

# PM945GZ

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## FCC Compliance Statement

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. However, there is no guarantee that interference will not occur in a particular installation.

## CE Mark

The device is in accordance with 89/336 ECC-ENC Directive.

Ver: EG100

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# **PM945GZ**

**Intel® 945GZ & ICH7**

**Support Socket 775 Intel® Core™ 2 Duo/Pentium® Extreme Edition/  
Pentium® D/ Pentium® 4/Celeron® D Processor**

## **User Manual**

**Enabling the Hyper-Threading Technology, your computer system is required to have components as the following:**

- ❖ **CPU:** An Intel® Pentium® 4 Processor with HT Technology
- ❖ **Chipset:** An Intel® Chipset that supports HT Technology
- ❖ **BIOS:** A BIOS that supports HT Technology must be enabled
- ❖ **OS:** An operating system that supports HT Technology

**For more information on Hyper-Threading Technology, go to:**

<http://www.intel.com/info/hyperthreading>

### **Dimensions (ATX form-factor):**

- ✧ 220mm x 235mm ( W x L )

### **Operating System:**

- ✧ Windows® 2000/ XP

## **Mainboard PM945GZ**

### **Things You Have To Know**

- The images and pictures in this manual are for reference only and may vary from the product you received depending on specific hardware models, third party components and software versions.
- This mainboard contains very delicate IC chips. Always use a grounded wrist strap when working with the system.
- Do not touch any IC chip, lead, connector or other components.
- Always unplug the AC power when you install or remove any device on the mainboard or when configuring pins and switches.

### **Packing List**

- ❖ PM945GZ Mainboard
- ❖ IDE Cable
- ❖ FDD Cable
- ❖ SATA Cable
- ❖ I/O Bracket
- ❖ SPDIF Card (optional)
- ❖ PM945GZ Setup Driver CD
- ❖ Mainboard User Manual CD
- ❖ Mainboard Quick Installation Guide

### **Symbols**



Attention- Important Information



Follow the procedures below...



Troubleshooting Tips



Refer to other sections in this manual...

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# **Chapter 1. Getting Started**

## **Introduction**

Thanks for choosing PM945GZ Mainboard. It is based on Intel® 945GZ Northbridge chipset and Intel® ICH7 Southbridge chipset. It supports Intel® Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® D/ Pentium® 4/ Celeron® D Processor with FSB (Front Side Bus) frequencies of 800 MHz/ 533 MHz.

The PM945GZ provides two DIMM (Dual In-Line Memory Modules) sockets which allowing you to install 240-pin, unbuffered non-ECC, DDRII 533/ 400 SDRAMs. It also supports Dual Channel Technology and allows you installing a total memory capacity of 2 GB.

This mainboard provides one Universal PCI-E interface slot up to x4 mode which is recommended that insert a graphics card onto the Universal PCI-E slot. In addition, three PCI slots come with this mainboard and are capable for use with expansion cards.

The PM945GZ provides one floppy disk drive connector that can be used with 360KB/720KB/ 1.2MB/1.44MB/2.88MB drives. It also has one IDE connector for IDE hard drives supporting Ultra ATA 66/100. Moreover, the mainboard comes with Serial ATA II feature, four SATA II connectors which the interfaces can provide the transmit rate up to 3 Gbps.

The onboard AC' 97 Audio CODEC (ALC655) supports high quality performance 6-channel audio play (Super 5.1 Channel Audio Effect) <See **Appendix I**>. The mainboard also supports the Sony/Philips Digital Interfaces (SPDIF) output function (Optional).

The PM945GZ also comes with an onboard 10/100 Mbps Ethernet LAN chip. There is a LAN port on the back panel of your case that you can directly plug into an Internet cable.

There are maximal eight USB2.0/ 1.1 ports which can be set up on this mainboard.

All the information (including hardware installation and software installation) in this manual are for reference only. The contents in this manual may be updated without notice. The company will not assume any responsibility for any errors or mistakes within.

## **Specification**

### **CPU:**

- ✧ Support Socket 775
- ✧ Support Intel® Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® D/ Pentium® 4/ Celeron® D Processor
- ✧ Support Hyper-Threading Technology
- ✧ Support 800 MHz/ 533 MHz FSB (Front Side Bus) Frequencies

### **Chipset:**

- ✧ Northbridge Chipset – Intel® 945GZ
- ✧ Southbridge Chipset – Intel® ICH7
- ✧ I/O Controller – ITE® IT8712F-A
- ✧ AC' 97 Audio Codec – Realtek® ALC655
- ✧ LAN Controller – Realtek® RTL 8100C

### **Memory:**

- ✧ Two DIMM sockets
- ✧ Supports unbuffered & non-ECC DDRII 533/ 400 SDRAM
- ✧ Supports a total memory capacity of up to 2 GB
- ✧ Supports Dual Channel data bus

### **Onboard AC' 97 Sound Codec:**

- ✧ High performance Codec with high S/N ratio (>90 db)
- ✧ Compliant with AC' 97 2.3 specification
- ✧ Supports 6-channel playback capability (Super 5.1 Channel Audio Effect)
- ✧ Supports 3D stereo enhancement
- ✧ Supports Sony/ Philips Digital Interfaces (S/PDIF) functionality (Optional)

### **Slots:**

- ✧ One Universal PCI-Express x4 interface slot for graphics card or expansion card
- ✧ Three PCI interface slots for expansion cards

### **FDD Connector:**

- ✧ Support to set up to two floppy disk drives
- ✧ Support 360KB/ 720KB/ 1.2MB/ 1.44MB/ 2.88MB

