

Intel[®] Pentium[®] and Celeron[®] N3000 Product Family

Application Power Guidelines Addendum

June 2015



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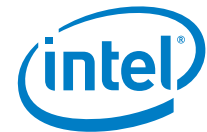
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Revision History

Date	Revision	Description
June 2015	001	Initial release

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1 Introduction

This document provides power data on the Intel® Pentium® and Celeron® N3000 Product Family while running industry standard benchmarks. This document is complementary to the specifications published in the product datasheet, but does not replace the specifications.

The Application Power Guidelines (APG) should be used for reference only. The power data provided in this document are not design points and should not be used as such.

Additional information about APG is provided in the [Table 1](#) Related Documents. Refer to the documents in [Table 1](#) for additional information.

1.1 Related Documents

Table 1. Related Documents

Document Title	Document Number/Location
<i>Application Power Guideline for Intel® Embedded Processors</i>	http://www.intel.com/content/dam/www/public/us/en/documents/white-papers/embedded-appl-power-guideline-paper.pdf
<i>Application Power Guideline Refresh White Paper</i>	554966

1.2 Reference Documents

Table 2. Reference Documents

Document Title	Document No./Location
<i>N-series Intel® Pentium® Processors and Intel® Celeron® Processors – External Design Specification (EDS) – Volume 1 of 3</i>	547869
<i>N-series Intel® Pentium® Processors and Intel® Celeron® Processors – External Design Specification (EDS) – Volume 2 of 3</i>	547870
<i>N-series Intel® Pentium® Processors and Intel® Celeron® Processors – External Design Specification (EDS) – Volume 3 of 3</i>	547871
<i>Braswell M/D Product Design Guide</i>	540602
<i>Braswell Platform Thermal Mechanical Design Guide</i>	541502

NOTE: Contact the local Intel representative for the most recent revision of these documents.



1.3 Terminology

Table 3. Terminology

Term	Description
APG	Application Power Guidelines
HFM	High Frequency Mode
SDP	Scenario Design Power
SKU	Stock Keeping Unit
TDP	Thermal Design Power

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2 Application Power Guidelines

The Application Power Guidelines (APG) data listed in this document are intended to reflect typical use conditions. Factors such as temperature, platform configuration, and other variables can influence power usage. Specific information about the platform and test configurations is provided in this document to enable repeatable power measurement.

2.1 Application Power Guidelines for the Intel® Pentium® and Celeron® N3000 Product Family Processor

Figure 1 indicates the application power guidelines for various embedded applications for the Intel® Pentium® QC N3700 Processor with a 6 W Thermal Design Power (TDP) and 4 W Scenario Design Power (SDP) specification.

Figure 1. Intel® Pentium® QC N3700 Processor Application Power Guidelines

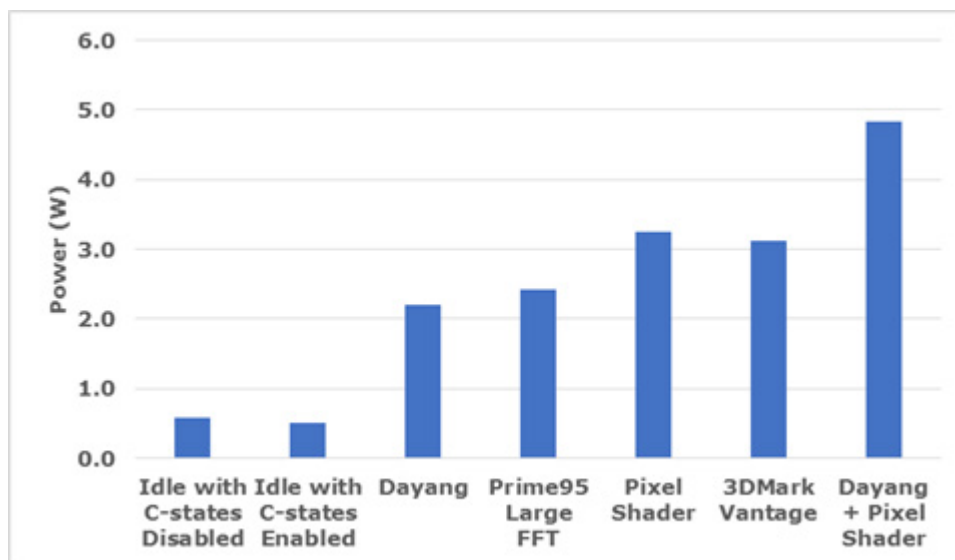
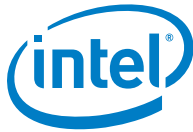


