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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.

Contents

CHAPTER 1. SPECIFICATION	1
HARDWARE INSTALLATION	2
CONFIGURATION	3
CHAPTER 2. BIOS SETUP	9
INTRODUCTION	9
MAIN MENU	10
LOAD DEFAULTS	12
EXIT MENU	12
CHAPTER 3: SOFTWARE SETUP	13
SOFTWARE INSTALLATION	13

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Ver: EG101

PM915G Series
Intel® 915G & ICH6
Supports Socket 775 Intel® Pentium® 4
Prescott Processor

User Mnaual

Enabling Hyper-Threading for your computer system requires ALL of the following components

- **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):

- 244mm x 228mm (W x L)

Operating System:

- Supports most popular operating systems: Windows® 2000/ XP

Package Contents

- PM915G Series mainboard
(PX915G/ PM915G PRO/ PM915G PRO-H/ PM915G PRO-HG/ PM915G PRO-HGF)
- IDE ATA Cable
- FDC Cable
- USB Bracket (optional)
- SPDIF & FRONT AUDIO Port Bracket (optional)
- SATA Power cord (optional)
- SATA Cable (optional)
- Mainboard Setup Driver CD
- Mainboard User Manual CD
- Mainboard Quick Installation Guide

Chapter 1. Specification

CPU:

- Supports Socket 775 Pentium® 4 Prescott processor with 533/ 800 MHz FSB frequencies

Chipset:

- Northbridge Chipset – Intel® 915G
- Southbridge Chipset – Intel® ICH6
- I/O Controller – Winbond W83627THF
- HD Audio Codec – Realtek ALC880 (for PM915G PRO-HGF, PM915G PRO-HG & PM915G PRO-H)
- AC'97 Codec – Realtek ALC655 (for PM915G PRO & PM915G)
- Gb LAN Controller – Realtek® RTL8110S (for PM915G PRO-HGF & PM915G PRO-HG)
- Mb LAN Controller – Realtek® RTL8100C (for PM915G PRO-H & PM915G PRO)
- IEEE 1394 Controller – VIA® VT6307 (only for PM915G PRO-HGF)

DRAM Memory:

- Uses either DDR400 (PC3200) or DDR333 (PC2700) SDRAM (unbuffered & non-ECC)
- Supported memory module increments are 256 MB /512 MB /1 GB
- Supports Dual-Channel data bus

PCI-Express BUS Slots:

- Provides 1 x 16 PCI Express slot with 4 GB/s bandwidth (each direction)
- Provides 1 x 1 PCI Express slots with 250 MB/s bandwidth (each direction)
- All PCI Express slots are fully PCI Express 1.0a compliant

PCI BUS Slots:

- Provides 2 PCI slots

Universal Serial Bus:

- Supports up to 8 USB2.0 ports for USB compliant interface devices

Onboard IDE Facilities:

- Supports Ultra ATA 66/ 100, DMA and PIO modes
- One IDE slot can support 2 IDE drives

Onboard SATA Bus:

- 4 SATA IDE slots
- Supports 150 MB/s transfer rates

HD Audio Sound Codec Onboard: (For PM915G PRO-HGF/ -HG/ -H)

- HD Audio (High Definition Audio) protocol compliance
- Compliant with Azalia specifications
- 8-channel playback capability
- Supports Sony/ Philips Digital Interfaces (S/PDIF)

AC'97 Sound Codec Onboard: (For PM915G/ PRO)

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

LAN Controller:

- Realtek RTL8110S supports Ethernet 10/100/1000 Mbit/s connectivity. (for PM915G PRO-HG/ -HGF)

PM915G Series

- The PM915G PRO/ -H provide an additional LAN facility using a built-in Realtek RTL8100C chips which supports Ethernet 10/100 Mbit/s network connectivity.