## **Mainboard PM945GZ**

### **IDE Connector:**

- ✧ One IDE connectors
- ✧ Supports up to two IDE devices
- ✧ Supports Ultra ATA 33/66/100
- ✧ Supports high capacity hard disk drives

### **Serial ATA II Connector:**

- ✧ Four SATA II connectors
- ✧ Supports SATA 2.0 specification and with transmit rate up to 3 Gb/ s
- ✧ One SATA II connector can only support one SATA II HDD

### **Onboard LAN Chip:**

- ✧ 10/100 Mbps Ethernet LAN supported

### **I/O facility Connectors**

- ✧ Supports one serial port
- ✧ Supports one VGA port (=D-Sub)
- ✧ Supports one PS/2 mouse port and one PS/2 keyboard port
- ✧ Supports one JPRNT1 header and one JSPDIF\_OUT1 header compatible with external devices connected

### **Universal Serial Bus:**

- ✧ Four onboard USB 2.0/ 1.1 ports
- ✧ Two front USB headers come with this mainboard for additional four USB ports
- ✧ Support a maximum of eight USB ports to connect USB compliant devices

### **BIOS:**

- ✧ Phoenix-Award™ BIOS
- ✧ Support APM1.2
- ✧ Support ACPI 2.0 power management

### **Green Function:**

- ✧ Supports Phoenix-Award™ BIOS power management function
- ✧ Supports system-wake-from-power-saving-mode by keyboard or mouse touching

### **Shadow RAM:**

- ✧ Integrated memory controller provides shadow RAM functionality and supports ROM BIOS

## **Mainboard PM945GZ**

### **Flash Memory:**

- ✧ Supports flash memory functionality
- ✧ Supports ESCD functionality

### **Hardware Monitor Function:**

- ✧ Monitors CPU/ Chassis Fan Speed
- ✧ Monitors CPU and system temperature
- ✧ Monitors system voltages

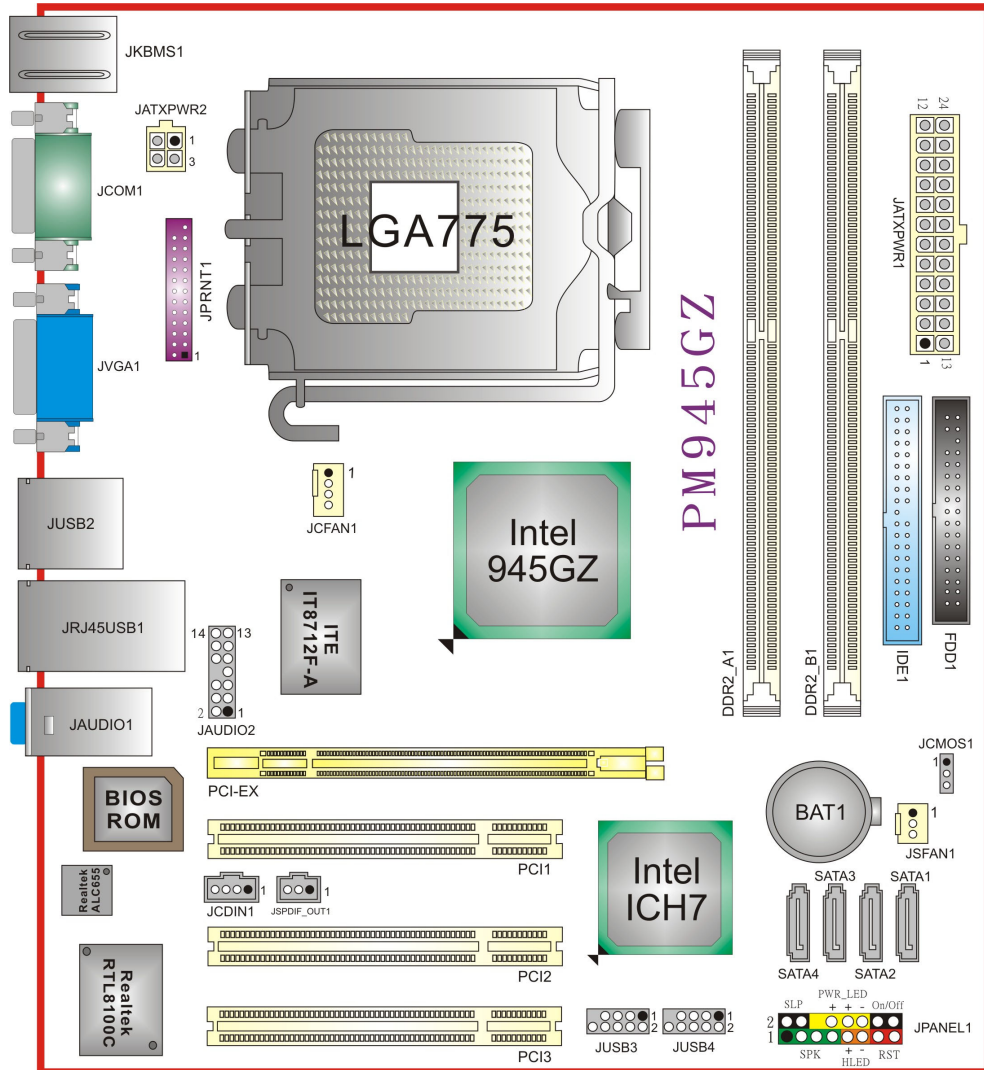
### **Watch Dog Timer:**

- ✧ This function is used for detecting the system hangs during the POST stage due to conflicts resulting from changing the system BIOS settings. Once the problem is detected, the system will reset the configurations and reboot the system within five seconds.



