
EC Declaration of Conformity

We

Iwill Corp.

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Taiwan, R.O.C.

Declare under sole responsibility that the

BD100 Plus 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

About This Manual

This manual will introduce to the user how this product is consisted. All useful information will be described in later chapters. Keep this manual for your future upgrade or system re-configuration.

Chapter 0 Overview

An overview of some special and basic features of the BD100 Plus motherboard

Chapter 1 Features

The detailed features and specifications of the BD100 Plus motherboard

Chapter 2 Quick Installation

The quick reference for experienced users

Chapter 3 Hardware Installation

The detailed information on jumper setting, connection, and hardware installation

Chapter 4 System BIOS Setup

The detail information of the system BIOS setup options

Chapter 5 Software and Tools

The detail information for install software and tools

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Warning

Most of the features of this product have passed strict verification and are subject to change at any time without 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.

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Chapter 0

Overview

Thank you for purchasing Iwill BD100 Plus 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.

BD100 PLUS FEATURES

The BD100 Plus is the newest, most exciting motherboard in the market today. A step ahead of the competition, the BD100 Plus provides more power, convenience, and reliability for users. The BD100 Plus has more speed, and is great for better, fast computer graphics. The BD100 Plus has our special Iwill Smart Setting—an easy way to set your CPU frequency—and also more versatile power-on functions, all for your convenience. Furthermore, the BD100 Plus has several power saving modes to reduce energy waste. All of these features are compacted in a dynamic motherboard that has the stability you require in a powerful motherboard. Special features of the BD100 Plus include:

- AGP Booster—allows for fast graphics for games, and in some cases brings more stability to your AGP port
- Iwill Smart Setting—allows easy setting of your CPU frequency, no jumpers required!
- Versatile Power-On—you can power-on the system using a hot key, password, LAN, or modem
- Power Management Setup—allows you to set Doze, Standby, and Suspend modes
- Power Failure Recovery—after a power failure, the system will automatically turn on again once the power returns
- Health Monitoring System—helps manage your system so that your system runs safely

The BD100 Plus also includes some basic features, such as: 1 x Slot 1 for Pentium® III/II/Celeron, Intel 443BX chipset, 4 x DIMM slots, 5 x PCI slots, 1 x FDC floppy disk connector, 2 x IDE connectors, 2 x USB ports, 1 x PS/2 mouse, 1 x PS/2 keyboard ports, one parallel port, two serial ports, ATX power connector, one Sound Blast Link connector, and much, much more!

The BD100 Plus has speed, convenience, and reliability, all wrapped up in one outstanding motherboard. The BD100 Plus is ahead of the pack. There is no other motherboard quite like it. Iwill: Lead the way into the 21st century!

YEAR 2000 issue

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 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 occurs, 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 applications 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.** The BIOS contains a feature that checks the least two significant digits of the year stored in the RTC during each BIOS request (INT 1Ah) to read the date and, if less than ‘80’, updates the century byte to ‘20’. This feature enables operating systems and applications using the BIOS date/time services to reliably manipulate the year as a four-digit value.

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.

Peripherals and Devices

If you want to improve your system’s I/O performance, choose the latest Iwill SCSI controllers. The following are some Iwill SCSI controllers you may purchase and use with your BD100 Plus motherboard:

- SIDE 2930C: a fast SCSI for MO, CD-R, CD-R/W, CD-ROM. This value/performance SCSI card connects up to 7 devices.
- SIDE 2930U+: a 20MB/Sec. transfer rate. A full function card, supports booting from hard disk or CD-ROM, connects 7 devices
- SIDE 2935UW: 40 MB/sec transfer rate, 15 devices. The most stable product for an efficient system
- SIDE 2935LVD: an 80MB/sec transfer rate, and a 12-meter cable length connecting 15 devices. Perfect solution for enthusiasts.

Chapter 1

Features

1.1 Features

1.1.1 Processor

Supports single Pentium® III/II/Celeron processors

Supports 100 MHz and 66 MHz bus speeds

Supports all published Pentium® III/II/Celeron processor voltages

SEC (Single Edge Contact) cartridge Slot 1 connector

Jumper inside selects the processor speed from 233 MHz to 500 MHz or higher

1.1.2 Core Logic

Intel 82443BX PCI/ AGP controller

- Integrated DRAM controller

- Integrated PCI bus mastering controller

- Integrated Accelerated Graphics Port (AGP) bus controller

Intel 82371EB PCI/ISA/IDE Xcelerator (PIIX4E)

- Multifunction PCI-to-ISA bridge (PCI Rev 2.1 compliant)

- Integrated IDE controller with Ultra DMA/33 support

- USB host interface with support for two USB ports

- Enhanced DMA controller and standard Interrupt controller and Timer function

- System Management Bus (SMB) with support for DIMM Serial PD

1.1.3 Main Memory

4 x 168-pin DIMM (Dual Inline Memory Module) sockets

Supports up to 1 GB of 3.3 V Unbuffered SDRAM or Registered DIMM

Supports up to 1 GB of 3.3 V Extended Data Out (EDO) memory.

64-bit data interface with ECC support (SDRAM only)

1.1.4 Multi I/O

Winbond W83977 super I/O controller

Note: Several different chips of the W83977 series may be used to support special features.

Supports two floppy disk drives (include 3 Mode drive) and / or QIC-80 tape drive

Supports one multi-mode parallel port

Supports two high speed 16550 FIFO serial ports

Integrated keyboard controller

Integrated PS/2 mouse controller

Supports PS/2 Power-On function

Supports Power Failure Recovery

1.1.5 Expansion slots

1 x ISA slot

4 x PCI slots

1 x shared ISA/PCI slot

1 x AGP slot

1.1.6 Form Factor

Compliance with ATX Version 2.01 specification

Supports ATX power supply connector

Supports the remote on/off switch

Physical dimensions: length: 188 mm / width: 305 mm

1.1.7 Manageability

Winbond W83781 System Hardware Monitor built-in.

Note: Several different chips of the W83781 series may be used to support special features.

Wake on LAN header for use with add-in network interface cards (NICs)

Power failure recovery

Wake on modem

1.1.8 Other features

Award BIOS

Using 2Mbit Flash ROM to provide on-board-upgrade ability without changing components
Plug and Play compatible

Supports Advanced Power Management (APM)

Supports ACPI (Advanced Configuration Power Interface)

Supports Creative SB-LINK to deliver Sound Blaster 16 compatibility

1.2 Environment Requirements

Temperature 0-55 degrees C (operating or storage)

5% to 95% non-condensing relative humidity

At least a 250 W power supply

The power supply must comply with the following recommendations found in the specifications:

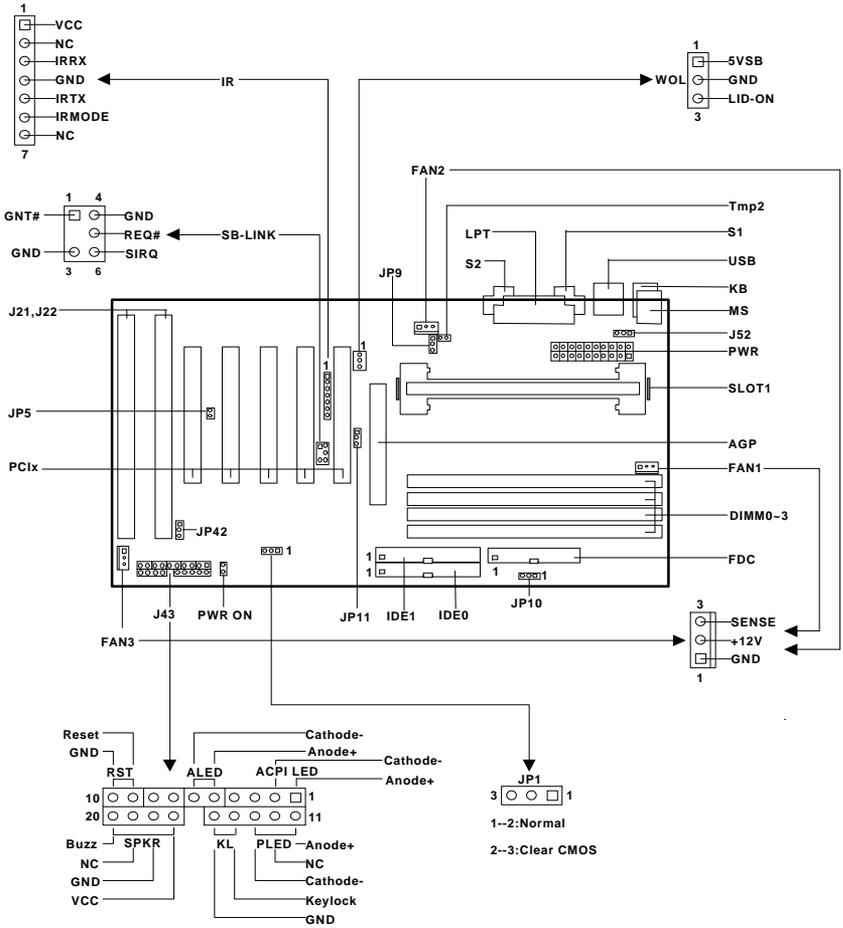
- The potential relation between 3.3 VDC and +5 VDC power rails

- The current capability of the +5VSB line

- All timing parameters

1.3 Motherboard Components Placement

The following figure shows the location of the components on the BD100 Plus motherboard.

