# Intel® Core™ i5-4310M Processor

3M Cache, up to 3.40 GHz

## Specifications

Export specifications

### Essentials

| | |
|---|---|
| Product Collection | 4th Generation Intel® Core™ i5 Processors |
| Code Name | Products formerly Haswell |
| Vertical Segment | Mobile |
| Processor Number | i5-4310M |
| Status | Launched |
| Launch Date | Q1'14 |
| Lithography | 22 nm |
| Recommended Customer Price | N/A |

### Performance

| | |
|---|---|
| # of Cores | 2 |
| # of Threads | 4 |
| Processor Base Frequency | 2.70 GHz |
| Max Turbo Frequency | 3.40 GHz |
| Cache | 3 MB SmartCache |
| Bus Speed | 5 GT/s DMI2 |
| TDP | 37 W |

### Supplemental Information

| | |
|---|---|
| Embedded Options Available | No |
| Datasheet | View now |

### Memory Specifications

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|---|---|
| Max Memory Size (dependent on memory type) | 32 GB |

| | |
|---|---|
| Memory Types | DDR3L 1333/1600 |
| Max # of Memory Channels | 2 |
| Max Memory Bandwidth | 25.6 GB/s |
| ECC Memory Supported ‡ | No |

## Processor Graphics

| | |
|---|---|
| Processor Graphics ‡ | Intel® HD Graphics 4600 |
| Graphics Base Frequency | 400 MHz |
| Graphics Max Dynamic Frequency | 1.25 GHz |
| Graphics Video Max Memory | 2 GB |
| Graphics Output | eDP/DP/HDMI |
| Max Resolution (HDMI 1.4)‡ | 3840x2160@60Hz |
| Max Resolution (DP)‡ | 3840x2160@60Hz |
| Max Resolution (VGA)‡ | 2880x1800@60Hz |
| DirectX* Support | 11.2/12 |
| OpenGL* Support | 4.3 |
| Intel® Quick Sync Video | Yes |
| Intel® InTru™ 3D Technology | Yes |
| Intel® Clear Video HD Technology | Yes |
| # of Displays Supported ‡ | 3 |
| Device ID | 0x416 |

## Expansion Options

| | |
|---|---|
| PCI Express Revision | 3 |
| PCI Express Configurations ‡ | 1x16 or 2x8 or 1x8 2x4 |
| Max # of PCI Express Lanes | 16 |

## Package Specifications

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|---|---|
| Max CPU Configuration | 1 |
| T$_{JUNCTION}$ | 100°C |
| Package Size | 37.5mm x 37.5mm x 4.7mm |

## Advanced Technologies

| | |
|---|---|
| Intel® Turbo Boost Technology ‡ | 2.0 |
| Intel® vPro™ Platform Eligibility ‡ | Yes |
| Intel® Hyper-Threading Technology ‡ | Yes |
| Intel® Virtualization Technology (VT-x) ‡ | Yes |
| Intel® Virtualization Technology for Directed I/O (VT-d) ‡ | Yes |
| Intel® VT-x with Extended Page Tables (EPT) ‡ | Yes |
| Intel® TSX-NI | No |
| Intel® 64 ‡ | Yes |
| Instruction Set | 64-bit |
| Instruction Set Extensions | Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2 |
| Enhanced Intel SpeedStep® Technology | Yes |
| Thermal Monitoring Technologies | Yes |
| Intel® Identity Protection Technology ‡ | Yes |

## Security & Reliability

| | |
|---|---|
| Intel® AES New Instructions | Yes |
| Secure Key | Yes |
| Intel® Trusted Execution Technology ‡ | Yes |
| Execute Disable Bit ‡ | Yes |
| Anti-Theft Technology | Yes |

Product Images

Downloads and Software

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Refer to Datasheet for formal definitions of product properties and features.

"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

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.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

See http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading for more information including details on which processors support Intel® HT Technology.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

The Recommended Customer Price ("RCP") is pricing guidance for Intel products. Prices are for direct Intel customers, typically represent 1,000-unit purchase quantities, and are subject to change without notice. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply. If sold in bulk, price represents individual unit. Listing of these RCP does not constitute a formal pricing offer from Intel. Please work with your appropriate Intel representative to obtain a formal price quotation.

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

For benchmarking data see http://www.intel.com/performance.

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/content/www/us/en/processors/processor-numbers.html for details.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.