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Intel® Core™ i5-4590T Processor
(6M Cache, up to 3.00 GHz)

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Specifications

⊖ Essentials

Processor Number	i5-4590T
Status	Launched
Launch Date	Q2'14
Lithography	22 nm
Recommended Customer Price	

⊖ Performance

# of Cores	4
# of Threads	4
Processor Base Frequency	2.00 GHz
Max Turbo Frequency	3.00 GHz
Cache	6 MB SmartCache
Bus Speed	5 GT/s DMI2
TDP	35 W

⊖ Supplemental Information

Embedded Options Available 🔍	Yes
Conflict Free	Yes
Datasheet	Link

⊖ Memory Specifications

Max Memory Size (dependent on memory type)	32 GB
Memory Types	DDR3-1333/1600, DDR3L-1333/1600 @ 1.5V
Max # of Memory Channels	2
Max Memory Bandwidth	25.6 GB/s
ECC Memory Supported ‡ 🔍	No

⊖ Graphics Specifications

Processor Graphics ‡	Intel® HD Graphics 4600
Graphics Base Frequency	350.00 MHz
Graphics Max Dynamic Frequency	1.15 GHz
Graphics Video Max Memory	2 GB
Graphics Output	eDP/DP/HDMI/VGA
Max Resolution (HDMI 1.4)‡	4096x2304@24Hz
Max Resolution (DP)‡	3840x2160@60Hz
Max Resolution (eDP - Integrated Flat Panel)‡	3840x2160@60Hz
Max Resolution (VGA)‡	1920x1200@60Hz
DirectX* Support	11.2/12
OpenGL* Support	4.3
Intel® Quick Sync Video 🔍	Yes
Intel® InTru™ 3D Technology	Yes

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Intel® Core™ i5-4500 Desktop Processor Series

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PCN/MDDS Information

SR1S6
932361: PCN | MDDS

Intel® Wireless Display	Yes
Intel® Flexible Display Interface (Intel® FDI)	Yes
Intel® Clear Video HD Technology	Yes
# of Displays Supported ‡	3
Device ID	0x412

Expansion Options

Scalability	1S Only
PCI Express Revision	Up to 3.0
PCI Express Configurations ‡	Up to 1x16, 2x8, 1x8+2x4
Max # of PCI Express Lanes	16

Package Specifications

Sockets Supported	FCLGA1150
Max CPU Configuration	1
Thermal Solution Specification	PCG 2013A
T_{CASE}	66.35°C
Package Size	37.5mm x 37.5mm
Low Halogen Options Available	See MDDS

Advanced Technologies

Intel® Turbo Boost Technology ‡	2.0
Intel® vPro Technology ‡	Yes
Intel® Hyper-Threading Technology ‡	No
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	SSE4.1/4.2, AVX 2.0
Intel® My WiFi Technology	Yes
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Thermal Monitoring Technologies	Yes
Intel® Identity Protection Technology ‡	Yes
Intel® Stable Image Platform Program (SIPP)	Yes
Intel® Small Business Advantage	Yes

Intel® Data Protection Technology

Intel® AES New Instructions	Yes
Secure Key	Yes

Intel® Platform Protection Technology

OS Guard	Yes
Trusted Execution Technology ‡	Yes
Execute Disable Bit ‡	Yes
Anti-Theft Technology	Yes

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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.

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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   -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.

Low Halogen: Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

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.

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