Onboard Video Graphic:

- Supports 2D/ 3D Acceleration
- Supports Video Acceleration
- Microsoft® DirectX compatible and OpenGL driver available

I/O facilities:

- One multi-mode Parallel Port capable of supporting the following specifications:
 1. Standard & Bi-direction Parallel Port.
 2. Enhanced Parallel Port (EPP)
 3. Extended Capabilities Port (ECP)
- Contains one serial port (16550 UART) / Contains one VGA port
- Supports PS/2 mice and PS/2 keyboards
- Supports 360 KB/720 KB/1.2 MB/1.44 MB/2.88 MB floppy disk drives

BIOS:

- Phoenix-Award™ BIOS
- Supports APM1.2 & ACPI2.0 power management

Watch Dog Timer:

- This mainboard contains a special feature called the "Watch Dog Timer" which is used to detect when the system hangs during the POST stage due to certain BIOS configuration problems. Once a problem is detected, the Watch Dog will reset the configurations and reboot the system.

Hardware Installation

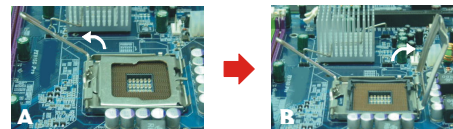
This section will assist you in quickly installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage the system's components.

CPU Processor Installation

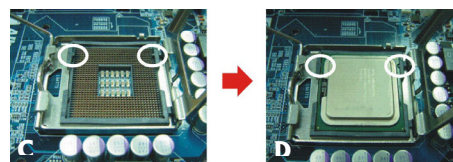
This mainboard supports Intel® Pentium® 4 processors using a Socket 775. Before building your system, we suggest you visit the Intel website and review the processor installation procedures. <http://www.intel.com>

CPU Socket 775 Configuration Steps:

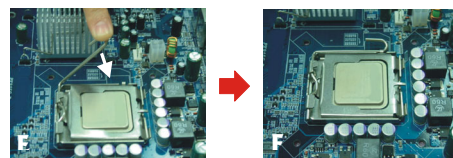
1. Locate the CPU socket 775 on your mainboard and nudge the lever away from the socket as shown. Then lift the lever to a 140-degree angle (A). Next, lift up the iron cover (B).



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).

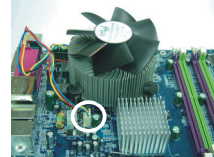


3. Replace the iron cover and then lower the lever until it snaps back into position (E). This will lock down the CPU (F).



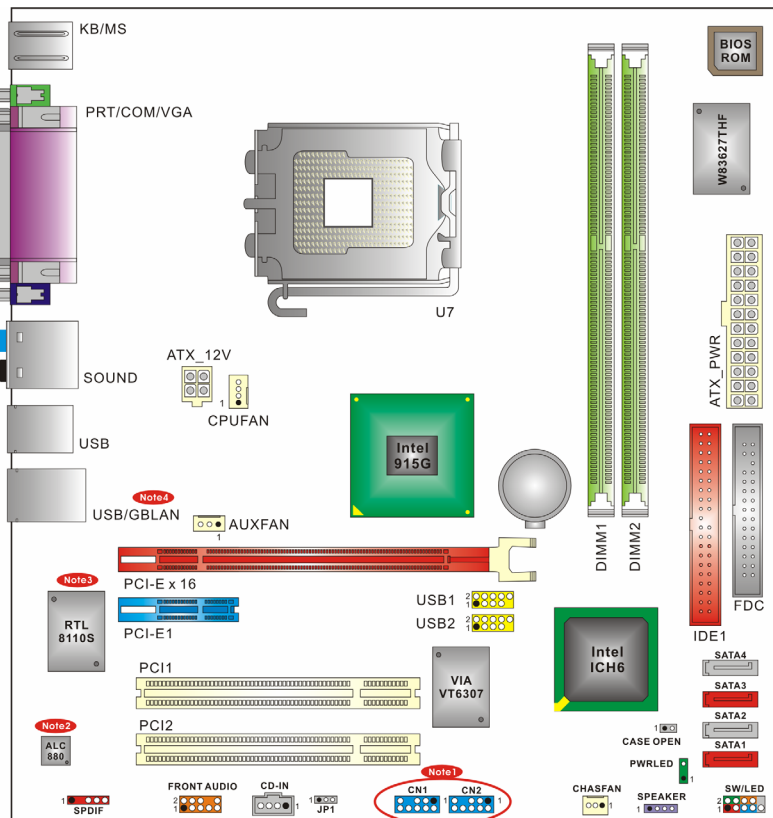
PM915G Series

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 cable to the **CPUFAN** adapter.



