## User Guide

EVGA Z75 SLI Motherboard

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## Before You Begin...

Thank you for purchasing the EVGA Z75 SLI Motherboard. This board is based off of the new Intel Z75 chipset with native support for SATA III/6G and USB 3.0 for the performance you demand, delivered when you need it.

As always this board comes with the added bonus of EVGA's industry leading 24/7 technical support in case you ever have any issues or questions.

## Parts NOT in the Kit

This kit contains all the hardware necessary to install and connect your new EVGA Z75 SLI Motherboard. However, it does not contain the following items that must be purchased separately to make the motherboard functional.
$\square$ Intel Socket 1155 Processor

- DDR3 System Memory
$\square$ Socket 1155 CPU cooler for the processor
- PCI Express Graphics Card
$\square$ Power Supply

EVGA assumes you have purchased all the necessary parts needed to allow for proper system functionality. For a full list of supported CPU's on this motherboard, please visit http://www.evga.com/support/motherboard/.

## Intentions of the Kit


#### Abstract

This kit provides you with the motherboard and all connecting cables necessary to install the motherboard into a PC case. If you are building a PC, you will use most of the cables provided in the kit. If however, you are replacing a motherboard, you will not need many of the cables.

When replacing a motherboard in a PC case, you will need to reinstall an operating system even though the current Hard Disk Drive may already have one installed.


## EVGA Z75 SLI

## Motherboard

## Motherboard Specifications

- Size

ATX form factor of 12 inches x 9.6 inches
$\square$ Microprocessor support
Intel Socket 1155 Processor
$\square$ Operating systems:
Supports Windows 7/Vista/XP 32 and 64 bit
$\square$ Contains Intel Z75 chipset
$\square$ System Memory support
Supports Dual channel DDR3-2133+. Officially supports up to 32GBs of
DDR3 memory.
$\square$ USB 2.0 Ports
Supports hot plug
Supports wake-up from S1 and S3 mode
Supports USB 2.0 protocol up to a 480 Mbps transmission rate
$\square$ USB 3.0 Ports
Backwards compatible USB 2.0 and USB 1.1 support
Supports transfer speeds up to 5 Gbps
$\square$ SATA ports up to $3.0 \mathrm{~Gb} / \mathrm{s}(300 \mathrm{M} / \mathrm{s})$ data transfer rate
Support for RAID 0, RAID 1, RAID 0+1, RAID5 and RAID 10
$\square$ ESATA (optional) Supports SATA $6 / 3 \mathrm{Gbps}$
$\square$ SATA ports up to $6.0 \mathrm{~Gb} / \mathrm{s}(600 \mathrm{M} / \mathrm{s})$ data transfer rate
Support for RAID $0 \&$ RAID 1

- Onboard LAN

Supports 10/100/1000 Mbit/sec Ethernet
$\square$ Onboard Audio
Realtek High-Definition audio
Supports 8-channel audio
Supports Jack-Sensing function
$\square$ PCI-E Support
PCI-E 3.0 Slots
Low power consumption and power management features
$\square$ Green Function
Supports ACPI (Advanced Configuration and Power Interface)
Supports S0 (normal), S1 (power on suspend), S3 (suspend to RAM), S4
(Suspend to disk - depends on OS), and S5 (soft - off)

- Expansion Slots

PCI-E x1 slots
PCI-E x8/x16 slots

# Unpacking and 7 Parts Descriptions 

## Unpacking

The EVGA Z75 SLI Motherboard comes with all the necessary cables for adding a motherboard to a system case. If replacing a motherboard, you may not need many of these cables.

## Equipment

The following accessories are included with the EVGA Z75 SLI Motherboard:

## The EVGA 275 SLI Motherboard



This PCI-E motherboard contains the Intel $Z 75$ chipset and is SLI-ready.

## 1 - Visual Guide

Helps to quickly and visually guide you through the hardware installation of the motherboard.
1-I/O Shield


Installs in the system case to block radio frequency transmissions, protect internal components from dust, foreign objects, and aids in proper airflow within the chassis.


## 2-2-Port SATA Power Cables

Allows a Molex power connector to adapt to a SATA power connector.

## 2 - SATA II/3G Data Cables



Used to support the SATA protocol and each one connects a single drive to the motherboard.