## Mainboard PM945GZ

### Configuration Layout of PM945GZ



## Hardware Installation

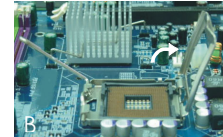
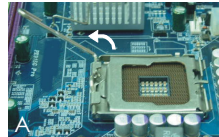
This section will assist you in quickly installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage the system's components.

### CPU Processor Installation

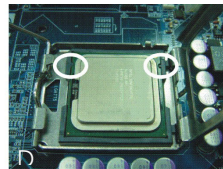
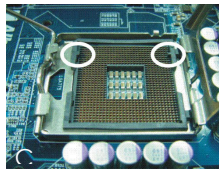
This mainboard supports Intel® Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® D/ Pentium® 4/ Celeron® D Processor using a Socket 775. Before building your system, we suggest you to visit the Intel website and review the processor installation procedures. <http://www.intel.com>

#### CPU Socket 775 Configuration Steps:

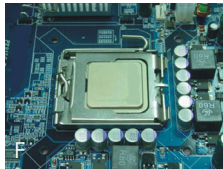
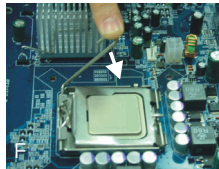
1. Locate the CPU socket 775 on your mainboard and nudge the lever away from the socket as shown. Then lift the lever to a 140-degree angle (A). Next, lift up the iron cover (B).



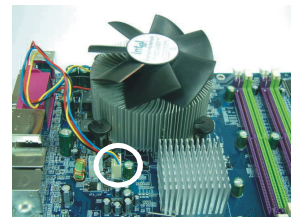
2. There are 2 distinctive marks located near the corners of the socket on the same side as the lever as shown (C). Match these marks with the marks on the CPU and carefully lower the CPU down onto the socket (D).



3. Replace the iron cover and then lower the lever until it snaps back into position (E). This will lock down the CPU (F).



4. Smear thermal grease on the top of the CPU. Lower the CPU fan onto the CPU/CPU socket and secure it using the attachments or screws provided on the fan. Finally, attach the fan power cord to the **JCFAN1** header.



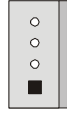
#### Attention

DO NOT touch the CPU pins in case they are damaged. Also, make sure that you have completed all installation steps before powered on the system. Finally, double-check that the cooling fan is properly installed and the CPU fan power cord is securely attached, in case your CPU and other sensitive components are damaged because of high temperatures.


## **Mainboard PM945GZ**

### **FAN Headers: JCFAN1, JSFAN1**

There are two fan headers available for cooling fans. The cooling fans play an important role in maintaining ambient temperatures in your system. The JCFAN1 header is attached with a CPU cooling fan. The JCFAN1 and JSFAN1 headers are attached with other cooling fans.

 JCFAN1	Pin	Assignment
	1	Ground
	2	+12V
	3	FAN RPM rate sense
	4	Control

 JSFAN1	Pin	Assignment
	1	Ground
	2	Power (+12V)
	3	FAN RPM rate sense



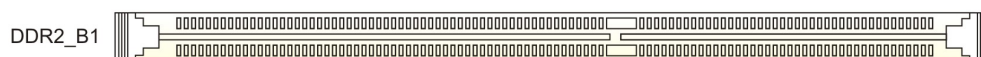
#### **Attention**

You can avoid damaging your CPU due to high temperatures with proper cooling equipment. It is recommended that attach a cooling fan on top of your CPU. Use the JCFAN1 header to attach the fan cord.

On most fan power cord, the black wire of the fan cable is the “ground” and should be attached to pin-1 of the header.

### **Memory Installation: DDR2\_A1/B1**

The PM945GZ provides two DIMM (Dual In-Line Memory Modules) sockets which allowing you to install 240-pin, unbuffered non-ECC, DDRII 533/ 400 SDRAMs. It also supports Dual Channel Technology and allows you installing a total memory capacity of 2 GB.



#### **Attention**

It is recommended that to install memories which are identical specifications (same timing specifications and same DDRII speed) to achieve the best effects. It may cause the failure of power-on or lower memory speed if installing different type, SPD (series presence detects) memories.

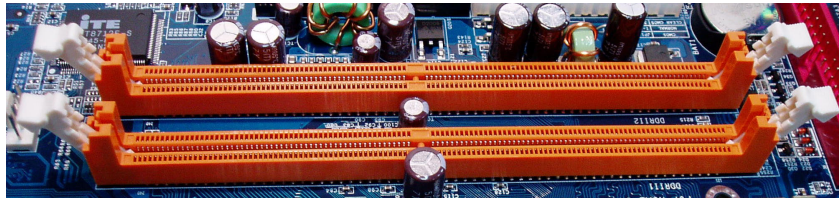
## **Mainboard PM945GZ**

### **How to enable Dual-Channel DDRII:**

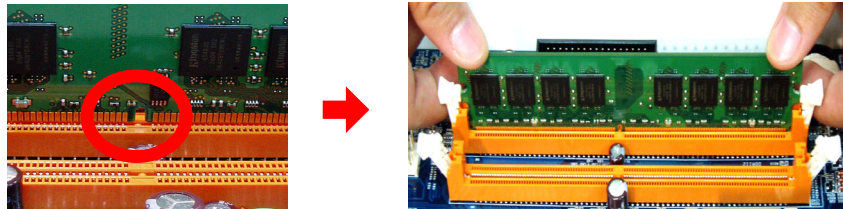
1. This mainboard provides Dual-Channel functionality for the two DIMM sockets. Enabling Dual-Channel can significantly increase your data access rates. DDR2\_A1 and DDR2\_B1 share one channel.
2. For enabling Dual-Channel, you have to install two memories in the DIMM sockets at the same time; according to the definition by Intel, once one channel of the memory capacity is the same with the other channel, then Dual-Channel will be enabled.  
**For example**, if you install one 256 MB memory in DDR2\_A1 and the other one in DDR2\_B1 (256MB x 2 = 512MB), so that the Dual-Channel can be enabled.
3. If you only need to install one memory, then the Dual-Channel won't be enabled.

