ENERGY STAR® Power and Performance Data Sheet

Model Name: MAGNIA R3510a

System Characteristics

Form Factor	2 socket rack server
Available Processor Sockets	2
Available DIMM Slots / Max Memory Capacity	24slots / 768GB max.
ECC and/or Fully Buffered DIMMs	DDR3-1600 ECC DIMMs
Available Expansion Slots	3 slots
Minimum and Maximum # of Hard Drives	Min: 1unit ; Max: 8units
Redundant Power Supply Capable?	Yes
Power Supply Make and Model	Delta Electronics DPS-800QB A
Power Supply Output Rating* (watts)	800W
Minimum and Maximum # of Power Supplies	1 to 2
Input Power Range (AC or DC)	115Vac and 230Vac
Power Supply Efficiency at Specified Loadings*	87.40@10%, 91.67@20%, 94.09@50%, 91.95@100%
Power Supply Power Factor at Specified Loadings*	0.89@10%,0.96 @20%, 0.99@50%, 0.99@100%
Operating Systems Supported	Microsoft Windows Server 2008 R2 Standard Microsoft Windows Server 2008 R2 Enterprise etc.
Installed Operating System for Testing	Microsoft Windows Server 2008 R2 Standard

*** Note: Power supply information is for a single power supply only**

System Configurations

	Minimum	Typical	Maximum
Configuration ID	SYU4570C	SYU4570C	SYU4570C
Processor Information	Intel Xeon E5-2640 2.50GHz x2	Intel Xeon E5-2640 2.50GHz x2	Intel Xeon E5-2640 2.50GHz x2
Memory Information	DDR3-1600 2GB x4	DDR3-1600 32GB x8	DDR3-1600 32GB x24
Internal Storage	SATA 6Gbps 7200rpm 250GB x1	SAS 6Gbps 10000rpm 900GB x3	SAS 6Gbps 10000rpm 900GB x8
I/O Devices	None	SAS Raid Card x1	SAS Raid Card x1 SAS HBA card x1 Ethernet card x1
Power Supply Number and Redundancy Configuration	Delta DPS-800QA 800W x1	Delta DPS-800QA 800W x2	Delta DPS-800QA 800W x2
Management Controller or Service Processor Installed?	Yes	Yes	Yes
Other Hardware Features / Accessories			

Power Data

	Minimum	Typical	Maximum
Idle Category (1S and 2S only)	Category D: Managed Dual Installed Processor (2P) Servers		
ENERGY STAR Idle Power Allowance (1S and 2S only)	150W	714W	1790W
Measured Idle Power (watts)	84.1	144.7	231.4
Power at Full Load* (watts)	179.3	240.3	336.9
Benchmark / Method Used for Full Load Test	Use SiSoftware Sandra Engineer (.NET Multi-Media)		
Test Voltage and Frequency for Idle and Full Load Test	230V / 60Hz		
Range of Total Estimated Energy Usage ** (kWh/year)	1,473 to 3,141	2,535 to 4,209	4,055 to 5,902
Link to Detailed Power Calculator (if available)			

*** Note: Full load power represents the sustained, average power at 100% load of the given workload, and does not necessarily represent the absolute peak power or the highest average, sustained power possible for other workloads.**

**** Note: Estimated kWh/year gives the absolute range of energy use a user could expect from continuous operation (24x7x365) and ranges from 100% Idle usage to 100% full load operation. The calculation also includes typical data center overhead at a ratio of 1 watt of overhead to every 1 watt of IT load (corresponding to a PUE of 2.0). Closer approximations may be found by using established power calculators and specific information about the intended operating environment (e.g., average time at Idle, data center PUE, etc.).**

Power and Performance for Benchmark #1

Benchmark #1	Minimum	Typical	Maximum
Benchmark Used and Type of Workload	SiSoftware Sandra Engineer (.NET Multi-Media)		
Avg. Power Measured During Benchmark Run	179.3W	240.3W	336.9W
Benchmark Performance Score	65.2Mpixel/s	65Mpixel/s	64.5Mpixel/s
Power Performance Ratio (perf score/avg. power)	0.36	0.27	0.19
Link to Full Benchmark Report (Where Available)	N/A	N/A	N/A

Power and Performance for Benchmark #2 (optional)

Benchmark #2	Minimum	Typical	Maximum
Benchmark Used and Type of Workload			
Avg. Power Measured During Benchmark Run			
Benchmark Performance Score			
Power Performance Ratio (perf score/avg. power)			
Link to Full Benchmark Report (Where Available)			

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Power Saving Features	***Enabled on Shipment***	***End-User Enabling Required***
Processor Dynamic Voltage and Frequency Scaling	**Yes**	**No**
Processor or Core Reduced Power States	**Yes**	**No**
Power Capping	**No**	**Yes**
Variable Speed Fan Control Based on Power or Thermal Readings	**Yes**	**No**
Low Power Memory States	**No**	**No**
Low Power I/O States	**No**	**No**
Liquid Cooling Capability	**No**	**No**
Other1:		
Other2:		
Other3:		
Other4:		

Power and Temperature Measurement and Reporting

Input Power Available & Accuracy?	Yes, +/- 5% for 80W~800W, +/-10W for ~100W
Input Air Temp Available & Accuracy?	Yes, +/- 2(˚c)
Processor Utilization Available?	Yes
Other Data Measurements Available & Accuracy?	
Compatible Protocols for Data Collection	IPMI
Averaging method and time period	Non Averaging, 1 sec. interval sampling.

Thermal Information*	***Minimum***	***Typical***	***Maximum***
Total Power Dissipation (watts)	179.3	240.3	336.9
Delta Temperature at Exhaust at Peak Temp. (˚C)	3.1	5.4	8.1
Airflow at Maximum Fan Speed (CFM) at Peak Temp.	96.4	87.6	76.0
Airflow at Nominal Fan Speed (CFM) at Nominal Temp.	36.0	33.1	29.7

* References: ASHRAE Extended Environmental Envelope Final August 1, 2008
Thermal Guidelines for Data Processing Environments, ASHRAE, 2004, ISBN 1-931862-43-5
Peak temperature is defined as 35 ˚C, Nominal Temperature is defined as 18 - 27 ˚C

Notes

1. SPECpower_ssj2008 is a registered trademark of the Standard Performance Evaluation Corporation (SPEC). Benchmark results stated above reflect results published on XX/XX/XX. For the latest SPECpower_ssj2008 benchmark results, visit http://www.spec.org/power_ssj2008.

ENERGY STAR Qualified Configurations

Include specific information on ENERGY STAR Qualified SKUs or configurations

Qualified Configuration ID: SYU4570C

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ENERGY STAR Qualified Configurations (Continued)

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