

# ZOTAC<sup>®</sup>

## INTEL<sup>®</sup> SERIES MOTHERBOARD



Designed for Intel<sup>®</sup> Core<sup>™</sup> i3,  
Core<sup>™</sup> i5, and Core<sup>™</sup> i7 (8xx series) processors

### H55 SERIES MOTHERBOARD

### USER'S MANUAL



## Electronic Emission Notices

### Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 instructions contained in this manual, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- REORIENT OR RELOCATE THE RECEIVING ANTENNA
- INCREASE THE SEPARATION BETWEEN THE EQUIPMENT AND THE RECEIVER
- CONNECT THE EQUIPMENT INTO AN OUTLET ON A CIRCUIT DIFFERENT FROM THAT OF THE RECEIVER
- CONSULT THE DEALER OR AN EXPERIENCED AUDIO/TELEVISION TECHNICIAN

### NOTE:

Connecting this device to peripheral devices that do not comply with Class B requirements, or using an unshielded peripheral data cable, could also result in harmful interference to radio or television reception.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables.

### Copyright

This manual is copyrighted with all rights reserved. No portion of this manual may be copied or reproduced by any means.

While every precaution has been taken in the preparation of this manual, no responsibility for errors or omissions is assumed. Neither is any liability assumed for damages resulting from the use of the information contained herein.

### Trademarks

All brand names, logos and registered trademarks mentioned are property of their respective owners.

## Table of Contents

<b>Motherboard Specifications</b>	<b>4</b>
<b>Motherboard Layout</b>	<b>6</b>
<b>Hardware Installation</b>	<b>8</b>
Safety Instructions	8
Preparing the Motherboard	9
Installing the CPU	9
Installing the CPU Fan	10
Installing Memory DIMMs	10
Installing the Motherboard	11
Installing the I/O Shield	11
Securing the Motherboard into the Chassis	11
Connecting Cables and Setting Switches	12
24-pin ATX Power Connector	13
4-pin ATX_12V Power Connector	13
SPDIF-Out Header (optional)	14
COM Header (optional)	14
Front Panel Header	14
USB Headers	15
Front Panel Audio Header	15
Speaker Header	16
Serial-ATA (SATA) Connectors	16
Fan Connectors	16
Expansion Slots	17
Jumper Settings	17
<b>Configuring the BIOS</b>	<b>18</b>
Enter BIOS Setup	18
Main Menu	18
Advanced Menu	19
PC Health Monitor	19
USB Configuration	19
CPU Configuration	19
IDE Configuration	20
AHCI Configuration	20
Intel TXT(LT) Configuration	21
Intel VT-d Configuration	21
ACPI Configuration	21
PCIPnP	21

---

Security .....	21
Boot Menu .....	22
Boot Setting Configuration .....	22
Chipset Menu .....	23
North Bridge Configuration .....	23
South Bridge Configuration .....	23
Perform Setting Menu .....	23
Exit Menu .....	24
Save Changes and Exit .....	24
Discard Changes and Exit .....	24
Discard Changes .....	24
Load Optimal Defaults .....	24
Load Failsafe Defaults .....	24
Flash Update Procedure .....	25
<b>Installing Drivers and Software .....</b>	<b>26</b>
Driver Installation .....	26
Realtek HD Audio Driver Setup .....	33
Getting Started .....	33
Sound Effect .....	33
Mixer .....	35
Audio I/O .....	37
Microphone .....	41
3D Audio Demo .....	42
Information .....	42

---

# Motherboard Specifications

## ☐ Chipset

- ❖ Intel® H55 Express Chipset

## ☐ Size

- ❖ Micro ATX form factor of 244 mm x 170 mm

## ☐ Microprocessor support

- ❖ Supports LGA 1156 socket for Intel® Core™ i3/Core™ i5/Core™ i7 (8xx series) processors

## ☐ Operating systems

- ❖ Supports Windows XP 32bit/64bit, Windows Vista 32bit/64bit and Windows 7 32bit/64bit

## ☐ System Memory

- ❖ Supports dual-channel (128 bits wide) DDRIII memory interface
- ❖ Supports DDRIII 1333/1066
- ❖ Maximum memory size: 8 GB

## ☐ USB 2.0 ports

- ❖ Supports hot plug and play
- ❖ Twelve USB 2.0 ports (six on the back panel, six via the USB brackets connected to the internal USB headers)
- ❖ Supports USB 2.0 protocol up to 480 Mbps transmission rate

## ☐ Onboard Serial ATA ports

- ❖ Independent DMA operation on five ports (optional)
- ❖ Data transfer rates of 3.0 Gb/s

## ☐ eSATA Port

- ❖ One eSATA port on backpanel
- ❖ Supports hot plug and play
- ❖ Provide a link for 3.0 Gb/s data speed

## ☐ Onboard Lan (RTL8111 series)

- ❖ PCI Express base specification 1.0a compliant
- ❖ Compliant to 802.3x flow control support
- ❖ 10/100/1000 IEEE 802.3 compliant
- ❖ Wake On LAN (WOL) power management support

**❑ Audio**

- ❖ 6/8 channel High Definition Audio Codec (optional)
- ❖ All DACs support 192k/96k/48k/44.1kHz sample rate
- ❖ One SPDIF-out header on board (optional)

**❑ Green Function**

- ❖ Support SMM, APM, ACPI
- ❖ Suspend to DRAM supported (STR)
- ❖ RTC timer to power-on the system
- ❖ AC power failure recovery

**❑ Onboard Graphics Features**

- ❖ DX10 and OpenGL 2.0 are supported
- ❖ 3D Graphics Rendering Enhancements
- ❖ Up to 2048x1536@75 Hz refresh
- ❖ HDMI/DVI/VGA port output support (DVI-VGA adaptor bundled in some model)

**❑ PCI Express Interface**

- ❖ Supports PCI Express 2.0
- ❖ Provide 16 GB/s bandwidth for platform graphics
- ❖ Wake up function is supported
- ❖ Clock spread spectrum capability

**❑ Expansion slots**

- ❖ One PCI express x16 slot
- ❖ Two PCI express x1 slots
- ❖ One PCI slot

# Motherboard Layout

Figure 1 shows the motherboard and Figure 2 shows the back panel connectors.

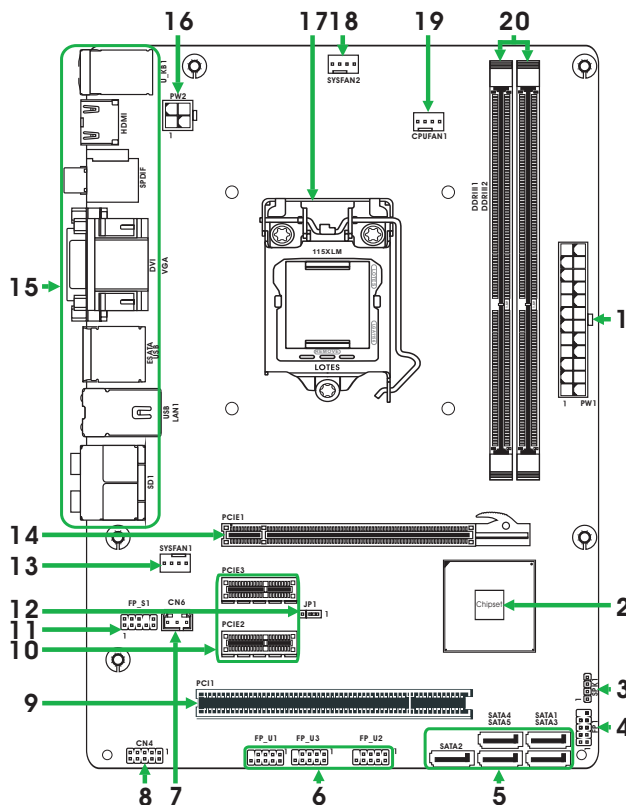
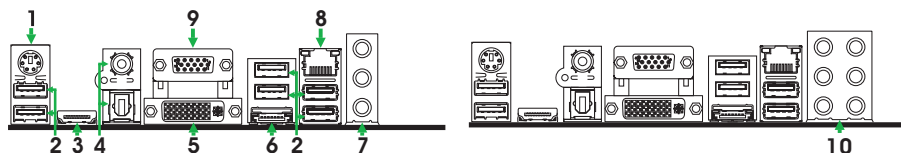


