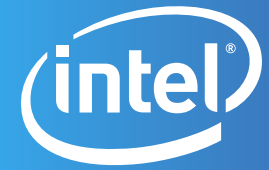


# Intel® Desktop Board **DZ87KLT-75K**

Optimized for -K processors  
Fastest connections with Thunderbolt™



PRODUCT BRIEF

The ultimate gaming foundation

## FIND YOUR EXTREME

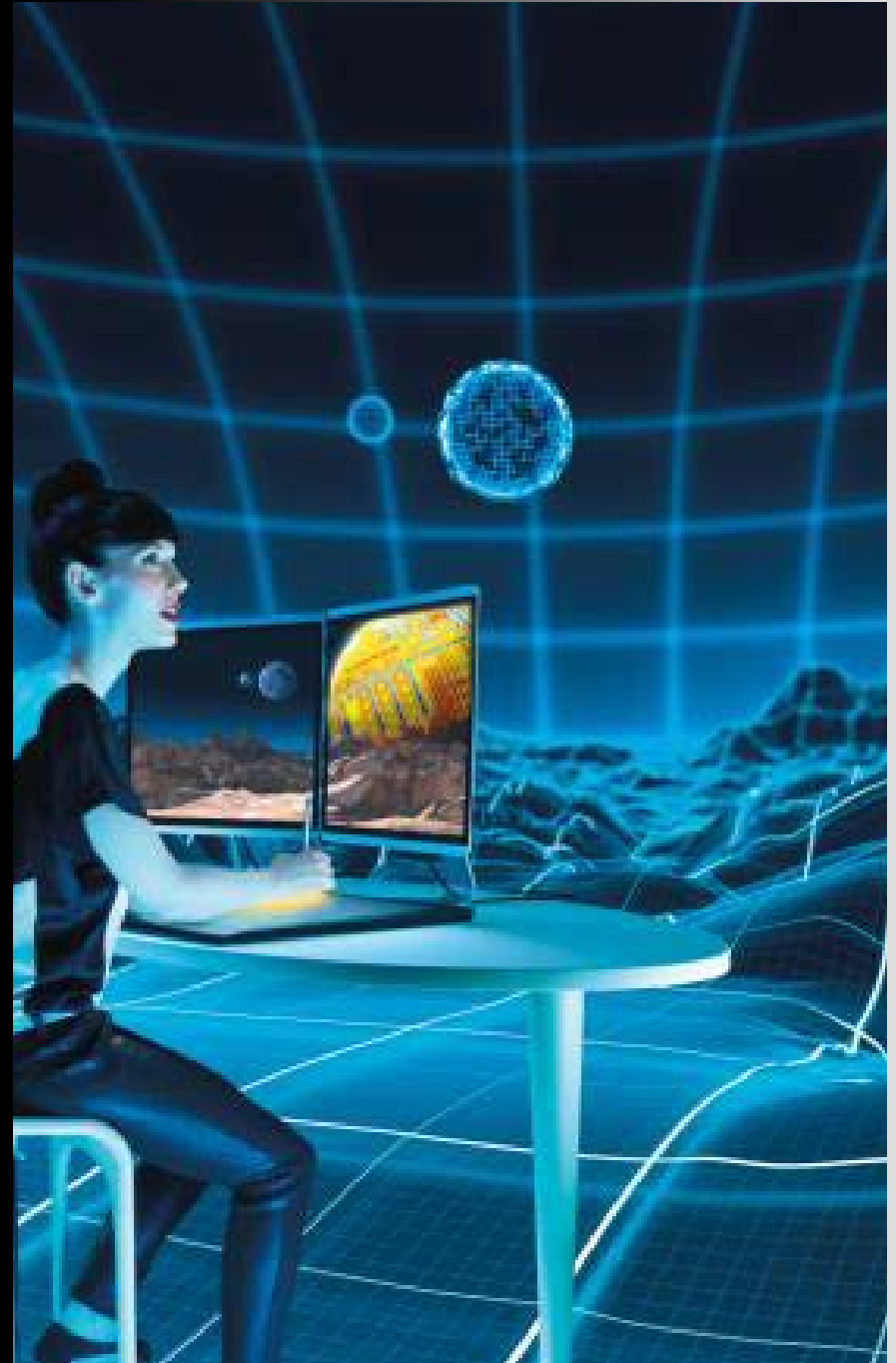
Whether you're into extreme gaming, overclocking or high-end video manipulation, Intel® Desktop Board DZ87KLT-75K is the motherboard for you. This board has been highly optimized for Intel® -K processors to take full advantage of what the processor family has to offer. Support for CrossFireX and SLI, USB 3.0, SATA 6 Gb/s and dual Intel LAN allows endless connection possibilities. And if you enjoy pushing the envelope with the ultimate in connectivity, this board offers on-board Thunderbolt™ technology for blistering bidirectional 10Gb/s transfer rates. Nothing moves content in and out of your system faster. All of this in a board from Intel - your trusted technology partner.