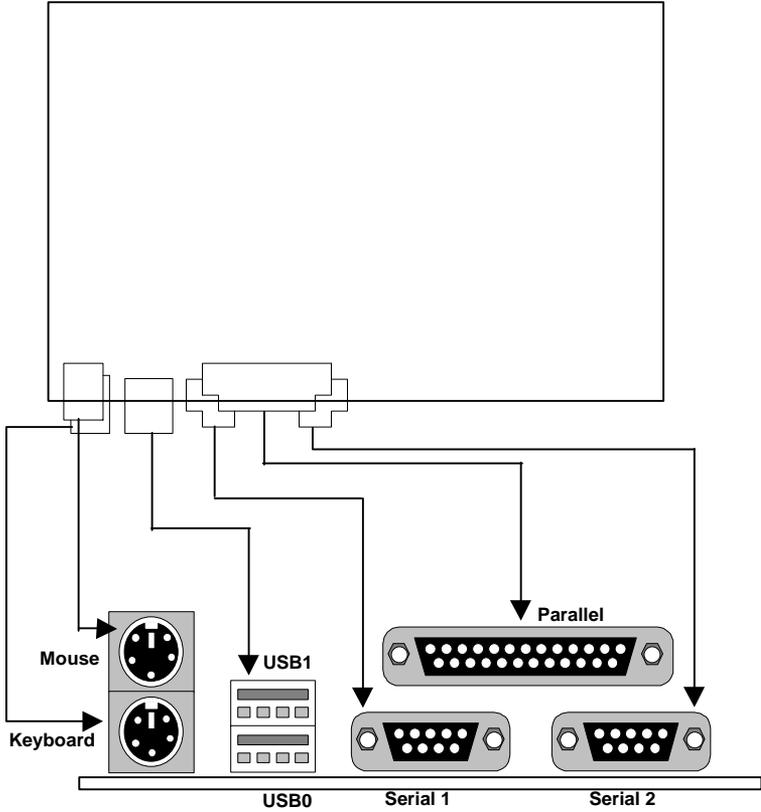


Location	Screen Printing	Description
J3	Slot 1	Processor Slot 1 connector
J5--J8	DIMM0--3	168-pin DIMM Sockets
J11	AGP	AGP connector
J12--J16	PCI1--5	PCI expansion slots
J21--J22	J21, J22	ISA expansion slots
J28	IDE 0	Primary IDE connector
J29	IDE 1	Secondary IDE connector
J30	FDC	Floppy drive connector
J31	S1	Serial 1 connector
J32	S2	Serial 2 connector
J33	LPT	Parallel connector
J34	USB	Two USB connectors
J35	MS	PS/2 mouse connector
J35	KB	PS/2 keyboard connector
J37	PWR	Standard ATX power connector
J39	FAN1	Processor fan header
J40	FAN2	System fan header
J41	FAN3	System fan header
J42	PWR ON	Remote power-on/off header
J43	J43	Front panel I/O header
	ACPI LED (pins 1--2):	ACPI LED header
	ALED (pins 5--6):	IDE LED header
	RST (pins 9--10):	Reset Switch header
	PLED (pins 11--13):	Power LED header
	KL (pins 14--15):	Keylock switch header
	SPKR (pins 17--20):	Speaker header
J44	SB-LINK	Creative SB-LINK header
J45	IR	IR (infrared) connector
J46	WOL	Wake On LAN header
J50	Tmp2	2nd temperature sensor header
J52	KB ON	PS/2 Power-On jumper block
JP1	CLRTC	Jumper for clearing CMOS
JP5	JP5	Jumper for PCI devices compatibility
JP9	JP9	Adjustable Vcore (5% or 10 %)
JP10	VIO	Adjustable VIO (3.5, 3.6, or 3.8)
JP11	JP11	Adjustable AGP Frequency
JP42	JP42	Clear Keyboard Power-On Password

1.4 Back Panel Connectors

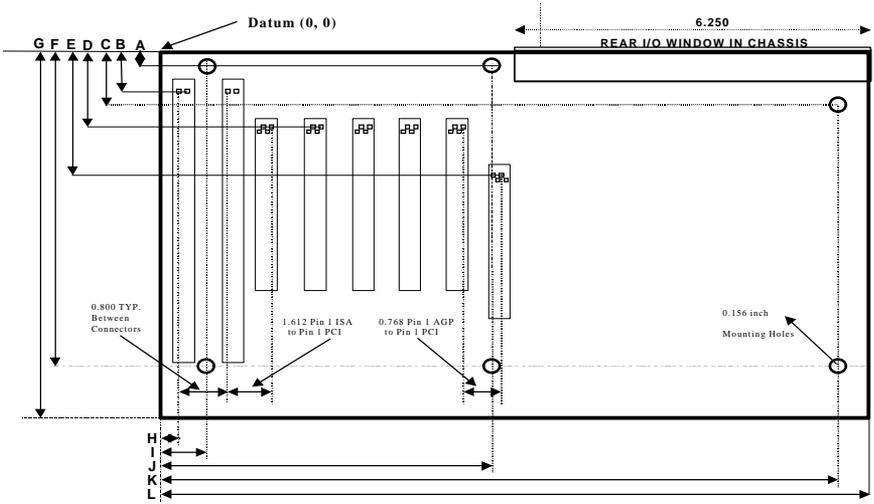
The following figure shows the location of the back panel I/O connectors, which include:

- PS/2-style keyboard and mouse connectors
- Two USB connectors
- Two serial port connectors
- One parallel port connector



1.5 Form Factor

The BD100 Plus motherboard is designed to fit into an ATX form-factor chassis. The I/O connector locations and the mounting hole locations are in compliance with the ATX specification. Please see details in the following figure:



- | | |
|---------------|----------------|
| A: 0.400 inch | H: 0.150 inch |
| B: 1.000 inch | I: 0.650 inch |
| C: 1.300 inch | J: 5.550 inch |
| D: 1.625 inch | K: 11.750 inch |
| E: 2.627 inch | L: 12.000 inch |
| F: 6.500 inch | |
| G: 7.086 inch | |



Chapter 2

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 **Chapter 3**.

Note: Please reviews **1.3 Motherboard Components Placement** graphic for reference.

Warning: Users must follow these guidelines to ensure the BD100 Plus is protected during installation.

- a. Make sure your computer is unplugged whenever working with inside components.
- b. Beware of Static electricity! Either wear anti-static wrist straps, or ensure that you touch a safely grounded object (such as a metal desk/table). Don't handle components near high static objects (i.e. carpets, wool/ acrylic sweaters, etc.).
- c. Pick up components by their bodies. Try not to touch IC chips, connectors or leads. Don't handle components any more than necessary.
- d. Keep all magnets away from both your hard and floppy disk drives, especially magnetic screwdrivers. Keep both floppy and hard disks apart if disassembled.
- e. Keep water and liquids away from your computer and its components.

Step 1. Install processor

This process is for motherboards already equipped with the universal retention mechanism.

For Pentium II processors:

- a. 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.
- b. With the CPU fan facing the DIMM sockets, 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.
- c. Locate the two CPU lock switches, which are on the top, one on each side of the CPU just above its respective bracket. With the CPU fan facing you, use **both** hands and grasp the CPU, placing each thumb on top of each lock switch. Then, at the same time "flip" each lock switch outward in opposite directions (both away from the CPU fan). You should hear two "click" sounds, one from each switch. This indicates the CPU is secured into place.
- d. To release CPU, grasp the CPU (in the same manner in "c" above) and push both lock switches inward (toward the CPU fan). You should hear two "click" sounds, one from each switch. Lift CPU upward and out of the socket.

For Pentium III/Celeron processors:

- a. Follow steps “a” ~ “b” above.
- b. Locate the two sliding locks on each bracket. Read the writing on each lock: “OPEN” and “LOCK”. To lock, use your index finger and thumb, grasp each lock, and gently slide upward. This may be done simultaneously with two hands, or one at a time. Once each lock has been fixed upward, the CPU is secured into place.
- c. To release CPU, use your index finger and thumb, grasp each lock, and gently push downward. Lift the CPU upward and out of the socket.

Step 2. Install processor fan

This process is executed more quickly if your Pentium II/III/Celeron processor already has a fan attached to it. If so, attach the processor fan power cable to the “FAN1” header.

Step 3. Setting CPU speed

The CPU speed is setup using **Iwill Smart Setting**. This is found in the BIOS setup by pressing during the boot up process. Please refer to Chapter 4 for instructions on setting CPU speed.

Note: The CPU speed must be setup according to the CPU’s specifications.

Step 4. Install the memory module

At least one memory module, such as a 168-pin 3.3V unbuffered SDRAM, Registered DIMM or EDO DIMM, needs to be inserted into the DIMM sockets. You may select any of the four DIMM sockets —there are no restrictions.

Note: Be sure the edges of your memory module line-up correctly with the socket before attempting to insert the memory module.

Step 5. Connect the internal peripherals

The internal peripherals are devices that are located within the computer chassis, such as the floppy disk drive, hard disk drive, CD-ROM drive, etc. There is one 34-pin flat cable for floppy disk drive, and one 40-pin flat cable for several IDE devices included in your retail package.

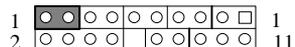
Note: The plastic lead on the middle of one side of the cable’s connector acts as a key, and slides easily into the gap in the middle of the receiving connector on the motherboard when inserting the cable connector.

Step 6. Connect the Reset button

The 2-pin reset header is located on pins 9--10 (identified as RST). Connect the reset button cable from the RST header to the reset button on the front panel of your PC case.

Locate the RST header on the motherboard:

Pin 9	RESET
Pin 10	Ground

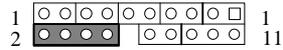


Step 7. Connect the Speaker

The 4-pin speaker header is located on pins 17--20 (identified as SPKR). Connect the cable from the SPKR header to the speaker on the front panel of your PC case.

Locate the SPKR header on the motherboard:

Pin 17	VCC
Pin 18	Ground
Pin 19	NC
Pin 20	BUZZ

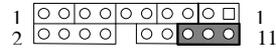


Step 8. Connect the power LED

The 3-pin power LED header is located on pins 11--13 (identified as PLED). Connect the cable from the PLED header to the power LED on the front panel of your PC case.

Locate the PLED header on the motherboard:

Pin 11	Anode (+)
Pin 12	NC
Pin 13	Cathode (-)

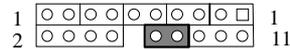


Step 9. Connect the keylock switch

The 2-pin keylock header is located on pins 14--15 (identified as KL). Connect the cable from the KL header to the keylock switch (if supported) on the front panel of your PC case.