### **Memory Installation Steps:**

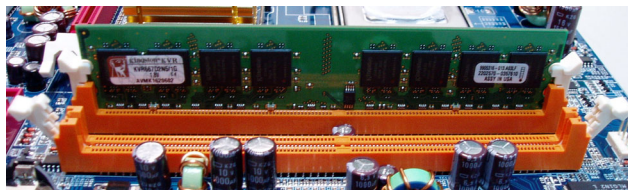
1. Pull the white plastic tabs at both ends of the slot away from the slot.



2. Match the notch on the RAM module with the corresponding pattern in the DIMM slot. This will ensure that the module will be inserted with the proper orientation.



3. Lower the RAM module into the DIMM Slot and press firmly using both thumbs until the module snaps into place.

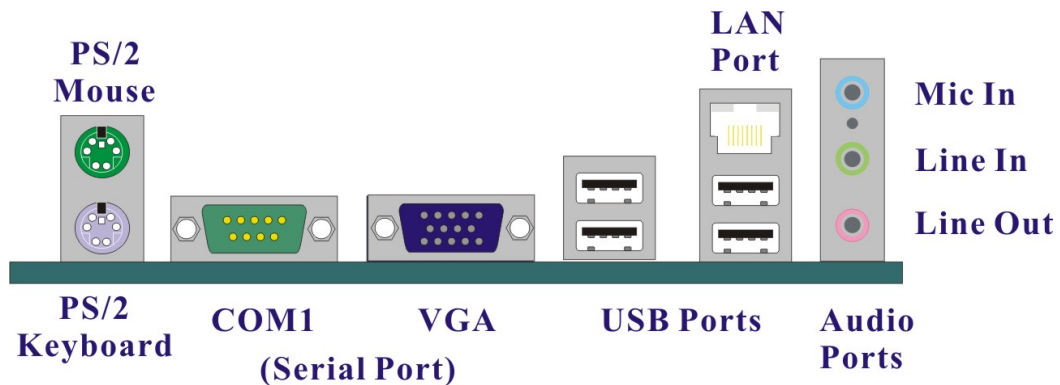


4. Repeat steps 1, 2 & 3 for the remaining RAM modules.

\* The pictures above are for reference only. Your actual installation may vary slightly from the pictures.

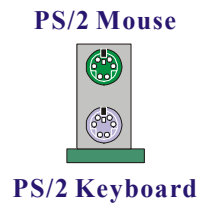
## Mainboard PM945GZ

### Back Panel Configuration



#### PS/2 Mouse & PS/2 Keyboard Ports: JKBMS1

This mainboard provides a standard PS/2 mouse port and a PS/2 keyboard port. The pin assignments are described below.



Pin	Assignment	Pin	Assignment
1	Data	4	+5 V (fused)
2	N/A	5	Clock
3	Ground	6	N/A

### Serial and Parallel Interface Ports

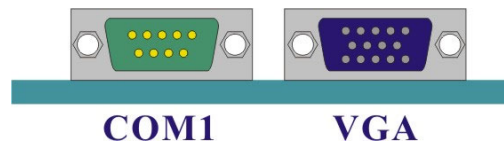
The mainboard provides one serial port and one parallel port on the back panel.

#### The Serial Interface: JCOM1

This mainboard provides a serial port COM1 on your back panel, and is used to connect mice, modem and other peripheral devices. Through this port, you can also transfer data from your computer hard disk drive to other computers.

#### D-SUB Connector: JVGA1

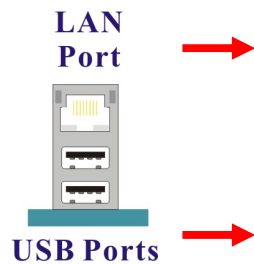
Your VGA monitor can attach directly to this VGA connector.



## Mainboard PM945GZ

### USB Ports/LAN Port: JUSB2, JRJ45USB1

There are four onboard USB 2.0/ 1.1 ports on the back panel. These USB ports are used to attach with USB devices, such as keyboard, mice and other USB supported devices. There is also a 10/100 Mbps Ethernet LAN port available for you to attach an Internet cable.



Pin	Assignment	Pin	Assignment
1	TX+ (TX+)	5	NC (TRD2-)
2	TX- (TX-)	6	RX- (RX-)
3	RX+ (RX+)	7	NC (TRD3+)
4	NC (TRD2+)	8	NC (TRD3-)

Pin	Assignment	Pin	Assignment
1/5	+5 V (fused)	3/7	USBP0+/P1+
2/6	USBP0-/P1-	4/8	Ground

### Audio Ports: JAUDIO1

This mainboard provides three audio ports, the Mic-in, Line-in and Line-out. These are the standard audio ports that provide basic audio function.

#### Line-In (Blue)

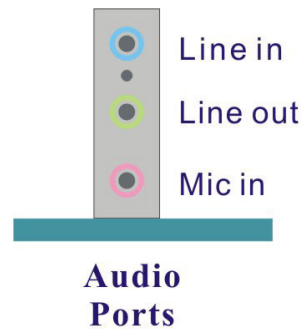
This port is for audio input and connects to external audio devices such as CD player, tape player, etc. When the multi-channel audio system is enabled, this port will output audio for the rear speakers.

#### Line-Out (Green)

This port is an output audio port used for connecting to speakers or a headset. When the multi-channel audio system is enabled, this port will output audio for the front speakers.

