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Intel Pentium G3420 - CM8064601482522

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Intel Pentium G3420 specifications

Click on links in the blue area. These specs can be used for short-term listings on auction and classified sites

General information

Market segment	Desktop
Family	Intel Pentium Dual-Core
Model number	G3420
CPU part numbers	CM8064601482522 is a OEM/tray microprocessor BX80646G3420 is a boxed processor with fan and heatsink (English version) BX80646G3420 is a boxed processor with fan and heatsink (Chinese version)
Frequency	3.2 GHz / 3200 MHz
Bus speed	5 GT/s Direct Media Interface
Clock multiplier	32
Package	1150-land Flip-Chip Land Grid Array
Socket	Socket 1150 / H3 / LGA1150
Size	1.48" x 1.48" / 3.75cm x 3.75cm
Introduction date	September 1, 2013
End-of-Life date	Last order date is October 23, 2015 Last shipment date is April 8, 2016
Price at introduction	\$75 (OEM) \$82 (box)

S-spec numbers

Part number	Production processors
BX80646G3420	+
BXC80646G3420	+
CM8064601482522	+

Architecture / Microarchitecture

Instruction set	x86
Microarchitecture	Haswell
Processor core	Haswell
Core stepping	C0
Manufacturing process	0.22 micron
Data width	64 bit
The number of CPU cores	2
The number of threads	2
Floating Point Unit	Integrated
Level 1 cache size	2 x 32 KB instruction caches 2 x 32 KB data caches
Level 2 cache size	2 x 256 KB
Level 3 cache size	3 MB
Physical memory	32 GB
Multiprocessing	Uniprocessor
Extensions & Technologies	<ul style="list-style-type: none"> MMX instructions SSE / Streaming SIMD Extensions SSE2 / Streaming SIMD Extensions 2 SSE3 / Streaming SIMD Extensions 3 SSSE3 / Supplemental Streaming SIMD Extensions 3 SSE4 / SSE4.1 + SSE4.2 / Streaming SIMD Extensions 4 EM64T / Extended Memory 64 technology / Intel 64 VT-x / Virtualization technology
Security Features	NX / XD / Execute Disable Bit
Low power features	Enhanced SpeedStep technology

Integrated Graphics Processing Unit

GPU Type	HD (Haswell)
Microarchitecture	Gen 7.5
Execution units	10
Base frequency (MHz)	350
Maximum frequency (MHz)	1100

Integrated peripherals / components

Display controller	3 displays
Memory controller	The number of controllers: 1 Memory channels (per controller): 2 Memory channels (Total): 2 Supported memory: DDR3-1333, DDR3-1600
Other peripherals	<ul style="list-style-type: none"> Direct Media Interface 2.0 PCI Express 3.0 interface

Electrical / Thermal parameters

Maximum operating temperature	72°C
Thermal Design Power	53 Watt

Notes on Intel Pentium G3420

- According to pre-launch documents, the processor has 54 Watt TDP
- Intel's website claims that the maximum GPU frequency is 1150 Mhz

Detailed side-by-side comparison

If you want to compare in detail the Intel G3420 with any other processor from our CPU database please select desired processor using one of the following methods:

- Browse CPUs by: Family Socket Codename Microarchitecture
- Find processor by its name and/or partial specifications:

