboard the best choice of the value segment.

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All other product names are trademarks and registered trademarks of their respective owners.

Warning

Most of the features of this product have passed strict verification tests, and are subject to change at any time without prior notice. If any malfunction occurs due to the future technical changes made by the respective component manufacturers, Iwill assumes no responsibility or liability for it.

Notice

Information furnished in this manual is believed to be accurate and reliable. However, Iwill Corporation assumes no responsibility for its use, nor for any infringements of patents or other rights of third parties which may result from its use. Iwill Corporation reserves the right to change product specifications at any time without notice. Applications described in this document for any of these products are for illustrative purposes only. Iwill Corporation makes no representation nor warranty that such applications are suitable for the specified use without further testing or modification. Iwill Corporation assumes no responsibility for any errors that may appear in this document.

YEAR 2000 issue

All motherboard currently shipped from IWILL contain BIOS capable of handling the year 2000 data correctly.

The IBM compatible PC utilizes a Motorola MC146818 compatible Real Time Clock (RTC) chip to maintain the date and time. Unfortunately, the “century” is not manipulated by the RTC. It uses 8-bits of information to report the year, and can only hold the last two digits of a year in packed BCD format. For example, 1997 is reported solely as 97. Since the RTC also contains non-volatile memory, IBM has specified a location in the memory to hold “century” information. By combining the century data with the year data, software can obtain a full 4-digit year. When the Year 2000 arrives, the RTC reports the year as ‘00’ and the “century” in RTC memory will contain ‘19.’ Combining the full 4-digit year yields 1900, not 2000. Any application which compare dates, or uses relative dates to perform functions will see incorrect dates.

All motherboards contain BIOS, which is one of the key ingredients to check for systems designed to handle the year 2000. **All motherboards currently shipped from IWILL contain BIOS capable of handling the year 2000 date correctly.**

Be aware that the BIOS capability alone does not ensure that the system will handle the transition correctly. Other system components such as the operating system and application software also need to be able to handle the year 2000 date, and recognize the date format from other sources.

EC Declaration of Conformity

We

IWILL Corporation
No. 10, Wu Chuan 3rd Rd.,

Hsin Chuang City, Taipei,
Taiwan, R.O.C.

Declare under sole responsibility that the
DS133R motherboard

Meets the intent of Directive 89/336/ECC for Electromagnetic Compatibility. Compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

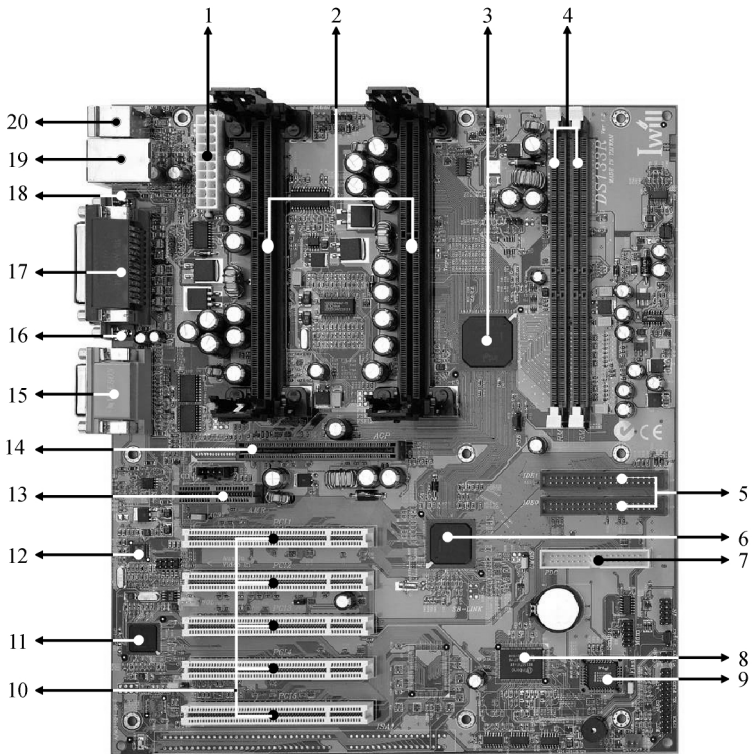
EN 50081-1	Emissions:
EN 55022	Radiated, Class B
EN 55022	Conducted, Class B
EN 60555-2	Power Harmonics
EN 50082-1	Immunity:
IEC	801-2 Electrostatic Discharge
IEC	801-3 RF Radiate
IEC	801-4 Fast Transient

Chapter 3

Features

This Iwill DS133R motherboard are well designed for the user. Who wants the most stable plat form, best performance/price ratio and convenience.

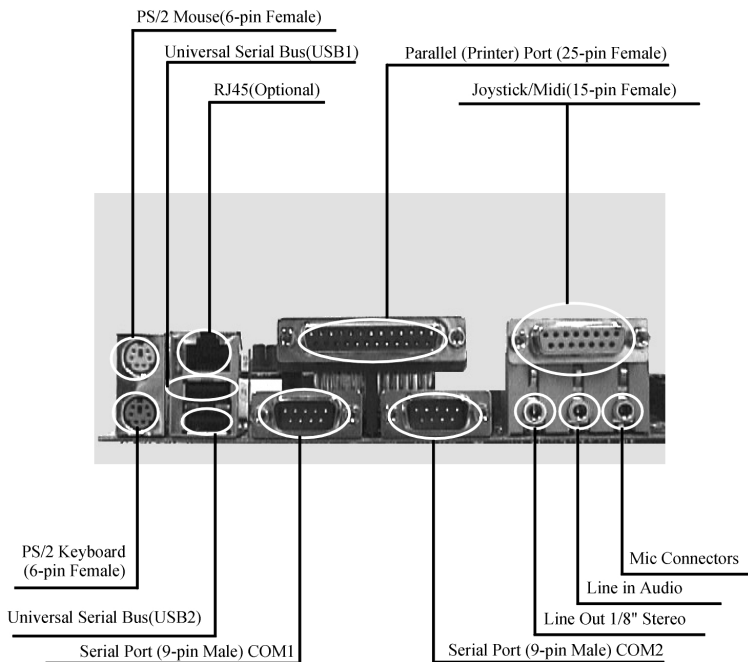
3.1 Motherboard Components Placement



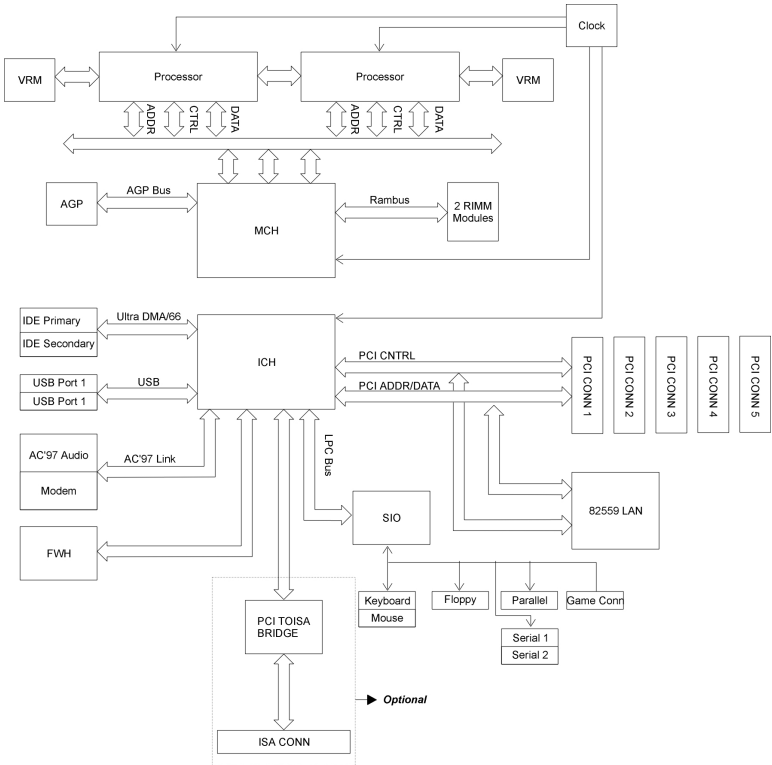
The following are part descriptions for the motherboard parts shown on the opper page.

1. **ATX Power Connector.**
2. **Primary / Secondary CPU slot.**
3. **Intel 820 MCH Chipset.**
4. **Two RIMMSockets.**
5. **Primary and Secondary IDE Connector.**
6. **Intel ICH Chipset.**
7. **Floppy Connector.**
8. **Multi-I/O Chip.**
9. **4Mbit FWH Hub Chipset (Programmable BIOS).**
10. **32 bit/33MHz Bus Master PCI Slot.**
11. **Intel 82559 LAN Chip.**
12. **AC97 Codec.**
13. **AMR Slot.**
14. **AGP Slot.**
15. **Joystick/Midi, Line out,Line in, Microphone In Connector.**
16. **COM2 Connector.**
17. **Parallel Connector.**
18. **COM1 Connector.**
19. **LAN and USB Connector.**
20. **PS/2 Mouse, PS/2 Keyboard Connector.**

3.2 Back Panel



3.3 Block Diagram



3.4 Specifications

Processor

Support dual Slot 1 connector with pre-installed URM (Universal Retention Mechanism)

Support single or dual Pentium® III / II processors

Support Katmai / CuMine CPU

Support 133MHz, 100MHz bus speeds

Support SEPP/SECC/SECC2 CPU package

Support PPGA370 /FC-PGA370 CPU through slocket converter

Supports processor speeds from 350 MHz to 600 MHz or higher

ChipSet

Intel® FW82820DP

Supports up to 2 processors

Supports 100/133 MHz system bus frequency

266,300,356,400 MHz memory bus frequency

Supports PCI Rev 2.2 compliance

Support AGP2.0 1X/2X/4X AGP mode

Support AGP2.0 3.3V/1.5V/Universal AGP card

MainMemory

Supports single Direct RAMBUS channel for up to 32 DRDRAM devices

Supports 300/400 MHz DRDRAM bus speed @ 100MHz FSB

Supports 356/400 MHz DRDRAM bus speed @ 133MHz FSB

Supports 64M/128M/256M DRAM technology

Maximum memory up to 1G/512/MB/256MB when using 256M/128M/64M technology

Support ECC memory module (Single bit error Correction, Multiple bit error Detection)

Bus Master IDE

Supports dual channel IDE interface for up to four IDE devices

Supports Ultra DMA Bus Master with 66 MB/s burst data transfer rate

Supports PIO mode up to Mode four

Supports LS 120/ZIP drive

Multi-IO

Provides one floppy port to support 1.2M/1.4M/2.8M/3 Mode FDD and QIC-80 tape drive

Supports two high-speed 16550A serial ports

Supports one ECP/EPP parallel port

Supports one PS2 mouse port

Supports one PS2 keyboard port

Provides one Game/MIDI port to support two joysticks

Supports one FIR and CIR port

Supports PS2 mouse and PS2 keyboard auto swapping

USB

Supports two UHCI Universal Serial Bus ports

Supports USB keyboard/mouse/joystick/telephone/modem devices

Expansion Slots

Supports five Bus Master PCI slots

Supports one Universal AGP slot

Supports one AMR slot for AR/MR/AMR cards

Supports one ISA slot (optional)

LAN on board(i82559)

Single chip support 10/100M BaseT (IEEE 802.3u Auto-Negotiation)

Support Full-Duplex Flow Control (IEEE 802.3x)

Support WfM

Support Remote Power-up using Wake-on-LAN technology

Support Wake-Up on "Interesting" packet, LinkChg (PME#)

PCI 2.2 compliance

Support ACPI

Support Alert-on-LAN

Sound on board

Support AC'97 2.1 Digital Link

Management

H/W Monitoring Chip: integrated into LPC MIO

Monitoring +12V, -12V, +5V, Vcore1, Vcore2, VIO, Vbat, Vsb voltage

One alarm buzzer

Support Power on by LAN/Ext. Modem/Int. Modem/PS2 keyboard/PS2 Mouse/Alarm

Support Resume by LAN/Ext. Modem/Int. Modem/Keyboard/Mouse/Alarm

Support Intel LDCM/LDSM

Support ACPI Blinking LED

Support BIOS ROM Flash Control (3-pin jumper provide H/W & S/W protection)

Support "AC-Loss Recovery" (Former Status / OFF)

Support Suspend to RAM (DRAM should not have power during S5 soft-off state)

Support Manually Assign PCI IRQ

Support Auto-reboot function through TCO Timer when system hang

Support ICH Safe-Mode function through jumper

BIOS

4 MB PLCC FWH (Firmware Hub)

Support Plug and Play

Support APM 1.2

Support DMI 12.1

Support ACPI 1.0

Year 2000 Compliance

Others

ATX Form Factor 12" x 10.5"

Chapter 4

Hardware Setup

4.1 Before Installation

For installation, you may need some or all of the following tools:

Medium size flat blade screwdriver

Medium size Phillips head screwdriver

A 3/16 inch nut driver or wrench



Users must follow these guidelines to ensure the motherboard is protected during installation.