Locate the KL header on the motherboard:

Pin 14	KEYLOCK
Pin 15	Ground

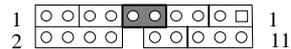


Step 10. Connect the IDE LED

The 2-pin IDE LED header is located on pins 5--6 (identified as ALED). Connect the cable from ALED header to the LED on the front panel of your PC case.

Locate the ALED header on the motherboard:

Pin 5	Anode (+)
Pin 6	Cathode (-)

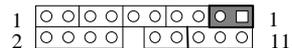


Step 11. Connect the ACPI LED

The 2-pin ACPI LED is located on pins 1-2 (marked as ACPI) of the front panel connector. Connect the chassis's ACPI LED to this header.

Signal of ACPI LED header

Pin 1	Cathode (-)
Pin 2	Anode (+)



Step 12. Connect the Power-ON button

All ATX computers provide a Power-On button on the front panel of your PC case. Simply plug in the ATX power connector into the Power-On button.

Step 13. Install the Power Supply cord

The BD100 Plus motherboard provides a 20-pin ATX power connector. This works in conjunction with the Power-On button to provide remote On/Off function.

Step 14. Install the Keyboard

Connect the cable from the PS/2 keyboard connector at the back panel to the keyboard.

Step 15. Install the Display Card

Insert the display card into the ISA, PCI or AGP expansion slot.

Step 16. Connect the External Peripherals

The external peripherals are devices located outside the computer chassis, such as the serial mouse, printer, PS/2 mouse, external modem, etc. Connect these devices to their appropriate connectors.

Step 17. Power-on the system

Once the system is powered on, make sure you enter the BIOS setup program and load the manufacturer's default settings. After the system reboot, you are ready to install your operating system. Enjoy!

Chapter 3

Hardware Installation

3.1 Preparation and Inspection

The BD100 Plus 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.

Note: Please review **1.3 Motherboard Components Placement** graphic for reference.

3.2 Unpack the BD100 Plus

You should find the following components when opening the box:

- One BD100 Plus motherboard
- This operation manual
- One 40-pin IDE cable
- One 34-pin floppy cable
- One **Iwill Power Installer** CD diskette
- One Thermal Sensor Kit)

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

Warning: Users must follow these guidelines to ensure the BD100 Plus is protected during installation.

- a. Make sure your computer is unplugged whenever working with inside components.
- b. Beware of Static electricity! Either wear anti-static wrist straps, or ensure that you touch a safely grounded object (such as a metal desk/table). Don't handle components near high static objects (i.e. carpets, wool/ acrylic sweaters, etc.).
- c. Pick up components by their bodies. Try not to touch IC chips, connectors or leads. Don't handle components any more than necessary.
- d. Keep all magnets away from both your hard and floppy disk drives, especially magnetic screwdrivers. Keep both floppy and hard disks apart if disassembled.
- e. Keep water and liquids away from your computer and its components.

3.3 Installation procedure

3.3.1 Processor (Slot 1 and FAN1)

The BD100 Plus motherboard supports single Pentium®III/II/Celeron processors. The processor's VID pins automatically program the voltage regulator on the motherboard to the required voltage. The motherboard currently supports processors that run internally from 233 MHz to 500 MHz or higher.

This process is for motherboards already equipped with the universal retention mechanism.

For Pentium II processors:

- a. 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.
- b. With the CPU fan facing the DIMM sockets, 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.
- c. Locate the two CPU lock switches, which are on the top, one on each side of the CPU just above its respective bracket. With the CPU fan facing you, use **both** hands and grasp the CPU, placing each thumb on top of each lock switch. Then, at the same time “flip” each lock switch outward in opposite directions (both away from the CPU fan). You should hear two “click” sounds, one from each switch. This indicates the CPU is secured into place.
- d. To release CPU, grasp the CPU (in the same manner in “c” above) and push both lock switches inward (toward the CPU fan). You should hear two “click” sounds, one from each switch. Lift CPU upward and out of the socket.

For Pentium III/Celeron processors:

- a. Follow steps “a” ~ “b” above.
- b. Locate the two sliding locks on each bracket. Read the writing on each lock: “OPEN” and “LOCK”. To lock, use your index finger and thumb, grasp each lock, and gently slide upward. This may be done simultaneously with two hands, or one at a time. Once each lock has been fixed upward, the CPU is secured into place.
- c. To release CPU, use your index finger and thumb, grasp each lock, and gently push downward. Lift the CPU upward and out of the socket.

Locate the FAN1 header (processor fan header) on the motherboard:

Pin 1	Ground
Pin 2	+12 V
Pin 3	SENSE

Note 1. The processor fan must always be attached to the processor to prevent overheating.

Note 2. The second-level cache is located on the base of the SEC cartridge. The cache size and cacheable memory size vary, depending on the processor used.

3.3.2 Setting CPU speed

The CPU speed is setup using **Iwill Smart Setting**. This is found in the BIOS setup by pressing during the boot up process. Please refer to **Chapter 4** for instructions on setting CPU speed. When adjusting frequency, select the frequency that matches your motherboard's bus speed in order to maximize your motherboard's performance. Enclosed is a list of possible CPU settings.

Note: The CPU speed must be setup according to the CPU's specifications.

CPU Model	BIOS Setting
Intel Pentium II 233MHz	Manual, x3.5, 66MHz
Intel Pentium II 266MHz	Manual, x4, 66MHz
Intel Pentium II 300MHz	300Mhz(66x4.5)
Intel Pentium II 333MHz	333Mhz(66x5)
Intel Pentium II 350MHz	350Mhz(100x3.5)
Intel Pentium II 400MHz	400Mhz(100x4)
Intel Pentium II 450MHz	450Mhz(100x4.5)
Intel Pentium III 450MHz	450Mhz(100x4.5)
Intel Pentium III 500MHz	500Mhz(100x5)
Intel Pentium III 550MHz	550Mhz(100x5.5)
Intel Celeron 266MHz	Manual, x4, 66MHz
Intel Celeron 300	300Mhz(66x4.5)
Intel Celeron 333MHz	333Mhz(66x5)
Intel Celeron 366MHz	366Mhz(66x5.5)
Intel Celeron 400MHz	400Mhz(66x6)
Intel Celeron 433MHz	433Mhz(66x6.5)
Intel Celeron 466MHz	466Mhz(66x7)

3.3.3 Main memory (DIMM0--3)

The BD100 Plus motherboard has four Dual Inline Memory Module (DIMM) sockets, which support memory size from 8 MB to 1 GB with SDRAM and EDO DRAM. The Synchronous DRAM (SDRAM) improves memory performance through memory access that is synchronous with the memory clock. The Error Checking and Correcting (ECC) memory improves system security by detecting and correcting error bits when accessing memory.

The BD100 Plus motherboard supports the following memory features:

- JEDEC MO-161 compliant 168-pin DIMMs with gold-plated contacts
- 3.3 V memory module only
- ECC logic detects multiple-bit errors and corrects single-bit errors (SDRAM)
- Unbuffered SDRAM, Registered DIMM or 60-ns 3.3 V EDO DIMMs
- 16 / 64 Mbit DRAM technology
- Symmetrical and asymmetrical DRAM addressing
- Single-sided or double-sided DIMMs

Note: 3.3 V EDO and SDRAM DIMMs cannot be installed together (at the same time) on the BD100 Plus motherboard

Memory can be installed in DIMM sockets without any order restrictions. The memory type, size, speed can vary between sockets. The BIOS automatically detects memory type, size and speed.

Note 1: In order to reduce the loading, the total memory chip count installed on the system should not exceed 72 unless the Registered DIMMs are used.

Note 2: The Serial Presence Detect (SPD) information is highly recommended on all 100 MHz DIMMs for the BD100 Plus motherboard. This function is implemented using an EEPROM component on the memory module. The nonvolatile storage device contains data programmed by the DIMM manufacturer that identifies the module type and various SDRAM organization and timing parameters. A warning message will be displayed if any DIMMs installed on this motherboard have no SPD EEPROM. If this is the case, the system might become unstable without correct timing parameters.

3.3.4 Accelerated Graphics Port (AGP)

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 AGP supports AC timing for 133 MHz data transfer rates, allowing data throughput of 533 MB/sec.

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.

For Windows NT 4.0: Upgrade to "Windows NT 4.0 Service Pack 3" or later versions

For Windows 95: Upgrade to Windows 95 OSR 2.1 or later versions

Install DirectX 5 or later versions from Microsoft

3.3.5 Primary/Secondary IDE connectors (IDE0 and IDE1)

The BD100 Plus motherboard has two bus-mastering IDE interfaces, which support PIO Mode 3 / 4 and Ultra DMA 33 mode transfer. These interfaces support IDE disks, ATAPI devices (ex: CD-ROM), ZIP and LS-120 devices. If two devices are connected to one channel, one should be set to "Master" and the other one to "Slave" (Refer to device operation guide).

Note: The IDE interfaces are fully compatible with ATA66 HDD.

3.3.6 Floppy drive connector (FDC)

The BD100 Plus motherboard has one floppy interface, which supports 360K, 720K, 1.2M, 1.44M, 2.88M, 3 Mode floppy drives and QIC-80 floppy tape drive. It supports up to two devices in any capacity using the same connector. Simply connect the 34-pin cable connector from the connector on the motherboard to the floppy drive or drives.

3.3.7 Serial port connector (S1 and S2)

The two 9-pin D-Sub serial port connectors on the back panel are compatible with 16550 UART. These ports are used for serial mouse, serial printer, fax modem, etc. Simply connect the serial cable from the serial port connector to your serial devices.

3.3.8 Parallel port connector (LPT)

The connector for the multi-mode parallel port is a 25-pin D-Sub connector located on the back panel. It is used for printers, or other parallel devices. Simply connect the parallel cable connector from the parallel port to your parallel devices.

3.3.9 Universal Serial Bus (USB)

The USB is suitable for mid-to-low speed devices such as mice, keyboards, joysticks, etc. In the past, all of these devices used different connectors, and it was difficult for end users to install the system. With USB technology, the various types of ports are replaced with a single connection, from which you can connect dozens of USB-compatible devices. Simply connect a hub into the USB port, and then plug all of your USB peripherals into the hub. The system is ready to go!

