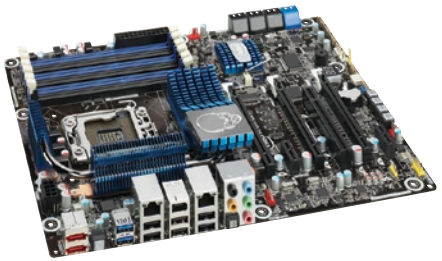
PRODUCT BRIEF
Intel® Desktop Board DX58SO2
Extreme Series

ATX Form Factor

Intel® Desktop Board DX58SO2 Extreme Series



Lock and load!

Introducing the Intel® Desktop Board DX58SO2, designed to unleash the power of the new Intel® Core™ i7 processors.

Build upon a winner

With the Intel Desktop Board DX58SO2, Intel is breaking down barriers when it comes to the performance and bandwidth that gamers, digital media creators, and ultimate multitaskers need most. The Intel Desktop Board DX58SO2 provides breakaway performance in production and editing, as well as digital media rendering and real-time audio/video preview capabilities. Superior Phase Shedding Technology keeps the system performing in the most efficient optimum state. The massive data throughput and support for the Intel Core i7 processor runs more applications simultaneously, with less wait time.

Power for the hottest new games

With incredible support for up to 12 threads of raw processing power, unprecedented bandwidth, triple-channel DDR3 memory, and full support for ATI* CrossFireX* and NVIDIA* SLI* technologies, the Intel Desktop Board DX58SO2 goes where no desktop board has gone before.

The optimized eight-layer stack up provides flawless signal speed and industry-leading power delivery to critical components to deliver more advanced performance tuning[1] and, with superior graphics flexibility, gamers enjoy a smoother, more realistic experience. Intel® Extreme Memory Profiles (Intel® XMP) is a performance-packed expansion of the standard DDR3 memory specification, enabling a robust and stable solution for ultra-fast memory.

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Intel® Desktop Board DX58SO2 Extreme Series

The boxed Intel® Desktop Board DX58SO2 solution includes:

- ATX compliant I/O shield
- UV-reactive SATA cables
- Extreme mouse pad
- Bluetooth* / Wi-Fi* module
- Board and back panel I/O layout stickers
- Quick reference guide
- Intel® Express Installer driver and software DVD
- Windows Vista* Premium WHQL certified
- NVIDIA* SLI* bridge connectors
- Post code information card

Software included:

CAPABILITY	SOFTWARE INCLUDED:
Utilities	▪ Intel® Core Utilities Bundle[2] ▪ Intel® Extreme Tuning Utility[3] (XTU) (Internet download)
Antivirus	▪ ESET* Smart Security

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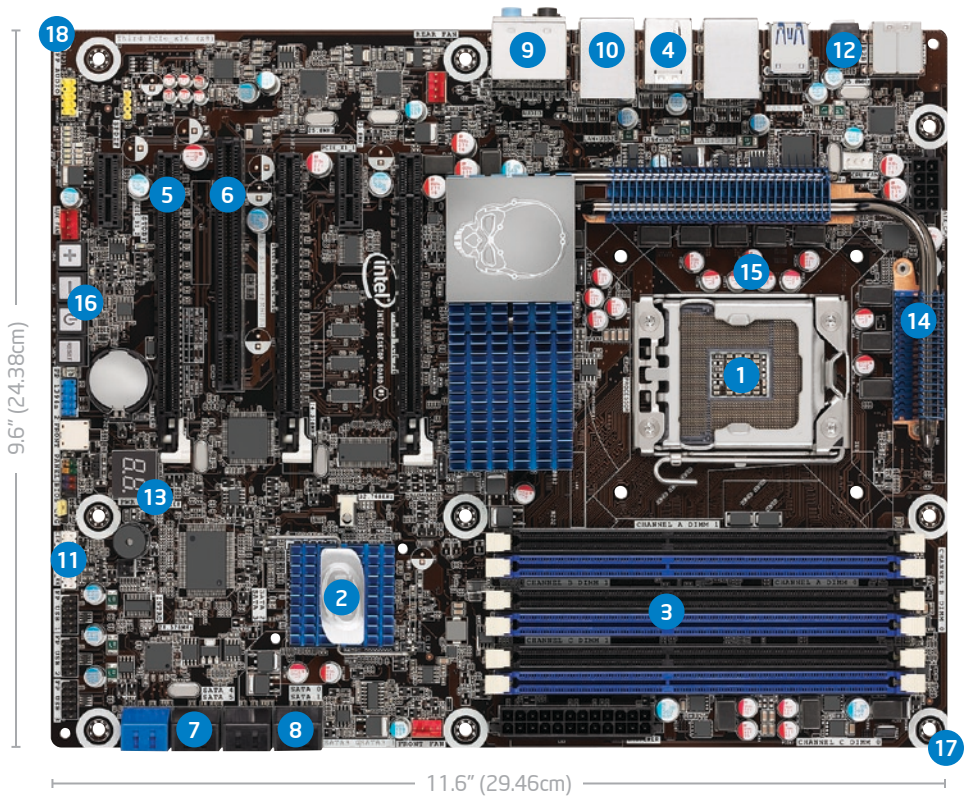
Intel® Desktop Board DX58SO2 Extreme Series
Features and Benefits