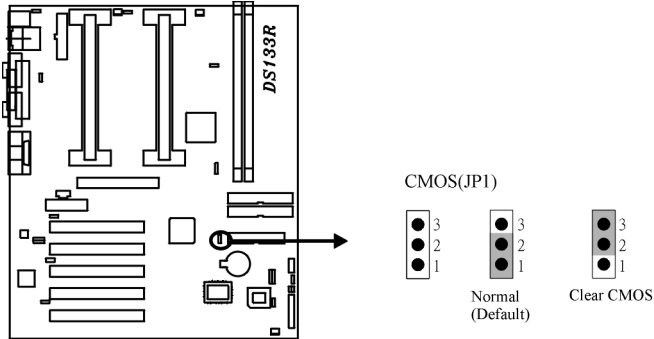
- a. Make sure your computer is powered-off whenever working with inside components.**
- b. The motherboard, like all other electronic equipment, is sensitive to static. Please take the proper precautions when handling it. If possible, ground yourself by touching a metal table or desk. keep the board in its conductive wrapping until it is configured and ready to be installed in your system.**
- c. Keep all magnets away from both your hard and floppy disk drives, especially magnetic screwdrivers. Keep both floppy and hard disks apart if disassembled.**
- d. Keep water and liquids away from your computer and its components.**

4.2 Jumper setting

4.2.1 JP1 Clear CMOS jumper (CMOS)

To reset the CMOS data, you should turn off the computer first, take the JP1 jumper cap off pins 1-2, place onto pins 2-3, and then place back onto pins 1-2 again. Then, turn on your computer, press key during boot up and

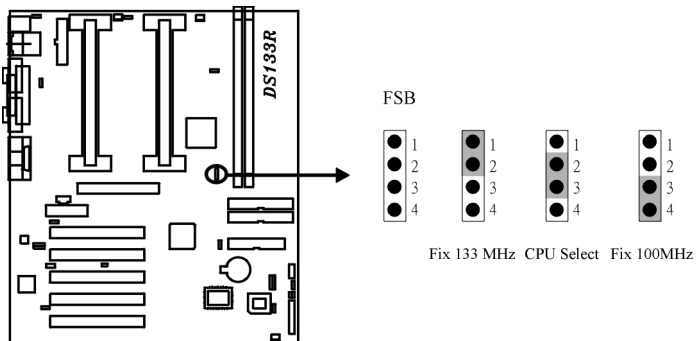
enter the BIOS setup program to re-set your preferences.



4.2.2 JP3 CPU FSB select jumper (FSB)

These jumpers allow the selection of the CPU's based external frequency. The CPU "External Frequency" multiplied by the "Frequency Multiple" equals the CPU's "Internal Frequency". Currently, most of the processors have the Frequency Multiple locked, so you only need to select the External Frequency.

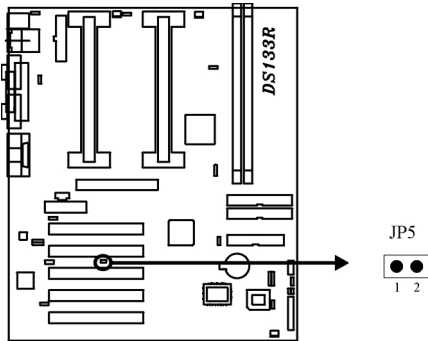
The CPU speed is setup using "IWILL Smart Setting". This is found in the BIOS setup program by pressing during the boot up process.



4.2.3 JP5 PCI compatibility jumper (JP5)

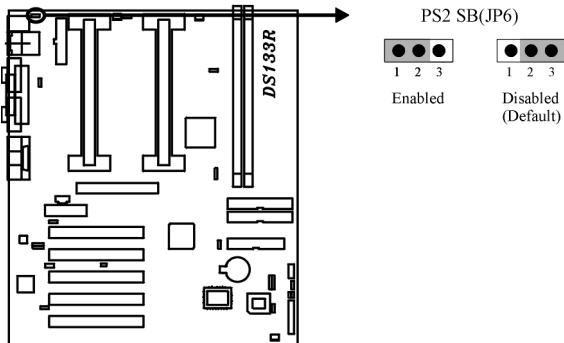
JP5 is designed to solve the compatibility problem for older PCI VGA cards. Using some older PCI VGA cards on PCI Rev2.1 compliant motherboards, particularly PCI 2.0 specification cards, may cause some of the screen's pixels to function improperly.

If you experience compatibility problems when using older PCI VGA cards, please place a jumper cap over JP5.



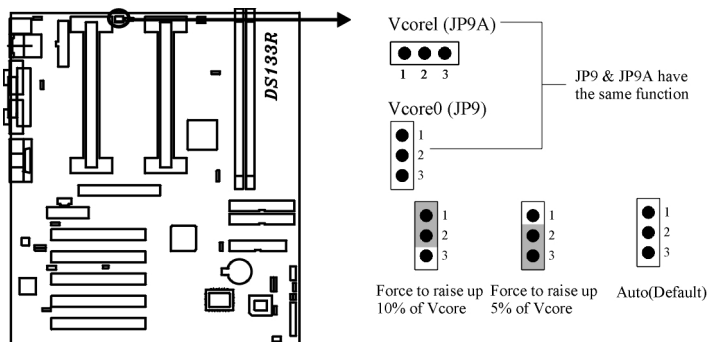
4.2.4 JP6 PS/2 power standby jumper (PS2_SB)

The computer can be powered on through PS/2 keyboard or PS/2 mouse. In order to support this feature, the standby power must be provided to PS/2 ports.



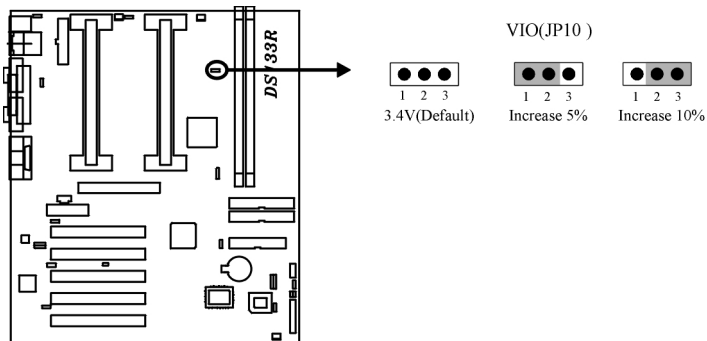
4.2.5 JP9&JP9A Vcore booster jumper (Vcore0+ & Vcore1+)

This jumper allows you to select the voltage supplied to the CPU. The default voltage should be used unless processor over-clocking requires a higher voltage.



4.2.6 JP10 VIO select jumper (Vio)

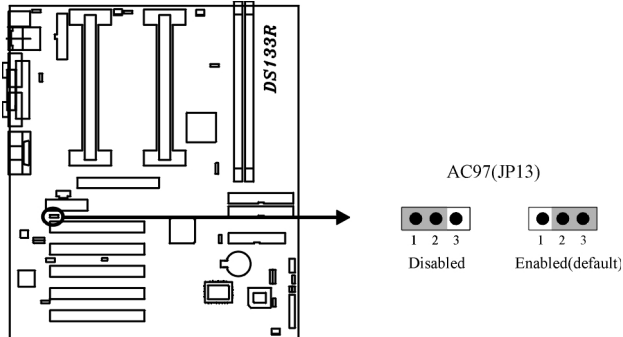
This jumper allows you to select the voltage supplied to the DRAM, chipset, PCI and the CPU's I/O buffer. The default voltage should be used unless processor over-clocking requires a higher voltage.



Using a higher voltage may help when over-clocking but may result in the shortening of your computer component's life. It is strongly recommended that you leave these setting on its default.

4.2.7 JP13 AC'97 Codec Enabled / Disabled jumper (AC'97)

This jumper is used to enable / disable the onboard audio CODEC. The onboard audio CODEC must be disabled when using an ISA/PCI audio card or a primary AMR card.

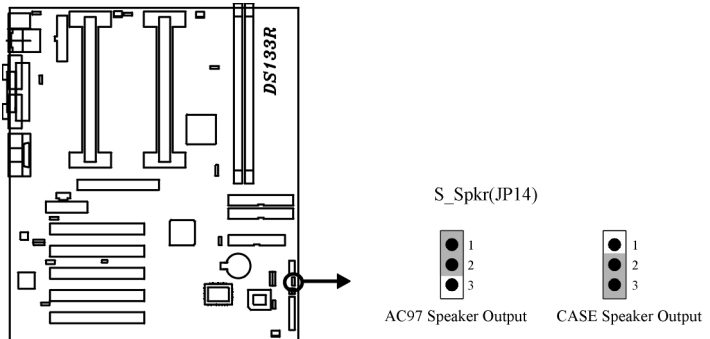


4.2.8 JP14 Speaker Souce Select jump(S-spkr)

This jumper is used to select the Speaker Souce protection mode.

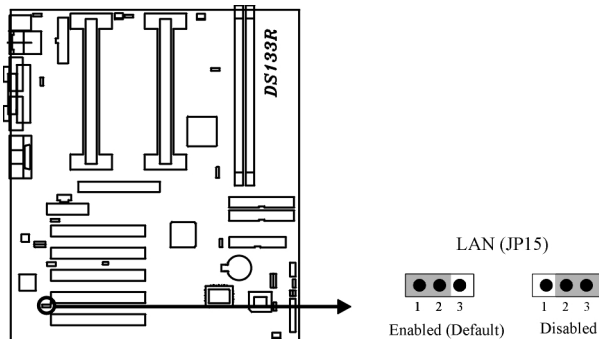
If JP14 is set on 2-3 the Speaker Souce protection mode by CASE Speaker Output.

If JP14 is set on 1-2 the Speaker Souce protection mode by AC97 Speaker Output.



4.2.9 JP15 LAN Enabled / Disabled jumper (LAN)

This jumper is used to enable / disable the onboard LAN chip.

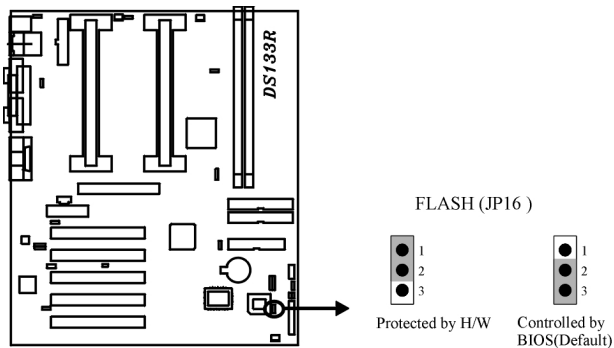


4.2.10 JP16 Flash protect jumper (FLASH)

This jumper is used to select the Flash ROM protected mode.

If JP16 is set on 1-2 the Flash ROM protection mode will be controlled by BIOS.

If JP16 is set on 2-3 the Flash ROM protection mode will be controlled by H/W



Do not leave JP16 without any cap.

4.3 Install the Processor



All of the processors have two categories: OEM version and Boxed version. The OEM version processor has no heat sink, fan and heat sink support, while the Boxed version processor has all of them. Without a fan, the processor could overheat and damage both the processor and the motherboard. If this is the case, purchase a fan before you turn on your computer.

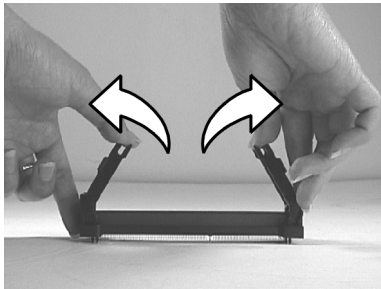
This motherboard is shipped with a pre-installed Universal Retention Mechanism (URM), so you can go through to install the processor directly.



