

Intel PM945GC-478 Mainboard

User's Manual

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Chapter 1 Introduction

1.1 Chipset Introduction

Intel 945GC Chipset

The Intel 945GC chipset supports the latest PC technologies such as Socket 478 CPU, dual-channel DDRII memory architecture and PCI Express x16 graphics card interface. Intel Graphics Media Accelerator 950 provides a significant increase in graphics performance. 6 high-speed USB 2.0 ports.

Dual-channel DDRII

This Intel 945GC chipset motherboard supports TWO DDRII DIMM interfaces that can make you have more use room. Dual-channel can give you the fastest frequency.

1.2 Specification

INTEL 945GC

- **Intel 945GC + ICH6;**
- **Supports Socket 478 CPU**
- **Supports 533/800 MHz HOST BUS Frequency;**
- **Intel Graphics Media Accelerator 950 VGA;**
- **Dual channel Mode DDRII 400/533MHz;**
- **Supports 1 PCI Express x16 Slot;**
- **Supports 2 PCI Slots;**
- **Supports 6 channel sound input;**
- **Supports 6 USB2.0 ports;**

1.3 Mainboard Introduction

Key Features:

-Chipset:

Intel 945GC + ICH6

-CPU:

Supports Intel Socket 478 CPU

- Supports 533/800MHz HOST BUS Frequency

-Memory:

Supports DDRII 400/533MHz Memory

-Built-in Powerful Integrated Graphics

Integrated display function technologies without extend VGA card

Integrated 2D/3D Graphics Controller

-Provides one channel connecting two IDE drives

Supports Ultra ATA66/100/133 synchronous DMA modes

-Provides 2 channel connecting 2 SATA drives with speed up to 150MB/S

-I/O:

1 floppy port support format 360K/720K/1.2M/1.44M/2.88M disk

1 serial port

1 parallel port supports EPP/ECP/SPP transfers

6 USB2.0 ports

1 PS/2 port

2 SATA ports

1 10/100M Network Adapter

-Onboard AC'97 2.3 specification compliant

Supports six channel sound input (example Realtek ALC653)

-Expansion slot:

One PCIE_X16 slot

Two 32-bit PCI slots 2.2 specification compliant

-Dimension

MICROATX

Chapter 2 Package Contents

Your mainboard package contains the following items:

1 x Intel 945GC mainboard

1 x 40-pin Ultra DMA 66/100/133 IDE ribbon cable

1 x SATA cable

1 x Driver installed CD

1 x One user's manual

1 x bracket

Chapter 4 Installations

4.1 Jumper Setting and Slot

Clear CMOS Jumper setting

1-2 (Default)	Normal
2-3	Clear CMOS

Audio: Front panel Jumper setting

PIN	Function	PIN	Function
1	MIC+	2	Ground
3	Vbias	4	AuD_Vcc(AVCC)
5	AuD_R_Out	6	R_Out Back
7	N.C.	8	Key
9	AuD_L_Out	10	L_Out Back

SATA: PIN Jumper setting

PIN	SATA1 Function	PIN	SATA2 Function
1	Ground	1	Ground
2	RSATA_RXP1	2	RSATA_RXP2
3	RSATA_RXN1	3	RSATA_RXN2
4	Ground	4	Ground
5	RSATA_TXN1	5	RSATA_TXN2
6	RSATA_TXP1	6	RSATA_TXP2
7	Ground	7	Ground

Expansion slot

DIMM1/DIMM2	240 PIN DDRII MEMORY SLOT
PCI1/PCI2	120 PIN PCI BUS expansion slots
PCIE_X16	Intel PCI Express X16 expansion slots

USB: Expansion Connector

PIN	Function	PIN	Function
1	VCC: Power	2	VCC: Power
3	D-:Data- Signal	4	D-: Data- Signal
5	D+: Data- Signal	6	D+: Data- Signal
7	GND: Ground	8	GND: Ground
9	KEY	10	NC

Connectors

PS/2(Bottom)	PS/2 Keyboard(Purple)
PS/2(TOP)	PS/2 Mouse Header(Green)
R_USB1	USB1/2 Connector Port
F_USB2	USB3/4 Connector Port
F_USB3	USB5/6 Connector Port
LPT	Printer Connector Port
COM1	Serial Port COM1 Connector port
VGA	On-board VGA connector
LINE OUT/ LINE IN/MIC	Audio Output/Audio Input/Microphone
IDE	Primary/Secondary IDE port
SATA1/SATA2	SATA Port
FDD	Floppy Disk Drive Connector Port
ATX/ATX_12V	ATX/ATX_12V Power Supply Connector port
CPU_FAN/PWR_FAN	CPU/System FAN Port

