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[i5-520M](#)



Intel® Core™ i5-520M Processor
(3M Cache, 2.40 GHz)

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Specifications

[Essentials](#)

[Memory Specifications](#)

[Graphics Specifications](#)

[Expansion Options](#)

[Package Specifications](#)

[Advanced Technologies](#)

Ordering / sSpecs / Steppings

[Ordering / sSpecs / Steppings](#)

[Retired and Discontinued](#)

Compatible Products

[Chipsets](#)

Block Diagrams

Specifications

Essentials

Status	Launched
Launch Date	Q1'10
Processor Number	i5-520M
# of Cores	2
# of Threads	4
Clock Speed	2.4 GHz
Max Turbo Frequency	2.933 GHz
Intel® Smart Cache	3 MB
Bus/Core Ratio	18
DMI	2.5 GT/s
Instruction Set	64-bit
Instruction Set Extensions	SSE4.1, SSE4.2
Embedded Options Available	Yes
Lithography	32 nm
Max TDP	35 W
Recommended Channel Price	\$225.00

Memory Specifications

Max Memory Size (dependent on memory type)	8 GB
Memory Types	DDR3-800/1066
# of Memory Channels	2
Max Memory Bandwidth	17.1 GB/s
Physical Address Extensions	36-bit
ECC Memory Supported	No

Graphics Specifications

Integrated Graphics	Yes
Graphics Base Frequency	500 MHz
Graphics Max Dynamic Frequency	766 MHz

Menu

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Macrovision* License Required	No
Expansion Options	
PCI Express Revision	2.0
PCI Express Configurations	1x16
# of PCI Express Ports	1
Package Specifications	
Max CPU Configuration	1
T _{JUNCTION}	105°C
Package Size	rPGA 37.5mmx 37.5mm, BGA 34mmx28mm
Processing Die Size	81 mm ²
# of Processing Die Transistors	382 million
Graphics and IMC Lithography	45 nm
Graphics and IMC Die Size	114 mm ²
# of Graphics and IMC Die Transistors	177 million
Sockets Supported	BGA1288, PGA988
Low Halogen Options Available	Yes
Advanced Technologies	
Intel® Turbo Boost Technology	Yes
Intel® vPro Technology	Yes
Intel® Hyper-Threading Technology	Yes
Intel® Virtualization Technology (VT-x)	Yes
Intel® Virtualization Technology for Directed I/O (VT-d)	Yes
Intel® Trusted Execution Technology	Yes
AES New Instructions	Yes
Intel® 64	Yes
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Thermal Monitoring Technologies	Yes
Intel® Fast Memory Access	Yes
Intel® Flex Memory Access	Yes
Execute Disable Bit	Yes

Ordering and Spec Information

Ordering and Spec Information

Intel® Core™ i5-520M Processor (3M Cache, 2.40 GHz) FC-PGA10, Tray

Socket	Step	Step TDP	Ordering Code	Spec Code	Low Halogen	VT-x
PGA988	C2	35 W	CP80617004119AE	SLBNB	Yes	Yes
PGA988		35 W	CP80617004119AE	SLBU3	Yes	Yes

Boxed Intel® Core™ i5-520M Processor (3M Cache, 2.40 GHz) FC-PGA10

Socket	Step	Step TDP	Ordering Code	Spec Code	Low Halogen	VT-x
PGA988	C2	35 W	BX8061715520M	SLBNB	Yes	Yes



Compatible Products

Chipsets

Mobile Intel® HM55 Express Chipset

Intel® HM55 Platform Controller Hub
 # of CPUs: 1
 Embedded: Yes
 System Price: \$265
 System TDP: 38.5W

Mobile Intel® HM57 Express Chipset

Intel® HM57 Platform Controller Hub
 # of CPUs: 1
 Embedded: No
 System Price: \$273
 System TDP: 38.5W

Mobile Intel® PM55 Express Chipset

Intel® PM55 Platform Controller Hub
 # of CPUs: 1
 Embedded: No
 System Price: \$265
 System TDP: 38.5W

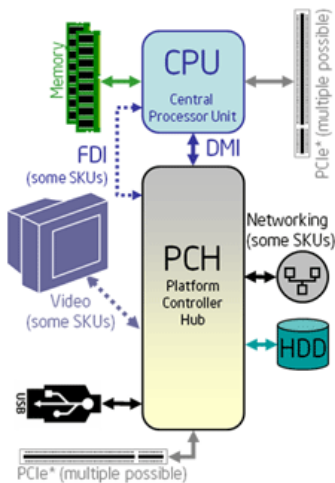
Mobile Intel® QM57 Express Chipset

Intel® QM57 Platform Controller Hub
 # of CPUs: 1
 Embedded: Yes
 System Price: \$273
 System TDP: 38.5W

Mobile Intel® QS57 Express Chipset

Intel® QS57 Platform Controller Hub
 # of CPUs: 1
 Embedded: No
 System Price: \$278
 System TDP: 38.4W

Block Diagrams



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64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

Hyper-Threading Technology (HT Technology) requires a computer system with an Intel® processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/products/ht/hyperthreading_more.htm for more information including details on which processors support HT Technology.

Intel® Virtualization Technology requires a computer system with a processor, chipset, BIOS, virtual machine monitor (VMM) and for some uses, certain platform software, enabled for it. Functionality, performance or other benefit will vary depending on hardware and software configurations. Intel Virtualization Technology-enabled VMM applications are currently in development.

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Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/products/processor_number for details.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

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Low Halogen implies the following:

Bromine and/or chlorine in materials that may be used during processing, but do not remain within the final product are not included in this definition. The halogens fluorine (F), iodine (I), and astatine (At) are not restricted by this standard.

"BFR/CFR and PVC-Free" Definition: :

All PCB laminates must meet Br and Cl requirements for low halogen as defined in IPC-4101B

For components other than PCB laminates, all homogeneous materials must contain < 900 ppm (0.09%) of Bromine [if the Bromine (Br) source is from BFRs] and < 900 ppm (0.09%) of Chlorine [if the Chlorine (Cl) source is from CFRs or PVC. Higher concentrations of Br and Cl are allowed in homogenous materials of components other than PCB laminates as long as their sources are not BFRs, CFRs, PVC.

Although the elemental analysis for Br and Cl in homogeneous materials can be performed by any analytical method with sufficient sensitivity and selectivity, the presence or absence of BFRs, CFRs or PVC must be verified by any acceptable analytical techniques that allow for the unequivocal identification of the specific Br or Cl compounds, or by appropriate material declarations agreed to between customer and supplier.

Max Turbo Frequency refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology, which requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.