Universal Retention Mechanism

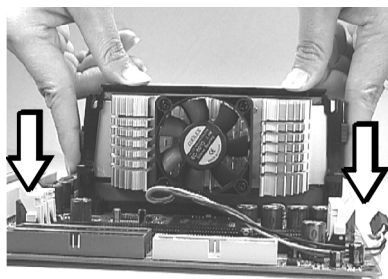
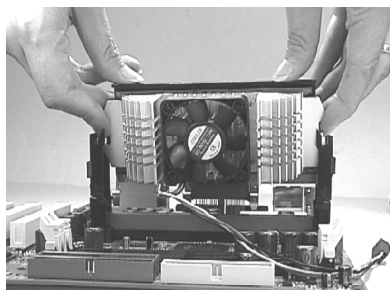
Step 1:

Lift each of the two retention mechanism brackets so that they stand fully upright. You should hear a soft “click” sound once each bracket is in the correct upright position.



Step 2:

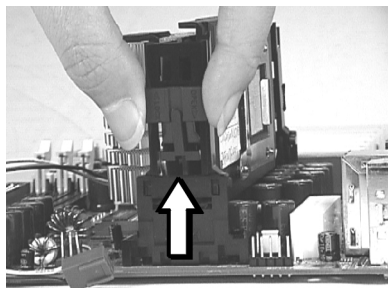
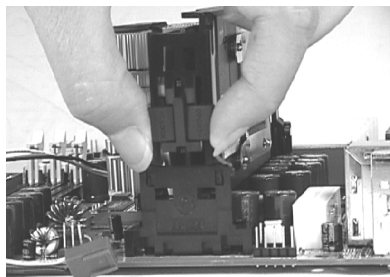
Insert the CPU horizontally into the retention mechanism, sliding both edges in simultaneously and as “evenly” as possible. Then, press down gently yet firmly so that the CPU is fully inserted correctly into the socket.



Step 3: Pull the clip beside retention mechanism upward to lock the CPU.

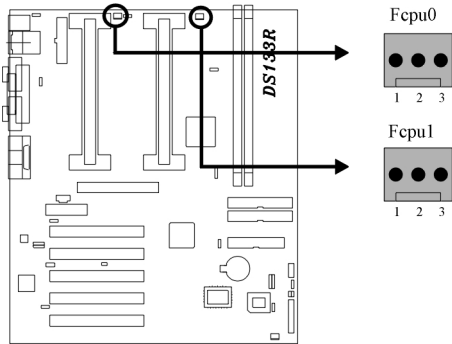
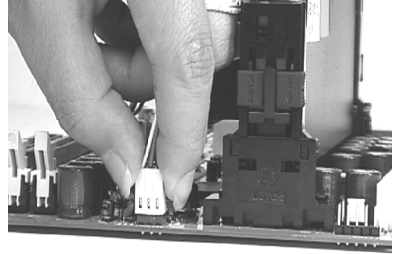
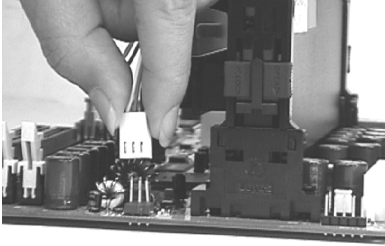
UNLOCK

LOCK



Do not forget to set the correct CPU External Frequency and Multiple (Multiple setting is available only on unlocked processors) for your processor or else boot up may not be possible.

Step 4: Finally, attach the fan cable to the CPU fan header Fcpu



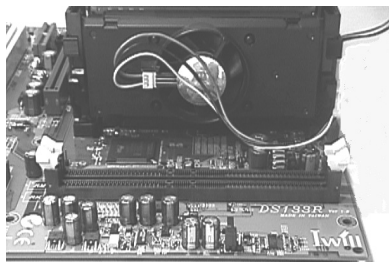
4.4 Install Memory Modules

The motherboard has two Dual Rambus Inline Memory Module (RIMM) sockets and supports the maximum memory size up to 1GB. These RIMM sockets only support DRDRAM modules of 64M, 128M and 256M.

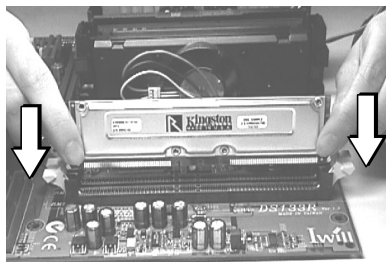


All the RIMM sockets need to be filled with DRDRAM Module or C-RIMM in order for the system to work.

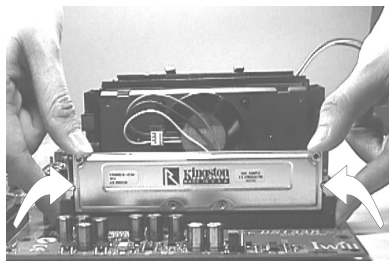
Step 1: Find RIMM sockets.
into the



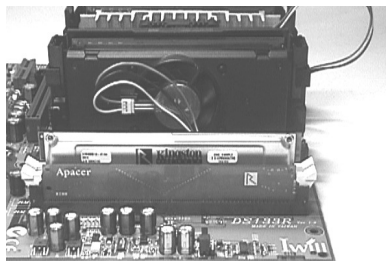
Step 2: Insert the DRDRAM module
RIMM socket.



Step 3: Press the latches into the notched
RIMM module.



Step 4: RIMM sockets need to be filled
with DRDRAM Module or C-RIMM.



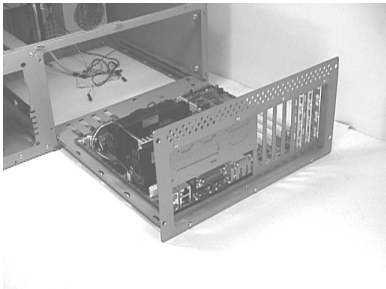
4.5 Install PCI Expansion Cards



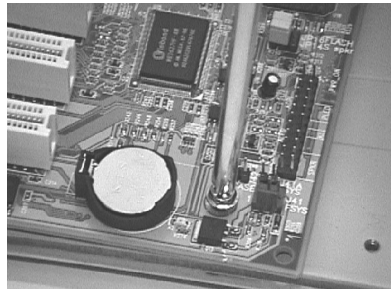
Make sure that you have unplugged the power supply before you adding or removing expansion card or other component. Failure to do so may cause damage to both the motherboard and expansion cards.

This motherboard provides five bus master PCI expansion slots. You can expand the features of the computer by adding some expansion cards. Before you do that, read the documentation for your expansion card carefully and make any necessary hardware settings on it, such as jumpers or switches. Locate a free expansion slot and remove the bracket plate with screw on the slot you intend to use, carefully align the card's connectors, press it firmly and secure the card on the slot with the screw you remove above. After installing the necessary software drivers, you can enjoy the features that expansion card provided.

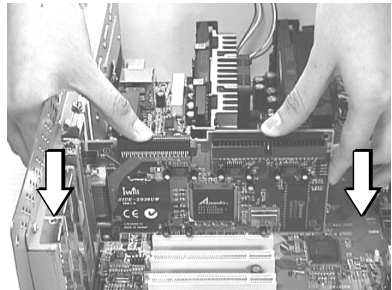
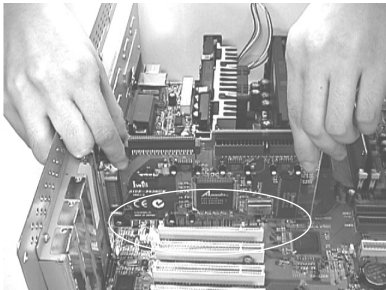
Step 1: Place the motherboard onto the chassis



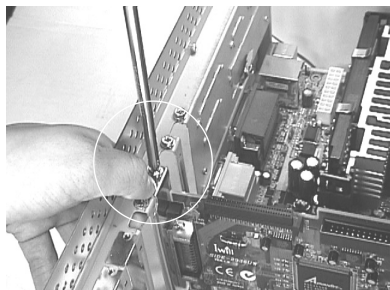
Step 2: Secure the motherboard on the chassis by fastening respective screws.



Step 3: Insert the expansion card into the PCI socket



Step 4: Secure the expansion card on the chassis by fastening the screw.

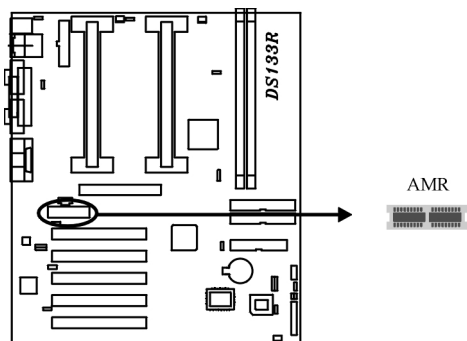


In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI slot that has a card in it. To check the IRQ map of your system in Windows 98, the Control Panel icon in My Computer contains a System icon, which gives you a Device Manager tab. Double click on a specific hardware device gives you the Resource tab, which shows the IRQ and address. Make sure that no two devices use the same IRQ or your computer will experience problems. If your expansion card must be performed with a specific IRQ, you can enter BIOS setup program to assign the specific IRQ in PnP/PCI Configuration page.

4.6 Usage of the AMR slot

This motherboard provides a Audio Modem Riser (AMR) slot to support a specially designed audio and/or modem card called an AMR card. Main audio and/or modem processing is done by system processor to provide an upgradeable audio and/or modem solution at an incredibly low cost.

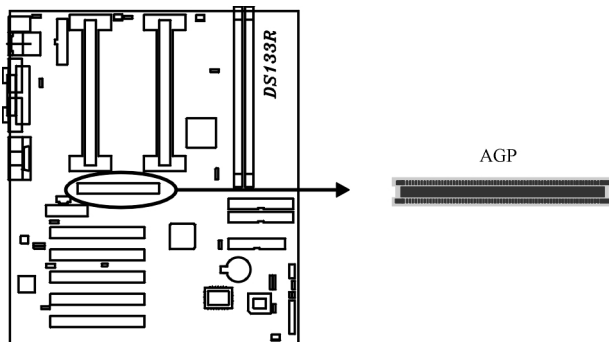
There are two type of AMR card, one defined as primary and another defined as secondary. This motherboard uses the primary channel so that a secondary AMR card can coexist without the need to disable the onboard audio CODEC. The onboard audio CODEC must be disabled when using a primary AMR card.



4.7 Usage of the AGP slot

The Accelerated Graphics Port (AGP) is a high-performance bus, especially for graphic-intensive 3D applications. AGP is independent of the PCI bus, and is intended for exclusive use with graphics devices.

The most important feature of AGP is DIME (Direct Memory Execute). DIME needs to allocate some system memory via the OS to access large textures outside the local graphic memory of the card. In order to take advantage of the DIME feature, some software components should be installed or upgraded within your system.



4.8 Connect Devices and Power Supply



All the connectors showed in this section are not jumpers, **DO NOT PLACE JUMPER CAPS OVER THE PINS OF THEM.** If you do so, you will damage the motherboard permanently.

4.8.1 Primary/Secondary IDE Connectors (IDE/IDE)

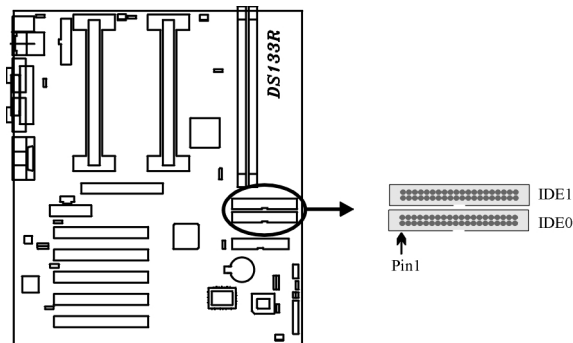
motherboard provides two independent Ultra ATA/66 IDE channels, which doubles the ATA/33 burst data transfer rate to 66 MB/s and are 100 percent backward compatible with all existing ATA / ATAPI devices. These connectors also support ZIP and LS-120 devices.

The ATA/66 requires a special 40-pin, 80-conductor cable that reduces noise bleed-over and improves signal integrity by providing 40 additional ground lines between each of the standard 40-pin ATA (IDE) signal lines and ground lines. Although a new 40-pin, 80-conductor cable is required for Ultra ATA/66, the chip set pin connector remains the same at 40.



The 40-pin, 80-conductor cables will support the Cable Detect feature. The blue (end) connector should be connected to the system board. The black (end) connector is known as the master position. The gray (middle) connector can be used for slave devices.

