

Product Brief

Intel® Celeron® and Intel® Celeron® M Processors on 65nm

Embedded Computing

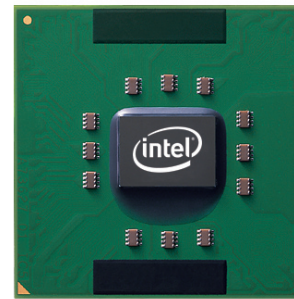
Intel® Celeron® and Intel® Celeron® M Processors on 65nm for Embedded Computing

Product Overview

Intel® Celeron® and Intel® Celeron® M processors, based on 65nm process technology, are available in both standard and ultra low-voltage versions, providing a range of performance, value and power options for thermally sensitive, embedded, communications and storage applications. These high-performance, low-power processors offer several enhancements over previous Intel Celeron and Intel Celeron M processors, creating ideal solutions for small-to-medium business and enterprise communications applications, storage appliances, gaming platforms, and embedded devices. Additionally, they remain software-compatible with previous IA-32 processors.

Product Highlights

- Validated with several Intel® chipsets to provide a variety of platform options:
 - Intel Celeron processor 575^A is validated with the Mobile Intel® GM45 Express chipset and Mobile Intel® GL40 Express chipset. These chipsets feature the Mobile Intel® Graphics Media Accelerator 4500MHD, providing outstanding graphics with 3D rendering performance, making them ideal for embedded applications such as industrial control, interactive clients, gaming platforms, and embedded display systems.
 - Intel Celeron processors 550^A and ULV 573^A are validated with the Mobile Intel® GLE960 and Mobile Intel® GME965 Express chipsets. These chipsets include the Mobile Intel® Graphics Media Accelerator X3100 and Intel® Clear Video Technology.
 - Intel Celeron M processors 530^A, 440^A, and ULV 423^A are validated with the Mobile Intel® 945GME Express chipset which includes an integrated 3D graphics engine based on Intel® Graphics Media Accelerator.
 - Intel Celeron M processors 440 and ULV 423 are also validated with the Intel® 3100 chipset which combines server-class memory and I/O controller functions into a single component, creating the first integrated Intel® chipset specifically optimized for embedded, communications, and storage applications.
- On-die, 1 MB L2 cache with Advanced Transfer Cache (ATC) architecture: ATC delivers a high data throughput channel between the Level 2 cache and processor core.
- Data Prefetch Logic speculatively fetches data to the L2 cache before the L1 cache requests occur, reducing bus cycle penalties. Data Cache Unit Streamer enhances performance of the L2 prefetcher by requesting L1 warm-ups earlier. Write Order Buffer depth is enhanced to help with write-back latency performance.
- New Streaming SIMD Extensions 3 set, featuring 13 new instructions, provides accelerated execution of 3D graphics for entertainment and gaming applications. Features continued support for existing Intel® MMX™ technology and Streaming SIMD Extensions 2.
- Execute Disable Bit, when combined with a supporting operating system, allows memory to be marked as executable or non-executable. If code attempts to run in non-executable memory, the processor raises an error to the operating system. This feature can prevent some classes of viruses or worms that exploit buffer overrun vulnerabilities and can thus help improve the overall security of the system. Please refer to the IA-32 Intel® Architecture Software Developer's Manual for more details (intel.com/products/processor/manuals/index.htm).
- Embedded lifecycle support protects system investment by enabling extended product availability for embedded, storage and communications 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 developers cost-effectively meet design challenges and shorten time-to-market.



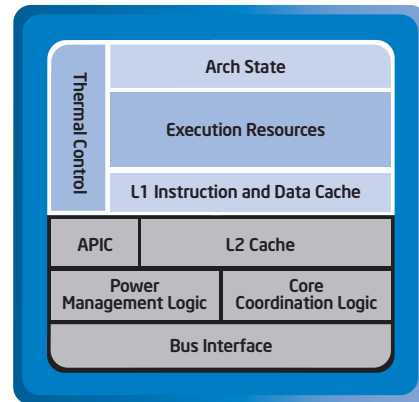
Software Overview

A number of independent operating system and BIOS vendors provide support for these platforms:

Operating System	Contact
Microsoft Windows* XP	Intel provides drivers ¹
Microsoft Windows* XP embedded	Intel provides drivers ¹
Microsoft Windows* WEPOS	Intel provides drivers ¹
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



Block diagram for Intel® Celeron® and Intel® Celeron® M processors on 65nm

Intel® Celeron® and Intel® Celeron® M Processors on 65nm for Embedded Computing

Product Number	Core Speed	Front-Side Bus Speed	L2 Cache	Thermal Design Power	VID	Tjunction	Package
Intel® Celeron® processor 575^A							
LF80537NF0411M	2.0 GHz	667 MHz	1 MB	31 W	0.95 - 1.3 V	0-100° C	478 μFC-PGA
Intel® Celeron® processor 550^A							
LF80537NE0411M	2.0 GHz	533 MHz	1 MB	31 W	0.95 - 1.3 V	0-100° C	478 μFC-PGA
LE80537NE0411M	2.0 GHz	533 MHz	1 MB	31 W	0.95 - 1.3 V	0-100° C	479 μFC-BGA
Intel® Celeron® processor ULV 573^A							
LE80537VE001512	1.0 GHz	533 MHz	512 KB	10 W	0.85 - 0.975 V	0-100° C	479 μFC-BGA
Intel® Celeron® M processor 530^A							
LF80537NE0301M	1.73 GHz	533 MHz	1 MB	31 W	1.25 V	0-100° C	478 μFC-PGA
LE80537NE0301M	1.73 GHz	533 MHz	1 MB	31 W	1.25 V	0-100° C	479 μFC-PGA
Intel® Celeron® M processor 440^A							
LF80538NE0361M	1.86 GHz	533 MHz	1 MB	27 W	1.26 V	0-100° C	478 μFC-PGA
LE80538NE0361M	1.86 GHz	533 MHz	1 MB	27 W	1.26 V	0-100° C	479 μFC-BGA
Intel® Celeron® M processor ULV 423^A							
LE80538VE0041M	1.06 GHz	533 MHz	1 MB	5.5 W	0.94 V	0-100° C	479 μFC-BGA

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 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. UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED NOR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

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 www.intel.com.

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

Copyright © 2009 Intel Corporation. All rights reserved. Intel, the Intel logo, Celeron, and Intel MMX are trademarks of Intel Corporation in the U.S. and other countries.

Printed in USA

0509/KSC/OCG/XX/PDF

♻️ Please Recycle

314731-006US