Function Port Panel

Power Supply LED	Pin2: Power Supply Anode; Pin4: Ground
HHD LED	Pin1: Power supply Anode Pin3: LED Signal
Power Supply Switch	Pin6、 8:Switch Signal
Reset Switch	Pin5、 7:Reset Switch

Chapter 5 BIOS Setup

The BIOS setup Utility record settings and information of your computer, such as date and time, the type of hardware installed, and various configuration settings. Your computer applies those information to initialize all the components when booting up and basic function of coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop you computer booting properly. If it happens, you can use the clear CMOS jumper to clear the CMOS memory which has stored the configuration information; or you can hold down the Page

Up Key while rebooting your computer. Holding down the Page Up key also clears the setup information.

Setup the best performance values in system

❖ **Set Supervisor Password**

Setup supervisor password in system

❖ **Set User Password**

Setup user password in system

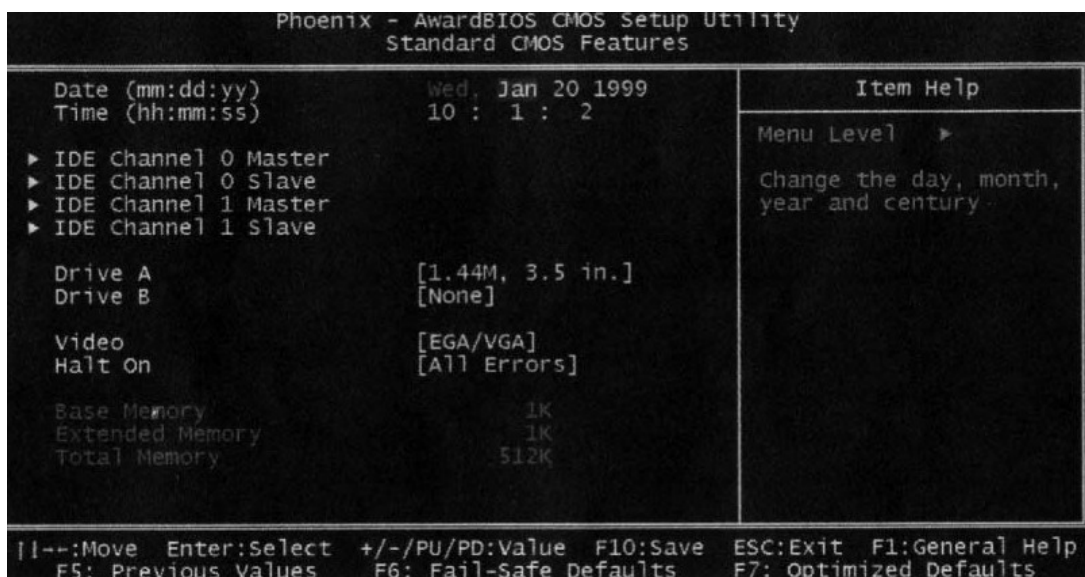
❖ **Save & Exit Setup**

Setup save and exit, press Y to save and exit

❖ **Exit Without Save Setup**

Exit without Save and exit, press N to without save and exit

5.2 Standard CMOS Features



❖ **Date(mm:dd:yyyy)**

These items set up system date

❖ **Time(hh:mm:ss)**

These items set up system time

❖ **Primary/Secondary Master/Slave**

These items configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, Choose Auto. If the Auto setting fails to find a hard disk drive, set it to User , and then fill in the hard disk characteristics manually. If you have a CD-ROM drive, select the setting CD-ROM. If you have an ATAPI device with removable media, select Floptical.