A legacy ATA (IDE) drive can coexist with an Ultra ATA/66 drive. However, for the Ultra ATA/66 device to attain Ultra DMA 4 mode, an Ultra ATA/66 capable cable is required.

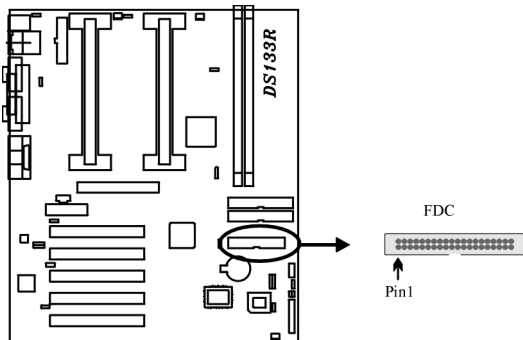


4.8.2 Floppy Connector (FDC)

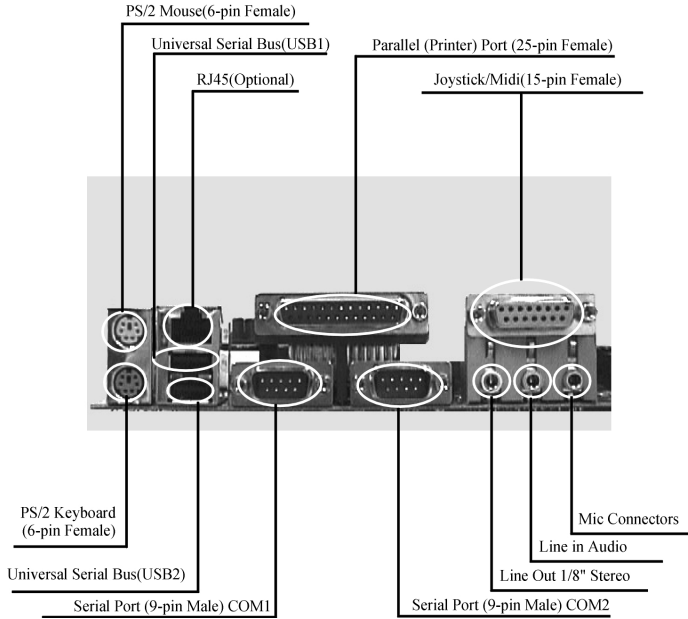
This motherboard has one floppy connector to support 360K, 720K, 1.2M, 1.44M, 2.88M, 3 Mode floppy drives and QIC-80 floppy tape drive. After connecting the single end to the board, connect the two plugs on the other end to the floppy devices.



Orient the red markings on the ribbon cable to pin1 of the connector



4.8.3 Back Panel



4.8.3.1 PS/2 Mouse Connector (Green color)

This connector can be used to support a PS/2 mouse.

4.8.3.2 PS/2 Keyboard Connector (Purple color)

This connector can be used to support a PS/2 keyboard.

4.8.3.3 Universal Serial Bus Connectors

This motherboard has two USB ports, any USB-compatible peripherals and/or hub can be connected into either USB port.



The PS/2 mouse and PS/2 keyboard can be auto-detected by this motherboard. That means if you plug the PS/2 keyboard into the mouse connector, it still can work without any trouble and vice versa. It is recommended that you turn off the computer before connecting or disconnecting keyboard and/or mouse.

4.8.3.4 Serial port COM1&COM2 Connector (Teal color)

One serial port is ready for a modem or other serial devices. A second serial port is available using a serial port bracket connected from the motherboard to an expansion slot opening.

4.8.3.5 Parallel port Connector (Burgundy color)

This connector is used for printers, or other parallel devices.

4.8.3.6 Joystick/Midi and Audio Port Connector (Gold color)

You may connect joysticks or game pads to this connector for playing games, or connect MIDI devices for playing / editing professional audio. Line Out (Lime color) can be connected to headphones or powered speakers. Line In (Light Blue color) allows audio sources to be recorded by your computer or played through the Line Out connector. Mic (Pink color) allows microphones to be connected for inputting voice.

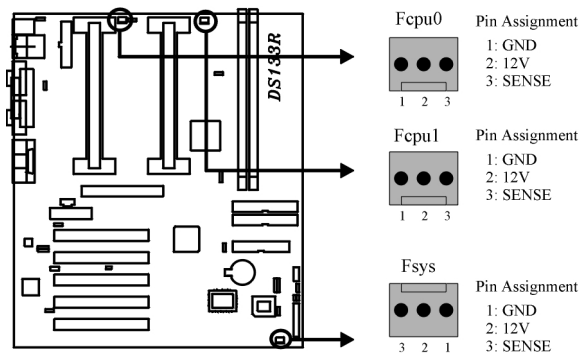
4.8.3.7 Ethernet RJ45 Connector

The RJ45 connector is optional at the time of purchase and is located on top of the USB connectors. The connector allow the motherboard to connect to a Local Area Network (LAN) through a network hub.

4.8.4 CPU and System FAN Connectors (Fcpu0, Fcpu1 and Fsys)

There are three fan connectors on this motherboard. The J39 & J40 (Fcpu0&Fcpu1) is designed to support CPU fan; the J41 (Fsys) is for system fan. Depending on the fan manufacturer, the wiring and plug may be different. In most of the case, the red wire is positive, while the black is ground. Connect the fan’s plug to the board taking into consideration the polarity of the connector.

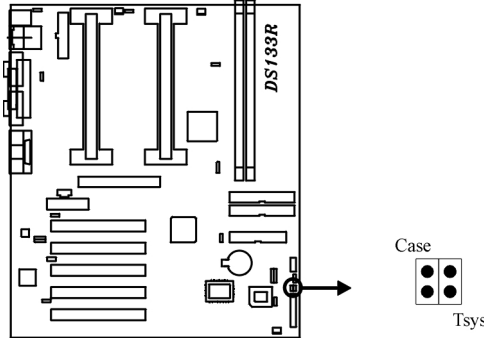
The “Sense” signal is to be used only by a specially designed fan with rotation signal. You may use the hardware monitoring utility to monitor the Rotations per Minute (RPM) of the fan.



1. The CPU will overheat if there is no airflow across the CPU heatsink.
2. Damage may occur to the CPU fan and/or motherboard if these pins are incorrectly used.

4.8.5 System temp. sensor header (Tsys) (J41A)

Tsys is a 1x2-pin header used to detect the computer system temperature. If enabled, the system will display a message indicating the computer system temperature. A IWILL system temperature sensor need to be used inconjunction with this function.

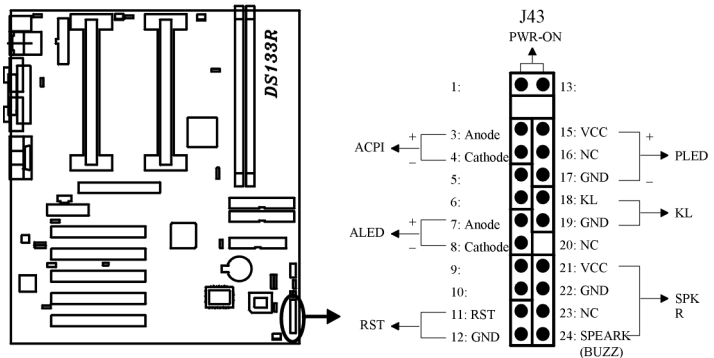


4.8.6 Chassis Intrusion Connector (CASE) (J42)

This connector is for a chassis designed for chassis intrusion detection. Two wires should be available from the chassis to connect to this connector. When any chassis component is removed, the contact should open and the motherboard will record a chassis intrusion event. If this feature is not used, a jumper cap must be placed over the 2 pins of the connector.

4.8.7 Front Panel Connector (J43)

This connector is composed of all the headers that may be connected to the front panel of the chassis.



Power/Soft-Off Connector (PWR_ON)

The system power is controlled by a momentary button connected to this connector. Pressing the button once will switch the system between ON and OFF. Pushing the button for more than 4 seconds will turn the system off.

ACPILED Connector (ACPI)

This 2-pins connector is for a ACPI power status indicator. The LED status will depend on the connector.

IDELED Connector (ALED)

This 2-pin connector connects to the case-mounted IDE LED, which lights when the IDE devices connected to the primary / secondary IDE connectors are working.

Reset Connector (RST)

This 2-pin connector connects to the case-mounted reset button for rebooting your computer without having to turn off the power supply.

System Power LED Connector (PLED)

This 3-pin connector connects to the case-mounted system power LED, which lights when the system is powered on.

Keyboard Lock Connector (KL)

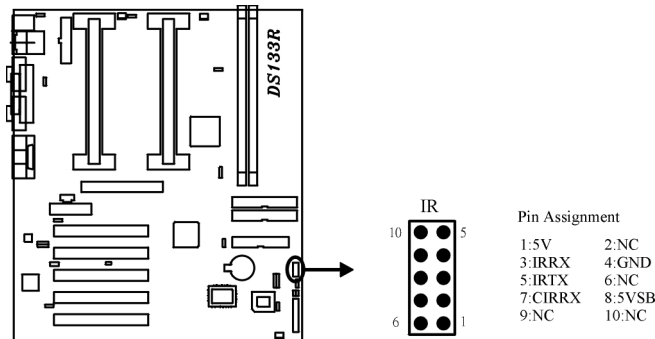
This 2-pin connector connects to the case-mounted key switch to allow keyboard locking.

Speaker Connector (SPKR)

This 4-pin connector connects to the case-mounted speaker.

4.8.8 Infrared Connector (IR)

This connector supports an optional wireless transmitting and receiving infrared device when using the appropriate application software.

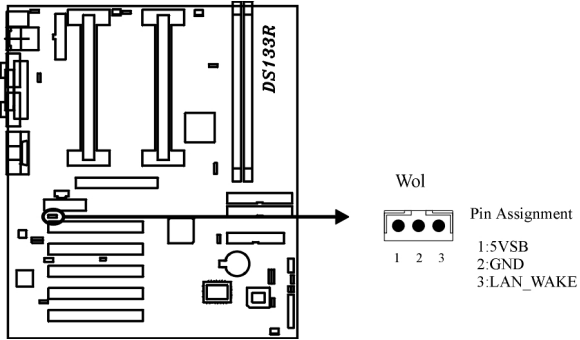


4.8.9 Wake-On-LAN Connector (WOL)

This connector connects to a plug-in network card, which supports the WOL technology to powers up the system when a wakeup packet or signal is received through the LAN card.

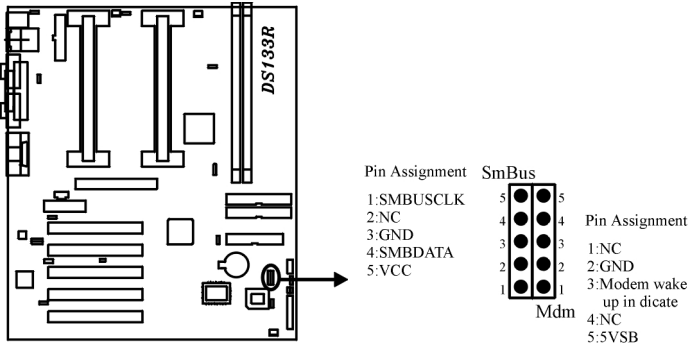


- a. You may need to enable the “Wake Up by Ring/LAN” feature in the BIOS setup program.
- b. Your system must have a ATX power supply with at least 720mA 5VSB power.
- c. This motherboard only supports the LAN card with a high-active wake signal.



4.8.10 Internal Modem connector (Mdm)

This connection works in conjunction with your modem card. If you intend to use a modem card (inserted into the PCI slot), please connect the cable from the modem card into the Modem header (MDM).

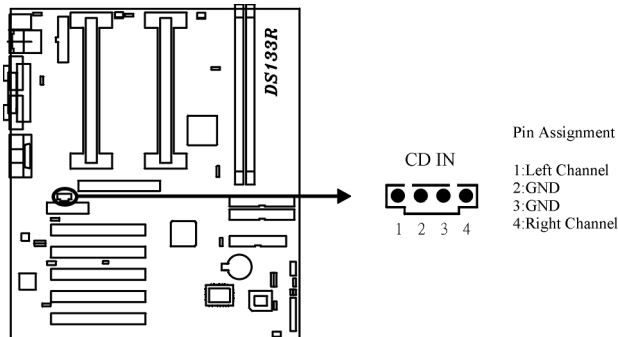


4.8.11 SMBUS connector J48 (SMBUS)

This connector provides the connectivity of SMBUS utilization.

