AM335x Power Consumption Summary

CAUTION Data presented in this wiki was collected on an unsupported version of the SDK, and is provided for legacy purposes. For most recent data, please refer to the TI Processor SDK Kernel Performance Guide, Power Management section

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Overview[edit]

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Note: the power consumption data in this Wiki was last collected on May 15, 2013

The AM335x Power Consumption Summary discusses the power consumption for common system application usage scenarios for the AM335x ARM® Cortex™-A8 Microprocessors (MPUs). The metrics contained in this document serve to give users a better understanding of AM335x active power behaviors -- making it easier to determine a suitable configuration to meet a given power budget. Power consumption is highly dependent on the individual user's application; however, this document focuses on providing several AM335x application-usage case scenarios and the environment settings that were used to perform such power measurements. This collection of real power measurements was measured on an AM335x GP EVM with a high-precision digital multimeter.

For additional details about the AM335x processor, please visit the TI.com product page.

Power Measurement Setup[edit]

The power measurements have been performed on the following platform:

- Texas Instruments AM335x 15x15 GP EVM
  - Base Board Revision : 1.2A ("DDR2")
  - Base Board Revision : 1.5A ("DDR3")
  - General Purpose Daughterboard Revision : 1.2B
  - LCD Board Revision : 1.3A

Base Board SW3 settings

Switch	1	2	3	4	5	6	7	8
State	OFF	ON	ON	ON	ON	ON	ON	ON

Base Board SW4 settings

Switch	1	2	3	4	5	6	7	8
State	ON	ON	ON	ON	ON	ON	OFF	ON

- Keithley 2701 DMM with a 7702 40-channel mux module.
- All tests were not conducted in a controlled environment. The ambient room temperature was ~25C.

AM335x Power Supplies[edit]

The following table describes the power supplies for AM335x:

AM335x Power Supply rails		
SIGNAL	**DESCRIPTION**	**VALUE**
VDD_CORE	Core domain	0.95V - 1.1V
VDD_MPU *	MPU domain	0.95V - 1.325V
VDDS_RTC	RTC domain	1.8V
VDDS_DDR	DDR IO domain (DDR2 / DDR3)	1.8V / 1.5V
VDDS	Dual voltage IO domains	1.8V
VDDS_SRAM_CORE_BG	Core SRAM LDOs, Analog	1.8V
VDDS_SRAM_MPU_BB	MPU SRAM LDOs, Analog	1.8V
VDDS_PLL_DDR	DPLL DDR, Analog	1.8V
VDDS_PLL_CORE_LCD	DPLL Core and LCD, Analog	1.8V
VDDS_PLL_MPU	DPLL MPU, Analog	1.8V
VDDS_OSC	System oscillator IOs, Analog	1.8V
VDDA1P8V_USB0/1	USB PHY, Analog, 1.8V	1.8V
VDDA3P3V_USB0/1	USB PHY, Analog, 3.3V	3.3V
VDDA_ADC	ADC, Analog	1.8V
VDDSHV1	Dual Voltage IO domain	1.8/3.3V
VDDSHV2 *	Dual Voltage IO domain	1.8/3.3V
VDDSHV3 *	Dual Voltage IO domain	1.8/3.3V
VDDSHV4	Dual Voltage IO domain	1.8/3.3V
VDDSHV5	Dual Voltage IO domain	1.8/3.3V
VDDSHV6	Dual Voltage IO domain	1.8/3.3V

** Note: These voltage rails are not available in the 13x13 package.*

The "DDR3" measurements have an additional "VDDSDDRMEM" supply, which is brought up on the Rev1.5A GP EVM. This is not an AM335x voltage rail. It is used to measure the power consumption of the dual-loaded DDR3 + VTT.

High-level Summary[edit]

The following tables contain a high-level summary of the total device power (measured in milliwatts) for each application use case and/or configuration. For a detailed breakdown of the total device power over all 20 supplies, click on the corresponding link in the table cells.

An Excel spreadsheet of the data can be downloaded here: Media:AM335x_PowerConsumptionSummary_20130515.zip

Low Power Modes[edit]

Implemented in StarterWare. "Max" accounts for additional leakage power due to worst-case silicon process variation, at room temperature.

	Typical (mW)	Max (mW)
RTC-Only	0.04	0.05
DS0	3.00	4.30
DS1	6.00	10.00
Standby	16.50	22.00

Active Power[edit]

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Selected demo applications from the AM335x EVM SDK 05.07

- VDD_CORE and VDD_MPU at OPP100 (ARM 600 MHz, L3 200 MHz, L4 100 MHz)
- "DDR3" refers to AM335x Rev. 1.5A GP EVM, which has dual-loaded DDR3 with VTT termination at running 303 MHz

- "DDR2" refers to AM335x Rev. 1.2A GP EVM, which has dual-loaded DDR2 running at 266 MHz

Application	DDR3 (mW)	DDR2 (mW)
Linux PSP	553.99	395.29
OS Idle	605.33	449.33
Dhrystone	721.07	554.23
DDR Bandwidth	631.04	471.53
USB Bonnie	687.27	528.57
AAC Decode	572.59	414.21
H.264 Decode	746.00	612.49
Mpeg4 + AAC Decode	750.60	613.10
3D Chameleon Man	823.21	700.96

MPU DVFS[edit]

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Dynamic Voltage Frequency Scaling (DVFS) for the MPU voltage domain. VDD_CORE is maintained at OPP100.

	DDR3	DDR2

	OS Idle (mW)	Dhrystone (mW)	OS Idle (mW)	Dhrystone (mW)
OPP50	527.81	533.26	380.53	385.51
OPP100	605.95	721.07	454.82	556.88
OPP120	658.72	852.76	506.00	677.59
Turbo	700.30	953.03	544.25	771.31
Nitro	780.54	1142.02	622.31	949.37

VDD_MPU Power vs. Total Device Power Consumption (DDR3 EVM)

		OS Idle		Dhrystone	
MPU OPP	Frequency (MHz)	VDD_MPU Power (mW)	Total Power (mW)	VDD_MPU Power (mW)	Total Power (mW)
OPP50	300	45.26	527.81	109.29	533.26
OPP100	600	120.43	605.95	290.38	721.07
OPP120	720	172.32	658.72	420.67	852.76
Turbo	800	212.90	700.30	518.05	953.03
Nitro	1000	290.59	780.54	703.67	1142.02

CORE OPP[edit]

CORE OPP for the VDD_CORE voltage domain.

	DDR3		DDR2	
	OS Idle (mW)	**Dhrystone (mW)**	**OS Idle (mW)**	**Dhrystone (mW)**
CORE OPP50, MPU OPP50	N/A	N/A	253.59	257.24
CORE OPP50, MPU OPP100	N/A	N/A	327.19	429.24
CORE OPP100, MPU OPP100	605.33	721.07	449.33	554.23

Low Power Modes[edit]

- As implemented in Starterware
- Rev1.5A GP EVM
- "Typical" refers to nominal PG2.x silicon, at room temperature
- "Max" accounts for additional leakage power due to worst-case silicon process variation, at room temperature
- This version of DS1 does not include USB remote wakeup

RTC-Only[edit]

RTC-Only		**Typical**				**Maximum**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0000005	0.000	0.01	0.00	0.0000022	0.000	0.04	0.00

VDD_MPU	0.05	0.0000028	0.000	0.06	0.00	0.0000073	0.000	0.15	0.00
VDDS_RTC	2	0.0000404	1.800	0.02	0.04	0.0000511	1.800	0.03	0.05
VDDS_DDR	0.24	0.0000021	0.000	0.01	0.00	0.0000017	0.000	0.01	0.00
VDDS	0.24	0.0000018	0.320	0.01	0.00	0.0000010	0.346	0.00	0.00
VDDS_SRAM_CORE_BG	2	0.0000022	0.025	0.00	0.00	0.0000025	0.025	0.00	0.00
VDDS_SRAM_MPU_BB	2	0.0000018	0.025	0.00	0.00	0.0000020	0.025	0.00	0.00
VDDS_PLL_DDR	2	0.0000017	0.025	0.00	0.00	0.0000005	0.025	0.00	0.00
VDDS_PLL_CORE_LCD	2	0.0000019	0.025	0.00	0.00	0.0000013	0.025	0.00	0.00
VDDS_PLL_MPU	2	0.0000021	0.025	0.00	0.00	0.0000013	0.025	0.00	0.00
VDDS_OSC	2	0.0000024	0.024	0.00	0.00	0.0000022	0.025	0.00	0.00
VDDA1P8V_USB0/1	1	0.0000021	0.024	0.00	0.00	0.0000012	0.025	0.00	0.00
VDDA3P3V_USB0/1	2	0.0000018	0.061	0.00	0.00	0.0000017	0.061	0.00	0.00

VDDA_ADC	1	0.0000011	0.347	0.00	0.00	0.0000011	0.232	0.00	0.00
VDDSHV1	0.24	0.0000000	0.000	0.00	0.00	0.0000784	0.000	0.33	0.00
VDDSHV2	0.24	0.0000019	0.026	0.01	0.00	0.0000016	0.027	0.01	0.00
VDDSHV3	0.24	0.0000000	0.000	0.00	0.00	0.0009411	0.000	3.92	0.00
VDDSHV4	0.24	0.0000016	0.026	0.01	0.00	0.0000016	0.027	0.01	0.00
VDDSHV5	0.24	0.0000000	0.000	0.00	0.00	0.0021680	0.000	9.03	0.00
VDDSHV6	0.24	0.0000000	0.000	0.00	0.00	0.0030291	0.000	12.62	0.00
				Total	**0.0398**			Total	**0.0482**
VDDSDDRMEM	0.24	0.0000000	0.000	0.00	0.00	0.0000000	0.000	0.00	0.00