Figure 1

Figure 1. Board Layout

- |  |                                       |
|--|---------------------------------------|
| 1. 24-pin ATX Power Connector-PW1        | 11. Front Panel Audio Header-FP_S1    |
| 2. Chipset                               | 12. Clear CMOS Jumper-JP1             |
| 3. Speaker Header-SPK1                   | 13. SYS Fan Connector-SYSFAN1         |
| 4. Front Panel Header-FP1                | 14. PCI Express x16 Slot-PCIE1        |
| 5. Serial-ATA (SATA) Connectors(SATA1~5) | 15. Backpanel Connectors              |
| 6. USB Headers (FP_U1~FP_U3)             | 16. 4-pin ATX_12V Power Connector-PW2 |
| 7. SPDIF-Out Header-CN6 (optional)       | 17. CPU Socket                        |
| 8. COM Header_CN4 (optional)             | 18. SYS Fan Connector-SYSFAN2         |
| 9. PCI Slot-PCI1                         | 19. CPU Fan Connector_CPUFAN1         |
| 10. PCI Express x1 Slots-PCIE2~3         | 20. DDRIII DIMM Sockets-DDRIII1~2     |

Figure 2. Backpanel connectors



1. PS/2 Keyboard Port

2. USB Connectors

3. HDMI Port (optional)

4. SPDIF Connectors (optional)

5. DVI Port

6. eSATA Port

7. Port	2-Channel	4-Channel	6-Channel
Blue	Line-In	Rear Speaker Out	Rear Speaker Out
Green	Line-Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Center/Subwoofer

8. LAN Connector

Lan Port with LEDs to indicate status.

- Yellow/Light Up/Blink = 10 Mbps/Link/Activity
- Yellow and Green/Light Up/Blink = 100 Mbps/link/Activity
- Yellow and Orange/Light Up/Blink = 1000 Mbps/link/Activity

9. VGA Port

10. Port	2-Channel	4-Channel	6-Channel	8-Channel
Blue	Line-In	Line-In	Line-In	Line-In
Green	Line-Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Orange	—	—	Center/Subwoofer	Center/Subwoofer
Black	—	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Grey	—	—	—	Side Speaker Out



## Hardware Installation

This section will guide you through the installation of the motherboard. The topics covered in this section are:

- ☐ Preparing the motherboard
  - ❖ Installing the CPU
  - ❖ Installing the CPU fan
  - ❖ Installing Memory DIMMs
- ☐ Installing the motherboard
  - ❖ Installing the I/O shield
  - ❖ Securing the Motherboard into the Chassis
- ☐ Connecting cables and setting switches

## Safety Instructions

To reduce the risk of fire, electric shock, and injury, always follow basic safety precautions.

Remember to remove power from your computer by disconnecting the AC main source before removing or installing any equipment from/to the computer chassis.

## Preparing the Motherboard

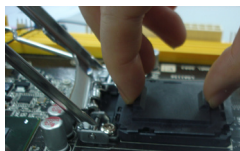
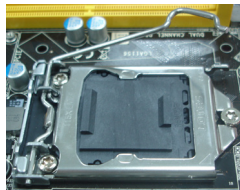
The motherboard shipped in the box does not contain a CPU or memory DIMM. You need to purchase them to complete this installation.

### Installing the CPU

Be very careful when handling the CPU. Make sure not to bend or break any pins on the back. Hold the processor only by the edges and do not touch the bottom of the processor.

The following illustration shows CPU installation components

1. Unhook the socket lever by pushing down and away from the socket.
2. Lift the socket lever and the load plate to fully open position.
3. Use your thumb and forefinger to lift the cap up vertically.
  - Be careful not to touch the socket contacts.
4. Hold the processor with your thumb and forefinger. Insert the processor into the socket vertically.
  - Align the CPU pin 1 mark with the pin 1 corner of the CPU socket.
5. Make sure the CPU is fully seated, and then replace the load plate.
  - Be sure that the front end of the load plate is under the shoulder screw.
6. Secure the load lever to its locked location.



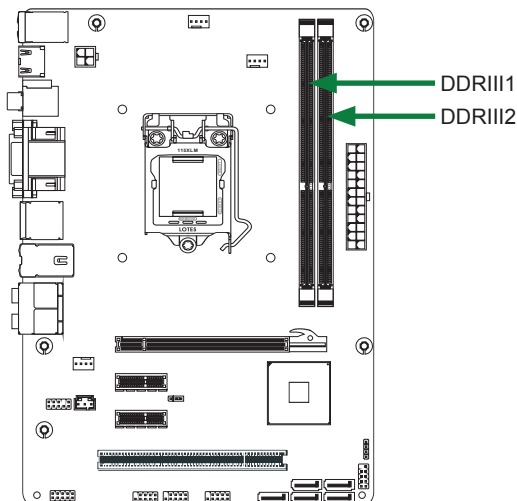
## Installing the CPU Fan

There are many different fan types that can be used with this motherboard. Follow the instruction that came with your fan assembly. Be sure that the fan orientation is correct for your chassis type and your fan assembly.

## Installing Memory DIMMs

Your new motherboard has two 1.5V 240-pin slots for DDR3 memory. These slots support 1 GB/2 GB/4 GB DDR3 technologies. They also support dual channel DDR3 memory technology up to 10.7 GB/s. There must be at least one memory bank populated to ensure normal operation. Refer to the following recommendations to install memory DIMMs.

- ☐ **One DIMM:** Install it into slot 1 or 2. You can install the DIMM into any slot, however, slot 1 is preferred.
- ☐ **Two DIMMs:** Install them into slot 1 and slot 2.



Refer to the following procedure to install memory DIMMs into the slots on the motherboard. Note that there is only one gap near the center of the DIMM slot. This slot matches the slot on the memory DIMM to ensure the component is installed properly.

1. Unlock a DIMM slot by pressing the module clips outward.
2. Align the memory module to the DIMM slot, and insert the module vertically into the DIMM slot. The plastic clips at both sides of the DIMM slot automatically lock the DIMM into the connector.

## Installing the Motherboard

The sequence of installing the motherboard into the chassis depends on the chassis you are using and if you are replacing an existing motherboard or working with an empty chassis. Determine if it would be easier to make all the connections prior to this step or to secure the motherboard and then make all the connections. It is normally easier to secure the motherboard first.

Use the following procedure to install the I/O shield and secure the motherboard into the chassis.

**Note:** *Be sure that the CPU fan assembly has enough clearance for the chassis covers to lock into place and for the expansion cards. Also make sure the CPU Fan assembly is aligned with the vents on the covers.*

## Installing the I/O Shield

The motherboard kit comes with an I/O shield that is used to block radio frequency transmissions, protects internal components from dust and foreign objects, and promotes correct airflow within the chassis.

Before installing the motherboard, install the I/O shield from the **inside** of the chassis. Press the I/O shield into place and make sure it fits securely. If the I/O shield does not fit into the chassis, you would need to obtain the proper size from the chassis supplier.

## Securing the Motherboard into the Chassis

Most computer chassis have a base with mounting studs or spacers to allow the motherboard to be secured to the chassis and help to prevent short circuits. If there are studs that do not align with a mounting hole on the motherboard, it is recommended that you remove that stud to prevent the possibility of a short circuit. In most cases, it is recommended to secure the motherboard with spacers.

