PLATFORM BRIEF
Intel® Celeron® Processor G540 with Intel® C206, Intel® Q67 Express, Intel® B65 Express, and Intel® H61 Express Chipsets
Embedded Computing

Intel® Celeron® Processor G540-Based Platforms for Embedded Computing

Product Overview

Based on 32nm process technology and next-generation Intel® microarchitecture codename Sandy Bridge, the Intel® Celeron® processor G540Δ features dual-core processing with Intel® HD Graphics and Error Correcting Code (ECC) capabilities (when paired with Intel® C206 chipset). It also includes Intel® Virtualization Technology[1] to ease software migration, improve real-time performance and enhance security for embedded systems.

This processor may be paired with any of the following chipsets:

- Intel C206 chipset
- Intel® Q67 Express chipset
- Intel® B65 Express chipset
- Intel® H61 Express chipset

These platform solutions are ideal for embedded market segments such as retail, digital signage, digital surveillance, gaming, medical, communications, print imaging, and industrial automation and control.

The graphics engine is integrated into the same die as the processor, providing a two-chip solution with enhanced graphics performance in a smaller footprint, compared to previous Intel® platforms. The memory controller has also been integrated into the processor for faster performance. While incorporating advanced technology, these processors remain software-compatible with previous IA-32 processors.

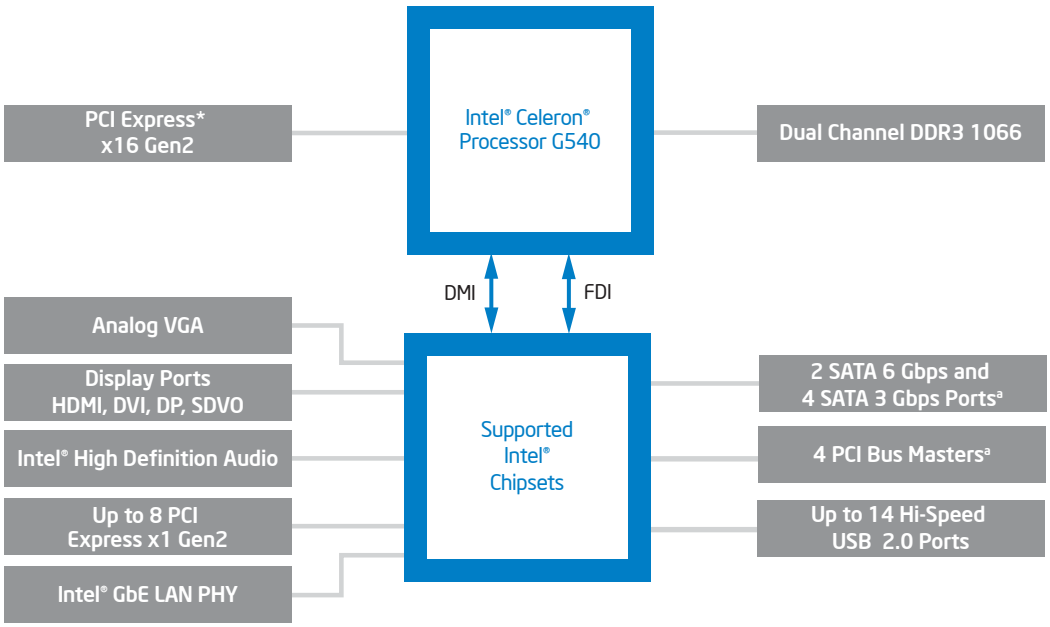
Product Highlights

Intel HD Graphics: Supports enhanced graphics performance and capabilities while reducing overall platform power requirements and footprint.

ECC memory: Corrects memory errors without requiring system reset to enhance performance, uptime and autonomous operation—essential for remote, embedded applications (with Intel C206 chipset).

Intel® Intelligent Power Technology[2]: Reduces power consumption through architectural improvements such as integrated power gates and automated low-power states.

Intel® Virtualization Technology (VT-x): By providing hardware-based assistance for virtualization software, this technology enables creation of multiple virtual machines that run on a single system.



[a] Not available on Intel® H61 Express chipset.

