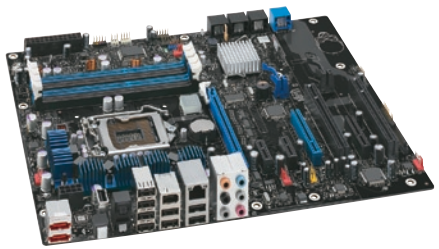
PRODUCT BRIEF
Intel® Desktop Board DP55KG
Extreme Series

ATX Form Factor

Intel® Desktop Board DP55KG Extreme Series



Loaded with the features extreme gamers want

When it comes to serious gaming, the Intel® Desktop Board DP55KG is packed with features to exceed any power user's expectations. With incredible support for up to eight threads of raw processing power, dual-channel DDR3 memory, and flexible support for ATI* CrossfireX* technology and NVIDIA* SLI* technology, the Intel Desktop Board DP55KG brings the best weapons to any application or game. The flexible graphics also make this board ideal for the backbone of an entry workstation system.

Today's extreme gaming, digital photography, and video editing demand breakthrough technology. The Intel Desktop Board DP55KG supports the latest processors, and Intel's cutting-edge technology delivers even greater performance and power efficiency.

Surviving never looked this good

The Intel Desktop Board DP55KG is built with the new Intel® P55 Express Chipset, supporting the Intel® Core™ i7 and Intel® Core™ i5 processors in the LGA1156 package. The revolutionary two-chip layout enables lower power consumption and more advanced performance tuning[1] for a smoother, more realistic experience. Intel® Extreme Memory Profiles (Intel® XMP) is a performance-packed expansion of the standard DDR3 memory specification, hitting speeds of 1600 MHz[1] or faster. Eight SATA and two eSATA ports deliver greater flexibility. Build your system quickly with 90-degree rotated SATA ports and easy-to-locate, aligned front-panel headers at the edge of the board. An integrated Bluetooth* module onboard connects to peripherals.

Performance tuning for greater control

An Intel-designed BIOS[1] presets clock values for quick performance tuning, along with great manual controls. The six-phase voltage regulators with sturdy thermal solutions and CHiL* Advanced Digital Voltage Regulator Control deliver high-speed phase control for lower, efficient, and balanced temperature. An onboard post code decoder LED cycles through post codes while booting. The third-generation watchdog timer recovers from crashes by restoring previous safe values. If the watchdog timer fails, the easy-to-access Back-to-BIOS switch lets you get to maintenance mode without having to open the system chassis.

Intel® Desktop Board DP55KG Extreme Series

Tools and software exclusive to Intel® Desktop Boards Extreme Series

The Intel® Desktop Control Center tunes, cools, and maximizes performance in Intel® Desktop Boards Extreme Series[2]. This tool performance-tunes the processor, memory, and system clocks, and one button auto-tuning monitors system temperature, component voltages, and fan speeds to ensure optimum performance.

The boxed Intel® Desktop Board DP55KG solution includes:

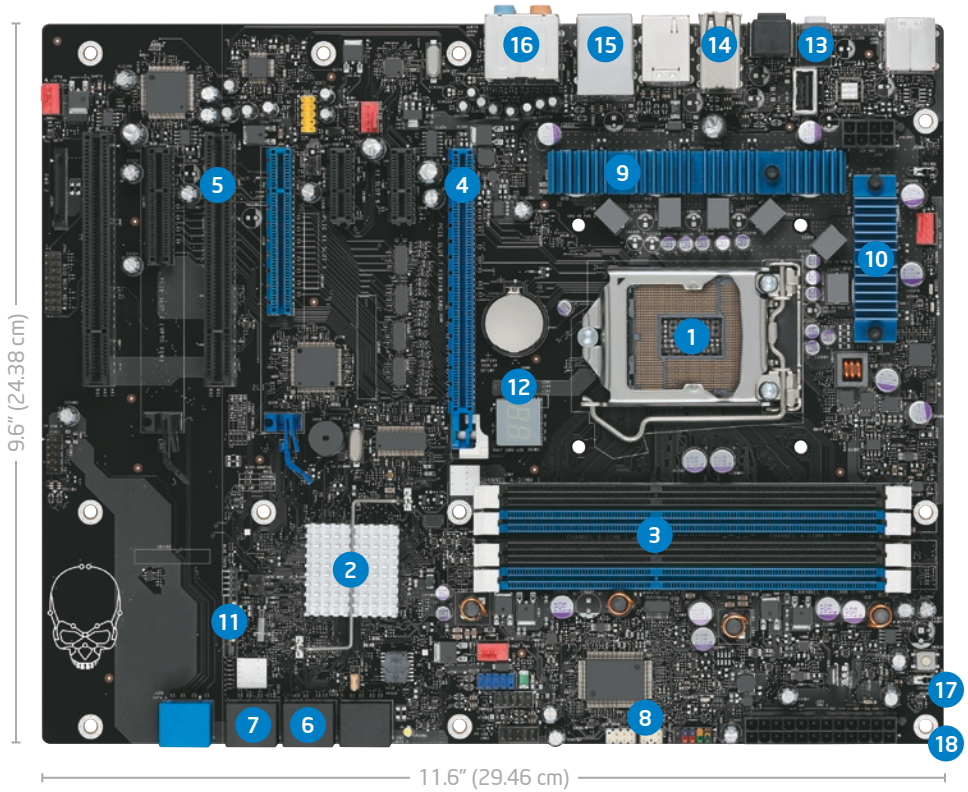
- ATX 2.2 compliant I/O shield
- UV SATA cables
- Board and back panel I/O layout stickers
- Quick reference guide
- Intel® Express Installer driver and software DVD
- Bluetooth* antenna
- NVIDIA* SLI* two-way connector
- Post code information card