## COMPLETE CONTROL = COMPLETE POWER

Control is all about the BIOS and only genuine Intel® Desktop Boards have the most advanced BIOS interface available today: Intel® Visual BIOS. With the ability to tweak anything and everything with a completely graphical interface, you'll be able to take your rig to new heights with ease.

## ADVANCED TECHNOLOGY

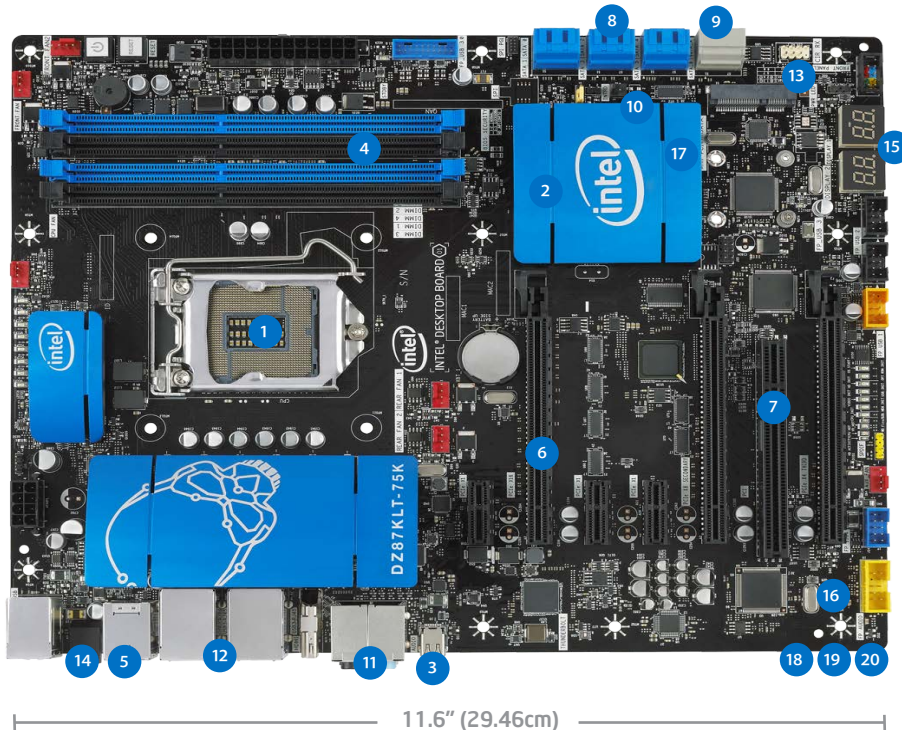
This board supports technologies that you will not find on the competition. Superior Phase Shedding Technology provides automatic power regulation to keep your system cooler while minimizing energy consumption. Power Supervisor minimizes thermal stress to your CPU while still delivering maximum power. And Fast Boot technology gets you into the game faster by eliminating needless startup steps in BIOS.