1. Carefully place the motherboard onto the studs/spacers located inside the chassis.
2. Align the mounting holes with the studs/spacers.
3. Align the connectors to the I/O shield.
4. Ensure that the fan assembly is aligned with the chassis vents according to the fan assembly instruction.
5. Secure the motherboard with screws.

## Connecting Cables and Setting Switches

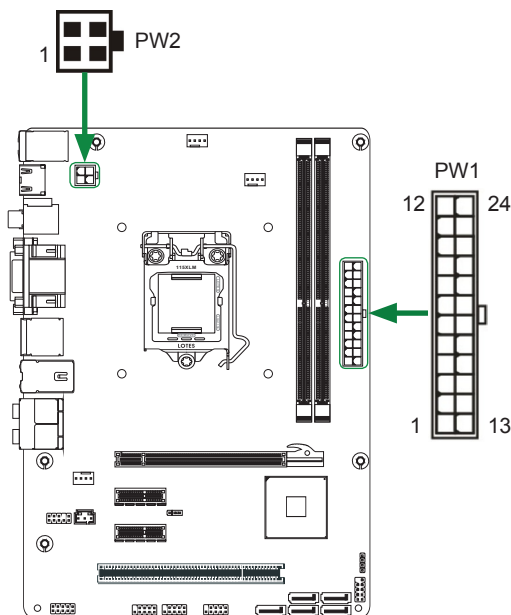
This section takes you through all the connectors and switch settings necessary on the motherboard. This will include:

- ☐ Power Connectors
  - ❖ 24-pin ATX Power Connector-PW1
  - ❖ 4-pin ATX\_12V Power Connector-PW2
- ☐ Internal Headers/Connectors
  - ❖ SPDIF-Out Header-CN6 (optional)
  - ❖ COM Header-CN4 (optional)
  - ❖ Front Panel Header-FP1
  - ❖ USB Header (FP\_U1~FP\_U2)
  - ❖ Front Pannel Audio Header-FP\_S1
  - ❖ Speaker Header-SPK1
- ☐ Serial-ATA (SATA) Connectors (SATA1~6)
- ☐ Fan Connectors
- ☐ Expansion Slots
- ☐ CMOS Jumper Settings

***See Figure 1 to locate the connectors and jumpers referenced in the following procedure.***

## 24-pin ATX Power Connector-PW1

**PW1** is the main power supply connector. Make sure that the power supply cable and pins are properly aligned with the connector on the motherboard. Firmly plug the power supply cable into the connector and make sure it is secure.



**PW1-Pin Definition**

Pin	Signal	Pin	Signal
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWROK	20	-5V
9	+5V_AUX	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

## 4-pin ATX\_12V Power Connector-PW2

**PW2**, the 4-pin ATX 12V power connector, is used to provide power to the CPU. Align the pins to the connector and press firmly until seated.

**PW2-Pin Definition**

Pin	Signal
1	GND
2	GND
3	+12V
4	+12V

## SPDIF-Out Header-CN6 (optional)

This header provides a SPDIF (Sony/Philips Digital Interface) output to digital multimedia device through coaxial connector.

## COM Header-CN4 (optional)

**CN4 - Pin Definition**

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

## CN6 - Pin Definition

Pin	Signal
1	GND
2	SPDIF-out
3	VCC

## Front Panel Header-FP1

The front panel header on this motherboard is one connector used to connect the following four cables :

**FP1-Pin Definition**

Pin	Signal	Pin	Signal
1	HDD_LED+	2	PW_LED+
3	HDD_LED-	4	PW_LED-
5	GND	6	PWR_SW
7	RESET	8	GND
9	NC	10	KEY

### ☐ PWRLED

Attach the front panel power LED cable to these two pins of the connector. The Power LED indicates the system's status.

### ☐ PWR SW

Attach the power button cable from the case to these two pins. Pressing the power button on the front panel turns the system on and off rather than using the power supply button.

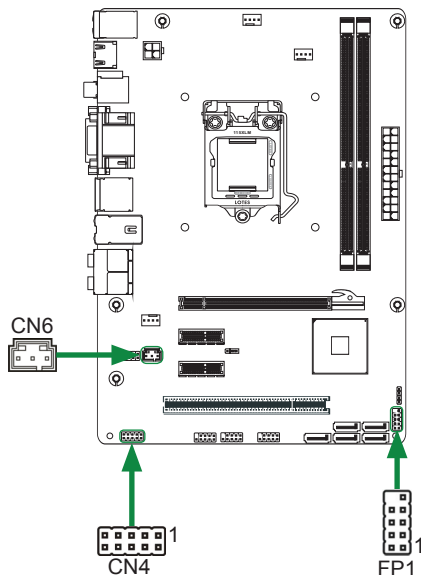
### ☐ HDD LED

Attach the hard disk drive indicator **LED** cable to these two pins. The HDD indicator **LED** indicates the activity status of the hard disks.

### ☐ RST SW

Attach the Reset switch cable from the front panel of the case to these two pins. The system restarts when the **RESET** switch is pressed.

**Note:** Some chassis do not have all four cables. Be sure to match the name on the connectors to the corresponding pins.



## USB Headers-FP\_U1~FP\_U3

This motherboard contains six USB 2.0 ports that are exposed on the rear panel of the chassis. The motherboard also contains three 10-pin internal headers connector onboard.

**Note:** *Secure the bracket to either the front or rear panel of your chassis (not all chassis are equipped with the front panel option).*

FP\_U1~FP\_U3-Pin Definition

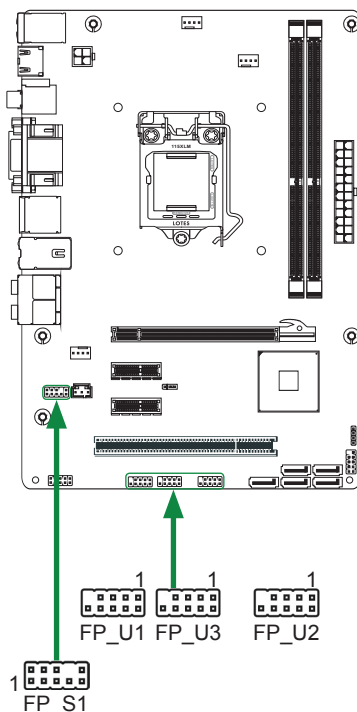
PIN	Assignment	PIN	Assignment
1	VCC	2	VCC
3	USBP0-	4	USBP1-
5	USBP0+	6	USBP1+
7	GND	8	GND
9	KEY	10	NC

## Front Panel Audio Header-FP\_S1

The audio connector supports HD audio standard and provides two kinds of audio output choices: the Front Audio, the Rear Audio. The front Audio supports retasking function.