The BD100 Plus motherboard supports the following USB features:

- Self-identifying, hot pluggable peripherals
- Support of isochronous and asynchronous transfer type
- Supports a maximum of 127 physical devices
- Supports data transfer rate up to 12 Mbit/sec

The BD100 Plus motherboard has two USB ports; any USB peripheral can be connected to either port. For more than two USB devices, connect a hub to either port.

3.3.10 PS/2 keyboard and mouse connectors (KB and MS)

Find the 6-pin mini-DIN keyboard connector, located on the back panel. Simply plug in the keyboard cable's connector into this back panel connector (**Note:** It's the lower one on the motherboard). Then, find the 6-pin mini-DIN PS/2 mouse connector, also located on the back (**Note:** It's the upper one). Plug in the mouse cable's connector into PS/2 mouse connector on the back panel.

Note: It is recommended that you turn off the computer's power before connecting or disconnecting a keyboard and/or mouse.

3.3.11 ATX power connector (PWR)

The BD100 Plus motherboard supports an ATX power connector. Simply connect the ATX power cord into this connector.)

3.3.12 System fan headers (FAN2 and FAN3)

The system's airflow is critical for its reliability. To generate airflow within a system, ensure you have the proper size and number of fans (and vents), and position each fan properly in relation to the system's components. Most systems are equipped with at least one fan. However, the user may have to purchase additional (secondary) fans in order to take advantage of this function.

The BD100 Plus motherboard supports two extra system fan headers: FAN2 and FAN3. Connect the power cable from the FAN2/3 header to each additional fan used within your system. These fans automatically stop when the system enters the suspend mode.

Locate the FAN2/3 header on the motherboard:

Pin 1	Ground
Pin 2	+12 V
Pin 3	SENSE

3.3.13 Power-On header (PWR ON)

The Power-On header can be connected to the Power-On button located on front panel of your PC case. Pressing this button turns your system on or off. At least two seconds must pass before the power supply will recognize another on/off signal.

Note: Press the Power-On button, holding it in for four seconds. This will forcibly execute the shutdown procedure immediately.

3.3.14 Front panel connector (J43)

The J43 connector contains several headers, which are connected to buttons or switches located on front panel of your PC case.

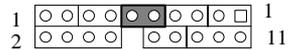
Note: These functions are optional for the user.

3.3.14.1 IDE LED header (ALED)

If connected, the LED will light up whenever the IDE devices are working. The 2-pin IDE LED header is located on pins 5--6 (identified as ALED). To use this function, connect the cable from the ALED header to the LED on the front panel of your PC case.

Locate the ALED header on the motherboard:

Pin 5	Anode (+)
Pin 6	Cathode (-)

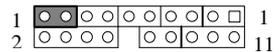


3.3.14.2 RESET header (RST)

If connected, you may use the button on the front panel to reset the system. The 2-pin reset header is located on pins 9--10 (identified as RST). To use this function, connect the cable from the RST header to the reset button located on front panel of your PC case.

Locate the RST header on the motherboard:

Pin 9	RESET
Pin 10	Ground

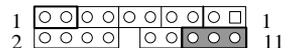


3.3.14.3 Power LED header (PLED)

If connected, the LED will light up each time you power-on the PC. The 3-pin power LED header is located on pins 11--13 (identified as PLED). To use this function, connect the cable from the PLED to the LED located on front panel of your PC case.

Locate the PLED header on the motherboard:

Pin 11	Anode (+)
Pin 12	NC
Pin 13	Cathode (-)

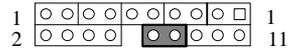


3.3.14.4 KEYLOCK header (KL)

If connected, the user is able to temporarily disable the keyboard (often used as security when the user steps away momentarily from the PC). The function is activated by pressing the keylock button on the front panel of the PC case. The 2-pin keylock header is located on pins 14--15 (identified as KL). To use this function, connect the cable from the KL header to the switch located on front panel of your PC case.

Locate the KL header on the motherboard:

Pin 14	KEYLOCK
Pin 15	Ground

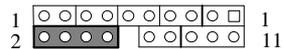


3.3.14.5 SPEAKER header (SPKR)

If connected, the speaker sounds an error “beep” code/information (during the POST) in the event that the computer can not use the video interface. The 4-pin speaker header is located on pins 17--20 (identified as SPKR). To use this function, connect the cable from the SPKR header to the switch located on front panel of your PC case.

Locate the SPKR header on the motherboard:

Pin 17	VCC
Pin 18	Ground
Pin 19	NC
Pin 20	BUZZ

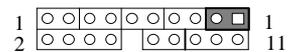


3.3.14.6 Connect the ACPI LED

If connected, the ACPI LED will light up each time your PC is in suspend or power saving mode. The 2-pin ACPI LED is located on pins 1-2 (identified as ACPI). Connect the cable from the ACPI LED header to the ACPI located on front panel of your PC case.

Locate the ACPI LED header on the motherboard:

Pin 1	Anode (+)
Pin 2	Cathode (-)



3.3.15 SB-LINK header (SB-LINK)

Sound Blaster 16 was the standard of the ISA bus sound cards. Several games have been programmed for Sound Blaster especially under the DOS environment. Users who continue to play games that use ISA bus sound cards may experience compatibility problems with the new upgraded PCI bus sound cards.

This function adopts Intel’s PC/PCI technology to deliver Sound Blaster 16 compatibility to PCI bus sound card, enabling users to play real-mode DOS games. To use this function, connect the cable provided by the PCI sound card to the SB-LINK header.

Locate the SB-LINK header on the motherboard:

Pin 1	GNT#	Pin 4	Ground
Pin 2	Key	Pin 5	REQ#
Pin 3	Ground	Pin 6	SIRQ

3.3.16 Infrared connector (IR)

The Infrared connector 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. The 7-pin Infrared header (identified as IR) is located in between the PCI1 and PCI2 slots. Connect the cable from the IrDA module to the IR header.

3.3.17 WOL header (WOL)

The WOL (“Wake On LAN,”) is a feature which allows you to power-on or “wake up” the computer through a network LAN. This feature can only be used if your system has a network interface card (NIC) that supports WOL technology, and your system has an ATX power supply of at least 800mA.). The 3-pin WOL header (identified as WOL) is located in near the PCI1 slot. Connect the cable from a network interface card (NIC) to the WOL header.

Note: When operating WOL, ensure the power cord is still plugged into the socket, and that the computer has been turned off.

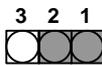
Locate the WOL header on the motherboard:

Pin 1	5VSB
Pin 2	Ground
Pin 3	LID_ON (Active High)

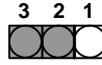
3.3.18 PS/2 Power-On (J52)

This is essential for the PS/2 Power-On to function properly (see below). Your system requires an ATX power supply of at least 300mA on the +5VSB lead. There are several ways you can choose to power-on your system through PS/2 devices: keyboard 98, password, Hot KEY, Mouse Left and Mouse Right. Please refer to **Chapter 4** for instructions on setting PS/2 Power-On mode. If you DO NOT want to use this function, place the jumper cap over pins 1-2, and the function will be disabled. If you want this function, place the jumper cap over pins 2-3 to set 5V_SB, and enable the function.

Note: In case of AC power loss, the Power-On function will reset to “BUTTON ONLY”. To re-set your Power-On function to one of the above modes again, you must re-enter CMOS setup utility.



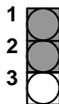
Disable (Default)



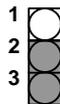
5V_SB

3.3.19 Clear Keyboard Power-On Password (JP42)

To enable function, place the jumper cap over pins 1-2. Then enter BIOS and select “Password Power-On” to set your password for the keyboard power-on function. Once you select and enter the Keyboard Password Power-On mode, you must type the correct password in order to turn on your system. The remote on/off button will be disabled. If you forget your password, place the jumper cap over pins 2-3 (pins 2-3 become ON), and use the Power-On button on the front panel of your PC case to power-on the system.



Normal

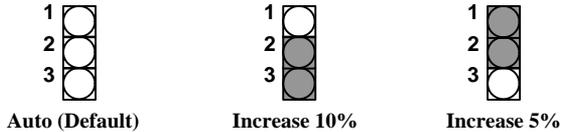


Clear power-on password

3.3.20 Adjustable Vcore (JP9)

This function offers adjustable processor Vcore. When NO jumper caps are used, the motherboard automatically generates the proper Vcore voltage that requested by the CPU. Place the jumper cap over pins 1-2 to increase 5% more voltage to the processor's Vcore. Place the jumper cap over pins 2-3 to increase 10% more voltage to the processor's Vcore.

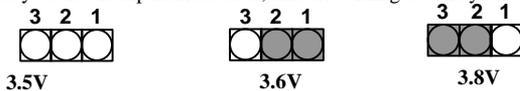
Note: A wrong voltage setting will cause irreversible permanent damage to the CPU. DO NOT use these functions unless you are an experienced user, and are willing to take your own risk.



3.3.21 Adjustable VIO (JP10)

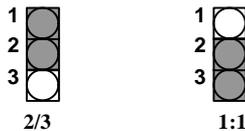
This function offers adjustable VIO. When NO jumper caps are used, the system automatically uses the VIO default setting, which is 3.5V. To set the VIO to 3.6V, place the jumper cap over pins 1-2. To set the VIO to 3.8V, place the jumper cap over pins 2-3.

Note: A wrong voltage setting will cause irreversible permanent damage to the CPU. DO NOT use these functions unless you are an experienced user, and are willing to take your own risk.



3.3.22 AGP Booster (JP11)

This function offers AGP frequency setup. The AGP frequency normally runs at 66MHz. To set the AGP frequency to its default setting, which is roughly two-thirds of the processor's external frequency, place the jumper cap on pins 1-2. To set the AGP frequency at the same speed as processor's external frequency, place the jumper cap on pins 2-3.



In most instances, it is best to leave the jumper in its default setting (on pins 1-2). For testing and/or other purposes, here are some examples for your reference.

