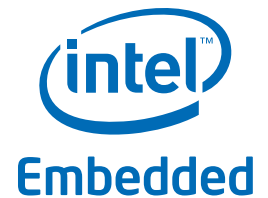


Product Brief

Intel® G41 Express Chipset

Embedded Computing



Intel® G41 Express Chipset for Embedded Computing

The Intel® G41 Express chipset provides an ideal price/performance solution for embedded computing applications needing HD video playback and 3D graphics. When combined with the Intel® Celeron® processor E3400^A or E1500^A this platform enables media-intensive embedded applications such as retail and transaction solutions (point-of-service, ATMs, kiosks, digital signage, transaction terminals), gaming machines and medical appliances.

The chipset consists of the Intel® 82G41 Graphics Memory Controller Hub (GMCH) and Intel® I/O Controller Hub 7 (Intel® ICH7). The GMCH includes the next-generation Intel® Graphics Media Accelerator X4500 (Intel® GMA X4500) with built-in support for smooth high-definition video playback without the need for add-in video cards or decoders. Intel GMA X4500 comes with Intel® Clear Video Technology, which enhances the visual experience with a combination of video-processing hardware and software technologies. The chipset also delivers optimized 3D graphics performance and support for Microsoft DirectX® 10, Shader Model* 4.0 and OpenGL* 2.0.

Product Highlights

- 1333/1066/800 MHz system bus supports Intel Celeron processors E3400 and E1500.
- PCI Express* 1.1 interface provides 8 GB/s bandwidth for platform graphics.
- Updated GMCH backbone architecture improves system performance by optimizing the use of available memory bandwidth and reducing memory access latency.
- Up to 17 GB/s (8.5 GB/s per channel with DDR3 1066 MHz) bandwidth and 4 GB supported memory; up to 12.8 GB/s (6.4 GB/s per channel with DDR2 800 MHz) bandwidth and 8 GB supported memory. Fast system responsiveness and support for 64-bit computing.
- Intel® Flex Memory Technology facilitates easier upgrades by allowing population of different memory sizes while remaining in dual-channel mode.
- Intel Clear Video Technology delivers enhanced high-definition video playback, sharper images with advanced de-interlacing, and ProcAmp color controls.
- Support for DisplayPort* interface with up to 2560 x 1600 resolution, and Digital Video Interface with up to 2048 x 1536 resolution.
- Intel® High Definition Audio¹ features integration audio support, enabling premium digital surround sound and delivering advanced features such as multiple audio streams and jack re-tasking.
- High-speed storage interface supports a faster transfer rate for improved data access, with up to four serial ATA ports delivering up to 3.0 GB/s each.
- Embedded lifecycle support protects system investment by enabling extended product availability for embedded customers.
- Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Embedded and Communications Alliance (intel.com/go/eca), Intel helps cost-effectively meet development challenges and speed time-to-market.



Software Overview

The following independent operating system and BIOS vendors provide support for these platforms:

Operating System

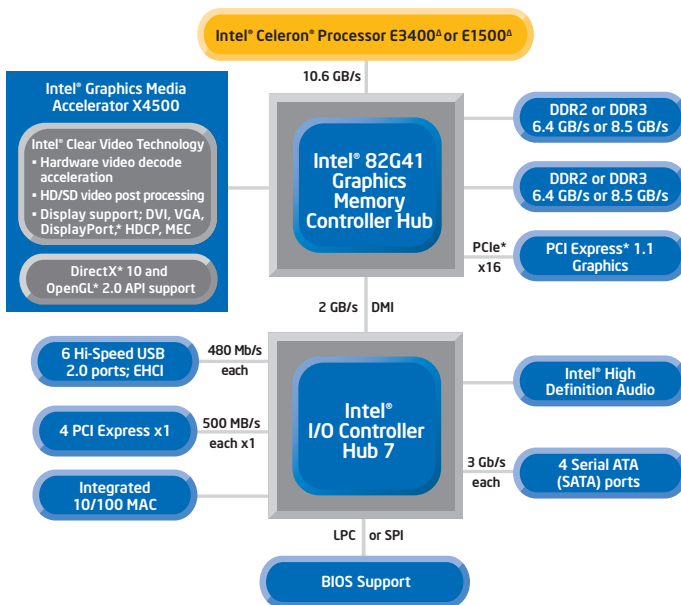
Operating System	Contact
Microsoft Windows* XP	Intel provides drivers ²
Microsoft Windows* Embedded Standard	Intel provides drivers ²
Microsoft Windows* Embedded POSReady	Intel provides drivers ²
Red Hat Enterprise Linux* 5	Red Hat
Novell SUSE Linux* Enterprise 10	Novell
Wind River Linux*	Wind River
Wind River VxWorks* 6.6	Wind River

BIOS

American Megatrends
Insyde Software
Phoenix Technologies

This and other chipsets are supported by the Intel® Embedded Graphics Drivers and video BIOS, developed specifically for embedded products and applications (developer.intel.com/design/intarch/SWsup/graphics_drivers.htm).

For the most recent software updates, please visit downloadcenter.intel.com, and enter the product name.



Intel® G41 Express Chipset Block Diagram

Intel® G41 Express Chipset for Embedded Computing

Product	Product Code	Package	Features
Intel® 82G41 Graphics Memory Controller Hub (GMCH)	AC82G41	34x34 mm 1254 FC-BGA	1333/1066/800 MHz system bus; DDR2 or DDR3 memory; Intel® Graphics Media Accelerator X4500; PCI Express* x16 Gen 1.1
Intel® I/O Controller Hub 7 (Intel® ICH7)	NH82801GB	31x31 mm 676 PBGA	Four PCI Express x1 channels; four SATA ports; six Hi-Speed USB 2.0 ports; EHCI controller; integrated 10/100 MAC

Intel in Embedded and Communications: intel.com/embedded

^a 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 for details.

¹ 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

² Drivers available at: downloadcenter.intel.com (enter chipset name).

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information. The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request. Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order. Copies of documents which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or by visiting Intel's Web Site <http://www.intel.com>.

Copyright © 2009 Intel Corporation. All rights reserved.

Intel, the Intel logo, and Celeron are trademarks of Intel Corporation in the U.S. and other countries.

*Other names and brands may be claimed as the property of others.