#### Mic-In (Pink)

This port is for connecting to a microphone. When the multi-channel audio system is enabled, this port will output audio for your subwoofer/center speakers.



This mainboard supports Super 5.1 Channel Audio Effect, and you can transfer 2-channel to 6-channel audio by using a SPDIF Card (Optional) to enable 6 speaker audio. See **Appendix I** for more information.

## **Mainboard PM945GZ**

### **Connectors**

#### **Floppy Disk Drive Connector: FDD1**

The mainboard provides a standard floppy disk drive connector (FDD1) that supports 360KB/720KB/1.2MB/1.44MB/2.88 MB floppy disk drives using a FDD ribbon cable.


#### **Primary IDE Connector: IDE1**

The mainboard provides one IDE connector that supports Ultra ATA 66/100 IDE devices. You can attach a maximum of two IDE devices, such as hard disk drive (HDD), CD-ROM, DVD-ROM, etc. using an IDE ribbon cable.

In general, two IDE devices can be attached onto one IDE connector. If you attach two IDE HDDs, you must configure one drive as the master and the other one as the slave. In this case, one optical device i.e., CD-ROM, DVD-ROM...etc. should be attached to this connector as well.

#### **Serial ATA II Connector: SATA1/2/3/4**

The four SATA II connectors support 3 Gbps transmit rate, and one SATA connector only can attach one SATA HDD of each time using SATA cables.

 SATA1~4	Pin	Assignment	Pin	Assignment
	1	Ground	2	TX+
	3	TX-	4	Ground
	5	RX+	6	RX-
	7	Ground		



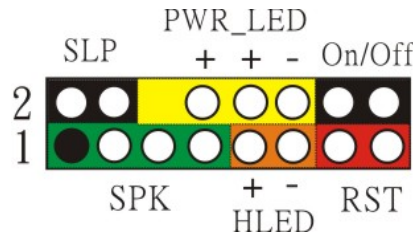
#### **Attention**

The FDD/ IDE cable is designed and should be attached with a specific direction. One edge of the cable will usually in color such as red, to indicate that should line up with the header pin-1.



## Mainboard PM945GZ

### Front Panel Headers: JPANEL1



Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker connector (SPK)	2	Sleep control	Sleep button (SLP)
3	N/A		4	Ground	
5	N/A		6	N/A	
7	Speaker		8	Power LED (+)	Power LED (PWR_LED)
9	HDD LED (+)	Hard drive LED (HLED)	10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	Ground	Reset button (RST)	14	Power button	Power-on button (On/ Off)
15	Reset control		16	Ground	

#### Speaker connector (Green): SPK

A speaker cable on your case front panel can be attached to this header. When you reboot the computer, this speaker will issue a short audible (beep). If there are problems during the Power On Self-Test, the system will issue an irregular pattern of audible beeps through this speaker.

#### Hard drive LED Header (Orange): HLED

If your case front panel has a hard drive LED cable, attach it to this header. The LED will flicker when there is hard disk drive activity.

#### Reset button Header (Red): RST

This header can be attached to a momentary SPST switch (reset button) cable on your case front panel. The switch is normally left open. When the switch closed, it will cause the mainboard to reset and run the POST (Power-On Self Test).

#### Sleep button Header (Black): SLP

If your case front panel has a sleep control cable, attach it to this header. The system will get into sleep mode when you press the button by setting the system sleep mode.

#### Power LED Header (Yellow): PWR\_LED

The mainboard provides a power LED header. If there is a 3-pin power LED cord on your case front panel, you can attach it to the 3-pin power LED header. Then the power LED will illuminate while the system is powered on.



## **Mainboard PM945GZ**


### **Power-on button Header (Black): On/Off**

This header can be attached to a power switch cable on your case front panel. You can turn your system on or off by pressing the button attached to this power switch cable.

## **Headers & Jumpers**

### **Front USB Headers: JUSB3/4**

This mainboard provides four onboard USB 1.1/2.0 ports (back panel) that attach to USB devices. There are two additional USB headers that can be connected by cables to four more USB ports on the front panel of your case giving you a possible 8 USB ports.

 <b>JUSB3/4</b>	Pin	Assignment	Pin	Assignment
	1	+5V (fused)	2	+5V (fused)
	3	USB-	4	USB-
	5	USB+	6	USB+
	7	Ground	8	Ground
	9	Key	10	N/A





#### **Attention**

If you are using a USB 2.0 device with Windows 2000/XP, you will need to install the USB 2.0 driver from the Microsoft® website. If you are using Service pack 1 (or later) for Windows® XP, and using Service pack4 (or later) for Windows® 2000, you will not have to install the driver.

### **Power Source Headers for PS/2 Keyboard and Mouse: JKBV1**

PS/2 keyboard and mouse attached to PS/2 keyboard and mouse ports on the back panel of your computer case can awaken the system from sleep mode. In order to enable this functionality, you must adjust the jumper caps on JKBV1 header for +5V or +5V Standby mode.

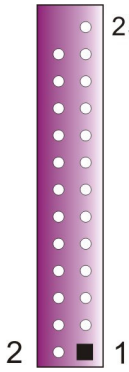
JKBV1	Assignment	Description
 <b>Pin 1-2 Closed</b>	+5V	+5V for PS/2 keyboard and mouse (Default)
 <b>Pin 2-3 Closed</b>	+5V Standby	PS/2 keyboard and mouse are powered by +5V standby voltage

**Note:** Close stands for putting a jumper cap onto two header pins.

## Mainboard PM945GZ



### Printer Interface Header: JPRNT1

This mainboard provides a JPRNT1 header for you connecting an additional printer connector on your case back panel. Attach the cable of printer connector (Optional) onto this header, and then you can use the printer connector connecting with a printer.