❖ **Drive A/B**

❖ **Video**

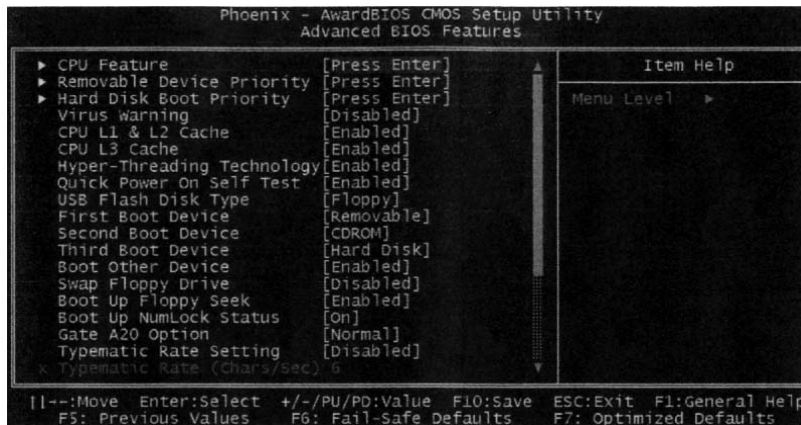
❖ **Halt on**

❖ **Base Memory**

❖ **Expanded Memory**

❖ Total Memory

5.3 Advanced BIOS Features



❖ CPU Feature

Delay Prior to Thermal

Thermal Management

Limit CPUID MaxVal

C1E Function

Execute Disable Bit

Default: Press Enter

Default: 16Min

Default: Thermal Monitor1

Default: Disabled

Default: Auto

Default: Enabled

❖ Removable Device Priority

Floppy Disks

Default: Press Enter

❖ Hard Disk Boot Priority

Default: Press Enter

❖ Virus Warning

Default: Disabled

❖ CPU L1&L2 Cache

Default: Enabled

Leave these items enabled since all the processors that can be installed on this board have internal L2 cache memory.

Hyper-Threading Technology

Default: Enabled

❖ Quick Power On Self Test

Default: Enabled

❖ USB Flash Disk Type

Default: Floppy

❖ First Boot Device

Default: Removable

When system boot-strap first time detect device.

❖ Second Boot Device

Default: CDROM

When system boot-strap first time detect device.

❖ Third Boot Device

Default: Hard Disk

When system boot-strap first time detect device.

❖ Boot Other Device

Default: Enabled

If you enable this item, the system will also search for other boot devices if it fails an operating system from the first two locations.

❖ Swap Floppy Drive

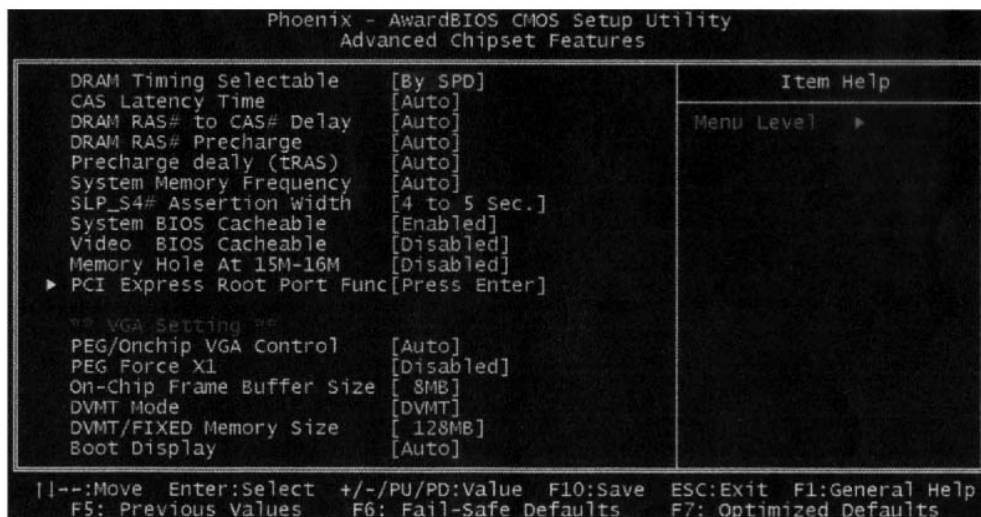
Default: Disabled

If you have two diskette drives installed and you enable this item, drive A

becomes drive B and drive B becomes drive A.