DSO[edit]

DS0		**Typical**				**Maximum**			

Power Supply	Shunt [Ohm]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]
VDD_CORE	0.05	0.0000498	0.956	1.00	0.95	0.0001143	0.956	2.29	2.18
VDD_MPU	0.05	0.0000152	0.961	0.30	0.29	0.0000285	0.961	0.57	0.55
VDDS_RTC	2	0.0000432	1.800	0.02	0.04	0.0000526	1.800	0.03	0.05
VDDS_DDR	0.24	0.0000049	1.498	0.02	0.03	0.0000064	1.498	0.03	0.04
VDDS	0.24	0.0000235	1.811	0.10	0.18	0.0000231	1.810	0.10	0.17
VDDS_SRAM_CORE_BG	2	0.0003279	1.823	0.16	0.30	0.0003419	1.822	0.17	0.31
VDDS_SRAM_MPU_BB	2	0.0000139	1.823	0.01	0.01	0.0000137	1.822	0.01	0.01
VDDS_PLL_DDR	2	0.0000016	1.823	0.00	0.00	0.0000011	1.823	0.00	0.00
VDDS_PLL_CORE_LCD	2	0.0000020	1.823	0.00	0.00	0.0000023	1.823	0.00	0.00
VDDS_PLL_MPU	2	0.0000019	1.823	0.00	0.00	0.0000015	1.822	0.00	0.00
VDDS_OSC	2	0.000002	1.823	0.00	0.00	0.0000024	1.822	0.00	0.00

		4							
VDDA1P8V_USB0/1	1	0.0000024	1.820	0.00	0.00	0.0000024	1.820	0.00	0.00
VDDA3P3V_USB0/1	2	0.0000422	3.342	0.02	0.07	0.0000464	3.341	0.02	0.08
VDDA_ADC	1	0.0000021	1.829	0.00	0.00	0.0000014	1.829	0.00	0.00
VDDSHV1	0.24	0.0000057	3.312	0.02	0.08	0.0000054	3.311	0.02	0.07
VDDSHV2	0.24	0.0000058	3.324	0.02	0.08	0.0000061	3.322	0.03	0.08
VDDSHV3	0.24	0.0000071	3.312	0.03	0.10	0.0000076	3.311	0.03	0.11
VDDSHV4	0.24	0.0000047	3.324	0.02	0.06	0.0000048	3.322	0.02	0.07
VDDSHV5	0.24	0.0000054	3.312	0.02	0.07	0.0000056	3.311	0.02	0.08
VDDSHV6	0.24	0.0000327	3.312	0.14	0.45	0.0000329	3.311	0.14	0.45
				Total	**2.74**			Total	**4.27**
VDDSDDRMEM	0.24	0.002800	1.493	11.67	17.42	0.0028000	1.493	11.67	17.42

		0							

DS1[edit]

DS1		Typical				Maximum			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0001994	0.956	3.99	3.81	0.0004040	0.956	8.08	7.72
VDD_MPU	0.05	0.0000155	0.961	0.31	0.30	0.0000272	0.961	0.54	0.52
VDDS_RTC	2	0.0000420	1.800	0.02	0.04	0.0000519	1.800	0.03	0.05
VDDS_DDR	0.24	0.0000049	1.498	0.02	0.03	0.0000068	1.498	0.03	0.04
VDDS	0.24	0.0000237	1.811	0.10	0.18	0.0000236	1.810	0.10	0.18
VDDS_SRAM_CORE_BG	2	0.0003283	1.823	0.16	0.30	0.0003413	1.822	0.17	0.31
VDDS_SRAM_MPU_BB	2	0.0000135	1.823	0.01	0.01	0.0000140	1.823	0.01	0.01
VDDS_PLL_DDR	2	0.0000021	1.823	0.00	0.00	0.0000014	1.823	0.00	0.00

VDDS_PLL_CORE_LCD	2	0.0000016	1.823	0.00	0.00	0.0000023	1.822	0.00	0.00
VDDS_PLL_MPU	2	0.0000014	1.823	0.00	0.00	0.0000016	1.822	0.00	0.00
VDDS_OSC	2	0.0000025	1.823	0.00	0.00	0.0000020	1.822	0.00	0.00
VDDA1P8V_USB0/1	1	0.0000028	1.820	0.00	0.01	0.0000016	1.820	0.00	0.00
VDDA3P3V_USB0/1	2	0.0000426	3.342	0.02	0.07	0.0000457	3.341	0.02	0.08
VDDA_ADC	1	0.0000014	1.829	0.00	0.00	0.0000019	1.829	0.00	0.00
VDDSHV1	0.24	0.0000056	3.312	0.02	0.08	0.0000060	3.311	0.02	0.08
VDDSHV2	0.24	0.0000059	3.324	0.02	0.08	0.0000061	3.323	0.03	0.08
VDDSHV3	0.24	0.0000070	3.312	0.03	0.10	0.0000067	3.311	0.03	0.09
VDDSHV4	0.24	0.0000046	3.324	0.02	0.06	0.0000045	3.323	0.02	0.06
VDDSHV5	0.24	0.0000055	3.312	0.02	0.08	0.0000047	3.311	0.02	0.07
VDDSHV6	0.24	0.0000326	3.312	0.14	0.45	0.0000329	3.311	0.14	0.45

				Total	**5.60**			Total	**9.77**
VDDSDDRMEM	0.24	0.0028000	1.493	11.67	17.42	0.0028000	1.493	11.67	17.42

Standby[edit]

Standby		**Typical**				**Maximum**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0005892	0.956	11.78	11.26	0.0007874	0.955	15.75	15.04
VDD_MPU	0.05	0.0000174	0.961	0.35	0.34	0.0000303	0.961	0.61	0.58
VDDS_RTC	2	0.0001373	1.799	0.07	0.12	0.0001492	1.799	0.07	0.13
VDDS_DDR	0.24	0.0000047	1.498	0.02	0.03	0.0000063	1.498	0.03	0.04
VDDS	0.24	0.0000237	1.811	0.10	0.18	0.0000236	1.810	0.10	0.18
VDDS_SRAM_CORE_BG	2	0.0024246	1.823	1.21	2.21	0.0039976	1.822	2.00	3.64

VDDS_SRAM_MPU_BB	2	0.0000132	1.823	0.01	0.01	0.0000143	1.822	0.01	0.01
VDDS_PLL_DDR	2	0.0000013	1.823	0.00	0.00	0.0000016	1.822	0.00	0.00
VDDS_PLL_CORE_LCD	2	0.0000022	1.823	0.00	0.00	0.0000026	1.822	0.00	0.00
VDDS_PLL_MPU	2	0.0000015	1.823	0.00	0.00	0.0000021	1.822	0.00	0.00
VDDS_OSC	2	0.0013934	1.823	0.70	1.27	0.0013752	1.822	0.69	1.25
VDDA1P8V_USB0/1	1	0.0000022	1.820	0.00	0.00	0.0000023	1.820	0.00	0.00
VDDA3P3V_USB0/1	2	0.0000432	3.342	0.02	0.07	0.0000464	3.341	0.02	0.08
VDDA_ADC	1	0.0000024	1.829	0.00	0.00	0.0000031	1.829	0.00	0.01
VDDSHV1	0.24	0.0000058	3.312	0.02	0.08	0.0000064	3.311	0.03	0.09
VDDSHV2	0.24	0.0000060	3.324	0.03	0.08	0.0000062	3.323	0.03	0.09
VDDSHV3	0.24	0.0000076	3.312	0.03	0.11	0.0000076	3.311	0.03	0.10
VDDSHV4	0.24	0.0000044	3.324	0.02	0.06	0.0000054	3.323	0.02	0.07

VDDSHV5	0.24	0.0000057	3.312	0.02	0.08	0.0000049	3.311	0.02	0.07
VDDSHV6	0.24	0.0000331	3.312	0.14	0.46	0.0000327	3.311	0.14	0.45
				Total	**16.37**			Total	**21.84**
VDDSDDRMEM	0.24	0.0028000	1.493	11.67	17.42	0.0028000	1.493	11.67	17.42

Active Power[edit]

- Selected demo applications from the AM335x EVM SDK 05.07
- VDD_CORE and VDD_MPU at OPP100 (ARM 600 MHz, DDR3 303 MHz, L3 200 MHz, L4 100 MHz)
- Optimized IO pad configuration
- SmartReflex disabled
- Matrix GUI is shutdown (except for "OS Idle")
- LCDC is disabled (except for "OS Idle", "H.264 Decode", "Mpeg4 + AAC Decode", "3D Chameleon Man")

Linux PSP[edit]

Use Case: Command prompt after login, no application running

Linux PSP		**DDR3**				**DDR2**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0092644	1.143	185.29	211.85	0.0077265	1.128	154.53	174.27

VDD_MPU	0.05	0.0054017	1.111	108.03	120.00	0.0052665	1.096	105.33	115.42
VDDS_RTC	2	0.0008652	1.798	0.43	0.78	0.0009008	1.797	0.45	0.81
VDDS_DDR	0.24	0.0240616	1.495	100.26	149.89	0.0043077	1.756	17.95	31.52
VDDS	0.24	0.0000415	1.810	0.17	0.31	0.0000481	1.801	0.20	0.36
VDDS_SRAM_CORE_BG	2	0.0027236	1.820	1.36	2.48	0.0026791	1.818	1.34	2.44
VDDS_SRAM_MPU_BB	2	0.0032137	1.820	1.61	2.92	0.0031413	1.818	1.57	2.86
VDDS_PLL_DDR	2	0.0021812	1.820	1.09	1.99	0.0020869	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0149135	1.820	7.46	13.57	0.0147957	1.818	7.40	13.45
VDDS_PLL_MPU	2	0.0040831	1.820	2.04	3.72	0.0040701	1.818	2.04	3.70
VDDS_OSC	2	0.0013886	1.820	0.69	1.26	0.0013568	1.818	0.68	1.23
VDDA1P8V_USB0/1	1	0.0162042	1.815	16.20	29.41	0.0162293	1.824	16.23	29.60
VDDA3P3V_USB0/1	2	0.0070970	3.339	3.55	11.85	0.0066446	3.323	3.32	11.04