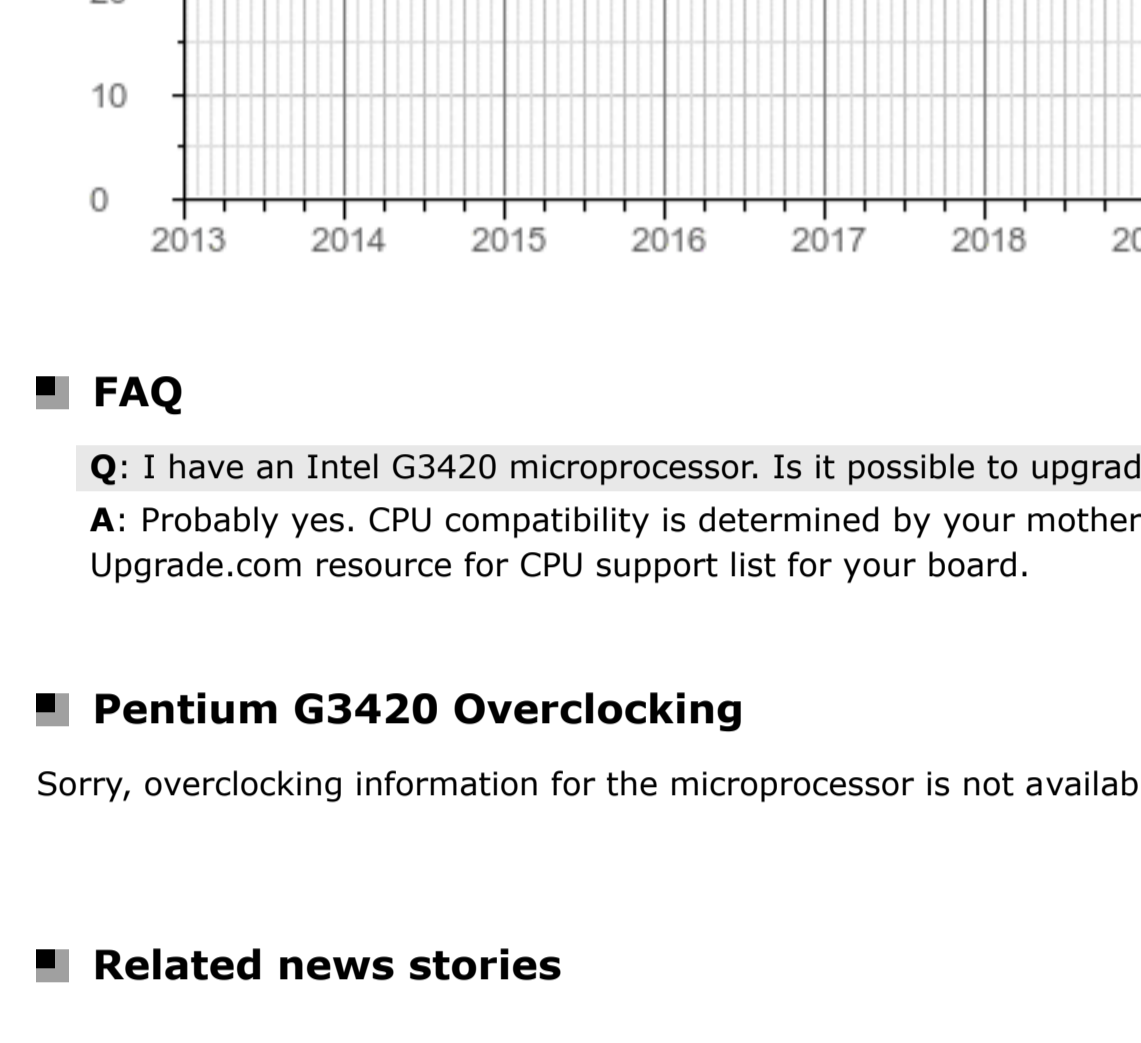
You can specify any of the following: manufacturer name, family name, model number, part number, core name, microarchitecture, manufacturing process, socket name, operating frequency, bus speed, the number of cores and threads, cache size, TDP and GPU type. Here are some examples of searches: G3420, CM8064601482522, Intel Pentium Dual-Core 3.2GHz, Haswell Socket 1150 53 Watt, Haswell 2 cores 2 threads, 0.22 micron 3 MB HD graphics

POPULAR PENTIUM G3420 COMPARISONS

vs G500K	vs G3258
vs F8400	vs G3430
vs G2020	vs G3450
vs G2120	vs G6600
vs G2130	vs I3-3220
vs G2140	vs I3-4150
vs G3240	vs I3-4160
vs G3250	

Historical price chart

The chart below shows official prices of Intel Pentium G3250, G3258, G3260, G3420 and G4400 processors:



FAQ

Q: I have an Intel G3420 microprocessor. Is it possible to upgrade it?
 A: Probably yes. CPU compatibility is determined by your motherboard. Please see CPU-Upgrade.com resource for CPU support list for your board.

Pentium G3420 Overclocking

Sorry, overclocking information for the microprocessor is not available at this time.