- ✧ **Boot Up Floppy Seek** **Default: Enabled**
- ✧ **Boot Up NumLock Status** **Default: On**
- ✧ **Gate A20 Option** **Default: Normal**
- ✧ **Typematic Rate Setting** **Default: Disabled**
- Typematic Rate (chars/sec)** **Default: 6**
- Typematic Delay (Msec)** **Default: 250**
- ✧ **Security Option** **Default: Setup**
- ✧ **ACPI Mode** **Default: Enabled**
- ✧ **MPS Version Control For OS** **Default: 1.4**
- ✧ **OS Select For DRAM>64MB** **Default: NON-OS2**
- ✧ **Report No FDD For WIN 95** **Default: No**
- ✧ **Full screen Logo show** **Default: Enabled**
- ✧ **Small Logo (EPA) show** **Default: Enabled**

5.4 Advanced Chipset Features



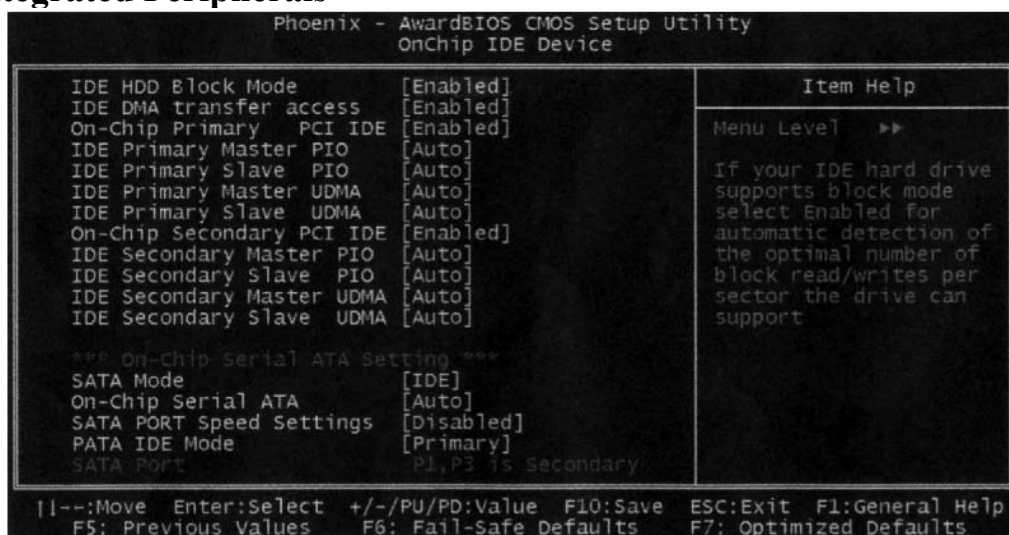
- ✧ **DRAM Timing Selectable** **Default: By SPD**
- X CAS Latency Time** **Default: Auto**
- X DRAM RAS# to CAS# Delay** **Default: Auto**
- X DRAM RAS# Precharge** **Default: Auto**
- X Precharge dealy (tRAS)** **Default: Auto**
- X System Memory Frequency** **Default: Auto**
- ✧ **SLP-S4# Assertion Width** **Default: 4 to 5 sec**
- ✧ **System BIOS Cacheable** **Default: Enabled**
- ✧ **Video BIOS Cacheable** **Default: Disabled**
- ✧ **Memory Hole At 15M-16M** **Default: Disabled**
- ✧ **PCI Express port 1** **Default: Auto**
- PCI Express port 2** **Default: Auto**

- PCI Express port 3 **Default: Auto**
- PCI Express port 4 **Default: Auto**
- PCI Express port 5 **Default: Auto**
- PCI Express port 6 **Default: Auto**
- PCI-E Compliancy Mose **Default: v1.0a**

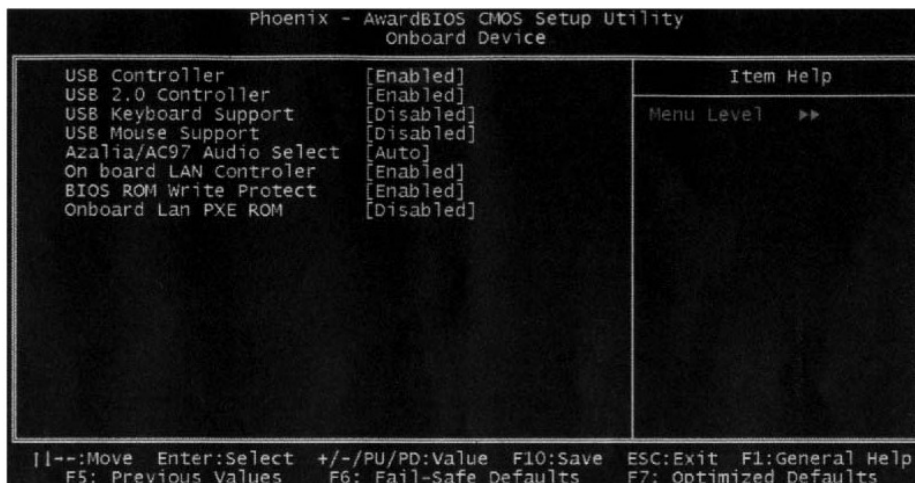
****VGA Setting****

- ✧ PEG/Onchip VGA Contro1 **Default: Auto**
- ✧ On-chip Frame Buffer Size **Default: 8MB**
- ✧ DVMT Mode **Default: DVMT**
- ✧ FIXED Memory Size **Default: 128MB**
- ✧ DVMT Memory Size **Default: 128MB**
- ✧ Boot Display **Default: Auto**