FP\_S1-Pin Definition

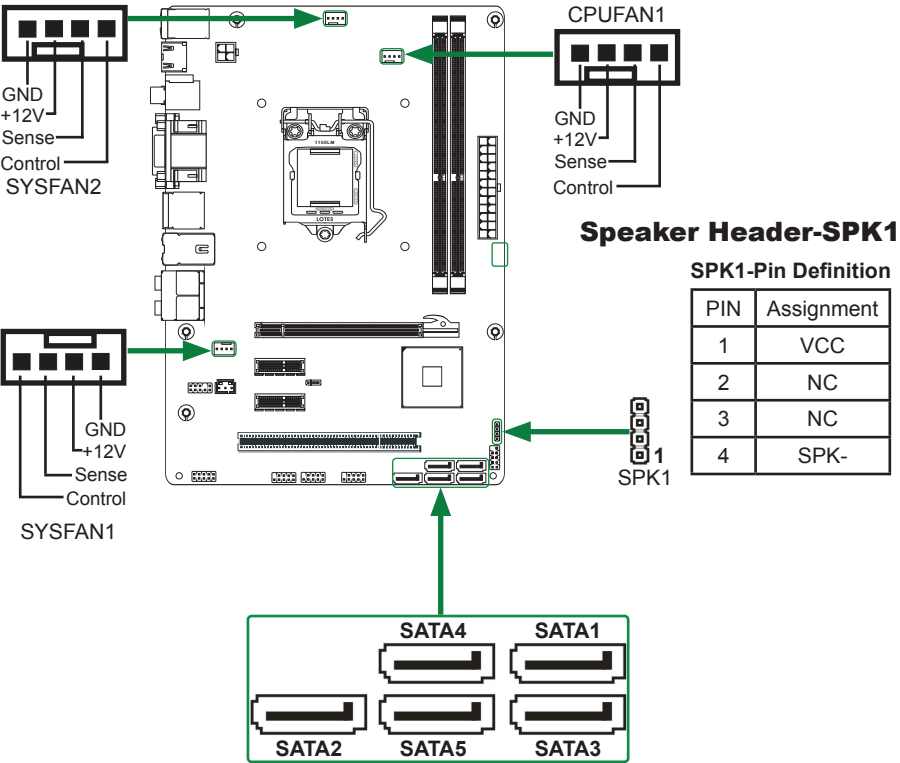
PIN	Assignment	PIN	Assignment
1	MIC2(L)	2	GND
3	MIC(R)	4	-ACZ-DET
5	Front Audio(R)	6	Reserved
7	FAVDIO-JD	8	Key(No pin)
9	Front Audio(L)	10	Reserved



### Note:

*In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the mainboard header. To find out if the chassis you are buying supports a front audio connector, please contact your dealer.*





**Serial-ATA (SATA) Connectors (SATA1~5)**

The Serial ATA connector is used to connect the Serial ATA device to the motherboard. These connectors support the thin Serial ATA cables for primary storage devices. The current Serial ATA interface allows up to 300 MB/s data transfer rate. There are six serial ATA connectors on the motherboard that support AHCI configuration.

**Fan Connectors**

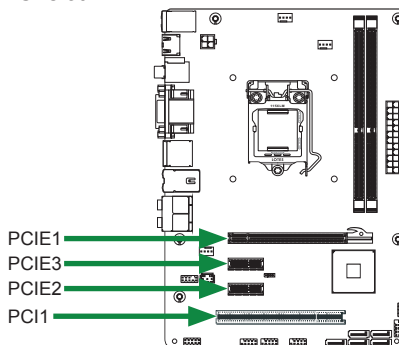
There are three fan connectors on the motherboard, including system fan connectors-SYSFAN1 and SYSFAN2, CPU fan connector-CPUFAN1.

**SATA-Pin Definition**

Pin	Signal
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

## Expansion Slots

The motherboard contains four expansion slots, including one PCIe x16 slot, two PCIe x1 slots and one PCI slot.



### PCIe x16 Slot-PCIe1

There is one PCIe x16 slot reserved for graphics or video cards. The bandwidth of the PCIe x16 slot is up to 16 GB/s complying with PCIe 2.0 specification.

### PCIe x1 Slots-PCIe2~3

There are two PCI Express x1 slots that are designed to accommodate less bandwidth intensive cards, such as a modem or LAN card.



### PCI Slot-PCI1

The one PCI slot supports many expansion cards such as a LAN card, USB card, SCSI card and other cards that comply with PCI specifications.

## Jumper Settings

This section explains how to configure the motherboard's hardware. Before using your computer, make sure all jumpers and DRAM modules are set correctly. Refer to this section whenever in doubt.

### CMOS Clear Jumper-JP1

JP1	Selection
1  1-2*	Normal*
1  2-3	CMOS Clear

 Close     Open    \* = Default setting.

If you want to clear the system configuration, use the JP1 (Clear CMOS Jumper) to clear data.

#### Notice:

1. Be sure to save the CMOS setting when exit the CMOS.
2. If the CPU is frequency multiplier locked, no CPU speed change will be seen even if the frequency multiplier setting in CMOS setup is changed.

## Configuring the BIOS

This section discusses how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

### Enter BIOS Setup

The BIOS is the communication bridge between hardware and software. Correctly setting the BIOS parameters is critical to maintain optimal system performance.

Refer to the following procedure to verify/change BIOS settings.

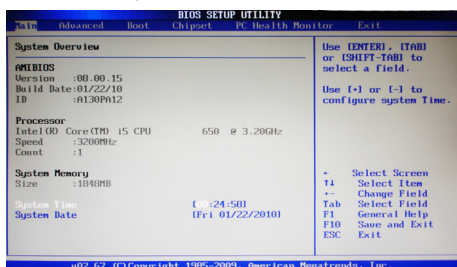
1. Power on the computer.,
2. Press the **Del** key when the following message briefly displays at the bottom of the screen during the Power On Self Test (POST).

Pressing **Del** takes you to the BIOS Setup Utility.

**Note:** 1. We reserve the right to update the BIOS version presented in the manual. The BIOS pictures shown in this section are for reference only.  
2. It is strongly recommended that you do not change the default BIOS settings. Changing some settings could damage your system.

### Main Menu

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.

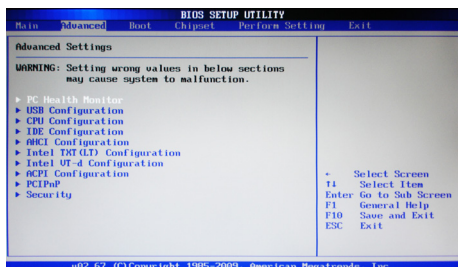


**Note:** Users please note that the data in gray is non-changeable, and the others are for selection.

- ☐ **AMI BIOS**  
Displays the auto-detected BIOS information.
- ☐ **Processor**  
Displays the auto-detected CPU specification.
- ☐ **System Memory**  
Displays the auto-detected system memory.
- ☐ **System time**  
Allows you to set the system time.

## Advanced Menu

The Advanced menu items allow you to change the setting for the CPU and other system devices. Press <enter> to display the configuration options:



## PC Health Monitor

Use this menu to monitor the real-time system status of your PC. Press <enter> to display the configuration options:

### ☐ CPUFAN Mode Setting

Use this item to set the CPU FAN mode.

## USB Configuration

The items in this menu allow you to change the USB-related features. Press <enter> to display the configuration options:

### ☐ Legacy USB Support

Allows you to enable or disable support for USB devices on legacy operating systems.

### ☐ USB 2.0 Controller Mode

Allows you to configure the USB 2.0 controller in HiSpeed or Full Speed.

### ☐ BIOS EHCI Hand-Off

Allows you to enable support for operating systems without an EHCI hand-off feature.

### ☐ Legacy USB1.1 HC Support

Allows you to enable or disable Legacy USB1.1 HC support.

## CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects. Press <enter> to display the configuration options:

### ☐ Ratio CMOS Setting

Use this option to set CMOS ratio.

### ☐ Hardware Prefetcher

Use this item to enable or disable hardware prefetcher (hardware prefetch mechanism).

### ☐ Adjacent Cache Line Prefetch

Use this item to enable or disable the adjacent cache line prefetch mode. If you disable this item, only one 64-bit line will be prefetched from the 128-bit section (including the required data). If you enable this item, two lines will be prefetched whether there is required data or not.

☐ **MPS and ACPI MADT ordering**

Use this item to set MPS and ACPI MADT ordering. There are two options in this item: [Legacy ordering] for Windows 2000 or earlier OSes, and [Modern ordering] for Windows XP or later OSes.

☐ **Max CPUID Value Limit**

Allows you to determine whether to limit CPUID maximum value. Set this item to [Disable] Windows XP operating system; set this item to [Enable] for legacy operating system such as Windows NT4.0..

