Product Brief

Intel® Pentium® M Processors on 90nm Process

Embedded Computing

Intel® Pentium® M Processors on 90nm Process with 2 MB L2 Cache

Product Overview

Intel® Pentium® M processors on 90-nanometer (nm) process utilize a new microarchitecture to meet the current and future demands of high-performance, low-power embedded computing, making them ideal for medium-to-large enterprise communications, transaction terminal, interactive client, and industrial automation applications. While incorporating advanced processor technology, they remain software-compatible with previous members of the Intel® microprocessor family.

Intel Pentium M processors on 90nm process are available in both standard and low-voltage versions, providing a variety of performance and power options.

They are validated with the Intel® 3100, Mobile Intel® 915GME Express, Intel® E7520, Intel® E7320, Intel® E7501, and Intel® 855GME chipsets. Each chipset, when paired with the Intel Pentium M processor on 90nm process, helps create a unique platform that addresses a variety of customer requirements.

Product Highlights

- Performance and power options:
  - Intel® Pentium® M processor 760[Δ] at 2.0 GHz core speed and 533 MHz front-side bus (FSB) speed
  - Intel® Pentium® M processor 745[Δ] at 1.8 GHz core speed and 400 MHz FSB speed
  - Intel® Pentium® M processor Low Voltage 738[Δ] at 1.4 GHz core speed and 400 MHz FSB speed
- Support across several chipsets:
  - Mobile Intel 915GME Express and Intel E7520 chipsets support Intel Pentium M processors 760, 745, and 738
  - Intel 3100, Intel E7320, Intel E7501, and Intel 855GME chipsets support Intel Pentium M processors 745 and 738
- A new microarchitecture designed from the ground up:
  - Dedicated hardware stack manager employs sophisticated hardware control for improved stack management
  - Micro-ops fusion for improved instruction execution
  - Advanced branch prediction capability
  - 2 MB Level 2 Advanced Transfer Cache (ATC) delivers a high data throughput channel between the Level 2 cache and the processor core
- Second-generation Streaming SIMD Extensions (Streaming SIMD Extensions 2) capability adds 144 new instructions, including 128-bit SIMD integer arithmetic and 128-bit SIMD double-precision floating-point operation
- Manufactured on state-of-the-art 90nm process technology
- Support for uni-processor designs
- Fully compatible with existing Intel® architecture-based software
- 478 µFC-PGA and 479 µFC-BGA packages
- Embedded life cycle support
- Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Communications Alliance (intel.com/go/ica), Intel helps cost-effectively meet development challenges and speed time-to-market

Features	Benefits
Efficient execution	
▪ Advanced branch prediction ▪ Power optimized processor system bus ▪ Micro-ops fusion ▪ Hardware stack manager	▪ Fast program execution ▪ Low exception handling overhead ▪ Excellent packet manipulation: load, store ▪ Low context switching latency
Power-optimized circuitry	
▪ Cache and processor bus power management ▪ Enhanced Intel SpeedStep® technology	▪ Low average power consumption ▪ Multiple frequency/voltage operating points
Data supply	
▪ Large L1/L2 caches	▪ Fast large-table look-ups: routing tables
High I/O bandwidth	
▪ Intel® 3100, Mobile Intel® 915GME Express, Intel® E7520, and Intel® E7320 chipsets support PCI Express* technology	▪ High packet throughput and processing
Graphics support	
▪ Mobile Intel 915GME Express and Intel® 855GME chipsets provide support via Intel® Extreme Graphics 2 Technology	▪ Cutting-edge graphics performance while reducing system cost

Intel® Pentium® M Processors on 90nm Process

Product Number	Core Speed	Front-Side Bus Speed	L2 Cache	Thermal Design Power	VID	Tjunction	Package
Intel® Pentium® M processor 760[Δ]							
RH80536GE0412M	2.0 GHz	533 MHz	2 MB	27 watts	1.260V-1.356V	0-100° C	478 µFC-PGA
RJ80536GE0412M	2.0 GHz	533 MHz	2 MB	27 watts	1.260V-1.356V	0-100° C	479 µFC-BGA
Intel® Pentium® M processor 745[Δ]							
RH80536GC0332M	1.8 GHz	400 MHz	2 MB	21 watts	1.276V-1.340V	0-100° C	478 µFC-PGA
RJ80536GC0332M	1.8 GHz	400 MHz	2 MB	21 watts	1.276V-1.340V	0-100° C	479 µFC-BGA
Intel® Pentium® M processor Low Voltage 738[Δ]							
RJ80536LC0172M	1.4 GHz	400 MHz	2 MB	10 watts	1.116V	0-100° C	479 µFC-BGA

[Δ] 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.

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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