 JPRNT1	Pin	Assignment	Pin	Assignment
	1	-Strobe	2	-ALF
	3	Data 0	4	-Error
	5	Data 1	6	-Init
	7	Data 2	8	-Scltin
	9	Data 3	10	Ground
	11	Data 4	12	Ground
	13	Data 5	14	Ground
	15	Data 6	16	Ground
	17	Data 7	18	Ground
	19	-ACK	20	Ground
	21	Busy	22	Ground
	23	PE	24	Ground
	25	SCLT		

### Clear CMOS Jumper: JCMOS1

The "Clear CMOS" function is used when you cannot boot your system due to some CMOS problems, such as a password is forgotten. This jumper allows you to reset the CMOS configurations, and then reconfigure it.

JCMOS1		Assignment
1	 <b>Pin 1-2 Close</b>	Normal (Default)
1	 <b>Pin 2-3 Close</b>	Clear CMOS Data

**Note:** Close stands for putting a jumper cap onto two header pins.



The following steps explain how to reset your CMOS configurations when you have forgotten your system password.

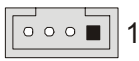
1. Turn off your system and disconnect the AC power cable.
2. Set JCMOS1 header to OFF (2-3 Closed).
3. Wait several seconds.
4. Set JCMOS1 header to ON (1-2 closed).
5. Connect the AC power cable and turn on your system.
6. Reset your new password.

## **Mainboard PM945GZ**

### **Audio Configuration**

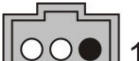
#### **CD-ROM Audio-In Connector: JCDIN1**

The CD-IN connector is used to attach an audio cable to audio devices such as CD-ROMs, DVD-ROMs etc.

 <b>JCDIN1</b>	Pin	Assignment
	1	Left channel input
	2	Ground
	3	Ground
	4	Right channel input

#### **SPDIF Header: JSPDIF\_OUT1**

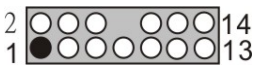
S/PDIF is a recent audio transfer file format, which provides high quality audio using optical fiber and digital signals. This mainboard is capable to deliver audio output through the SPDIF header and FRONT AUDIO header. One way you would use these headers is by using an SPDIF Card (optional) and attaching the cords onto the two specific headers of mainboard. The RCA or TOS-Link connectors will be provided on the SPDIF Card and which are convenient you to output audio format files between your system and the SPDIF styled players.

 <b>JSPDIF_OUT1</b>			
Pin	Assignment	Pin	Assignment
1	+5V	2	SPDIF OUT1
5	Ground		

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### **Front Audio Header: JAUDIO2**

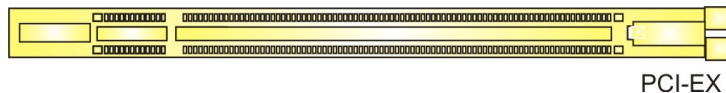
If your case front panel has audio ports, you can connect them to the Front Audio Header of this mainboard. First, you must remove the jumper caps on this header and then attach the cables from the front panel to the pins on this header. You can use both the front audio panel and back panel audio simultaneously. If you are not using front panel audio ports, leave the jumper caps on the header pins (Note: pins 5-6 、 pins 9-10 、 pins 11-12 and 13-14) to avoid problems with the back panel audio ports.

			
<b>JAUDIO2</b>			
Pin	Assignment	Pin	Assignment
1	Mic in/center	2	Ground
3	Mic_VREF	4	Audio power +5V
5	Front out_R/	6	Rear out_R
7	N/A	8	Key
9	Front out_L	10	Rear out_L
11	Front in R	12	Rear in R
13	Front in L	14	Rear in L

## **Slots**

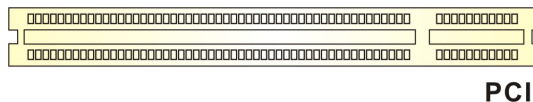
### **Universal PCI-Express Interface slot: PCI-EX**

The PCI-EX slot is the Universal PCI-Express interface slot which can be supported up to x4 mode. It is recommended that you insert a graphics card onto the PCI-EX slot which the interface is capable for PCI-E x4 specification.



### **PCI Interface Slots: PCI1/2/3**

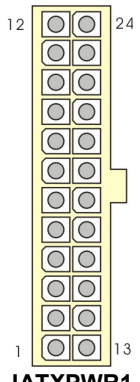

PCI stands for Peripheral Component Interconnect, which is a bus standard for installing expansion cards such as network card, SCSI card, etc. to these PCI slots.



## Power Supply Attachments

### ATX Power Connector: JATXPWR1, JATXPWR2

This mainboard provides two ATX power connectors, a 24-pin JATXPWR1 connector and a 4-pin JATXPWR2 connector. You must use a power supply that has both of these connectors and both connectors must be attached before the system is powered on. These power connectors support several power management functions such as the instant power-on function. The connector pins are described below.

 JATXPWR1	Pin	Assignment	Pin	Assignment
	1	+3.3V	13	+3.3V
	2	+3.3V	14	-12V
	3	Ground	15	Ground
	4	+5V	16	PS_ON
	5	Ground	17	Ground
	6	+5V	18	Ground
	7	Ground	19	Ground
	8	PW_ON	20	-5V
	9	+5V standby voltage	21	+5V
	10	+12V	22	+5V
	11	+12V	23	+5V
	12	+3.3V	24	Ground
 JATXPWR2	Pin	Assignment	Pin	Assignment
	1	+12V	3	Ground
	2	+12V	4	Ground



#### Attention

In general, power cords are designed and should be attached with a specific direction. The black wire of the power cord is Ground and should be attached onto the header location of Ground.