☐ **Intel(R) Virtualization Tech**

Hardware Virtualization Technology enables processor feature for running multiple simultaneous virtual machines allowing specialized software applications to run in full isolation of each other.

☐ **Execute-Disable Bit Capability**

This function enhances protection of your computer, reducing exposure to viruses and malicious buffer overflow attacks when working with its supporting software and system.

☐ **Intel(R) HT Technology**

This item allows you to enable or disable Intel® Hyper-Threading technology support.

☐ **Active Processor Cores**

This item allows you to choose the number of the active processor cores. The default value is [All].

☐ **A20M**

This item allows you to enable or disable A20M.

☐ **Intel(R) SpeedStep(tm) tech**

Use this option to enable or disable Intel® SpeedStep™ Technology.

☐ **Intel(R) C-STATE tech**

Use this option to enable or disable Intel® C-STATE Technology.

## IDE Configuration

The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Press <enter> to display the configuration options:

☐ **Configure SATA as**

This item allows you to set the SATA to IDE/AHCI mode.

☐ **SATA#1/2 IDE Configuration**

The items allow you to configure SATA#1/2.

☐ **Primary, Second, Third and Fourth IDE Master/Slave**

This displays the status of auto detection of IDE devices.

☐ **Hard Disk Write Protect**

This item will be effective only if device is accessed through BIOS.

☐ **IDE Detect Time Out (Sec)**

The item allows you to select the time out value for detecting ATA/ATAPI devices.

☐ **ATA(P) 80pin cable detection**

The item allows you to select the mechanism for detecting 80pin ATA(P) cable.

## AHCI Configuration

The items in this menu allow you to set general AHCI configuration.

---

## Intel TXT(LT) Configuration

The menu allows you to configure Intel TXT(LT) Parameters.

## Intel VT-d Configuration

The menu allows you to enable or disable Intel VT-d technology.

## ACPI Configuration

The items in this menu allow you to set General ACPI Configuration, Advanced ACPI Configuration and South Bridge ACPI Configuration.

## PCIPnP

The PCIPnP menu shows the configurations of PCI bus system and PnP features. Press <enter> to display the configuration options:

### ☐ Clear NVRAM

The item allows you to select whether clear NVRAM during system boot.

### ☐ Plug and Play O/S

When set to [No], BIOS configure all the devices in the system. When set to [YES] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot.

### ☐ PCI Latency Timer

Allows you to select the value in units of PCI clocks for PCI device latency timer register.

### ☐ Allocate IRQ to PCI VGA

When set to [YES], BIOS assigns an IRQ to PCI VGA card if the requests for an IRQ. When set to [No], BIOS does not assign an IRQ to the PCI VGA card even if requested.

### ☐ Palette Snooping

When set to [Enabled], the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly.

### ☐ PCI IDE BusMaster

When set to [Enabled], BIOS use PCI busmastering for reading /writing to IDE drives.

### ☐ OffBoard PCI/ISA IDE Card

Use this option to set the PCI slot number for some PCI IDE Cards holding.

### ☐ IRQ3/4/5/7/9/10/11/14/15

These items allow you to set the Interrupt Request.

### ☐ DMA Channel 0/1/3/5/6/7

Use these items to set the Direct Memory Access Channel.

## Security

The security menu items allow you to change the system security settings. Press <enter> to display the configuration options:

### ☐ Change Supervisor/User Password

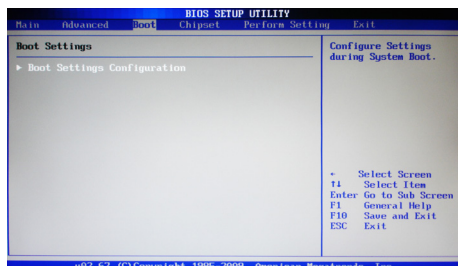
Select this item to set or change the supervisor/user password. The Supervisor/User Password item on top of the screen shows the default setting: [Not Installed]. After you set a password, this item shows [Installed].

## ☐ **Boot Sector Virus Protection**

The items allow you to enable or disable booting sector virus protection.

## **Boot Menu**

The Boot menu items allow you to change the system boot options. Press <enter> to display the configuration options:



## **Boot Settings Configuration**

The items allow you to configure Boot settings. Press <enter> To display the configuration options:

### ☐ **Quick Boot**

Enabling this item allows the BIOS to skip some power on self tests while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items.

### ☐ **Fullscreen LOGO Show**

Use this item to enable or disable fullscreen logo show.

### ☐ **AddOn ROM Display Mode**

Sets the display mode for option ROM.

### ☐ **Bootup Num-Lock**

Allows you to select the power-on state for the NumLock.

### ☐ **PS/2 Mouse Support**

Allows you to enable or disable support for PS/2 mouse.

### ☐ **Wait For 'F1' If Error**

When set to [Enabled], the system waits for the F1 key to be pressed when error occurs.

### ☐ **Hit 'DEL' Message Display**

When set to [Enabled], the system displays the message "press DEL to run setup" during POST.

### ☐ **Interrupt 19 Capture**

When set to [Enabled], this function allows the option ROMs to trap interrupt 19.

## Chipset Menu

The chipset menu items allow you to change the advanced chipset settings. Press <enter> to display the sub-menu:



### North Bridge Configuration

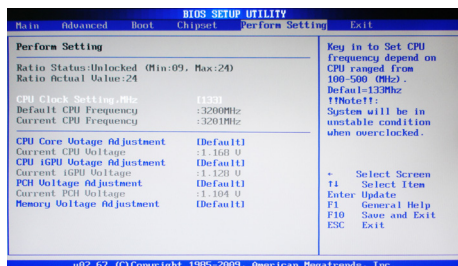
The item allows you to configure north bridge features, including Memory, Graphic, NB PCIE and so on.

### South Bridge Configuration

The item allows you to configure south bridge features, including USB, HDA, SMBUS, and so on.

## Perform Setting Menu

The perform setting menu items allows you to set perform. Changing some settings could damage your system.





## Exit Menu

The exit menu items allow you to load the option or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items. Press <enter> to display the sub-menu:



### Save Changes and Exit

Select this item and press <Enter> to save the changes that you have made in the BIOS Setup and exit the BIOS Setup. When the dialog box [Save configuration changes and exit setup?] appears, select [Ok] to save and exit, or select [Cancel] to return to the main menu.

### Discard Changes and Exit

Select this option only if you do not want to save the changes that you have made to the setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.

### Discard Changes

This option allows you to discard the selections you have made and restore the previously saved values. After selecting this option, a confirmation window appears. Select [Ok] to discard any change and load the previously saved values.

### Load Optimal Defaults

This option allows you to load the default values for each of the parameters on the setup menus. When you select this option, a confirmation window appears. Select [Ok] to load default values. Select [Cancel] to make other changes before saving the values to the non-volatile RAM.

### Load Failsafe Defaults

This option has been set by the manufacturer and represents settings which provide the minimum requirements for your system to operate.

## FLASH Update Procedure

The program AFUDOS XX.ROM is included on the driver CD (D:\Utility\AFUDOS XX.ROM). Please follow the recommended procedure to update the flash BIOS, as listed below.

1. Create a DOS-bootable floppy diskette. Copy the new BIOS file (just obtained or downloaded) and the utility program AFUDOS XX.ROM to the diskette.
2. Allow the PC system to boot from the DOS diskette.
3. At the DOS prompt, type

**AFUDOS XX.ROM /P /C /B /N /X <ENTER>**

**Note:** *XX (the BIOS file name) can be defined by users.*

4. Wait until the flash-update is complete.
5. Restart the PC.

<p><b>Warning:</b> - Do not turn off or RESET the computer during the flash process. - If you are not sure how to upgrade the BIOS, please take your computer to an Authorized Service Center and have a trained technician do the work for you.</p>
--

## Installing Drivers and Software

**Note:** *It is important to remember that before installing the driver CD that is shipped in the kit, you need to load your operating system. The motherboard supports Windows XP 32 bit/64 bit, Windows Vista 32 bit/64 bit and Windows 7 32bit/64bit.*

The kit comes with a CD that contains utility drivers and additional INTEL software.

