



Intel® Pentium® M Processor 745 for Embedded Computing

Product Overview

The Intel® Pentium® M processor 745 utilizes a new microarchitecture to meet the current and future demands of high-performance, low-power embedded computing, making it ideal for communications, transaction terminal, interactive client, and industrial automation applications. While incorporating advanced processor technology, it remains software-compatible with previous members of the Intel® microprocessor family.

The Intel Pentium M processor 745 is validated with the Intel® E7501 chipset and the Intel® 855GME chipset. The Intel E7501 chipset expands the processor's performance and I/O bandwidth capability for embedded computing, particularly within the communications market segment. It provides up to 4 GB single- or dual-channel DDR 200 memory, and features configurable, optional Error Correcting Code (ECC) operation.

The Intel 855GME chipset provides up to 2 GB of DDR 333 memory with configurable optional ECC operation. It also offers integrated graphics support via Intel® Extreme Graphics 2 Technology which provides enhanced graphics features including dual independent display support.

Product Highlights

- Available at 1.8 GHz with a 400 MHz processor side bus delivering up to 3.2 GB of data per second into and out of the processor
- Features 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
- µFC-PGA 478 and µFC-BGA 479 packages
- Embedded life cycle support

Intel in
Communications



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The Intel® Pentium® M processor 745/Intel® E7501 chipset platform provides the performance and chipset I/O bandwidth to support multiple Gb Ethernet controllers in ultra-dense environments. The platform enables outstanding instruction execution/watt and is ideal for high-performance blades. The Intel Pentium M processor 745/Intel 855GME chipset platform provides a low-power solution while providing cutting-edge integrated graphics support via Intel Extreme Graphics 2 Technology.

Features

Benefits

Efficient execution <ul style="list-style-type: none"> Advanced branch prediction Power optimized processor system bus Micro-op fusion Hardware stack manager 	<ul style="list-style-type: none"> Fast program execution Low exception handling overhead Excellent packet manipulation: load, store Low context switching latency
Power-optimized circuitry <ul style="list-style-type: none"> Cache and processor bus power management Next-generation Intel SpeedStep® technology 	<ul style="list-style-type: none"> Low average power consumption Multiple frequency/voltage operating points
Data supply <ul style="list-style-type: none"> Large L1/L2 caches 	<ul style="list-style-type: none"> Fast large-table look-ups: routing tables
High I/O bandwidth <ul style="list-style-type: none"> Intel® E7501 chipset supports up to six PCI-X segments 	<ul style="list-style-type: none"> High packet throughput and processing
Graphics support <ul style="list-style-type: none"> Intel® 855GME chipset provides integrated graphics support via Intel® Extreme Graphics 2 Technology 	<ul style="list-style-type: none"> Cutting-edge graphics performance while reducing system cost

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Product Number	Core Speed	External Bus Speed	L2 Cache	Thermal Design Power	VID	Tjunction	Package
RH80536GC0332M	1.8 GHz	400 MHz	2 MB	21 watts	1.276V-1.340V	100° C	µFC-PGA 478
RJ80536GC0332M	1.8 GHz	400 MHz	2 MB	21 watts	1.276V-1.340V	100° C	µFC-BGA 479

Intel Access

Developer's Site:	developer.intel.com
Embedded Intel® Architecture Home Page:	www.intel.com/design/intarch
Intel Technical Documentation Center:	www.intel.com/go/techdoc (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
General Information Hotline:	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

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