VDDA_ADC	1	0.0004581	1.828	0.46	0.84	0.0004581	1.827	0.46	0.84
VDDSHV1	0.24	0.0000342	3.310	0.14	0.47	0.0000271	3.316	0.11	0.37
VDDSHV2	0.24	0.0000061	3.321	0.03	0.08	0.0000054	3.325	0.02	0.07
VDDSHV3	0.24	0.0000090	3.310	0.04	0.12	0.0000098	3.319	0.04	0.14
VDDSHV4	0.24	0.0000072	3.322	0.03	0.10	0.0000070	3.325	0.03	0.10
VDDSHV5	0.24	0.0000071	3.310	0.03	0.10	0.0001886	3.319	0.79	2.61
VDDSHV6	0.24	0.0001624	3.310	0.68	2.24	0.0001871	3.314	0.78	2.58
				Total	**553.99**			Total	**395.2924**
VDDSDDRMEM	0.24	0.0140000	1.500	58.33	87.50				

OS Idle[edit]

Use Case: Matrix Qt GUI

OS Idle (Matrix)		DDR3				DDR2			
Power Supply	Shunt [Ohm]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]
VDD_CORE	0.05	0.009359 5	1.143	187.19	213.98	0.008037 3	1.129	160.75	181.52
VDD_MPU	0.05	0.005417 6	1.111	108.35	120.33	0.005268 0	1.096	105.36	115.48
VDDS_RTC	2	0.000866 0	1.798	0.43	0.78	0.000899 2	1.797	0.45	0.81
VDDS_DDR	0.24	0.025142 0	1.494	104.76	156.48	0.005180 8	1.757	21.59	37.92
VDDS	0.24	0.000143 1	1.810	0.60	1.08	0.000146 8	1.801	0.61	1.10
VDDS_SRAM_CORE_BG	2	0.002810 4	1.820	1.41	2.56	0.002606 1	1.819	1.30	2.37
VDDS_SRAM_MPU_BB	2	0.003312 5	1.820	1.66	3.01	0.003058 5	1.819	1.53	2.78
VDDS_PLL_DDR	2	0.002182 8	1.820	1.09	1.99	0.002084 6	1.819	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.014782 3	1.820	7.39	13.45	0.014778 0	1.819	7.39	13.44
VDDS_PLL_MPU	2	0.004085	1.820	2.04	3.72	0.004065	1.818	2.03	3.70

		9				6			
VDDS_OSC	2	0.0013842	1.820	0.69	1.26	0.0013594	1.819	0.68	1.24
VDDA1P8V_USB0/1	1	0.0162018	1.815	16.20	29.40	0.0162061	1.824	16.21	29.56
VDDA3P3V_USB0/1	2	0.0066459	3.338	3.32	11.09	0.0066482	3.324	3.32	11.05
VDDA_ADC	1	0.0004581	1.828	0.46	0.84	0.0004590	1.828	0.46	0.84
VDDSHV1	0.24	0.0000337	3.307	0.14	0.46	0.0000273	3.315	0.11	0.38
VDDSHV2	0.24	0.0007357	3.320	3.07	10.18	0.0005006	3.325	2.09	6.94
VDDSHV3	0.24	0.0000101	3.309	0.04	0.14	0.0000112	3.318	0.05	0.16
VDDSHV4	0.24	0.0000077	3.320	0.03	0.11	0.0000067	3.325	0.03	0.09
VDDSHV5	0.24	0.0000078	3.309	0.03	0.11	0.0001908	3.318	0.80	2.64
VDDSHV6	0.24	0.0024931	3.307	10.39	34.35	0.0025674	3.312	10.70	35.43
				Total	**605.33**			Total	**449.331**

VDDSDDRMEM	0.24	0.0170000	1.500	70.83	106.25				

Dhrystone[edit]

- Measured DMIPS/MHz : 1.8 ~ 1.9 DMIPS/MHz

Dhrystone		**DDR3**				**DDR2**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0092576	1.144	185.15	211.73	0.0077025	1.128	154.05	173.74
VDD_MPU	0.05	0.0131109	1.107	262.22	290.38	0.0123149	1.094	246.30	269.34
VDDS_RTC	2	0.0008667	1.798	0.43	0.78	0.0008988	1.797	0.45	0.81
VDDS_DDR	0.24	0.0227718	1.495	94.88	141.88	0.0042967	1.756	17.90	31.44
VDDS	0.24	0.0000412	1.810	0.17	0.31	0.0000484	1.801	0.20	0.36
VDDS_SRAM_CORE_BG	2	0.0027687	1.819	1.38	2.52	0.0027166	1.818	1.36	2.47
VDDS_SRAM_MPU_BB	2	0.009487	1.819	4.74	8.63	0.009342	1.818	4.67	8.49

		3				6			
VDDS_PLL_DDR	2	0.0021790	1.820	1.09	1.98	0.0020848	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0147669	1.820	7.38	13.44	0.0147721	1.818	7.39	13.43
VDDS_PLL_MPU	2	0.0040814	1.819	2.04	3.71	0.0040650	1.818	2.03	3.69
VDDS_OSC	2	0.0013888	1.820	0.69	1.26	0.0013505	1.818	0.68	1.23
VDDA1P8V_USB0/1	1	0.0161796	1.815	16.18	29.37	0.0162206	1.824	16.22	29.58
VDDA3P3V_USB0/1	2	0.0066463	3.339	3.32	11.10	0.0066404	3.324	3.32	11.03
VDDA_ADC	1	0.0004578	1.828	0.46	0.84	0.0004576	1.827	0.46	0.84
VDDSHV1	0.24	0.0000357	3.309	0.15	0.49	0.0000272	3.317	0.11	0.38
VDDSHV2	0.24	0.0000058	3.321	0.02	0.08	0.0000051	3.325	0.02	0.07
VDDSHV3	0.24	0.0000094	3.310	0.04	0.13	0.0000092	3.320	0.04	0.13
VDDSHV4	0.24	0.0000079	3.321	0.03	0.11	0.0000077	3.325	0.03	0.11

VDDSHV5	0.24	0.0000082	3.310	0.03	0.11	0.0001891	3.319	0.79	2.62
VDDSHV6	0.24	0.0001616	3.309	0.67	2.23	0.0001867	3.314	0.78	2.58
				Total	**721.07**			Total	**554.23**
VDDSDDRMEM	0.24	0.0171000	1.500	71.25	106.88				

DDR Bandwidth[edit]

DDR Bandwidth		**DDR3**				**DDR2**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0092733	1.143	185.47	212.03	0.0077094	1.128	154.19	173.91
VDD_MPU	0.05	0.0088350	1.109	176.70	196.02	0.0085640	1.095	171.28	187.54
VDDS_RTC	2	0.0008657	1.798	0.43	0.78	0.0008991	1.797	0.45	0.81
VDDS_DDR	0.24	0.024099	1.495	100.42	150.12	0.004329	1.756	18.04	31.68

		9				5			
VDDS	0.24	0.0000414	1.810	0.17	0.31	0.0000811	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.0027665	1.820	1.38	2.52	0.0026895	1.818	1.34	2.45
VDDS_SRAM_MPU_BB	2	0.0046273	1.820	2.31	4.21	0.0038408	1.818	1.92	3.49
VDDS_PLL_DDR	2	0.0021808	1.820	1.09	1.98	0.0020848	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0149132	1.820	7.46	13.57	0.0147828	1.818	7.39	13.44
VDDS_PLL_MPU	2	0.0040843	1.819	2.04	3.72	0.0040676	1.818	2.03	3.70
VDDS_OSC	2	0.0013874	1.820	0.69	1.26	0.0013543	1.819	0.68	1.23
VDDA1P8V_USB0/1	1	0.0162240	1.815	16.22	29.45	0.0162125	1.824	16.21	29.57
VDDA3P3V_USB0/1	2	0.0066487	3.339	3.32	11.10	0.0066423	3.324	3.32	11.04
VDDA_ADC	1	0.0004583	1.828	0.46	0.84	0.0004583	1.827	0.46	0.84
VDDSHV1	0.24	0.0000340	3.309	0.14	0.47	0.0000270	3.317	0.11	0.37

VDDSHV2	0.24	0.0000066	3.321	0.03	0.09	0.0000049	3.325	0.02	0.07
VDDSHV3	0.24	0.0000091	3.310	0.04	0.13	0.0000092	3.320	0.04	0.13
VDDSHV4	0.24	0.0000076	3.321	0.03	0.10	0.0000067	3.325	0.03	0.09
VDDSHV5	0.24	0.0000072	3.310	0.03	0.10	0.0004407	3.320	1.84	6.10
VDDSHV6	0.24	0.0001623	3.309	0.68	2.24	0.0001867	3.315	0.78	2.58
				Total	**631.04**			Total	**471.53**
VDDSDDRMEM	0.24	0.0260000	1.500	108.33	162.50				

USB Bonnie[edit]

USB Bonnie		**DDR3**				**DDR2**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0092641	1.143	185.28	211.85	0.0078401	1.128	156.80	176.89