Table 4. Intel® Pentium® QC N3700 Processor Application Power Guidelines

Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Idle with C-states Disabled	0.6	40
Idle with C-states Enabled	0.5	40
Dayang	2.2	55
Prime95	2.4	55



Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Pixel Shader	3.3	55
3DMark Vantage	3.1	55
Dayang + Pixel Shader	4.8	55

- NOTE:** Test 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.
- Processor: Intel® Pentium® QC N3700 Processor (HFM)
 - Platform: Braswell RVP PnP FAB2
 - BIOS Rev.: BSW_SPI_Quad_R10_Production_BRASWEL_X64_R_X059_00_ME-2.0.0.2048
 - Memory: 2x Hynix* 2 GB 1Rx8 DDR3L/1333 MHz
 - Operating System: Windows* 8.1 Enterprise
 - Windows* Benchmarks: Windows* 8 Software: 3DMark06* (Pixel Shader), Prime95* version 28.5.0.0 (large FFT), 3DMark* Vantage (Jane Nash)
 - A thermal head with a set temperature was used while running these benchmarks.

Figure 2 indicates the application power guidelines for various embedded applications for the Intel® Celeron® QC N3150 Processor with a 6 W TDP and 4 W SDP specification.

Figure 2. Intel® Celeron® QC N3150 Processor Application Power Guidelines

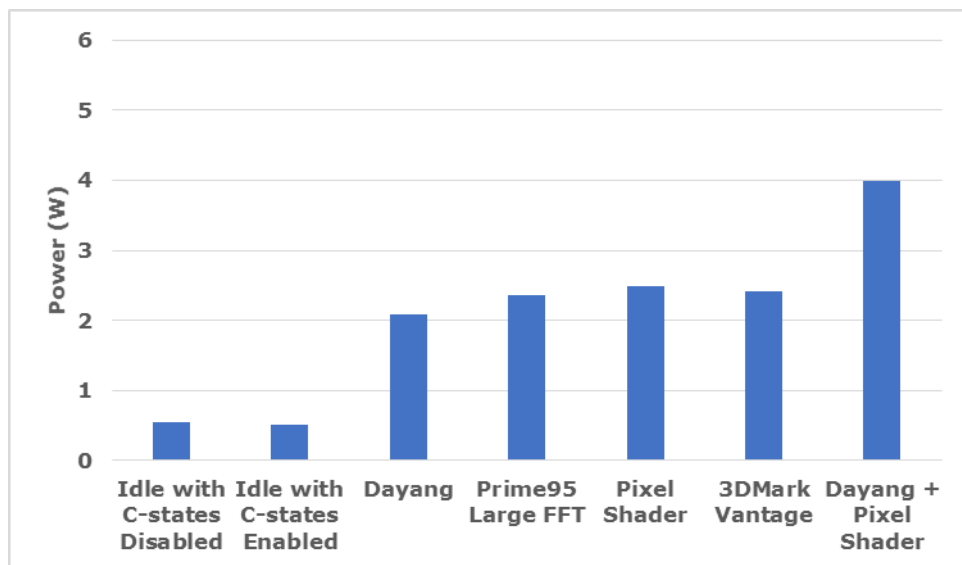
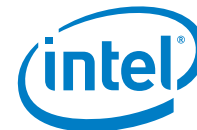


Table 5. Intel® Celeron® QC N3150 Processor Application Power Guidelines

Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Idle with C-states Disabled	0.6	40
Idle with C-states Enabled	0.5	40
Dayang	2.1	55
Prime95*	2.4	55



Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Pixel Shader*	2.5	55
3DMark* Vantage	2.4	55
Dayang + Pixel Shader*	4.0	55

NOTE: Test 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.

