

Product Brief

Intel® Celeron® M Processors on 65nm

Embedded Computing



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

Product Overview

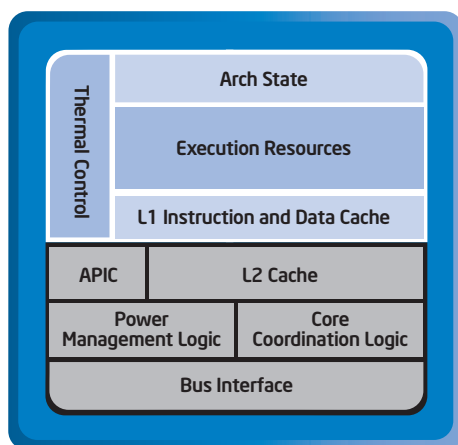
Intel® Celeron® M processors, based on 65nm process technology, are available in both standard and ultra low-voltage versions, providing a range of performance, value and power options for thermally sensitive, embedded, communications and storage applications. These high-performance, low-power processors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

Product Highlights

- A range of performance, value and power options:
 - Intel® Celeron® M processor 530^a at 1.73 GHz core speed with 533 MHz front-side bus (FSB) and 31 W thermal design power (TDP)
 - Intel® Celeron® M processor 440^a at 1.86 GHz core speed with 533 MHz FSB and 27 W TDP
 - Intel® Celeron® M processor Ultra Low Voltage 423^a at 1.06 GHz core speed with 533 MHz FSB and 5.5 W TDP
- All processors validated with the Mobile Intel® 945GME Express chipset, delivering enhanced graphics capabilities. The chipset includes an integrated 3D graphics engine based on Intel® Graphics Media Accelerator 950, and is ideal for embedded applications such as industrial control, interactive clients, gaming platforms, and embedded display systems.
- Intel Celeron M processors 440 and 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. Writer Order Buffer depth is enhanced to help with write-back latency performance.
- New Streaming SIMD Extensions 3 set (SSE3), 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 (SSE2).
- 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® Communications Alliance (intel.com/go/ica), Intel helps developers cost-effectively meet design challenges and shorten time-to-market.



Block diagram for the Intel® Celeron® M processor on 65nm

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® 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-BGA
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 Ultra Low Voltage 423^A							
LE80538VE0041M	1.06 GHz	533 MHz	1 MB	5.5 W	0.94 V	0-100° C	479 µFC-BGA

^AIntel 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.

Intel Access

- Embedded Intel® Architecture Home Page: intel.com/design/intarch
- Developer's Site: intel.com/design
- Intel in Embedded and Communications: intel.com/go/embedded
- 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.

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