Related news stories

Intel launches Haswell Pentium desktop processors
Sep 01, 2013: Intel today introduced new Core i3 and Pentium microprocessors, built on three-month old Haswell architecture. The company also refreshed Core i5, Core i7 and Celeron lines with new Haswell and Ivy Bridge models, and released Xeon E3-1220L v3 model, that was announced in June 2013. Brief specifications, as well as prices of these products are available in the official price list, that was updated last night.
[Read more...](#)

Upcoming Core i3 and Pentium Haswell CPUs are available for pre-order
Aug 19, 2013: At Computex show earlier this year Intel launched first desktop microprocessors, built on Haswell microarchitecture. The initial wave of desktop chips was comprised mostly of quad-core products, priced between \$180 and \$400. The next wave of Haswell processors is coming in September. It is expected that Intel will release full range of Pentium and Core i3 SKUs, that will replace currently available Ivy Bridge-based Pentium and Core i3 models.
[Read more...](#)

Intel desktop and mobile roadmaps leaked
Jul 26, 2013: Yesterday VR-Zone leaked several slides from Intel desktop and mobile roadmaps. The slides do not have much of new information, with the exception of a launch date of Broadwell mobile processors. Last month, we reported that Broadwell mobile CPUs will be available in the first half of 2014. Apparently, the launch was postponed until the second half of the year.
[Read more...](#)

New Intel desktop CPUs to launch in September
Jun 25, 2013: A number of new Haswell desktop processors recently emerged in a leaked Intel roadmap, including Core i7-4771, Core i5-4440, i5-4440S, along with Core i3 and Pentium CPUs. A specifications slide, leaked separately from the roadmap, revealed a few additional low power Haswell SKUs from Core i3 and Pentium Families. According to a screenshot, posted by VR-Zone last Sunday, all aforementioned microprocessors will be launched in September.
[Read more...](#)

Details of Haswell Pentium and Core i3 CPUs surfaced
Jun 16, 2013: Earlier this week we published a story about new Intel desktop roadmap, spotted on insider00.blogspot.it website. After the story was posted, the site added another picture with specifications of all future Haswell-based Core i3 and Pentium microprocessors for socket 1150, including several T1 low-power models, that were not referenced in the original slides. The specs slide also contains details of unreleased Core i5-4440, i5-4440S, i7-4930K, i7-4930K, and i7-4960X SKUs.
[Read more...](#)

Intel desktop roadmap for H2 2013 and H1 2014
Jun 13, 2013: Haswell desktop processors debuted last week, and, as was the case with Sandy Bridge and Ivy Bridge launches, the initial lineup consisted of Core i5 and i7 quad-core models. Less expensive products, such as Core i3 and Pentium CPUs, were expected later this year, but we didn't have much information about specific SKUs up until now. We recently stumbled on a few slides from Intel desktop roadmap, that shed more light on Haswell mid-range lineup.
[Read more...](#)

Intel G3420 Benchmarks and Performance evaluation

Compare Intel G3420 benchmark results with all tested CPUs from one of the following families:

A4-Series

You can also compare this model with other tested CPUs in our [benchmark database](#)

For G3420 charts, comparing multi- and single-threaded performance of this microprocessor with other Pentium Dual-Core processors and the fastest AMD and Intel x86 chips, please visit [Intel Pentium G3420 multi-threaded](#) and [single-threaded](#) benchmarks pages.

For averaged performance in integer, floating-point, SIMD and memory-intensive applications please see the next section.

Integer, Floating-Point, SIMD and Memory performance

The graphs below show up to 10 microprocessors with approximately the same level of performance in integer (CPU), floating-point (FPU), SIMD and memory benchmarks. All processors were not overclocked, and were tested at a nominal frequency, with a stock heatsink and default BIOS settings. Click on the "T" mark next to each model name to see specifications of that model, and details of the test platform.

Benchmarked processor:

CPU ID:	306C3
CPU vendor string:	GenuineIntel
CPU name string:	Intel(R) Pentium(R) CPU G3420 @ 3.20GHz

Integer performance

Model / Part number	Result
Intel Pentium G3430	103.4%
Intel Pentium G3440	103.3%
Intel Pentium G3260	103.2%
Intel Pentium G3258	100.2%
Intel Pentium G3250	100.1%
Intel Pentium G3420	100%
Intel Pentium G3410	97.1%
Intel Core i3-4130T	95.8%
Intel Core i3-2130	95.7%
Intel Core i3-3250	94.8%
Intel Pentium G3220	94%