Software Overview

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

OPERATING SYSTEM	CONTACT	BIOS
Microsoft Windows* 7	Intel provides drivers[3]	American Megatrends
Microsoft Windows XP SP3	Intel provides drivers[3]	Insyde Software
Microsoft Windows Embedded Standard 7	Intel provides drivers[3]	Phoenix Technologies
Microsoft Windows Embedded Standard 2009	Intel provides drivers[3]	Byosoft
Microsoft Windows Embedded POSReady 2009	Intel provides drivers[3]	
Red Hat Enterprise Linux* 6.1	Red Hat	
SUSE SLE* 11 SP1	Novell	
Wind River Linux* 3.0	Wind River	
Wind River VxWorks* 6.8	Wind River	

Platform Features and Benefits

FEATURES	BENEFITS
Supports key embedded platform requirements	Ideal for compute-intensive embedded applications.
Extended life cycle product support	Protects system investment by enabling extended product availability for embedded customers.
Embedded ecosystem support	Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Embedded Alliance (intel.com/go/eca), Intel helps to cost-effectively meet development challenges and speed time-to-market.
Intelligent performance	Delivers optimum efficiency by adapting performance to embedded application needs.
Intel® Smart Cache Technology	Large on-die shared last-level cache reduces latency to data, improving performance and power efficiency.
Error Correcting Code memory (with Intel® C206 chipset)	Detects multiple-bit memory errors; locates and corrects single-bit errors to keep the system up and running.
Intel® Intelligent Power Technology[2]	Automated energy efficiency reduces power consumption.
Integrated power gates	Reduces idle processor cores to near zero power when not in use to help conserve power and lower operating costs.
Automated low-power states	Adjusts system power consumption based on real-time processor loads.
Flexible virtualization	Eases software migration, improves real-time performance and enhances security.
Intel® Virtualization Technology (VT-x)[1]	Speeds up the transfer of platform control and the movement of data between the virtual machine monitor (VMM) and other platform agents (including guest OSs). By lowering the workload on the VMM, this technology addresses many embedded system design challenges, like migrating legacy software, increasing real-time performance, and making applications more secure.

Intel® Celeron® Processor G540 for Embedded Computing

PROCESSOR NUMBER	CORES	BASE FREQUENCY	LAST-LEVEL CACHE	THERMAL DESIGN POWER	PACKAGE	ERROR CORRECTING CODE[a]	INTEL® VIRTUALIZATION TECHNOLOGY
Intel® Celeron® Processor G540[Δ]	2	2.50 GHz	2 MB	65 W	LGA1155	YES	YES

[a]When paired with Intel® C206 chipset only.

Supported Intel® Chipsets

PRODUCT	PRODUCT CODE	PACKAGE	FEATURES
Intel® BD82C206 Platform Controller Hub	BD82C206	942 FCBGA	Supports ECC; Includes 6 SATA ports; 14 USB ports; 8 PCI Express* I/O ports
Intel® BD82Q67 Platform Controller Hub	BD82Q67	942 FCBGA	6 SATA ports; 14 USB ports; 8 PCI Express I/O ports
Intel® BD82B65 Platform Controller Hub	BD82B65	942 FCBGA	6 SATA ports; 12 USB ports; 8 PCI Express I/O ports
Intel® BD82H61 Platform Controller Hub	BD82H61	942 FCBGA	4 SATA ports; 10 USB ports; 6 PCI Express I/O ports

Intel in Embedded and Communications: **intel.com/embedded**

[Δ] Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

[1] Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM) and, for some uses, certain computer system software enabled for it. Functionality, performance or other benefits will vary depending on hardware and software configurations and may require a BIOS update. Software applications may not be compatible with all operating systems. Please check with your application vendor.

[2] Intel® Intelligent Power Technology requires a computer system with an enabled Intel® processor, chipset, BIOS and for some features, an operating system enabled for it. Functionality or other benefits may vary depending on hardware implementation and may require a BIOS and/or operating system update. Please check with your system vendor for details.

[3] Drivers available at: downloadcenter.intel.com (enter chipset name).

Performance results are based on certain tests measured on specific computer systems. Any difference in system hardware, software or configurations will affect actual performance. For more information go to http://www.intel.com/performance.

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