VDD_MPU	0.05	0.0110872	1.107	221.74	245.49	0.0106669	1.095	213.34	233.55
VDDS_RTC	2	0.0008653	1.798	0.43	0.78	0.0008997	1.797	0.45	0.81
VDDS_DDR	0.24	0.0245889	1.495	102.45	153.15	0.0048278	1.756	20.12	35.33
VDDS	0.24	0.0000420	1.810	0.18	0.32	0.0000816	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.0027820	1.819	1.39	2.53	0.0027129	1.818	1.36	2.47
VDDS_SRAM_MPU_BB	2	0.0076701	1.820	3.84	6.98	0.0070746	1.818	3.54	6.43
VDDS_PLL_DDR	2	0.0021805	1.820	1.09	1.98	0.0020851	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0147742	1.820	7.39	13.45	0.0147746	1.818	7.39	13.43
VDDS_PLL_MPU	2	0.0040834	1.820	2.04	3.72	0.0040673	1.818	2.03	3.70
VDDS_OSC	2	0.0013892	1.820	0.69	1.26	0.0013525	1.818	0.68	1.23
VDDA1P8V_USB0/1	1	0.0181203	1.815	18.12	32.88	0.0181985	1.823	18.20	33.18
VDDA3P3V_USB0/1	2	0.0053435	3.339	2.67	8.92	0.0053366	3.324	2.67	8.87

VDDA_ADC	1	0.0004580	1.828	0.46	0.84	0.0004587	1.827	0.46	0.84
VDDSHV1	0.24	0.0000346	3.309	0.14	0.48	0.0000272	3.317	0.11	0.38
VDDSHV2	0.24	0.0000060	3.321	0.03	0.08	0.0000056	3.325	0.02	0.08
VDDSHV3	0.24	0.0000096	3.310	0.04	0.13	0.0000090	3.320	0.04	0.12
VDDSHV4	0.24	0.0000078	3.321	0.03	0.11	0.0000073	3.325	0.03	0.10
VDDSHV5	0.24	0.0000070	3.310	0.03	0.10	0.0004402	3.320	1.83	6.09
VDDSHV6	0.24	0.0001621	3.309	0.68	2.24	0.0001863	3.315	0.78	2.57
				Total	**687.27**			Total	**528.57**
VDDSDDRMEM	0.24	0.0150000	1.500	62.50	93.75				

AAC Decode[edit]

AAC Decode		**DDR3**				**DDR2**			

Power Supply	Shunt [Ohm]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]
VDD_CORE	0.05	0.0091971	1.143	183.94	210.33	0.0077432	1.128	154.86	174.67
VDD_MPU	0.05	0.0059143	1.111	118.29	131.36	0.0057297	1.096	114.59	125.56
VDDS_RTC	2	0.0008655	1.798	0.43	0.78	0.0009008	1.797	0.45	0.81
VDDS_DDR	0.24	0.0255236	1.494	106.35	158.91	0.0043994	1.756	18.33	32.19
VDDS	0.24	0.0000412	1.810	0.17	0.31	0.0000813	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.0027484	1.820	1.37	2.50	0.0026792	1.818	1.34	2.44
VDDS_SRAM_MPU_BB	2	0.0034700	1.820	1.73	3.16	0.0033579	1.818	1.68	3.05
VDDS_PLL_DDR	2	0.0021816	1.820	1.09	1.99	0.0020867	1.819	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0149157	1.820	7.46	13.58	0.0147918	1.819	7.40	13.45
VDDS_PLL_MPU	2	0.0040849	1.820	2.04	3.72	0.0040705	1.818	2.04	3.70
VDDS_OSC	2	0.001388	1.820	0.69	1.26	0.001356	1.819	0.68	1.23

		6				4			
VDDA1P8V_USB0/1	1	0.0162332	1.815	16.23	29.46	0.0162343	1.824	16.23	29.61
VDDA3P3V_USB0/1	2	0.0066526	3.339	3.33	11.11	0.0066443	3.324	3.32	11.04
VDDA_ADC	1	0.0004587	1.828	0.46	0.84	0.0004586	1.827	0.46	0.84
VDDSHV1	0.24	0.0000347	3.309	0.14	0.48	0.0000277	3.316	0.12	0.38
VDDSHV2	0.24	0.0000060	3.321	0.02	0.08	0.0000056	3.325	0.02	0.08
VDDSHV3	0.24	0.0000092	3.310	0.04	0.13	0.0000098	3.318	0.04	0.14
VDDSHV4	0.24	0.0000082	3.321	0.03	0.11	0.0000070	3.325	0.03	0.10
VDDSHV5	0.24	0.0000178	3.310	0.07	0.25	0.0007124	3.318	2.97	9.85
VDDSHV6	0.24	0.0001629	3.309	0.68	2.25	0.0001868	3.314	0.78	2.58
				Total	**572.595**			Total	**414.2132**

VDDSDDRMEM	0.24	0.0125000	1.500	52.08	78.13				

H.264 Decode[edit]

H.264 Decode		DDR3				DDR2			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0099085	1.144	198.17	226.65	0.0085588	1.128	171.18	193.17
VDD_MPU	0.05	0.0094418	1.108	188.84	209.32	0.0091769	1.096	183.54	201.07
VDDS_RTC	2	0.0008658	1.798	0.43	0.78	0.0008996	1.797	0.45	0.81
VDDS_DDR	0.24	0.0254633	1.492	106.10	158.28	0.0083682	1.755	34.87	61.19
VDDS	0.24	0.0001543	1.809	0.64	1.16	0.0001977	1.801	0.82	1.48
VDDS_SRAM_CORE_BG	2	0.0028304	1.820	1.42	2.58	0.0027286	1.818	1.36	2.48
VDDS_SRAM_MPU_BB	2	0.0056576	1.820	2.83	5.15	0.0056739	1.818	2.84	5.16
VDDS_PLL_DDR	2	0.0021825	1.820	1.09	1.99	0.0020847	1.818	1.04	1.90

VDDS_PLL_CORE_LCD	2	0.0149203	1.820	7.46	13.58	0.0147740	1.819	7.39	13.43
VDDS_PLL_MPU	2	0.0040848	1.819	2.04	3.72	0.0040663	1.818	2.03	3.70
VDDS_OSC	2	0.0013846	1.820	0.69	1.26	0.0013504	1.818	0.68	1.23
VDDA1P8V_USB0/1	1	0.0162216	1.815	16.22	29.44	0.0181442	1.823	18.14	33.08
VDDA3P3V_USB0/1	2	0.0066447	3.339	3.32	11.09	0.0053360	3.324	2.67	8.87
VDDA_ADC	1	0.0004574	1.828	0.46	0.84	0.0004580	1.827	0.46	0.84
VDDSHV1	0.24	0.0000340	3.307	0.14	0.47	0.0000265	3.313	0.11	0.37
VDDSHV2	0.24	0.0019268	3.318	8.03	26.64	0.0015042	3.323	6.27	20.83
VDDSHV3	0.24	0.0000094	3.308	0.04	0.13	0.0000085	3.317	0.04	0.12
VDDSHV4	0.24	0.0000081	3.318	0.03	0.11	0.0000071	3.324	0.03	0.10
VDDSHV5	0.24	0.0000068	3.308	0.03	0.09	0.0004367	3.317	1.82	6.03
VDDSHV6	0.24	0.0038282	3.306	15.95	52.73	0.0041077	3.310	17.12	56.65

				Total	**746.00**			Total	**612.49**
VDDSDDRMEM	0.24	0.0240000	1.500	100.00	150.00				

Mpeg4 + AAC Decode[edit]

MPEG-4 + AAC Decode		**DDR3**				**DDR2**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0099605	1.144	199.21	227.85	0.0085667	1.128	171.33	193.28
VDD_MPU	0.05	0.0093620	1.108	187.24	207.56	0.0088928	1.095	177.86	194.79
VDDS_RTC	2	0.0008662	1.798	0.43	0.78	0.0008994	1.797	0.45	0.81
VDDS_DDR	0.24	0.0254475	1.492	106.03	158.18	0.0087538	1.755	36.47	64.01
VDDS	0.24	0.0001485	1.809	0.62	1.12	0.0002011	1.801	0.84	1.51
VDDS_SRAM_CORE_BG	2	0.002829	1.820	1.41	2.57	0.002768	1.818	1.38	2.52

		2				3			
VDDS_SRAM_MPU_BB	2	0.0055558	1.820	2.78	5.05	0.0054227	1.818	2.71	4.93
VDDS_PLL_DDR	2	0.0021818	1.820	1.09	1.99	0.0020859	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0149184	1.820	7.46	13.58	0.0147790	1.818	7.39	13.44
VDDS_PLL_MPU	2	0.0040851	1.819	2.04	3.72	0.0040661	1.818	2.03	3.70
VDDS_OSC	2	0.0013851	1.820	0.69	1.26	0.0013474	1.818	0.67	1.22
VDDA1P8V_USB0/1	1	0.0162379	1.815	16.24	29.47	0.0181931	1.823	18.19	33.16
VDDA3P3V_USB0/1	2	0.0066445	3.338	3.32	11.09	0.0053333	3.323	2.67	8.86
VDDA_ADC	1	0.0004579	1.828	0.46	0.84	0.0004570	1.827	0.46	0.84
VDDSHV1	0.24	0.0000332	3.306	0.14	0.46	0.0000264	3.311	0.11	0.36
VDDSHV2	0.24	0.0024338	3.318	10.14	33.64	0.0012473	3.323	5.20	17.27
VDDSHV3	0.24	0.0000095	3.308	0.04	0.13	0.0000083	3.314	0.03	0.12