- Processor: Intel® Celeron® QC N3150 Processor (HFM)
- Platform: Braswell RVP PnP FAB2
- BIOS Rev.: BSW_SPI_Quad_R10_Production_BRASWEL_X64_R_X059_00_ME-2.0.0.2048
- Memory: 2x Hynix* 2 GB 1Rx8 DDR3L/1333 MHz
- Operating System: Windows* 8.1 Enterprise
- Windows* Benchmarks: Windows* 8 Software: 3DMark06* (Pixel Shader), Prime95 version 28.5.0.0 (large FFT), 3DMark Vantage* (Jane Nash)
- A thermal head with a set temperature was used while running these benchmarks.

Figure 3 indicates the Application Power Guidelines for various embedded applications for the Intel® Celeron® DC N3050 Processor with a 6 W TDP and 4W SDP specification.

Figure 3. Intel® Celeron® DC N3050 Processor Application Power Guidelines

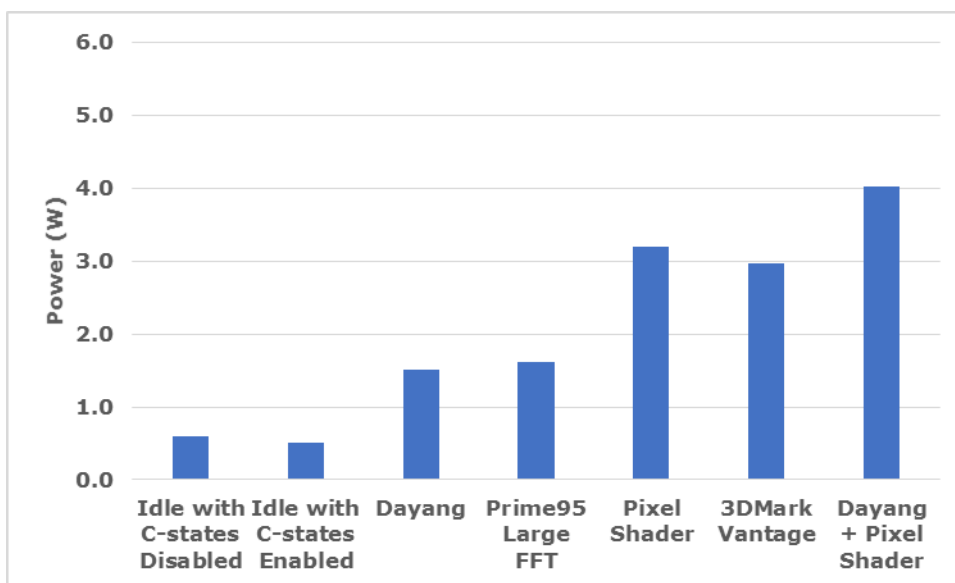
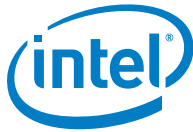


Table 6. Intel® Celeron® DC N3050 Processor Application Power Guidelines

Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Idle with C-states Disabled	0.6	40
Idle with C-states Enabled	0.5	40
Dayang	1.5	55
Prime95*	1.6	55



Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Pixel Shader	3.2	55
3DMark Vantage*	3.0	55
Dayang + Pixel Shader	4.0	55

NOTE: Test 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.

- Processor: Intel® Celeron® DC N3050 Processor (HFM)
- Platform: Braswell RVP PnP FAB2
- BIOS Rev.: BSW_SPI_Quad_R10_Production_BRASWEL_X64_R_X059_00_ME-2.0.0.2048
- Memory: 2x Hynix* 2 GB 1Rx8 DDR3L/1333 MHz
- Operating System: Windows* 8.1 Enterprise
- Windows Benchmarks: Windows 8 Software: 3DMark06* (Pixel Shader), Prime95* version 28.5.0.0 (large FFT), 3DMark Vantage* (Jane Nash)
- A thermal head with a set temperature was used while running these benchmarks.

Figure 4 indicates the application power guidelines for various embedded applications for the Intel® Celeron® DC N3000 Processor with a 4 W TDP and 3 W SDP specification.

