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 or E1500, 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 Audio* 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:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows* XP</td>
<td>Intel provides drivers2</td>
</tr>
<tr>
<td>Microsoft Windows* Embedded Standard</td>
<td>Intel provides drivers2</td>
</tr>
<tr>
<td>Microsoft Windows* Embedded POSReady</td>
<td>Intel provides drivers2</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux* 5</td>
<td>Red Hat</td>
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<td>Novell SUSE Linux* Enterprise 10</td>
<td>Novell</td>
</tr>
<tr>
<td>Wind River Linux*</td>
<td>Wind River</td>
</tr>
<tr>
<td>Wind River VxWorks* 6.6</td>
<td>Wind River</td>
</tr>
</tbody>
</table>

BIOS

American Megatrends
Insysde 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/IntelliDrivers.htm).

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

Intel® G41 Express Chipset for Embedded Computing

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

Intel in Embedded and Communications: intel.com/embedded

1 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.
2 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
3 Drivers available at: downloadcenter.intel.com (enter chipset name).

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