Attention: DO NOT touch the pins on the socket (the pins are sensitive and can be easily damaged). Also, make sure that you have completed all of the installation steps before starting the system. Finally, double-check that the heatsink is properly installed and make sure that the CPU fan power cable is securely attached (cooling problems can cause overheating, leading to damage to the CPU and other sensitive components).

Configuration



Note 1 These two IEEE1394 headers only for PM915G PRO-HGF

Note 2 The ALC655 Codec is for PM915G & PM915G PRO. And the ALC880 Codec is for PM915G PRO-H/-HG/-HGF

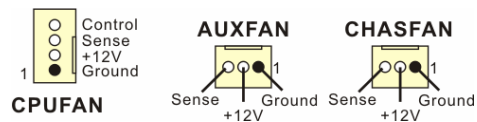
Note 3 The RTL8100C LAN chip is for PM915G PRO/-H. And the RTL8110S LAN chip is for PM915G PRO-HG/-HGF

Note 4 The LAN RJ-45 connector is for PM915G PRO/-H/-HG/-HGF

Hardware Installation

FAN Headers

Three power headers are available for the cooling fans. Cooling fans play an important role in maintaining the ambient temperature in your system.



Attention: We strongly recommend that you use a CPU fan sink with your CPU. You can attach the power cable from the CPU fan sink to the CPUFAN Header.

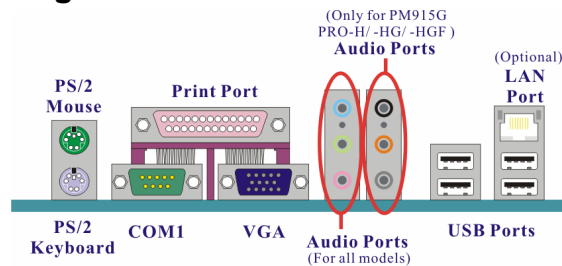
Memory Installation

These mainboards contain 2 memory slots which use 184-pin DDR SDRAM with a total memory capacity of up to 2 GB. You must install unbuffered/non-ECC DDR-SDRAM DIMMs with either 256 MB, 512 MB, or 1 GB of memory. These modules must be either DDR400 (PC3200) or DDR333 (PC2700) SDRAM.



Attention: We strongly recommend that you have to install modules in same specification to achieve the best effects. (Same timing specifications and same DDR speed) lest the failure of power-on or low memory speed if you install modules in different type, different SPD (series presence detect).

Back Panel Configuration



PS/2 Mouse & PS/2 Keyboard Connectors: KB/MS

These mainboards provide a standard PS/2 mouse connector and PS/2 keyboard connector. The pin assignments are described below:

Parallel Interface Port: PRT

The parallel port on your system has a 25-pin, DB25 connector that is used to interface with parallel printers and other devices using a parallel interface.

The Serial Interface: COM1

The serial port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, modems and other peripheral serial devices can be connected to this port.

VGA Graphics Connector: VGA

The Series have a built in VGA port. Your VGA monitor can attach directly to this VGA connector (D-SUB 15 pin).

PM915G Series

USB & LAN Connectors: USB/ (LAN = > optional)

These mainboards come with 4 USB ports. The PM915G PRO-HGF & PM915G PRO-HC has a 1 Gbits/s LAN port. And The PM915G PRO-H & PM915G PRO have a 10/ 100 Mbit/s LAN port. The USB connectors are used to attach to keyboards, mice and other USB devices. You can plug the USB devices directly into this connector. The LAN connectors can be attached directly to a network.