## 2 - SATA III/6G Data Cables

Used to support the SATAIII/6G high speed protocol and each one connects a single drive to the motherboard.
Contains drivers that are needed to setup the motherboard.

| 1- User Manual |
| :--- |
| Contains Information needed to properly install and configure |
| your EVGA Motherboard. |

## Hardware Installation

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

- Installing the CPU
- Installing the CPU fan
$\square$ Installing the memory
$\square$ Installing the motherboard
$\square$ Connecting cables


## 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

## Installing the CPU

Be very careful when handling the CPU. Hold the processor only by the edges and do not touch the bottom of the processor.

Use the following procedure to install the CPU
 onto the motherboard:

Unhook the socket lever by pushing down and away from the socket.

Pull the socket lever back and the load plate will automatically lift. There is a protective socket cover within the CPU socket to protect the socket when there is no CPU installed.

Remove the protective socket cover from the CPU Socket.


Note: After removing the CPU socket cover, it is recommended that you keep it in case you need to remove the CPU so for any reason you can replace the cover to avoid damaging the CPU socket pins.

Align the notches in the processor with the notches on the socket.

Lower the processor straight down into the socket without tilting or sliding it into the socket.

Note: Make sure the CPU is fully seated and level in
 the socket.

Close the load plate over the CPU and press down while you close and engage the socket lever.

The CPU installation is complete.

Align notches with notches on the CPU


## 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 System Memory (DIMMs)

Your new motherboard has four 240-pin slots for DDR3 memory. These slots support 1GB, 2GB and 4GB DDR3 DIMMs. There must be at least one memory slot populated to ensure normal operation. Use the following the recommendations for installing memory.
$\square$ One DIMM: If using 1 DIMM (Single Channel), install into: DIMM slot 2.
Two or Four DIMMs: If using 2 DIMMs (Dual Channel), install into: DIMM slots 2 and 4. If using 4 DIMMs (Dual Channel), install into: DIMM slots $1,2,3$, and 4 .
$\square$ Use the following procedure to install DIMMs. Note that there is only one gap near the center of the DIMM slot. This slot matches the slot on the DIMM to ensure the component is installed properly.

1. Unlock a DIMM slot by pressing the module clips outward.

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 a system case depends on the chassis you are using and if you are replacing an existing motherboard or working with an empty system case. 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 system case 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. This will depend on the system case being used.

## 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.

Also Note that for ease of installation you may want to install I/O shield Fan (optional) before installing into case.

## Securing the Motherboard into a System Case

Most system cases 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 using a minimum of nine (9) spacers and screws.

1. Carefully place the motherboard onto the stand offs located inside the chassis.
2. Align the mounting holes with the stand offs.
3. Align the connectors to the $\mathrm{I} / \mathrm{O}$ shield.
4. Ensure that the fan assembly is aligned with the chassis vents according to the fan assembly instruction.
5. Secure the motherboard with a recommended minimum of nine (9) screws.

## Connecting Cables

This section takes you through all the necessary connections on the motherboard. This will include:
$\square$ Power Connections
24-pin ATX power (ATX_PWR_24)
8-pin ATX 12V power (ATX_PWR_8P)
$\square$ Internal Headers
Front Panel Header
USB Headers
Audio Header

- SATA II
$\square$ SATA III
- Chassis Fans
$\square$ USB 2.0
$\square$ USB 3.0
- Expansion slots
$\square$ CMOS Clear Button


## 24-pin ATX Power (PWR_24)

PWR_24 is the main power supply connector located along the edge of the board next to the DIMM slots. 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.

Figure 1. PWR_24 Motherboard Connector Table 1. PWR_24 Pin Assignments


## 8-pin ATX 12V Power (ATX_PWR_8P)

PW1, the 8-pin ATX 12V power connection, is used to provide power to the CPU. Align the pins to the connector and press firmly until seated.


## BIOS Select Jumper

The BIOS Select Jumper is located at the bottom left of the board right next to the front panel header.

The addition of 2 physical BIOS chips on the mainboard allows for usage of two completely different bios versions or saving of profiles to differentiate between bench sessions and regular 24/7 usage.