CPU Type	FSB	JP11	AGP Clock	Remarks
66MHz	66MHz	2-3	66MHz	Normal usage
66MHz	75MHz	2-3	75MHz	Over-clocking at CPU/AGP
66MHz	83MHz	2-3	83MHz	Over-clocking at CPU/AGP
66MHz	100MHz	2-3	100MHz	Over-clocking at CPU/AGP
100MHz	66MHz	2-3	66MHz	Downgrade at CPU
100MHz	75MHz	2-3	75MHz	Downgrade at CPU, over-clocking at AGP
100MHz	83MHz	2-3	83MHz	Downgrade at CPU, over-clocking at AGP

100MHz	100MHz	2-3	100MHz	Over-clocking at AGP
100MHz	112MHz	2-3	112MHz	Over-clocking at CPU/AGP
100MHz	133MHz	2-3	133MHz	Over-clocking at CPU/AGP

CPU Type	FSB	JP11	AGP Clock	Remarks
66MHz	66MHz	1-2	44MHz	Downgrade at AGP
66MHz	75MHz	1-2	50MHz	Over-clocking at CPU, down grade at AGP
66MHz	83MHz	1-2	55MHz	Over-clocking at CPU, down grade at AGP
66MHz	100MHz	1-2	66MHz	Over-clocking at CPU
100MHz	66MHz	1-2	44MHz	Downgrade at CPU/AGP
100MHz	75MHz	1-2	50MHz	Downgrade at CPU/AGP
100MHz	83MHz	1-2	55MHz	Downgrade at CPU/AGP
100MHz	100MHz	1-2	66MHz	Normal usage
100MHz	112MHz	1-2	75MHz	Over-clocking at CPU/AGP
100MHz	133MHz	1-2	88MHz	Over-clocking at CPU/AGP

3.3.23 Clear CMOS jumper block (JP1)

To reset the RTC (Real Time Clock) 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, you will need to get into the BIOS setup program (See **Chapter 4**) choose LOAD SETUP DEFAULTS, and select the original manufacturer default settings in your CMOS.

3.3.24 System Hardware Monitor

The system hardware monitor supports following features:

- Integrated temperature sensor to monitor system temperature

- Voltage sense monitoring to detect voltage level, Vcore, VTT, +3.3V, +5V, -5V, +12V, -12V

- Fan speed sensors for up to three fans

Using a proprietary application, the system's hardware monitor logic will check the voltage, temperature and fan speed at all times. If any failure occurs, the application will display a warning message immediately.

Chapter 4

System BIOS Setup

4.1 Introduction

The BD100 Plus 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.

4.1.1 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.com.tw.

4.1.2 Recovering BIOS Data

Some types of conditions can destroy the BIOS. Nevertheless, the BIOS can be recovered from a diskette. To recover BIOS, you must create a bootable diskette, then copy the recovery files onto it. The recovery files are available from Iwill.

Note: No video is displayed during the recovery process.

4.1.3 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 BD100 Plus 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.

4.1.4 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>	Bring up a help screen for the current field
(Shift)<F2>	Change screen color. F2 to select color forward, (Shift) F2 to select color backward
<F10>	Save the current value and exit setup program

NOTE

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 (see 4.1.3 above), choose LOAD SETUP DEFAULTS, and select the original manufacturer default settings in your CMOS.

4.2 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.

Note: A brief description of each highlighted selection appears at the bottom of the screen.

The main menu includes the following setup pages.

STANDARD CMOS SETUP

Allocates resources for hardware components

BIOS FEATURES SETUP

Specifies advanced features available through the BIOS

CHIPSET FEATURES SETUP

Specifies advanced features available through the chipset

POWER MANAGEMENT SETUP

Specifies power management features

PNP /PCI CONFIGURATION

Specifies Plug and Play and PCI features

INTEGRATED PERIPHERALS

Specifies on-board controller features

LOAD SETUP DEFAULTS

Loads the manufacturer default setting into CMOS

IWILL SMART SETTING

Specifies special features

SUPERVISOR / USER PASSWORD

Specifies passwords

IDE HDD AUTO DETECTION

Auto-detects the parameters of IDE disks

SAVE & EXIT SETUP

Saves current value to CMOS and exit setup

EXIT WITHOUT SAVING

Abandons all changes and exit setup

4.3 STANDARD CMOS SETUP

This setup page is used for allocating resources for hardware components.

4.3.1 Date

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

4.3.2 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.

4.3.3 Primary Master / Primary Slave / Secondary Master / Secondary Slave

This field specifies the geometric parameters and translation mode of IDE disk drives.

4.3.3.1 TYPE

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
1 – 45	Specifies pre-defined disk drive type
User	Specifies disk drive type by user
Auto	BIOS automatically fills in the values for the cylinders, heads and sectors fields
None	No disk drive attached

4.3.3.2 Cylinders

If you select Auto, this field automatically fills in the number of cylinders for your hard disk and can not be modified. If you select User, you must type the correct number of cylinders for your hard disk.

4.3.3.3 Heads

If you select Auto, this field automatically fills in the number of heads for your hard disk and can not be modified. If you select User, you must type the correct number of heads for your hard disk.

4.3.3.4 Sectors

If you select Auto, this field automatically fills in the number of sectors for your hard disk and can not be modified. If you select User, you must type the correct number of sectors for your hard disk.

4.3.3.5 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

4.3.4 Drive A / Drive B

This field specifies the traditional type of the floppy drives.

Options	Description
None	No floppy drive is connected
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
2.88M, 3.5 in.	A 2.88M floppy drive is connected

4.3.5 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

4.3.6 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
MONO	Specifies Monochrome adapter

4.3.7 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 not 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

4.3.8 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.

4.3.9 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.

4.3.10 Other Memory

This refers to the memory located in the 640K to 1024K address space. This memory can be used for different applications. DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs. The BIOS is the most frequent user of this RAM area since this is where it shadows RAM. This field has no options.

4.4 BIOS FEATURES SETUP

This setup page specifies advanced features available through the BIOS.

Note: An asterisk (*) denotes the default setting.

4.4.1 Virus Warning

When this function is enabled, the BIOS monitors 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 (*)

4.4.2 CPU Internal Cache

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

Options	Enabled (*)
	Disabled

4.4.3 External Cache

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

Options	Enabled (*)
	Disabled

4.4.4 CPU L2 Cache ECC Checking

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

Options **Enabled (*)**
 Disabled

4.4.5 Quick Power-On Self Test

When enabled, BIOS will shorten or skip some items during the Power-On Self Test (POST).

Options **Enabled (*)**
 Disabled

4.4.6 Boot From LAN First

This field configures the boot from the network adapter. If this feature is enabled, no matter what Boot Sequence you choose (see below section 4.4.7), the system will try to boot from the network adapter first. The adapter must have a BootROM on it.

Options **Enabled**
 Disabled (*)

4.4.7 Boot Sequence

This field configures the boot sequence of drive devices.

Options	Description
A, C, SCSI (*)	System will first try to boot from floppy drive, then master IDE disk drive on primary channel, and then SCSI disk drive
C, A, SCSI	Master IDE disk drive on primary channel, floppy drive, SCSI disk driver
C, CDROM, A	Master IDE disk drive on primary channel, ATAPI CDROM drive, floppy drive
CDROM, C, A	ATAPI CDROM drive, master IDE disk drive on primary channel, floppy drive
D, A, SCSI	Slave IDE disk drive on primary channel, floppy drive, SCSI disk drive
E, A, SCSI	Master IDE disk drive on secondary channel, floppy drive, SCSI disk drive
F, A, SCSI	Slave IDE disk drive on secondary channel, floppy drive, SCSI disk drive
SCSI, A, C	SCSI disk drive, floppy drive, ATAPI CD-ROM drive
SCSI, C, A	SCSI disk drive, master IDE disk drive on primary channel, floppy drive
C only	Master IDE disk drive on primary channel only
LS/ZIP, C	LS-120 or ZIP drive, master IDE disk drive on primary channel

4.4.8 Swap Floppy Drive

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

Options	Enabled
	Disabled (*)

4.4.9 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

4.4.10 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

4.4.11 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 (*)

4.4.12 Typematic Rate (Chars/Sec)

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
---------	---

4.4.13 Typematic Delay (Msec)

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

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

4.4.14 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

4.4.15 PS/2 mouse function control

When enabled, your system can use a PS/2 mouse.

Options	Enabled (*)	Disabled
---------	-------------	----------

4.4.16 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 cards.

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

4.4.17 Assign IRQ for VGA

When enabled, BIOS will assign your Video Graphics Array (VGA) an IRQ (Interrupt Request) level.

Options	Disabled	Enabled (*)
---------	----------	-------------

4.4.18 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 (*)
---------	------	--------------

4.4.19 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 (*)
---------	-----	--------

4.4.20 Video BIOS Shadow

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

Options	Enabled (*)
	Disabled

4.4.21 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 (*)

4.5 CHIPSET FEATURES SETUP

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.**

4.5.1 Auto Configuration

When enabled, BIOS will divide all the EDO memory into two categories: 50ns DRAM and 60ns DRAM. A set of pre-defined values about DRAM timing will be used for each category. Then the user can assign the correct timing easily. When disabled, user can specify the EDO DRAM timing value.

Note: Some engineering knowledge is needed prior to handling Auto Configuration.

Options	Enabled (*)
	Disabled

4.5.2 EDO DRAM Speed Selection

This field selects pre-defined EDO DRAM timing for different speed categories. It is available only when the Auto Configuration field is enabled.

Options	Description
50ns	Pre-defined timing for 50ns EDO DRAM
60ns (*)	Pre-defined timing for 60ns EDO DRAM

4.5.3 EDO CASx# MA Wait State

This field specifies the Wait State of EDO DRAM address line. This field is available only when the Auto Configuration field is disabled. **Note:** This field is for experienced users only.

Options	Description
2 (*)	2 system clocks wait state for EDO address line
1	1 system clock wait state for EDO address line

4.5.4 EDO RASx# Wait State

This field specifies the Wait State of EDO DRAM row address line. This field is available only when the Auto Configuration field is disabled. **Note:** This field is for experienced users only.