Audio Port Connectors: Sound

These mainboards come equipped with 6 or 3 Audio Ports. The Mic-in, Line-in and Front Speaker-out are standard audio ports that provide basic audio functionality. When you install the 8 Channel Audio Effects driver (4/6/8 channel audio), the other 3 audio ports will be enabled.

Line In (blue) Connects to an external audio device such as a CD player, tape player or other audio devices that provide audio.

Front Speaker-Out (green) Connects to standard audio speakers for audio output. This port becomes the surround sound front speakers when the 8 Channel Audio Effects (4/6/8 speakers) driver is installed and enabled. Also note that this port provides the most amperage of all the ports making it suitable for headphones and speakers without their own power cables.

Mic In (pink) Connects to a microphone.

Surround Back Speaker-out (black) This port represents the surround sound back speakers and is only functional when the 4/ 6/ 8 Channel Audio Effects driver is installed and enabled.

Center/Subwoofer (orange) This port represents the Center/Subwoofer speakers and is only functional when the 6/ 8 Channel Audio Effects driver is installed and enabled.

Surround Speaker-out (grey) This port represents an auxiliary port and is only functional when 8 Channel Audio Effects driver is installed and enabled.

Connectors

Floppy Disk Connector: FDC

These mainboards provide a standard floppy disk connector (FDC) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy diskette drives. This connector supports the floppy drive ribbon cables provided in the packaging.

Hard Disk Connectors: IDE1/ SATA1-4

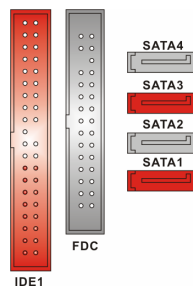
These mainboards provide a standard IDE connector that supports PIO Mode 0~4, Bus Master, Ultra ATA 66/100. 4 Serial ATA connectors are also available and can provide 150 MB/s transmission rates.

IDE1 (Primary IDE Connector)

You can connect 2 IDE devices to the IDE1 connector using a single ribbon cable with 3 connectors (2 for the drives and one to connect to the board). If you are connecting 1 drive, you should configure it as the Master device. If you are connecting a second drive, you must configure it as the Slave device (see your hard drive manual for master/slave configuration specifics). If you have an IDE CD-ROM drive, you just can attach it to this connector.

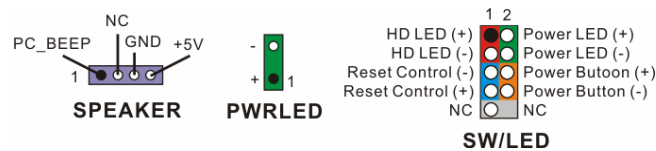
SATA1-4 (Serial ATA connector)

These SATA connectors (SATA1 – SATA4) support Serial ATA 150. Each SATA connector can only support one serial ATA device. **Note:** With most storage devices, there is a power cable that you need attach to a power source (power supply).



PM915G Series

Front Panel Indicator: SW/LED、PWRLLED、SPEAKER



HD LED (Hard Drive LED Connector/ red)

This connector can be attached to an LED on the front panel of a computer case. The LED will flicker during any disk activity.

RST SW (Reset Connector/ blue)

This connector can be attached to a momentary SPST switch. This switch is normally left open. When closed it will cause the mainboard to reset and run the POST (Power On Self Test).

PWR-LED (2-pin Power LED/ green)

The mainboard provides a two-pin power LED connector. If there is a 2-pin power LED cable on the front panel of your computer case, you can attach it to the 2-pin power LED connector. The LED will illuminate showing that the computer is powered on.

PWR ON (Power Button/ orange)

This connector can be attached to a front panel power switch. The switch must pull the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off (the time required is due to internal debounce circuitry on the system board). At least two seconds must pass before the power supply will recognize another on/off signal.