## **Chapter 2. BIOS Setup**

### **Introduction**

This section describes PHOENIX-AWARD™ BIOS Setup program which resides in the BIOS firmware. The Setup program allows users to modify the basic system configuration. The configuration information is then saved to CMOS RAM where the data is sustained by battery after power-down.

The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and parallel ports. As well, the BIOS control the first stage of the boot process, loading and executing the operating system.

The PHOENIX-AWARD™ BIOS installed in your computer system's ROM is a custom version of an industry standard BIOS. This means that it supports the BIOS of Intel® based processors.

This version of the PHOENIX-AWARD™ BIOS includes additional features such as virus and password protection as well as special configurations for fine-tuning the system chipset. The defaults for the BIOS values contained in this document may vary slightly with the version installed in your system.

### **Key Function**

In general, you can use the arrow keys to highlight options, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate within the BIOS Setup program.

<b>Keystroke</b>	<b>Function</b>
Up arrow	Move to previous option
Down arrow	Move to next option
Left arrow	Move to the option on the left (menu bar)
Right arrow	Move to the option on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the option you desire
PgUp key	Increase the numeric value or enter changes
PgDn key	Decrease the numeric value or enter changes
+ Key	Increase the numeric value or enter changes
- Key	Decrease the numeric value or enter changes
Esc key	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the defaults from BIOS default table
F7 key	Load the turbo defaults
F10 key	Save all the CMOS changes and exit

## Main Menu

Phoenix - AwardBIOS CMOS Setup Utility	
Standard CMOS Features	Frequency/Voltage Control
Advanced BIOS Features	Load optimized Defaults
Advanced Chipset Features	Set Supervisor Password
Integrated Peripherals	Set User Password
Power Management Setup	Save & Exit Setup
PnP/PCI Configurations	Exit Without Saving
PC Health Status	
Esc : Quit      F9 : Menu in BIOS      ↑ ↓ → ← : Select Item	
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

### **Standard CMOS Features**

Include all the adjustable items in standard compatible BIOS.

### **Advanced BIOS Features**

Include all the adjustable items of Award special enhanced features.

### **Advanced Chipset Features**

Include all the adjustable items of chipset special features.

### **Integrated Peripherals**

Include all onboard peripherals.

### **Power Management Setup**

Include all the adjustable items of Green function features.

### **PnP/PCI Configurations**

Include all configurations of PCI and PnP ISA resources.

### **PC Health Status**

It is for monitoring the system status such as temperature, voltage, and fan speeds.

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### **Frequency/ Voltage Control**

It is for you to specify settings for Frequency and Voltage Control, such as the CPU's clock and frequency ratio.

### **Load Optimized Defaults**

It can load the preset system parameter values to set the system in its best performance configurations.

### **Set Supervisor Password**

Set change or disable password. It allows you to limit access to the system and/or BIOS setup.

### **Set User Password**

Set change or disable password. It allows you to limit access to the system.

### **Save & Exit Setup**

Save CMOS value settings to CMOS and exit setup.

### **Exit Without Saving**

Abandon all CMOS value changes and exit setup.



## **Chapter 3: Software Setup**

### **Software List**

<b>Category</b>	<b>Platform</b>
Intel® Chipset INF	Windows 2000 /XP
Realtek® Lan Driver	Windows 2000 /XP
Realtek® Audio Driver	Windows 2000 /XP
Intel® VGA Driver	Windows 2000 /XP
Microsoft® DirectX9.0c	Windows 2000 /XP
Adobe® Acrobat Reader 6	Windows 2000 /XP
Trend PC-Cillin® 2005	Windows 2000 /XP
Drive Clone	Windows 2000 /XP
Restore IT	Windows 2000 /XP



**Attention:** You don't need to install the driver for USB 2.0 version if you are using Windows® XP with Service Pack 2 (or more advanced), or Windows® 2000 with Service Pack 4 (or more advanced).

### **Software Installation**

Place the Driver CD into the CD-ROM drive and the Installation Utility will auto-run. You can also launch the Driver CD Installation Utility manually by executing the Intel.exe program located on the Driver CD. (For more details, please refer to the Readme.txt files that in each folder of the Driver.)

© The screen and images are only for general reference. The version of the screens you received with your software may vary slightly.

1. When you insert the driver CD into the CD-ROM, you'll see the screen as the picture below. There are several driver buttons displayed in the "Driver Menu" screen, and you can click on the drivers to install.

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- ✧ **Intel Chipset INF** – It provides all drivers for the functions which built in both the Northbridge/ Southbridge.
- ✧ **Realtek LAN Driver** – It provides the driver of Realtek Network.
- ✧ **Realtek Audio Driver** – It provides the driver of Realtek AC'97 Audio CODEC.
- ✧ **Intel VGA Driver** – It provides the driver of Intel VGA.
- ✧ **Microsoft DirectX 9.0c** – It provides the software of Microsoft DirectX9.0c.

2. Click on the "Utility Menu" button, you can choose the software to install.



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- ✧ **Adobe Acrobat Reader 6** – Installing the Adobe Acrobat Reader program, you can browse files with PDF styled.
- ✧ **Trend PC-Cillin 2005** – It provides the software of Trend PC-Cillin 2005 (Anti-virus program).
- ✧ **Drive Clone** –It provides the software of Drive Clone which is used to back up or clone hard drives or partitions.
- ✧ **Restore IT** – It provides the software of Restore IT to help you recover lost data or restore files.

3. Click on the “User Manual” button, you can choose the manual to read.



**Attention:** Before you read manuals, you must install the driver of Adobe Acrobat Reader 6 to browse PDF files.

4. If you click the “Browse CD” button, you can browse all the files in the Driver CD.

## **Chapter 4: Troubleshooting**

### **Problem 1:**

No power to the system. Power light does not illuminate. Fan inside power supply does not turn on. Indicator lights on keyboard are not lit.

