

# **Intel<sup>®</sup> Core<sup>™</sup> i7 Processor-2610UE**

## **Embedded Application Power Guideline Addendum**

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*July 2012*



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# ***Contents***

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Revision History.....	5
Background.....	6
Disclaimer.....	7
Nomenclature.....	8
Application Power Guidelines.....	9



## ***Figures***

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Figure 1. Application Power Guidelines for the Intel® Core™ i7 Processor-2610UE ..... 10



## ***Revision History***

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<b>Version</b>	<b>Description</b>	<b>Date</b>
001	Initial release	July 2012

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## Background

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This document provides power numbers on the Intel® Core™ i7 Processor-2610UE while running real life applications. This document is complementary to the specs published in the datasheet. The application power guidelines should be used for reference purpose only. These power numbers provided in this document are not design points and should not be used as one.

The specifications contained in this document complement the document in the Reference Documents table.

Information types defined in the Nomenclature section of this document are consolidated into this update document and are no longer published in other documents. Addition information about Applications Power Guidelines is provided the Related Documents table.

## Related Documents

Document Title	Document Number/Location
Embedded Application Power Guideline	<a href="http://edc.intel.com/Link.aspx?id=4025">http://edc.intel.com/Link.aspx?id=4025</a>

## Reference Documents

Document Title	Document Number/Location
2nd Generation Intel® Core™ Processor Family Mobile External Design Specification (EDS), Volume 1	<a href="http://www.intel.com/cd/edesign/library/asm_o-na/enq/445463.htm">http://www.intel.com/cd/edesign/library/asm_o-na/enq/445463.htm</a>
2nd Generation Intel® Core™ Processor Family Desktop, Intel® Pentium® Processor Family Desktop, Intel® Celeron® Processor Family Desktop, 2nd Generation Intel® Core™ Processor Family Mobile, Intel® Pentium® Processor Family Mobile, Intel® Celeron® Processor Family Mobile, and Intel® Xeon® Processor E3-1200 Family External Design Specification – Volume 2	<a href="http://www.intel.com/cd/edesign/library/asm_o-na/enq/445465.htm">http://www.intel.com/cd/edesign/library/asm_o-na/enq/445465.htm</a>

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## ***Disclaimer***

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Values presented represent a typical or average processor SKU and do not guarantee a customer will achieve these exact values for each silicon sample. These values are not intended to replace TDP, nor to be used for reliability assessments. Individual test results may vary.

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## ***Nomenclature***

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APG	Application Power Guidelines
TDP	Thermal Design Power
SKU	Stock Keeping Unit





## ***Application Power Guidelines***

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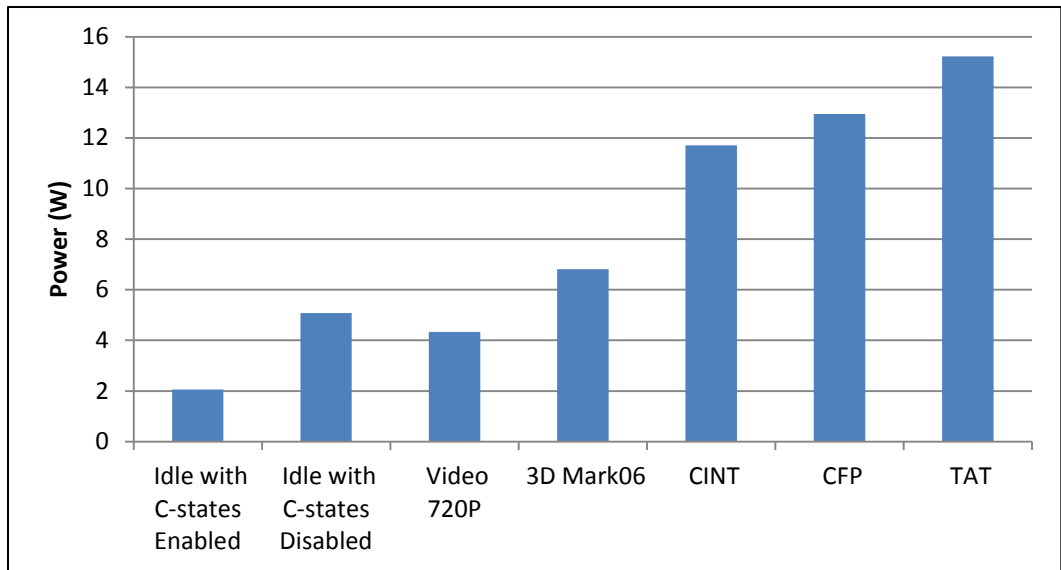
The Application Power Guidelines (APG) numbers listed in this document are intended to reflect the nominal use conditions. Several factors such as temperature, platform configuration and other variables can influence the numbers. Specific information about the platform, benchmarks, temperatures, etc. are provided in this document to enable a repeatable power measurement. Since Application Power Guidelines are provided on limited applications and SKUs, it is expected that users understand these numbers and apply them in their own use cases.



## Application Power Guidelines for the Intel® Core™ i7 Processor -2610UE

Figure 1 indicates the Application Power Guidelines for various embedded applications for the Intel® Core™ i7 Processor-2610UE with a 17W TDP specification.

Figure 1. Application Power Guidelines for the Intel® Core™ i7 Processor-2610UE



Application/Benchmark	Processor Power (W)	Junction Temperature (°C)
Idle with C-states Enabled	2	29
Idle with C-states Disabled	5	31
Elephant's Dream 720P	4	33
3DMark 06	7	34
CINT	12	37
CFP	13	39
TAT	15	42

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.



#### APG Configuration:

The results presented in this document are collected on a single sample. The data has not been post processed to account for part to part variation.

- Platform: Intel® Core™ i7 Processor -2610UE with the Intel® QM67 Express Chipset
- BIOS Rev: SNB86C.0998
- Memory: 2X 1GB DDR3 1xR8 PC3 1333MHz
- Operating System: Windows\* 7x64, Linux Ubuntu\* 11.04 x 64bit
- Windows Benchmarks: TAT (Thermal Analysis tool rev4.2 at 70% IA and 100% Graphics), Video 720P (VLC Player: Elephants Dream 1280x720 Divx), and 3Dmark 06
- Linux Benchmarks: SPEC CPU2006 (CINT.400 Perlbench, CFP.416 Games)
- Intel® Turbo Boost Technology graphics frequency was disabled in the Operating System graphics properties when running all benchmarks including the TDP workload
- A reference heat sink with fan was used while running these benchmarks.
- Application Power Guidelines testing was conducted by Intel Corporation.
- For more information go to <http://www.intel.com/performance>

#### Additional Information:

- In case of conflict the Datasheet supersedes this document.
- Temperature values are mean temperatures measured through the duration of the test.
- APG configuration is provided for repeatability of the test.
- SPEC CPU2006 is one of the most widely used industry standard benchmark for evaluating IA CPU compute capabilities. The CINT benchmark used in this test is 400.Perlbench. The CFP benchmark used in this test is 416.gamess.
- Power Thermal Utility tool (PTU) or Thermal Analysis tool (TAT) are developed by Intel to generate TDP like workloads on a system.
- 3DMark 06 is a 3D game performance benchmark.
- VLC Player is an open source media player.
- Elephants Dream is an open movie, made entirely with open source graphics software.
- The Idle Power reported above is while displaying the Windows Desktop screen.