PWRLLED (3-Pin Power LED/ green)

These mainboards provides a 3-pin power LED connector. If there is a 3-pin power LED cable on the front panel of a computer case, you can attach it to the 3-pin power LED connector. The LED will illuminate showing that the computer is powered on.

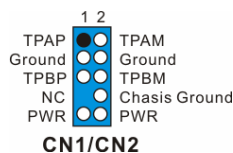
SPEAKER (Speaker/ violet)

A front panel speaker can be attached to this connector. This speaker is used for audible beeps during the boot up process (Power On Self-Test). A single "short beep" is normal, while "irregular beeps" signal problems.

Headers & Jumpers

IEEE 1394 Headers (Blue): CN1/ CN2 (only for PM915G PRO-HGF)

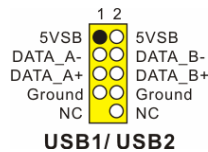
The IEEE 1394 high-speed serial bus provides enhanced PC connectivity for consumer electronics audio/video (A/V) appliances, storage peripherals, other PCs, and portable devices. You can connect the IEEE1394 bracket (optional) to the CN1 and CN2 headers.



PM915G Series

Front USB Headers (Yellow): USB1/ USB2

These mainboards provide 2 USB headers on the board allowing for 4 additional USB ports. To make use of these headers, you must attach a USB bracket/cable with USB ports (some models will come packaged with a USB 4-port bracket-cable). The optionally packaged bracket will have two connectors that you can connect to the headers (USB1, USB2). The other end (bracket containing the USB ports) is attached to the computer casing.



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.

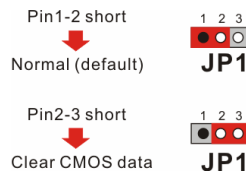
Case Open Warning Header: CASE OPEN

This connector is used to warn the user that the computer case has been previously opened. To use this functionality, you have to enable the CASE OPEN warning function in the BIOS Setup Utility. When your computer case is opened, your system will show alert messages during boot up. To use this function, your computer case must be equipped with a "case open" cable.



Clear CMOS Jumper: JP1

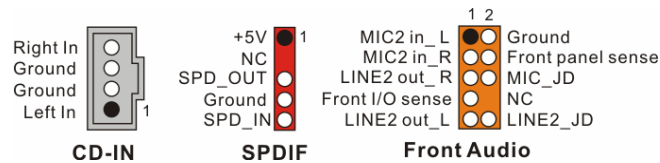
The "Clear CMOS" jumper allows you to reset your CMOS configurations. This is particularly useful when you have forgotten your system password and cannot boot to the operating system.



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 JP1 to OFF (2-3 Closed).
3. Wait several seconds.
4. Set JP1 to ON (1-2 closed).
5. Connect the AC power cable and turn on your system.
6. Reset your new password.

Audio Connectors



CD-ROM Audio-In Header: CD-IN

This header is used to connect to the CD-ROM/DVD audio cable

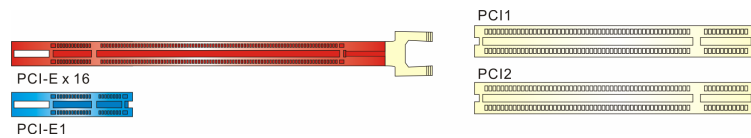
Front Panel Audio Header (Orange): FRONT AUDIO

You can use the Front Panel Audio header (FRONT AUDIO) to connect to a separate audio bracket or to connect to case embedded audio equipment. The Front AUDIO header provides MIC-in and Line-out functionality and cannot be used simultaneously with the back panel mic and speakers. An SPDIF/Audio bracket is optionally packaged with some models.

S/PDIF Header (Red): SPDIF

S/PDIF (Sony/Philips Digital Interface) is an audio transfer file format which provides high quality audio using optical fiber and digital signals. This mainboard is equipped with an SPDIF header and must be used with a bracket-cable containing S/PDIF ports. An SPDIF/Audio bracket is optionally packaged with some models. The bracket has RCA connectors similar to that used with most consumer audio products and TOS-Link connectors and you can use these connectors to output/input audio to and from an S/PDIF device. The devices you connect to must be S/PDIF compliant for optimal effect.