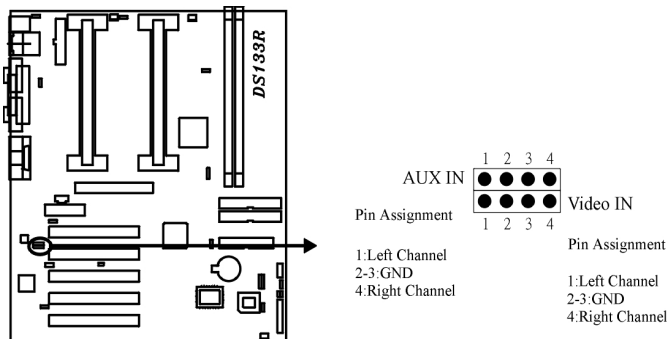
4.8.12 Internal Audio Connector (CD_IN)

This connect allow you to receive stereo audio input from such sound sources as a CD-ROM, TV tuner or MPEG card.



4.8.13 Aux_IN, Video_IN Connector

The audio output can be transferred form CD-ROM to the audio systme.

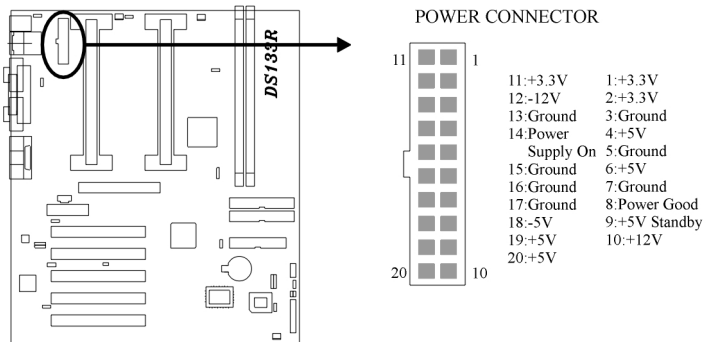


4.8.14 ATX Power Supply Connector

This connector connects to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes.



In order to support the power up function other than power/soft-off button, such as Wake-On-LAN, Wake-On-Modem, your ATX power supply must supply at least 720mA 5VSB.



4.8.15 Power On Procedures

1. After all connections are made, close the system case over.
2. Be sure that all switches are off.
3. Connect the power cord into the power supply located on the back of your system case (please refer to the manual of your power supply).
4. Connect the power cord into a power outlet that is equipped with a surge protector.
5. Many of the power supply support 110V/220V by a switch setting. Switch your power supply to the correct supply voltage (refer to the power supply's manual).
6. Turn on your system in the following order:
 - a. The monitor.
 - b. The external devices.
 - c. The computer system.

The power LED on the front panel of the chassis will light. After few seconds, the system will then run power-on tests. Some additional messages will appear on the screen during the test. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test. Recheck the jumper settings and connections or call your retailer for assistance.

4.8.16 Power Off Procedures

1. Exit from all the software applications.
2. Shut down your operating system.
3. Switch off the power button. If you are using Windows 95/98, the power supply should turn off automatically after Windows shut down
4. Turn off all the external devices.
5. Turn off your monitor.
 - a. The monitor.
 - b. The external devices.
 - c. The computer system.

Chapter 5

BIOS Setup

5.1 Introduction

The motherboard uses AWARD BIOS, which is stored in flash memory and can be upgraded using the appropriate software program. The setup program is for viewing and changing the BIOS setting for a computer. These settings are stored in battery-backed RAM so that it retains all the settings after the power has been turned off.

5.1.1 Upgrade BIOS

The BIOS can be upgraded from a diskette with the Award Flash utility — AWDFLASH.EXE. The BIOS image file, and update utility are available from IWILL's WEB site: www.iwill.net

5.1.2 Enter BIOS setup program

Power-on the system by either pressing the Power-On button, or by using any of the power-on features provided by the motherboard. Then, press the key after the Power-On Self Test (POST), and before the scanning of IDE devices. Simply look for the message “Press DEL to enter SETUP” displayed at the bottom of the screen during the boot up process. If the message disappears before you’ve had a chance to respond, you can restart the system by Turning off the system power then turn it on again, or Pressing the “RESET” button on the system case, or Pressing <Ctrl>, <Alt> and keys simultaneously.

5.1.3 Using BIOS setup program

The following table shows the function keys available for each menu screen.

↑Up	Move to the previous field
↓Down	Move to the next field
←Left	Move to the field on the left hand side
→Right	Move to the field on the right hand side
<Esc>	Quit from setup program without saving changes, or Exit from current menu page and return to main menu page
<PgUp> or <+>	Select the previous value for a field
<PgDn> or <->	Select the next value for a field
<F1>	General Help
<F2>	Item Help
<F5>	Previous Values
<F6>	Fail-Safe Defaults
<F7>	Optimized Defaults
<F10>	Save the current value and exit setup program



Generally, the BIOS default settings have been carefully chosen by the system manufacturer to provide the absolute maximum performance and reliability. It is very dangerous to change any setting without full understanding. We strongly recommend that you

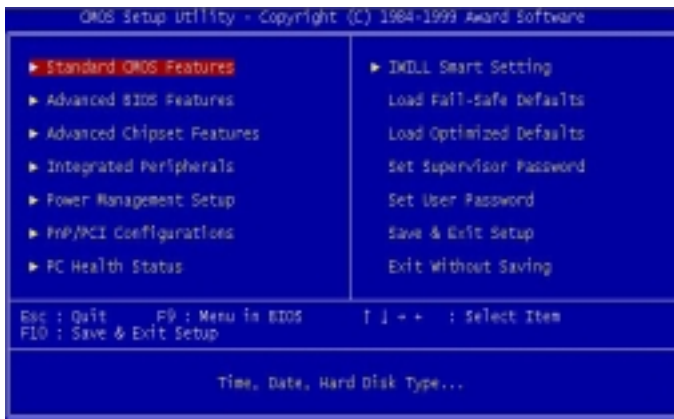
DO NOT update your BIOS if the system works perfectly.
DO NOT change any setting unless you fully understand what it means.

If the system does not work smoothly after changing the BIOS settings, follow the procedures described previously, enter the BIOS setup program, then load the original manufacturer default settings.

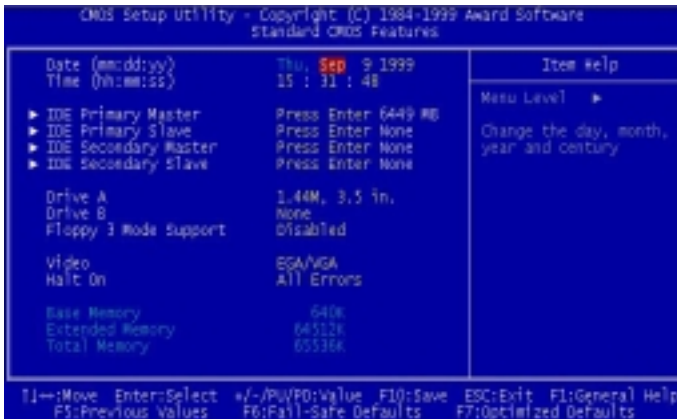
If the system is no longer able to boot after changing the settings, the only way to recover it is to clear the data stored in RTC CMOS. To reset the RTC CMOS data, take the JP1 jumper cap off pins 1-2, place onto pins 2-3, and then place back onto pins 1-2 again. This will return the RTC to the default setting. Then, get into the BIOS setup program, choose Load Fail-Safe Defaults; Load Optimized Defaults, and select the original manufacturer default settings in your CMOS.

5.2 Main Menu

The main menu allows you to select from several setup pages. Use the arrow keys to select among these pages and press <Enter> key to enter the sub-menu. A brief description of each highlighted selection appears at the bottom of the screen.



5.3 Standard CMOS Features



5.3.1 Date

This field specifies the current date. The date format is <month>, <day>, and <year>.

5.3.2 Time

This field specifies the current time. The time format is <hour>, <minute>, and <second>. The time is calculated based on the 24-hour (military-time) clock.

5.3.3 IDE Primary Master / Primary Slave / Secondary Master / Secondary Slave

Press “Enter” to enter next page for detail hard drive setting.

5.3.3.1 IDE HDD Auto-Detection

Auto-Detect the HDD’s Capacity, and its parameters, ex: Cylinder, Head and Sector.

5.3.3.2 IDE Primary Master / Primary Slave / Secondary Master / Secondary Slave

This field specifies type of drive that corresponds to the drive installed in your system. If you select User, please specify the correct number of Cylinders, Heads, and Sectors.

- | | |
|-----------------|--|
| Options | Description |
| Manual | Selecting ‘manual’ lets you set the remaining fields on this screen. Selects the type of fixed disk. |
| Auto (*) | BIOS automatically fills in the values for the cylinders, heads and sectors fields |
| None | Any Disk Drives are attached |

5.3.3.3 Capacity Auto Display your disk drive size

5.3.3.4 Access MODE

This field specifies the IDE translation mode.

Options	Description
NORMAL	Specifies traditional CHS addressing mode
LARGE	Specifies extended CHS translation mode
LBA	Specifies LBA translation mode
AUTO(*)	BIOS specifies translation method automatically

5.3.3.5 Cylinders

Set the number of cylinders for this hard disk.

5.3.3.6 Heads

Set the number of read/write heads

5.3.3.7 Precomp

Setting a value of 65535 means no hard disk

5.3.3.8 Sectors

Set the number of sectors per track

5.3.4 Drive A / Drive B

This field specifies the traditional type of floppy drives.

Options	Description
None	any floppy drive is connected
(*Drive B default)	
360K, 5.25 in.	A 360K floppy drive is connected
1.2M, 5.25 in.	A 1.2M floppy drive is connected
720K, 3.5 in.	A 720K floppy drive is connected
1.44M, 3.5 in.	A 1.44M floppy drive is connected
(*Drive A default)	
2.88M, 3.5 in.	A 2.88M floppy drive is connected

5.3.5 Floppy 3 Mode Support

3 Mode floppy drive is a type of 3.5-inch drive used by NEC PC98 computers. It supports both 1.2M and 1.44M formats using the same drive. This field specifies which drive supports 3 Mode. When a floppy drive is specified to support 3 Mode, the respective drive setting in "Drive A / Drive B" field will be invalid.

Options	Description
Disabled(*)	No 3 Mode drive is connected
Drive A	A 3 Mode drive is connected as drive A
Drive B	A 3 Mode drive is connected as drive B
Both	Both drive A and drive B are 3 Mode drives

5.3.6 Video

This field specifies the type of the graphics adapters used by the primary system monitor.

Options	Description
EGA/VGA(*)	Specifies EGA or VGA adapter
CGA 40	Specifies CGA adapter with 40 column mode
CGA 80	Specifies CGA adapter with 80 column mode
MONO	Specifies Monochrome adapter

5.3.7 Halt On

This field determines how the system reacts to errors once detected.

Options	Description
All Errors (*)	Each time the BIOS detects a non-fatal error, the system will stop and display an error message
No Errors	The system will stop for any errors that are detected
All, But Keyboard	The system will stop for any errors except keyboard error
All, But Diskette	The system will stop for any errors except diskette error
All, But Disk/Key	The system will stop for any errors except diskette and keyboard errors

5.3.8 Base Memory

The POST (Power-On Self Test) determines the amount of base (conventional) memory installed in the system. The value of the base memory is typically 640K. This field has no options.

5.3.9 Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the processor's memory address map. This field has no options.

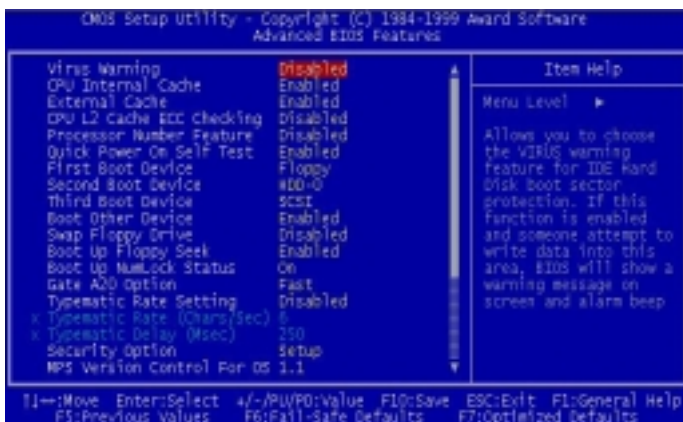
5.3.10 Total Memory

Displays the total memory available in the system

5.4 Advanced BIOS Features



An asterisk (*) denotes the default setting, whenever appropriate.