# Intel® Desktop Board DZ87KLT-75K

## Features and Benefits



## Extreme Series

- 1 Support for the Intel® 4th Generation Core™ i7 processor in the LGA 1150 package:** Highly optimized for the Intel® -K Processors. Features Intel® Turbo Boost Technology, Intel® Hyper-Threading Technology for exceptional performance and scalability, and 8 MB Shared Intel® Smart Cache, enabling dynamic and efficient allocation of cache
- 2 Intel® Z87 Express Chipset:** Features Intel® Smart Response Technology.
- 3 Thunderbolt Connector:** Providing revolutionary I/O technology with 10Gb/s bi-directional dual protocol interface for data and display.
- 4 Four DIMM slots:** Designed to support overclocked<sup>1</sup> DDR3 2400 + O.C.<sup>6</sup> memory, delivering up to 32 GB /s memory bandwidth
- 5 Eight Super-Speed USB 3.0 ports (6 external, 2 via internal header), two IEEE 1394a ports (1 external, 1 via internal header), and 8 Hi-Speed USB 2.0 ports (2 external, 6 via internal headers):** Two USB 2.0 ports (yellow) external and 2 via internal provide high current and fast charging capability.
- 6 Three PCI Express 3.0\* x16 slots:** Support for certified AMD CrossFireX\* and NVIDIA\* SLI.\* One HDMI port supporting HDMI 1.4a
- 7 Three PCI Express 2.0\* x1 and one PCI connectors:** Flexibility to support PCI Express and legacy PCI devices.
- 8 Eight SATA 6.0 Gb/s ports and one full length PCIe Mini Card slot supporting mSATA Solid-State Drive capability via Intel PCH. Intel® Rapid Storage Technology**
- 9 Separate SATA 6.0 Gb/s controller adding 2 additional ports**
- 10 Intel® Smart Response and Intel® Rapid Start<sup>8</sup> Technologies:** Provides SSD like performance with HDD capacity. Dramatically improves response time when a small capacity SSD is used in conjunction with a large HDD
- 11 (8+2) 10-channel Intel® High Definition Audio<sup>7</sup> (7.1):** Enables high-quality integrated audio that rivals the performance of high-end discrete solutions
- 12 Dual Intel® Gigabit Ethernet LAN:** Features onboard 10 /100 /1000 Mb /s Ethernet LANconnectivity.
- 13 Consumer infrared:** Supports receiving, learning, and emitting capabilities and eliminates the need for a USB CIR dongle
- 14 Back-to-BIOS switch:** Allows easy access to the BIOS for easy overclocking<sup>1</sup> and recovery.
- 15 Post Code Decoder:** Allows for display of post codes for debug along with the included post code quick reference card displaying critical areas to help troubleshoot performance increase road blocks.
- 16 Exclusive voltage regulator heat sinks:** Provides reliable and silent cooling for extreme Core, Graphics, and Memory performance tuning.
- 17 Initialization and diagnostic LEDs:** Provides instant visible system feedback.
- 18 100% Solid state capacitors and exclusive Power Supervisor:** Maximizes stability and power for advanced performance tuning.
- 19 ATX (9.6" × 11.6") Form Factor:** ATX board supports more fully featured tower designs.
- 20 Lead-free:** Meets all worldwide regulatory requirements for lead-free manufacturing.

# Intel® Desktop Board DZ87KLT-75K

## Technical Specifications

### PROCESSOR

#### Processor Support

- Highly optimized for Intel® -K Processors
- Intel® Core™ i7, Intel® Core™ i5 and other Intel® processors in the LGA 1150 package
- Intel® Turbo Boost Technology<sup>4</sup>
- Intel® Hyper-Threading Technology<sup>5</sup>
- Integrated Memory Controller with support for up to 32GB<sup>6</sup> of system memory DDR3 2400MHz+ O.C. SDRAM
- Intel® Fast Memory Access
- Support Intel® 64 architecture<sup>3</sup>

### CHIPSET

- Intel® Z87 Express Chipset
- Intel® Rapid Storage Manager (Raid 0, 1, 5, 10)
- Intel® Smart Response Technology
- Intel® Rapid Start Technology<sup>8</sup>

### THUNDERBOLT CONNECTOR

- 10Gb/s bi-directional and dual protocol for data and display

### INTEL® PRO 10/100/1000 NETWORK CONNECTION

- Dual Intel® LAN on the back panel
- New low-power design can meet Energy Star<sup>7</sup> 5.2V with support for 6.0.

### USB/1394 PORTS

- Six Super-Speed USB 3.0 ports (blue) via back panel
- Two Super-Speed USB 3.0 ports via one internal header
- Two Hi-Speed USB 2.0 ports (yellow) via back panel, both fast charging, high current ports
- Six Hi-Speed USB 2.0 ports via three internal headers, including two fast charging, high current ports
- One 1394a port via back panel
- One 1394a port via internal header

### EXPANSION CAPABILITIES

- Three PCI Express\* 2.0 x1 slots
- One PCI slot
- One full length PCIe Mini Card slot supporting mSATA Solid-State Drive capability

### GRAPHICS

- Three PCI Express\* 3.0 x16 connectors (switchable to x8 or x4)
- One HDMI port supporting HDMI 1.4a

### AUDIO

- 10-channel Intel® High Definition Audio<sup>7</sup> codec
- 8-channel audio via back panel
- 2-channel audio via front panel
- Back panel support for output via optical cable
- One internal header for S/PDIF output for HDMI\* support