## Connecting Internal Headers

## Front Panel Header

The front panel header on this motherboard is one connector used to connect the following four cables.
(see Table 2 for pin definitions):

## PWRLED

Attach the front panel power LED cable to these two pins of the connector. The Power LED indicates the system's status. When the system is powered on, the LED will be on. When the system is turned off, the
 LED is off. When the system is in S1, S3,
S4 status, the LED will blink.

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

## PWRSW

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 onboard button.

## HD_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.

## $\square$ RESET

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.

Table 2.Front Panel Header Pins

|  | Pin | Signal |
| :--- | :--- | :--- |
| HD_LED | 1 | HD_PWR |
|  | 3 | HD Active |
| PWRLED | 2 | PWR LED |
|  | 4 | STBY LED |
| RESET | 5 | Ground |
|  | 7 | RST BTN |
| PWRSW | 6 | PWR BTN |
|  | 8 | Ground |
| No Connect | 9 | +5V |
| Empty | 10 | Empty |

## USB Headers

This motherboard contains six (4) USB 2.0 ports that are exposed on the rear panel of the chassis. The motherboard also contains two 10pin internal header connectors onboard that can be used to connect an optional external bracket containing up to four (4) USB 2.0 ports.

1. Secure the bracket to either the front or rear panel of your chassis (not all chassis are equipped with the front panel option).
2. Connect the two ends of the cables to the USB 2.0 headers on the motherboard.


Table 3. USB 2.0 Header Pins

| Connector | Pin | Signal |
| :---: | :---: | :---: |
| USB 2.0 Header Connector | 1 | 5V_DUAL |
|  | 3 | D- |
| $\begin{array}{l\|ll\|l} 1 & 0 & 0 & 2 \\ 3 & 0 & \end{array}$ | 5 | D+ |
| 50006 | 7 | GND |
|  | 9 | Empty |
|  | Pin | Signal |
|  | 2 | 5V_DUAL |
|  | 4 | D- |
|  | 6 | D+ |
|  | 8 | GND |
|  | 10 | No Connect |

## Audio

The audio connector supports HD audio standard and provides two kinds of audio output choices: the Front Audio and the Rear Audio. The Front Audio supports re-tasking function.

Table 4. Front Audio Connector

| Connector | Pin | Signal |
| :---: | :---: | :---: |
| Front Audio Connector | 1 | PORT1_L |
|  | 2 | AUD_GND |
|  | 3 | PORT1_R |
|  | 4 | PRECENCE_J |
|  | 5 | PORT2_R |
|  | 6 | SENSE1_RETURN |
|  | 7 | SENSE_SEND |
|  | 8 | Empty |
|  | 9 | PORT2_L |
|  | 10 | SENSE2_RETURN |



## PCI-E x1 Slots

There are PCI-E x1 slots that are designed to accommodate less bandwidthintensive cards, such as a modem, sound or LAN card.

## PCI-E x16/x8 Slots

These PCI-E slots are reserved for Graphics Cards and PCI-E x1, x4, x8 and x 16 devices. The design of this motherboard supports multiple Graphics Card technologies such as SLI or CrossFireX.

When installing a PCI-E Graphics Card, be sure the retention clip snaps and locks the card into place. If the card is not seated properly, it could cause a short across the pins. Secure the card's metal bracket to the chassis back panel with the screw used to hold the blank cover.

## Onboard Buttons

These onboard buttons include RESET, POWER and Clear CMOS. These functions allow you to easily reset the system, turn on/off the system, or clear the CMOS.

## Clear CMOS Button

The motherboard uses the CMOS RAM to store all the set parameters. The CMOS can be cleared by pressing the Clear CMOS button either onboard or on the external I/O Panel.


External Clear CMOS Button

## RESET and POWER Button

These onboard buttons allow you to easily turn on/off the system. These buttons allow for easy debugging and testing of the system during troubleshooting situations.

The POWER button with an integrated LED indicates the system's status. When the system is powered on, the LED remains a solid red.

The RESET button with an integrated LED indicates the activity status of the hard disk drives and will flicker accordingly.


## Post Port Debug LED and LED Status Indicators

## Post Port Debug LED

Provides two-digit POST codes to show why the system may be failing to boot. It is useful during troubleshooting situations. This Debug LED will also display current CPU socket temperatures after the system has fully booted into the Operating System.