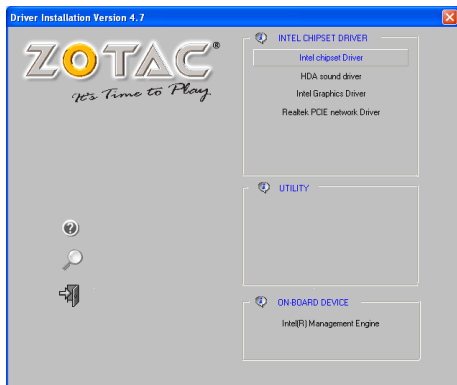
The CD that has been shipped with your Intel® H55 motherboard contains the following software and drivers:

- ☐ Intel chipset Driver
- ☐ HDA Sound driver
- ☐ Intel Graphics Driver
- ☐ Realtek PCIE network Driver
- ☐ Intel(R) Management Engine

**Note.** *We reserve the right to update the driver version presented in the manual. The driver installation pictures shown in this section are for reference only.*

## Driver Installation

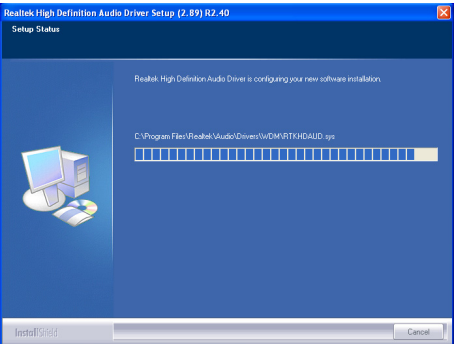
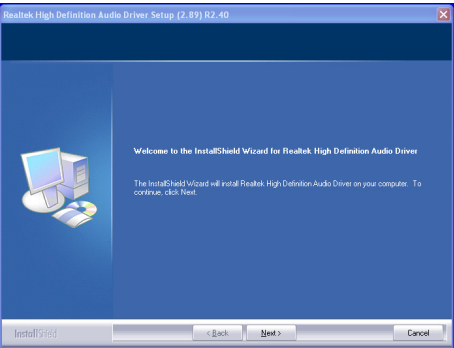
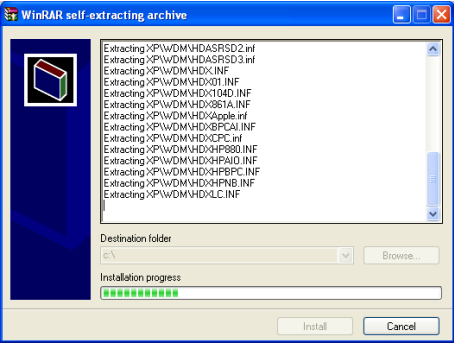
1. Insert the Intel® H55 driver CD into the drive after loading your operating system, and then you can see the interface below.

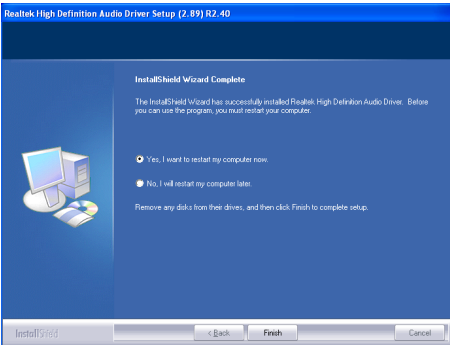


## 2. Left-click **Intel** chipset Driver, begin loading

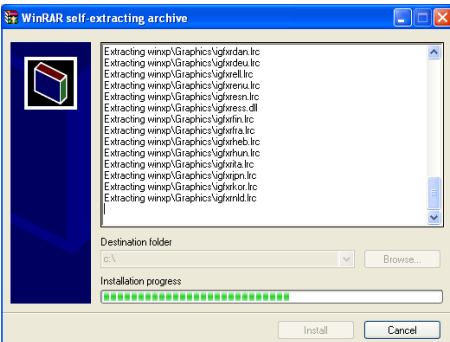


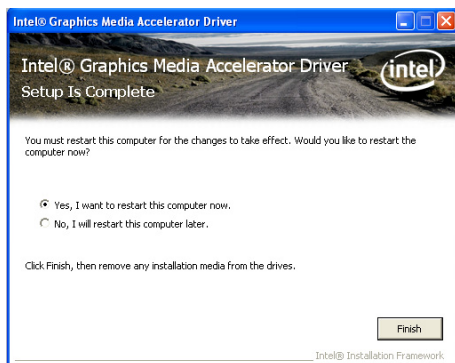
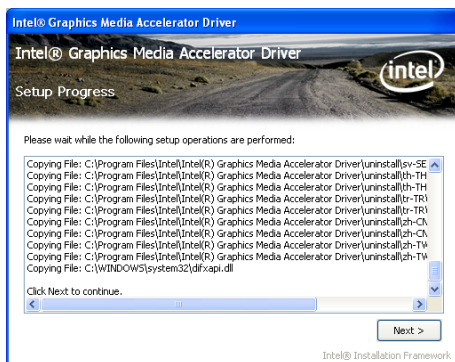
3. Left-click **HDA sound driver**, begin loading



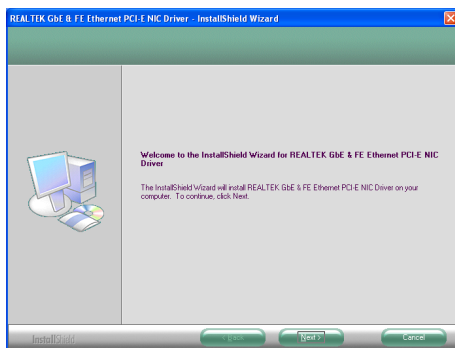


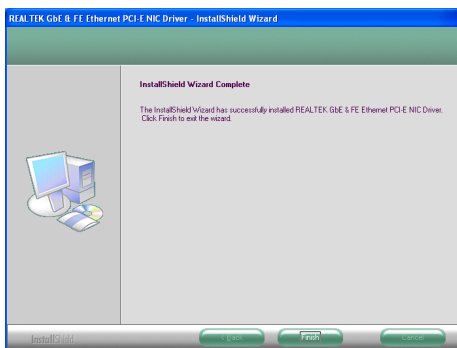
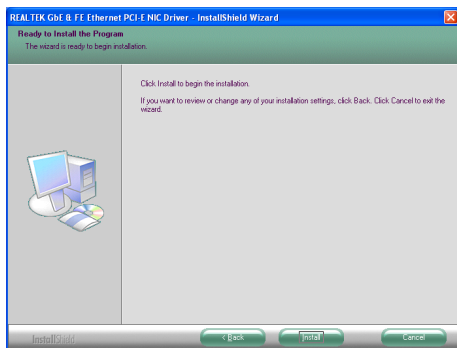
#### 4. Left-click **Intel Graphics Driver**, begin loading





## 5. Left-click **Realtek PCIE network Driver**, begin loading

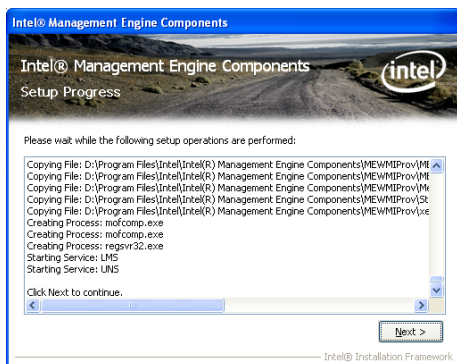




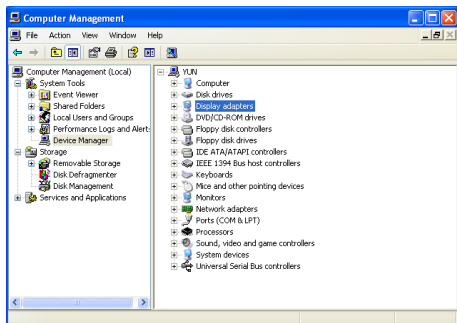
## 6. Left-click **Intel(R) Management Engine**, begin loading.