Causes:

1. Power cable is unplugged.
2. Defective power cable.
3. Power supply failure.
4. Faulty wall outlet; circuit breaker or fuse blown.

Solutions:

1. Make sure power cable is securely plugged in.
2. Replace cable.
3. Contact technical support.
4. Use different socket, repair outlet, reset circuit breaker or replace fuse.

### **Problem 2:**

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is active but system seems "hung"

Causes: Memory DIMM is partially dislodged from the slot on the mainboard.

Solutions:

1. Power Down
2. Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

### **Problem 3:**

System does not boot from the hard disk drive but can be booted from the CD-ROM drive.

Causes:

1. Connector between hard drive and system board unplugged.
2. Damaged hard disk or disk controller.
3. Hard disk directory or FAT is corrupted.

Solutions:

1. Check the cable running from the disk to the disk controller board. Make sure both ends are securely attached. Check the drive type in the standard CMOS setup.
2. Contact technical support.
3. Backing up the hard drive is extremely important. Make sure you periodically perform backups to avoid untimely disk crashes.



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### **Problem 4:**

System only boots from the CD-ROM. The hard disk can be read and applications can be used but booting from the hard disk is impossible.

Causes: Hard Disk boot sector has been corrupted.

Solutions: Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

### **Problem 5:**

Error message reading "SECTOR NOT FOUND" displays and the system does not allow certain data to be accessed.

Causes: There are many reasons for this such as virus intrusion or disk failure.

Solutions: Back up any salvageable data. Then performs low level format, partition, and then a high level format the hard drive. Re-install all saved data when completed.

### **Problem 6:**

Screen message says "Invalid Configuration" or "CMOS Failure."

Causes: Incorrect information entered into the BIOS setup program.

Solutions: Review system's equipment. Reconfigure the system.

### **Problem 7:**

The Screen is blank.

Causes: No power to monitor.

Solutions: Check the power connectors to the monitor and to the system.

### **Problem 8:**

Blank screen.

Causes:

1. Memory problem.
2. Computer virus.

Solutions:

1. Reboot computer. Reinstall memory. Make sure that all memory modules are securely installed.
2. Use anti-virus programs to detect and clean viruses.

### **Problem 9:**

Screen goes blank periodically.

Causes: Screen saver is enabled.

Solutions: Disable screen saver.



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### **Problem 10:**

Keyboard failure.

Causes: Keyboard is disconnected.

Solutions: Reconnect keyboard. Replace keyboard if you continue to experience problems.

### **Problem 11:**

No color on screen.

Causes:

1. Faulty Monitor.
2. CMOS incorrectly set up.

Solutions:

1. If possible, connect monitor to another system. If no color appears, replace monitor.
2. Call technical support.

### **Problem 12:**

The screen displays "C: drive failure."

Causes: Hard drive cable not connected properly.

Solutions: Check hard drive cable.

### **Problem 13:**

Cannot boot the system after installing a second hard drive.

Causes:

1. Master/slave jumpers not set correctly.
2. Hard drives are not compatible / different manufacturers.

Solutions:

1. Set master/slave jumpers correctly.
2. Run SETUP program and select the correct drive types. Call drive manufacturers for possible compatibility problems with other drives.

### **Problem 14:**

Missing operating system on hard drive.

Causes: CMOS setup has been changed.

Solutions: Run setup and select the correct drive type.

### **Problem 15:**

Certain keys do not function.


Causes: Keys jammed or defective.

Solutions: Replace keyboard.

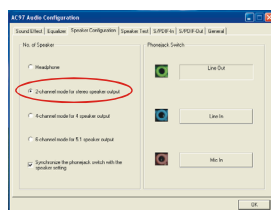


## **Appendix I: Super 5.1 Channel Audio Effect Setup**

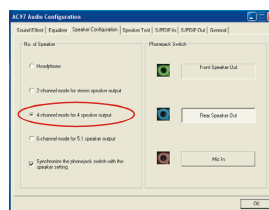
### **Channels Setup**

1. After starting your system, click the Sound Effect Manager icon  from the tool bar on the desktop. You can also find the icon by going to Start-> Setting -> Control Panel.
2. Click the Speaker Configuration button. One of the screens will display as shown below.
3. You can choose a 2, 4 or 6 channel (speaker) system.

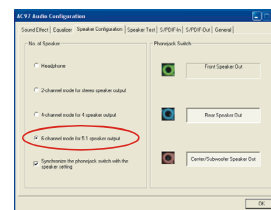
#### **2 Channels**



#### **4 Channels**



#### **6 Channels**




### **Super 5.1 Channel Audio Effect**

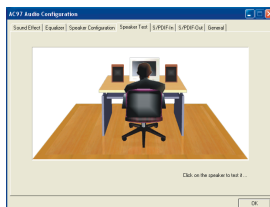
This mainboard comes with an ALC655 Codec which supports high quality 5.1 Channel audio effects. With ALC655, you are able to use standard line-jacks for surround audio output without connecting to any auxiliary external modules. To use this function, you have to install the audio driver in the bonus Pack CD as well as an audio application supporting 5.1 Channel audio effects. See the audio Port Connectors in the Hardware Installation section for a description of the output connectors.

### **Speaker Test**

Make sure the cable is firmly into the connector.

1. Click the audio icon  from the Windows screen.
2. Click Speaker Test button, you can see the screen like the pictures below.
3. Select the speaker which you want to test by clicking on it.

#### **2 Channels**



#### **4 Channels**



#### **6 Channels**