5.4.1 Virus Warning

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

Many disk diagnostic programs will attempt to access the boot sector table, which can cause the above warning message. If you run such a program, we recommend that you first disable the Virus Warning function beforehand.

Options **Enabled**
 Disabled (*)

5.4.2 CPU Internal Cache

This field configures the CPU internal cache (L1 cache).

Options **Enabled (*)**
 Disabled

5.4.3 External Cache

This field configures the system's external cache (L2 cache).

Options **Enabled (*)**
 Disabled

5.4.4 CPU L2 Cache ECC Checking

This field specifies whether the CPU L2 cache supports ECC or not.

Options **Enabled**
 Disabled (*)

5.4.5 Processor Number Feature

Intel® Pentium® III processors are equipped with a built-in processor serial number for security purposes. When enabled, you allow reading access to this serial number.

Options **Enabled**
 Disabled (*)

5.4.6 Quick Power On Self Test

This field allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.

Options **Enabled (*)**
 Disabled

5.4.7 First / Secondary / Third / Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

Options **Floppy (*)**
 LS/ZIP
 HDD-0 ()**
 SCSI
 CD-ROM
 HDD-1
 HDD-2
 HDD-3
 LAN
 Disable (*)**

5.4.8 Swap Floppy Drive

When enabled, floppy drives A and B will be exchanged without the user physically changing the connection on the cable.

Options **Enabled**
 Disabled (*)

5.4.9 Boot Up Floppy Seek

Seeks disk drives during boot up. Disabling speeds boot up.

Options **Enabled (*)**
 Disabled

5.4.10 Boot Up NumLock Status

This field determines the configuration of the numeric keypad after system boot up. If On, the keypad uses numbers keys. If Off, the keypad uses arrow keys.

Options	Description
On (*)	Keypad works as number keys
Off	Keypad works as arrow keys

5.4.11 Gate A20 Option

This field configures how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MB. At first, the gate A20 was handled from a pin on the keyboard. While some keyboards still provide this support, it is more common, and much faster, for modern system chipsets to provide support for gate A20.

Options	Description
Fast (*)	GateA20 signal supported by core logic
Normal	GateA20 signal supported by keyboard controller

5.4.12 Typematic Rate Setting

This field determines if the typematic rate is to be used. When enabled, the BIOS will report (after a moment) that the key has been depressed repeatedly. When disabled, the BIOS will report only once if a key is held down continuously. This feature is used to accelerate cursor movements using the arrow keys.

Options	Enabled
	Disabled (*)

5.4.13 Typematic Rate (Chars/Sec)

When Typematic Rate Setting enabled, this field specifies how many characters will be displayed in one second when a key is held down continuously.

Options	6 (*), 8, 10, 12, 15, 20, 24, 30
---------	----------------------------------

5.4.14 Typematic Delay (Msec)

When enabled, typematic delay allows you to select the time delay between when the key is first pressed and when the acceleration begins.

Options	250 msec (*), 500 msec, 750 msec, 1000 msec
---------	---

5.4.15 Security Option

This field configures how the system security is handled. It works conjunction with SETTING SUPERVISOR / USER PASSWORD page to control the security level of the system.

Options	Description
Setup (*)	System needs a password to enter BIOS setup program

System System needs a password to boot

5.4.16 MPS Version Control For OS

This field specifies the version of MPS used by the motherboard.

Options **1.1 (*) / 1.4**

5.4.17 OS Select for DRAM >64MB

When enabled, this field allows you to access the memory that is over 64MB under OS/2.

Options **OS/2**
Non-OS/2 (*)

5.4.18 Report No FDD For WIN 95

For a floppy diskless system that runs Windows 95, this field should be set to Yes.

Options **Yes**
No (*)

5.4.19 Video BIOS Shadow

When enabled, the video BIOS will be copied to system memory and increase the video speed.

Options **Enabled (*)**
Disabled

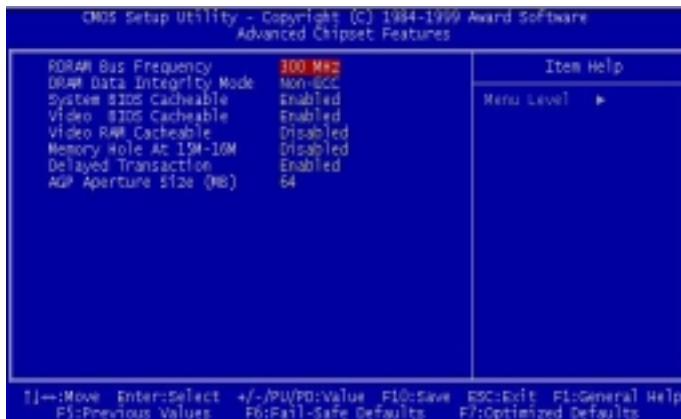
5.4.20 C8000-CBFFF / CC000-CFFFF / D0000-D3FFF Shadow D4000-D7FFF / D8000-DBFFF / DC000-DFFFF Shadow

When enabled, the extended ROM data located at the respective address range will be copied to system memory.

Options **Enabled / Disabled**

5.5 Advanced Chipset Features

This setup page is used to specify advanced features available through the chipset. The default settings have been chosen carefully for most operating conditions. **DO NOT** change the value of any field in this setup page without full understanding.



5.5.1 RDRAM Bus Frequency

This field select pre-defined RDRAM speed for different frequency. It is available only when the Auto configuration field is 300 MHz.

Options **300/ 356/400 MHz**

5.5.2 DRAM Data Integrity Mode

When enabled, the BIOS will use ECC (Error Checking and Correcting) protocol to increase integrity of system data. When ECC is selected, all memory modules used by the system must support ECC.

Options **ECC**
Non-ECC(*)

5.5.3 System BIOS Cacheable

When enabled, accesses to the system BIOS will be cached.

Options **Enabled(*)**
Disabled

5.5.4 Video BIOS Cacheable

When enabled, access to the video BIOS will be cached.

Options **Enabled**
Disabled(*)

5.5.5 Video RAM Cacheable

When enabled, access to the video memory located at A0000H to BFFFFH will be cached.

Options **Enabled**
 Disabled (*)

5.5.6 Memory Hole At 15M-16M

Some add-in cards need to re-map its resource to a block of main memory address range. Any host cycles that match this memory hole are passed on to the add-in cards.

Options **Enabled**
 Disabled (*)

5.5.7 Delayed Transaction

When enabled, the south bridge PIIX4 will supports the Delayed Transaction mechanism when it is the target of a PCI transaction. The PCI revision 2.1 compliant requires this field to be enabled.

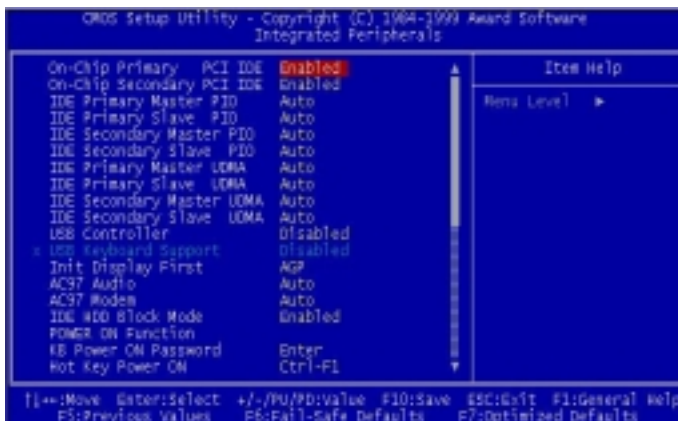
Options **Enabled**
 Disabled (*)

5.5.8 AGP Aperture Size (MB)

This field specifies the size of system memory that can be used for AGP graphics aperture.

Options 4 / 8 / 16 / 32 / 64 (*) / 128 / 256

5.6 Integrated Peripherals



5.6.1 On-Chip Primary / Secondary PCI IDE

This field enables or disables the onboard IDE controller.

Options **Enabled(*)**
 Disabled

5.6.2 IDE Primary Master / Slave PIO IDE Secondary Master / Slave PIO

These fields configure the PIO (Programmable Input Output) transfer mode for IDE controller. The maximum transfer rates of each PIO mode are listing as follow:

PIO Mode Setting	Maximum transfer rate
PIO Mode 0	3.3 MB/sec
PIO Mode 1	5.2 MB/sec
PIO Mode 2	8.3 MB/sec
PIO Mode 3	11 MB/sec
PIO Mode 4	16.6 MB/sec

Options	Description
Auto (*)	The BIOS negotiates with device automatically
Mode0	Use Mode 0 timing to access device
Mode1	Use Mode 1 timing to access device
Mode2	Use Mode 2 timing to access device
Mode3	Use Mode 3 timing to access device
Mode4	Use Mode 4 timing to access device

5.6.3 IDE Primary Master / Slave UDMA IDE Secondary Master / Slave UDMA



Higher setting may exceed the capability of older IDE device and cause problem.

If you select Auto, the IDE controller uses Ultra DMA 33/66 Mode to access Ultra DMA-capable IDE devices.

Options **Auto (*)**
 Disabled

5.6.4 USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. When enabled, the IDE controller will use the faster block mode to access devices.

Options **Enabled**
 Disabled (*)

5.6.5 USB Keyboard support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard under DOS

Options **Enabled**
 Disabled (*)

5.6.6 Init Display First

This item allows you to decide which slot to activate first, either PCI slot or AGP slot. This function takes place during the system boot.

Options **PCISlot**
 Onboard AGP (*)

5.6.7 AC97 Audio/Modem

This item allows you to decide to enable/disable the 820 chipset family to support AC97 Audio/Modem.

Options **Auto**
 Disabled

5.6.8 IDE HDD Block Mode

When enabled, the IDE controller will use the faster block mode to access devices.

Options **Enabled (*)**
 Disabled

5.6.9 Power-On Function

This field configures the Power-On mode of the system. If a power outage occurs, you need to re-configure this field. To ensure proper set up, allow the system to complete its reboot process (including the Power-On Self Test) before powering off computer.



This feature only supports PS/2 keyboard and PS/2 mouse. It does not work with USB keyboard or serial mouse.

5.6.9.1 KB Power-On Password

In you wish to use this function, bring the cursor to the field written “Enter”, and then press <Enter>. The computer will display the message, “Enter Password”. Type your password and press <Enter>. After the message “Confirm Password” is displayed, re-type your password. The KB Power-On function will be in effect after you save and exit setup.

To disable a password, bring the cursor to the “Enter” field again, then press <Enter>. The computer will display the message, “Enter Password”. Press <Enter>. A message will confirm that the password is disabled. Once the password is disabled, the system will boot and you can enter setup program freely.

5.6.9.2 Hot Key Power-On

This field specifies key selection for the Keyboard-Power-On hot key.

Options Ctrl-F1 / Ctrl-F2 / Ctrl-F3 / Ctrl-F4 / Ctrl-F5 / Ctrl-F6
 Ctrl-F7 / Ctrl-F8 / Ctrl-F9 / Ctrl-F10 / Ctrl-F11 / Ctrl-F12

5.6.9.3 PS2 MOUSE Button Power ON

This field specifies key selection for the PS2 MOUSE Button -Power-On hot key.

Options **Left / Right**

5.6.10 Onboard FDC Controller

This field enables or disables the onboard floppy controller. Select enabled if you intend to use your floppy disk drive.

Options **Enabled(*)**
 Disabled

5.6.11 Onboard Serial Port 1 / 2

These fields configure the onboard serial ports. There are several port addresses and IRQ channels to select from.

Options	Description
3F8 / IRQ 4(*)	Port address 3F8h, IRQ 4
2F8 / IRQ 3(*)	Port address 2F8h, IRQ 3
3E8 / IRQ 4	Port address 3E8h, IRQ 4
2E8 / IRQ 3	Port address 2E8h, IRQ 3
Auto	BIOS assigns port address and IRQ channel automatically
Disabled	Disables serial port

5.6.12 UART Mode Select

The UART (Universal Asynchronous Receiver/Transmitter) converts the parallel data into serial format on the transmission side and converts serial data to parallel format on the receiver side. This field must be configured in order to use the infrared connector, which supports infrared wireless transmitting and receiving of data between devices when using the appropriate application software. You must configure a Serial Port 2 to support an IrDA module prior to using this feature.