### SYSTEM BIOS

- Intel® Visual Bios
- 64 Mb Flash EEPROM with Intel® Platform Innovation Framework for EFI Plug and Play, IDE drive auto-configure
- Advanced configuration and power interface V3.0b, SMBIOS2.5
- Intel® Express BIOS update support
- Fast Boot BIOS – Optimized POST for almost instant-on access to PC from power on

### HARDWARE MANAGEMENT FEATURES

- Processor fan speed control
- System chassis fan speed control
- Voltage and temperature sensing
- Fan sensor inputs used to monitor fan activity
- Power management support for ACPI 3.0b

### SYSTEM MEMORY

#### Memory Capacity

- Four 240-pin DIMM connectors supporting dual-channel memory. Two double-sided DIMMs per channel.
- Maximum system memory up to 32GB<sup>2</sup> using 8 GB double-sided DIMMS

#### Memory Types

- DDR3 2400MHz+ (O.C.)/1600/1333/1066 SDRAM memory support
- Non-ECC memory

#### Memory Voltage

- 1.65V, 1.5V and 1.35V
- Support for Intel® Extreme Memory Profile (Intel® XMP)

### JUMPERS AND FRONT PANEL CONNECTORS

#### Jumpers

- Single configuration jumper design
- Jumper access for BIOS maintenance mode

#### Front Panel Connectors

- Reset, HDD LED, Power LED, Power on/off
- One front-panel Super-Speed USB 3.0 header (2 ports)
- Three front-panel High-Speed USB 2.0 headers (6 ports)
- Front-panel audio header
- One IEEE 1394a header
- CIR Receiver

### MECHANICAL

#### Board Style

- ATX

#### Board Size

- 11.6" x 9.6" (29.46 cm x 24.38 cm)

### Baseboard Power Requirements

- ATX 12 V

### COMPLIANCE WITH REGULATIONS AND STANDARDS Safety Regulations

UL/CSA 60950-1  
EN 60950-1  
IEC 60950-1

### EMC Class B Regulations

CISPR 22  
CISPR 24  
FCC 47 CFR Part 15, Subpart B  
ICES-003  
EN 55022  
EN 55024  
EN 61000-3-2  
EN 61000-3-3  
IEC/EN 61000-4 Series  
VCCI V-3  
KN-22  
KN-24  
CNS 13438

### Environmental Compliance

Europe RoHS  
China RoHS

1 WARNING: Altering PC memory frequency, voltage and/or latency may: (i) reduce system stability and useful life of the system, memory and processor; (ii) cause the processor and other system components to fail; (iii) cause reductions in system performance; (iv) cause additional heat or other damage; and (v) affect system data integrity. Intel has not tested, and does not warrant, the operation of the memory beyond its specifications. Intel assumes no responsibility that the memory, including if used with altered clock frequencies and/or voltages, will be fit for any particular purpose. Check with memory manufacturer for warranty and additional details.

2 System resources and hardware (such as PCI and PCI Express\*) require physical memory address locations that can reduce available addressable system memory. This could result in a reduction of as much as 1 GB or more of physical addressable memory being available to the operating system and applications, depending on the system configuration and operating system.

3 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. See <http://developer.intel.com/technology/intel64/index.htm> for more information.

4 Intel® Turbo Boost Technology requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. See [www.intel.com/technology/turboboost](http://www.intel.com/technology/turboboost) for more information.

5 Intel® Hyper-Threading Technology requires a computer system with a processor supporting HT Technology and an HT Technology-enabled chipset, BIOS, and operating system. Performance will vary depending on the specific hardware and software you use. For more information including details on which processors support HT Technology, see [www.intel.com/info/hyperthreading](http://www.intel.com/info/hyperthreading).

6 Maximum peak memory bandwidth requires four DDR 3 modules to be populated in each of the blue memory slots. DDR 3 2400MHz support on this motherboard requires advanced knowledge of BIOS and memory tuning; individual results may vary. For specific supported memory for this motherboard, please visit [www.intel.com/products/motherboard/](http://www.intel.com/products/motherboard/) for more details.

7 Intel® High Definition Audio requires a system with an appropriate Intel® chipset and a motherboard with an appropriate codec and the necessary drivers installed. System sound quality will vary depending on actual implementation, controller, codec, drivers, and speakers. For more information about Intel® HD Audio, refer to [www.intel.com/design/chipsets/ndaudio.htm](http://www.intel.com/design/chipsets/ndaudio.htm).

8 BIOS Update may be required to support Rapid Start Technology features. This Feature may not be available at initial launch of product

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Actual Intel® Desktop Board may differ from the image shown.

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