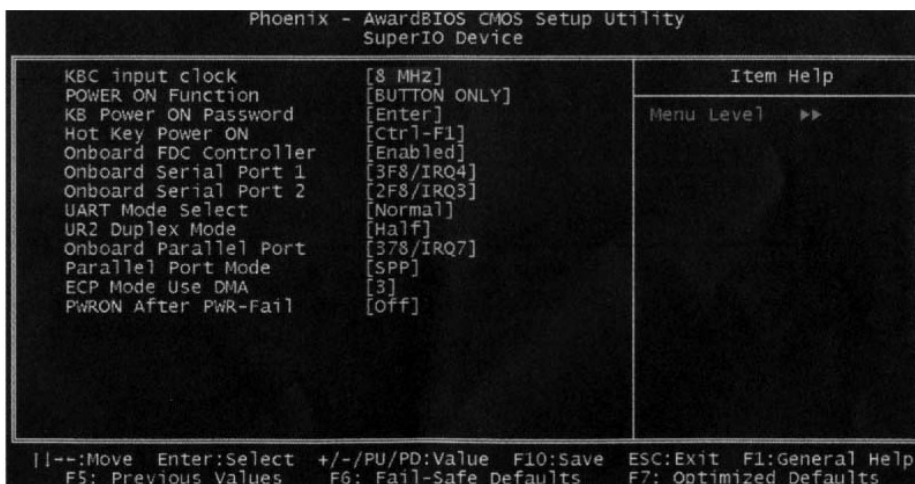
5.5 Integrated Peripherals



- ✧ OnChip IDE Device **Default: Press Enter**
- ✧ IDE HDD Block Mode **Default: Enabled**
- ✧ IDE DMA Transfer access **Default: Enabled**
- ✧ On-Chip Primary/ Secondary PCI IDE **Default: Enabled**
Chipset inside the first/second channel of PCI IDE interface
- ✧ IDE Primary/ Secondary Master/Slave PIO **Default: Auto**
The first/second IDE Primary Master/ Primary slave control PIO mode
- ✧ IDE Primary/ Secondary Master/Slave UDMA **Default: Auto**
- ***On-Chip Serial ATA Setting***
- X SATA Mode **Default: IDE**
- ✧ On-Chip Serial ATA **Default: Auto**
- X SATA PORT Speed Settings **Default: Disabled**
- PATA IDE Mode **Default: Primary**
- SATA Port **Default: p1,p3 IS Secondary**