- | | | |
|--|---------|---------------------------------|
| | Options | Normal (*) , IrDA, ASKIR |
|--|---------|---------------------------------|
- 5.6.12.1 RxD, TxD Active for IrDA and ASKIR functions
 When setting the field to either IrDA or ASKIR, you must select the active level of receiving and transmission signal.
 Options **Hi, Lo (*) / Lo, Hi / Lo, Lo / Hi, Hi**
- 5.6.12.2 IR Transmission delay for IrDA and ASKIR functions
 When setting the field to either IrDA or ASKIR, you must select whether or not you require a delay between IR transmissions.
 Options **Enabled (*)**
Disabled
- 5.6.12.3 UR2 Duplex Mode for IrDA and ASKIR functions
 When setting the field to either IrDA or ASKIR, you must select the mode of receiving and transmitting signals.
 Options **Half (*) / Full**
- 5.6.12.4 Use IR Pins for IrDA and ASKIR functions
 When setting the field to either IrDA or ASKIR, you must select the mode of receiving and transmitting signals.
 Options **IR-Rx2Tx2 / RxD2, TxD2**

5.6.13 Parallel Port Mode

This field configures the operating mode of an onboard parallel port. Ensure you know the specifications of your parallel port devices before selecting field.

- | | | |
|--|---------|----------------------------|
| | Options | SPP (*) / EPP / ECP |
|--|---------|----------------------------|
- 5.6.13.1 EPP Mode Select
 When the Parallel Port Mode field is configured as EPP, ECP+EPP mode, the EPP version needs to be specified. Please check the EPP specifications before selecting field.
 Options Description
EPP1.7 (*) Use EPP 1.7 protocol
EPP1.9 Use EPP 1.9 protocol
- 5.6.13.2 ECP Mode Use DMA
 When the Parallel Port Mode field is configured as ECP, ECP+EPP mode, it needs a DMA channel for data transfer. This field specifies the DMA channel for ECP parallel port use.
 Options Description
1 Use DMA channel 1
3 Use DMA Channel 3

5.6.14 PWRON After PWR-Fail

The field configures the system status after experiencing a power failure.

Options	Description
---------	-------------

Former-Sts	System returns to former status prior to power failure (on or off)
-------------------	--

On	System turns back on after power lost
-----------	---------------------------------------

Off(*)	System remains off after power lost
---------------	-------------------------------------

5.6.15 Game Port Address

This field configures the onboard game port. There are several port addresses to select from.

Options	Description
---------	-------------

201(*)	Port address 201h
---------------	-------------------

209	Port address 209h
------------	-------------------

Disabled	Disables game port
-----------------	--------------------

5.6.16 Midi Port Address

This field configures the midi port. There are several port addresses to select from.

Options	Description
---------	-------------

330(*)	Port address 330h
---------------	-------------------

300	Port address 300h
------------	-------------------

290	Port address 290h
------------	-------------------

Disabled	Disables midi port
-----------------	--------------------

5.6.17 Midi Port IRQ

This field configures the midi port IRQ. There are several IRQs to select from.

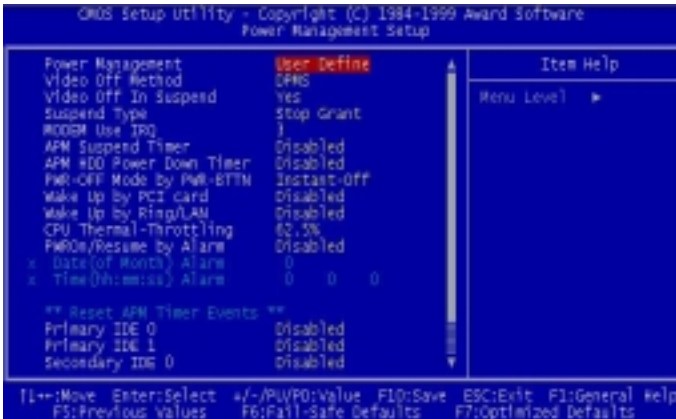
Options	Description
---------	-------------

5(*)	Port address IRQ5
-------------	-------------------

10	Port address IRQ10
-----------	--------------------

Disabled	Disables midi port IRQ
-----------------	------------------------

5.7 Power Management Setup



Each power-saving mode has a respective timer. The value of the timer can be assigned or reloaded and it will count down to zero. When the timer equals to zero, the system will be forced into the related suspend or power-saving mode. If any predefined signal or event is detected during the timer counting period, the timer restarts automatically.

5.7.1 Power Management

This feature allows the user to select the default parameters for the power-saving mode.

Options	Description
Min saving	When idle for one hour, the system enters suspend mode
Max Saving	When idle for fifteen minutes, the system enters suspend mode
User Define (*)	User can specify the time the system enters suspend mode

5.7.2 Video off Method

This field specifies the method that video subsystem used for power saving.

Options	Description
V/HSYNC+Blank	Turn off the vertical and horizontal synchronization ports and write blanks to the video buffer
Blank Screen	Writes blanks to the video buffer only
DPMS (*)	Initial display power management signaling with DPMS

5.7.3 Video Off In Suspend

This determines the manner in which the monitor is blanked.

Options **Yes (*)**
 No

5.7.4 Suspend Type

Select the Suspend Type.

Options **PwrOn Suspend / Stop Grant (*)**

5.7.5 MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

Options **3 (*) / 4 / 5 / 7 / 9 / 10 / 11 / NA**

5.7.6 APM Suspend Timer

This field specifies the time the system enters power-saving mode. It is available only when the Power Management field is set to User Define.

Options **1 Min / 2 Min / 4 Min / 8 Min / 12 Min / 20 Min / 30 Min**

5.7.7 APM HDD Power Down Timer

This field specifies the time the system enters HDD power down. It is available only when the Power Management field is set to User Define.

Options **1 Min / 2 Min / 3 Min / 4 Min / 5 Min / 6 Min / 7 Min**

5.7.8 PWR-Off Mode by PWR-BTTN

This field specifies the function of power button.

Options	Description
Instant-Off (*)	When power button pressed, the system turns off immediately.
Delay 4 Sec.	After the power button has been pressed and held for four seconds, the system turns off.

5.7.9 Wake up by PCI card

When enabled, you can “wake-up” your system using a PCI rev.2.2 card, such as a WOL card, connected in your PCI slot.

Options **Enabled**
 Disabled (*)

5.7.10 Wake up by LAN/RING

When Wake up by LAN function is enabled, the PC can power-on or “wake up” through LAN (Local Area Network). Used only when your PC is connected to a network.

When Wake up by RING function is enabled, the PC can power-on through an external modem connected to your PC. For example, sending an e-mail message to your PC from another location will power-on your PC. When using this feature, you must have a modem, and your PC must be turned off.

Options	Enabled
	Disabled (*)

5.7.11 CPU Thermal throttling

This field specifies the throttling function of CPU Thermal. When the CPU’s temperature attain its default protection point, the CPU will run slower in order to descend the hit generation from itself.

Options	Description
87.5%	Keep 87.5% of CPU’s full speed performance
75.0%	Keep 75.0% of CPU’s full speed performance
62.5% (*)	Keep 62.5% of CPU’s full speed performance
50.0%	Keep 50.0% of CPU’s full speed performance
37.5%	Keep 37.5% of CPU’s full speed performance
25.0%	Keep 25.0% of CPU’s full speed performance
12.5%	Keep 12.5% of CPU’s full speed performance

5.7.12 PWROn/Resume by Alarm

When enabled, you can set the date and time to automatically power-on your PC (similar to an alarm clock). The alarm from RTC (real-time clock) automatically turns on the system.

Options	Description
Disabled (*)	Disables RTC alarm function
Enabled	Enter the Date and Time alarm to power-on the PC. To set alarm for every day, select “0” for Date (of month) Alarm.

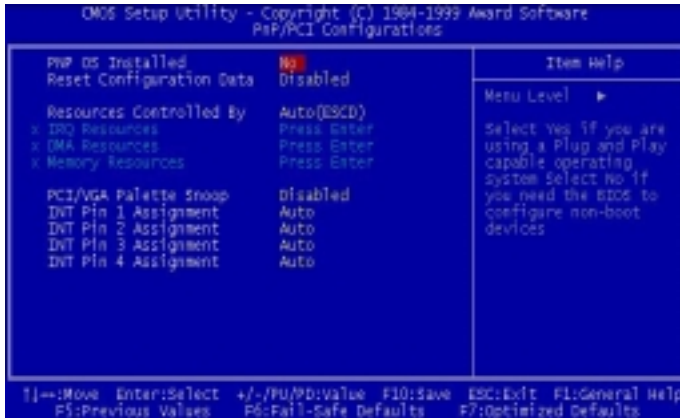
5.7.13 Reset APM Timer Events

This field enables the system to detect activity, and restart the timer of the power-saving mode.

5.7.13.1	Primary IDE0
	If enabled, timer restarts whenever the master disk of the primary IDE channel is active.
Options	Enabled
	Disabled (*)

- 5.7.13.2 Primary IDE 1
 If enabled, timer restarts whenever the slave disk of the primary IDE channel is active.
 Options **Enabled**
Disabled (*)
- 5.7.13.3 Secondary IDE 0
 If enabled, timer restarts whenever the master disk of the secondary IDE channel is active.
 Options **Enabled**
Disabled (*)
- 5.7.13.4 FDD, COM, LPT Port
 If enabled, timer restarts whenever the floppy disk is active.
 Options **Enabled**
Disabled (*)
- 5.7.13.5 PCI IRQ#
 If enabled, timer restarts whenever any of these interrupts occurs.
 Options **Enabled**
Disabled (*)

5.8 PnP/PCI Configurations



5.8.1 PNP OS Installed

The field specifies whether a Plug and Play operating system is installed.

- Options **Yes**
No (*)

5.8.2 Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

Options **Enabled**
 Disabled (*)

5.8.3 Resources Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 98/95/NT. If you set this field to “manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “Ø”).

Options Description
Auto (ESCD) (*) Resources controlled by BIOS automatically
Manual Resources controlled by the user

5.8.3.1 IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

5.8.3.1.1 IRQ3/4/5/7/9/10/11/12/14/15 assigned to

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

Options **PCI / ISA PnP (*)**
 Legacy ISA

5.8.3.2 DMA Resources

This sub menu can let you control the memory resource.

5.8.3.2.1 Reserved Memory Base

Reserved a low memory for the legacy device (non-PnP device).

Options **C800 / CC00 / D000 / D800 / DC00 / D400**
 / N/A (*)

5.8.3.2.2 Reserved Memory Length

Reserved a low memory length for the legacy device (non-PnP device).

Options **8K (*) / 16K / 32K / 64K.**

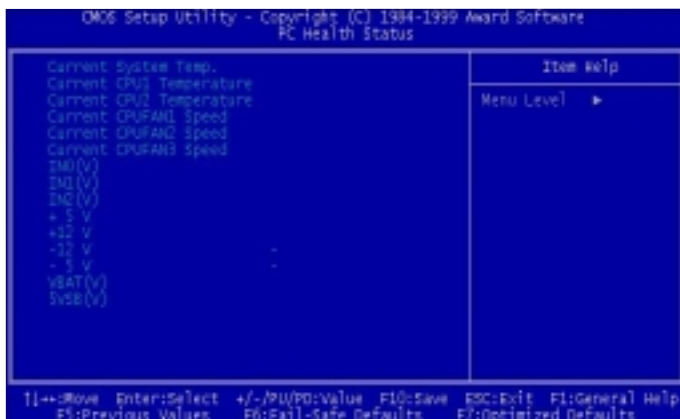
5.8.4 PCI / VGA Palette Snoop

This field controls the ability of a primary PCI graphics controller to share a common palette with an ISA/VESA video or MPEG card

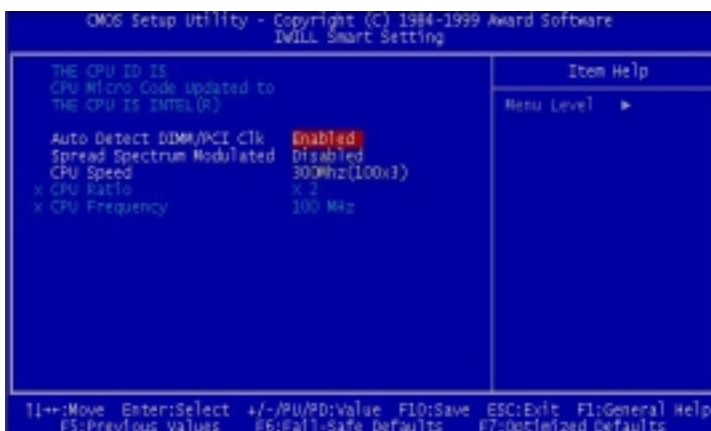
Options	Description
Enabled	PCI VGA co-works with ISA MPEG card
Disabled (*)	All cases except above

5.9 PC Health Status

This page is monitoring your status of computer. On the screen displays CPU/System temperature, FAN speed, and voltages.



