



Intel in  
Communications

# Intel® Xeon™ Processor with 512 KB L2 Cache and Low Voltage Intel® Xeon™ Processor for Embedded Computing

## Product Overview

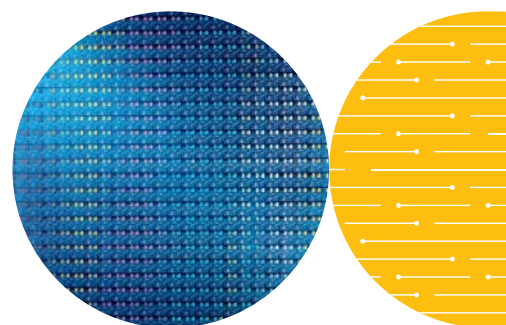
The Intel® Xeon™ processor with 512 KB L2 cache and Low Voltage Intel® Xeon™ processor provide excellent solutions for applications in the communications market segment that require very high levels of processing performance. The Low Voltage Intel Xeon processor has the additional benefit of low thermal design power, making it ideal for thermally sensitive, space-constrained environments. A 512 KB L2 Advanced Transfer Cache, along with the Intel® E7500 chipset and Intel® E7501 chipset, creates a balanced platform designed to deliver unparalleled price-performance, scalability, and flexibility. Intel Xeon processor- and Low Voltage Intel Xeon processor-based products demonstrate compelling value in specific applications like Web-serving, storage (NAS, SAN), search engines, telecommunications servers, network management, security, voice, and load balancing.

## Product Highlights

- Intel NetBurst® microarchitecture delivers new levels of performance and throughput
- Hyper-Threading Technology (HT Technology) enables a single physical processor to execute two separate code streams (called threads) simultaneously
- Intel Xeon processor available at 2.0 GHz, 2.4 GHz and 2.8 GHz
- Low Voltage Intel Xeon processor available at 1.6 GHz, 2.0 GHz, and 2.4 GHz



- Validated with the Intel E7500 chipset and Intel E7501 chipset for high memory bandwidth, high memory capacity, and high I/O bandwidth
- Level 2 Advance Transfer Cache (512 KB) tightly synchronized with the L1 cache and rapid execution engine, improving access times for data
- Level 1 Execution Trace Cache improves throughput and reduces latency
- Rapid Execution Engine provides 2x clock speed for integer computations
- Internet Streaming SIMD Extensions 2 (SSE2) with 144 new instructions
- Extended life cycle support



## Intel NetBurst® Microarchitecture

### The foundation for the Intel Xeon processor and the Low Voltage Intel Xeon processor

Intel NetBurst microarchitecture offers several innovations that allow the Intel Xeon processor and Low Voltage Intel Xeon processor to deliver best-in-class performance in dual-processor configurations. This microarchitecture features higher clock speeds, a 400 MHz or 533 MHz system bus, a Rapid Execution Engine, and an Execution Trace Cache. These features are incorporated specifically to increase performance and throughput on current applications and build headroom to meet current and future performance needs as your business and workloads grow. Specific microarchitecture benefits include:

- Higher clock speeds with future headroom: Faster raw execution provides higher transaction rates and faster response times

- Rapid Execution Engine: 2x clock speed for Arithmetic Logic Units (ALU) operations gives increased performance to compute servers
- Trace Cache: Faster instruction throughput and improved performance by removing decoder latency

## Hyper-Threading Technology

### Immediate Performance Benefits for Embedded Computing Applications

Going beyond GHz (processor core frequency), Intel is changing the landscape of processor design and performance by including simultaneous multi-threading on a processor. Intel's ground-breaking HT Technology, a new on-processor innovation, allows multi-processing applications to execute more than one thread per processor, increasing the throughput of applications and enabling processing to scale to handle future workload requirements.

### Intel® Xeon™ Processor with 512 KB L2 Cache

Product Number	Core Speed (GHz)	External Bus Speed (MHz)	L2 Cache	Thermal Design Power	Voltage	Tcase	Package
RK80532KE072512	2.8	533	512K	74.0W	1.5V	75°C	604-pin FC-mPGA-2p
RK80532KE056512	2.4	533	512K	65.0W	1.5V	74°C	604-pin FC-mPGA-2p
RN80532KC041512	2.0	400	512K	58.0W	1.5V	70°C	603-pin INT3

### Low Voltage Intel® Xeon™ Processor

Product Number	Core Speed (GHz)	External Bus Speed (MHz)	L2 Cache	Thermal Design Power	Voltage	Tcase	Package
RK80532EE056512	2.4	533	512K	40.0W	1.3V	81°C	604-pin FC-mPGA-2p
RK80532EC041512	2.0	400	512K	35.0W	1.3V	83°C	604-pin FC-mPGA-2p
RK80532EC025512	1.6	400	512K	30.0W	1.3V	81°C	604-pin FC-mPGA-2p

## Intel Access

Developer's Site:

[developer.intel.com](http://developer.intel.com)

Embedded Intel® Architecture Home Page:

[developer.intel.com/design/intarch](http://developer.intel.com/design/intarch)

Intel® Technical Documentation Center:

[www.intel.com/go/techdoc](http://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

For more information, visit the Intel Web site at: [developer.intel.com](http://developer.intel.com)

UNITED STATES AND CANADA  
Intel Corporation  
Robert Noyce Bldg.  
2200 Mission College Blvd.  
P.O. Box 58119  
Santa Clara, CA 95052-8119  
USA

EUROPE  
Intel Corporation (UK) Ltd.  
Pipers Way  
Swindon  
Wiltshire SN3 1RJ  
UK

ASIA-PACIFIC  
Intel Semiconductor Ltd.  
32/F Two Pacific Place  
88 Queensway, Central  
Hong Kong, SAR

JAPAN  
Intel Kabushiki Kaisha  
P.O. Box 115 Tsukuba-gakuen  
5-6 Tokodai, Tsukuba-shi  
Ibaraki-ken 305  
Japan

SOUTH AMERICA  
Intel Semicondutores do Brasil  
Rue Florida, 1703-2 and CJ22  
CEP 04565-001 Sao Paulo-SP  
Brazil

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