Slots



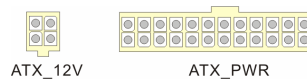
PCI-Express slots: PCI-E X16 & PCI-E1/ PCI-E2

PCI-E x16 slot is for installing PCI-Express graphics card. The PCI-E x1 slot is for expansion card which fit the PCI-E x1 slot.

PCI Slots: PCI1/ PCI2

These mainboards are equipped with 2 standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which has, for the most part, supplanted the older ISA bus standard. This PCI slot is designated as 32 bit.

Power Supply Attachments



ATX Power Connector: ATX_PWR \ ATX_12V

This mainboard requires two ATX power connections. The first is a 24-pin connector and the second is a 4-pin connector. Attach the 4-pin connector first and then attach the 24-pin connector. Make sure the connectors are secure before applying power. (ATX_PWR can be attached to a 20-pin connector but be extra careful with the connector orientation when connecting the cables)

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 controls 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.

Plug and Play Support

This PHOENIX-AWARD™ BIOS supports the Plug and Play Version 1.0A specification as well as ESCD (Extended System Configuration Data) write.

EPA Green PC Support

This PHOENIX-AWARD™ BIOS supports Version 1.03 of the EPA Green PC specification.

APM Support

This PHOENIX-AWARD™ BIOS supports Version 1.1 & 1.2 of the Advanced Power Management (APM) specification. These features include system sleep and suspend modes in addition to hard disk and monitor sleep modes. Power management features are implemented using the System Management Interrupt (SMI).

PCI/ PCI-Express Bus Support

This PHOENIX-AWARD™ BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification and the PCI-Express v1.0a specification.

DRAM Support

DDR (Double Data Rate) SDRAM (Synchronous DRAM) is supported.

Supported CPUs

This PHOENIX-AWARD™ BIOS supports the Intel® Pentium® 4 CPUs.

Key Function

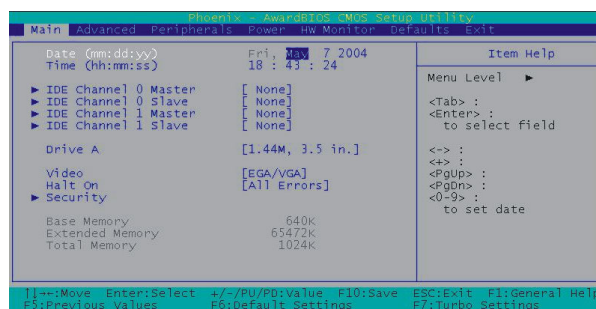
In general, you can use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate within the BIOS Setup program.

PM915G Series

Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item 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 item 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

When you enter the PHOENIX-AWARD™ BIOS Utility, the Main Menu will appear on the screen. The Main menu allows you to select from several configuration options. Use the left/right arrow keys to select a particular configuration screen from the top menu bar or use the down arrow key to access and configure the information below.

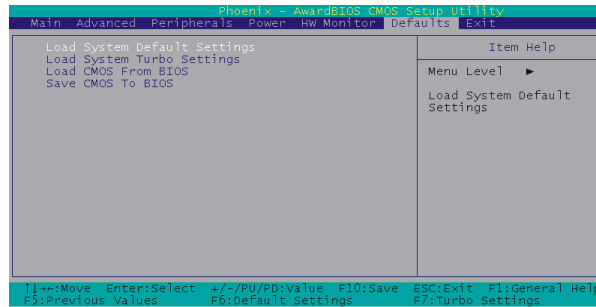


PM915G Series

Main Menu Setup Configuration Options

Item	Options	Description
Date	mm dd yyyy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	Hh: mm: ss	Set the current time of the system.
IDE Channel 0/1 Master	Options contained in sub menu.	Press <Enter> to enter the sub menu.
IDE Channel 0/1 Slave	Options contained in sub menu.	Press <Enter> to enter the sub menu.
SATA Channel 0/1 Master	Options contained in sub menu.	Press <Enter> to enter the sub menu.
SATA Channel 0/1 Slave	Options contained in sub menu.	Press <Enter> to enter the sub menu.
Driver A	None 360k, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Security	Options contained in sub menu.	Press <Enter> to enter the sub menu.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

Load Defaults



Load System Default Settings

Load System Default Settings.