Floating Point performance

Model / Part number	Result
Intel Pentium G3440	103.5%
Intel Pentium G3430	103.4%
Intel Pentium G2140	102.2%
Intel Pentium G3250	100.2%
Intel Pentium G3258	100.2%
Intel Pentium G3420	100%
Intel Pentium G2130	99.1%
AMD Athlon II X2 270	98.3%
Intel Pentium G3240	97.2%
Intel Pentium G2120	96%
Intel Pentium E6600	95.5%

MMX / SSE / SSE2 performance

Model / Part number	Result
Intel Pentium G3440	103.2%
Intel Pentium E6600	101.6%
Intel Pentium G2130	100.8%
Intel Pentium G3250	100.2%
Intel Pentium G3258	100.1%
Intel Pentium G3420	100%
Intel Celeron G3920	97.9%
Intel Pentium G2120	97.6%
Intel Pentium E6700	97.6%
Intel Pentium G3240	97%
Intel Pentium G870	94.9%

Memory-intensive program performance

Model / Part number	Result
Intel Core i3-3220	102.5%
Intel Core i3-3225	102.3%
Intel Pentium G3250	101.4%
Intel Pentium G3258	101.4%
Intel Core i3-2130	101.3%
Intel Pentium G2140	100%
Intel Core i3-2120	99.7%
Intel Core i3-3210	99.5%
Intel Core i3-2125	99.5%
Intel Pentium G3240	99.3%
Intel Pentium G3245	98.5%

CPU ID information for the Pentium G3420

Detailed characteristics of processor's internals, including x86 instruction set extensions and individual instructions, high- and low-level technologies, are listed below. This list was acquired from an actual Intel Pentium Dual-Core G3420 processor with the help of the x86 CPUID instruction. Any discrepancies between CPUID features and official specifications are likely due to some features being disabled in BIOS, or due to a bug in our CPUID decoding algorithm. Different steppings of Intel processors may also have slightly different features.

Search our [public submissions](#) in our [CPUID database](#).

Use our [CPU identification tool](#) to check features of your processor.

Submission details		
Manufacturer:	Intel	Measured frequency: 3192 MHz
CPU Family:	Pentium Dual-Core	Comment:
Processor Number:	G3420	
Part number (supplied):	CM8064601482522	Submitted by: CPU-World
Part number (guessed):	CM8064601482522	Submitted on:
S-Spec Number:	SR1NB	CWID version: 0.5

General information

Vendor:	GenuineIntel
Processor name (BIOS):	Intel(R) Pentium(R) CPU G3420 @ 3.20GHz
Cores:	2
Logical processors:	2
Processor type:	Original OEM Processor
CPUID signature:	306C3
Family:	6 (06h)
Model:	60 (03Ch)
Stepping:	3 (03h)
TLB/Cache details:	64-byte Prefetching Data TLB: 1-GB pages, 4-way set associative, 4 entries Data TLB: 4-KB Pages, 4-way set associative, 64 entries Instruction TLB: 4-KByte pages, 8-way set associative, 128 entries L2 TLB: 1-MB, 4-way set associative, 64-byte line size Shared 2nd-Level TLB: 4-KByte / 2-MB pages, 8-way associative, 1024 entries

Cache details

Cache	L1 data	L1 instruction	L2	L3
Size:	2 x 32 KB	2 x 32 KB	2 x 256 KB	3 MB
Associativity:	8-way set associative	8-way set associative	8-way set associative	12-way set associative
Line size:	64 bytes	64 bytes	64 bytes	64 bytes
Comments:	Direct-mapped	Direct-mapped	Non-inclusive Direct-mapped	Inclusive Shared between all cores

Supported instructions

Instruction set extensions	Additional instructions
MMX	Advanced BH manipulation
SSE	CFLUSH
SSE2	CMOV
SSE3	CMPXCHG16B
SSSE3	CMPXCHG8B
SSE4.1	Enhanced FPU MOVSB/STOSB
SSE4.2	PXSAVE/PXSTORE
	INVD
	MONITOR/MWAIT
	PCLMULQ
	POPCNT
	RD/WR FSGSBASE instructions
	RDRAND
	RDTSCP
	SYSENTER/SYSEXIT
	XSAVE/XRSTORE states