Software included:

- **Intel® Desktop Control Center** (Internet download): Monitors system temperature and fan speeds. Enables manual tuning of memory and processor or one-button auto-tuning.
- **Intel® Integrator Assistant** (Internet download): Streamlines board integration.
- **DivX* Pro for Windows*:** Provides everything you need to burn, post, e-mail, store, or watch DivX* videos.
- **Dolby* Control Center:** A powerful set of easy-to-use home theater configuration tools delivers a cinema-style experience in vivid surround sound.
- **Norton Internet Security* 2009** (90-day trial): Removes viruses automatically, blocks certain Internet worm attacks, and protects e-mail and instant messages.
- **Additional free software:** Helps get your system up and running.

Intel® Desktop Board DP55KG Extreme Series
Features and Benefits

1. **Support for the Intel® Core™ i7 and Intel® Core™ i5 processors in the LGA1156 package:** Features Intel® Turbo Boost Technology[3] and Intel® Hyper-Threading Technology[4] for exceptional performance and scalability, and 8 MB Shared Intel® Smart Cache, enabling dynamic and efficient allocation of cache.
2. **Intel® P55 Express Chipset:** Revolutionary new single chip increases routing space for additional onboard features and lowers power consumption.
3. **Dual-Channel DDR3 1600+[1] / 1333 / 1066 MHz memory support:** Four DIMM slots support up to 16 GB[5] memory connected directly to the processor via the Integrated Memory Controller.
4. **One PCI Express* 2.0 x16 slot:** Graphics with the ability to scale to dual x8 graphics supporting ATI* CrossFireX* and NVIDIA* SLI*.
5. **One PCI Express 2.0 x4 slot, two PCI Express 2.0 x1 slots, and two PCI expansion slots:** Flexibility to support PCI Express and legacy PCI devices.
6. **Eight SATA 3.0 GB/s ports, with two additional eSATA ports:** Allows for a large addition of external mass storage using either single hard drives or SATA enclosures supporting port replication.
7. **Intel® Matrix Storage Technology:** RAID 0, 1, 5, and 10 for higher performance data access and/or data protection.
8. **Consumer infrared receiver and transmitter:** Supports receiving, learning, and emitting capabilities, controls up to two additional CE devices with your PC, and eliminates the need for a USB CIR dongle.
9. **Exclusive voltage regulator thermal solutions:** Provides reliable and silent cooling for extreme performance tuning.
10. **Six-phase improved voltage regulator:** The addition of the CHiL* processor voltage regulator allows for improved power and voltage delivery to reach even better performance while running games and media applications.
11. **Bluetooth*:** Adds the ability to connect to Bluetooth-enabled devices such as an audio headset, keyboard, or mouse for reduced cable computing.
12. **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 roadblocks.
13. **Back-to-BIOS switch:** New feature allows easy system recovery with all the BIOS settings kept intact after pushing the performance envelope too far.
14. **One IEEE 1394a port with one additional port via internal header; eight Hi-Speed USB 2.0 ports with four additional ports via two internal headers and one onboard port via one internal header:** Provides for the most flexible connectivity options for front and back panels.



15. **Intel® PRO 10/100/1000 Network Connection:** Uses a new low-power design and can meet Energy Star* 5.0 specifications.
16. **Dolby* Home Theater with 10-Channel Intel® High Definition Audio[6] (7.1) and S/PDIF In and Out:** Enables high-quality integrated audio that rivals the performance of high-end discrete solutions.
17. **Lead-free:** Meets all worldwide regulatory requirements for lead-free manufacturing.
18. **ATX (9.6" x 11.6") Form Factor:** ATX board supports more fully featured tower designs.