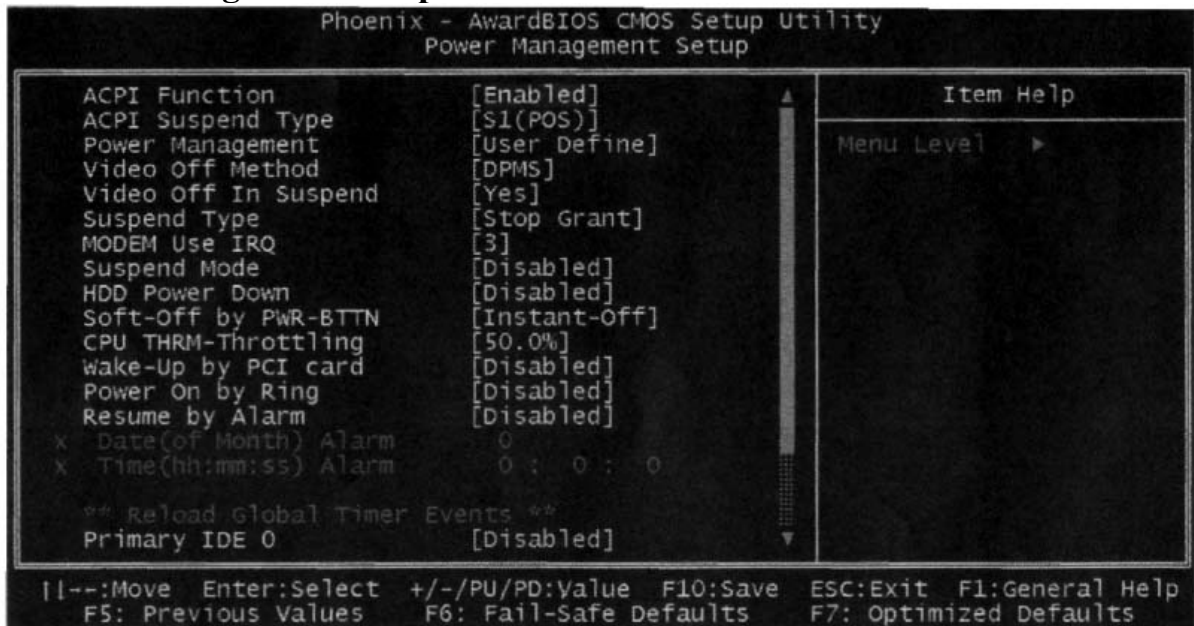
- ❖ **Onboard Device** **Default: Press Enter**
- ❖ **USB Controller** **Default: Enabled**
- ❖ **USB 2.0 Controller** **Default: Enabled**
- ❖ **USB Keyboard Support** **Default: Disabled**
- ❖ **USB Mouse Support** **Default: Disabled**
- ❖ **Azalia/AC97 Audio select** **Default: Auto**
- ❖ **Onboard LAN controller** **Default: Enabled**
- ❖ **BIOS ROM Write Protect** **Default: Enabled**
- ❖ **Onboard Lan PXE ROM** **Default: Enabled**



- ❖ **Super IO Device** **Default: Press Enter**
- ❖ **KBC input clock** **Default: 8 MHz**
- ❖ **POWER ON Function** **Default: BUTTON ONLY**
- ❖ **X KB Power ON Password** **Default: Enter**
- ❖ **X Hot Key Power ON** **Default: Ctrl-F1**
- ❖ **Onboard FDC Controller** **Default: Enabled**
- ❖ **Setup onboard FDC controller**
- ❖ **Onboard Serial port1/2** **Default: 3F8/IRQ4; 2F8/IRQ4**
- ❖ **Setup onboard serial port1/2**
- ❖ **UART Mode Select** **Default: Normal**

- Setup UART mode select
- ✧ UR2 Duplex Mode Default: Half
- ✧ Onboard Parallel port Default: 378/IRQ7
- Setup select parallel port
- ✧ Parallel Port Mode Default: SPP
- Setup parallel port mode
- ✧ ECP Mode USE DMA Default: 3
- ✧ PWRON After PWR=Fail Default: off

5.6 Power Management Setup



- ✧ ACPI Function Default: Enabled
- Setup if use ACPI function
- ✧ ACPI Suspend Type Default: S1 (POS)
- ✧ Power Management Default: User Define
- ✧ Video off Method Default: DPMS
- ✧ Video off In Suspend Default: Yes
- ✧ Suspend Type Default: Stop Grant
- ✧ MODEM Use IRQ Default: 3
- ✧ Suspend Mode Default: Disabled
- ✧ HDD Power Down Default: Disabled
- ✧ Soft-Off by PWR-BTTN Default: Instant-Off
- ✧ Wake-up by PCI card Default: Disabled
- ✧ Power On by Ring Default: Disabled
- ✧ Resume by Alarm Default: Disabled
- Date (of Month) Alarm Default: 0
- ✧ Time (hh:mm:ss) Alarm Default: 0
- ** Reload Global Timer Events **
- ✧ Primary/Secondary IDE 0/1 Default: Disabled

✧ FDD,COM,LPT Port

Default: Disabled

✧ PCI PIRQ[A-D]#

Default: Disabled

5.7 Set Supervisor Password & Set User Password

If you highlight this item and press Enter, a dialog box appears that you can enter a supervisor password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. There will be the second dialog box asking you to retype the password for confirmation. Press Enter after you have retyped it correctly. Then the password is required for the access to the setup utility or for it at start-up ,depending on the setting of the password check item in advanced setup.

5.8 Save Exit & Without Save Exit Setup

Highlight this item and press Enter to save the changes that you have made in the setup utility configuration and exit the program. When the save and exit dialog box appears. Press Y to save and exit; or press N to exit without saving.

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