

AMD Phenom™ II Processor Quick Reference Guide

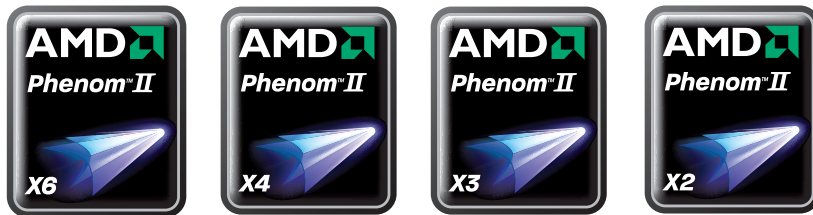
Deliver exceptional multi-core value with superior high definition computing¹, advanced multitasking performance, and innovative, energy efficient solutions.

AMD Phenom™ II X6 Series Processor

AMD Phenom™ II X4 Series Processor

AMD Phenom™ II X3 Series Processor

AMD Phenom™ II X2 Series Processor



Performance

→ **Do It All.** AMD Phenom™ II processors have the power to do it all. With models featuring next-generation six-core design, AMD Phenom™ II processors crush even the most demanding tasks. So design it, render it, play it, create it, stream it, HD it.¹ With AMD Phenom™ II processors, if you can imagine it, you can do it.

Visual Experience

→ **Live Your Life In HD.** AMD Phenom™ II processors support high definition entertainment, gaming, and applications. With AMD Phenom™ II processors as the foundation, you'll enjoy a new level of responsiveness and visual intensity. Your games, photos, videos, and home movies will look better in HD.¹ AMD Phenom II processors support high definition computing — putting it within everyone's reach.

Energy Efficient

→ **Efficient Performance.** AMD Phenom™ II processors complete even the most demanding tasks amazingly fast, so systems can spend less time processing and more time idling. AMD Phenom™ II processors use low power at idle so the time between tasks can work to your advantage. The result is the ability to do more, quickly, with minimal energy. AMD Phenom™ II processors deliver performance headroom with AMD PowerNow™ technology for superior energy efficiency.

PRODUCT FEATURES

- **True Multi-Core Processing** — True multi-core processing enables amazing multitasking to help users run more applications and do more in less time
- **Direct Connect Architecture** — Direct Connect Architecture delivers leading-edge PC system performance
- **Integrated Dual-Channel Memory Controller** — Integrated dual-channel memory controller allows dramatic application performance with superior system throughput and low latency to enable a superior PC experience
- **HyperTransport™ 3.0 Technology** — HyperTransport™ 3.0 technology provides incredible system agility for blistering 3D graphics performance
- **AMD Balanced Smart Cache** — AMD Balanced Smart Cache supports a better multi-tasking and multi-threaded experience
- **AMD Wide Floating Point Accelerator** — AMD Wide Floating Point Accelerator helps improve digital media and 3D gaming experiences
- **AMD Memory Optimizer Technology** — AMD Memory Optimizer Technology helps improve performance of multi-threaded software
- **AMD Digital Media XPress™ 2.0** — AMD Digital Media XPress™ 2.0 enables a more dramatic experience with sharp and life-like 3D graphics
- **AMD Virtualization™ (AMD-V™) Technology** — AMD Virtualization™ (AMD-V™) technology helps virtualization software to run more securely and efficiently
- **AMD PowerNow™ Technology** — AMD PowerNow™ technology enables cool and quiet platform designs by providing extremely efficient performance and energy usage

OPERATING SYSTEM COMPATIBILITY

The AMD Phenom™ II X4, X3, X2 and AMD Athlon™ II X2 processors are designed to be compatible with Windows® 7, Windows Vista® Home Basic, Windows Vista® Business, Windows Vista® Enterprise, Windows Professional, Microsoft® Windows® XP Home Edition, Windows® 98, Windows® ME, Windows® XP Media Center Edition, Linux®, and other PC operating systems. Windows® 7 capable PC configuration required for full Windows® 7 functionality. For more information, visit www.amd.com.

AMD
The future is fusion

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AMD Phenom™ II Product Model Comparisons

Processor	Model	Clock Frequency	System Bus	Package Profile	CMOS Tech	L2 Cache	L3 Cache	TDP	Voltage	Max Temp
AMD Phenom™ II X6	1090T*	3.2GHz	4.0 GT/s	socket AM3	45nm SOI	3MB	6MB	125W	1.125-1.40V	62°C
AMD Phenom™ II X6	1055T	2.8GHz	4.0 GT/s	socket AM3	45nm SOI	3MB	6MB	125W	1.125-1.40V	62°C
AMD Phenom™ II X6	1035T	2.6GHz	4.0 GT/s	socket AM3	45nm SOI	3MB	6MB	95W	1.075-1.375V	71°C
AMD Phenom™ II X4	965	3.4GHz	4.0 GT/s	socket AM3	45nm SOI	2MB	6MB	125W	0.825-1.40V	62°C
AMD Phenom™ II X4	955*	3.2GHz	4.0 GT/s	socket AM3	45nm SOI	2MB	6MB	125W	0.825-1.40V	62°C
AMD Phenom™ II X4	945	3.0GHz	4.0 GT/s	socket AM3	45nm SOI	2MB	6MB	95W	0.85-1.425V	71°C
AMD Phenom™ II X2	555*	3.2GHz	4.0 GT/s	socket AM3	45nm SOI	1MB	6MB	80W	0.875-1.40V	70°C
AMD Phenom™ II X2	550	3.1GHz	4.0 GT/s	socket AM3	45nm SOI	1MB	6MB	80W	0.875-1.40V	70°C
AMD Phenom™ II X2	545	3.0GHz	4.0 GT/s	socket AM3	45nm SOI	1MB	6MB	80W	0.875-1.40V	70°C

AMD Phenom™ II Energy-Efficient Product Model Comparisons

Processor	Model	Clock Frequency	System Bus	Package Profile	CMOS Tech	L2 Cache	L3 Cache	TDP	Voltage	Max Temp
AMD Phenom™ II X4	910e	2.6GHz	4.0 GT/s	socket AM3	45nm SOI	2MB	6MB	65W	0.825-1.25V	70°C
AMD Phenom™ II X4	905e	2.5GHz	4.0 GT/s	socket AM3	45nm SOI	2MB	6MB	65W	0.825-1.25V	70°C
AMD Phenom™ II X3	705e	2.5GHz	4.0 GT/s	socket AM3	45nm SOI	1.5MB	6MB	65W	0.80-1.25V	72°C

¹ Additional hardware/software may be required for full enablement of some features. An HD capable output port is required for HD display and playback. In addition, HD capable graphics (such as ATI Radeon™ Premium Graphics) are recommended for HD computing.
* Also available as Black Edition

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AMD Phenom™ II Processor Product Specifications

Cache Sizes	L1 Cache (Instruction + Data): 128KB x4 (64KB + 64KB for each core) L2 Cache: 512KB x4(quad-core); 512x3 (triple-core); 512x2 (dual-core) L3 Cache: 6MB Shared L3
Process Technology	45-nanometer SOI (silicon-on-insulator) technology
HyperTransport™ technology links	One 16-bit/16-bit link at up to 4000MT/s full duplex; or up to 16.0GB/s I/O bandwidth
Memory	Integrated memory controller up to 21GB/sec dual channel memory bandwidth
Types of Memory	Support for unregistered DIMMs up to PC2 8500 (DDR2-1066MHz) and PC3 10600 (DDR3-1333MHz)
Die Size	45nm = 258mm ²
Packaging	938-pin organic micro Pin Grid Array (micro-PGA)