Integrated features and technologies

Major features	Other features
On-chip Floating Point Unit	1 GB large page support
64-bit / Intel 64	36-bit large-page extensions
NX bit/XD-bit	64-bit debug store
Intel Virtualization	Advanced programmable interrupt controller
Enhanced SpeedStep	CPL, qualified debug store
	Clock modulation duty cycle extension
	Debug store
	Debugging extensions
	Digital Thermal Sensor capability
	LAHF/SAHF support in 64-bit mode
	Machine check architecture
	Machine check exception
	Memory-type range registers
	Model-specific registers
	Package thermal management
	Page attribute table
	Page global extension
	Page-size extensions (4MB pages)
	Pending break enable
	Perfmon and Debug capability
	Physical address extensions
	Process context identifiers
	Self-group
	TSC rate is ensured to be invariant across all states
	Thermal monitor
	Thermal monitor 2
	Thermal monitor and software controlled clock facilities
	Time stamp counter
	Timestamp counter deadline
	Virtual 8086-mode enhancements
	XTPR Update Control

CPUs related to Intel Pentium G3420

This list of related CPUs does not include all models. For the complete list, please see the [related "Haswell" processors for socket 1150](#) page.

Model	Cores / Threads	Frequency	Turbo frequency	L3 cache	TDP	Features
Intel Pentium Dual-Core family, Socket 1150						
Intel Pentium G3440T	2 / 2	2.8 GHz		3 MB	35W	
Intel Pentium G3200T	2 / 2	2.9 GHz		3 MB	35W	
Intel Pentium G3450T	2 / 2	2.9 GHz		3 MB	35W	
Intel Pentium G3420	2 / 2	3.2 GHz		3 MB	53W	
Intel Pentium G3400T	2 / 2	3.2 GHz		3 MB	35W	
Intel Pentium G3240	2 / 2	3.1 GHz		3 MB	53W	
Intel Pentium G3250	2 / 2	3.2 GHz		3 MB	53W	
Intel Pentium G3420	2 / 2	3.2 GHz		3 MB	53W	
Intel Pentium G3258	2 / 2	3.2 GHz		3 MB	53W	Unlock
Intel Pentium G260	2 / 2	3.3 GHz		3 MB	53W	
Intel Pentium G3430	2 / 2	3.3 GHz		3 MB	53W	
Intel Pentium G3440	2 / 2	3.3 GHz		3 MB	53W	
Intel Pentium G3450	2 / 2	3.4 GHz		3 MB	53W	
Intel Pentium G3460	2 / 2	3.5 GHz		3 MB	53W	
Intel Pentium G3470	2 / 2	3.6 GHz		3 MB	53W	
Other families, Haswell micro-architecture, Socket 1150						
Intel Celeron G1830	2 / 2	2.8 GHz		2 MB	53W	
Intel Celeron G1840	2 / 2	2.8 GHz		2 MB	53W	
Intel Celeron G1850	2 / 2	2.9 GHz		2 MB	53W	
Intel Core i3-330	2 / 2	3.2 GHz		4 MB	54W	AES, AVX, AVX2, HT
Intel Core i3-3370	2 / 4	3.8 GHz		4 MB	54W	AES, AVX, AVX2, HT
Intel Core i5-4590	4 / 4	3.5 GHz	3.9 GHz	6 MB	84W	AES, AVX, AVX2, TXT, TBT
Intel Core i5-4590K	4 / 4	3.5 GHz	3.9 GHz	6 MB	88W	AES, AVX, AVX2, TBT, Unlock
Intel Core i7-4790	4 / 8	3.6 GHz	4 GHz	8 MB	84W	AES, AVX, AVX2, HT, TXT, TBT
Intel Core i7-4790K	4 / 8	4 GHz	4.4 GHz	8 MB	88W	AES, AVX, AVX2, HT, TBT, Unlock

- Within each category, the CPUs are sorted from slower (at the top) to faster (at the bottom)
- Background color of specs and features indicate whether they are better or worse than similar specification of the Pentium G3420
- Click on the icon to compare any CPU in the table with the Intel Pentium G3420 (Javascript required).

- Features abbreviations:
 - AES - AES instructions
 - AVX - AVX instructions
 - AVX2 - AVX 2.0 instructions
 - HT - Hyper-Threading
 - TXT - Trusted Execution technology
 - TBT - Dynamic Acceleration / Turbo Boost / Burst Performance
 - Unlock - Unlocked multiplier

Pictures (2)

Posted by: [Andrey](#) 2014-01-19 12:36:48

Posted by: [gshv](#) 2014