

AMD Phenom II X4 940 specifications

The specs can be used for short-term listings on auction and classifieds sites

General information

Type	CPU / Microprocessor
Market segment	Desktop
Family	AMD Phenom II X4
Model number ?	940
CPU part numbers	HDZ940XCJ4DGI is an OEM/tray microprocessor HDZ940XCGIBOX is a boxed microprocessor with fan and heatsink
Stepping codes	AACSC AC CACVC AC CACZC AC
Frequency ?	3000 MHz
Bus speed ?	533 MHz Memory controller One 1800 MHz 16-bit HyperTransport link (3.6 GT/s)
Clock multiplier ?	15
Package	940-pin organic micro-PGA
Sockets	Socket AM2 Socket AM2+
Weight	1.4oz / 38.5g
Introduction date	Jan 8, 2009
Price at introduction	\$275

Architecture / Microarchitecture

Microarchitecture	K10
Platform	Dragon
Processor core ?	Deneb
Core stepping ?	RB-C2
CPUID	100F42
Manufacturing process	0.045 micron silicon-on-insulator (SOI) technology 758 million transistors
Die	258mm ²
Data width	64 bit
The number of CPU cores	4
The number of threads	4
Floating Point Unit	Integrated
Level 1 cache size ?	4 x 64 KB 2-way set associative instruction caches 4 x 64 KB 2-way set associative data caches
Level 2 cache size ?	4 x 512 KB 16-way set associative exclusive caches
Level 3 cache size	Shared 6 MB 48-way set associative cache
Cache latency	3 (L1 cache)
Virtual memory	256 TB
Multiprocessing	Uniprocessor
Extensions and Technologies	MMX instructions Extensions to MMX 3DNow! technology Extensions to 3DNow! SSE / Streaming SIMD Extensions SSE2 / Streaming SIMD Extensions 2 SSE3 / Streaming SIMD Extensions 3 SSE4a ? AMD64 / AMD 64-bit technology ? EVP / Enhanced Virus Protection ? AMD-V / AMD Virtualization technology
Low power features	Cool'n'Quiet 3.0 CoolCore Technology ?

Dual Dynamic Power Management [?](#)
Core C1 and C1E states
Package S0, S1, S3, S4 and S5 states

Integrated peripherals / components

Integrated graphics	None
Memory controller	The number of controllers: 1 Memory channels: 2 Channel width (bits): 72 Supported memory: DDR2-1066 DIMMs per channel: 2 Maximum memory bandwidth (GB/s): 17.1
Other peripherals	HyperTransport 3 technology

Electrical / Thermal parameters

V core ?	1.225V - 1.425V
V NorthBridge	1.15V - 1.3V
Maximum operating temperature ?	55°C - 62°C
Thermal Design Power ?	125 Watt (Socket AM2+/Socket AM3) 139.6 Watt (Socket AM2)

Notes on AMD Phenom II X4 940

The processor has unlocked clock multiplier
On socket AM2+/AM3 platforms in the minimum performance state the processor runs at 800 MHz / 0.875 - 1.15 Volt core voltage, and has TDP 48.8 Watt
On socket AM2 platforms in the minimum performance state the processor runs at 800 MHz / 1.15 Volt core voltage, and has TDP 77 Watt
In pre-launch documents this CPU was referenced as Phenom X4 20550