Options	Description
2 (*)	2 system clocks wait state for EDO row address line
1	1 system clock wait state for EDO row address line

4.5.5 SDRAM CAS Latency Time

This field specifies the SDRAM CAS latency timing parameter (the time from CAS# assertion to data valid). **Note:** This field is for experienced users only.

Options	Description
2	2 system clocks
3 (*)	3 system clocks

4.5.6 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 (*)

4.5.7 System BIOS Cacheable

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

Options	Enabled (*)
	Disabled

4.5.8 Video BIOS Cacheable

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

Options	Enabled
	Disabled (*)

4.5.9 Video RAM Cacheable

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

Options	Enabled
	Disabled (*)

4.5.10 8 Bit I/O Recovery Time

This field specifies the number of clocks, which the system will delay after the completion of an 8 bit input/output request.

Options **1 (*) / 2 / 3 / 4 / 5 / 6 / 7 / NA / 8**

4.5.11 16 Bit I/O Recovery Time

This field specifies the number of clocks, which the system will delay after the completion of an 16 bit input/output request.

Options **1 (*) / 2 / 3 / NA / 4**

4.5.12 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 (*)

4.5.13 Passive Release

When enabled, the south bridge PIIX4 will support the Passive Release mechanism when it is a PCI master. The PCI revision 2.1 compliant requires this field to be enabled. This field is for experienced users only.

Options **Enabled (*)**
Disabled

4.5.14 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. This field is for experienced users only.

Options **Enabled**
Disabled (*)

4.5.15 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**

4.5.16 Set SDRAM Timing By SPD

When Enabled, the system BIOS will reference data of DIMM module EEPROM.

Options **Enabled (*)**
Disabled

4.6 POWER MANAGEMENT SETUP

This setup page specifies suspend or power saving features.

There are several modes used to save computer's energy:

Doze Mode	The CPU clock runs at slower speed, and all other devices still operate at full speed
Standby Mode	The CPU clock runs at slower speed, and the fixed disk drive will power off, and the video will power off, and all other devices still operate at full speed
Suspend Mode	All devices except the CPU will shut off

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 power saving mode. If any predefined signal or event is detected during the timer counting period, the timer restarts automatically.

4.6.1 Power Management

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

Options	Description
Disable	The computer always runs at full speed. No power is saved
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

4.6.2 PM Control by APM

When enabled, an Advanced Power Management (APM) protocol will be activated to handle the power saving mode.

Options	Yes (*) No
---------	-----------------------------

4.6.3 Video Off After

This field specifies the suspend or power saving mode, which shuts off the video.

Options	Doze / Standby (*) / Suspend / NA
---------	--

4.6.4 Doze Mode

This field specifies the time the system enters Doze Mode. It is available only when the Power Management field set to User Define.

Options	1 Min / 2 Min / 4 Min / 8 Min / 12 Min / 20 Min 30 Min / 40 Min / 1 Hour / Disable
---------	---

4.6.5 Standby Mode

This field specifies the time the system enters Standby 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 / 40 Min / 1 Hour / Disable (*)

4.6.6 Suspend Mode

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 / 40 Min / 1 Hour / Disable (*)

4.6.7 HDD Power Down

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 / 8 Min / 9 Min / 10 Min / 11 Min / 12 Min
13 Min / 14 Min / 15 Min / Disable (*)

4.6.8 HDD Power Down When suspend

This field specifies the time the system enters HDD power down during the suspend mode only.

Options **Enabled (*)**
Disabled

4.6.9 CPUFAN Off In Suspend

When enabled, the CPU fan will shut off during the suspend mode.

Options **Disabled**
Enabled (*)

44.6.10 Suspend Mode Option

This field specifies suspend mode options.

Options	Description
Power-On Suspend (*)	The traditional Green PC suspend mode. All devices except CPU will shut off.
Suspend to Disk	Saves system status, memory and screen image into hard disk, then the power turns off automatically. When you strike a key or move the mouse, the power turns on again, and the system comes back to the original screen (when the screen was last on) within just few seconds, depending on the memory size of your system. Need Utility ZVHDD.EXE to reserve disk space.

4.6.11 Throttle Duty Cycle

This field specifies system performance when system is in suspend mode. The more performance required, less energy saved.

Options	Disabled
	12.5-25%
	37.5-50%
	50-62.5%(*)

4.6.12 PCI/VGA ACT-Monitor

When enabled, the system goes into power saving mode if there's no activity on the monitor screen. When disabled, the system goes into power saving mode, whether or not there is activity on the monitor screen.

Options	Enabled (*)
	Disabled

4.6.13 Soft-Off 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.

4.6.14 Wake Up On LAN

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

Options	Enabled
	Disabled (*)

4.6.15 Power-On By Ring

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

Note: This feature alone doesn't allow you to power off your PC (see 4.6.10 Suspend Mode).

Options	Enabled
	Disabled (*)

4.6.16 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	Sets the date and time to power-on the PC.

When date is set to 0, the alarm becomes set for every day.

4.6.17 IRQ 8 Break Suspend

When disabled, this feature allows the system to go into suspend mode. When enabled, IRQ 8 (RTC) is broken, and the system cannot go into suspend mode.

Options	Enabled
	Disable (*)

4.6.18 Reload Global Timer Events

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

IRQ [3-7, 9-15], NMI

If enabled, timer restarts whenever any of these interrupts occurs.

Primary IDE 0

If enabled, timer restarts whenever the master disk of the primary IDE channel is active.

Primary IDE 1

If enabled, timer restarts whenever the slave disk of the primary IDE channel is active.

Secondary IDE 0

If enabled, timer restarts whenever the master disk of the secondary IDE channel is active.

Secondary IDE 1

If enabled, timer restarts whenever the slave disk of the secondary IDE channel is active.

Floppy Disk

If enabled, timer restarts whenever the floppy disk is active.

Serial Port

If enabled, timer restarts whenever the serial port is active.

Parallel Port

If enabled, timer restarts whenever the parallel port is active.

4.7 PNP/ PCI CONFIGURATION

This setup page specifies Plug and Play and PCI features.

4.7.1 PNP OS Installed

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

Options	Yes
	No (*)

4.7.2 Resources Controlled By

The BIOS has the capability to assign system resources to all Plug and Play devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows® 95/98/NT.

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

4.7.3 Reset Configuration Data

Sometimes when you install a new add-on, the system reconfiguration causes such a serious conflict that the operating system cannot boot. Only in this case, exit Setup and select enabled. The Extended System Configuration Data (ESCD) will clear every time the system boots.

Note: Leave this field disabled unless you have a conflict similar to the one mentioned above.

Options	Enabled
	Disabled (*)

3.7.4 IRQ 3 / 4 / 5 / 7 / 9 / 10 / 11 / 12 / 14 / 15 assigned to

DMA 0 / 1 / 3 / 5 / 6 / 7 assigned to

If the **Resources Controlled By** field is set to **Manual**, use these fields to assign resources

Options	Description
Legacy ISA	Resources will not be assigned to any PnP device
PCI/ISA PnP	Resources are available to PnP devices

4.7.5 Used MEM Base Addr

Some add-in cards ask for a specific address space in the system memory. This field specifies the memory base (start address) of the reserved memory space.

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

4.7.5.1 Used MEM Length

This field is available only when the Used MEM Base Addr field has been assigned a base address. It specifies the memory size for the add-in card used.

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

4.7.6 Assign IRQ For USB

When disabled, the BIOS will not assign IRQ channel to USB controller.

Options **Enabled (*)**
Disabled

4.8 INTEGRATED PERIPHERALS

4.8.1 IDE HDD Block Mode

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

Options **Enabled (*)**
Disabled

4.8.2 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:

Note: Higher settings may cause problems for older IDE devices.

	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
Mode 0	Use Mode 0 timing to access device
Mode 1	Use Mode 1 timing to access device
Mode 2	Use Mode 2 timing to access device
Mode 3	Use Mode 3 timing to access device
Mode 4	Use Mode 4 timing to access device

4.8.3 IDE Primary Master / Slave Ultra DMA

IDE Secondary Master / Slave Ultra DMA

If you select Auto, the IDE controller uses Ultra DMA 33 Mode to access UltraDMA-capable IDE devices. The maximum transfer rate of Ultra DMA 33 Mode is 33.3 MB/sec.

Options **Auto (*)**
 Disabled

4.8.4 On-Chip Primary / Secondary PCI IDE

This field enables or disables the onboard IDE controller.

Options **Enabled (*)**
 Disabled

4.8.5 USB Keyboard Support

This field enables or disables the USB keyboard support. Select enable only if you intend to use the USB standard port (ATX form factor) for your keyboard.

Options **Enabled**
 Disabled (*)

4.8.6 KBC clock source

This field sets the frequency speed for the keyboard controller clock. Please ensure you know the keyboard data rate (according to the keyboard's specifications) before selecting frequency speed.

Options **8 MHz (*) / 12 MHz / 16MHz.**

4.8.7 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

4.8.8 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

4.8.9 Onboard Parallel Port

This field configures the onboard parallel port. There are several port addresses and IRQ channels to select from.

Options	Description
378 / IRQ 7(*)	Port address 378h, IRQ 7
278 / IRQ 5	Port address 278h, IRQ 5
3BC / IRQ 7	Port address 3BCh, IRQ 7
Disabled	Disables parallel port

4.8.10 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 / ECP+EPP
---------	--------------------------------------

4.8.10.1 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

4.8.10.2 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

4.8.11 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 **PCI Slot**
 AGP (*)

4.8.12 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.

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

Options	Description
Hot KEY	You can assign a hot key through the Hot Key Power-On field. Pressing this hot key will power-on your system.
Password	You can assign a password string through KB Power-On Password field. Typing this password string will power-on your system. Note: The Power-On button will not function in this mode.
Mouse left	“Double-Clicking” the left button on your mouse will automatically power-on your system.
Mouse right	“Double-Clicking” the right button on your mouse will power-on your system.
Button only	Simply power-on your system by pressing the Power-On button on the front panel of your PC case.
Keyboard 98	Enables Keyboard 98 function. This function is good only for users of Keyboard 98.