VDDSHV4	0.24	0.0000071	3.319	0.03	0.10	0.0000066	3.323	0.03	0.09
VDDSHV5	0.24	0.0000157	3.308	0.07	0.22	0.0005059	3.314	2.11	6.99
VDDSHV6	0.24	0.0037025	3.306	15.43	51.00	0.0045931	3.308	19.14	63.31
				Total	**750.60**			Total	**613.10**
VDDSDDRMEM	0.24	0.0260000	1.500	108.33	162.50				

3D Chameleon Man[edit]

3D Chameleon Man		**DDR3**				**DDR2**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0142116	1.141	284.23	324.37	0.0127182	1.126	254.36	286.39
VDD_MPU	0.05	0.0067084	1.110	134.17	148.91	0.0065003	1.095	130.01	142.42

VDDS_RTC	2	0.0008668	1.798	0.43	0.78	0.0008997	1.797	0.45	0.81
VDDS_DDR	0.24	0.0284022	1.489	118.34	176.22	0.0144338	1.753	60.14	105.43
VDDS	0.24	0.0002512	1.809	1.05	1.89	0.0002890	1.800	1.20	2.17
VDDS_SRAM_CORE_BG	2	0.0032439	1.820	1.62	2.95	0.0031668	1.818	1.58	2.88
VDDS_SRAM_MPU_BB	2	0.0041402	1.820	2.07	3.77	0.0040281	1.818	2.01	3.66
VDDS_PLL_DDR	2	0.0021825	1.820	1.09	1.99	0.0020859	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.0149238	1.820	7.46	13.58	0.0147811	1.818	7.39	13.44
VDDS_PLL_MPU	2	0.0040866	1.819	2.04	3.72	0.0040660	1.818	2.03	3.70
VDDS_OSC	2	0.0013842	1.820	0.69	1.26	0.0013471	1.818	0.67	1.22
VDDA1P8V_USB0/1	1	0.0162014	1.815	16.20	29.40	0.0181554	1.823	18.16	33.10
VDDA3P3V_USB0/1	2	0.0066429	3.338	3.32	11.09	0.0053325	3.323	2.67	8.86
VDDA_ADC	1	0.0004572	1.828	0.46	0.84	0.0004572	1.827	0.46	0.84

VDDSHV1	0.24	0.0000329	3.306	0.14	0.45	0.0000256	3.311	0.11	0.35
VDDSHV2	0.24	0.0030549	3.316	12.73	42.21	0.0019922	3.322	8.30	27.58
VDDSHV3	0.24	0.0000087	3.308	0.04	0.12	0.0000080	3.316	0.03	0.11
VDDSHV4	0.24	0.0000076	3.317	0.03	0.11	0.0000067	3.323	0.03	0.09
VDDSHV5	0.24	0.0000075	3.308	0.03	0.10	0.0004362	3.316	1.82	6.03
VDDSHV6	0.24	0.0043170	3.305	17.99	59.46	0.0043533	3.308	18.14	60.01
				Total	**823.21**			Total	**700.96**
VDDSDDRMEM	0.24	0.0330000	1.500	137.50	206.25				

MPU DVFS[edit]

- Updated OPP voltage/frequency table for PG2.x
- VDD_CORE kept at OPP100
- Optimized IO pad configuration
- SmartReflex disabled
- Matrix GUI is shutdown (except for "OS Idle")
- LCDC is disabled (except for "OS Idle", "H.264 Decode", "Mpeg4 + AAC Decode", "3D Chameleon Man")

OPP50[edit]

		DDR3								DDR2							
OPP50		OSIdle				Dhrystone				OSIdle				Dhrystone			
Power Supply	Shunt [Ohm]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]
VDD_CORE	0.05	0.00931 02	1.143	186.20	212.87	0.0092293	1.143	184.59	211.00	0.00803 28	1.129	160.66	181.30	0.0076838	1.128	153.68	173.31
VDD_MPU	0.05	0.00237 22	0.954	47.44	45.26	0.0057051	0.958	114.10	109.29	0.00229 79	0.939	45.96	43.17	0.0053746	0.945	107.49	101.58
VDDS_RTC	2	0.00086 76	1.798	0.43	0.78	0.0008665	1.798	0.43	0.78	0.00090 14	1.797	0.45	0.81	0.0009004	1.797	0.45	0.81
VDDS_DDR	0.24	0.02523 74	1.494	105.16	157.08	0.0225466	1.495	93.94	140.49	0.00517 06	1.756	21.54	37.83	0.0043228	1.756	18.01	31.63
VDDS	0.24	0.00014 40	1.810	0.60	1.09	0.0000415	1.810	0.17	0.31	0.00018 05	1.801	0.75	1.35	0.0000814	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.00274 44	1.820	1.37	2.50	0.0027177	1.820	1.36	2.47	0.00273 62	1.818	1.37	2.49	0.0026673	1.818	1.33	2.42

VDDS_SRAM_MPU_BB	2	0.00322 26	1.820	1.61	2.93	0.0062828	1.820	3.14	5.72	0.00319 78	1.818	1.60	2.91	0.0061835	1.818	3.09	5.62
VDDS_PLL_DDR	2	0.00218 15	1.820	1.09	1.99	0.0021800	1.820	1.09	1.98	0.00208 84	1.818	1.04	1.90	0.0020864	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.01477 82	1.820	7.39	13.45	0.0147725	1.820	7.39	13.45	0.01480 63	1.818	7.40	13.46	0.0147851	1.818	7.39	13.44
VDDS_PLL_MPU	2	0.00223 81	1.820	1.12	2.04	0.0022368	1.820	1.12	2.04	0.00223 13	1.818	1.12	2.03	0.0022298	1.818	1.11	2.03
VDDS_OSC	2	0.00139 09	1.820	0.70	1.27	0.0013910	1.820	0.70	1.27	0.00135 50	1.818	0.68	1.23	0.0013560	1.819	0.68	1.23
VDDA1P8V_USB0/1	1	0.01621 15	1.815	16.21	29.42	0.0161813	1.815	16.18	29.37	0.01823 32	1.823	18.23	33.24	0.0162174	1.824	16.22	29.58
VDDA3P3V_USB0/1	2	0.00665 16	3.339	3.33	11.10	0.0066512	3.339	3.33	11.10	0.00533 68	3.323	2.67	8.87	0.0066426	3.323	3.32	11.04
VDDA_ADC	1	0.00045 87	1.828	0.46	0.84	0.0004586	1.828	0.46	0.84	0.00045 83	1.827	0.46	0.84	0.0004581	1.827	0.46	0.84
VDDSHV1	0.24	0.00003 49	3.307	0.15	0.48	0.0000357	3.309	0.15	0.49	0.00002 67	3.314	0.11	0.37	0.0000276	3.317	0.12	0.38
VDDSHV2	0.24	0.00073	3.32	3.06	10.17	0.0000057	3.32	0.02	0.08	0.00050	3.32	2.09	6.94	0.0000052	3.32	0.02	0.07

		53	0				2			10	4				5		
VDDSHV3	0.24	0.00000091	3.309	0.04	0.12	0.0000090	3.310	0.04	0.12	0.00000080	3.318	0.03	0.11	0.0000105	3.320	0.04	0.15
VDDSHV4	0.24	0.00000079	3.320	0.03	0.11	0.0000082	3.321	0.03	0.11	0.00000067	3.324	0.03	0.09	0.0000083	3.325	0.03	0.12
VDDSHV5	0.24	0.00000082	3.309	0.03	0.11	0.0000082	3.310	0.03	0.11	0.00004385	3.318	1.83	6.06	0.0004451	3.320	1.85	6.16
VDDSHV6	0.24	0.00024820	3.307	10.34	34.20	0.0001623	3.310	0.68	2.24	0.00025748	3.311	10.73	35.52	0.0001880	3.315	0.78	2.60
				Total	**527.81**			Total	**533.26**			Total	**380.53**			Total	**385.51**
VDDSDDRMEM	0.24	0.01680000	1.500	70.00	105.00	0.0172000	1.500	71.67	107.50								

OPP100[edit]

		DDR3								**DDR2**							
OPP1		**OS**				**Dhr**				**OS**				**Dhr**			

00		Idle				ystone				Idle				ystone			
Power Supply	Shunt [Ohm]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]
VDD_CORE	0.05	0.00934 40	1.144	186.88	213.72	0.0092576	1.144	185.15	211.73	0.00803 49	1.128	160.70	181.35	0.0076964	1.128	153.93	173.65
VDD_MPU	0.05	0.00542 15	1.111	108.43	120.43	0.0131109	1.107	262.22	290.38	0.00527 56	1.096	105.51	115.62	0.0122661	1.094	245.32	268.32
VDDS_RTC	2	0.00086 67	1.798	0.43	0.78	0.0008667	1.798	0.43	0.78	0.00090 01	1.797	0.45	0.81	0.0008994	1.797	0.45	0.81
VDDS_DDR	0.24	0.02530 53	1.494	105.44	157.51	0.0227718	1.495	94.88	141.88	0.00517 62	1.756	21.57	37.87	0.0042918	1.756	17.88	31.40
VDDS	0.24	0.00014 35	1.810	0.60	1.08	0.0000412	1.810	0.17	0.31	0.00017 95	1.801	0.75	1.35	0.0000818	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.00276 84	1.820	1.38	2.52	0.0027687	1.819	1.38	2.52	0.00273 75	1.818	1.37	2.49	0.0027071	1.818	1.35	2.46
VDDS_SRAM_MPU_BB	2	0.00325 79	1.820	1.63	2.96	0.0094873	1.819	4.74	8.63	0.00320 28	1.818	1.60	2.91	0.0093236	1.818	4.66	8.47
VDDS_PL	2	0.00218	1.82	1.0	1.9	0.002	1.82	1.0	1.9	0.00208	1.81	1.0	1.9	0.002	1.81	1.0	1.8