5.10 IWILL Smart Setting





Over-clocking is not guaranteed. Users must have substantial knowledge of proper CPU relative to adjusting CPU speeds. Over-clocking should be done only by experienced engineers who conduct tests.

5.10.1 Auto Detect DIMM/PCI Clk

When enabled, the motherboard will automatically disable the clock source for a DIMM socket, which does not have a module on it. This is true for all PCI slots.

Options **Enabled(*)**
 Disabled

5.10.2 Spread Spectrum

This item configures radiation emitted from the system. When enabled, system will release less radiation.

Options **Enabled**
 Disabled(*)

5.10.3 CPU Speed Options



The CPU external frequency multiplied by the bus multiple equal the CP internal frequency. The configuration options vary depending on the CPU/SDRAM Frequency Ratio.
CPU Speed:CPU External Frequency × CPU Ratio

CPU/DRDRAM Clock

This field allows user to adjust the CPU external frequency.

your CPU **external frequency is 100MHz**, BIOS will display the following settings:

- 1
- 2
- 3
- 4

100MHz

Non-Fresh By BIOS
Freshable By BIOS

When your system booting, you can find the BIOS status on the screen

Shown on screen	CPU External frequency
100 MHz	100 MHz
105 MHz	107 MHz
114MHz	112 MHz
120 MHz	119 MHz
128 MHz	124 MHz

If your CPU **external frequency is 133MHz**, BIOS will display the following settings:



133 MHz

Shown on screen	CPU External frequency
133 MHz	133 MHz
138 MHz	138 MHz
143MHz	140MHz
148MHz	145MHz
152 MHz	150 MHz
157MHz	153MHz
162MHz	162MHz
170MHz	170MHz
180 MHz	180 MHz
200MHz	200MHz

PU Clock Ratio:

Option **2/2.5/3/3.5/4/4.5/5/5.5/6/6.5/7/7.5/8**

5.10.4 BIOS-ROM Flash Protect

The main function of BIOS-ROM Flash Protect prevents the virus of computers to destory the system of computers.

When JP16 1-2 , the Flash ROM protection mode will be controlled by this field.

Option Description

Non-Fresh By BIOS

Freshable By BIOS

When your system booting, you can find the BIOS status on the screen:

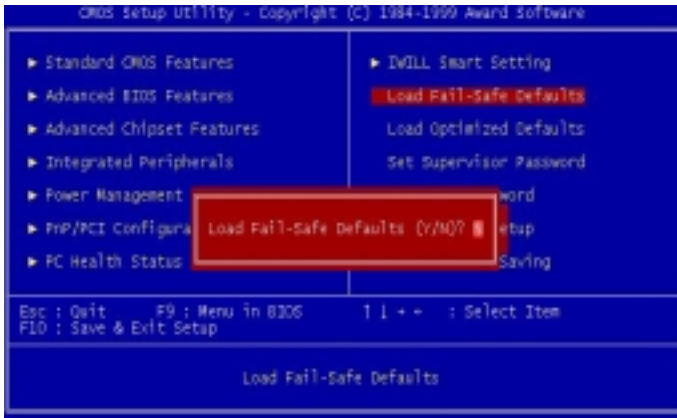
CPU TYPE	: PENTIUM-MMX	Base Memroy	:	640K
CO-Processor	: Installed	Extended Memroy	:	130048K
CPU Clock	: 166MHz	Cache Memory	:	512K
Diskette Drive A:	1.44M,3.5in.	Display Type	:	EGA/VGA
Diskette Drive B:	None	Serial Port(s)	:	3FB 2FB
Pri. Master Disk:	CDROM,Mode 4	Parallel Port(s)	:	378
Pri. Slave	: None	Cache L2 Type	:	Pipe-Burst
Disk	: Lba,UDMA 33,	SDRAM at Rows	:	0 2 3 4 5
Sec. Master Disk:	4335MB	EDO DRAM at Rows	:	None
Sec. Slave Disk:	None	Fast-Page at Rows	:	None
Power	: Enable	BIOS(FWH)Status	:	Protected By BIOS

There are three possible conditions will be shown that indicates your hardware setting respectively (Please refer to JP16 Flash protect jumper):

1. Protected By BIOS
2. Protected By H/W
3. Flashable

5.11 Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:



Pressing ‘Y’ loads the BIOS default values for the most stable, minimal-performance system operations.

on this item you get a confirmation dialog box with a message similar to:

5.12 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:



Pressing ‘Y’ loads the default values that are factory settings for optimal performance system operations.

5.13 Set Supervisor / User Password Setting

These setup pages are used for password setting. When a password has been enabled and the Security Option field is set as Setup, you will be required to enter the password every time you try to enter BIOS Setup program. This prevents an unauthorized person from changing any part of your system configuration. Additionally, if the Security Option field is set as Boot, the BIOS will request a password every time your system boot. This would prevent unauthorized use of your computer.

In you wish to use this function, bring the cursor to this field, then press <Enter>. The computer will display the message, “Enter Password”. Type your password and press <Enter>. After the message onfirm Password” is displayed, re-type your password. The Supervisor Password function will be in effect after you save and exit setup.

To disable a password, bring the cursor to this field, then press <Enter>. The computer will display the message, “Enter Password”. Press <Enter>. A message will confirm that the password is disabled. Once the password is disabled, the system will boot and you can enter setup program freely.



The User Password allows you to enter BIOS setup program, but you cannot change the value of any fields. Place keep your password in safe place.

5.14 Save & Exit Setup

Saves current CMOS value and exit BIOS setup program.

5.15 Exit Without Saving

Abandons all CMOS value changes and exits BIOS setup program.

Chapter 6

Power Installer CD

6.1 Software Installation

The attached Power Installer CD contains all the necessary drivers, utilities for IWILL's full range of motherboards. It provides an easy way for users to install the needed drivers without going through a complicated process. The Power Installer CD is able to auto-detect and display the drivers, utilities needed for your motherboard.

6.1.1 What's inside Power Installer CD for this motherboard

1. Drivers

- Intel INF Installation Utility
- Security Driver
- Software Audio Driver
- Network Driver Installation Guide

2. Utilities

- Make Driver Diskettes
- Hardware Monitor Utility
- PC-Cillin Anti-Virus
- Suspend to Disk program
- Adobe Acrobat Reader

3. Manuals

6.2 How to use the Power installer CD

The Power Installer CD supports the Auto Run program under Windows 98/95 and Windows NT operating systems. All the necessary drivers, utilities and manual for this motherboard will show on the screen. Select the one that needs to be installed, then simply follow the messages displayed on the screen to complete setup.



IWILL Power Installer does not support a keyboard at this moment. You must use a mouse to install it.

6.2.1 How to view manual

This Power Installer CD includes detailed information of all IWILL manuals for every motherboard manufactured by IWILL. Please insert the IWILL Power Installer CD into the CD-ROM drive; Click the "View Manual" item, and select the product that you want to view.

6.2.2 How to make driver diskette

6.2.2.1 Without O.S. installed

This bootable Power Installer CD also allows you to boot up your system, even when the OS has not been installed. During the boot-up process, you can perform "IWILL Diskette Creator," which will automatically make the driver diskettes you need.



At least one CD-ROM drive and one 1.44M floppy drive are necessary to make ""IWILL Diskette Creator"" work properly.

Follow the instructions below to make your own device driver floppy diskettes if you have a CD-ROM with IDE interface. If you have already installed SCSI CD-ROM, please make sure your SCSI host adapter supports bootable CD-ROM, and then proceed directly to step 8, and then finish the procedure.

1. First, power-on or "boot" your system.
2. Press key during boot sequence to enter "CMOS Setup Utility"
3. Use arrow keys to select "ADVANCED BIOS FEATURES" on the menu, then press "Enter."
4. Select "First Boot Device" and change the default setting from "Floppy" to "CDROM" using Page Up/Page Down key.
5. Press <Esc> key to go back to CMOS SETUP Utility menu.
6. Press <F10> to select "Save and Exit Setup"
7. Press "Y" then "Enter" to complete. Now you are able to boot up the system from the CD-ROM.
8. Insert the Power Installer CD into the CD-ROM drive and re-start the computer.
9. IWILL Diskette Creator will now execute automatically for making your own driver diskettes.
10. Make the desired driver diskettes according to the instructions displayed on screen.

6.2.2.2 Under windows 98/95/NT

You may just click on the software **Make Driver Diskettes Utility** shown on screen, then select the driver you need, follow the messages shown on screen to complete.

6.2.3 How to Install Intel INF Installation Utility

You may just click on the **Intel INF Installation Utility** shown on screen that needs to be installed, then follow the prompts to complete setup.



After completing O.S. installation, user must install ""Intel INF Installation Utility"" first to avoid some problems during installation.

6.2.4 How to install Security Driver

You may just click on the **Security Driver** shown on screen that needs to be installed, then follow the prompts to complete setup.

6.2.5 How to install Software Audio Driver

You may just click on the **Software Audio Driver** shown on screen that needs to be installed, then follow the prompts to complete setup.

6.2.6 How to install Network Driver

You may just click on the **Network Driver** Installation Guide shown on screen . Please follow the instructions to install the network driver.

6.2.7 How to use PC-Cillin Anti-Virus program

Simply click on the **PC-Cillin Anti-Virus** shown on screen that be installed, then follow the prompts to complete setup.

6.2.8 How to use Hardware Monitoring Utility

You may just click on the **Hardware Monitor Utility** shown on screen then follow the prompts to complete setup.

6.3 Installing Operating Systems

This section briefly demonstrates how to install a few popular software operating systems. Use this section only as a guide. It is highly recommended that users first refer to the installation manual of their operating system for a more thorough, detailed description on how to install the operating system.

6.3.1 Windows 98

Whenever installing Windows 98, please remember that Setup creates a new folder for Windows 98, and won't transfer any existing system settings. Windows 98 will become your default operating system, and will use standard system settings. This procedure represents an entirely new installation of Windows, therefore you'll need to reinstall any existing programs you may want to use.

There are two ways to install Windows 98. Each method depends on your current computer setup.



During Setup, your computer will automatically restart several times using the Windows 98 Setup wizard.

- 6.3.1.1 Installing the CD-ROM version of Windows 98
1. Place a Windows 98 Startup Disk into the floppy disk drive.
 2. Restart your computer.
The Microsoft Windows 98 Startup menu will appear.
 3. Place the Windows 98 CD into your CD-ROM drive.
 4. Type the number 1 and press <ENTER>.
A series of scans is performed, and then the MS-DOS prompt is displayed.
 5. Type the word setup at the MS-DOS display, and press <ENTER>.
Setup performs a check (A message will be displayed).
This message won't appear if your computer can't locate your CD-ROM drive. If you haven't installed the correct CD-ROM driver, please consult your drive's documentation or contact your hardware manufacturer.
 6. Press <ENTER>.
Microsoft ScanDisk will check your disk drives for errors.
 7. When ScanDisk finishes, press the X key.
Setup will initialize. Then, Windows 98 Setup begins.
 8. Please follow the instructions that are displayed.



Setup may ask you to insert your original Windows 95 or Windows 3.1 disks if you're using the upgrade version of Windows 98.

6.3.2 Windows NT

- 6.3.2.1 Installing the CD-ROM version of Windows NT on an IDE system
1. First, power-on or "boot" your system.
 2. Press key during boot sequence to enter "CMOS Setup Utility"
 3. Use arrow keys to select "BIOS FEATURES SETUP" on the menu, then press "Enter."
 4. Select "Boot Sequence" and change the default setting from A, C, SCSI to "CD-ROM, C, A" using Page Up /Page Down key.
 5. Place the Windows NT 4.0 CD-ROM in the drive.
 6. Follow all instructions to finish Windows NT installation.