

# Product Brief

## Development Kit

Embedded Computing



# Intel® Q965 Express Chipset Development Kit

## Product Overview

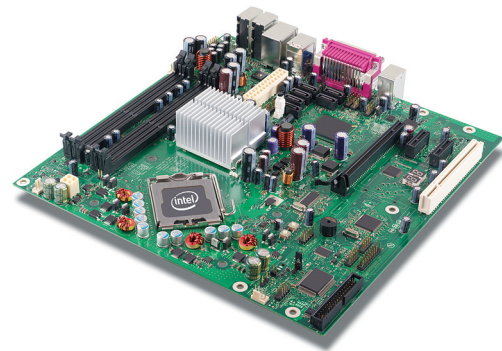
The Intel® Q965 Express chipset development kit delivers outstanding next-generation graphics performance with innovative features for interactive client and embedded computing solutions. It integrates Intel® Graphics Media Accelerator 3000 (Intel® GMA 3000) and PCI Express® x16 external graphics, and supports Intel® Active Management Technology (Intel® AMT)<sup>1</sup> with system defense.

The Intel® Q965 Express chipset platform with LGA-775 package provides scalable performance and an ideal price/performance solution for embedded computing applications. The Intel® Core™2 Duo processor E6400<sup>4</sup> at 2.13 GHz with 1066 MHz front-side bus (FSB) enhances the microarchitecture with Intel® 64 technology (Intel® 64)<sup>5</sup> to support 64-bit computing needs. It meets the current and future demands of high-performance, embedded computing while remaining software-compatible with previous members of the Intel® microprocessor family.

The Intel Q965 Express chipset provides a high-performance dual-channel memory interface delivering significant graphics performance over previous Intel® platforms. With support for dual independent display, enhanced modes for widescreen flat panels, and optimized 3D, embedded platforms based on the Intel Q965 Express chipset development kit can deliver an intense, realistic visual experience without requiring a separate graphics card.

## Product Highlights

- Evaluation board supports:
  - Intel Core 2 Duo processor E6400, Intel® Pentium® 4 processor 651<sup>6</sup> and Intel® Celeron® D processor 352<sup>7</sup>, all with Intel 64 in the LGA-775 socket
  - Intel® 82Q965 Graphics Memory Controller Hub (GMCH) supporting a 533/800/1066 MHz FSB
  - Dual-channel memory interface provides support for up to 8 GB of DDR2-533/667/800 MHz
  - Intel GMA 3000 with VGA out and sDVO support
  - Direct Media Interface for high-speed, chip-to-chip interconnect



- Intel® ICH8 DO I/O Controller Hub
- Intel® PRO/1000 LAN 82566DM Gigabit Ethernet controller
- Super I/O provides legacy floppy, serial and parallel ports, PS/2 mouse and keyboard support
- User-accessible on-board connectors:
  - PS/2 mouse and keyboard
  - Parallel port
  - Serial port header
  - Ten (10) Hi-Speed USB 2.0 ports, including six (6) via front-panel header
  - Six (6) SATA connectors supporting up to 3 Gb/s
  - One (1) floppy connector
  - One (1) conventional PCI bus connector
  - Two (2) PCI Express x1 slot
  - One (1) PCI Express x16 graphics slot (via media expansion card)
  - Four (4) DDR2 DIMM slots
  - One (1) Gigabit (10/100/1000 Mbps) Ethernet connector
  - VGA connector
  - Six (6) audio jacks for Intel® High Definition Audio support
  - Two (2) S/PDIF optical digital audio connectors

## Included in the Kit

- uBTX form factor development board
- Intel Core 2 Duo processor E6400 at 2.13 GHz with 1066 MHz FSB
- uBTX thermal heatsink
- Two (2) 512 MB, DDR2-667 DIMM
- User's manual
- CD including drivers developed by Intel, enabling Windows XP\*, Windows XP Embedded, Windows 2000\*, and Red Hat Enterprise Linux\* v3 WS

## Product Benefits

The Intel Q965 Express chipset development kit, complete with hardware and supporting documentation, provides a fully working product with a range of performance options that can be modified or used immediately for product development.

A validated processor/chipset platform lets software vendors test BIOS and operating system software. This and other development kits from Intel can help reduce design and validation efforts, lower total cost-of-ownership by reducing inventory and manufacturing costs, and facilitate faster time-to-market.

## Software Overview

In order to provide customers with a complete development environment, Intel works to enable the development kit platform to integrate with customer applications and operating systems. Any software/firmware provided in the kit is subject to change without notice. For the most recent updates and more information about the Intel Q965 Express chipset development kit, go to [developer.intel.com/design/intarch/devkits/index.htm](http://developer.intel.com/design/intarch/devkits/index.htm).

## Ordering Information

IPDCDQ965DEVKT

## Intel Access

Embedded Intel® Architecture Home Page:	<a href="http://intel.com/design/intarch">intel.com/design/intarch</a>
Developer's Site:	<a href="http://developer.intel.com">developer.intel.com</a>
Intel in Communications:	<a href="http://intel.com/communications">intel.com/communications</a>
General Information Hotline:	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST
Intel® Literature Center:	(800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.

<sup>1</sup>Intel® Active Management Technology requires a system with an Intel® Q965 Express Chipset with ICH8 DO, Intel® 82566DM with Intel® PRO/1000 PM network connection and appropriate third-party software. The system must be plugged into a power source and connected to a LAN.

<sup>2</sup>Intel® 64 requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64. Processor will not operate (including 32-bit operation) without an Intel® 64-enabled BIOS. Performance will vary depending on your hardware and software configurations. See [www.intel.com/info/em64t](http://www.intel.com/info/em64t) for more information including details on which processors support Intel® 64 or consult with your system vendor for more information.

<sup>3</sup>Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See [http://www.intel.com/products/processor\\_number](http://www.intel.com/products/processor_number) for details.

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