4.8.12.1 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

4.8.12.2 KB Power-On Password

Enter your Keyboard-Power-On password in this field if you wish to use this function.

4.8.13 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

4.9 LOAD SETUP DEFAULTS

This setup page is used for loading the manufacturer default values.

4.10 IWILL SMART SETTING

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

In general, when adjusting the CPU frequency, you should select the frequency that matches your motherboard bus speed. The reason is that your CPU can only communicate with its external components at the same speed at which the components operate. In other words, if your motherboard bus speed is 100 MHz, you should start by selecting 100 MHz (as a “base”) to set the CPU frequency. This frequency is also referred to as the “system bus frequency” or **external frequency**.

However, the CPU manufacturers make CPUs much faster than the speed of the motherboard system bus frequency. This is true because most of the operations are done in a small die inside the CPU chip. This is the CPU **internal frequency**. For example, a 400 MHz CPU actually means the **internal frequency** runs at 400 MHz.

To understand the term **multiplier**, and how it applies to setting your CPU frequency, here’s an example: If you purchase a 400 MHz CPU, and your motherboard runs at 100 MHz system bus speed, adjust your CPU frequency by selecting 100 MHz (system bus frequency) x 4 (**multiplier**), which equals 400 MHz (your CPU frequency). Or, to install the same 400 MHz CPU into motherboard with 66 MHz system bus speed, you may be select 66 MHz (system bus frequency) x 6 (**multiplier**), which equals 400 MHz (your CPU frequency). However, the fact is, a higher system bus frequency runs faster and has a much better performance than a slower system bus frequency.

4.10.1 CPU Speed

This field allows user to adjust CPU speed.

Options	300 (66x4.5) / 333 (66x5) / 366 (66x5.5) / 400 (66x6) / 433 (66x6.5) / 466 (66x7) / 500 (66x7.5) / 533 (66x8)
	300 (100x3) (*) / 350 (100x3.5) / 400 (100x4) / 450 (100x4.5) / 500 (100x5) / 550 (100x 5.5) / 600 (100x6) / 650 (100x6.5) / 700 (100x7) / 750 (100x7.5) / 800 (100x8) / Manual

4.10.1.1 Manual

This option sets the CPU speed.

In this field, the CPU speed is indicated as such:

CPU speed = CPU Frequency x CPU Ratio, select the CPU speed according to the type and the speed of your CPU.

CPU Frequency

Option **66/75/83/100/103/105/110/112/124/133 MHz**

CPU Ratio:

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

4.10.2 Auto Detect DIMM/PCI Clk

When enabled, the BD100 Plus 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

4.10.3 Spread Spectrum

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

Options **Enabled**
 Disabled (*)

4.10.4 BIOS-ROM Flash Protect

The BD100 Plus motherboard provides solid protection at BIOS ROM. When set to **Non-Flash**, it will prevent any changes to the data in BIOS.

There are two cases that you may need to configure this field to **Flashable**:

In order to update the Extended System Configuration Data (ESCD) when you install or remove any device.

You need to update the BIOS data.

Note: Make sure to configure this field back to **Non-Flash** to avoid unexpected changes in BIOS.

Options **Non-Flash (*)**
 Flashable

4.11 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.

To disable a password, just press <Enter> when you are required to enter the new password. 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.

Note: The User Password allows you to enter BIOS setup program, but you cannot change the value of any fields.

4.12 IDE HDD AUTODETECTION

This setup page detects and configures hard disk parameters automatically.

4.13 SAVE & EXIT SETUP

Saves current CMOS value and exit BIOS setup program.

4.14 EXIT WITHOUT SAVING

Abandons all CMOS value changes and exits BIOS setup program.

Chapter 5

Software and Tools

5.1 Software Installation

The attached Power Installer CD contains all the necessary drivers, utilities and tools 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 and tools needed for your motherboard.

Note: Not all drivers or utilities can be used on this motherboard.

5.1.1 What's inside Power Installer CD (needed for the BD100 Plus motherboard)

1. Drivers

- a. Intel PIIX4 Patch Program
- b. Intel IDE Bus Master Driver for Windows 95
- c. ZVHDD.EXE program for Suspend to Disk

2. Utilities

- a. McAfee Anti-Virus
- b. Iwill PC Doctor

3. Tools

- a. Adobe Acrobat Reader

4. Make Driver Diskettes

5. Manuals

5.1.2 How to use the Power Installer CD

The Power Installer CD supports the Auto Run program used by Windows 98/95 and Windows NT operating systems. You may simply select the software shown on screen that needs to be installed. Then simply follow the messages displayed on the screen to complete setup.

Note: Iwill PowerInstaller does not support a keyboard at this moment. You must use a mouse to install it.

5.2 How to make driver diskette 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.

Note: 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 h, and then finish the procedure.

- a. First, power-on or "boot" your system.
- b. Press key during boot sequence to enter " **CMOS Setup Utility**"
- c. Use arrow keys to select " **BIOS FEATURES SETUP**" on the menu, then press " **Enter**."
- d. Select " **Boot Sequence**" and change the default setting from A, C, SCSI to " **CD-ROM, C, A**" using Page Up /Page Down key.
- e. Press <Esc> key to go back to CMOS SETUP Utility menu.
- f. Press <F10> to select "Save and Exit Setup"
- g. Press "Y" then "Enter" to complete. Now you are able to boot up the system from the CD-ROM.
- h. Insert the Power Installer CD into the CD-ROM drive and re-start the computer.
- i. Iwill Diskette Creator will now execute automatically for making your own driver diskettes.
- j. Make the desired driver diskettes according to the instructions displayed on screen.

5.3 CPU frequency selection by BIOS

Iwill BD100 PLUS motherboard offers the Iwill Smart Setting for CPU selection.

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

Through Software -- BIOS setting

In case there is a special need for over-clocking, please ...

- a. First, power-on or "boot" your system.
- b. Press key during boot sequence to enter " **CMOS Setup Utility**"
- c. Select **IWILL SMART SETTING**
- d. Select **CPU Speed**
- e. Use page down/page up key to select

300 (66x4.5) / 333 (66x5) / 366 (66x5.5) / 400 (66x6) / 433 (66x6.5) / 466 (66x7) / 500 (66x7.5) / 533 (66x8)

300 (100x3) (*) / 350 (100x3.5) / 400 (100x4) / 450 (100x4.5) / 500 (100x5) / 550 (100x 5.5) / 600 (100x6) / 650 (100x6.5) / 700 (100x7) / 750 (100x7.5) / 800 (100x8) / Manual

- f. After selecting CPU speed, press **Save & Exit CMOS Setup** to complete. The system will automatically re-boot.

Should your CPU fail to over-clock, the screen will become blank and the system will hang (temporarily suspend or “freeze”) while the system attempts to re-boot. If this happens, follow the procedure below:

- a. Press the power button on the front panel to power off the system.
- b. Hold the **INSERT** key down, then press the power button on the case. The system will restart using 66 MHz as the CPU external frequency.
- c. Press **** key during boot sequence to enter “**CMOS Setup Utility**” and repeat steps “c” through “f” (See above).

5.4 View Detailed 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; the Auto Run program will display the main manual automatically. Click the “View Manual” item, and select the product you want to view, and the manual will be displayed.

5.5 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 software.

5.5.1 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.

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

5.5.1.1 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.

Note: 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.

5.5.1.2 Installing the floppy disk version of Windows 98

1. Place Setup disk 1 into your floppy disk drive.
2. Restart your computer.
3. At the MS-DOS prompt, type the word **setup** and press <ENTER>.
The Windows 98 Setup wizard will begin.
4. Please follow the instructions that appear.

5.5.2 Windows NT

5.5.2.1 Installing the CD-ROM version of Windows NT using SCSI controller

1. Prepare a 1.44MB blank diskette
2. Enable CD-ROM Bootable and Set boot sequence first priority is CD-ROM.
3. Place the Iwill Power Installer CD into the CD-ROM drive
4. Boot from Iwill Power Installer to create Windows 9x/NT driver diskette from CD-ROM by selecting FMS Disk1 for **Win95/NT**
5. Place the Windows NT 4.0 CD-ROM in the drive.
6. Press <F6> when the screen show following messages: Setup is inspecting your computer's hardware configuration ...
7. Press <S> to specify additional SCSI adapters.
8. Select <Other> to load manufacture supplied software driver.
9. Place **the SCSI driver diskette for Windows NT 4.0** into the floppy drive.
10. Press <ENTER> when SCSI driver is ready.
11. From list select the proper SCSI controller driver:
12. **Example: Adaptec AHA-294xU2/295xU2/395xU2/AIC-789xPCI SCSI Controller (NT 4.0)**
13. Press <ENTER> to continue if you have no other SCSI controller to install. Or, repeat steps 3-7 to install all drivers as needed.

-
14. Follow all instruction to finish Windows NT installation.

5.5.2.2 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.

5.6 Installing the Suspend to Disk utility on your BD100 Plus motherboard

Suspend to Disk is an energy-saving feature that allows you to temporarily power off your system (i.e. when you step away from your computer for a meeting, errand, etc.), then return to the original screen (when the screen was last on) to resume your work the next time you power-on the system. This feature is fast and efficient, especially if your system is handling a small memory size.

Although the Suspend to Disk utility can be installed without an operating system, it is highly recommended that you first install an operating system before installing Suspend to Disk. You must first make a “Suspend to Disk” diskette to use for installation. Insert the **Power Installer CD** into your CD-ROM, select **Make Driver Diskette** from the menu, and carefully follow the instructions to make a driver diskette. Please see **Chapter 5.2** in the BD100 Plus manual to create a driver diskette without an operating system.