Intel® Desktop Board DP55KG Extreme Series
Technical Specifications

PROCESSOR
Processor Support
- Intel® Core™ i7 and Intel® Core™ i5 processors in the LGA1156 package
- Intel® Turbo Boost Technology[3]
- Intel® Hyper-Threading Technology[4]
- Integrated Memory Controller with support for up to 16 GB[5] of system memory DDR3 1600+[1] / 1333 / 1066 MHz SDRAM
- Intel® Fast Memory Access
- Supports Intel® 64 architecture[7]

CHIPSET
New Intel® P55 Express Chipset
- Intel® 82P55 Platform Controller Hub (PCH)
- Intel® Matrix Storage Technology (RAID 0, 1, 5, 10)
- Eight onboard SATA ports
- Two eSATA (3.0 Gb/s) ports on the back panel provided by a Marvell* 88SE6145 controller

USB 2.0
Integrated Intel® PCH controller
- Eight Hi-Speed USB 2.0 ports via back panel
- Four additional ports via two internal headers
- One onboard port via internal header

System BIOS
- 16 Mb Flash EEPROM with Intel® Platform Innovation Framework for EFI Plug and Play, IDE drive auto-configure
- Advanced configuration and power interface V3.0b, DMI 2.5

Intel® Rapid BIOS Boot
- Intel® Rapid BIOS Boot
- Intel® Express BIOS update support: BIOS update via new F7 function key

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

Intel® PRO 10/100/1000 Network Connection
- New low-power design can meet Energy Star* 5.0 specifications

Expansion Capabilities
- One PCI Express* 2.0 x16 slot, switchable to two PCI Express 2.0 x8 slots
- One PCI Express 2.0 x4 slot
- Two PCI Express 2.0 x1 slots
- Two PCI slots

Audio
- 10-channel Intel® High Definition Audio[6] codec
- 8-channel via the back panel
- 2-channel via the front panel
- Back panel support for both input and output via optical cable
- One internal header for S/PDIF output for HDMI* support

SYSTEM MEMORY
Memory Capacity
- Four 240-pin DIMM connectors supporting up to two double-sided DIMMs
- Maximum system memory up to 16 GB[5] using 4 GB double-sided DIMMs

Memory Types
- DDR3 1600 / 1333 / 1066 SDRAM memory support
- Non-ECC Memory

Memory Modes
- Dual- or single-channel operation support

Memory Voltage
- 1.35 V low voltage
- 1.5 V standard JEDEC voltage
- Support for Intel® XMP extended voltage profiles

JUMPERS AND FRONT-PANEL CONNECTORS
Jumpers
- Single configuration jumper design
- Jumper access for BIOS maintenance mode

Front-Panel Connectors
- Reset, HD LED, Power LEDs, power on/off
- Two front-panel Hi-Speed USB 2.0 headers
- Front-panel audio header
- One IEEE 1394a header

MECHANICAL
Board Style
- ATX

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

Baseboard Power Requirements
- ATX 12 V

ENVIRONMENT
Operating Temperature
- 0° C to +55° C

Storage Temperature
- -20° C to +70° C

REGULATIONS AND SAFETY STANDARDS
United States and Canada
UL 1950, Third edition—CAN/CSA C22.2 No. 950-95 with recognized U.S. and Canadian component marks

Europe
Nemko certified to EN 60950 International
Nemko certified to IEC 60950
(CB report with CB certificate)

EMC regulations (tested in representative chassis)
United States
FCC Part 15, Class B
FCC Part 15, Class B open-chassis (cover off) testing

Canada
ICES-003, Class B

Europe
EMC directive 89/336/EEC; EN 55022:1998 Class B; EN 55024:1998

Australia/New Zealand
AS/NZS 3548, Class B

Taiwan
CNS 13438, Class B International
CISPR 22:1997, Class B

Power requirements vary. Complies with US CRF via EN55022 +6 db in system configurations with an open chassis and EU Directive 89/336/EEC and use via EN55022 and EN50082-1 in a representative chassis.

Lead-Free: The symbol is used to identify electrical and electronic assemblies and components in which the lead (Pb) concentration level in any of the raw materials and the end product is not greater than 0.1% by weight (1000 ppm). This symbol is also used to indicate conformance to lead-free requirements and definitions adopted under the European Union's Restriction on Hazardous Substances (RoHS) directive, 2002/95/EC.

For ordering information, visit **www.intel.com**

For the most current product information, visit **www.intel.com/go/idb** or **http://ark.intel.com**

For specific CPU compatibility, visit **http://processormatch.intel.com**

[1] DDR3 1600 or higher memory support requires compatible Intel® XMP-enabled memory or advanced knowledge of BIOS and memory tuning; individual results may vary. Altering PC memory frequency and/or voltage may (i) reduce system stability and use 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 assumes no responsibility that the memory, included 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. For specific supported memory for this motherboard, please visit www.intel.com/go/idb for more details.
[2] Intel® Desktop Control Center is only compatible with Intel® Desktop Boards based on the Intel® X38 Express Chipset and newer. Auto-tuning capabilities may not be available for all Extreme Series motherboards.
[3] 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 for more information.
[4] 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.
[5] 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.
[6] 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/hdaudio.htm
[7] 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.

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