



Intel® Core™ i7-3820 Processor

10M Cache, up to 3.80 GHz

Essentials

- Product Collection [Intel® Core™ X-series Processors](#)
- Code Name [Products formerly Sandy Bridge E](#)
- Vertical Segment Desktop
- Processor Number i7-3820
- Status Discontinued
- Launch Date Q1'12
- Lithography 32 nm
- Recommended Customer Price \$305.00

Performance

- # of Cores 4
- # of Threads 8
- Processor Base Frequency 3.60 GHz
- Max Turbo Frequency 3.80 GHz
- Cache 10 MB SmartCache
- Bus Speed 5 GT/s DMI2
- TDP 130 W
- VID Voltage Range 0.600V – 1.350V

Supplemental Information

- Embedded Options Available No
- Datasheet [View now](#)

Memory Specifications

- Max Memory Size (dependent on memory type) 64.23 GB
- Memory Types DDR3 1066/1333/1600
- Max # of Memory Channels 4
- Max Memory Bandwidth 51.2 GB/s
- ECC Memory Supported † No

Expansion Options

- PCI Express Revision 2.0
- Max # of PCI Express Lanes 40

Package Specifications

- Sockets Supported FCLGA2011
- Max CPU Configuration 1
- T_{CASE} 66.8°C
- Package Size 52.5mm x 45.0mm

Advanced Technologies

- Intel® Turbo Boost Technology † 2.0
- Intel® vPro™ Platform Eligibility † No
- 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® 64 † Yes
- Instruction Set 64-bit
- Instruction Set Extensions Intel® SSE4.2, Intel® AVX
- Idle States Yes
- Enhanced Intel SpeedStep® Technology Yes
- Intel® Demand Based Switching No
- Thermal Monitoring Technologies Yes
- Intel® Identity Protection Technology † Yes
- Intel® Smart Response Technology Yes

Security & Reliability

- Intel® AES New Instructions Yes
- Intel® Trusted Execution Technology † No
- Execute Disable Bit † Yes