System Requirements for installing Suspend to Disk:

1. Suspend to Disk utility only works with IDE hard disk drives. You cannot use this utility with any SCSI device because the system BIOS controls IDE devices, but cannot control SCSI devices.
2. This feature works fine with Windows 95/98, and Windows NT FAT file systems, but does not work with Windows NT NTFS file system. This utility also does not support ACPI modes.
3. This feature works fine with APM compatible PCI/AGP VGA and Sound Blaster compatible cards and drivers.
4. The Intel Bus Master IDE driver is not fully compatible with Suspend to Disk. If this causes some problems, please uninstall the drivers, or do not use Suspend to Disk.
5. Whether you select file or partition method, please make sure that you have enough free HDD space for creating this hidden file or partition. Ex: if you have 64MB system memory and 4MB of VGA memory, you need at least 68MB (64MB + 4MB) of HDD space. You also have to reserve some free space for your future memory expansion. For example, if you plan to upgrade you system memory to 128MB in the near future, then you may reserve a 132MB (128MB+4MB) space.
6. The following are just some of the many AGP cards that have been tested and approved to work satisfactorily with Suspend to Disk:

Manufacturer/model	Chipset
Iwill Adventure II	3Dlabs Permedia 2
Matrox G200	

GainWard	3Dfx Banshee
View Top Vulcan B	3Dfx Banshee
View Top Titan 4000	S3 Trio 3D
Prolink	3Dfx Banshee
ATI	3D Rage Pro
ATI	Rage IIC
ASUS	Sis 6326

5.6.1 Set-Up Suspend to Disk

Before installing Suspend to Disk utility, please make sure your system is running normally. More importantly, you must ensure the Suspend to Disk feature has been disabled before installing new devices, or upgrading your system memory.

Enter BIOS setup

Power-on the system by either pressing the Power-On button, or by using any of the power-on features provided by the BD100 Plus 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.

Set-Up Suspend to Disk in BIOS

- a. Select Power Management Setup, move cursor to "Suspend Mode Option", select "Suspend to Disk" and move cursor to "Soft-Off by PWR-BTTN", select "Delay 4 Sec".
- b. Select PNP/PCI Configuration Setup. Then, for "PnP OS Installed" select "NO".
- c. Press <F10> to save your setup into BIOS. The system will then automatically re-boot.

5.6.1.1 Enter DOS mode From Windows 95/98/NT

Open your "Programs" file, and select "MS DOS Prompt."

Once you've entered DOS from Windows

- a. Type the following:
C:\WINDOWS>lock
Press <Enter>
- b. The system will ask, "Are you Ready?" Press "y" for "yes." Press <Enter>.
- c. Insert your **Suspend to Disk** diskette into your floppy disk drive. (See above).
- d. Type the following:
C:\>A:
Press <Enter>
- e. Creating a file or partition

There are two ways to store the data into HDD: create a **file** or **partition**. You must make

sure you have enough disk space before selecting either option (Please refer to **System Requirements** above). Creating a **file** stores all the necessary information (you may be working on) into a hidden read-only file within the system hard disk. Creating a **partition** allows further protection for you by storing all the necessary information into partition separate from other files.

Create a file

You may select the **file** size, or allow the system to automatically select for you.

Automatic Selection

Type the following:

```
A:\>zvhdd /c /file
```

(**Note** one space is between “zvhdd and “/c”, and one space is between “/c” and “/file”)

Press <Enter>

The system will then automatically select **file** size.

Then, the system will display the following message: “The C:\SAVE2DSK.BIN has been executed”. The Suspend to Disk utility has been set up.

Enter **File Size** (Example: You select 100 MB file size)

Type the following:

```
A:\>zvhdd /c /file /m:100
```

(**Note** one space is between “zvhdd and “/c”, between “/c” and “/file”, and between “/file” and “/m:100”)

Press <Enter>

In this case, the system will use 100 MB file size that you’ve selected.

Then, the system will display the following message: “The C:\SAVE2DSK.BIN has been executed”. The Suspend to Disk utility has been set up.

Create a partition

Type the following:

```
A:\>zvhdd /c /partition
```

(**Note** one space is between “zvhdd and “/c”, and one space is between “/c” and “/partition”)

The system will start to create and format a **partition**.

Whether you have selected **file** or **partition** options, once the Suspend to Disk utility has been set up, press any key, and you will automatically return to Windows. Then, you **must** restart your system in order to enable the Suspend to Disk feature.

5.6.1.2 Enter DOS command Directly

You may also enter DOS during the re-boot process by pressing the <F8> key after powering on the system, and selecting “Command prompt only.” If your system normally runs from DOS, or you have a DOS diskette, simply boot from DOS.

Then, simply follow procedures “c” through “e” (above). Since the system is not controlled by Windows, it will automatically re-boot.

5.6.2 Using Suspend to Disk

There are two ways to use Suspend to Disk:

1. Simply press the power-on button located on the front panel of your computer chassis. **Note:** Do not hold the power-on button more than four seconds, because the system will shutdown immediately, and the Suspend to Disk function will not work.
2. For Windows 95/98/NT, you may use your mouse, “click” on the “Start” icon (located on the lower left hand corner of your screen). Then, “click” the “Shut Down” option. Finally, select the “Standby” option.

After selecting either method, the system will automatically enter the Suspend to Disk mode. The screen will become black for several seconds. Then, the screen will display the percentage of memory as it is being saved into the hard disk. Once the percentage reaches 100%, the system will shut down automatically.

To return to the original screen (last used when the system was last on), press the power-on button. The screen will display the percentage of memory as it is being restored from the hard disk. Once the percentage reaches 100%, the system will return to the original screen.

5.6.3 Removing Suspend to Disk utility

This process helps disable the Suspend to Disk utility.

5.6.3.1 Delete Suspend to Disk From Windows 95/98/NT

Open your “Programs” file, and select “MS DOS Prompt.”

1. Type the following:

```
C:\WINDOWS>lock
```

Press <Enter>

2. The system will ask, “Are you Ready?” Press “y” for “yes.” Press <Enter>.
3. Insert your **Suspend to Disk diskette** into your floppy disk drive. (See above).
4. Type the following:

```
C:\>A:
```

Press <Enter>

5. To delete **file**, type the following:

```
A:\>zvhdd /d /file
```

(**Note** one space is between “zvhdd and “/d”, and one space is between “/d” and “/file”)

6. To delete **partition**, type the following:

```
A:\>zvhdd /d /partition
```

(**Note** one space is between “zvhdd and “/d”, and one space is between “/d” and “/partition”)

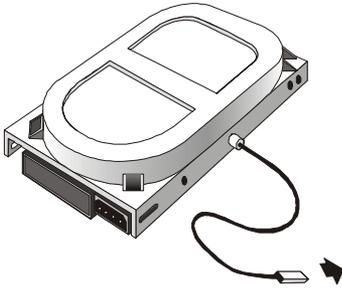
7. Press any key to return to Windows. Then restart your system.

5.6.3.2 Delete Suspend to Disk From DOS Directly

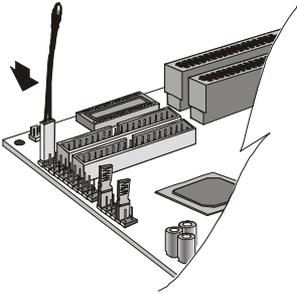
Enter DOS during the re-boot process by pressing the <F8> key after powering on the system, and selecting “Command prompt only.” Or, if your system normally runs from DOS, or you have a DOS diskette, simply boot from DOS.

1. Insert your Suspend to Disk diskette into your floppy disk drive. (See above).
2. Type the following:
C:\>A:
Press <Enter>
3. Then, follow procedures “5” through “7” in 5.6.3.1 (above).
4. Since the system is not controlled by Windows, it will automatically re-boot.

5.7 How to use the Thermal sensor



Detects all heat-releasing devices. Firmly screw the connector to any device.

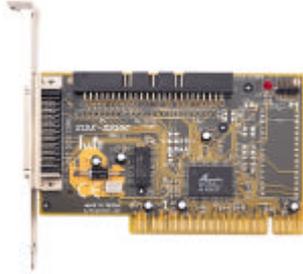


Detects system temperature.
NO NEED to contact this thermostat to any device.
Leave it on the motherboard.

5.8 Iwill SCSI series

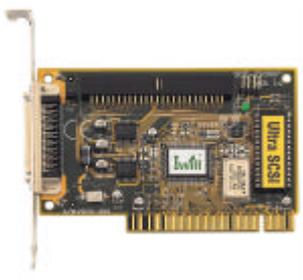
If you want to improve I/O performance of your BD100 Plus, choose the latest Iwill SCSI controllers. The following are some Iwill SCSI controllers you may purchase, and use with your BD100 Plus motherboard:

SIDE 2930C: an economical SCSI card, and connects up to 7 device



- Support SCSI-1, SCSI-2 protocol
- 10 MB/sec. Data transfer rate
- The best choice for CD-ROM, CD-R, CD-R/W, MO, Scanner ..etc.
- Connects maximum 7 narrow SCSI devices
- Automatic active termination control for easy plug & play installation.

SIDE 2930U+: a 20MB/sec. transfer rate, this card also connects up to 7 devices



- Supports SCSI-1, SCSI-2 and Ultra SCSI protocol
- Up to 20 MB/sec synchronous data transfer rate
- Connects maximum narrow SCSI devices
- Automatic active termination control for easy plug & play installation
- Supports Multi-tasking, Multi-threaded, scatter/gather, tagged queuing

SIDE 2935UW: this doubles the 2930U+; a 40 MB/sec transfer rate, connects up to 15 devices



- Support both Ultra Narrow (50-pin) and Ultra Wide (68-pin) SCSI
- Data transfer rate up to 20 MB/sec and 40 MB/sec respectively
- Able to connect up to 15 Ultra Wide SCSI devices
- Active terminator
- Able to boot from CD-ROM

SIDE 2935LVD: an 80MB/sec. transfer rate, and a 12-meter cable length connecting 15 devices



- Double the data transfer rate of Ultra Wide SCSI to 80 MB/sec
- Up to 12 meters cable length for Ultra 2 devices
- Able to connect up to 15 devices
- Able to boot from any SCSI ID
- Able to boot from CD-ROM

Please contact Iwill today for more information regarding our SCSI cards.