At last, you can enter **Computer Management** that provides information about the hardware devices on this motherboard to check if the driver installation is complete.



## Realtek HD Audio Driver Setup

### Getting Started

After Realtek HD Audio Driver being installed (insert the driverCD and follow the on-screen instructions), “Realtek HD Audio Manager” icon will show in System tray as below. Double click the icon and the control panel will appear:



### Sound Effect

After clicking on the “Sound Effect” tab, 3 sections “Environment”, “Equalizer” and “Karaoke” are available for selection.



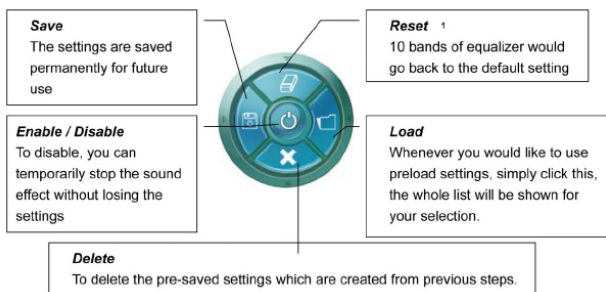
### Environment Simulation

You will be able to enjoy different sound experience by pulling down the arrow, totally 23 kinds of sound effect will be shown for selection. Realtek HD Audio Sound Manager also provides five popular settings “Stone Corridor”, “Bathroom”, “Sewer pipe”, “Arena” and “Audio Corridor” for quick enjoyment.

## Equalizer Selection

The Equalizer section allows you to create your own preferred settings by utilizing this tool.

In standard 10 bands of equalizer, ranging from 100Hz to 16KHz are available:



## Frequently Used Equalizer Setting

Realtek recognizes the needs that you might have. By leveraging our long experience at audio field, Realtek HD Audio Sound Manager provides you certain optimized equalizer settings that are frequently used for your quick enjoyment.

### How to Use

Other than the buttons “Pop” “Live” “Club” & “Rock” shown on the page, to pull down the arrow in “Others”, you will find more optimized settings available to you.

### Karaoke Mode

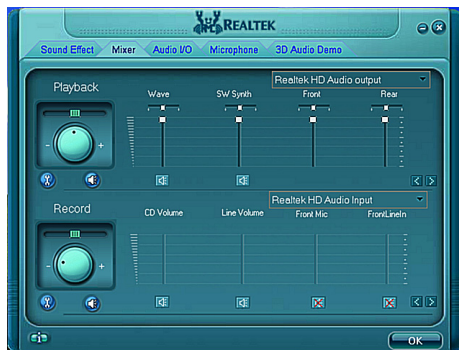
Karaoke mode brings Karaoke fun back home by simply using the music you usually play, Karaoke mode can help you eliminate the vocal of the song or adjust the key to accommodate your range.

**Vocal Cancellation:** Single click on “Voice Cancellation”, the vocals of the songs will be erased, while the background music is still playing which lets you take over the vocal part.

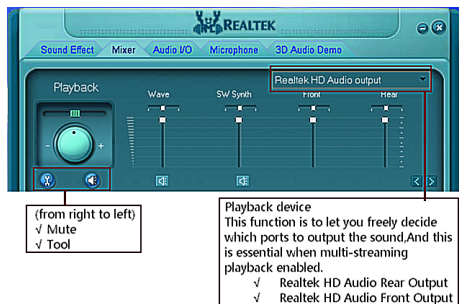
**Key Adjustment:** Using “Up/Down Arrow” to find a key which better fits your vocal range.

## Mixer

Realtek HD Audio Sound Manager integrates Microsoft's "Volume Control" functions into the Mixer page. This gives you the advantage to you to create your favorite sound effect in one single tool.



## Playback control



## Mute

You may choose to mute single or multiple volume controls or to completely mute sound output.

## Tool

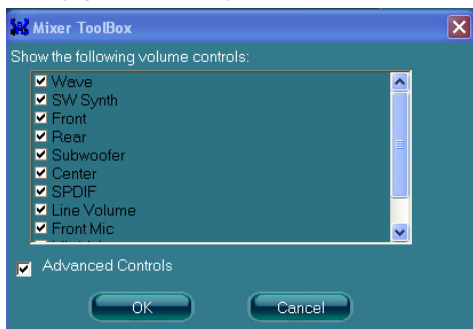
### ✓ Show the following volume control

This is to let you freely decide which volume control items to be displayed, total 13 items to be chosen.

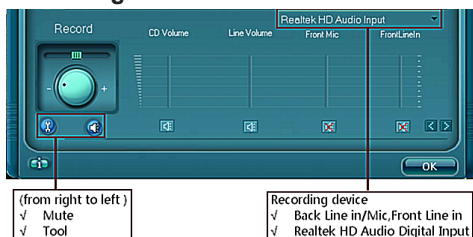
### ✓ Advanced controls

### ✓ Enable playback multi-streaming

With this function, you will be able to have an audio chat with your friends via headphone (stream 1 from front panel) while still have music (stream 2 from back panel) playing. At any given period, you can have maximum 2 streams operating simultaneously.



## Recording control



## Mute

You may choose to mute single or multiple volume controls or to completely mute sound input.

## Tool

### ✓ Show the following volume controls

This is to let you freely decide which volume control items to be displayed.

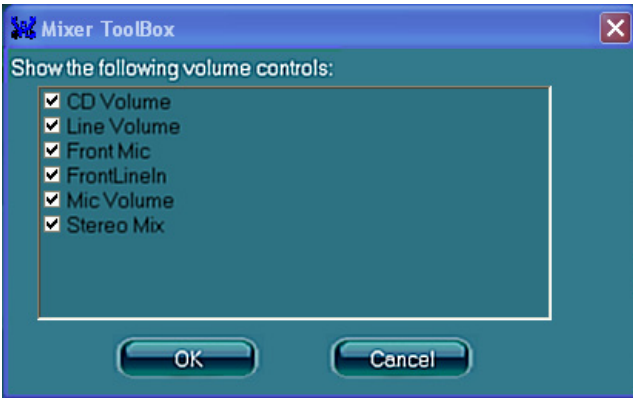
### ✓ Advanced controls.

Advanced control is a “Microphone Boost” icon.

Once this item is checked, you will find “advanced” icon beside “Front Pink In” & “Mic Volume”. With this, the input signal into “Front Pink In” & “Mic Volume” will be strengthen.

### ✓ Enable recording multi-streaming

At any given period, you can have maximum 2 streams operating simultaneously.



## Audio I/O

Realtek HD Audio Manager frees you from default speaker settings. Different from before, for each jack, they are not limited to perform certain functions. Instead, now each jack is able to be chosen to perform either output (i.e. playback) function or input (i.e. Recording) function, we call this “Retasking”.

Audio I/O aims to help you setting jacks as you wish. Moreover, other than blue to blue, pink to pink, the way that you used to do, Audio I/O would guide you to other right jacks that can also serve as microphone / speaker / headphone.