## LED Status Indicators

Theses LEDs indicate the system's status.
$\square$ POWER LED (Red):
When the System is powered on: This LED is on.
$\square$ DIMM LED (Yellow):
When the Memory slot is functional: This LED is on.
$\square$ STANDBY LED (White):
When the System is in Standby Mode: This LED is on. This LED will remain on as long as the motherboard is receiving constant power.


## 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 7, Vista and XP both 32 and 64 Bit.

The kit comes with a CD that contains utilities, drivers, and additional software. The CD that has been shipped with the EVGA Z75 SLI Motherboard contains the following software and drivers:
$\square$ Chipset Drivers
$\square$ Audio Drivers
$\square$ RAID Drivers
$\square$ LAN Drivers
$\square$ Matrix Storage
$\square$ USB 3.0 Drivers

- EVGA E-LEET
- User's Manual


## Windows 7/Vista/XP

## Driver Installation

1. Insert the EVGA Z75 SLI installation CD for the motherboard included in the kit.
2. The CD will autorun, install the drivers and utilities listed on the install screen. If the CD does not run, go to My Computer and click on the CD to open.

## Appendix A. POST Codes

This section provides the AMI POST Codes (Table 6) for the EVGA Z75 SLI Motherboard during system boot up.

The POST Codes are displayed on the Debug LED readout located directly onboard the motherboard.
This Debug LED will also display current CPU temperatures after the system has fully booted


Debug LED with CPU Temperature Monitor

## Table 5. AMI POST Code

| 01 | Power on. Reset type detection (soft/hard). |
| :--- | :--- |
| 02 | AP initialization before microcode loading |
| 03 | North Bridge initialization before microcode loading |
| 04 | South Bridge initialization before microcode loading |
| 05 | OEM initialization before microcode loading |
| 06 | Microcode loading |
| 07 | AP initialization after microcode loading |
| 08 | North Bridge initialization after microcode loading |
| 09 | South Bridge initialization after microcode loading |


| OA | OEM initialization after microcode loading |
| :---: | :---: |
| OB | Cache initialization |
| $\begin{aligned} & \text { OC- } \\ & \text { OD } \end{aligned}$ | Reserved for future AMI SEC error codes |
| OE | Microcode not found |
| 0F | Microcode not loaded |
| 10 | PEI Core is started |
| $\begin{aligned} & 11- \\ & 14 \end{aligned}$ | Pre-memory CPU initialization is started |
| $\begin{aligned} & 15- \\ & 18 \end{aligned}$ | Pre-memory North Bridge initialization is started |
| $\begin{aligned} & 19- \\ & 1 \mathrm{C} \end{aligned}$ | Pre-memory South Bridge initialization is started |
| $\begin{aligned} & \text { 1D- } \\ & \text { 2A } \end{aligned}$ | OEM pre-memory initialization codes |
| 2B | Memory initialization. Serial Presence Detect (SPD) data reading |
| 2 C | Memory initialization. Memory presence detection |
| 2D | Memory initialization. Programming memory timing information |
| 2E | Memory initialization. Configuring memory |
| 2F | Memory initialization (other). |
| 30 | Reserved for ASL (see ASL Status Codes section below) |
| 31 | Memory Installed |
| 32 | CPU post-memory initialization is started |
| 33 | CPU post-memory initialization. Cache initialization |
| 34 | CPU post-memory initialization. Application Processor(s) (AP) initialization |
| 35 | CPU post-memory initialization. Boot Strap Processor (BSP) selection |
| 36 | CPU post-memory initialization. System Management Mode (SMM) initialization |
| $\begin{aligned} & 37- \\ & 3 A \end{aligned}$ | Post-Memory North Bridge initialization is started |
| $\begin{aligned} & \text { 3B- } \\ & \text { 3E } \end{aligned}$ | Post-Memory South Bridge initialization is started |
| $\begin{aligned} & 3 \mathrm{~F}- \\ & 4 \mathrm{E} \end{aligned}$ | OEM post memory initialization codes |
| 4 F | DXE IPL is started |
| 50 | Memory initialization error. Invalid memory type or |