L_DDR		19	0	9	9	1790	0	9	8	70	8	4	0	0831	8	4	9
VDDS_PLL_CORE_LCD	2	0.01477 72	1.820	7.39	13.45	0.0147669	1.820	7.38	13.44	0.01479 49	1.818	7.40	13.45	0.0147650	1.818	7.38	13.42
VDDS_PLL_MPU	2	0.00408 49	1.820	2.04	3.72	0.0040814	1.819	2.04	3.71	0.00407 09	1.818	2.04	3.70	0.0040645	1.818	2.03	3.69
VDDS_OSC	2	0.00138 96	1.820	0.69	1.26	0.0013888	1.820	0.69	1.26	0.00135 29	1.818	0.68	1.23	0.0013504	1.818	0.68	1.23
VDDA1P8V_USB0/1	1	0.01620 55	1.815	16.21	29.41	0.0161796	1.815	16.18	29.37	0.01818 27	1.823	18.18	33.15	0.0162176	1.824	16.22	29.58
VDDA3P3V_USB0/1	2	0.00664 91	3.339	3.32	11.10	0.0066463	3.339	3.32	11.10	0.00533 49	3.323	2.67	8.87	0.0066372	3.324	3.32	11.03
VDDA_ADC	1	0.00045 82	1.828	0.46	0.84	0.0004578	1.828	0.46	0.84	0.00045 82	1.827	0.46	0.84	0.0004585	1.827	0.46	0.84
VDDSHV1	0.24	0.00003 43	3.307	0.14	0.47	0.0000357	3.309	0.15	0.49	0.00002 67	3.314	0.11	0.37	0.0000277	3.317	0.12	0.38
VDDSHV2	0.24	0.00073 48	3.320	3.06	10.17	0.0000058	3.321	0.02	0.08	0.00048 33	3.324	2.01	6.69	0.0000060	3.325	0.02	0.08
VDDSHV3	0.24	0.00000 090	3.309	0.04	0.12	0.0000094	3.310	0.04	0.13	0.00000 083	3.318	0.03	0.11	0.0000114	3.320	0.05	0.16

VDDSHV4	0.24	0.00000083	3.320	0.03	0.11	0.00000079	3.321	0.03	0.11	0.00000067	3.324	0.03	0.09	0.00000084	3.325	0.04	0.12
VDDSHV5	0.24	0.00000082	3.309	0.03	0.11	0.00000082	3.310	0.03	0.11	0.00004387	3.318	1.83	6.06	0.00004440	3.320	1.85	6.14
VDDSHV6	0.24	0.00024813	3.307	10.34	34.19	0.00001616	3.309	0.67	2.23	0.00026059	3.311	10.86	35.96	0.00001873	3.315	0.78	2.59
				Total	**605.95**			Total	**721.07**			Total	**454.82**			Total	**556.88**
VDDSDDRMEM	0.24	0.01680000	1.500	70.00	105.00	0.01671000	1.500	71.25	106.88								

OPP120[edit]

		DDR3								**DDR2**							
OPP120		**OSIdle**				**Dhrystone**				**OSIdle**				**Dhrystone**			
Power Supply	**Shunt [O**	**Voltage Drop**	**Voltage**	**Current [m**	**Power [m**	**Voltage Drop [V]**	**Voltage**	**Current [m**	**Power [m**	**Voltage Drop**	**Voltage**	**Current [m**	**Power [m**	**Voltage Drop [V]**	**Voltage**	**Current [m**	**Power [m**

	hm]	[V]	[V]	A]	W]		[V]	A]	W]	[V]	[V]	A]	W]		[V]	A]	W]
VDD_CORE	0.05	0.00935 08	1.144	187.02	213.86	0.0092962	1.144	185.92	212.64	0.00804 51	1.129	160.90	181.62	0.0077067	1.128	154.13	173.85
VDD_MPU	0.05	0.00711 29	1.211	142.26	172.32	0.0174224	1.207	348.45	420.67	0.00692 83	1.198	138.57	165.98	0.0161996	1.194	323.99	386.91
VDDS_RTC	2	0.00086 72	1.798	0.43	0.78	0.0008672	1.798	0.43	0.78	0.00090 01	1.797	0.45	0.81	0.0008985	1.797	0.45	0.81
VDDS_DDR	0.24	0.02521 20	1.494	105.05	156.92	0.0225454	1.495	93.94	140.46	0.00516 22	1.756	21.51	37.77	0.0043031	1.756	17.93	31.49
VDDS	0.24	0.00014 34	1.810	0.60	1.08	0.0000413	1.810	0.17	0.31	0.00017 99	1.801	0.75	1.35	0.0000815	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.00276 99	1.820	1.38	2.52	0.0028189	1.819	1.41	2.56	0.00274 86	1.818	1.37	2.50	0.0027595	1.818	1.38	2.51
VDDS_SRAM_MPU_BB	2	0.00327 18	1.820	1.64	2.98	0.0108705	1.819	5.44	9.89	0.00322 85	1.818	1.61	2.93	0.0106892	1.818	5.34	9.72
VDDS_PLL_DDR	2	0.00218 01	1.820	1.09	1.98	0.0021787	1.820	1.09	1.98	0.00208 76	1.818	1.04	1.90	0.0020828	1.818	1.04	1.89
VDDS_PLL_CORE_LCD	2	0.01477 50	1.820	7.39	13.45	0.0147691	1.820	7.38	13.44	0.01478 95	1.818	7.39	13.45	0.0147552	1.818	7.38	13.41

VDDS_PLL_MPU	2	0.00476 50	1.820	2.38	4.34	0.0047610	1.819	2.38	4.33	0.00474 85	1.818	2.37	4.32	0.0047384	1.818	2.37	4.31
VDDS_OSC	2	0.00138 91	1.820	0.69	1.26	0.0013871	1.820	0.69	1.26	0.00135 16	1.818	0.68	1.23	0.0013460	1.818	0.67	1.22
VDDA1P8V_USB0/1	1	0.01619 96	1.815	16.20	29.40	0.0161871	1.815	16.19	29.38	0.01815 67	1.823	18.16	33.10	0.0162121	1.824	16.21	29.57
VDDA3P3V_USB0/1	2	0.00664 84	3.339	3.32	11.10	0.0066408	3.339	3.32	11.09	0.00533 32	3.323	2.67	8.86	0.0066333	3.324	3.32	11.02
VDDA_ADC	1	0.00045 79	1.828	0.46	0.84	0.0004574	1.828	0.46	0.84	0.00045 80	1.827	0.46	0.84	0.0004574	1.827	0.46	0.84
VDDSHV1	0.24	0.00003 40	3.307	0.14	0.47	0.0000349	3.309	0.15	0.48	0.00002 67	3.314	0.11	0.37	0.0000272	3.317	0.11	0.38
VDDSHV2	0.24	0.00073 30	3.320	3.05	10.14	0.0000058	3.321	0.02	0.08	0.00051 07	3.324	2.13	7.07	0.0000056	3.325	0.02	0.08
VDDSHV3	0.24	0.00000 84	3.309	0.04	0.12	0.0000096	3.310	0.04	0.13	0.00000 80	3.318	0.03	0.11	0.0000107	3.320	0.04	0.15
VDDSHV4	0.24	0.00000 71	3.320	0.03	0.10	0.0000077	3.321	0.03	0.11	0.00000 70	3.324	0.03	0.10	0.0000089	3.325	0.04	0.12
VDDSHV5	0.24	0.00000	3.30	0.03	0.11	0.0000077	3.31	0.03	0.11	0.00043	3.31	1.83	6.06	0.0004447	3.32	1.85	6.15

		79	9				0			86	8				0		
VDDSHV6	0.24	0.00253771	3.307	10.57	34.96	0.0001615	3.309	0.67	2.23	0.00258 25	3.311	10.76	35.63	0.0001860	3.315	0.78	2.57
				Total	**658.72**			Total	**852.76**			Total	**5006.00**			Total	**677.59**
VDDSDDRMEM	0.24	0.0168000	1.500	70.00	105.00	0.0170000	1.500	70.83	106.25								

Turbo[edit]

		DDR3								**DDR2**							
OPP Turbo		**OS Idle**				**Dhrystone**				**OS Idle**				**Dhrystone**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0093692	1.144	187.38	214.33	0.0092923	1.144	185.85	212.57	0.0080535	1.129	161.07	181.77	0.0077223	1.128	154.45	174.20

VDD_MPU	0.05	0.00083439	1.276	166.88	212.90	0.0204167	1.269	408.33	518.05	0.00081135	1.260	162.27	204.42	0.0190630	1.257	381.26	479.28
VDDS_RTC	2	0.00008674	1.798	0.43	0.78	0.0008673	1.798	0.43	0.78	0.00008995	1.797	0.45	0.81	0.0008984	1.797	0.45	0.81
VDDS_DDR	0.24	0.00252026	1.494	105.01	156.85	0.0228224	1.495	95.09	142.17	0.00051599	1.756	21.50	37.76	0.0042926	1.756	17.89	31.41
VDDS	0.24	0.00001460	1.810	0.61	1.10	0.0000415	1.810	0.17	0.31	0.00001786	1.801	0.74	1.34	0.0000813	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.00027944	1.820	1.40	2.54	0.0028784	1.819	1.44	2.62	0.00027607	1.818	1.38	2.51	0.0028274	1.818	1.41	2.57
VDDS_SRAM_MPU_BB	2	0.00038138	1.820	1.91	3.47	0.0119621	1.819	5.98	10.88	0.00034480	1.818	1.72	3.13	0.0116531	1.818	5.83	10.59
VDDS_PLL_DDR	2	0.00021810	1.820	1.09	1.98	0.0021797	1.819	1.09	1.98	0.00020867	1.818	1.04	1.90	0.0020827	1.818	1.04	1.89
VDDS_PLL_CORE_LCD	2	0.01477 77	1.820	7.39	13.45	0.0147706	1.820	7.39	13.44	0.01478 72	1.818	7.39	13.44	0.0147531	1.818	7.38	13.41
VDDS_PLL_MPU	2	0.00501 34	1.820	2.51	4.56	0.0050078	1.819	2.50	4.55	0.00499 32	1.818	2.50	4.54	0.0049823	1.818	2.49	4.53
VDDS_OSC	2	0.00138	1.82	0.69	1.26	0.0013852	1.82	0.69	1.26	0.00135	1.81	0.68	1.23	0.0013419	1.81	0.67	1.22