Load System Turbo Settings

Load System Turbo Settings.

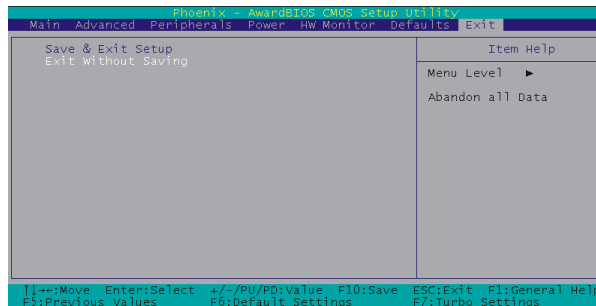
Load CMOS From BIOS

Load defaults from flash ROM for systems without batteries.

Save CMOS To BIOS

Save defaults to flash ROM for systems without batteries.

Exit Menu



Save & Exit Setup

Save all configuration changes to CMOS (memory) and exit setup. A confirmation message will be displayed before proceeding.

Exit Without Saving

Abandon all changes made during the current session and exit setup. A confirmation message will be displayed before proceeding.

Chapter 3: Software Setup

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.)

- Intel Chipset INF (Windows® 98 /ME /2000 /XP) – provides all the drivers of the functions that built in the Northbridge/ Southbridge.
- Realtek Audio Driver (Windows® 2000 /XP for HD Audio & Windows® 98 /ME /2000 /XP for AC'97 Audio) – provides the driver of Realtek Audio Codec.
For HD Audio driver : you can only install this driver if you are using Windows® XP with Service Pack1 (or more advanced). You will see a screen as shown right after finishing the driver installation and rebooting the system, click "Continue Anyway" to complete the installation. You can only install this driver if you are using Windows® 2000 with Service Pack4 (or more advanced).
- Intel Onboard VGA Driver (Windows® 2000 /XP) – provides the driver of Onboard VGA
- Realtek Network Driver (Windows® 98 /ME /2000 /XP) – provides driver of Network
- Trend PC-Cillin 2004 (Windows® 98 /ME /2000 /XP) – provides the software of Trend PC-Cillin 2004 (Anti-virus program)
- Microsoft DirectX (Windows® 98 /ME /2000 /XP) – provides software of Microsoft DirectX
- Acrobat Reader (Windows® 98 /ME /2000 /XP) – install Adobe Acrobat Reader program that you can browse pdf files

Note: Because the Realtek HD Audio and Intel Onboard VGA do not support Windows® 98/ ME, therefore we strongly recommend you installing Windows® 2000/ XP.

How to install Windows® 98/ ME to the SATA device?

1. Make sure that the "On-Chip Serial ATA" option is set to " Combined Mode" in the BIOS Setup Utility.
BIOS Setup Utility → Integrated Peripherals → OnChip IDE Device → On-Chip Serial ATA → "Combined Mode"
2. Save all BIOS configurations and exit the BIOS setup utility.
3. Place the Windows® 98/ME CD into the CD-ROM drive to begin the OS installation process. During the installation you will see that the SATA device has been assigned to the C: drive. Continue and complete the installation of the Windows® OS.
4. Because the SATA device only support windows® 2000/ XP, therefore, if you want to install windows® 98/ ME, you must had the SATA devices simulate PATA device (by using IDE channel). So that you should set the "On-Chip Serial ATA" options to "Combined Mode" all time in the BIOS Setup Utility.