Figure 4. Intel® Celeron® DC N3000 Processor Application Power Guidelines

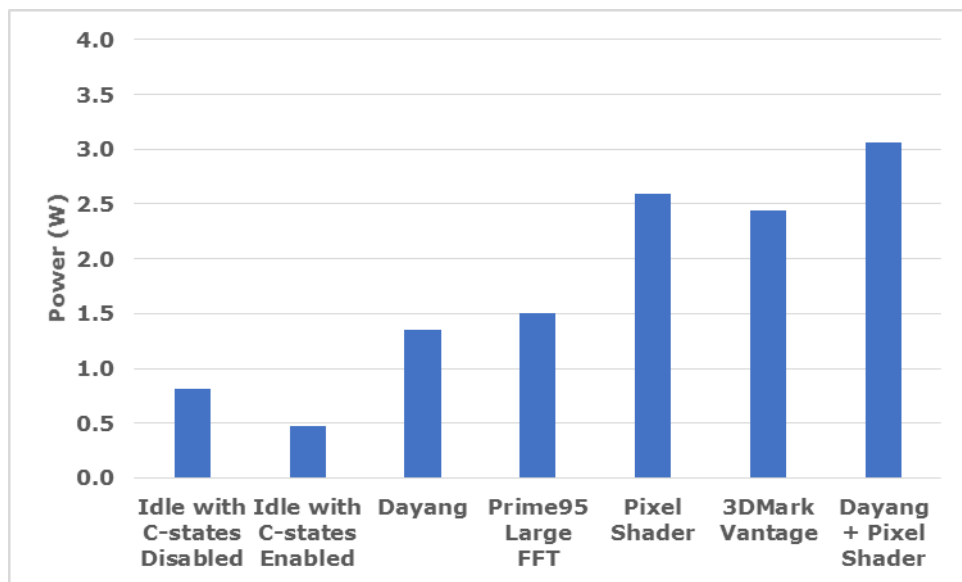


Table 7. Intel® Celeron® DC N3000 Processor Application Power Guidelines

Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Idle with C-states Disabled	0.8	40
Idle with C-states Enabled	0.5	40
Dayang	1.3	55
Prime95	1.5	55



Application/Benchmark	SoC Power (W)	SoC Temperature (°C)
Pixel Shader	2.6	55
3DMark Vantage	2.4	55
Dayang + Pixel Shader	3.1	55

NOTE: Test 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.

- Processor: Intel® Celeron® DC N3000 Processor (HFM)
- Platform: Braswell RVP PnP FAB2
- BIOS Rev.: BSW_SPI_Quad_R10_Production_BRASWEL_X64_R_X059_00_ME-2.0.0.2048
- Memory: 2x Hynix* 2 GB 1Rx8 DDR3L/1333 MHz
- Operating System: Windows* 8.1 Enterprise
- Windows* Benchmarks: Windows* 8 Software: 3DMark06* (Pixel Shader), Prime95* version 28.5.0.0 (large FFT), 3DMark Vantage* (Jane Nash)
- A thermal head with a set temperature was used while running these benchmarks.

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3 Configuration and Disclaimer

The Application Power Guidelines (APG) data represents a typical or average processor SKU and does not include part-to-part power variation. The APG data is not intended to replace the TDP, or to be used for reliability assessments. Individual test results may vary.

Software and workloads used in the performance tests may have been optimized for performance only on Intel processors. 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. Consult other information and performance tests to assist in fully evaluating contemplated purchases, including the performance of that product when combined with other products.

3.1 APG Configuration

- Platform: Braswell RVP PnP FAB2
- BIOS Rev.: BSW_SPI_Quad_R10_Production_BRASWEL_X64_R_X059_00_ME-2.0.0.2048
- Memory: 2x Hynix* 2 GB 1Rx8 DDR3L/1333 MHz
- Operating System: Windows* 8.1 Enterprise
- Windows* Benchmarks: Windows* 8 Software: 3DMark06* (Pixel Shader), Prime95* v28.5.0.0 (large FFT), 3DMark Vantage* (Jane Nash)
- A thermal head with a set temperature was used while running these benchmarks.
- APG testing was conducted by the Intel Corporation.
- Core and Graphics Turbo Disabled in BIOS
- For more information, go to <http://www.intel.com/performance>.

3.2 Additional Information:

- In case of conflict, the datasheet supersedes this document.
- The temperature values are mean temperatures set and measured through the duration of the test.
- The idle power reported above is measured displaying the Windows desktop screen while in the balanced power plan.
- 3DMark06* is a 3D game performance benchmark. Power was measured while running a feature test "Pixel Shader" at resolution 1280x1024.
- 3DMark Vantage* is a 3D game performance benchmark. Power was measured while running a graphics test "Jane Nash" at resolution 1280x1024 with default settings.



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