		83	0				0			06	8				8		
VDDA1P8V_USB0/1	1	0.01621 81	1.815	16.22	29.44	0.0161772	1.815	16.18	29.36	0.01818 03	1.823	18.18	33.14	0.0161874	1.824	16.19	29.52
VDDA3P3V_USB0/1	2	0.00664 80	3.338	3.32	11.10	0.0066379	3.339	3.32	11.08	0.00533 31	3.323	2.67	8.86	0.0066315	3.324	3.32	11.02
VDDA_ADC	1	0.00045 77	1.828	0.46	0.84	0.0004576	1.828	0.46	0.84	0.00045 77	1.827	0.46	0.84	0.0004569	1.827	0.46	0.83
VDDSHV1	0.24	0.00003 50	3.307	0.15	0.48	0.0000350	3.309	0.15	0.48	0.00002 70	3.314	0.11	0.37	0.0000269	3.317	0.11	0.37
VDDSHV2	0.24	0.00075 82	3.320	3.16	10.49	0.0000059	3.321	0.02	0.08	0.00048 17	3.324	2.01	6.67	0.0000052	3.325	0.02	0.07
VDDSHV3	0.24	0.00000 92	3.309	0.04	0.13	0.0000092	3.309	0.04	0.13	0.00000 76	3.318	0.03	0.11	0.0000106	3.320	0.04	0.15
VDDSHV4	0.24	0.00000 72	3.320	0.03	0.10	0.0000075	3.321	0.03	0.10	0.00000 73	3.324	0.03	0.10	0.0000080	3.325	0.03	0.11
VDDSHV5	0.24	0.00000 84	3.309	0.03	0.12	0.0000083	3.309	0.03	0.11	0.00043 89	3.318	1.83	6.07	0.0004440	3.320	1.85	6.14
VDDSHV6	0.24	0.00249 47	3.307	10.39	34.38	0.0001610	3.309	0.67	2.22	0.00255 36	3.311	10.64	35.23	0.0001855	3.315	0.77	2.56

				Total	**700.30**			Total	**953.03**			Total	**544.25**			Total	**771.31**
VDDSDDRMEM	0.24	0.01680000	1.500	70.00	105.00	0.0173000	1.500	72.08	108.13								

Nitro[edit]

		DDR3								**DDR2**							
OPP Nitro		**OSIdle**				**Dhrystone**				**OSIdle**				**Dhrystone**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.00939 09	1.144	187.82	214.84	0.0093198	1.144	186.40	213.22	0.00807 51	1.129	161.50	182.29	0.0077236	1.128	154.47	174.25
VDD_MPU	0.05	0.01088 13	1.335	217.63	290.59	0.0265022	1.328	530.04	703.67	0.01059 64	1.323	211.93	280.32	0.0248164	1.318	496.33	654.16

VDDS_RTC	2	0.00086873	1.798	0.43	0.78	0.0008682	1.798	0.43	0.78	0.00089893	1.797	0.45	0.81	0.0008970	1.797	0.45	0.81
VDDS_DDR	0.24	0.02522216	1.494	105.09	156.98	0.0226178	1.495	94.24	140.88	0.00515553	1.756	21.48	37.72	0.0042830	1.756	17.85	31.34
VDDS	0.24	0.00014550	1.810	0.60	1.09	0.0000412	1.810	0.17	0.31	0.00017780	1.801	0.74	1.34	0.0000810	1.801	0.34	0.61
VDDS_SRAM_CORE_BG	2	0.00028314	1.820	1.42	2.58	0.0029712	1.818	1.49	2.70	0.00027853	1.818	1.39	2.53	0.0028626	1.818	1.43	2.60
VDDS_SRAM_MPU_BB	2	0.00045669	1.820	2.28	4.15	0.0151347	1.819	7.57	13.76	0.00041249	1.818	2.06	3.75	0.0140857	1.818	7.04	12.80
VDDS_PLL_DDR	2	0.00021813	1.820	1.09	1.98	0.0021806	1.819	1.09	1.98	0.00020862	1.818	1.04	1.90	0.0020811	1.818	1.04	1.89
VDDS_PLL_CORE_LCD	2	0.01477 62	1.820	7.39	13.45	0.0147722	1.820	7.39	13.44	0.01477 91	1.818	7.39	13.44	0.0147365	1.818	7.37	13.40
VDDS_PLL_MPU	2	0.00617 65	1.819	3.09	5.62	0.0061685	1.818	3.08	5.61	0.00614 70	1.818	3.07	5.59	0.0061280	1.817	3.06	5.57
VDDS_OSC	2	0.00138 73	1.820	0.69	1.26	0.0013828	1.819	0.69	1.26	0.00134 84	1.818	0.67	1.23	0.0013366	1.818	0.67	1.22
VDDA1P8V_USB0/1	1	0.01618	1.81	16.18	29.37	0.0161992	1.81	16.20	29.40	0.01813	1.82	18.14	33.07	0.0161835	1.82	16.18	29.52

		16	5				5			76	3				4		
VDDA3P3V_USB0/1	2	0.00664631	3.339	3.32	11.09	0.0066301	3.338	3.32	11.07	0.00533 13	3.323	2.67	8.86	0.0066238	3.324	3.31	11.01
VDDA_ADC	1	0.00045 76	1.828	0.46	0.84	0.0004571	1.828	0.46	0.84	0.00045 71	1.827	0.46	0.84	0.0004554	1.828	0.46	0.83
VDDSHV1	0.24	0.00003 47	3.307	0.14	0.48	0.0000350	3.309	0.15	0.48	0.00002 68	3.314	0.11	0.37	0.0000270	3.317	0.11	0.37
VDDSHV2	0.24	0.00077 71	3.320	3.24	10.75	0.0000052	3.321	0.02	0.07	0.00048 18	3.324	2.01	6.67	0.0000049	3.325	0.02	0.07
VDDSHV3	0.24	0.00000 93	3.308	0.04	0.13	0.0000090	3.309	0.04	0.12	0.00000 81	3.318	0.03	0.11	0.0000101	3.320	0.04	0.14
VDDSHV4	0.24	0.00000 074	3.320	0.03	0.10	0.0000073	3.321	0.03	0.10	0.00000 073	3.324	0.03	0.10	0.0000081	3.326	0.03	0.11
VDDSHV5	0.24	0.00000 076	3.309	0.03	0.10	0.0000080	3.309	0.03	0.11	0.00043 83	3.318	1.83	6.06	0.0004432	3.320	1.85	6.13
VDDSHV6	0.24	0.00249 22	3.307	10.38	34.34	0.0001606	3.309	0.67	2.21	0.00256 03	3.312	10.67	35.33	0.0001846	3.315	0.77	2.55
				Total	**780.54**			Total	**1142.0**			Total	**622.31**			Total	**949.37**

VDDSDDRMEM	0.24	0.01680000	1.500	70.00	105.00	0.0170000	1.500	70.83	106.25								

CORE OPP[edit]

CAUTION Data presented in this wiki was collected on an unsupported version of the SDK, and is provided for legacy purposes. For most recent data, please refer to the TI Processor SDK Kernel Performance Guide, Power Management section

- Please be aware of the limitations and advisories for using OPP50, as specified in the Datasheet and Silicon Errata.
- CORE OPP50 configured in uboot
- Optimized IO pad configuration
- SmartReflex disabled
- Matrix GUI is shutdown (except for "OS Idle")
- LCDC is disabled (except for "OS Idle", "H.264 Decode", "Mpeg4 + AAC Decode", "3D Chameleon Man")

CORE OPP50/50[edit]

		DDR2							
CORE OPP50, MPU OPP50		**OS Idle**				**Dhrystone**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.0037363	0.939	74.73	70.13	0.0034243	0.937	68.49	64.17
VDD_MPU	0.05	0.0022964	0.940	45.93	43.16	0.0053885	0.945	107.77	101.84

VDDS_RTC	2	0.0004936	1.797	0.25	0.44	0.0004933	1.797	0.25	0.44
VDDS_DDR	0.24	0.0053132	1.757	22.14	38.90	0.0037520	1.757	15.63	27.46
VDDS	0.24	0.0001460	1.801	0.61	1.10	0.0000464	1.801	0.19	0.35
VDDS_SRAM_CORE_BG	2	0.0026041	1.819	1.30	2.37	0.0026137	1.819	1.31	2.38
VDDS_SRAM_MPU_BB	2	0.0030421	1.819	1.52	2.77	0.0061184	1.819	3.06	5.56
VDDS_PLL_DDR	2	0.0016289	1.819	0.81	1.48	0.0016285	1.819	0.81	1.48
VDDS_PLL_CORE_LCD	2	0.0039718	1.819	1.99	3.61	0.0039727	1.819	1.99	3.61
VDDS_PLL_MPU	2	0.0022320	1.819	1.12	2.03	0.0022319	1.819	1.12	2.03
VDDS_OSC	2	0.0013638	1.819	0.68	1.24	0.0013623	1.819	0.68	1.24
VDDA1P8V_USB0/1	1	0.0162071	1.824	16.21	29.56	0.0162124	1.824	16.21	29.57
VDDA3P3V_USB0/1	2	0.0066494	3.324	3.32	11.05	0.0066500	3.324	3.33	11.05
VDDA_ADC	1	0.0004582	1.828	0.46	0.84	0.0004576	1.827	0.46	0.84