1. **Support for the Intel® Core™ i7 processor Extreme Edition in the LGA1366 package:** Supports both four-core and six-core processors. Features Intel® Turbo Boost Technology[4] and Intel® Hyper-Threading Technology[5] for exceptional performance and scalability, and 12 MB shared Intel® Smart Cache, enabling dynamic and efficient allocation of cache.
2. **Intel® X58 Express Chipset with ICH10R:** Features Intel® QuickPath Interconnect (Intel® QPI) to the processor for 25.6 GB/s maximum peak bandwidth.
3. **Six DIMM connectors:** Designed to support overclocked[1] DDR3 1600+[6] / 1333 / 1066 MHz memory, delivering up to 48 GB/s[7] memory bandwidth.
4. **Two SuperSpeed USB 3.0 ports, two IEEE 1394a ports (one external port and one port via internal header), and 12 USB 2.0 ports (six back ports and six ports via three internal headers):** Provides for the most flexible back panel connectivity options.
5. **Three PCI Express* 2.0 x16 connectors:** Improved graphics bandwidth and support for certified triple-card ATI* CrossFireX* and NVIDIA* SLI*.
6. **PCI Express and PCI connectors:** Flexibility to support PCI Express and legacy PCI devices.
7. **Two SATA 6.0 Gb/s ports, six SATA 3.0 Gb/s ports, and two eSATA back ports:** Support for up to ten ports with external SATA capability and the ability to disable individual ports via the Intel® Matrix Storage driver stack.
8. **Intel® Matrix Storage Technology:** Performance and reliability with support for RAID 0, 1, 5, and 10, and new Intel® Rapid Recover Technology.
9. **Ten-channel Intel® High Definition Audio[8] (7.1):** Enables high-quality integrated audio that rivals the performance of high-end discrete solutions.
10. **Dual Intel® Gigabit Ethernet LAN:** Features onboard 10/100/1000 Mb/s Ethernet LAN connectivity.
11. **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.
12. **Back-to-BIOS switch:** Allows easy access to the BIOS for easy overclocking[1] and recovery.
13. **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.
14. **Exclusive voltage regulator thermal solutions:** Provides reliable and silent cooling for extreme performance tuning[1].



15. **Solid-state capacitors and exclusive Maximum ePower processor voltage regulation design:** Maximizes stability and power for advanced performance tuning.
16. **Tweaker switches:** Speed bump, power, and reset switches for overclocking[1] on the go, quick reset, and power on.
17. **ATX Form Factor:** ATX board supports more fully featured tower designs.
18. **Lead-free:** Meets all worldwide regulatory requirements for lead-free manufacturing.

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Intel® Desktop Board DX58SO2 Extreme Series
Technical Specifications

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**

PROCESSOR
Processor Support
- Intel® Core™ i7 processors in the LGA1366 package
- Intel® Turbo Boost Technology[4]
- Intel® Hyper-Threading Technology[5]
- Integrated Memory Controller with support for up to 48 GB[7] of system memory DDR3 +1600[6] / 1333 / 1066 MHz SDRAM
- Intel® Fast Memory Access
- Supports Intel® 64 architecture[9]

CHIPSET
Intel® X58 Express Chipset
- Intel® 82X58 IOH with ICH10R
- Intel® Matrix Storage Manager (RAID 0, 1, 5, 10)
- Two SATA (6.0 Gb/s) ports and 6 SATA (3.0 Gb/s) ports
- Two eSATA (3.0 Gb/s) ports on the back panel

USB PORTS
Integrated Intel® ICH10R controller
- Six Hi-Speed USB 2.0 ports via back panel
- Six additional Hi-Speed USB 2.0 ports via three internal headers
- Two SuperSpeed USB 3.0 ports via NEC controller

System BIOS
- 32 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
- Dual LAN on the back panel
- New low-power design can meet Energy Star* 5.0 specifications

Expansion Capabilities
- Three PCI Express* 2.0 x16 connectors (configured as x16 / x8 / x8 in triple-graphics mode)
- Two PCI Express 2.0 x1 connectors
- One PCI connector

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

SYSTEM MEMORY
Memory Capacity
- Six 240-pin DIMM connectors supporting triple-channel memory. Two double-sided DIMMs per channel.
- Maximum system memory up to 48 GB[7] using 8 GB double-sided DIMMs

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

Memory Modes
- Triple-, 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
- Three 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.

[1] Warning: Altering clock frequency and/or voltage may (i) reduce system stability and useful life of the system 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 warranty, the operation of the processor beyond its specifications.

[2] The Intel® Core Utilities Bundle includes Intel® Integrator Assistant, Intel® Integrator Toolkit, Intel® Express Installer, and Intel® Express BIOS Update.

[3] Intel® Extreme Tuning Utility 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.

[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 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.

[6] Maximum peak memory bandwidth requires three DDR3 modules to be populated in each of the blue memory slots. DDR3 1600 memory 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/ for more details.

[7] 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.

[8] 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

[9] 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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