

# Product Brief

Intel® Celeron® Processors 1.66 GHz and 1.83 GHz

Embedded Computing



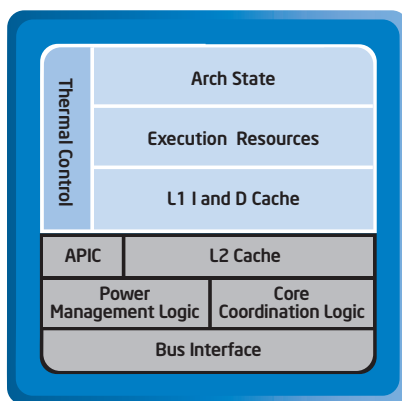
## Intel® Celeron® Processors 1.66 GHz and 1.83 GHz for Embedded Computing

### Product Overview

Intel® Celeron® processors 1.66 GHz and 1.83 GHz are single-core, low-power processors based on Intel's advanced 65-nanometer (nm) process technology, providing performance, value and power options for thermally sensitive, embedded, communications and storage applications. It is fully code compatible with existing Intel® architecture-based 32-bit application software.

These processors are validated with the Intel® E7520 and Intel® 3100 chipsets, enabling reduced power consumption with improved platform reliability and system manageability. Intel's comprehensive processor/chipset validation process enables fast deployment of next-generation platforms to help developers maximize competitive advantage while minimizing development risks.

Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Communications Alliance ([intel.com/go/ica](http://intel.com/go/ica)), Intel helps developers cost-effectively meet design challenges and shorten time-to-market.



Block diagram for the Intel® Celeron® processors 1.66 GHz and 1.83 GHz on 65nm

### Product Highlights

- 667 MHz front-side bus (FSB) and 27 watts thermal design power
- Single-core (uniprocessor support) with 36-bit physical addressing provides a value solution for high-performance, low-power applications
- On-die, 32 KB Level 1 instruction/data caches and 1 MB, ECC protected Level 2 cache with advanced transfer cache
- Data prefetch logic speculatively fetches data to the L2 cache before an L1 cache request occurs, resulting in reduced bus cycle penalties and improved performance; writer order buffer depth is enhanced to help with write-back latency performance
- Streaming SIMD Extensions 3 (SSE3) provide significant performance enhancement for multi-media applications; additional instructions designed to improve thread synchronization, complex arithmetic, graphics, and video encoding
- 667 MHz, source-synchronous FSB supports address, data, and response parity; provides a key reliability and data integrity feature for the communications, storage, and other embedded market segments
- Enhanced 36-bit memory addressing supports up to 16 GB of DDR2 memory when paired with the Intel E7520 chipset or Intel 3100 chipset
- Execute disable bit improves the overall security of the system by preventing viruses or worms that exploit buffer overrun vulnerabilities
- Embedded lifecycle support protects system investment by enabling extended product availability

## Intel® Celeron® Processors 1.66 GHz and 1.83 GHz for Embedded Computing

| Product Number | Core Speed | Front-Side Bus Speed | L2 Cache | Thermal Design Power | VID              | Tjunction | Package     |
|----------------|------------|----------------------|----------|----------------------|------------------|-----------|-------------|
| LF80538KF0281M | 1.66 GHz   | 667 MHz              | 1 MB     | 27W                  | 1.1125V - 1.275V | 100° C    | 478 µFC-PGA |
| LF80538KF0341M | 1.83 GHz   | 667 MHz              | 1 MB     | 27W                  | 1.1125V - 1.275V | 100° C    | 478 µFC-PGA |

### Intel Access

|   |  |
|---|--|
| Embedded Intel® Architecture Home Page: | <a href="http://intel.com/design/intarch">intel.com/design/intarch</a>   |
| Developer's Site:                       | <a href="http://developer.intel.com">developer.intel.com</a>   |
| Intel in Communications:                | <a href="http://intel.com/communications">intel.com/communications</a>   |
| 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)<br>International locations please contact your local sales office. |

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