VDDSHV1	0.24	0.0000272	3.314	0.11	0.38	0.0000274	3.317	0.11	0.38
VDDSHV2	0.24	0.0005150	3.325	2.15	7.13	0.0000045	3.325	0.02	0.06
VDDSHV3	0.24	0.0000116	3.318	0.05	0.16	0.0000112	3.320	0.05	0.16
VDDSHV4	0.24	0.0000082	3.325	0.03	0.11	0.0000084	3.325	0.03	0.12
VDDSHV5	0.24	0.0001382	3.318	0.58	1.91	0.0001381	3.320	0.58	1.91
VDDSHV6	0.24	0.0025521	3.312	10.63	35.22	0.0001875	3.315	0.78	2.59
				Total	**253.59**			Total	**257.24**

CORE OPP50[edit]

		DDR2							
CORE OPP50		**OS Idle**				**Dhrystone**			
Power Supply	**Shunt [Ohm]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**	**Voltage Drop [V]**	**Voltage [V]**	**Current [mA]**	**Power [mW]**
VDD_CORE	0.05	0.003748	0.939	74.97	70.36	0.0034345	0.937	68.69	64.33

		4							
VDD_MPU	0.05	0.0052706	1.096	105.41	115.53	0.0123115	1.094	246.23	269.29
VDDS_RTC	2	0.0004928	1.797	0.25	0.44	0.0004929	1.797	0.25	0.44
VDDS_DDR	0.24	0.0053102	1.757	22.13	38.88	0.0037296	1.756	15.54	27.29
VDDS	0.24	0.0001449	1.801	0.60	1.09	0.0000462	1.801	0.19	0.35
VDDS_SRAM_CORE_BG	2	0.0025661	1.819	1.28	2.33	0.0026559	1.818	1.33	2.41
VDDS_SRAM_MPU_BB	2	0.0029987	1.819	1.50	2.73	0.0092503	1.818	4.63	8.41
VDDS_PLL_DDR	2	0.0016273	1.819	0.81	1.48	0.0016280	1.819	0.81	1.48
VDDS_PLL_CORE_LCD	2	0.0039651	1.819	1.98	3.61	0.0039673	1.819	1.98	3.61
VDDS_PLL_MPU	2	0.0040697	1.819	2.03	3.70	0.0040670	1.818	2.03	3.70
VDDS_OSC	2	0.0013633	1.819	0.68	1.24	0.0013557	1.819	0.68	1.23
VDDA1P8V_USB0/1	1	0.0161281	1.824	16.13	29.42	0.0162159	1.824	16.22	29.57

VDDA3P3V_USB0/1	2	0.0066483	3.324	3.32	11.05	0.0066442	3.324	3.32	11.04
VDDA_ADC	1	0.0004588	1.828	0.46	0.84	0.0004571	1.827	0.46	0.84
VDDSHV1	0.24	0.0000274	3.315	0.11	0.38	0.0000278	3.317	0.12	0.38
VDDSHV2	0.24	0.0004892	3.325	2.04	6.78	0.0000058	3.325	0.02	0.08
VDDSHV3	0.24	0.0000114	3.318	0.05	0.16	0.0000112	3.320	0.05	0.15
VDDSHV4	0.24	0.0000079	3.325	0.03	0.11	0.0000082	3.325	0.03	0.11
VDDSHV5	0.24	0.0001388	3.318	0.58	1.92	0.0001386	3.320	0.58	1.92
VDDSHV6	0.24	0.0025473	3.312	10.61	35.15	0.0001874	3.315	0.78	2.59
				Total	**327.19**			Total	**429.24**

CORE OPP100[edit]

		DDR3								**DDR2**							

CORE OPP100		OS Idle				Dhrystone				OS Idle				Dhrystone			
Power Supply	Shunt [Ohm]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]	Voltage Drop [V]	Voltage [V]	Current [mA]	Power [mW]
VDD_CORE	0.05	0.000935 95	1.143	187.19	213.98	0.0092576	1.144	185.15	211.73	0.000803 73	1.129	160.75	181.52	0.0077025	1.128	154.05	173.74
VDD_MPU	0.05	0.000541 76	1.111	108.35	120.33	0.0131109	1.107	262.22	290.38	0.000526 80	1.096	105.36	115.48	0.0123149	1.094	246.30	269.34
VDDS_RTC	2	0.000086 60	1.798	0.43	0.78	0.0008667	1.798	0.43	0.78	0.000089 92	1.797	0.45	0.81	0.0008988	1.797	0.45	0.81
VDDS_DDR	0.24	0.025142 0	1.494	104.76	156.48	0.0227718	1.495	94.88	141.88	0.000518 08	1.757	21.59	37.92	0.0042967	1.756	17.90	31.44
VDDS	0.24	0.000143 1	1.810	0.60	1.08	0.0000412	1.810	0.17	0.31	0.000014 68	1.801	0.61	1.10	0.0000484	1.801	0.20	0.36
VDDS_SRAM_CORE_BG	2	0.000281 04	1.820	1.41	2.56	0.0027687	1.819	1.38	2.52	0.000260 61	1.819	1.30	2.37	0.0027166	1.818	1.36	2.47
VDDS_SRAM_MPU_BB	2	0.000331 25	1.820	1.66	3.01	0.0094873	1.819	4.74	8.63	0.000305 85	1.819	1.53	2.78	0.0093426	1.818	4.67	8.49

VDDS_PLL_DDR	2	0.00218 28	1.820	1.09	1.99	0.0021790	1.820	1.09	1.98	0.00208 46	1.819	1.04	1.90	0.0020848	1.818	1.04	1.90
VDDS_PLL_CORE_LCD	2	0.01478 23	1.820	7.39	13.45	0.0147669	1.820	7.38	13.44	0.01477 80	1.819	7.39	13.44	0.0147721	1.818	7.39	13.43
VDDS_PLL_MPU	2	0.00408 59	1.820	2.04	3.72	0.0040814	1.819	2.04	3.71	0.00406 56	1.818	2.03	3.70	0.0040650	1.818	2.03	3.69
VDDS_OSC	2	0.00138 42	1.820	0.69	1.26	0.0013888	1.820	0.69	1.26	0.00135 94	1.819	0.68	1.24	0.0013505	1.818	0.68	1.23
VDDA1P8V_USB0/1	1	0.01620 18	1.815	16.20	29.40	0.0161796	1.815	16.18	29.37	0.01620 61	1.824	16.21	29.56	0.0162206	1.824	16.22	29.58
VDDA3P3V_USB0/1	2	0.00664 59	3.338	3.32	11.09	0.0066463	3.339	3.32	11.10	0.00664 82	3.324	3.32	11.05	0.0066404	3.324	3.32	11.03
VDDA_ADC	1	0.00045 81	1.828	0.46	0.84	0.0004578	1.828	0.46	0.84	0.00045 90	1.828	0.46	0.84	0.0004576	1.827	0.46	0.84
VDDSHV1	0.24	0.00003 37	3.307	0.14	0.46	0.0000357	3.309	0.15	0.49	0.00002 73	3.315	0.11	0.38	0.0000272	3.317	0.11	0.38
VDDSHV2	0.24	0.00073 57	3.320	3.07	10.18	0.0000058	3.321	0.02	0.08	0.00050 06	3.325	2.09	6.94	0.0000051	3.325	0.02	0.07
VDDSHV3	0.24	0.00001	3.30	0.04	0.14	0.0000094	3.31	0.04	0.13	0.00001	3.31	0.05	0.16	0.0000092	3.32	0.04	0.13

		01	9				0			12	8				0		
VDDSHV4	0.24	0.00000077	3.320	0.03	0.11	0.0000079	3.321	0.03	0.11	0.00000067	3.325	0.03	0.09	0.0000077	3.325	0.03	0.11
VDDSHV5	0.24	0.00000078	3.309	0.03	0.11	0.0000082	3.310	0.03	0.11	0.00001908	3.318	0.80	2.64	0.0001891	3.319	0.79	2.62
VDDSHV6	0.24	0.00024931	3.307	10.39	34.35	0.0001616	3.309	0.67	2.23	0.00025674	3.312	10.70	35.43	0.0001867	3.314	0.78	2.58
				Total	**605.33**			Total	**721.07**			Total	**449.33**			Total	**554.23**
VDDSDDRMEM	0.24	0.01700000	1.500	70.83	106.25	0.0171000	1.500	71.25	106.88								

Additional Power Savings[edit]

- Disabling unused modules (USB, Ethernet, etc.)
- Minimizing frequencies (MPU, interconnect, DDR)

References[edit]

- AM335x Datasheet
- AM335x Technical Reference Manual
- AM335x Silicon Errata
- AM335x PM User Guide
- StarterWare PM
- Standby Users Guide
- AM335x Evaluation Module

- GP EVM User Guide
- GP EVM Design Files
- Linux SDK for TI ARM MPU
- AM335x Thermal Considerations. *As IC components become more integrated and more complex, the challenge of producing an end product with good thermal performance also increases. Thermal performance is a system level concern, impacted by IC packaging as well as PCB design. This application note addresses the thermal considerations for the AM335x devices.*
- Optimizing AM335x IO Power in DeepSleep0
- AM335x Power Measurement Archive

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1. switchcategory:MultiCore=

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