6-Channel or 8-Channel

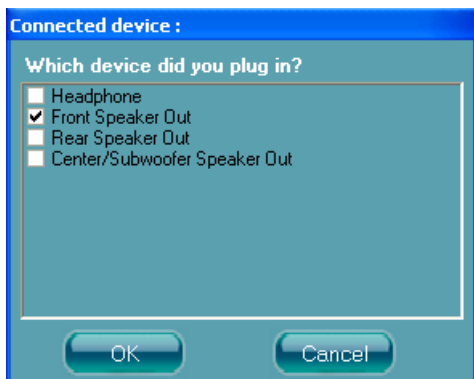


## Speaker Configuration

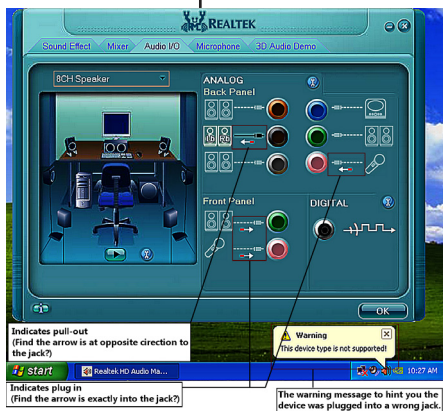
**Step 1:** Plug in the device in any available jack.

**Step 2:** Dialogue “connected device” will pop up for your selection. Please select the device you are trying to plug in.


- \* If the device is being plugged into the correct jack, you will be able to find the icon beside the jack changed to the one that is same as your device.
- \* If not correct, Realtek HD Audio Manager will guide you to plug the device into the correct jack.

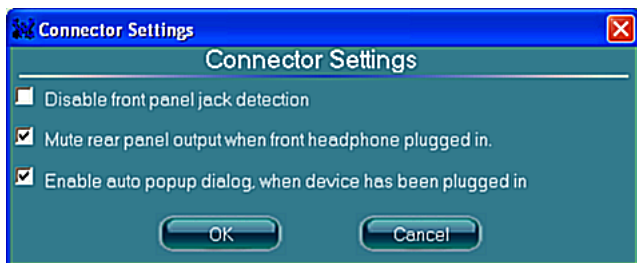


6-Channel or 8-Channel



## Connector Settings

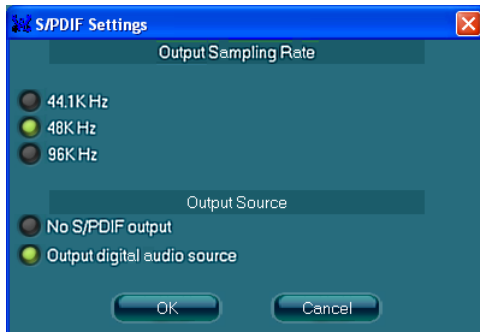
Click  to access connector settings



- ✓ **Mute rear panel when front headphone plugged in**  
Once this option is checked, when front headphone is plugged, the music that is playing from the back panel, will be stopped.
- ✓ **Disable front panel jack detection (option)**  
Did not find any function on front panel jacks?  
Please check if front jacks on your system are so-called AC'97 jacks. If so, please check this item to disable front panel jack detection.
- ✓ **Enable auto popup dialogue, when device has been plugged in.**  
Once this item checked, the dialog "Connected device" would automatically pop up when device plugged in.

## S/PDIF

Short for **S**ony/**P**hilips **D**igital **I**nterface, a standard audio file transfer format. S/PDIF allows the transfer of digital audio signals from one device to another without having to be converted first to an analog format. Maintaining the viability of a digital signal prevents the quality of the signal from degrading when it is converted to analog.





## ✓ Output Sampling Rate

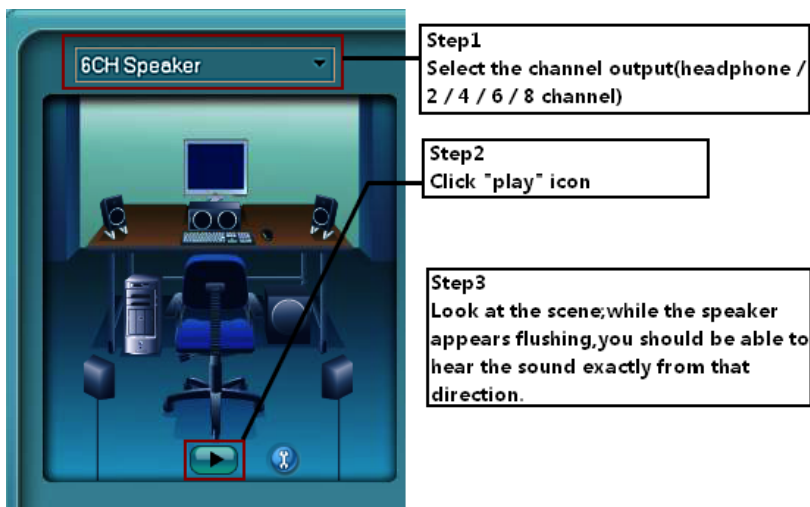
- 44.1KHz: This is recommended while playing CD
- 48KHz: This is recommended while playing DVD or Dolby.
- 96KHz: This is recommended while playing DVD-Audio.

## ✓ Output Source

- Output digital audio source: The digital audio format (such as .wav, .mp3, .midi etc) will come out through S/PDIF-Out.

## Speaker Calibration

After you have successfully plugged in speakers and assigned to the right jacks, you are only one more step to go to enjoy the intended sound. We provide "Speaker Calibration" to help you check if the speakers are located in the correct position.



## Microphone

This page is designed to provide you better microphone/recording quality.

Below picture indicates both “Noise Suppression” & “Acoustic Echo Cancellation” are both enabled.



### Noise Suppression

If you feel that the background noise, especially the sound generated from the fan inside PC, is too loud? Try “Noise Suppression”, which allows you to cut off and suppress disturbing noise.

### Beam Forming

Also known as “directional recording”, this option lets you do the following: Once beam forming is enabled; only the sound from certain direction will be recorded. You will get the best quality if you chose 90° position, which we recommend you to use, this effectively means that you speak right into the microphone.

**Note:** A Stereo Microphone is required when using Beam Forming function.

### Acoustic Echo Cancellation

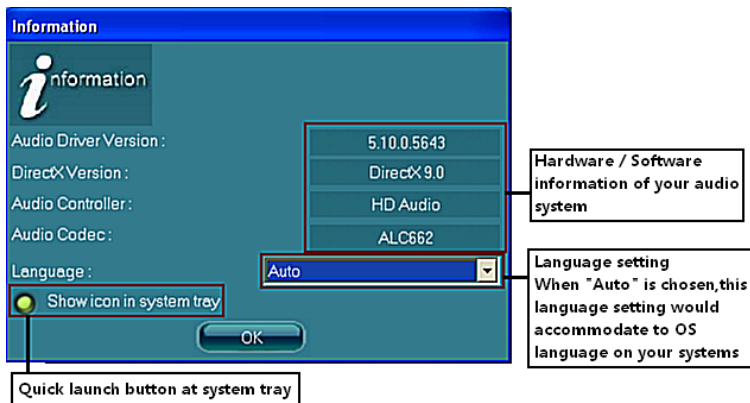
This function prevents playback sound from being recorded by microphone together with your sound. For example, you might have chance to use VOIP function through Internet with your friends. The voice of your friend will come out from speakers (play-back). However, the voice of your friend might also be recorded into your microphone then go back to your friend through Internet. In that case, your friend will hear his/her own voice again. With AEC (Acoustic Echo Cancellation) enabled at your side, your friend can enjoy the benefit with less echo.

### 3D Audio Demo

The section “3D Audio Demo” grants you another possibility to enjoy your sound. The Audio Demo allows you to listen to sound in an extraordinary way.



### Information



This section provides information about your current system audio device.





**ZOTAC®**  
*It's Time to Play*

[WWW.ZOTAC.COM](http://WWW.ZOTAC.COM)



291-MA142-0153F