$\left.$|  | incompatible memory speed |
| :---: | :--- |
| 51 | Memory initialization error. SPD reading has failed |
| 52 | Memory initialization error. Invalid memory size or <br> memory modules do not match. |
| 53 | Memory initialization error. No usable memory <br> detected |
| 54 | Unspecified memory initialization error. |
| 55 | Memory not installed |
| 56 | Invalid CPU type or Speed |
| 57 | CPU mismatch |
| 58 | CPU self test failed or possible CPU cache error |
| 59 | CPU micro-code is not found or micro-code update <br> is failed |
| $5 A$ | Internal CPU error |
| 5B | reset PPI is not available |
| 5C- | Reserved for future AMI error codes |
| 5F |  |
| E0 | S3 Resume is stared (S3 Resume PPI is called by <br> the DXE IPL) |
| E1 | S3 Boot Script execution |
| E2 | Video repost |
| E3 | OS S3 wake vector call |
| E4- | Reserved for future AMI progress codes |
| E7 |  |
| E8- | S3 Resume Failed |
| EB |  |
| EC- | Reserved for future AMI error codes |
| EF |  |
| F0 | Recovery condition triggered by firmware (Auto <br> recovery) |
| F1 | Recovery condition triggered by user (Forced <br> recovery) |
| F2 | Recovery process started |
| F3 | Recovery firmware image is found |
| F4 | Recovery firmware image is loaded |
| F5- | Reserved for future AMI progress codes |
| F7 |  |
| F8 | Recovery PPI is not available |
| F9 | Recovery capsule is not found |
| FA | Invalid recovery capsule |
| FB- | Reserved for future AMI error codes |$l \right\rvert\,$


| FF |  |
| :---: | :--- |
| 60 | DXE Core is started |
| 61 | NVRAM initialization |
| 62 | Installation of the South Bridge Runtime Services |
| $63-$ | CPU DXE initialization is started |
| 67 |  |
| 68 | PCI host bridge initialization |
| 69 | North Bridge DXE initialization is started |
| 6 A | North Bridge DXE SMM initialization is started |
| $6 B-$ | North Bridge DXE initialization (North Bridge |
| 6F | module specific) |
| 70 | South Bridge DXE initialization is started |
| 71 | South Bridge DXE SMM initialization is started |
| 72 | South Bridge devices initialization |
| $73-$ | South Bridge DXE Initialization (South Bridge |
| 77 | module specific) |
| 78 | ACPI module initialization |
| 79 | CSM initialization |
| $7 A-$ | Reserved for future AMI DXE codes |
| 7 7F |  |
| $80-$ | OEM DXE initialization codes |
| 8F |  |
| 90 | Boot Device Selection (BDS) phase is started |
| 91 | Driver connecting is started |
| 92 | PCI Bus initialization is started |
| 93 | PCI Bus Hot Plug Controller Initialization |
| 94 | PCI Bus Enumeration |
| 95 | PCI Bus Request Resources |
| 96 | PCI Bus Assign Resources |
| 97 | Console Output devices connect |
| 98 | Console input devices connect |
| 99 | Super IO Initialization |
| 9 A | USB initialization is started |
| $9 B$ | USB Reset |
| 9 C | USB Detect |
| $9 D$ | USB Enable |
| $9 E-$ | Reserved for future AMI codes |
| $9 F$ |  |
| A0 | IDE initialization is started |
| A1 | IDE Reset |


| A2 | IDE Detect |
| :---: | :--- |
| A3 | IDE Enable |
| A4 | SCSI initialization is started |
| A5 | SCSI Reset |
| A6 | SCSI Detect |
| A7 | SCSI Enable |
| A8 | Setup Verifying Password |
| A9 | Start of Setup |
| AA | Reserved for ASL (see ASL Status Codes section <br> below) |
| AB | Setup Input Wait |
| AC | Reserved for ASL (see ASL Status Codes section <br> below) |
| AD | Ready To Boot event |
| AE | Legacy Boot event |
| AF | Exit Boot Services event |
| B0 | Runtime Set Virtual Address MAP Begin |
| B1 | Runtime Set Virtual Address MAP End |
| B2 | Legacy Option ROM Initialization |
| B3 | System Reset |
| B4 | USB hot plug |
| B5 | PCI bus hot plug |
| B6 | Clean-up of NVRAM |
| B7 | Configuration Reset (reset of NVRAM settings) |
| B8- | Reserved for future AMI codes |
| BF | C0- |
| OEM BDS initialization codes |  |
| DF | CPU initialization error |
| D1 | North Bridge initialization error |
| D2 | South Bridge initialization error |
| D3 | Some of the Architectural Protocols are not <br> available <br> D4 PCI resource allocation error. Out of Resources |
| D5 | No Space for Legacy Option ROM |
| D6 | No Console Output Devices are found |
| D7 | No Console Input Devices are found |
| D8 | Invalid password |
| D9 | Error loading Boot Option (Loadlmage returned |
| DA | Boot Option is failed (Startlmage returned error) |

