

Intel Core i5-650 processor 3.2 GHz 4 MB Smart Cache Box

Brand : Intel

Product family: Core

Product code: BX8061615650

Product name : i5-650

Intel® Core™ i5-650 Processor
(4M Cache, 3.20 GHz)

Intel Core i5-650. Processor family: Intel® Core™ i5, Processor socket: LGA 1156 (Socket H), Processor lithography: 32 nm. Memory channels: Dual-channel, Maximum internal memory supported by processor: 16 GB, Memory types supported by processor: DDR3-SDRAM. On-board graphics card model: Intel® HD Graphics, On-board graphics card base frequency: 733 MHz. Market segment: Desktop, PCI Express configurations: 1x16, 2x8, Number of Processing Die Transistors: 382 M. Package type: Retail box



Processor		Features	
Processor manufacturer *	Intel	Physical Address Extension (PAE)	36 bit
Processor generation	Intel® Core™ i5	PCI Express CEM revision	2.0
Processor model *	i5-650	Export Control Classification Number (ECCN)	5A992C
Processor base frequency *	3.2 GHz	Commodity Classification Automated Tracking System (CCATS)	G077159
Processor family *	Intel® Core™ i5	Processor special features	
Processor cores *	2	Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Processor socket *	LGA 1156 (Socket H)	Intel® Turbo Boost Technology	1.0
Component for	PC	Intel FDI Technology	✓
Processor lithography *	32 nm	Intel® Clear Video HD Technology (Intel® CVT HD)	✓
Processor series	Intel Core i5-600 Desktop Series	Intel Dual Display Capable Technology	✓
Processor threads	4	Intel® AES New Instructions (Intel® AES-NI)	✓
System bus rate	2.5 GT/s	Enhanced Intel SpeedStep Technology	✓
Processor operating modes *	64-bit	Intel Trusted Execution Technology	✓
Processor boost frequency	3.46 GHz	Intel Enhanced Halt State	✓
Processor cache	4 MB	Intel VT-x with Extended Page Tables (EPT)	✓
Processor cache type	Smart Cache	Intel Demand Based Switching	✗
Thermal Design Power (TDP)	73 W	Intel 64	✓
Box *	✓	Intel Virtualization Technology (VT-x)	✓
Cooler included *	✓	Intel Virtualization Technology for Directed I/O (VT-d)	✓
VID Voltage Range	0.65 - 1.4 V	Intel® vPro™ Platform Eligibility	✓
Generation	6th Generation	Operational conditions	
Stepping	C2	Maximum operating temperature	72.6 °C
Bus type	DMI	Tcase	72.6 °C
CPU multiplier (bus/core ratio)	24	Technical details	
Memory bandwidth supported by processor (max)	21 GB/s	Born on date	Q1'10
Processor codename	Clarkdale	Bus bandwidth	2.5
Processor ARK ID	43546	Bus type units	GT/s
Memory		Launch date	Q1'10
Maximum internal memory supported by processor	16 GB	Processor cache	4096 KB
Memory types supported by processor	DDR3-SDRAM	Processor core voltage	0.6500-1.4000 V
Memory channels *	Dual-channel		
Graphics			
On-board graphics card *	✓		
On-board graphics card model *	Intel® HD Graphics		
On-board graphics card base frequency	733 MHz		

Graphics		Technical details	
Number of displays supported (on-board graphics)	2	Product name	Intel Core i5-650 (4M Cache, 3.20 GHz)
Features		Product type	Processor
Execute Disable Bit	✓	Status	Discontinued
Idle States	✓	Maximum memory	16.38 GB
Thermal Monitoring Technologies	✗	Processor brand name	Intel Core i5 vPro
Market segment	Desktop	Supported memory types	DDR3-SDRAM
Maximum number of PCI Express lanes	16	Last change	63903513
PCI Express slots version	2.0	Product family	Previous Generation Intel Core i5 Processor
PCI Express configurations	1x16, 2x8	Bus speed	2.5 GT/s
Number of Processing Die Transistors	382 M	Logistics data	
Processing Die size	81 mm ²	Harmonized System (HS) code	8542310001
Number of Graphics & IMC Die Transistors	177 M	Packaging data	
Graphics & IMC Die Size	114 mm ²	Package type	Retail box
Supported instruction sets	SSE4.2	Weight & dimensions	
CPU configuration (max)	1	Processor package size	37.5 x 37.5 mm
Embedded options available	✗	Other features	
Graphics & IMC lithography	45 nm	Maximum internal memory	16.38 GB
		Maximum internal memory	16777 MB
		Cache memory	4 MB



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