## EVGA Glossary of Terms

1337 - This is reserved for EVGA level elite
AC - Alternating Current
ACPI - Advanced Configuration and Power Interface
AFR - Alternate Frame Rendering
APIC - Advanced Programmable Interrupt Controller
ACPI - Advanced Configuration and Power Interface
BCLK - Base Clock (or operating frequency of base system bus)
BIOS - Basic Input Output System
CD-ROM - Compact Disc Read-Only Memory
CMOS - Complementary Metal-Oxide Semiconductor
CPU - Central Processing Unit
D-ICE - Dry Ice Cooling
DDR2 - Double Data Rate 2
DDR3 - Double Data Rate 3
DIMM - Dual In-line Memory Module
DMI - Direct Memory Interface
DRAM - Dynamic random access memory
DVD - Digital Versatile Disc
DVI - Digital Video Interface
FDC - Floppy Disk Controller
FSB - Front Side Bus
FTW - For The Win!
GHz - Gigahertz
GPU - Graphics Processing Unit
HDD - Hard Disk Drive
HDMI - High-Definition Multimedia Interface
HDR - High Dynamic Range Lighting
HPET - High Precision Event Timer
HT - Hyper-Threading
HSF - Heat Sink Fan
I/O - Input/Output
IDE - Integrated Drive Electronics
IEEE - Institute of Electrical and Electronics Engineers
IGP - Integrated Graphics Processors
IMC - Integrated memory controller
IRQ - Interrupt Request
JBOD - Just a Bunch of Disks
JEDEC - Joint Electron Device Engineering Council
LAN - Local Area Network
LCD - Liquid Crystal Display
LGA - Land Grid Array
LN2 - Liquid Nitrogen Cooling
MAC - Media Access Control
MCP - Media and Communications Processor
MHz - Megahertz
MMIO - Memory Mapped I/O
NB - Northbridge
NCQ - Native Command Queuing
NIC - Network Interface Card
NTFS - New Technology File System
OEM - Original Equipment Manufacturer
PATA - Parallel Advanced Technology Attachment
PCB - Printed Circuit Board
PCI - Peripheral Component Interconnect
PCIe - Peripheral Component Interconnect Express
PCI-x - Peripheral Component Interconnect Extended
POST - Power on Self Test
PWM - Pulse Width Modulation
QDR - Quad Data Rate
QPI - Quick Path Interconnect
RAID - Redundant Array of Inexpensive Disks
RGB - Red Green Blue
SATA - Serial Advanced Technology Attachment
SB - Southbridge
SCSI - Small Computer System Interface
SFR - Split Frame Rendering
SLI - Scalable Link Interface
SPD - Serial Presence Detect
SPDIF - Sony/Philips Digital Interconnect Format
SPP - System Platform Processors
SSD - Solid State Drive
TCP/IP - Transmission Control Protocol/Internet Protocol
USB - Universal Serial Bus
VDroop - V-core Voltage Drop
VGA - Video Graphics Array

## Compliance Information

## FCC Compliance Information

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for 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 manufacturer's instructions, may cause harmful interference to radio 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: (1) Increase the separation between the equipment and signal source, or (2) connect the equipment to an outlet on a circuit different from that to which the signal source is connected. Consult the dealer or an experienced computer technician for help. The use of shielded cables for connection of peripheral devices to the PC systems is required to ensure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## CE Compliance Information

Generic Radiation Interference Standard for Information Technology Equipment. (EN 55022: 2006, Class B), (EN 61000-3-2: 2006), (EN 61000-3-3: $1995+$ A1: 2001 + A2: 2005). Warning: This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measure. Generic Immunity Standard for Information Technology Equipment. (EN 55024: 1998 + A1: 2001 + A2: 2003).

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